SONY

TRINITRON® COLOR VIDEO MONITOR

BVM-14E1E/14E1U

CHASSIS NO. SCC-J32E-A/SCC-H99F-A

BVM-14E5E/14E5U

CHASSIS NO. SCC-J32F-A/SCC-H99G-A

BVM-14F1E/14F1U

CHASSIS NO. SCC-J32B-A/SCC-H99B-A

BVM-14F5E/14F5U

CHASSIS NO. SCC-J32C-A/SCC-H99C-A

BVM-20E1E/20E1U

CHASSIS NO. SCC-J32D-A/SCC-H99E-A

BVM-20F1E/20F1U

CHASSIS NO. SCC-J32A-A/SCC-H99A-A

MONITOR CONTROL UNIT
BKM-10R

Trinitron

OPERATION AND MAINTENANCE MANUAL

1st Edition (Revised 1)

Serial No. 2000001 and Higher (ALL MODELS)

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.
LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

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WARNING
To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

AVERTISSEMENT
Afin d'éviter tout risque d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

WARNUNG
Um Feuergefahr und die Gefahr eines elektrischen Schlages zu vermeiden, darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur einem Fachmann.

ADVERTENCIA
Para evitar incendios o el riesgo de electrocución, no exponga la unidad a la lluvia ni a la humedad.

Para evitar descargas eléctricas, no abra la unidad. En caso de averia, solicite los servicios de personal cualificado.

ATTENZIONE
Per evitare incendi o cortocircuiti, l'apparecchio non deve essere esposto alla pioggia o all'umidità.

Per evitare scosse elettriche, non aprite l'apparecchio. Per le riparazioni rivolgetevi solo a personale qualificato.

CAUTION:
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommanded by the manufacturer. Discard used batteries according to the manufacturer's instructions.

ATTENTION
Il y a un risque d'explosion si la pile est mal insérée. Remplacer la pile uniquement par une pile de même type ou de type équivalent recommandé par le fabricant. Jeter les piles usées conformément aux instructions du fabricant.

VORSICHT:
Es besteht Explosionsgefahr, wenn die Batterie inkorrekt eingelegt wird.
Es darf nur eine identische oder eine vom Hersteller empfohlene Batterie des gleichen Typs eingesetzt werden. Entladene Batterien sind nach den Anweisungen des Herstellers zu entsorgen.

PRECAUCION
Peligro de explosión en caso de haberse instalado incorrectamente la batería.
Cambie sólo por una del mismo tipo o especificaciones equivalentes, de entre las recomendadas por el fabricante. Las baterías viejas se deben eliminar siguiendo las instrucciones del fabricante.

ATTENZIONE:
Pericolo di esplosione se la pila viene sostituita scorrettamente.
Sostituirla solo con un'altra uguale o di un tipo equivalente consigliato dal fabbricante. Gettare via le pile usate secondo le istruzioni del fabbricante.

Note
The socket-outlet should be installed near the equipment and be easily accessible.

Remarque
La prise doit être près de l'appareil et facile d'accès.

Hinweis
Zur Trennung vom Netz ist der Netzstecker aus der Steckdose zu ziehen, welche sich in der Nähe des Gerätes befinden muß und leicht zugänglich sein soll.

Nota
La toma mural debe estar instalada cerca del equipo y debe accederse a ésta con facilidad.

Nota
La presa di corrente deve essere situata vicino all'apparecchio e deve essere facilmente accessibile.

WARNING: THIS WARNING IS APPLICABLE FOR USA ONLY.

If used in USA, use the UL LISTED power cord specified below.
DO NOT USE ANY OTHER POWER CORD.

Plug Cap	Parallel blade with ground pin (NEMA 5-15P Configuration)
Cord	Type SJT, three 16 or 18 AWG wires
Length	Less than 2.5 m (8 ft 3 in)
Rating	Minimum 10 A, 125 V

Using this unit at a voltage other than 120V may require the use of a different line cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.

For customers in the USA
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For customers in Canada
This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Pour les utilisateurs au Canada
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Für Kunden in Deutschland
Dieses Produkt kann im kommerziellen und in begrenztem Maße auch im industriellen Bereich eingesetzt werden. Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse B besitzt.

Voor de klanten in Nederland

Bij dit produkt zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

- Dit apparaat bevat een Li-ion batterij voor memory back-up.
- De batterij voor memory back-up is vastgesoldeerd op de BC printplaat BAT1.
- Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat bij einde levensduur afdankt.
- Gooi de batterij niet weg, maar lever hem in als KCA.

Note
Be sure to use the supplied power cord for this monitor, or this monitor may not conform with the FCC Rules or EEC Directive 89/336/EEC.

Remarque
Utiliser le cordon d'alimentation fourni pour ce moniteur, sinon il pourrait ne pas être conforme aux règles FCC ou à la directive CEE 89/336/EEC.

Hinweis
Dieser Monitor darf ausschließlich mit dem mitgelieferten Netzkabel betrieben werden, weil anderenfalls der Monitor nicht mehr die FCC-Vorschriften oder die EG-Richtlinie 89/336/EWG erfüllt.

Nota
Utilice sin falta el cable eléctrico que viene con este monitor; de lo contrario el monitor puede no cumplir con los reglamentos de la FCC o de la directiva 89/336/EEC de la Comunidad Europea.

Nota
Assicurarsi di usare il cavo di alimentazione in dotazione per questo monitor, altrimenti il monitor può non essere conforme alle norme FCC o alla Direttiva CEE/89/336.

SECTION 1. GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual.

• BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U
• BVM-20E1E/20E1U/20F1E/20F1U

Overview

The BVM-14E1E/14E1U/14F1E/14F1U, BVM-14E5E/14E5U/14F5E/14F5U and BVM-20E1E/20E1U/20F1E/20F1U Trinitron®1) Color Video Monitors are high-performance 14- and 20-inch color video monitors. They are suitable for television stations or video production houses, where precise image reproduction is required.

1) Trinitron® is a registered trademark of Sony Corporation.

Features

High resolution picture tube
The HR Trinitron picture tube produces a clear, high resolution image.

Model	Aperture grille pitch	Resolution at the center of the picture
BVM-14E1E/14E1U BVM-14E5E/14E5U	0.22 mm	900 TV lines
BVM-14F1E/14F1U BVM-14F5E/14F5U	0.25 mm	800 TV lines
BVM-20E1E/20E1U	0.25 mm	1000 TV lines
BVM-20F1E/20F1U	0.30 mm	900 TV lines

Separate control unit
Both the BVM-20E1E/20E1U/20F1E/20F1U and BVM-14E1E/14E1U/14F1E/14F1U are controlled by a separate control unit, such as a BKM-10R Monitor Control Unit. Use of a separate control unit reduces the space needed for the equipment. With the BVM-20E1E/20E1U/20F1E/20F1U, it is also possible to attach the BKM-10R with an optional BKM-32H Monitor Control Unit Attachment Kit.

Data exchange between monitors
Up to 32 units of the BVM-20E1E/20E1U/20F1E/20F1U and BVM-14E1E/14E1U/14F1E/14F1U can be connected via serial remote connectors and controlled by a single BKM-10R Monitor Control Unit or By a single BVM-14E5E/14E5U/14F5E/14F5U Color Video Monitor which contains integrated control units. By copying memory card data and transmitting data through the serial remote connector, it is possible to share adjustment and setup condition data between the monitors.

Controlling monitor groups
Up to 32 monitors can be controlled from the BVM-14E5E/14E5U/14F5U/14F5U. First, using the monitor menus, assign a monitor address number to each monitor, divide the monitors into groups, and assign a group number to each group. Then you can use the BVM-14E5E/14E5U/14F5U/14F5U to control individual monitors or monitor groups simply by entering monitor address or group numbers. You can also execute the same operation on all connected monitors, or use the BVM-14E5E/14E5U/14F5U/14F5U to put all connected monitors into the same setup and adjustment state.

Setup and adjustment with the monitor memory card
You can use an optional BKM-12Y Monitor Memory Card to save and load monitor setup and adjustment data. If your system includes more than one monitor, you can use the monitor memory cards to exchange data between monitors. This makes it easy to put all monitors in your system into the same setup and adjustment state.

Standard auto alignment system
Decoder chroma and phase adjustment, as well as color temperature control, may be performed with the auto alignment system. This makes it possible to coordinate settings among multiple monitors.

Expandable input capability
The input connector configuration may be easily modified by simply sliding optional decoder adaptors or input expansion adaptors into input option slots at the rear of the monitor. The BVM-14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U may be fitted with up to four adaptors, and the BVM-14E1E/14E1U/14F1E/14F1U will accept two.

4:3/16:9 dual aspect ratio design
The monitors can be changed to either 4:3 or 16:9 aspect ratios with just a simple switching operation from an optional monitor control unit such as a BKM-10R. The screen can be also changed to 4:3 or 16:9 display by the replacement of a mask (no tools required).

Stable color temperature
The internal beam current feedback circuit maintains a constant color temperature over long periods of time.

Blue-only mode convenient for monitoring noise
All three CRT cathodes can be driven with a blue signal, producing a monochrome display. This mode is convenient for chroma and phase adjustment, and for monitoring VTR noise.

Menu operation
The monitor's various functions and operating conditions can be set with on-screen menus. Menu operations are performed using an optional monitor control unit such as a BKM-10R.

Other features
- Compatible with the ISR (Interactive Status Reporting) system.
- Has both RS-485 serial remote and relay contact parallel remote control connectors.
- Built-in safe area display and test signal generator for crosshatch, 100% white signal, 20% grey signal, grey scale, and PLUGE (Picture Line Up Generating Equipment).
- Built-in VITC (Vertical Interval Time Code) reader.
- Built-in coption vision.
- Pulse cross function for simultaneous checking of the horizontal and vertical synchronization signals. VITS (Vertical Interval Test Signal) checking is also possible.
- Auto and manual degaussing.
- Built-in CRT protection circuit.
- The BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U and BVM-20E1E/20E1U/20F1E/20F1U may be mounted in an EIA-standard 19-inch rack, using an optional BKM-30E20/30E14/31E14 Rack Mount Kit.

Options

For External Control

BKM-10R Monitor Control Unit
External control unit for the BVM-14E1E/14E1U/14F1E/14F1U and BVM-20E1E/20E1U/20F1E/20F1U.

BKM-12Y Monitor Memory Card
Memory cards which can be read and written by the BKM-10R and BVM-14E5E/14E5U/14F5E/14F5U.

For Screen

BKM-33H20 Monitor 16:9 Mask
Adapts the BVM-BVM-20E1E/20E1U/20F1E/20F1U screen for 16:9 aspect ratio display.

BKM-33H14 Monitor 16:9 Mask
Adapts the BVM-14E1E/14E1U/14F1E/14F1U/14E5E/14E5U/14F5E/14F5Uscreen for 16:9 aspect ratio display.

For Installation

BKM-30E20 Rack Mount Kit
Rack mount kit for mounting the BVM-20E1E/20E1U/20F1E/20F1Uin an EIA standard 19-inch rack.

BKM-30E14 Rack Mount Kit
Rack mount kit for mounting the BVM-14E5E/14E5U/14F5E/14F5U in an EIA standard 19-inch rack.

BKM-31E14 Rack Mount Kit
Rack mount kit for mounting the BVM-14E1E/14E1U/14F1E/14F1Uin an EIA standard 19-inch rack.

BKM-32H Monitor Control Unit Attachment Kit
Assembly kit for attaching a BKM-10R Monitor Control Unit to the BVM-20E1E/20E1U/20F1E/20F1Umonitor.

Decoder and Input Expansion Adaptors

The input connector panel is configured by sliding optional decoder adaptors and/or input expansion adaptors into input option slots at the rear of the monitor. The BVM-14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U may be fitted with up to four adaptors, and the BVM-14E1E/14E1U/14F1E/14F1U will accept two.

Note

When installing the adaptors, be sure to perform the necessary input signal setup with the INPUT CONFIGURATION menu. If the setup is not performed, the adaptors may not function correctly.

For information about the INPUT CONFIGURATION menu, see "Setting the Input Configuration —INPUT CONFIGURATION Menu".

BKM-20D SDI 4:2:2 Decoder Adaptor
Includes decoders for serial digital component signals (525/625). Input/output connectors for three serial digital channels (component inputs only) and three analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-21D SDI Multi Decoder Adaptor
Includes decoders for serial digital signals (525/625 component and NTSC/PAL composite) and analog composite signals (NTSC and PAL). Input/output connectors for three serial digital channels and three analog channels are equipped. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-24N NTSC Decoder Adaptor
Includes a decoder for analog composite NTSC signals and input/output connectors for six analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-25P PAL Decoder Adaptor
Includes a decoder for analog composite PAL signals and input/output connectors for six analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-26M PAL-M Decoder Adaptor
Includes a decoder for analog composite PAL-M signals and input/output connectors for six analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-27T Tri-Standard Decoder Adaptor
Includes decoders for analog composite NTSC, PAL, and SECAM signals and input/output connectors for six analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-22X SDI Input Expansion Adaptor
Used with decoder adaptors, increases the number of input/output channels. Includes input/output connectors for three serial digital channels and three analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-28X Analog Input Expansion Adaptor
Used with decoder adaptors, increases the number of input/output channels. Includes input/output connectors for six analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

Connector Panel Configuration

The BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U and BVM-20E1E/20E1U/20F1E/20F1U come standard with connectors for one channel of Y/R–Y/B–Y or RGB. By adding optional decoder adaptors and/or input expansion adaptors, the input/output connector panel can be assembled in a wide variety of configurations.
The signals that each of the adaptors' connectors supports are given in the table below. The type of signal to be applied to each input/output connector is set with the INPUT CONFIGURATION menu.

When the type of input signal determines, each connector of the installed adaptors is connected with the decoder for the corresponding signal over an internal bus. Therefore, if one decoder adaptor for a signal is installed, the signal input from any connector of the installed adaptors can be decoded.

For information about the INPUT CONFIGURATION menu, see "Setting the Input Configuration —INPUT CONFIGURATION Menu"

		Adaptor name							
		BKM-20D SDI 4:2:2 Decoder Adaptor	BKM-21D SDI Multi Decoder Adaptor	BKM-24N NTSC Decoder Adaptor	BKM-25P PAL Decoder Adaptor	BKM-26M PAL-M Decoder Adaptor	BKM-27T Tri-Standard Decoder Adaptor	BKM-22X SDI Input Expansion Adaptor	BKM-28X Analog Input Expansion Adaptor
Serial digital input	Component 525/625	◎	◎					○	
	Composite NTSC	○	◎					○	
	Composite PAL	○	◎					○	
Analog input	Composite NTSC	○	◎	◎	○	○	◎	○	○
	Composite PAL	○	◎	○	◎	○	◎	○	○
	Composite PAL-M	○	○	○	○	◎	○	○	○
	Composite SECAM	○	○	○	○	○	◎	○	○
	Y/R–Y/B–Y 525/625	◎	◎	◎	◎	◎	◎	◎	◎
	RGB 525/625	◎	◎	◎	◎	◎	◎	◎	◎
	Y/C NTSC			◎	○	○	◎		○
	Y/C PAL			○	◎	○	◎		○
	Y/C PAL-M			○	○	◎	○		○
Number of digital inputs		3	3	–	–	–	–	3	–
Number of analog input		3	3	6	6	6	6	3	6

◎: Independent input possible
○: Input possible when used with decoder adaptor

Decoder Adaptor Priority

The table on the right shows which decoder adaptor will be selected preferentially when more than one decoder adaptor which can accept the NTSC or PAL signal format have been installed in the monitor.

For example, when a BKM-24N and a BKM-27T are installed and an NTSC signal is selected, the NTSC signal connected to the BKM-24N's input connectors and the NTSC signal connected to the BKM-27T's input connectors are both processed by the decoder on the BKM-24N.

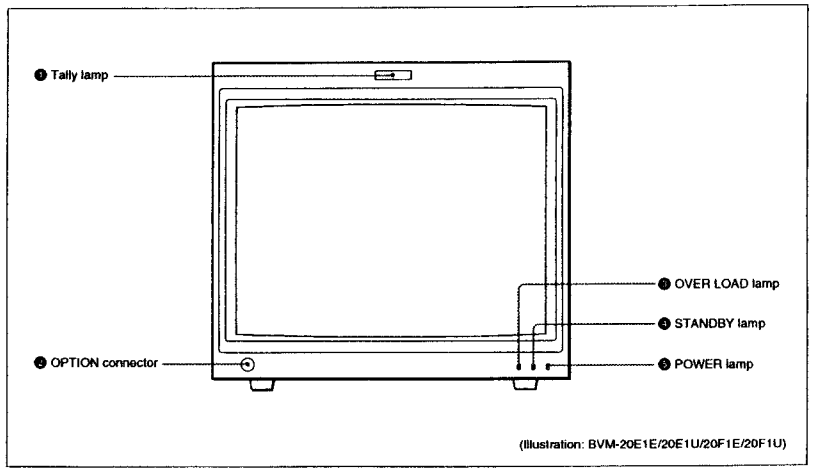
Input signal type and format		Decoder adaptor			
		BKM-24N	BKM-25P	BKM-27T	BKM-21D
Composite signal	NTSC	1		3	2
	PAL		1	3	2
Y/C signal	NTSC	1		2	
	PAL		1	2	

Numbers in the table show priority.

Location and Function of Parts

BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U

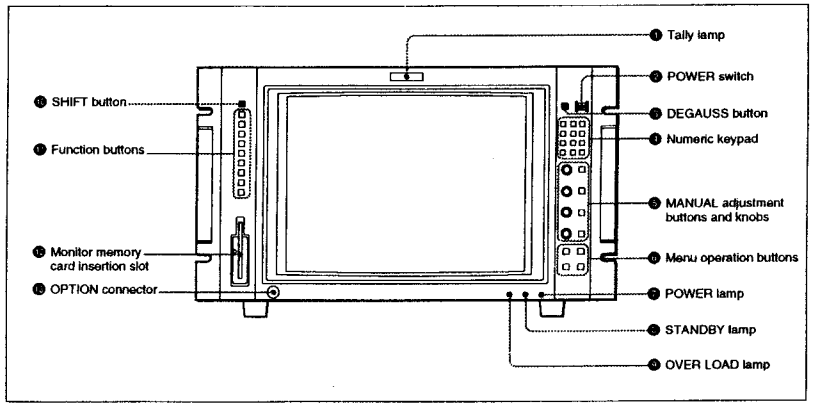
Front Panel



(Illustration: BVM-20E1E/20E1U/20F1E/20F1U)

BVM-14E5E/14E5U/14F1E/14F5U

Front Panel



❶ Tally lamp
With factory settings, the Tally lamp lights when pins No. 3 and No. 8 of the REMOTE 2 connector on the rear panel are connected. By changing the setting in the REMOTE menu, different pins on the remote connector can be used to control the tally lamp.

For information about the REMOTE menu, see "Assigning the Remote Control Functions —REMOTE MenuZ".

❷ OPTION connector (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U)
⓬ OPTION connector (BVM-14E5E/14E5U/14F5E/14F5U)
Connector for future expansion.

❸ OVER LOAD lamp (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U)
❾ OVER LOAD lamp (BVM-14E5E/14E5U/14F5E/14F5U)
Lights to warn of CRT overload.

❹ STANDBY lamp (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U)
❽ STANDBY lamp (BVM-14E5E/14E5U/14F5E/14F5U)
Lights when the monitor is in standby mode. The monitor will be in standby mode under the following conditions:
- The MAIN POWER switch (on the rear panel) is turned on (the STANDBY lamp will blink for a few moments after the switch is turned on).
- The monitor is changed from operation mode to standby mode via the monitor control unit such as the BKM-10R.

❺ POWER lamp (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U)
❼ POWER lamp (BVM-14E5E/14E5U/14F5E/14F5U)
Lights when the monitor is put into operation mode by an optional monitor control unit such as a BKM-10R.

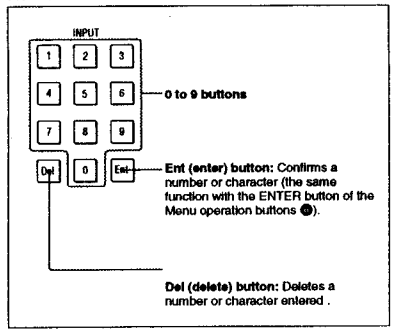
Note
When the STANDBY lamp ❹ is blinking, the monitor cannot be put into operation mode (internal data initialization is taking place). Wait until the STANDBY lamp ❹ is steadily lit.

❷ POWER switch (BVM-14E5E/14E5U/14F5E/14F5U)
Press to power the BVM-14E5E/14E5U/14F5E/14F5U on or off. If your system includes more than one monitor, you can use the ADDRESS menu to power a selected monitor on or off, or to power all monitors on or off at once.

For more information about the ADDRESS menu, see "Selecting the Monitor to Control —ADDRESS Menu".

❸ DEGAUSS button (BVM-14E5E/14E5U/14F5E/14F5U)
Press to manually degauss the monitor CRT. When degaussing repeatedly, wait for 5 minutes before pressing the button again. (The monitor CRT is degaussed automatically each time the power is turned on.)

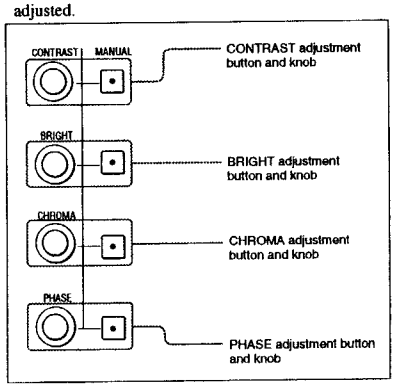
❹ Numeric keypad (BVM-14E5E/14E5U/14F5E/14F5U)
Use the numeric keypad to enter menu settings and channel numbers for signals that you want to input to the monitor.



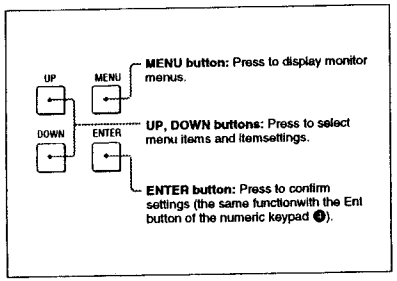
❺ MANUAL adjustment buttons and knobs (BVM-14E5E/14E5U/14F5E/14F5U)
Each press of one of these buttons turns the button's green LED on or off. When the corresponding button is on (lit), you can rotate the knobs to adjust the picture's contrast, brightness (black level), chroma, and phase. These buttons are also used to enter adjustment values from the menus.
You can use the CONTROL PRESET ADJ menu to set preset values for each adjustment item.

For more information about the CONTROL PRESET ADJ menu, See "Preset Adjustment of the Picture Level Control Knobs —CONTROL PRESET ADJ Menu".

Notes on using a SECAM, PAL D, component, and component digital system
- The phase of component signals cannot be adjusted.
- The phase and chroma of RGB signals cannot be adjusted.



❻ Menu operation buttons (BVM-14E5E/14E5U/14F5E/14F5U)



For more information about using monitor menus, see "Basic Menu Operations".

⓾ SHIFT button (BVM-14E5E/14E5U/14F5E/14F5U)
Each of the Function buttons ⓫ has a Shift On function as well as a Shift Off function. Press this button to select Shift On or Shift Off functions. Each time you press this button, its orange LED lights (Shift On) or goes out (Shift Off).
Shift On: Use the function indicated on the right of the Function button.
Shift Off: Use the function indicated on the left of the Function button.

⑰ Function buttons (BVM-1414E5E/14E5U/14F5E/14F5U)

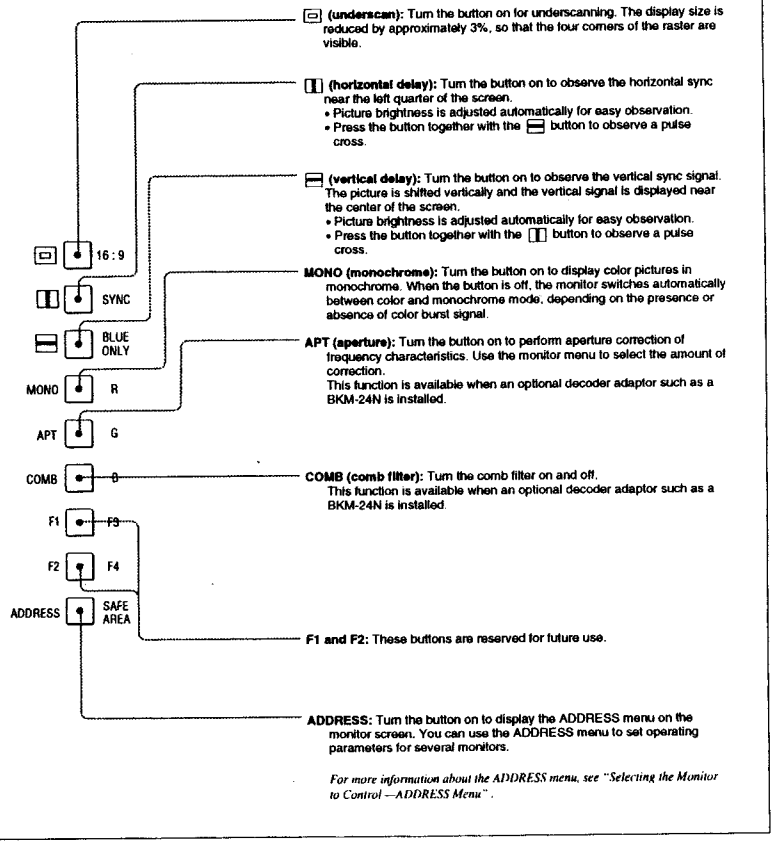
Use these buttons to control the operation of the monitor.

Each of these buttons has a Shift On function, indicated below the button, as well as a Shift Off function, indicated above the button. Press the SHIFT button ⑯ to select the desired function.

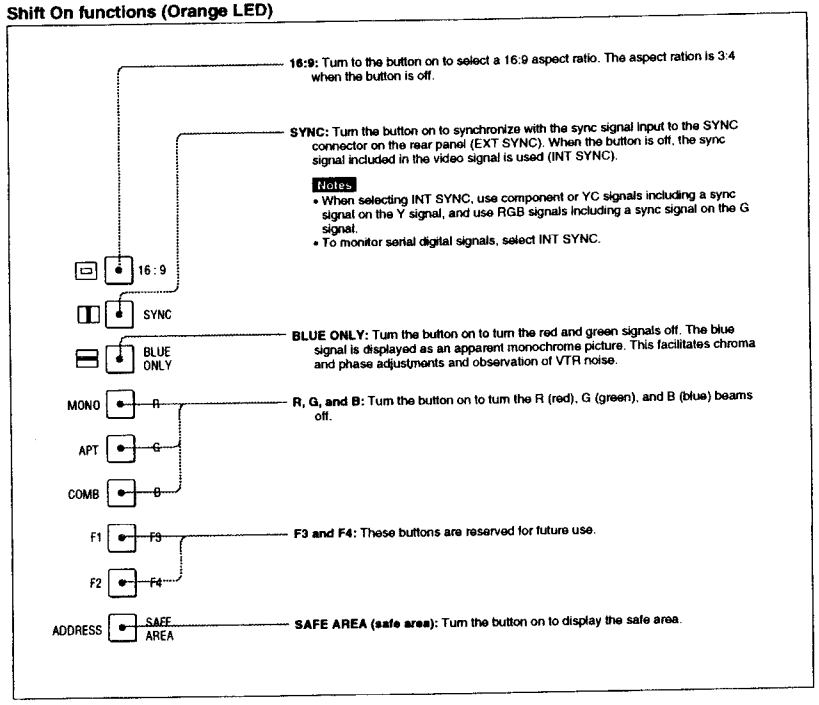
Each time you press one of these buttons, its LED lights or goes out and the function of the button selected with the SHIFT button ⑯ is turned on or off. The LED color change whether you select Shift Off functions or Shift On functions.

For Sift Off functions: Green LED
For Shift On functions: Orange LED

Shift Off functions (green LED)



Shift On functions (Orange LED)

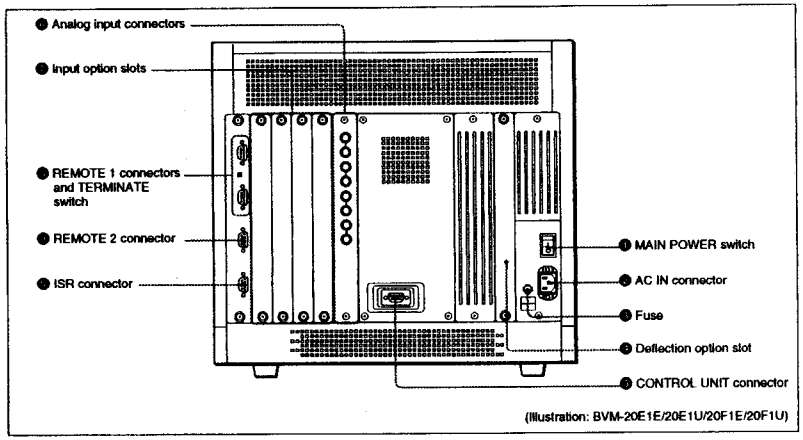


⑱ Monitor memory card insertion slot (BVM-14E5E/14E5U/14F5E/14F5U)

Insert an optional BKM-12Y Monitor Memory Card.

BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U

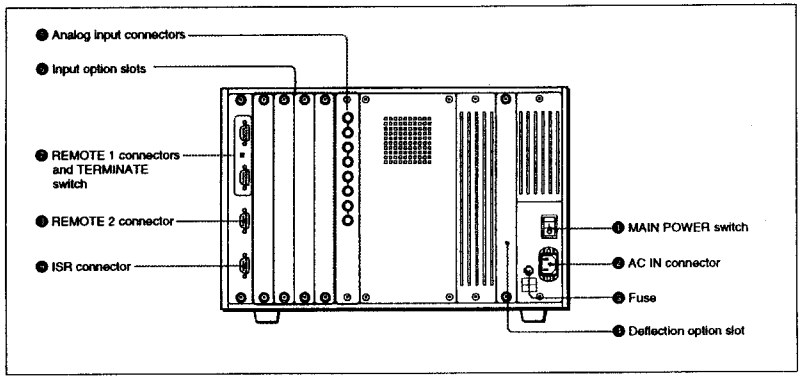
Rear Panel



(Illustration: BVM-20E1E/20E1U/20F1E/20F1U)

BVM-14E5E/14E5U/14F5E/14F5U

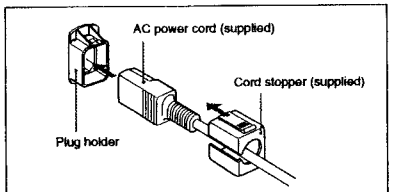
Rear Panel



❶ MAIN POWER switch
When turned on, the monitor enters standby mode. By a setting in the SYSTEM CONFIGURATION menu, the monitor can also be set to enter operation mode when the MAIN POWER switch is turned on.

For information about the SYSTEM CONFIGURATION menu, see "Setting the Channel Selection Method and Power-Up Conditions —SYSTEM CONFIGURATION Menu".

❷ AC IN connector (3-pin)
Connects the monitor to an AC power source, via the supplied AC power cord.

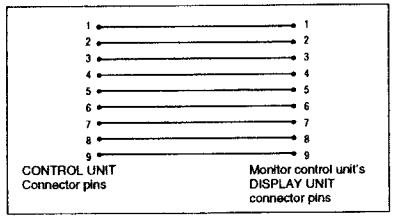


Attach the cord stopper to the AC power cord, and connect it to the plug holder so that the cord does not come loose.

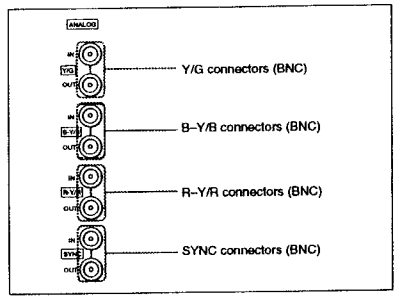
❸ Fuse
Use a 4 A fuse for 100 to 120 V AC or a T 3.15 A fuse for 220 to 240 V AC.

❹ Deflection option slot
Slot for future expansion.

❺ CONTROL UNIT connector (female, D-sub 9-pin) (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U)
Connects a monitor control unit such as the BKM-10R using a straight cable with D-sub 9-pin plugs such as an RCC-5G (not supplied) as shown in the figure.



❻ Analog input connectors (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U)
❺ Analog input connectors (BVM-14E5E/14E5U/14F5E/14F5U)



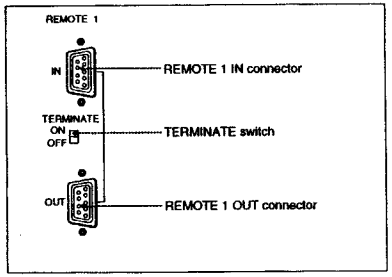
RGB signals, component signals (Y, R–Y, and B–Y), or composite sync signals can be fed in the IN connectors. The type of signal applied to each connector is set with the INPUT CONFIGURATION menu. The OUT connectors are used for loop-through output of the input signal. When not using loop-through, connect a 75-ohm terminator (not supplied) to the OUT connectors.

For information about the INPUT CONFIGURATION menu, see "Setting the Input Configuration—INPUT CONFIGURATION menu".

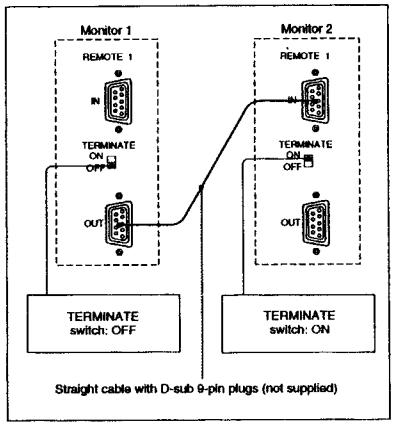
❼ Input option slots (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U)
❻ Input option slots (BVM-14E5E/14E5U/14F5E/14F5U)
The BVM-14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U may be fitted with up to four adaptors, and the BVM-14E1E/14E1U/14F1E/14F1U will accept two.

❽ REMOTE 1 connectors (female, D-sub 9-pin), and TERMINATE switch (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U)

❼ REMOTE 1 connectors (female, D-sub 9-pin), and TERMINATE switch (BVM-14E5E/14E5U/14F5E/14F5U)



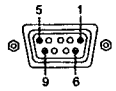
These are RS-485 serial interface connectors, used for connecting two or more BVM-series monitors. The IN and OUT connectors form a loop-through connection. Set the TERMINATE switch to OFF when loop-through is used, to ON when it is not. Connect two monitors using a straight cable with D-sub 9-pin plugs such as an RCC-5G (not supplied) as shown in the figure.



❾ REMOTE 2 connectors (female, D-sub 9-pin) (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U)

❽ REMOTE 2 connectors (female, D-sub 9-pin) (BVM-14E5E/14E5U/14F5E/14F5U)

Forms a pararell switch and controls the monitor externally. The pin arrangement and factory setting function assigned to each pin are given below.



Pin number	Function
1	Set input signal channel 1 (numeric keypad function)
2	Set input signal channel 2 (numeric keypad function)
3	Select sync signal (SYNC button function)
4	Set the screen to monochrome, or set for automatic switching based on the input signal (MONO button function)
5	Safe area on/off (SAFE AREA button function)
6, 7	Undefined
8	Tally lamp on/off
9	Ground

All pin function assignments can be changed with the REMOTE menu.

For information about the REMOTE menu, see "Assigning the Remote Control Functions —REMOTE Menu".

To switch each function between on and off or between enable and disable, change pin connections in the following way.
On or enabled: Short each pin and pin 9 together.
Off or disabled: Leave each pin open.

❿ ISR (Interactive Status Reporting) connector (female, D-sub 9-pin) (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U)

❾ ISR (Interactive Status Reporting) connector (female, D-sub 9-pin) (BVM-14E5E/14E5U/14F5E/14F5U)

Connect to the ISR system.

Guidance for Basic Monitor Operations

The following table shows how to use a monitor, control unit and menus to perform basic monitor operations.

Operations	Monitor/control unit parts	Menus
Selecting signals to be monitored	Specify the channel number with 0 to 9 buttons of the numeric keypad. 1 to 90: channel numbers for external input signals 91 to 95: channel numbers for signals from the internal testsignal generator 91: PLUGE (Picture Line UP Generating Equipment) 92: 20% gray signal 93: 100% white signal 94: five-step gray scale 95: crosshatch	• INPUT CONFIGURATION menu • SYSTEM CONFIGURATION menu
Remote control	• REMOTE 1 connector • REMOTE 2 connector	• REMOTE menu • ADDRESS menu
Adjusting the screen and signals	• Function buttons • MANUAL adjustment buttons and konbs *Refer to the operation manual for the control unit or the built-in control unit monitor on how to use.*	• CONTROL PRESET ADJ menu • COLOR TEMP ADJ menu • ALIGNMENT menu • ON SCREEN SET menu • KEY PROTECT menu
Data transfer	• REMOTE 1 connector • Monitor memory card *Refer to the operation manual for the control unit or the built-in control unit monitor on how to use.*	• MEMORY CARD menu • COPY menu
Menu operations	• Menu operation buttons • ADDRESS button of the function buttons *Refer to the operation manual for the control unit or the built-in control unit monitor on how to use.*	• Basic menu operations • PASSWORD menu

Basic Menu Operations

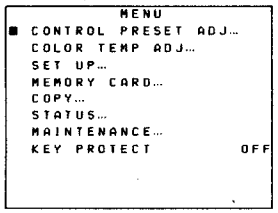
The various functions and operating conditions of the BVM-14E1E/14E1U/14F1E/14F1U or BVM-20E1E/20IEU/20F1E/20F1U can be set with on-screen menus. Menu operations are performed with an optional control unit such as the BKM-10R Monitor Control Unit or a built-in control unit monitor such as the BVM-14E5E/14E5U/14F5E/14F5U.
Herein, the operating procedures for the BKM-10R will be described.

The names of buttons and adjustment knobs may vary depending on the control unit or monitor you use. Consult the operating manual for your control unit or monitor, and use the buttons and knobs with the same functions as those described here.

Displaying the Menus

Press the MENU button.

The menu list is displayed on the screen.



Menu list

Choose the menu for the adjustment or setup you wish to perform. The adjustments and settings which can be made with the menus are described below.

CONTROL PRESET ADJ menu: Sets the preset values for the input signal contrast, brightness, chroma, and phase.
COLOR TEMP ADJ menu: Sets the color temperature.
SET UP menus: A menu group for performing monitor setup, consisting of the following.
- **INPUT CONFIGURATION menu:** Sets the input channel.
- **REMOTE menu:** Sets the remote control functionality.
- **PASSWORD menu:** Sets passwords for menus.
- **SYSTEM CONFIGURATION menu:** Sets the input channel selection method and power-up conditions.
- **ON SCREEN SET menu:** Sets data about the screen display.
- **ALIGNMENT menu:** Used to adjust the screen convergence and geometry.

MEMORY CARD menu: Operates on data in the memory card.
COPY menu: Copies set-up data to other connected monitors.
STATUS menu: Displays the information about the monitor or options installed in the monitor.
MAINTENANCE menu: Menu for maintenance (typically not used).
KEY PROTECT: When set to ON, function buttons on the control unit (with the exception of menu operation buttons) will be disable. When set to OFF, key protection is removed.

To exit the menus

Press the MENU button repeatedly until the menu disappears.

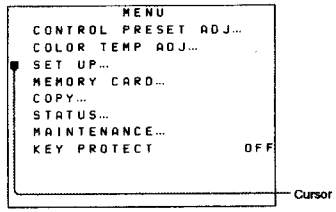
ADDRESS Menu

The ADDRESS menu is used to select the monitor or the monitor group, so that when several monitors are connected together via serial remort ports, the control panel can select which monitor to control.
To display or exit the ADDRESS menu, press the ADDRESS button. The method of choosing menu items and changing settings is the same as with the other menus.

For information about the ADDRESS menu, see "Selecting the Monitor to Control —ADDRESS Menu".

Selecting the Menu

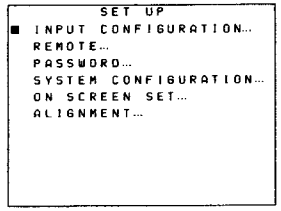
1 Using the UP or DOWN button, move the cursor to the desired item. (Example: move the cursor with the DOWN button to SET UP.)



Menu list

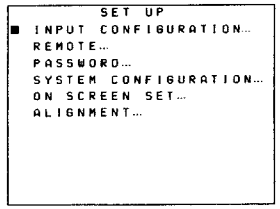
2 Press the ENTER button.

The SET UP menu list is displayed.



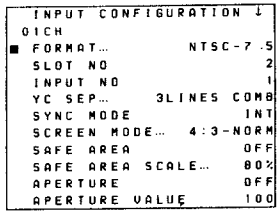
SET UP menu list

3 Using the UP or DOWN button, move the cursor to the desired item. (Example: select the INPUT CONFIGURATION menu.)



4 Press the ENTER button.

The INPUT CONFIGURATION menu is displayed.



INPUT CONFIGURATION menu

The " ↓" to the right of the menu title indicates that the menu continues onto another page. Items which are followed by "..." have sub-lists for settings.

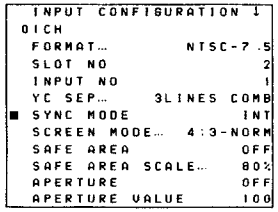
Changing the Settings

The setting procedure differs with different menu items. There are four different types of settings:
(1) Choosing one of two or more selections on a current setting list (items without "..." mark)
(2) Choosing one of two or more selections using sub-setting list (items with "..." mark)
(3) Entering a numerical value
(4) Entering characters

Choosing One of Two or More Selections about Items without "..." Mark

Example: changing the SYNC MODE setting in the INPUT CONFIGURATION menu

1 Move the cursor to the SYNC MODE line in the INPUT CONFIGURATION menu.

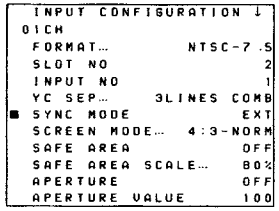


INPUT CONFIGURATION menu

2 Press the ENTER button.

INT is displayed in yellow text.

3 By pressing either the UP or DOWN button, INT changes to EXT.



Each time the UP or DOWN button is pressed, the value switches between INT and EXT.

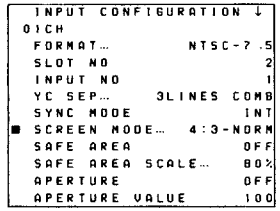
4 When EXT is displayed, press the ENTER button.

The SYNC MODE is set to EXT. (EXT is again displayed in white text.)

Choosing One of Two or More Selections about Items with "..." Mark

Example: changing the SCREEN MODE setting in the INPUT CONFIGURATION menu

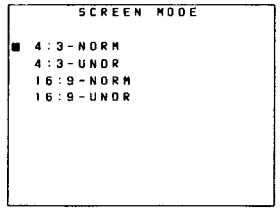
1 Move the cursor to the SCREEN MODE line in the INPUT CONFIGURATION menu.



INPUT CONFIGURATION menu

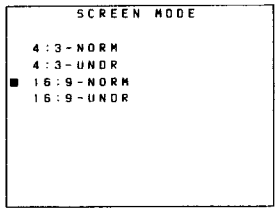
2 Press the ENTER button.

The SCREEN MODE setting list is displayed.



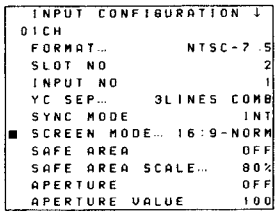
SCREEN MODE setting list

3 By pressing either UP and DOWN buttons, move the cursor to 16:9 - NORM.



4 Press the ENTER button.

The display returns to the INPUT CONFIGURATION menu, and shows SCREEN MODE as the 16:9 - NORM setting.

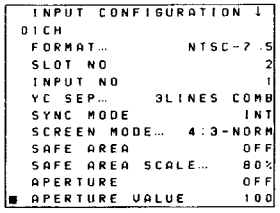


Entering a Numerical Value

Example: changing the APERTURE VALUE setting in the INPUT CONFIGURATION menu to 85

The numeric keypad, UP and DOWN buttons, or PHASE knob can be used to enter numerical values.

1 Move the cursor to the APERTURE VALUE line in the INPUT CONFIGURATION menu.



INPUT CONFIGURATION menu

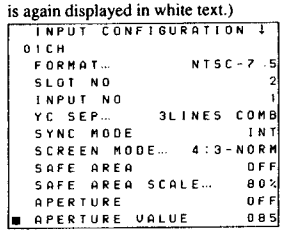
2 Press the ENTER button.

The third digit in the value is displayed in yellow text, indicating that it can now be modified.

3 There are three ways to set the value:
- Using the numeric keypad, enter "0", "8", and "5".
- Press the DOWN button to change the value to "85".
- Turn the PHASE knob counterclockwise to change the value to "85".

4 Press the ENTER button.

The APERTURE VALUE is set to 85. (The value is again displayed in white text.)

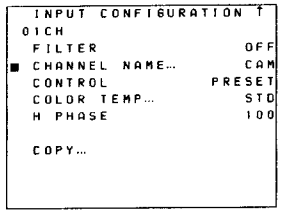


Entering Characters

Example: changing the CHANNEL NAME setting in the INPUT CONFIGURATION menu to CAM2

The PHASE knob or UP and DOWN buttons are used to enter characters.

1 Move the cursor to the CHANNEL NAME line in the INPUT CONFIGURATION menu (2/2).

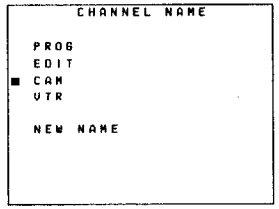


INPUT CONFIGURATION menu (2/2)

(continued)

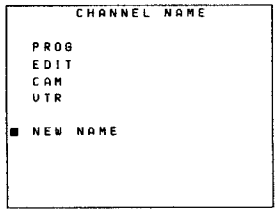
2 Press the ENTER button.

The CHANNEL NAME setting list is displayed.



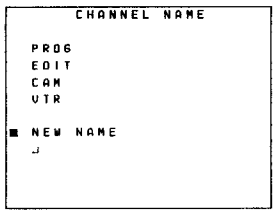
CHANNEL NAME setting list

3 Using the UP or DOWN button, move the cursor to the NEW NAME line.



4 Press the ENTER button.

The "↵" is displayed on the last line of the list (in yellow).

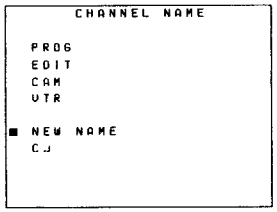


"↵" indicates the position where character input is possible.

5 Press the UP or DOWN buttons, or turn the PHASE knob, until "C" is displayed.

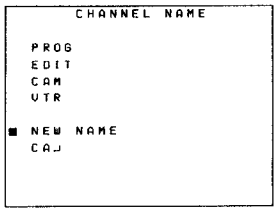
When the UP button is pressed, the display will cycle through letters, numbers, and symbols, in the following order. When the DOWN button is pressed, the display will cycle in the opposite order.
A, B, ..., Y, Z, 0, 1, ..., 8, 9, (,), :, ;, ., –, +, /, &, CH, _ (space), ↵

Press the ENTER button.



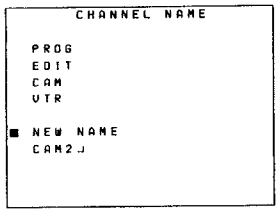
6 As in steps **4** and **5**, use the UP or DOWN button or the PHASE knob to select "A", and press the ENTER button.

"CA" (white) "↵" (yellow) is displayed.



7 As in steps **4** and **5**, use the UP or DOWN button or the PHASE knob to enter "M" and "2".

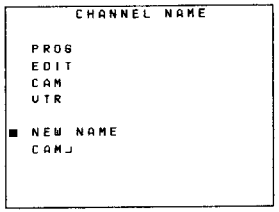
"CAM2" (white) "↵" (yellow) is displayed.
20 characters can be entered as a channel name.



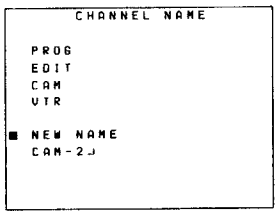
Check the entered name, and if it is correct, go on to step **8**.

To correct the entered text
Example: change "CAM2" to "CAM-2"

7-1) Press the Del button of the numeric keypad to delete "2".



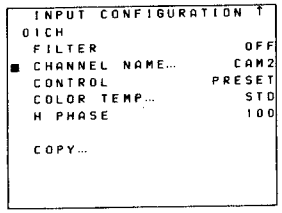
7-2) Enter "-" and "2".



Check the modified text, and if it is correct, go on to step **8**.

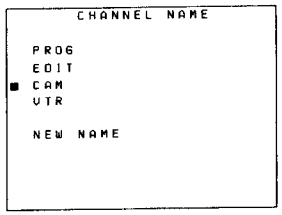
8 Press the ENTER button.

The INPUT CONFIGURATION menu appears, and the CHANNEL NAME is set to the name you entered (up to six characters from the head of the name are displayed).



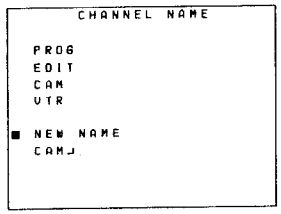
Using default names
Example: copy "CAM" and change it to "CAM2"

1 Using the UP or DOWN button, move the cursor to "CAM".



2 Press the ENTER button.

"CAM" (white) "↵" (yellow) is displayed on the bottom line of the screen.



(continued)

3 Using the UP or DOWN button or PHASE knob, enter "2".

```
      CHANNEL NAME

  PROG
  EDIT
  CAM
  VTR

■ NEW NAME
  CAM2␣
```

4 Press the ENTER button.

The INPUT CONFIGURATION menu appears, and the CHANNEL NAME is set to "CAM2".

```
  INPUT CONFIGURATION ↑
 01CH
  FILTER                    OFF
■ CHANNEL NAME...          CAM2
  CONTROL                PRESET
  COLOR TEMP...             STD
  H PHASE                   100

  COPY...
```


Preset Adjustment of the Picture Level Control Knobs — CONTROL PRESET ADJ Menu

The preliminary adjustment of contrast, brightness, chroma, and phase are carried out with the CONTROL PRESET ADJ menu to set the preset values to the knobs for the above-mentioned adjustments. Preset values can be set either commonly to all channels or separately for individual channels.
Preset values can be set in the following ways:
(1) Adjustment with the MANUAL knobs
(2) Automatic adjustment (An external color bar signal is necessary.)
(3) Copying data from other channels, common data, other BVM-series monitors that have been connected via the serial remote connector, or from data stored in monitor memory cards
(4) Restoring factory settings.

Structure and Usage of the CONTROL PRESET ADJ Menu

This section explains the setting lists displayed in the menu.

The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select CONTROL PRESET ADJ from the menu list.

```
CONTROL PRESET ADJ...   100
COLOR TEMP ADJ...
SET UP...
MEMORY CARD...
COPY...
STATUS...
MAINTENANCE...
KEY PROTECT      OFF
```

Menu list

100 CONTROL PRESET ADJ menu: Select either PRESET or CH SET. ⇨ **101**

PRESET...: Set common values.
CH SET...: Set values for each individual channel.

101 CONTROL PRESET ADJ (PRESET/xxCH): Select the setting method.

MANUAL...: Set with the MANUAL knobs. ⇨ **110**
AUTO...: Set by automatic adjustment. ⇨ **120**
COPY...: Copy data from elsewhere. ⇨ **130**
RESTORE FACTORY SET: Return values to their factory settings.

110 MANUAL (PRESET/xxCH): Adjust values by turning the PHASE, BRIGHT, CHROMA, and/or CONTRAST knobs.

PHASE: xxxx **CHROMA:** xxxx **BRIGHT:** xxxx **CONTRAST:** xxxx

120 AUTO (PRESET/xxCH): Select the color bar signal to be used for automatic adjustment.
⇨ **Adjustment is carried out.**

FULL FIELD CB 100: 100% full-field color bar **FULL FIELD CB 75:** 75% full-field color bar **SMPTE CB:** SMPTE standard color bar **EIA CB:** EIA standard color bar

130 COPY (PRESET/xxCH): Select the source to be copied from.

OTHER VALUE...: Copy data from another channel or from PRESET setting. ⇨ **131** **OTHER MONITOR...:** Copy data from another monitor. ⇨ **133** **MEMORY CARD...:** Copy data from a memory card. ⇨ **136**

131 OTHER VALUE (PRESET/xxCH): Choose either PRESET or CH SET.
⇨ **Copy is carried out.**

PRESET: Copy common data. **CH SET:** Copy data set for another channel. Input the number of the channel from which the data will be copied.

133 OTHER MONITOR (PRESET/xxCH): Input the address of the monitor from which the data will be copied. ⇨ **134**

MONITOR ADDRESS: Input the address.

134 OTHER MONITOR (PRESET/xxCH): Choose either PRESET or CH SET.
⇨ **Copy is carried out.**

PRESET: Copy common data. **CH SET:** Copy data set for another channel. Input the number of the channel from which the data will be copied.

136 MEMORY CARD (PRESET/xxCH): Select the file name. ⇨ **137**

FILE NAME: Select the file name.

137 FILE NAME (PRESET/xxCH): Choose either PRESET or CH SET.
⇨ **Copy is carried out.**

PRESET: Copy common data. **CH SET:** Copy data set for another channel. Input the number of the channel from which the data will be copied.

Adjusting the Color Temperature — COLOR TEMP ADJ Menu

The color temperature is adjusted with the COLOR TEMP ADJ menu. The color temperature can be set either commonly to all channels or individually for each channel.
The adjusted value can then be used as an original value.

Color temperature adjustment can be made in the following four ways:

(1) Knob adjustment
Adjust the color temperature with the bias and gain knobs.

(2) Automatic adjustment using a probe
Bias and gain can be adjusted automatically by connecting a color analyzer such as the Minolta CA-100.

(3) Copying other data
Copying data from other channels, common data, other BVM-series monitors that have been connected via the serial remote connector, or from data stored in monitor memory cards

(4) Restoring factory settings

Structure and Usage of the COLOR TEMP ADJ Menu

This section explains the setting lists displayed in the menu.

The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select COLOR TEMP ADJ from the main menu list.

CONTROL PRESET ADJ...
COLOR TEMP ADJ... 200
SET UP...
MEMORY CARD...
COPY...
STATUS...
MAINTENANCE...
KEY PROTECT OFF

Menu list

200 COLOR TEMP ADJ menu: Select STD, COL1, COL2, or CH SET. ⇨ **201**

STD: Use common data (factory setting: D65). **COL1:** Use common data (factory setting: D65). **COL2:** Use common data (factory setting: D93). **CH SET:** Use data for each individual channel (factory setting: D65). Use the numeric keypad to select the desired channel.

201 COLOR TEMP ADJ (STD/COL1/COL2/xxCH): Select the adjustment method.

MANUAL...: Set with the MANUAL knob. ⇨ **210**
PROBE...: Set using a probe. ⇨ **220**
COPY...: Copy data from elsewhere. ⇨ **260**
RESTORE FACTORY SET: Return values to their factory settings.
TRIM...: Perform fine adjustments after setting the color temperature. ⇨ **280**

210 MANUAL (STD/COL1/COL2/xxCH): Set the following data necessary to perform knob adjustment and select **ADJUST**.

ORIGINAL VALUE...: Set the initial value. ⇨ **211**
SIGNAL: Select the white signal to be used for adjustment.
INT: Use an internal signal. Simultaneously with the adjustment of the gain and bias, the 100 IRE and 20 IRE signals are automatically switched.
EXT: Use an external input signal. When adjusting the gain and bias, input the proper signal.
ADJUST...: Perform the adjustment with following knobs. ⇨ **212**
RED: CONTRAST knob (Adjust the R gain or bias with the CONTRAST knob.)
GREEN: BRIGHT knob (Adjust the G gain or bias with the BRIGHT knob.)
BLUE: CHROMA knob (Adjust the B gain or bias with the CHROMA knob.)
LUMINANCE: PHASE knob (Adjust luminance with the PHASE knob.)

211 ORIGINAL VALUE: Select STD, COL1, COL2, or CH SET. ⇨ **210**

STD: Use grobal data (factory setting: D65).
COL1: Use grobal data (factory setting: D65).
COL2: Use grobal data (factory setting: D93).
CH SET: Use data for each individual channel (factory setting: D65). Use the numeric keypad to select the desired channel.

212 ADJUST (STD/COL1/COL2/xxCH) (1/2): Adjust the gain with the proper knob.

GAIN R:xxxx G:xxxx B:xxxx

212 ADJUST (STD/COL1/COL2/xxCH) (2/2): Adjust the bias with the proper knob.

BIAS R:xxxx G:xxxx B:xxxx

220 PROBE (STD/COL1/COL2/xxCH): Select the probe. ⇨ **241 (Using a CA-100)**

241 CA-100 (STD/COL1/COL2/xxCH): Select either D65 or D93, and enter values for LOWLIGHT and HIGHLIGHT. Rather than selecting D65 or D93, you may instead enter the values of the CIE 1931 color system x and y coordinates.

D65: Use D65.
D93: Use D93.
X: Enter the x coordinate.
Y: Enter the y coordinate.
LOW LIGHT (20IRE): Enter the brightness (cd/m²) for low light.
HIGH LIGHT (100IRE): Enter the brightness (cd/m²) for high light.
START: Start adjustment. ⇨ **242**

242 COLOR TEMP ADJ (STD/COL1/COL2/xxCH): Perform adjustment.

SET PROBE ON CRT:
PRESS ENTER:
Adjustment starts when the probe is placed against the center of the screen and the ENTER button is pressed.

260 COPY (STD/COL1/COL2/xxCH): Select the source to be copied from.

OTHER VALUE...: Copy data from another channel or from common data. ⇨ **261**
OTHER MONITOR...: Copy data from another monitor. ⇨ **263**
MEMORY CARD...: Copy data from a memory card. ⇨ **266**

261 OTHER VALUE (STD/COL1/COL2/xxCH): Select STD, COL1,COL2, or CH SET. ⇨ **Copy is carried out.**

STD: Copy common data (factory setting: D65).
COL1: Copy common data (factory setting: D65).
COL2: Copy common data (factory setting: D93).
CH SET: Copy data from a particular channel (factory setting: D65). Enter the number of the channel from which the data will be copied.

263 OTHER MONITOR (STD/COL1/COL2/xxCH): Input the address of the monitor from which the data will be copied.

MONITOR ADDRESS: Input the address of the monitor from which the data will be copied. ⇨ **264**

264 OTHER MONITOR (STD/COL1/COL2/xxCH): Select STD, COL1,COL2, or CH SET. ⇨ **Copy is carried out.**

STD: Copy common data (factory setting: D65).
COL1: Copy common data (factory setting: D65).
COL2: Copy common data (factory setting: D93).
CH SET: Copy data from a particular channel (factory setting: D65). Enter the number of the channel from which the data will be copied.

266 MEMORY CARD (STD/COL1/COL2/xxCH): Select the file name. ⇨ **267**

267 FILE NAME (STD/COL1/COL2/xxCH): Select STD, COL1, COL2,or CH SET. ⇨ **Copy is carried out.**

STD: Copy common data (factory setting: D65).
COL1: Copy common data (factory setting: D65).
COL2: Copy common data (factory setting: D93).
CH SET: Copy data from a particular channel (factory setting: D65). Enter the number of the channel from which the data will be copied.

280 TRIM (STD/COL1/COL2/xxCH): After setting the necessary items, select **ADJUST**.

APPLY/NOT APPLY: Select whether to add the fine adjustment to the original setting (APPLY) or not (NOT APPLY)
SIGNAL: Select the white signal to be used for adjustment.
INT: Use an internal signal. Simultaneously with the adjustment of the gain and bias, the 100 IRE and 20 IRE signals are automatically switched.
EXT: Use an external input signal. When adjusting the gain and bias, input the proper signal.
ADJUST...: Perform the adjustment with following knobs: ⇨ **282**
RED: CONTRAST knob (Adjust the R gain or bias with the CONTRAST knob.)
GREEN: BRIGHT knob (Adjust the G gain or bias with the BRIGHT knob.)
BLUE: CHROMA knob (Adjust the B gain or bias with the CHROMA knob.)
LUMINANCE: PHASE knob (Adjust luminance with the PHASE knob.)

282 ADJUST (STD/COL1/COL2/xxCH) (1/2): Adjust the gain with the proper knob.

GAIN R:xxxx G:xxxx B:xxxx

282 ADJUST (STD/COL1/COL2/xxCH) (2/2): Adjust the bias with the proper knob.

BIAS R:xxxx G:xxxx B:xxxx

Setting the Input Configuration — INPUT CONFIGURATION Menu

Data pertaining to the input signals are set with the INPUT CONFIGURATION menu.
When a channel number (1 to 90) is entered with the numeric keypad, it is then possible to set which input connector on the rear panel will be assigned to that channel number, and select the type of signal that will be connected. The channel numbers from 91 to 99 are assigned to internal signals.

Assigning Slot and Connector Numbers

Set which input connector on which slot will be assigned to the current channel. The slots are numbered from the left, as seen when facing the rear panel, with the REMOTE connectors slot being number 1, the input option slots numbers 2 to 5, and the analog input connectors slot being number 6. The connectors are numbered 1 to 6 (from the top) for the slot.

Assigning the Signal Type and Format

The signal type and format which can be assigned to each channel number vary, depending on what adaptors are installed in the rear panel.

Assigning serial digital signals

It is possible to assign serial digital signals to the serial digital input connectors on the BKM-20D/21D/22X adaptors. However, at least one BKM-21D which includes the decoder for serial digital signals or BKM-20D which includes the decoder for serial digital component signals must be installed.

Assigning analog composite signals

It is possible to assign any composite signal to the analog signal input connectors of the BKM-20D/21D/22X, and any of the connectors of the BKM-24N/25P/26M/27T/28X adaptors. However, at least one of the following decoder adaptors must be installed:
To assign NTSC signals: BKM-21D/24N/27T
To assign PAL signals: BKM-21D/25P/27T
To assign PAL-M signals: BKM-26M
To assign SECAM signals: BKM-27T

Assigning Y/C signals

It is possible to assign any Y/C signals to the input connectors of the BKM-24N/25P/26M/27T/28X adaptors. However, at least one of the following decoder adaptors must be installed:
To assign NTSC signals: BKM-24N/27T
To assign PAL signals: BKM-25P/27T
To assign PAL-M signals: BKM-26M

Assigning analog component or RGB signals

Analog component and RGB signals can be assigned to any input connectors except the serial digital signal input connectors on the BKM-20D/21D/22X.

Structure and Usage of the INPUT CONFIGURATION Menu

This section explains the setting lists displayed in the menu.

The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select SET UP from the main menu list.

CONTROL PRESET ADJ...
COLOR TEMP ADJ...
SET UP... 300
MEMORY CARD...
COPY...
STATUS...
MAINTENANCE...
KEY PROTECT OFF

Menu list

300 SET UP menu list: Choose the menu for setting the desired items.

INPUT CONFIGURATION menu: Set the input signal configuration. 301
REMOTE menu
PASSWORD menu
SYSTEM CONFIGURATION menu
ON SCREEN SET menu
ALIGNMENT menu

301 INPUT CONFIGURATION menu (1/2): Set input signal data for each channel.

xxCH: Current channel is indicated. Enter a channel number with the numeric keypad if changing the channel. The settings below will be stored as information about the signal to be connected to this channel.
FORMAT...: Select the input signal type. ⇨ **310**
SLOT NO: Enter the slot number.
INPUT NO: Enter the input connector number.
YC SEP...: Select a Y/C separation filter. ⇨ **315**
SYNC MODE: Select the sync signal.
INT: Use an internal sync signal.
EXT: Use an external sync signal.
SCREEN MODE...: Select the scan size. ⇨ **320**
SAFE AREA: Choose whether or not to display the safe area (OFF or ON).
SAFE AREA SCALE...: Select the safe area size. ⇨ **322**
APERTURE: Choose whether or not to use aperture adjustment (OFF or ON).
APERTURE VALUE: Enter the aperture adjustment value (0 to 200).

301 INPUT CONFIGURATION menu (2/2): Set input signal data for each channel.

xxCH: Current channel is indicated. Enter a channel number with the numeric keypad if changing the channel. The settings below will be stored as information about the signal to be connected to this channel.
FILTER: Switch the filter operation (OFF or ON) when the monochrome display is selected.
CHANNEL NAME...: Give the channel a name. ⇨ **326**
CONTROL: Select whether to use local ("CH SET") or common ("PRESET") values for contrast, brightness, chroma, and phase.
PRESET: Use common data.
CH SET: Use values set for each channel.
COLOR TEMP...: Set the color temperature. ⇨ **328**
H PHASE: Set the horizontal picture position (0 to 200).
COPY...: Select a method for copying data from elsewhere. ⇨ **330**

310 FORMAT (xxCH): Select the signal format.

Note

If there is no input connector or decoder corresponding to a format, that format will not be selectable (the cursor will skip over that item).

COMPOSITE...: Composite signal. ⇨ **311**
YC...: Y/C signal. ⇨ **311**
COMPONENT...: Component or RGB signal. ⇨ **312**
SDI...: Serial digital signal. ⇨ **313**

311 COMPOSITE (xxCH): Select the format of a composite or Y/C signal.

Notes

- Even when selecting AUTO, also select the NTSC, PAL, or PAL-M format.
- If there is no input connector or decoder corresponding to a format, that format will not be selectable (the cursor will skip over that entry).

AUTO: The format of the input signal is detected and switched automatically.
NTSC: SETUP 7.5 or 0.
PAL: S (simple) or D (delay).
PAL-M: S (simple) or D (delay).
SECAM

312 COMPONENT (xxCH): Select the component signal format, or RGB.

YUV SMPTE/EBU-N10
YUV BETACAM: SETUP 7.5 or 0.
RGB

313 SDI (xxCH): Select the format of the serial digital signal.

AUTO: The format of the input signal is detected and switched automatically.
NTSC: SETUP 7.5 or 0
PAL: S (simpe) or D (delay)
4:2:2

315 YC SEP (xxCH): Select a Y/C separation filter.

TRAP/BPF
2 LINES COMB
3 LINES COMB

320 SCREEN MODE (xxCH): Select the scan size.

4:3-NORM: Overscanned 4:3 aspect ratio.
4:3-UNDR: Underscanned 4:3 aspect ratio.
16:9-NORM: Overscanned 16:9 aspect ratio.
16:9-UNDR: Underscanned 16:9 aspect ratio.

322 SAFE AREA (xxCH): Select the type of screen. ⇨ **323**

4:3 OR 16:9: Display the screen and safe area in 4:3 or 16:9 aspect ratio.
16:9 IN 4:3: Display a 16:9 aspect ratio safe area in a 4:3 aspect ratio screen.
4:3 IN 16:9: Display a 4:3 aspect ratio safe area in a 16:9 aspect ratio screen.

323 4:3 OR 16:9 (xxCH): Select the size of the safe area.

80%
90%
100%

326 CHANNEL NAME (xxCH): Give the channel a name. Select a preset name, or enter a new one.

PROG: Program signal.
EDIT: Signal from an editor.
CAM: Camera signal.
VTR: Signal from a VTR.
NEW NAME: Enter a new name. (Up to 20 characters can be entered and up to six characters from the head of the name are displayed in the INPUT CONFIGURATION menu (301, 2/2).)

328 COLOR TEMP (xxCH): Select STD, COL1, COL2, or CH SET.

STD: Use common data (factory setting: D65).
COL1: Use common data (factory setting: D65).
COL2: Use common data (factory setting: D93).
CH SET: Use data for the current channel (factory setting: D65).

330 COPY (xxCH): Select the source to be copied from.

OTHER CH: Copy data from another channel. Enter the channel number.
OTHER MONITOR...: Copy data from another monitor. ⇨ **332**
MEMORY CARD...: Copy data from a memory card. ⇨ **334**

332 OTHER MONITOR (xxCH): Enter the address of the monitor from which to copy data.

MONITOR ADDRESS: Enter the address of the monitor from which to copy data. ⇨ **333**

333 OTHER MONITOR (xxCH): Select which channel of the chosen monitor from which to copy data. ⇨ **Copy is carried out.**

CH NO: Enter the channel number.

334 MEMORY CARD (xxCH): Select the file name. ⇨ **335**

335 MEMORY CARD (xxCH): Select which channel of the chosen file from which to copy data. ⇨ **Copy is carried out.**

CH NO: Enter the channel number.

Assigning the Remote Control Functions — REMOTE Menu

The remote control functions are set with the REMOTE menu. With this monitor, both serial remote control (REMOTE 1) and parallel remote control (REMOTE 2) are possible. It is possible to simultaneously use the BKM-10R, REMOTE 1, and REMOTE 2 for control, but commands from REMOTE 2 have priority. Therefore, it is impossible for the BKM-10R or REMOTE 1 to change items set by REMOTE 2.
There is no priority order between commands from REMOTE 1 and the BKM-10R; it is possible to set APERTURE to ON from REMOTE 1 and then set it to OFF with a control panel operation.

About Monitor Address and Group Numbers

The monitor control unit BKM-10R or the integrated control unit monitors BVM-14E5E/14E5U/14F5E/14F5U are able to control up to 32 monitors connected via serial remote connector (using the REMOTE 1 connector). By giving each monitor a monitor address and group number, it is possible to control just a specific monitor or monitor group.
With the REMOTE menu, each monitor can be set with a monitor address and group number, between 1 and 99. The ADDRESS menu is used to select a particular monitor or group by entering a monitor number or group number.

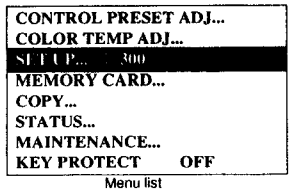
For information about the ADDRESS menu, see "Selecting the Monitor to Control —ADDRESS Menu".

Structure and Usage of the REMOTE Menu

This section explains the setting lists displayed in the menu.

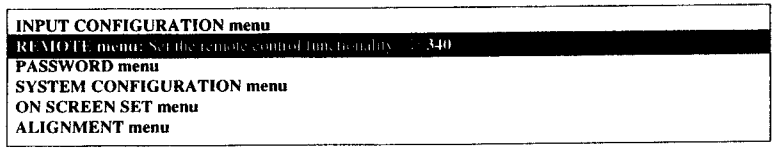
The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select SET UP from the menu list.



Menu list

300 SET UP menu list: Choose the menu for setting the desired items.



340 REMOTE menu: Select the type of remote control.

PARA REMOTE: Select whether or not parallel remote control will be used (ON or OFF).
PARA REMOTE CONFIG...: Set the pin assignments for the REMOTE2 (parallel remote control) connector. ⇨ **341**
SERI REMOTE CONFIG...: Set the address and group number of the monitor controlled via the REMOTE 1 (serial remote control) connector. ⇨ **343**

341 PARA REMOTE CONFIG: Select the REMOTE 2 connector pins for which you want to change the function. The factory settings for each pin are given below.⇨ 342

1 PIN...: CH01
2 PIN...: CH02
3 PIN...: EXT SYNC
4 PIN...: MONO
5 PIN...: SAFE AREA
6 PIN...: unused
7 PIN...: unused
8 PIN...: TALLY

342 1-8 PIN (1/2): Assign a function to the selected pin.

CH: Select a channel number. Enter the desired channel number with the numeric keypad.
----: Set to unused.
UNDERSCAN: Set underscan on or off.
16:9: Set a 16:9 aspect ratio on or off.
H DELAY: Set the horizontal sync display on or off.
V DELAY: Set the vertical sync display on or off.
EXT SYNC: Set the synchronization to external sync signals enabled or disabled.
COMB: Set the comb filter on or off.
APERTURE: Set the correction of frequency characteristics enabled or disabled.
MONO: Set monochrome display on or off.

342 1-8 PIN (2/2): Assign a function to the selected pin.

BLUE ONLY: Set the blue signal pictures display (monochrome) on or off.
R OFF: Set cutting red beams enabled or disabled.
G OFF: Set cutting green beams enabled or disabled.
B OFF: Set cutting blue beams enabled or disabled.
VITC ON: Set the VITC display on or off.
SAFE AREA ON: Set the safe area display on or off.
CAPTION VISION: Set the caption vision on or off.
TALLY ON: Set tally signals on or off.
DEGAUSS ON: Set degaussing on or off.
POWER ON: Set the monitor power on or off.

For information about pin connections, see the description of the REMOTE 2 connector in "Location and Function of Parts" on page 10.

343 SERI REMOTE CONFIG: Set the monitor address and group number of the monitor currently connected directly to the control unit. The monitors to be assigned addresses and group numbers must be directly connected to the control unit and set one at a time.

MONITOR ADDRESS: Enter a number.
GROUP ADDRESS: Enter a number.

Setting the Password — PASSWORD Menu

A four-digit password can be specified and applied to desired menu options to prohibit the menu settings from being changed without permission. The password is set with the PASSWORD menu.
A password is always assigned to the PASSWORD menu (factory setting: 9999). When a new password is created, it is automatically applied to the PASSWORD menu.

Use of the Password

The message "PLEASE ENTER PASSWORD" is displayed when an attempt is made to select a menu item for which the password has been applied. The correct password must be entered with the numeric keypad within about five seconds.

If the password is not entered correctly
If an incorrect password is entered, or if nothing is entered within about five seconds from when the message is displayed, the message "INCORRECT ENTRY" is displayed, and the menus disappear from the screen.

Structure and Usage of the PASSWORD Menu

This section explains the setting lists displayed in the menu.

The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select SET UP from the menu list.

CONTROL PRESET ADJ...
COLOR TEMP ADJ...
SET UP... ⇨ 300
MEMORY CARD...
COPY...
STATUS...
MAINTENANCE...
KEY PROTECT OFF

Menu list

300 SET UP menu list: Choose the menu for setting the desired items.

INPUT CONFIGURATION menu
REMOTE menu
PASSWORD menu: Setting the password ⇨ 400
SYSTEM CONFIGURATION menu
ON SCREEN SET menu
ALIGNMENT menu

400 PASSWORD menu: Enter the password for the PASSWORD menu.

ENTER PASSWORD: Enter the password (factory setting: 9999). ⇨ **401**

401 PASSWORD: Choose what action to perform with the password.

CHANGE PASSWORD...: Change the password. ⇨ **402**
APPLY PASSWORD...: Assign the password to a menu item. ⇨ **404**

402 ENTER NEW PASSWORD: Crate a new password.

ENTER NEW PASSWORD: Enter a password. ⇨ **403**

403 CHANGE PASSWORD: Change the password.

RE-ENTER PASSWORD
TO CONFIRM
Enter the new password again and press the ENTER button. ⇨ **The password is recorded.**
To change it, press the MENU button. ⇨ **Return to the PASSWORD (401).**

404 APPLY PASSWORD: Choose whether or not to apply the password to each menu.

CONTROL PRESET ADJ: YES or NO.
CONTROL TEMP ADJ: YES or NO.
SET UP: YES or NO.
MEMORY CARD: YES or NO.

Setting the Channel Selection Method and Power-Up Conditions — SYSTEM CONFIGURATION Menu

The SYSTEM CONFIGURATION menu is used for the following settings:

(1) Channel number entry method
The two ways in which the ten-key pad can be used to enter channel numbers are as follows:
(In the explanation below, x and y represent any digit between 1 and 9.)
DIRECT mode: When selecting a number from 1 to 9, press the x button to display channel x. When selecting a number from 10 to 99, press the 0, x, and y buttons to display channel xy (a two-digit channel number). This mode is selected at the shipping.
10KEY mode: When the x button is pressed followed by the ENTER button, the monitor displays channel x. When the x buttons is pressed, followed by the y and ENTER buttons, the monitor displays channel xy (a two-digit channel number).
When multiple monitors are connected by a serial remote connection, this setting will be common to all the monitors. It is not possible to change the setting for individual monitors.

(2) Power-up condition
This menu sets the condition of the monitor when the main power switch on the rear panel is switched on.
ON: Standby mode
OFF: Operation mode

(3) Power-up input channel
LAST: Set the channel to the channel that was selected at the time the power was last turned off.
CH xx: Set the channel to a specific channel number.

(4) Time from power-up until degauss
If several monitors are turned on at the same time and all start degaussing at the same time, there will be a very large current draw on the power supply for a few moments. To prevent this, the delay time between power-up and degaussing can be set for each monitor independently.

(5)AFC time constant

(6)Residual subcarrier detection (when using the BKM-24N/25P)
It is possible to detect residual subcarrier signals from phase change by setting the adaptor's residual subcarrier switch on.

(7)Auto chroma control (ACC) (when using the BKM-27T)

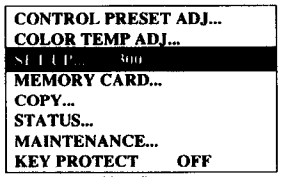
Setting the Channel Selection Method and Power-Up Conditions — SYSTEM CONFIGURATION Menu

Structure and Usage of the SYSTEM CONFIGURATION Menu

This section explains the setting lists displayed in the menu.

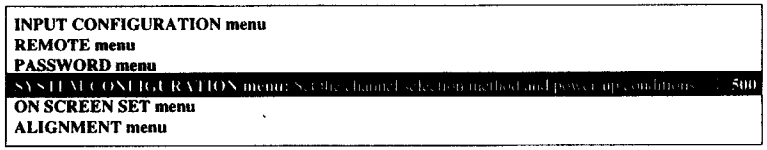
The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select SET UP from the menu list.



Menu list

300 SET UP menu list: Choose the menu for setting the desired items.



500 SYSTEM CONFIGURATION menu: Set each of the various items.

INPUT SELECT: Select the channel number selection method (DIRECT or 10KEY).
STANDBY MODE: Select the power-up condition (OFF or ON).
DEFAULT CH: Select the power-up input channel (LAST or CH xx).
DEGAUSS DELAY: Set the time between power-up and the beginning of degaussing. Enter the desired time (in seconds).
AFC TIME: Select the AFC time constant (0.5 or 2 ms).
RESIDUAL SC SW (BKM-24N): Switch the residual switch on the BKM-24N (OFF or ON).
RESIDUAL SC SW (BKM-25P): Switch the residual switch on the BKM-25P (OFF or ON).
ACC SW (BKM-27T): Switch the ACC switch on the BKM-27T (OFF or ON).

Setting the Screen Display — ON SCREEN SET Menu

The ON SCREEN SET menu is used to select the type of information that will be displayed on the screen and how that information will be displayed. The types of information that can be set are given below.

(1) The VITC or user bit from the input signal

(2) EDH (Error Detection and Handling) information (when using the BKM-20D/21D)
EDH is an error detection system which inserts Error Status Packets (ESP) into the serial digital signal. Using the data in these packets, it is possible to detect transmission errors.
With EDH, errors in the SDI signal's three data fields (Ancillary Data, Active Picture Data, and Full Field Data) can be detected, using five types of error flag (EDH, EDA, IDH, IDA, and UES). The flags make a distinction between errors caused by a certain device (EDH, IDH) and those that were caused earlier by some other equipment connected to that device (EDA/IDA).
EDH (Error Detected Here): Indicates the occurrence of a transmission error.
EDA (Error Detected Already): Indicates the occurrence of a transmission error.
IDH (Internal Device Error Here): Indicates the occurrence of a non-transmission error.
IDA (Internal Device Error Already): Indicates the occurrenceof a non-transmission error.
UES (Unknown Error Status): Indicates the occurrence of a different error.
When an EDH error occurs in the signal being displayed by the monitor, the message "EDH ERROR" is displayed on the screen. The details of the error can be confirmed with the error flags mentioned above, which are displayed in the menus. The menus can also be used to confirm whether or not the signal accommodates EDH.

The following two modes can be used to display the status in the menus:
ANALYZE MODE: Preserve the status when it is displayed.
WATCH MODE: Check status in real time.

(3) Caption vision

(4) SDI signal ancillary data blanking (when using the BKM-20D/21D)

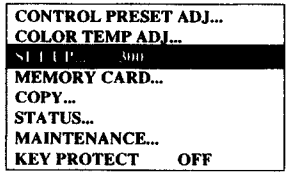
(5) Channel number and name

Structure and Usage of the ON SCREEN SET Menu

This section explains the setting lists displayed in the menu.

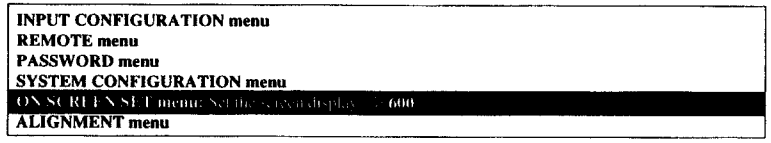
The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select SET UP from the menu list.



Menu list

300 SET UP menu list: Choose the menu for setting the desired items.



600 ON SCREEN SET menu: Select items to be displayed on the screen.

VITC...: Select whether or not to display the VITC or user bit data contained in the input signal. ⇨ **601**
EDH...: Select whether or not to display the EDH error messages. ⇨ **610**
CAPTION VISION...: Select whether or not to display the caption, and select the display mode. ⇨ **620**
ANCILLARY DATA: Select whether or not to display the ancillary data in the serial digital signal (OFF or ON).
CH NO...: Select the display mode of the channel number. ⇨ **625**
CH NAME...: Select the display mode of the channel name. ⇨ **625**
VITC POSITION...: Select the display position for the VITC data. ⇨ **630**
EDH POSITION...: Select the display position for the EDH error messages. ⇨ **630**
CH NO POSITION...: Select the display position for the channel number. ⇨ **630**
CH NAME POSITION...: Select the display position for the channel name. ⇨ **630**

601 VITC: Select whether or not to display the VITC and/or user bit.

VITC: OFF or ON
USER BIT: OFF or ON

610 EDH: Select whether or not to display the EDH error messages. If they are to be displayed, select either ANALYZE MODE or WATCH MODE.

ERROR WARNING: OFF or ON
ANALYZE MODE: ⇨ **611**
WATCH MODE: ⇨ **615**

611 ANALYZE MODE: Detection results for each item is displayed. Select the items for which you want to see the flag conditions.

EDH: The result whether the input signal accommodates EDH (FOUND) or not (INVALID)
ACTIVE PICT: Results will be displayed (ERROR or NO ERROR).⇨ **612**
FULL FIELD: Results will be displayed (ERROR or NO ERROR).⇨ **613**
ANCI DATA: Results will be displayed (ERROR or NO ERROR).⇨ **614**

612 ACTIVE PICT: Flag condition is displayed.

AP EDH: ERROR or NO ERROR
AP EDA: ERROR or NO ERROR
AP IDH: ERROR or NO ERROR
AP IDA: ERROR or NO ERROR
AP UES: ERROR or NO ERROR

613 FULL FIELD: Flag condition is displayed.

FF EDH: ERROR or NO ERROR
FF EDA: ERROR or NO ERROR
FF IDH: ERROR or NO ERROR
FF IDA: ERROR or NO ERROR
FF UES: ERROR or NO ERROR

614 ANCI DATA: Flag condition is displayed.

ANC EDH: ERROR or NO ERROR
ANC EDA: ERROR or NO ERROR
ANC IDH: ERROR or NO ERROR
ANC IDA: ERROR or NO ERROR
ANC UES: ERROR or NO ERROR

615 WATCH MODE: Detection results for each item is displayed. Select the items for which you want to see the flag conditions.

EDH: The result whether the input signal accommodates EDH (FOUND) or not (INVALID)
ACTIVE PICT: Results will be displayed (ERROR or NOERROR). ⇨ **616**
FULL FIELD: Results will be displayed (ERROR or NOERROR). ⇨ **617**
ANCI DATA: Results will be displayed (ERROR or NO ERROR).⇨ **618**

616 ACTIVE PICT: Flag condition is displayed.

AP EDH: ERROR or NO ERROR
AP EDA: ERROR or NO ERROR
AP IDH: ERROR or NO ERROR
AP IDA: ERROR or NO ERROR
AP UES: ERROR or NO ERROR

617 FULL FIELD: Flag condition is displayed.

FF EDH: ERROR or NO ERROR
FF EDA: ERROR or NO ERROR
FF IDH: ERROR or NO ERROR
FF IDA: ERROR or NO ERROR
FF UES: ERROR or NO ERROR

618 ANCI DATA: Flag condition is displayed.

ANC EDH: ERROR or NO ERROR
ANC EDA: ERROR or NO ERROR
ANC IDH: ERROR or NO ERROR
ANC IDA: ERROR or NO ERROR
ANC UES: ERROR or NO ERROR

620 CAPTION VISION: Select the caption display mode.

CAPTION 1
CAPTION 2
TEXT 1
TEXT 2
OFF

625 CH NO or CH NAME: Select the channel number and channel name display mode.

AUTO: Disappear after displayed for a while.
ON: Displayed.
OFF: Not displayed.

630 POSITION: Select the display position.

TL: Top left
TC: Top center
TR: Top right
BL: Bottom left
BC: Bottom center
BR: Bottom right

Convergence Adjustments — ALIGNMENT Menu

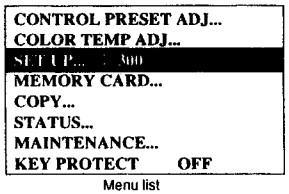
The ALIGNMENT menu is used for adjusting convergence and geometry.

Structure and Usage of the ALIGNMENT Menu

This section explains the setting lists displayed in the menu.

The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select SET UP from the menu list.



Menu list

300 SET UP menu list: Choose the menu for setting the desired items.

INPUT CONFIGURATION menu
REMOTE menu
PASSWORD menu
SYSTEM CONFIGURATION menu
ON SCREEN SET menu
ALIGNMENT menu: Perform convergence and geometry adjustment ⇨ 700

700 ALIGNMENT menu (1/2): Adjust each item with the UP and DOWN buttons or PHASE knob, or return to factory settings.

FACTORY SET: Return values to their factory settings.
ROTATION: Compensates for the screen rotation which occurs when the monitor is installed facing north or south.
H CENTER: Adjust the horizontal picture position.
V CENTER: Adjust the vertical picture position
H SIZE: Adjust the width of the picture.
V SIZE: Adjust the height of the picture.
V BLANKING: Adjust the vertical blanking of the screen.
H PIN: Correct the side pincushion distortion.
H KEY: Correct the trapezoid distortion.

700 ALIGNMENT menu (2/2): Adjust each item with the UP and DOWN buttons or PHASE knob, or return to factory settings.

H STATIC CONV: Adjust the horizontal static convergence.
V STATIC CONV: Adjust the vertical static convergence.

Monitor Memory Card Data Operations — MEMORY CARD Menu

Operations on monitor memory card data are performed with the MEMORY CARD menu.

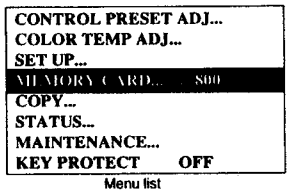
On how to handle the monitor memory card, refer to the operation manual for the control unit or the built-in control unit monitor.

Structure and Usage of the MEMORY CARD Menu

This section explains the setting lists displayed in the menu.

The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select MEMORY CARD from the menu list.



Menu list

800 MEMORY CARD menu: Select the operation to perform.

SAVE: Write data to a monitor memory card. ⇨ **801**
LOAD: Read data from a monitor memory card. ⇨ **803**
FORMAT: Format a monitor memory card. ⇨ **805**

801 SAVE: Select the name of the file to which to write data,or create a new file name. ⇨ **802**

NEW NAME: Enter a new name (max. 20 characters).

802 SELECTED OR CREATED FILE NAME: Confirm the data write.

OVERWRITE THIS FILE?
OK: ENTER KEY
CANCEL: MENU KEY
To overwrite the file, press ENTER. ⇨ **The data write is performed.**
To cancel the write, press MENU. ⇨ **Return to the SAVE (801).**

803 LOAD: Select the name of the file from which to read data. ⇨ **804**

804 SELECTED FILE NAME: Select the data to read.

ALL: Read data for all menu settings.
CONTROL PRESET: Read the data for the CONTROL PRESET ADJ menu settings.
COLOR TEMP: Read the data for the COLOR TEMP ADJ menu settings.
SET UP: Read the data for the SET UP menu settings.

805 FORMAT: Confirm the format operation.

ALL FILES WILL BE DELETED!
ARE YOU SURE?
OK: ENTER KEY
CANCEL: MENU KEY
To continue, press the ENTER button. ⇨ **The format is performed.**
To cancel, press the MENU button. ⇨ **Return to the MEMORY CARD menu (800).**

Monitor-to-Monitor Data Copy — COPY Menu

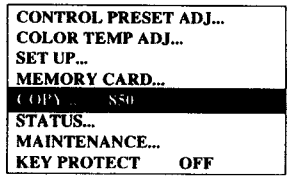
When multiple monitors are connected via their serial remote ports, data can be shared between the monitors by data copy. The data copy from one monitor to another is accomplished with the COPY menu.

Structure and Usage of the COPY Menu

This section explains the setting lists displayed in the menu.

The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select COPY from the menu list.



Menu list

850 COPY menu: Select the copy source monitor.

MONITOR ADDRESS: Enter the address number. ⇨ **851**

851 COPY: Select the data to be copied. ⇨ **Copy is carried out.**

ALL: Copy data for all menu settings.
CONTROL PRESET: Copy the data for the CONTROL PRESET ADJ menu settings.
COLOR TEMP: Copy the data for the COLOR TEMP menu settings.
SET UP: Copy the data for the SET UP menu settings.

Displaying Information About the Monitor — STATUS Menu

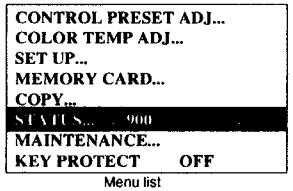
The STATUS menu is used to view general data about the monitor and information about signals assigned to the slots in the rear panel.

Structure and Usage of the STATUS Menu

This section explains the setting lists displayed in the menu.

The lists are numbered and shown with indentations to indicate the hierarchy in the menu.
If a setting in each list leads to another list or a monitor operation, the list number or the operation is indicated after the ⇨ mark. (Settings without the ⇨ mark end in a single list.)

Select STATUS from the menu list.



Menu list

900 STATUS menu (1/3): Data about the current channel is displayed.

CH: channel number
SL: slot number
IN: input connector number
FORMAT: format of the input signal
NAME: channel name

900 STATUS menu (2/3): Data about the monitor is displayed.

MODEL NAME: model name
SERIAL NO: serial number
OPERATION TIME: operation time (in hours)
SOFTWARE VERSION: software version

Displaying Information About the Monitor — STATUS Menu

900 **STATUS menu (3/3):** Data about signals assigned to each slot in the rear panel is displayed.

SLOT1
SLOT2
SLOT3
SLOT4
SLOT5
SLOT6
SLOT7
SLOT8
SLOT9

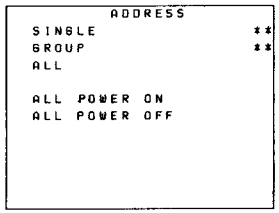
Selecting the Monitor to Control — ADDRESS Menu

When multiple monitors are connected by a serial remote connection, they can be controlled with a monitor control unit BKM-10R or a built-in control unit monitor, such as the BVM-14E5E/14E5U/14F5E/14F5U. The ADDRESS menu is used to choose whether one particular monitor or monitor group will be controlled, or whether operations are to be performed on all monitors together.

Structure and Usage of the ADDRESS Menu

Press the ADDRESS button on the control panel of the BKM-10R or the BVM-14E5E/14E5U/14F5E/14F5U.

The ADDRESS button lights, and the ADDRESS menu is displayed on the screen.



ADDRESS menu

The settings for each of the items are as follows:

SINGLE: Control only a particular monitor. Enter the address (32 of the numbers from 01 to 99 may be selected).

GROUP: Control only a particular monitor group. Enter the group number (32 of the numbers from 01 to 99 may be selected).

ALL: Control all monitors.

ALL POWER ON: When this is selected, all connected monitors will be turned on.

ALL POWER OFF: When this is selected, all connected monitors will be turned off.

To exit the ADDRESS menu

Press the ADDRESS button.

Specifications

General

System
525 lines, 60 fields per second interlaced
625 lines, 50 fields per second interlaced

CRT
Super fine pitch Trinitron

BVM-20E1E/20E1U/20F1E/20F1U

Aperture grille pitch: 0.3 mm, (BVM-20F1E/20F1U)
Aperture grille pitch: 0.25 mm, (BVM-20E1E/20E1U)
90 degree deflection, 30.6 mm diameter in-line gun.
Effective picture size:
386 × 291 mm (15 1/4 × 11 1/2 inches) (w/h)
482 mm (19 inches) (diagonal size)
CRT protection:EHT (extremely high tension) protection type
Warm-up time: approx. 30 minutes
Anode voltage: 27 kV with no beam current
Nominal chromaticity coordinates:

SMPTE phosphor (BVM-20E1U/20F1U)

	x	y
R	0.630	0.340
G	0.310	0.595
B	0.155	0.070

Error: less than ±0.005

EBU phosphor (BVM-20E1E/20F1E)

	x	y
R	0.640	0.330
G	0.290	0.600
B	0.150	0.060

Error: less than ±0.005

BVM-41E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U

Aperture grille pitch: 0.25 mm (BVM-14F1E/14F1U/14F5E/14F5U)
Aperture grille pitch: 0.22 mm (BVM-14E1E/14E1U/14E5E/14E5U)
90-degree deflection, 29.4 mm diameter in-line gun.
Effective picture size:
268 × 201mm (10 3/8 × 8 inches) (w/h)
332 mm (13 1/8 inches) (diagonal size)
CRT protection: EHT (extremely high tension) protectiontype
Warm-up time: approx. 30 minutes
Anode voltage: 25 kV with no beam current
Nominal chromaticity coordinates:

SMPTE phosphor (BVM-14E1U/14E5U/14F1U/14F5U)

	x	y
R	0.630	0.340
G	0.310	0.595
B	0.155	0.070

EBU phosphor (BVM-14E1E/14E5E/14F1E/14F5E)

	x	y
R	0.640	0.330
G	0.290	0.600
B	0.150	0.060

Power requirements
100 to 240 V AC, ±10%, 50/60 Hz

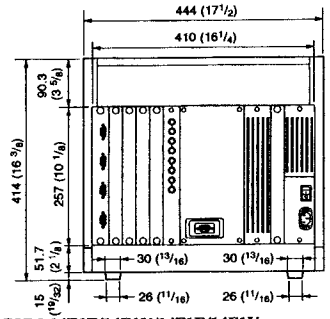
Power consumption
BVM-20E1E/20E1U/20F1E/20F1U: 120 W
BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U: 110 W

Dimensions
BVM-20E1E/20E1U/20F1E/20F1U: 444 × 414 × 570 mm (17 1/2 × 16 3/8 × 22 1/2 inches) (w/h/d)
BVM-14E5E/14E5U/14F5E/14F5U: 482 × 280 × 580 mm (19 × 11 1/8 × 20 7/8 inches) (w/h/d)
BVM-14E1E/14E1U/14F1E/14F1U: 346 × 280 × 530 mm (13 5/8 × 11 1/8 × 20 7/8 inches) (w/h/d)

Dimensional drawing

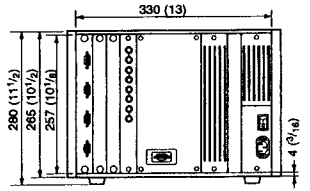
BVM-20E1E/20E1U/20F1E/20F1U

Unit: mm (inches)



BVM-14E1E/14E1U/14F1E/14F1U

Unit: mm (inches)



Mass
BVM-20E1E/20E1U/20F1E/20F1U: approx. 37 kg (81 lb 9 oz)
BVM-14E5E/14E5U/14F5E/14F5U: approx. 25 kg (55 lb 1 oz)
BVM-14E1E/14E1U/14F1E/14F1U: approx. 22 kg (48 lb 8 oz)

Input/output Connectors

Video input
BNC type, 3 (with three loop-through outputs)
R/G/B: 1 Vp-p ±6 dB, positive, high impedance
Y: 1 Vp-p ±6 dB, positive, high impedance
R–Y/B–Y: 0.7 Vp-p ±6 dB, positive, high impedance

Sync input
BNC type, 1 (with loop-through output)
Composite sync: 0.3 to 8 Vp-p, negative, high impedance

Return loss
More than 46 dB (7 MHz, with 75-ohm termination)

Remote control
OPTION
Mini-DIN 8-pin, 1
CONTROL UNIT
D-sub 9-pin, 1
REMOTE 1
D-sub 9-pin, 1 (with loop-through output), RS-485 serial interface
REMOTE 2
D-sub 9-pin, 1 (with loop-through output)
ISR
D-sub 9-pin, 1

Video Signal

Differential gain
Less than 2% (for luminance from 0 to 100 cd/m²)

Differential phase
Less than 2° (for luminance from 0 to 100 cd/m²)

Frequency response
100 Hz to 10 MHz, ±1 dB

DC restoration
Back porch type
Black level fluctuation: less than 1% for 10 to 90% APL input signal variation.

Synchronization

AFC time Constant
0.5 ms (fast mode)
2 ms (normal mode)

Line pull range/line hold range
Greater than ±500 Hz (with 0.5 ms AFC time constant)

Vertical blanking time
Normal: less than 1 ms.
Underscan: less than 0.8 ms

Horizontal blanking time
Less than 10 µs

Specifications

Picture Performance

Normal scan
5% overscan of CRT effective screen area (adjustable range greater than ±15%)

Underscan
3% underscan of CRT effective screen area (adjustable range greater than ±15%)

Linearity
Within a central area bounded by a circle with a diameter equal to the picture height, less than 0.5% of the picture height, and outside the same area, about 1% of the picture height

Color temperature
D65, D93 (adjustable to other color temperatures)

Convergence error
Within a central area bounded by a circle with a diameter equal to the picture height:
- Less than 0.4 mm (BVM-20E1E/20E1U/20F1E/20F1U)
- Less than 0.3 mm (14E1E/14E1U/14E5E/14E5U14F1E/14F1U/14E5E/14F5U)

Outer area of the above-mentioned circle:
- Less than 0.7 mm (BVM-20E1E/20E1U/20F1E/20F1U)
- Less than 0.6 mm (BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)

Standard luminescence
100 cd/m² (at standard 1 Vp-p 100% white signal)

Raster size stability
Less than 1% of picture height (at 100 cd/m² peak luminescence, 10 to 90% APL)

Scan delay
Horizontal: Approx. 1/4 line
Vertical: Approx. 1/2 field

Resolution (at screen center, 100 cd/m² luminescence)
- BVM-14E1E/14E1U/14E5E/14E5U: 900 TV lines
- BVM-14F1E/14F1U14F5E/14E5U: 800 TV lines
- BVM-20E1E/20E1U: 1000 TV lines
- BVM-20F1E/20F1U: 900 TV lines

Environmental Conditions

Operating temperature
0°C to 40°C (32°C to 104°F)

Optimum operating temperature
20°C to 30°C (68°F to 86°F)

Operating humidity
0% to 90% (no condensation)

Accessories Supplied

AC power cord (1)
Cord stopper (1)
Tally plate (1)
Operation manual (1)
Fuse (2)

Design and specifications are subject to change without notice.

• BKM-30E20

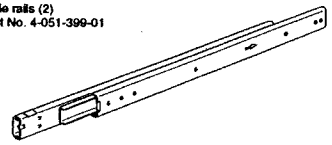
Overview

The BKM-30E20 Rack Mount Kit is a rack mount kit for mounting a Sony BVM series 20-inch monitor in an EIA standard 19-inch rack.

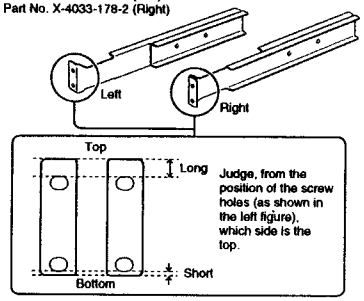
Components

The BKM-30E20 consists of the following components. Check to make sure that you have all the components before beginning assembly.

Slide rails (2)
Part No. 4-051-399-01

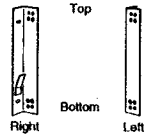


Front brackets (left, right, one each)
Part No. X-4033-179-2 (Left)
Part No. X-4033-178-2 (Right)

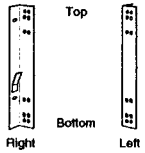


Rear brackets (2)
Part No. 4-051-261-01

Short brackets
(left, right, one each)
Part No. X-4033-182-1 (Left)
Part No. X-4033-183-1 (Right)



Long brackets
(left, right, one each)
Part No. X-4033-181-1 (Left)
Part No. X-4033-180-1 (Right)



Screws A (4 × 10 mm, silver) (16)
Part No. 7-682-562-04

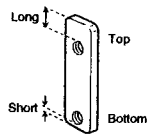
Screws B (4 × 12 mm, black) (4)
Part No. 7-682-263-09

Screws C (4 x 16 mm silver) (8)
Part No. 7-682-565-04

Nuts (8)
Part No. 7-684-024-04

Plate nuts (4)
Part No. 4-051-259-01

Judge, from the position of the screw holes (as shown in the figure), which side is the top.



Plain washers (φ4) (16)
Part No. 7-688-004-01

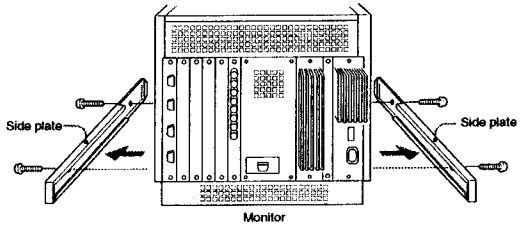
Spring washers (φ4) (12)
Part No. 7-623-210-22

Assembly

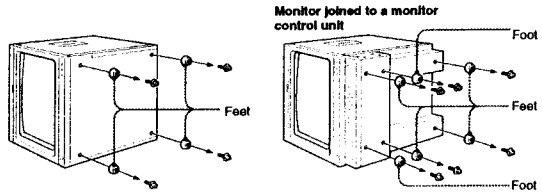
1 Remove the left and right side plates from the bottom part of the monitor.

For a monitor joined to a monitor control unit
Attach the short side covers for rack mounting to the monitor and the monitor control unit.

See step 11 of "Assembly" in the Installation Manual for the BKM-32H Monitor Control Unit Attachment Kit on how to attach them.

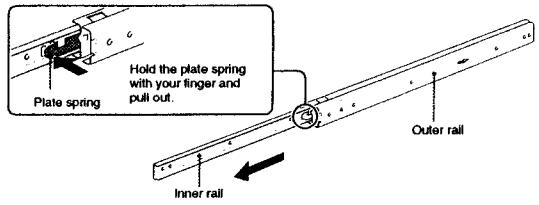


2 Remove the four feet from the bottom of the monitor (six feet if the monitor is joined to a monitor control unit).

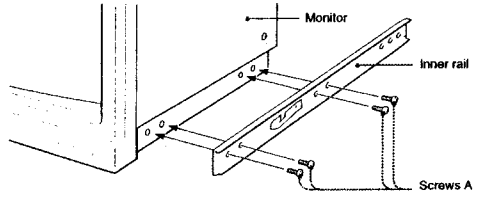


3 Separate the inner rail of the slide rail from the outer rail.

Note
Take care not to get your fingers caugt in the sllide rail.

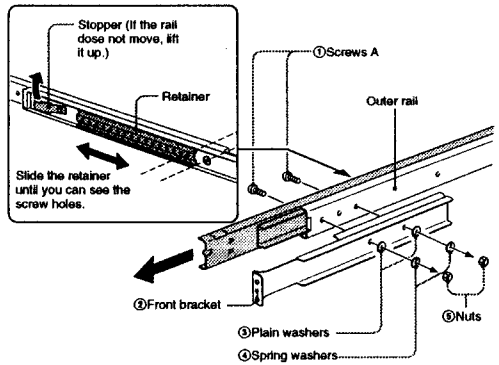


4 Attach the inner rail to the monitor using four screws A (4 × 10 mm).

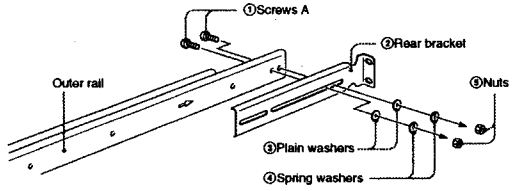


(continued)

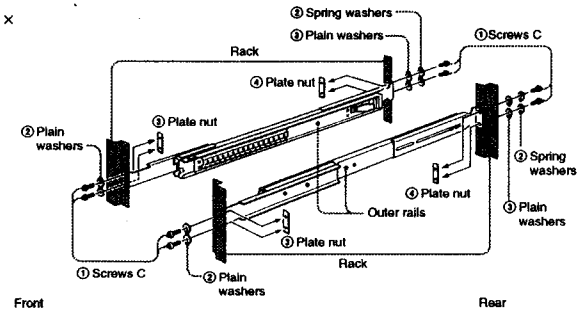
5 Attach the front bracket to the outer rail using two screws A (4 × 10 mm), two plain washers (ϕ4), two spring washers (ϕ4), and two nuts.



6 Attach the rear bracket to the outer rail using two screws A (4 × 10 mm).



7 Attach the outer rails to the rack using four screws A (4 × 10 mm) for each rail.

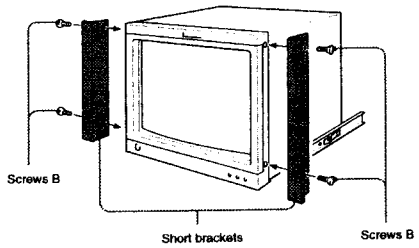


8 Attach the short brackets (or long brackets if the monitor is joined to a monitor control unit) to the monitor using two screws B (4 × 12 mm) for each bracket.

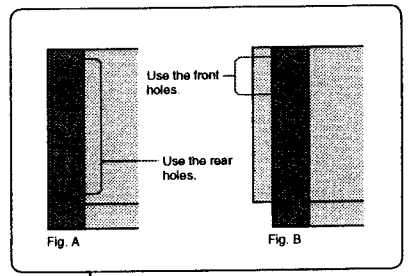
For a monitor joined to a monitor control unit

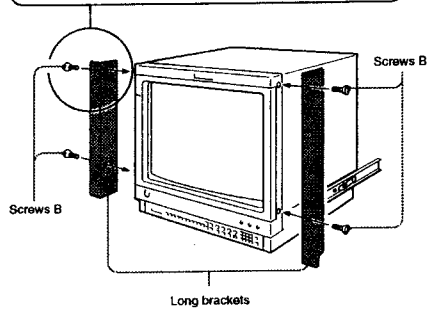
Select the front or rear screw holes of the long brackets.

- To mount the monitor so that it fits exactly inside the rack, use the screw holes at the rear of the long brackets *(see Fig. A)*. In this case, the monitor control unit is recessed slightly from the front of the rack.
- To mount the monitor so that it protrudes slightly from the rack, use the screw holes at the front of the long brackets *(see Fig. B)*. In this case, the monitor control unit is even with the front of the rack.



Monitor joined to a monitor control unit (side view)



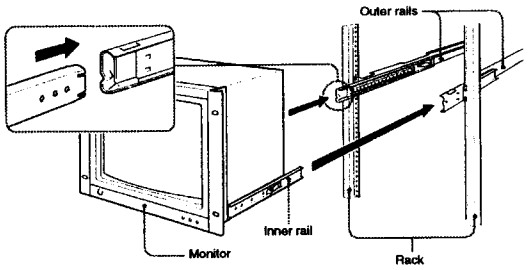


(continued)

9 Attach the monitor to the rack.

Note

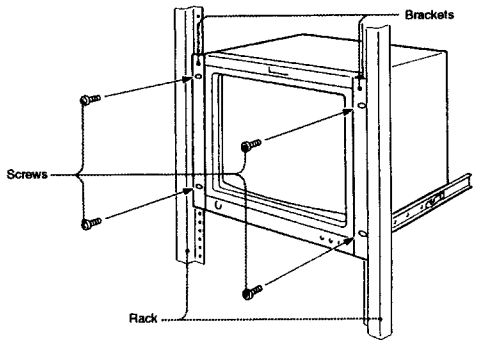
Push the monitor all the way into the rack, without releasing your grip until you hear an audible click as the plate springs of the slide rails are fixed in place. Unless they are fixed in place, there is a danger that the monitor might fall out of the rack.



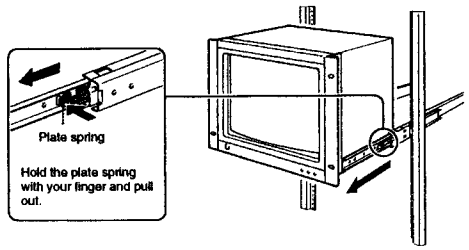
10 Using the four oval holes in the brackets, screw the monitor to the rack. Use screws appropriate for the rack's screw holes.

Note

When you are tightening the screws, the plate spring works to push the monitor toward the front of the rack. Always ask someone to assist you when you mount the monitor. One person should tighten the screws while the other person holds the monitor in place with both hands.



Removing the Monitor From the Rack



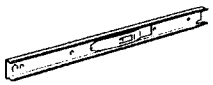
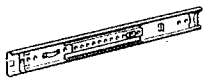
• BKM-30E14

Overview

The BKM-30E14 is a rack mount kit for mounting a Sony BVM series 14-inch stand-alone monitor in an EIA standard 19-inch rack.

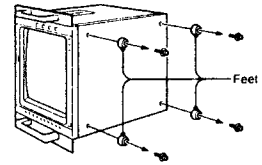
Components

The BKM-30E14 consists of the following components. Check to make sure that you have all the components before beginning assembly. The circled letters A to I in the table below correspond to those in the illustrations on the subsequent pages.

	Part	Qty	Part no.
Ⓐ	Rail A 	2	2-378-217-02 (Shipped with rail A inserted in rail B.)
Ⓑ	Rail B 	2	
Ⓒ	Front bracket 	2	4-051-611-01
Ⓓ	Rear bracket 	2	4-051-612-01
Ⓔ	Plate nut Judge, from the position of the screw holes (as shown in the figure), which side is the top. 	4	4-051-259-01
Ⓕ	Screw ⊕M4×6 	4	7-682-160-01
Ⓖ	Screw ⊕PSW4×20 	8	7-682-966-01
Ⓗ	Screw ⊕M4×10 	4	7-682-162-01
Ⓘ	Flange nut M4 	4	4-304-749-01

Assembly

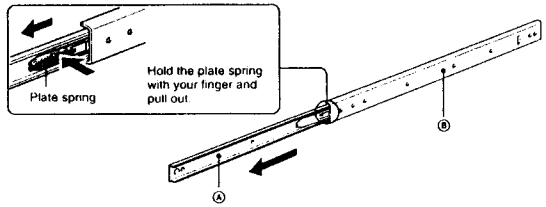
1 Remove the four feet from the bottom of the monitor.



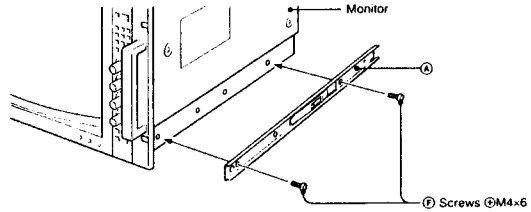
2 Pull out rail A from rail B.

Note

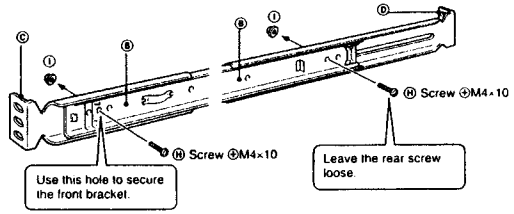
Take care not to get your fingers caught between the rails.



3 Attach rail A to the monitor.



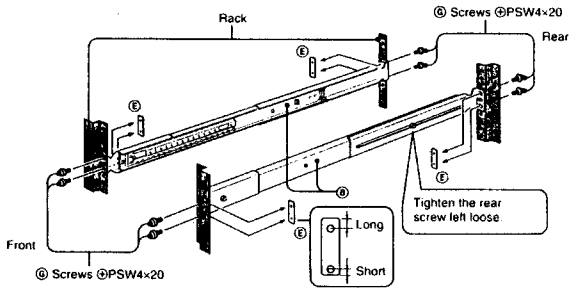
4 Attach the front bracket and rear bracket to rail B.



(continued)

Assembly

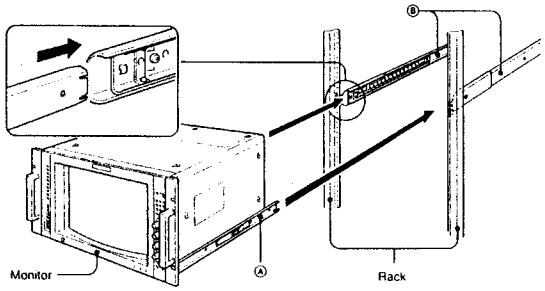
5 Attach rails B to the rack.



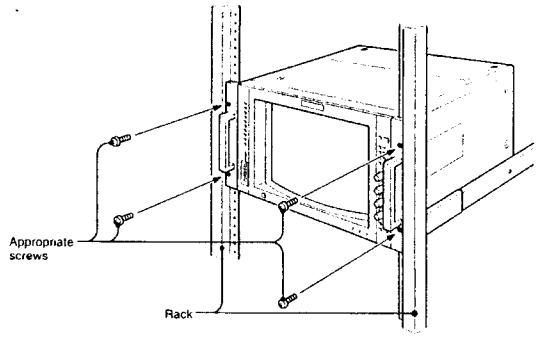
6 Insert rails A attached to the monitor into rails B.

Note

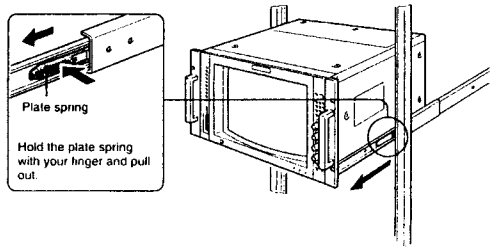
Push the monitor all the way into the rack, without releasing your grip until you hear an audible click as the plate springs of rails A are fixed in place. Unless they are fixed in place, there is a danger that the monitor might fall out of the rack.



7 Using screws appropriate for the rack's screw holes, secure the monitor to the rack.



Removing the monitor from the rack



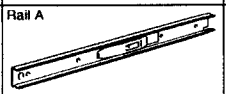
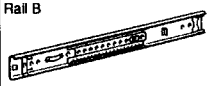
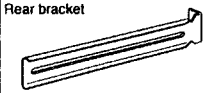
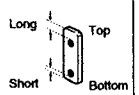
• BKM-31E14

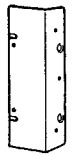
Overview

The BKM-31E14 is a rack mount kit for mounting a Sony BVM series 14-inch monitors (BVM-14F1/14E1 series) in an EIA standard 19-inch rack.

Components

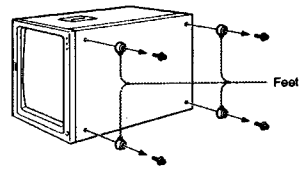
The BKM-31E14 consists of the following components. Check to make sure that you have all the components before beginning assembly.
The circled letters Ⓐ to Ⓞ in the table below correspond to those in the illustrations on the subsequent pages.

	Part	Qty	Part no.
Ⓐ	Rail A 	2	2-378-217-02 (Shipped with rail A inserted in rail B.)
Ⓑ	Rail B 	2	
Ⓒ	Front bracket 	2	4-051-611-01
Ⓓ	Rear bracket 	2	4-051-612-01
Ⓔ	Plate nut  Judge, from the position of the screw holes (as shown in the figure), which side is the top.	4	4-051-259-01
Ⓕ	Screw ⊕PSW4x8 	16	7-682-961-01
Ⓖ	Screw ⊕PSW4x20 	8	7-682-966-01
Ⓗ	Screw ⊕M4x10 	8	7-682-162-01

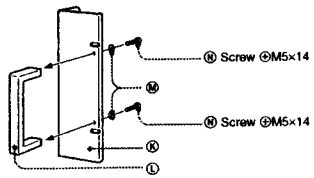
	Part	Qty	Part no.
Ⓘ	Flange nut M4 	4	4-304-749-01
Ⓙ	Bracket 	4	4-052-059-01
Ⓚ	Wide flange 	2	4-052-060-01
Ⓛ	Handle 	2	4-337-212-12
Ⓜ	Spring washer 	4	7-623-212-22
Ⓝ	Screw ⊕M5x14 	4	7-682-177-01
Ⓞ	Screw ⊕PSW4x12 	6	7-682-963-09

Assembly

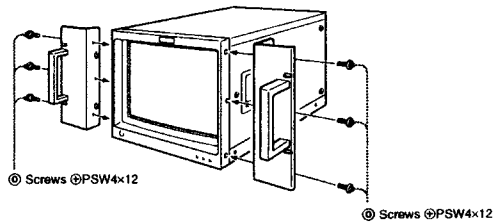
1 Remove the four feet from the bottom of the monitor.



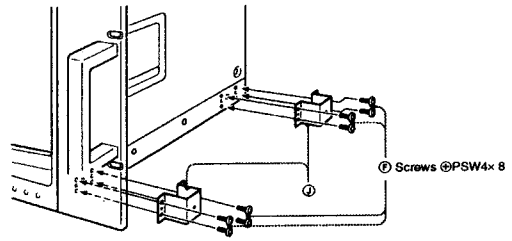
2 Attach the handle to the wide flange.



3 Attach the wide flanges to the monitor.



4 Attach the brackets to the monitor.

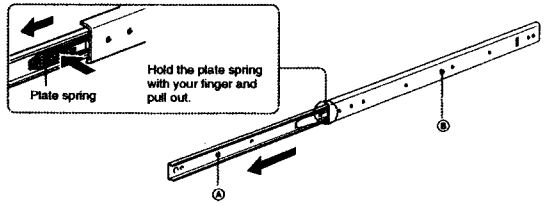


(continued)

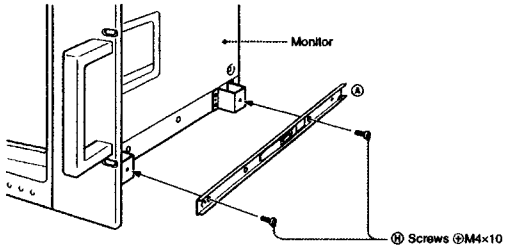
5 Pull out rail A from rail B.

Note

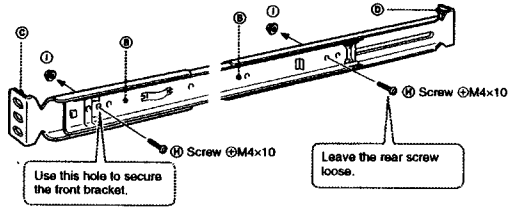
Take care not to get your fingers caught between the rails.



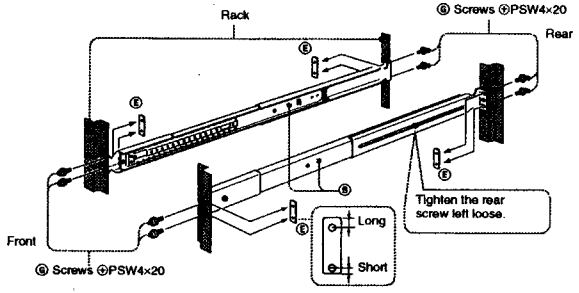
6 Attach rail A to the monitor.



7 Attach the front bracket and rear bracket to rail B.



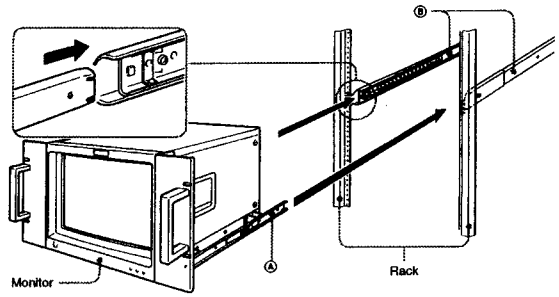
8 Attach rails B to the rack.



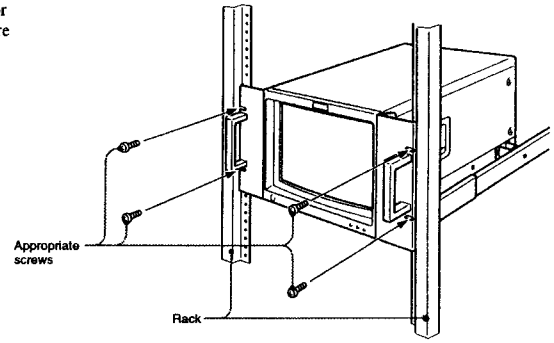
9 Insert rails A attached to the monitor into rails B.

Note

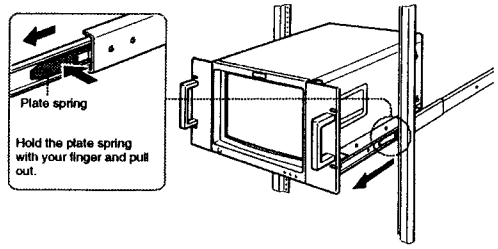
Push the monitor all the way into the rack, without releasing your grip until you hear an audible click as the plate springs of rails A are fixed in place. Unless they are fixed in place, there is a danger that the monitor might fall out of the rack.



10 Using screws appropriate for the rack's screw holes, secure the monitor to the rack.



Removing the monitor from the rack



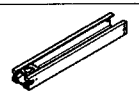
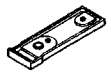
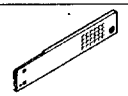
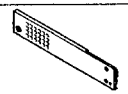
• BKM-32H

Overview

The BKM-32H Monitor Control Unit Attachment Kit is an assembly kit for joining a Sony BVM series 20-inch monitor to a BKM-10R Monitor Control Unit.

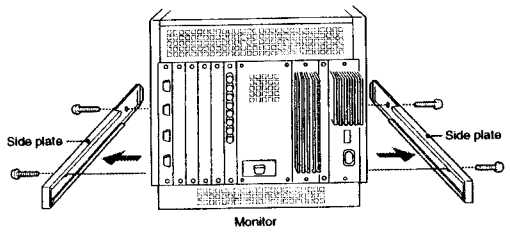
Components

The BKM-32H consists of the following components. Check to make sure that you have all the components before beginning assembly.

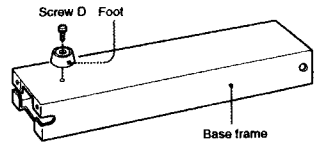
Base frames (2) Part No. 4-051-257-01	
Stay (1) Part No. 4-051-256-02	
Inner plates (2) Part No. 4-051-095-01	
Bushing (1) Part No. 4-364-745-01	
Long side cover (right) (1) Part No. 4-051-254-01	
Long side cover (left) (1) Part No. 4-051-255-01	
Short side cover (right) (1) Part No. 4-051-252-01	
Short side cover (left) (1) Part No. 4-051-253-01	
Joint covers (2) Part No. 4-051-251-01	
Feet (2) Part No. X-4033-117-1	
Screws A (4×20 mm, silver) (4) Part No. 7-682-566-04	
Screws B (4×8 mm, silver) (4) Part No. 3-703-354-41	
Screws C (4×8 mm, black) (6) Part No. 7-682-561-09	
Screws D (PS 4×16 mm, silver) (2) Part No. 7-682-665-09	
9-pin remote control cable (1) Part No. 1-558-883-11	

Assembly

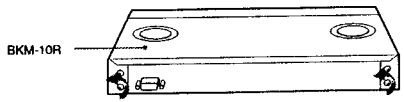
1 Remove the left and right side plates from the bottom part of the monitor.



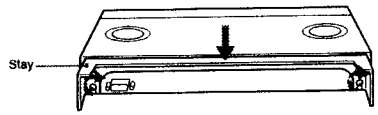
2 Attach the feet to the undersides of the two base frames using screws D (PS 4 × 16 mm).



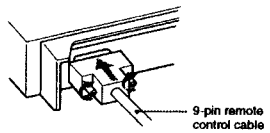
3 There are four screws at the rear of the BKM-10R. Loosen the two underside screws.



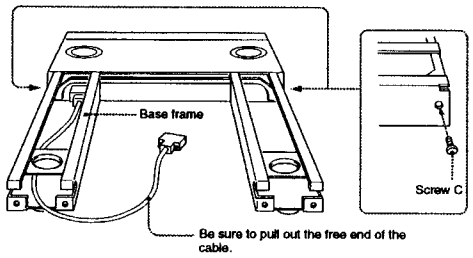
4 Attach the stay to the rear of the BKM-10R. (Place the two cut-outs in the stay on the two loosened underside screws at the rear of the BKM-10R, fitting the heads of the two topside screws in the round holes in the stay, then tighten the underside screws.)



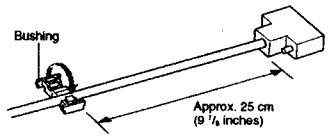
5 Connect one end of the supplied 9-pin remote control cable to the DISPLAY UNIT connector at the rear of the BKM-10R.



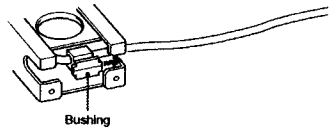
6 Assemble the base frames to the two ends of the stay, then screw them together using screws C (4 × 8 mm, black).



7 Fasten a bushing approx. 25 cm (9 $^{7}/_{8}$ inches) from the free end of the cable pulled out through the base frame in step **6**.

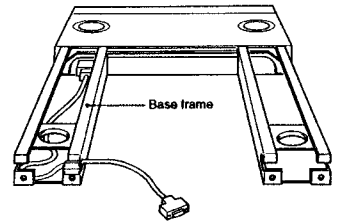


8 Press the bushing into the inner side cut-out in the end of the base frame.



(Continued)

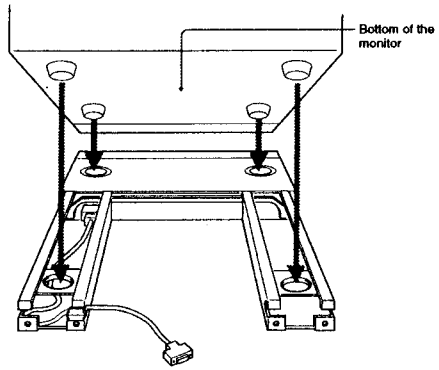
9 Press the cable into the base frame (as shown in the figure) so that it is not pushed out of the base frame.



10 Place the monitor on the BKM-10R so that the four feet of the monitor go into the two indentations on the upper surface of the BKM-10R and the two round holes in the topsides of the base frames.

Note

Before proceeding to the next step, check to be sure that the feet of the monitor are seated in the round indentations and round holes, as shown in the figure.



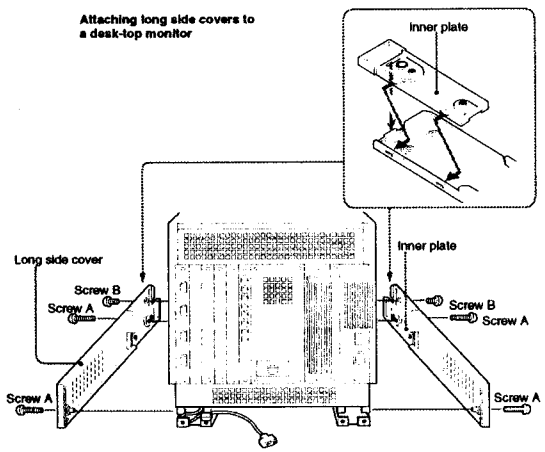
11 Attach the inner plates to the respective side covers, then screw them to the bottom part of the monitor and the BKM-10R sides. Use screws A (4 × 20 mm) and screws B (4 × 8 mm, silver) as shown in the figures.

- Use long side covers for desk-top monitors.
- Use short side covers for rack-mounted monitors.

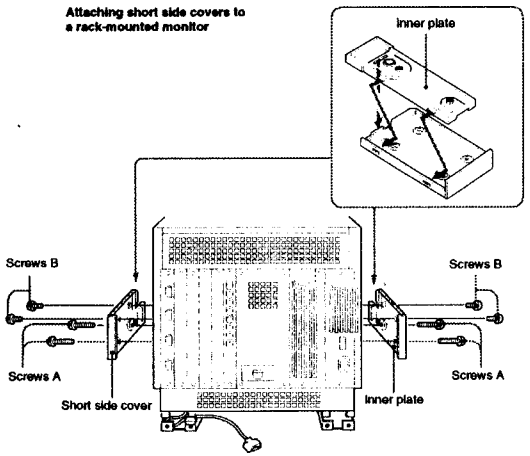
Note

Be sure to attach the both side covers properly to join the monitor and the BKM-10R firmly.

Attaching long side covers to a desk-top monitor

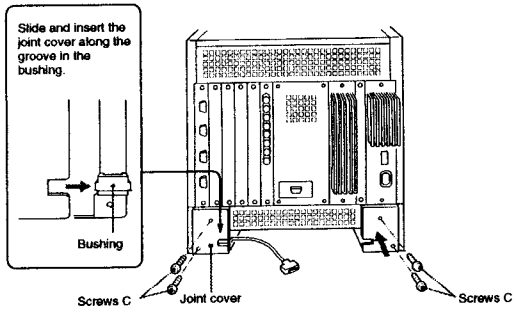


Attaching short side covers to a rack-mounted monitor

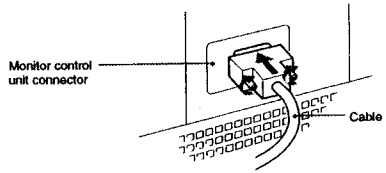


(Continued)

12 Attach the joint covers and screw them in place. Use two screws C (4 × 8 mm, black) for each cover.



13 Connect the cable to the monitor control unit connector at the rear of the monitor, and fasten the screws of the cable connector.



• BKM-10R

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For customers in the USA
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For customers in Canada
This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Pour les utilisateurs au Canada
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Für Kunden in Deutschland
Dieses produkt kann im kommerziellen und in begrenztem Maße auch im industriellen bereich eingesetzt werden. Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse B besitzt.

Overview

The BKM-10R Monitor Control Unit is a control unit for Sony BVM-series color video monitors. Use it to power monitors on and off, perform menu operations, and carry out monitor setup and adjustment.

Controlling monitor groups

You can control up to 32 monitors from the BKM-10R. First, using the monitor menus, assign an address number to each monitor, divide the monitors into groups, and assign a group number to each group. Then you can use the BKM-10R to control individual monitors or monitor groups simply by entering monitor address or group numbers. You can also execute the same operation on all connected monitors, or use the BKM-10R to put all connected monitors into the same setup and adjustment state.

Setup and adjustment with the monitor memory card

You can use an optional BKM-12Y Monitor Memory Card to save and load monitor setup and adjustment data. If your system includes more than one monitor, you can use the monitor memory cards to exchange data between monitors. This makes it easy to put all monitors in your system into the same setup and adjustment state.

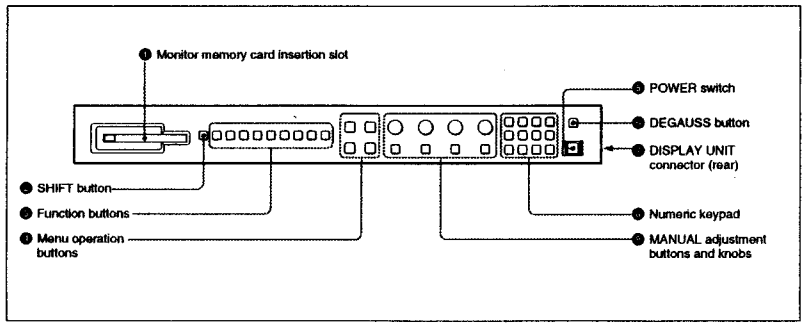
Attach to 20-inch monitors

You can use an optional BKM-32H Monitor Control Unit Attachment Kit to attach the BKM-10R to the BVM-20F1U/20F1E and other BVM-series color video monitors.

Rack Mounting

You can use an supplied rack mount attachment screws and an optional MB-510 Rack Mount Kit to mount the BKM-10R in an EIA standard 19-inch rack.

Location and Function of Parts



❶ Monitor memory card insertion slot
Insert an optional BKM-12Y Monitor Memory Card.

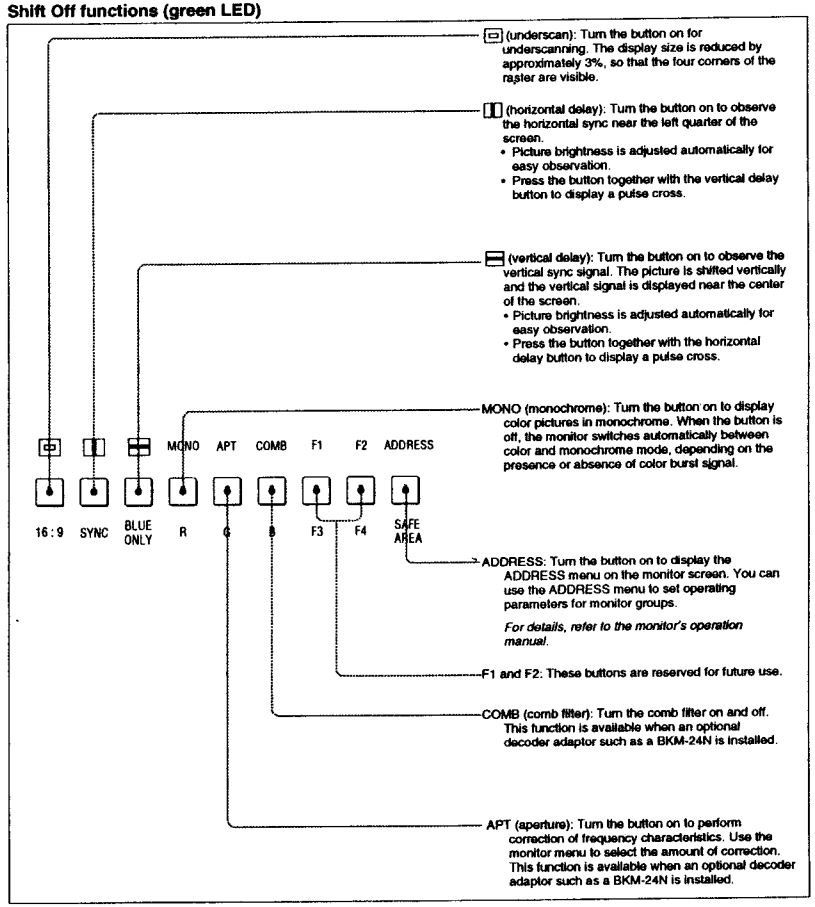
❷ SHIFT button
Each of the Function buttons ❸ has a Shift On function as well as a Shift Off function. Press this button to select Shift On or Shift Off functions. Each time you press this button, its orange LED lights (Shift On) or goes out (Shift Off).

Shift On: Use the function indicated below the Function button.
Shift Off: Use the function indicated above the Function button.

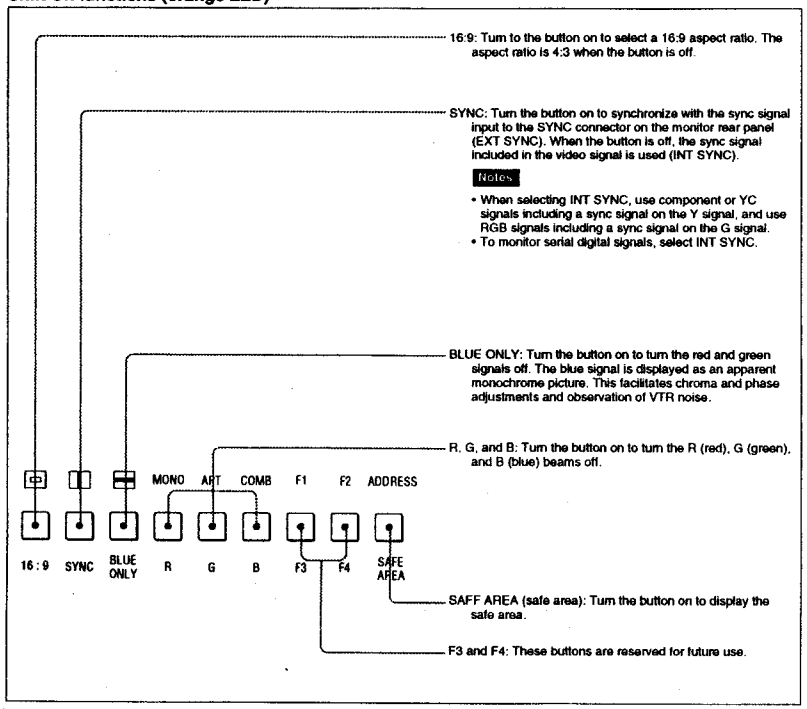
❸ Function buttons
Use these buttons to control the operation of the monitor.
Each of these buttons has a Shift On function, indicated below the button, as well as a Shift Off function, indicated above the button. Press the SHIFT button ❷ to select the desired function.

Each time you press one of these buttons, its LED lights or goes out and the function of the button selected with the SHIFT button ❷ is turned on or off. The LED color change whether you select Shift Off functions or Shift On functions.
For Shift Off functions: Green LED
For Shift On functions: Orange LED

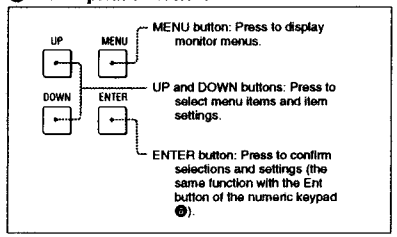
Shift Off functions (green LED)



Shift On functions (orange LED)



❹ Menu operation buttons



For more information about using monitor menus, refer to the monitor's operation manual.

❺ POWER switch

Press to power the monitor on or off. If your system includes more than one monitor, you can use the ADDRESS menu to power all monitors on or off at once.

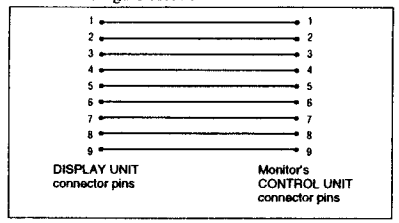
For information about the ADDRESS menu, refer to the monitor's operation manual.

❻ DEGAUSS button

Press to manually degauss the monitor CRT. When degaussing repeatedly, wait for 5 minutes before pressing the button again. (The monitor CRT is degaussed automatically each time the power is turned on.)

❼ DISPLAY UNIT connector (rear)

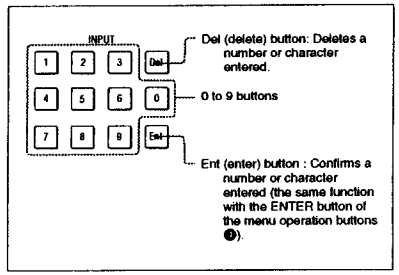
Connect to the CONTROL UNIT connector of a monitor designed for use with a separate control panel such as a BVM-20F1U/20F1E/14F1U/14F1E, using a straight cable with D-sub 9-pin plugs (not supplied) as shown in the figure below.



This connector is used to exchange control signals and to supply power from the monitor to the BKM-10R.

❽ Numeric keypad

Use the numeric keypad to enter menu settings and channel numbers for signals that you want to input to the monitor.



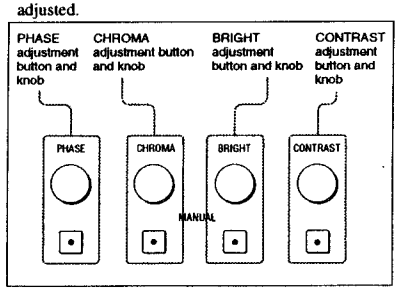
❾ MANUAL adjustment buttons and knobs

Each press of one of these buttons turns the button's green LED on or off. When the corresponding button is on (lit), you can rotate the knobs to adjust the picture's contrast, brightness (black level), chroma, and phase. These buttons are also used to enter adjustment values from the menus.
You can use the CONTROL PRESET ADJ menu to set preset values for each adjustment item.

For information about the CONTROL PRESET ADJ menu, refer to the monitor's operation manual.

Notes on using a SECAM, PAL D, component, and component digital system

- The phase of component signals cannot be adjusted.
- The phase and chroma of RGB signals cannot be adjusted.

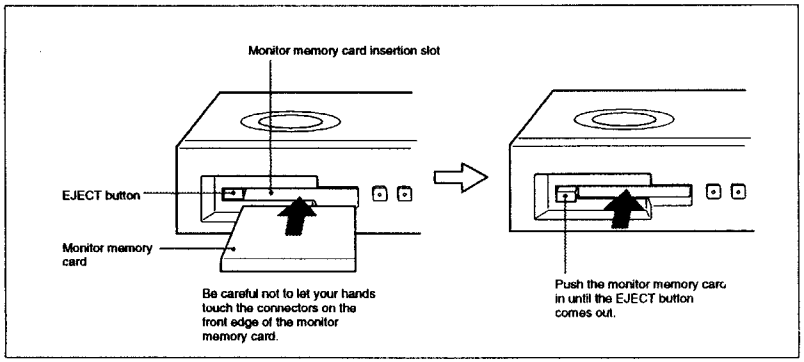


Inserting and Ejecting the Monitor Memory Card

Proceed as follows to insert and eject an optional BKM-12Y Monitor Memory Card.

For information about using data on the monitor memory card, refer to the monitor's operation manual.

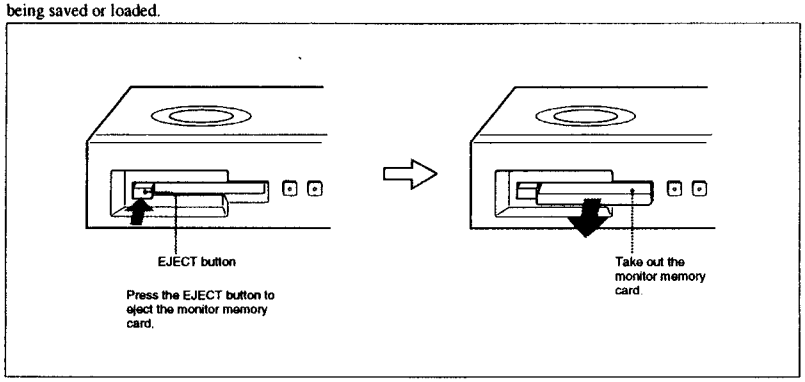
Inserting the monitor memory card



Ejecting the monitor memory card

Note

Do not eject the monitor memory card while data is being saved or loaded.



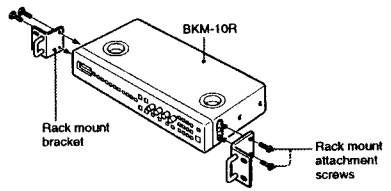
Mounting the Unit in a Rack

To mount the BKM-10R in an EIA standard 19-inch rack, an optional MB-510 Rack Mount Kit is required.

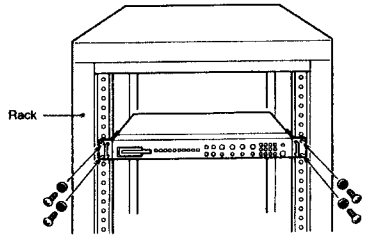
Proceed as follows to mount the unit in the rack.

1 Remove the four feet from the bottom of the BKM-10R.

2 Use the rack mount attachment screws supplied with the BKM-10R to attach the rack mount brackets of the optional MB-510 Rack Mount Kit to each side of this unit.



3 Screw the rack mount brackets to the rack to mount the BKM-10R in the rack. Use screws that match the size of the rack's screw holes.



Specifications

General

Power requirements	5 V DC (supplied from the connected monitor)
Power consumption	0.5 W 0.7 W max.
Maximum dimensions (w/h/d)	424 × 44 × 157 mm (16 3/4 × 1 3/4 × 6 1/4 inches)
Mass	1.4 kg (3 lb 1 oz)
Operating temperature	0°C to 40°C (32°F to 104°F)
Recommended working temperature	20°C to 30°C (68°F to 86°F)
Operating humidity	0% to 90% (no condensation)

Control connectors

DISPLAY UNIT	D-sub 9-pin, × 1

Accessories supplied

Rack mount attachment screws (4)
Operation Manual (1)

Accessories not supplied

BKM-12Y Monitor Memory Card
MB-510 Rack Mount Kit

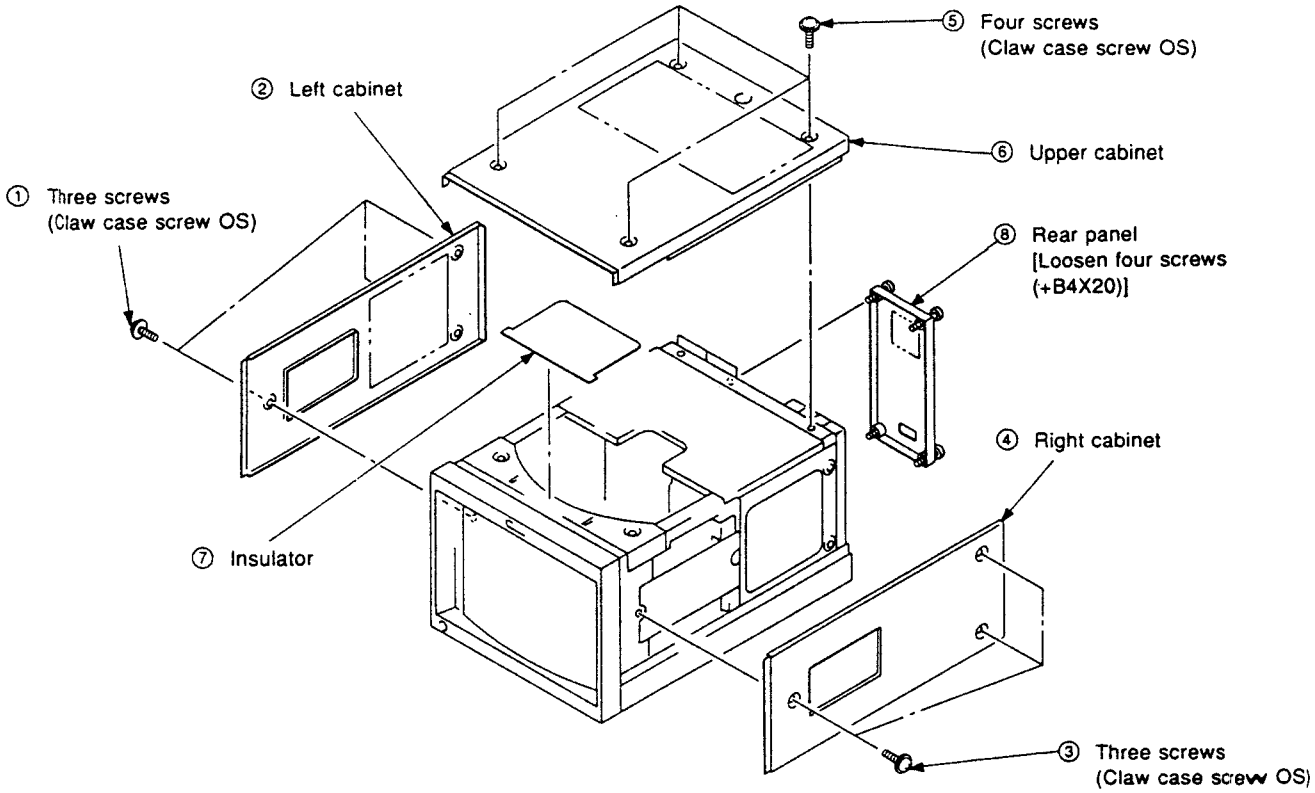
Related equipment

BVM-20F1U/20F1E/14F1U/14F1E Color Video Monitor

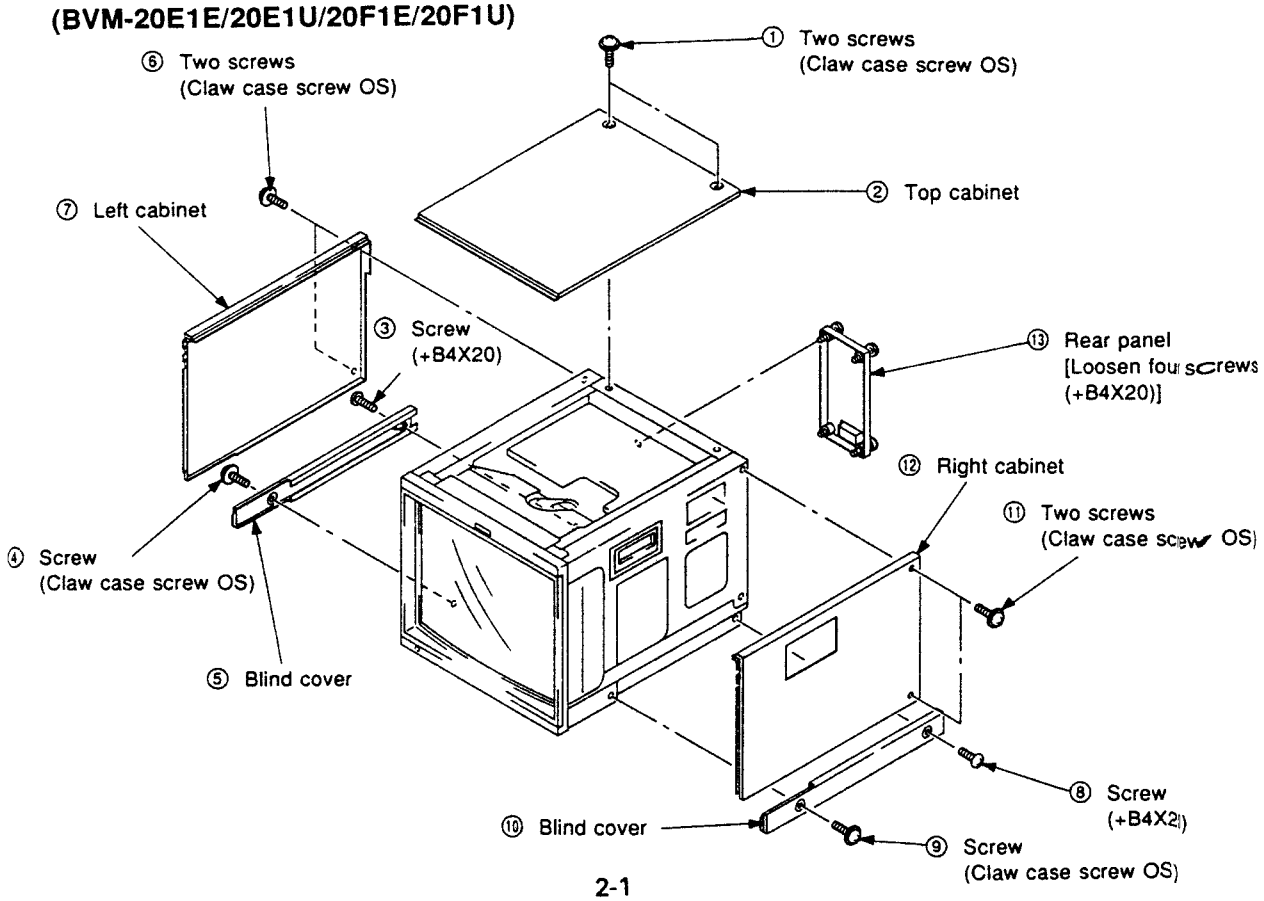
Design and specifications are subject to change without notice.

SECTION 2
DISASSEMBLY

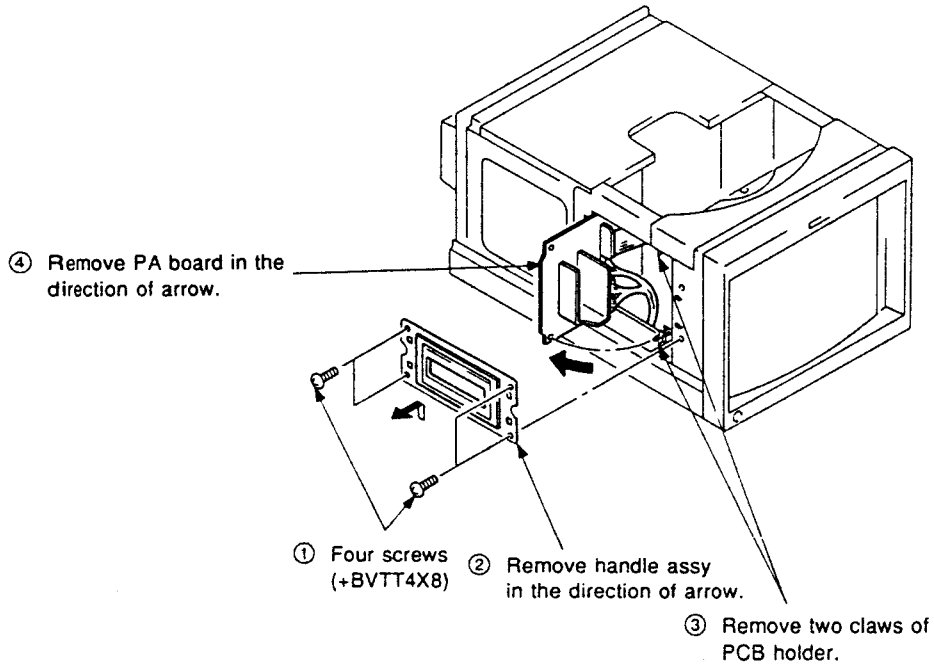
2-1-1. CABINET REMOVAL (BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)



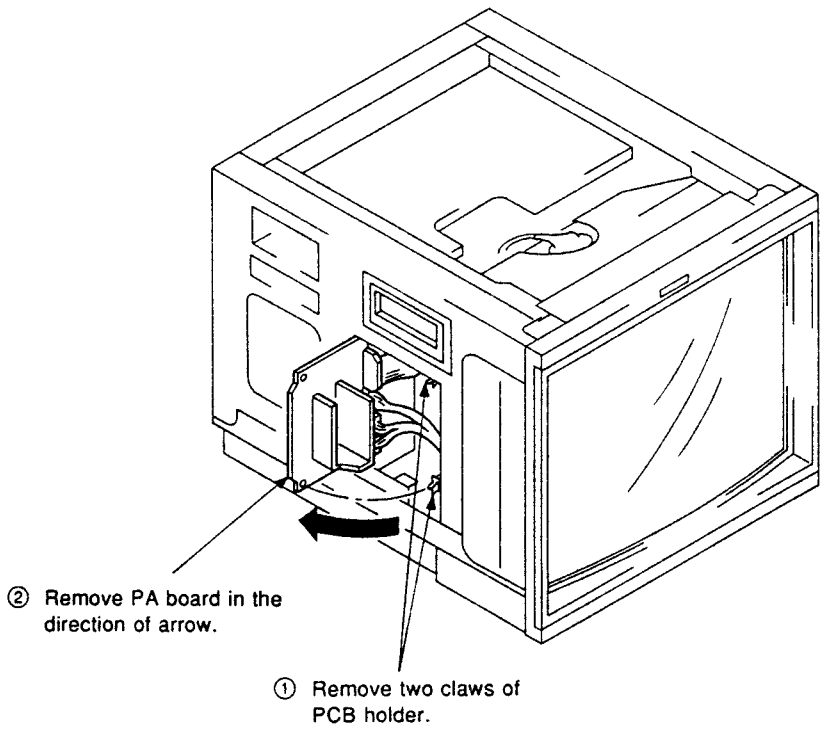
2-1-2. CABINET REMOVAL (BVM-20E1E/20E1U/20F1E/20F1U)



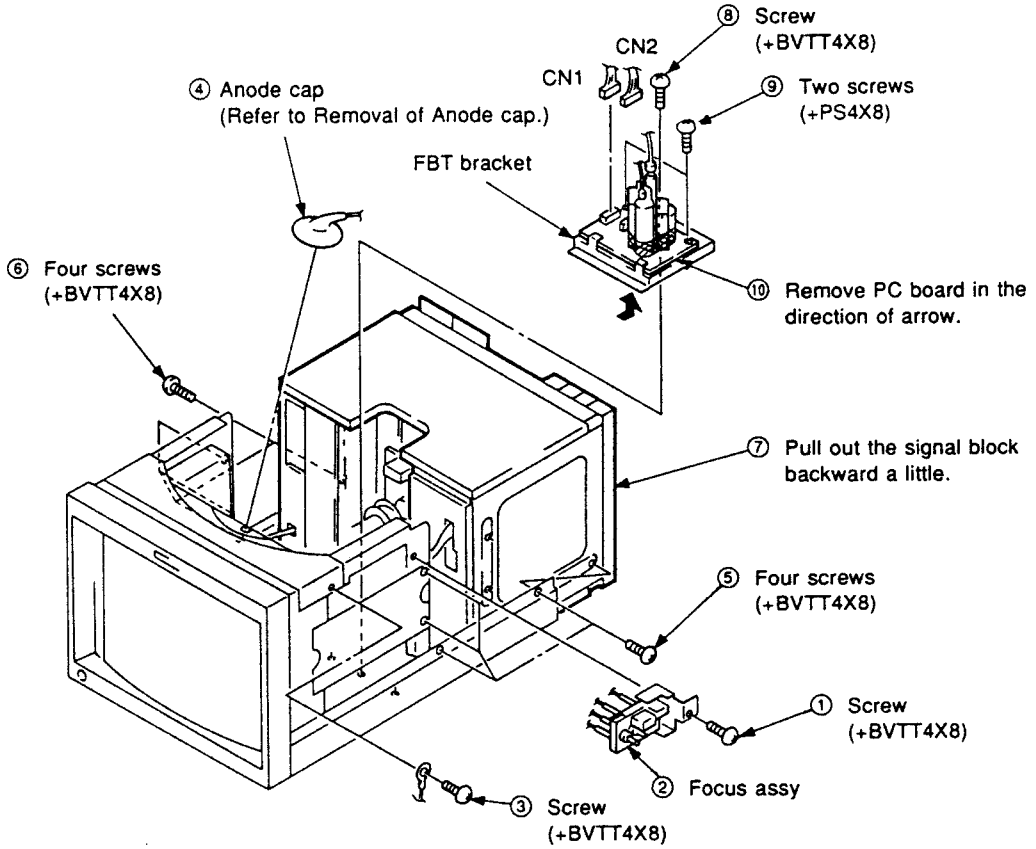
2-2-1. PA BOARD REMOVAL (BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)



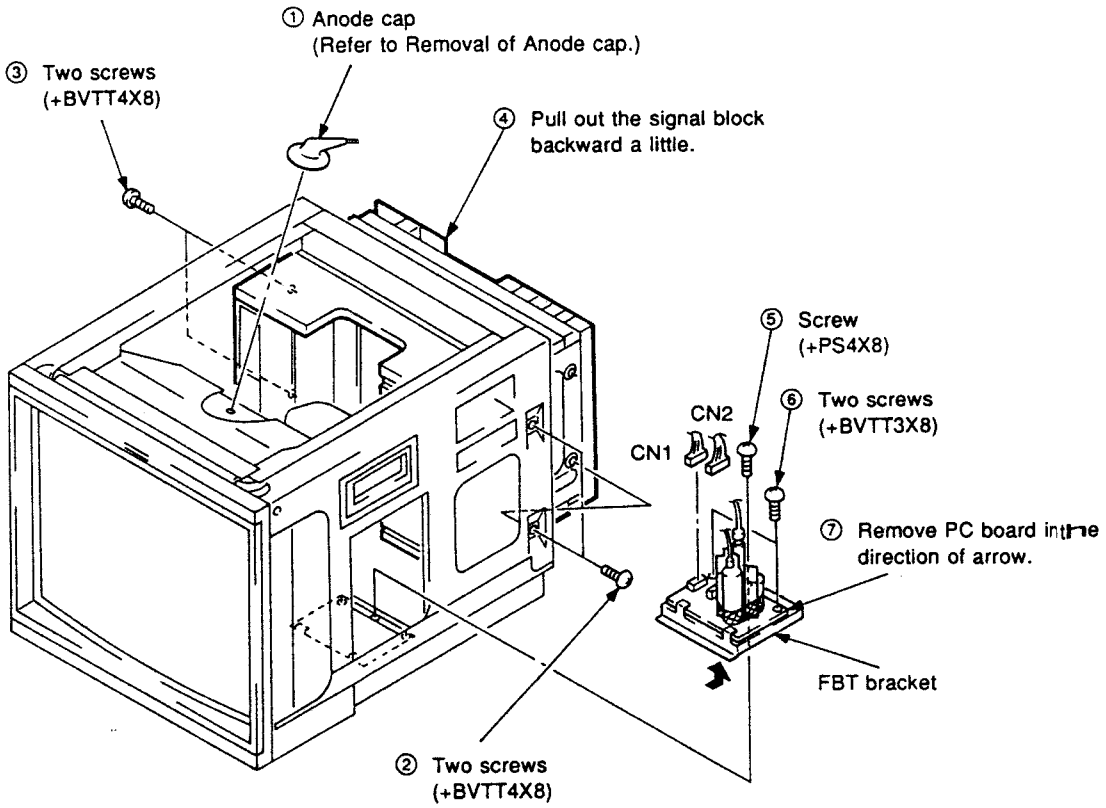
2-2-2. PA BOARD REMOVAL (BVM-20E1E/20E1U/20F1E/20F1U)



2-3-1. PC BOARD REMOVAL (BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)

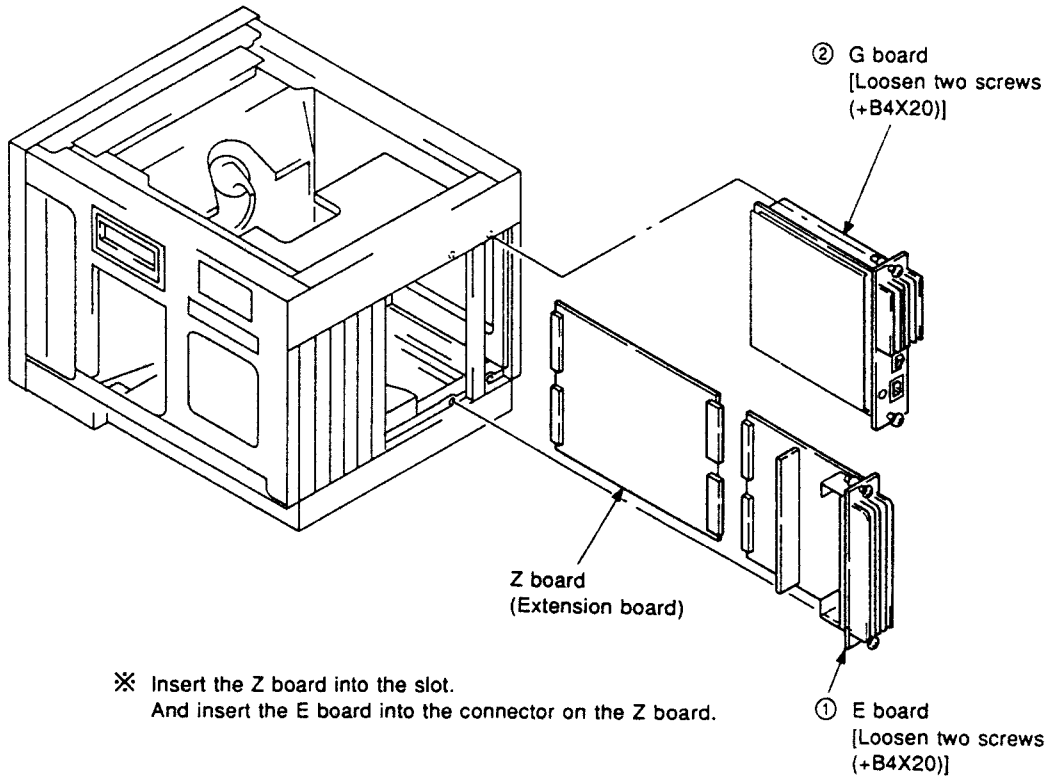


2-3-2. PC BOARD REMOVAL (BVM-20E1E/20E1U/20F1E/20F1U)



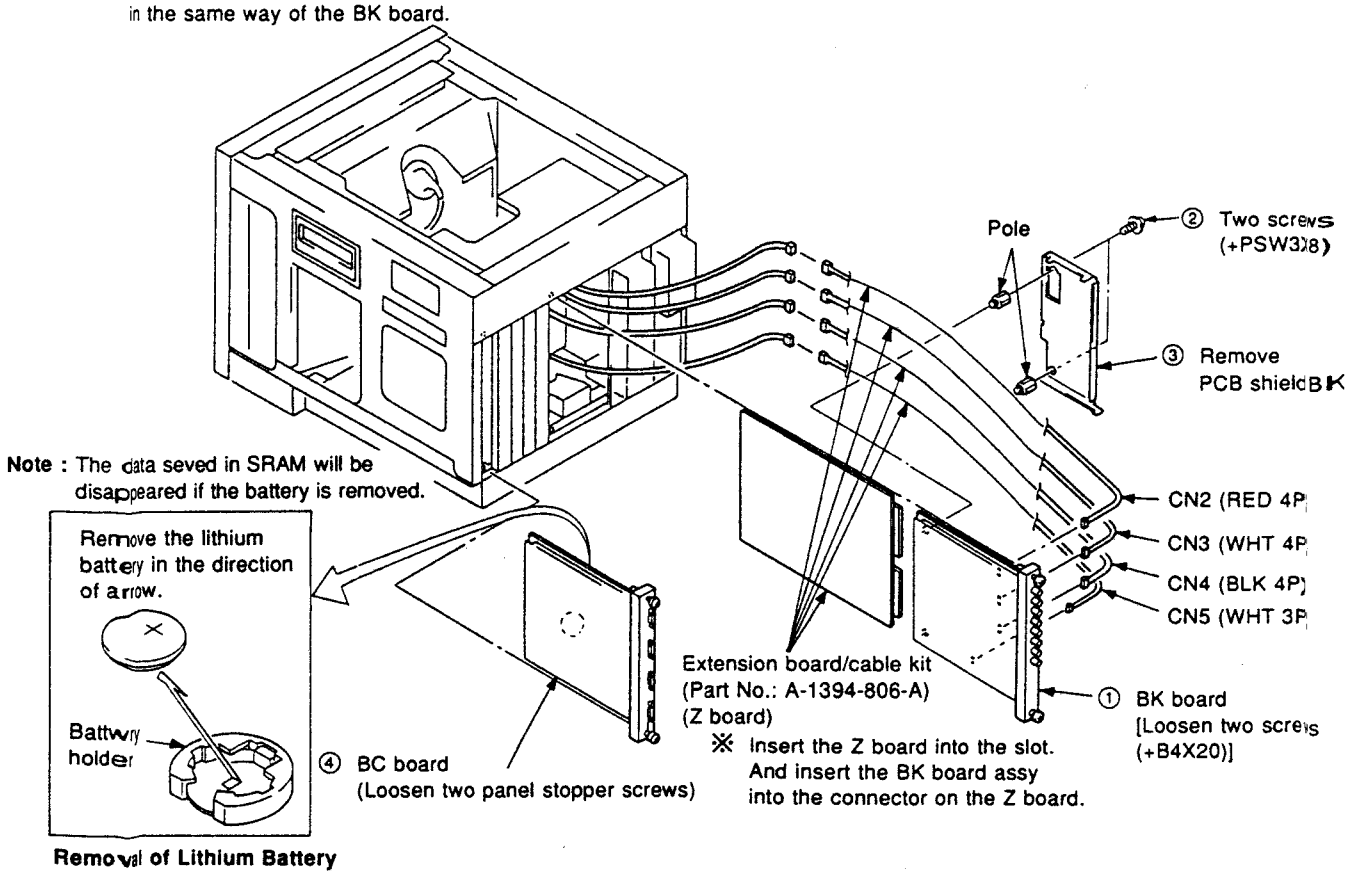
2-4. E AND G BOARDS REMOVAL AND CHECK

Note: The G board can be checked in the same way of the E board.



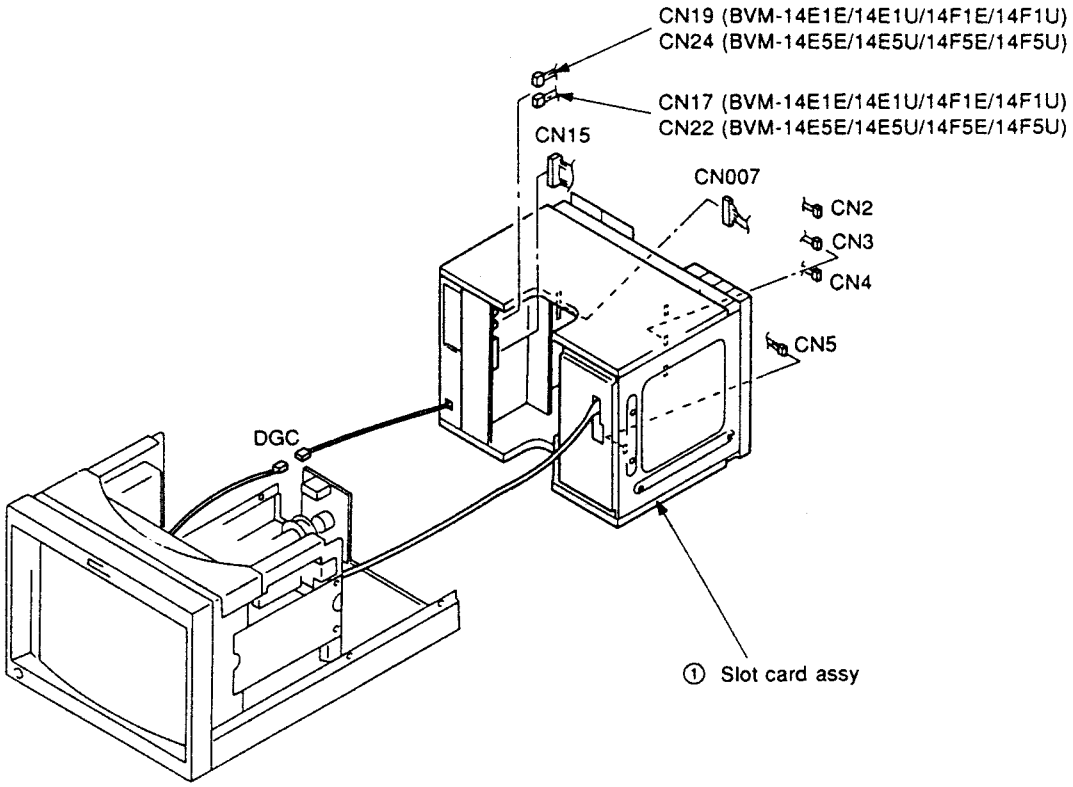
2-5. BC AND BK BOARDS REMOVAL AND CHECK

Note: The BC board can be checked in the same way of the BK board.

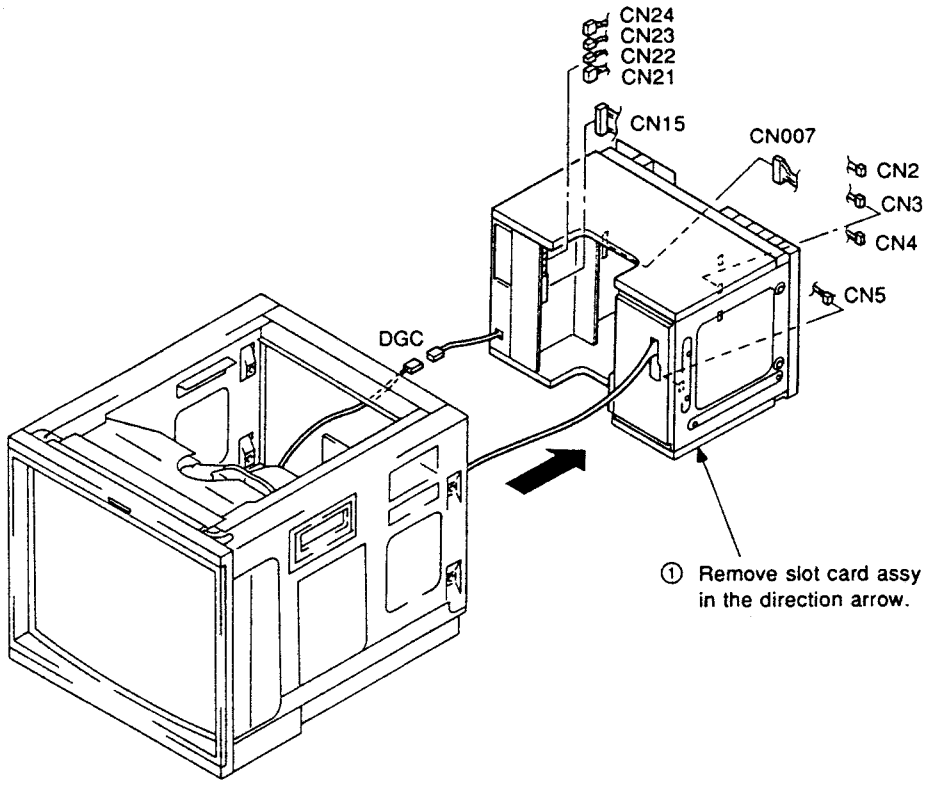


Removal of Lithium Battery

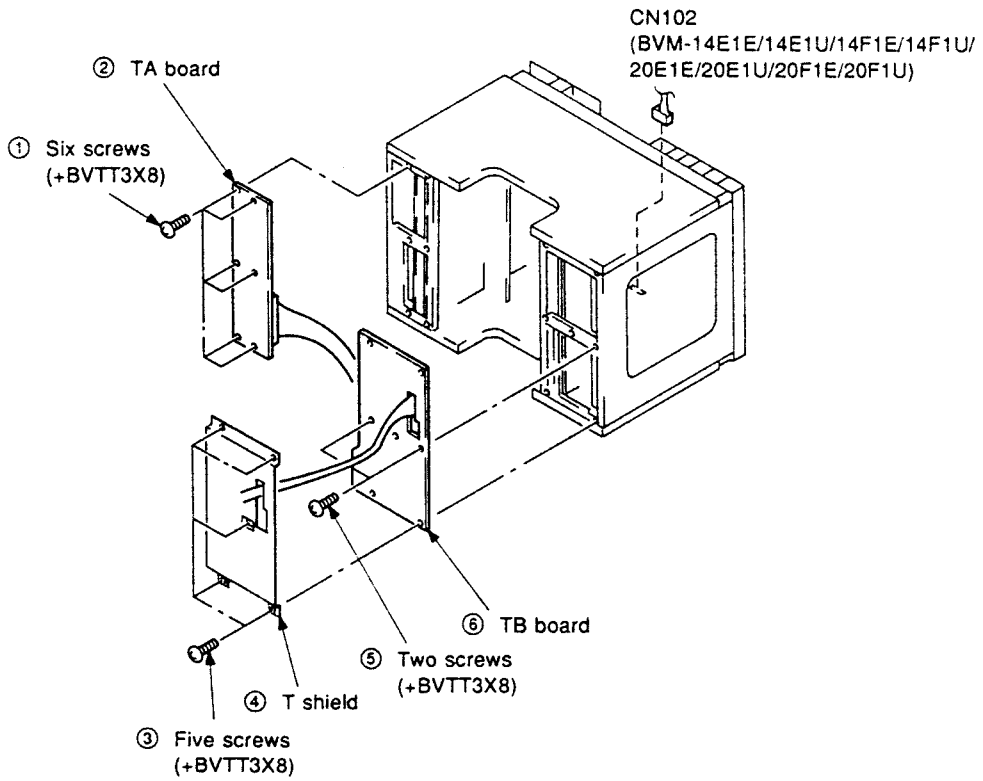
2-6-1. SLOT CARD ASSY REMOVAL (BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)



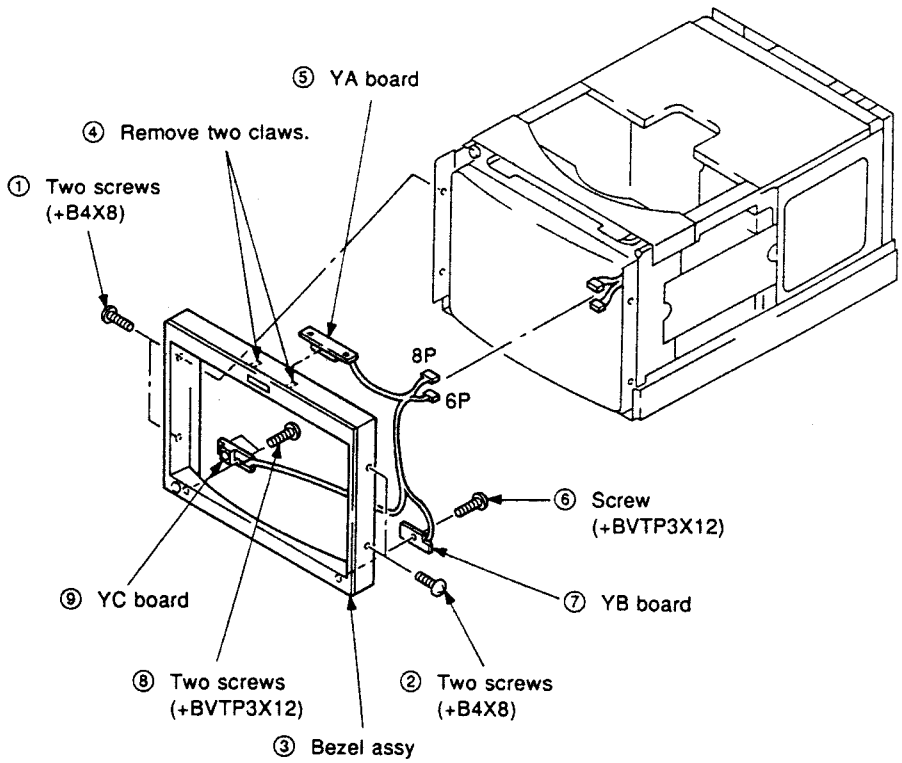
2-6-2. SLOT CARD ASSY REMOVAL (BVM-20E1E/20E1U/20F1E/20F1U)



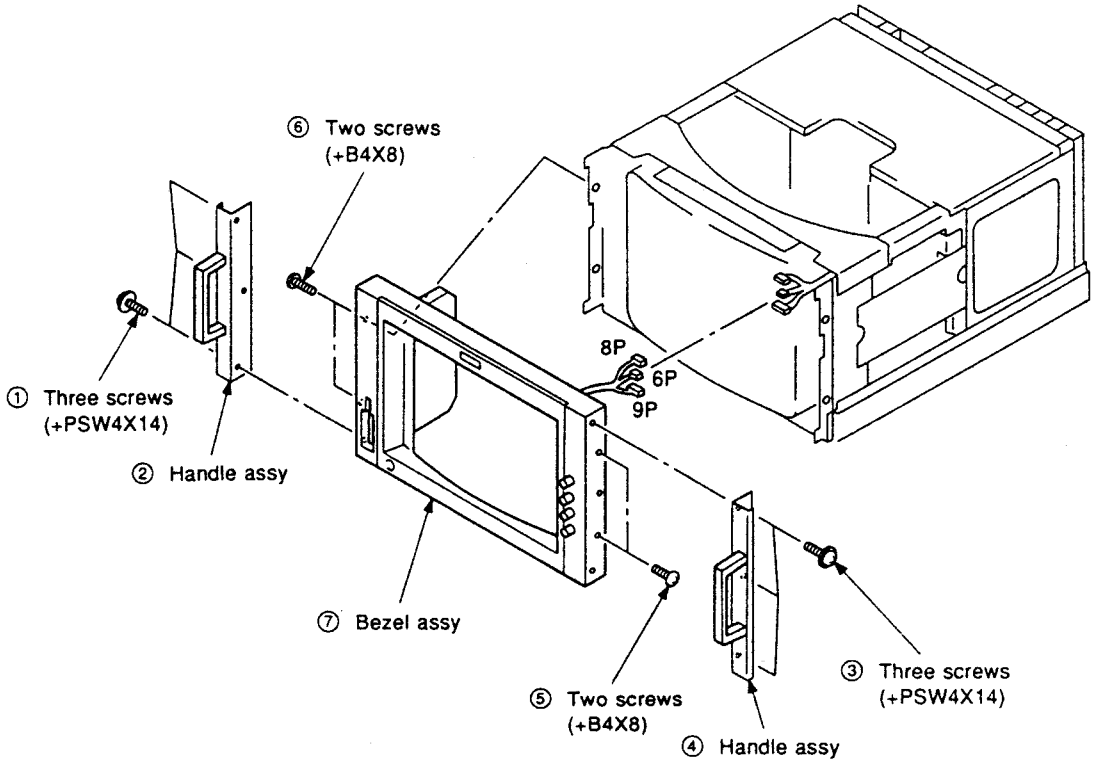
2-7. TA AND TB BOARDS REMOVAL



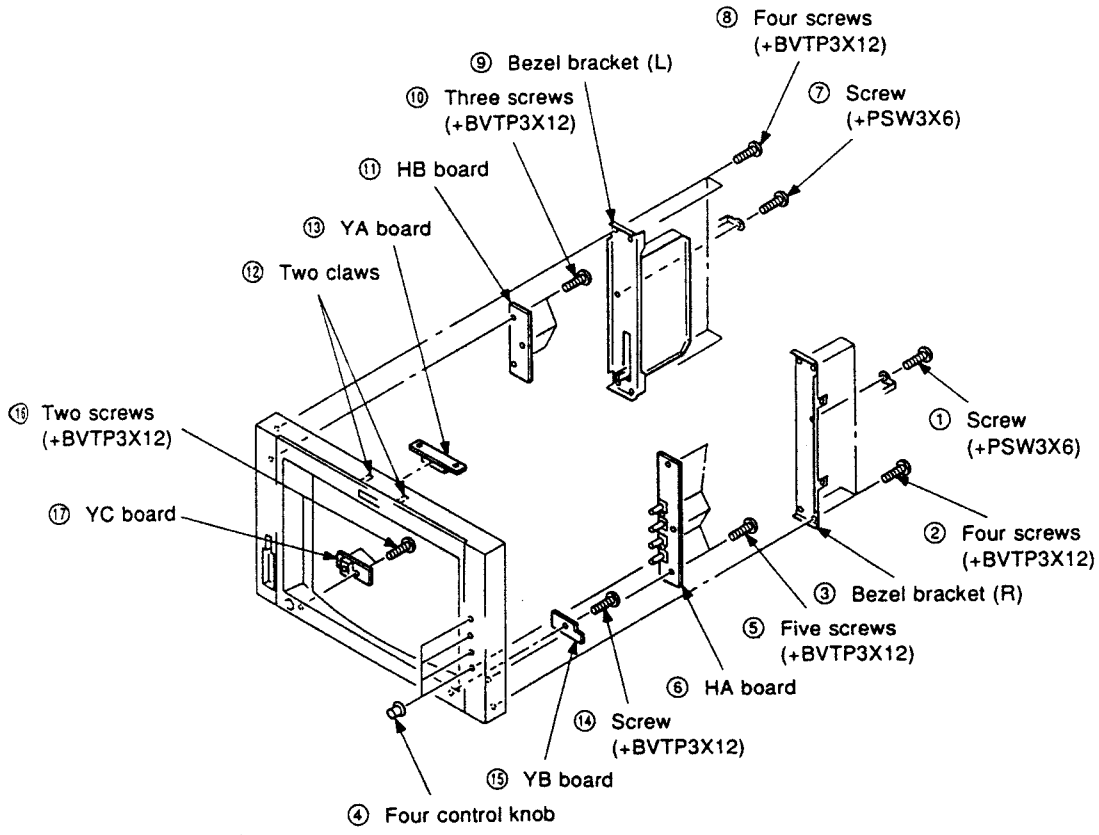
2-8-1-1. YA, YB AND YC BOARDS REMOVAL (BVM-14E1E/14E1U/14F1E/14F1U)



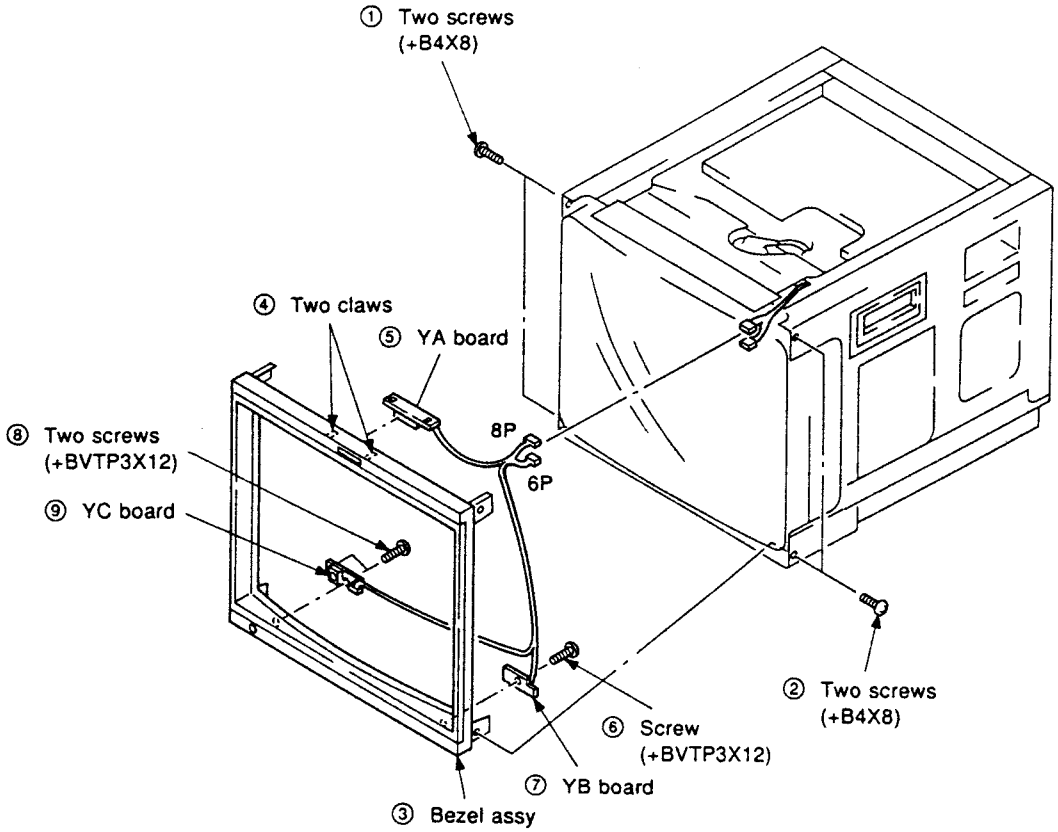
2-8-1-2. BEZEL ASSY REMOVAL (BVM-14E5E/14E5U/14F5E/14F5U)



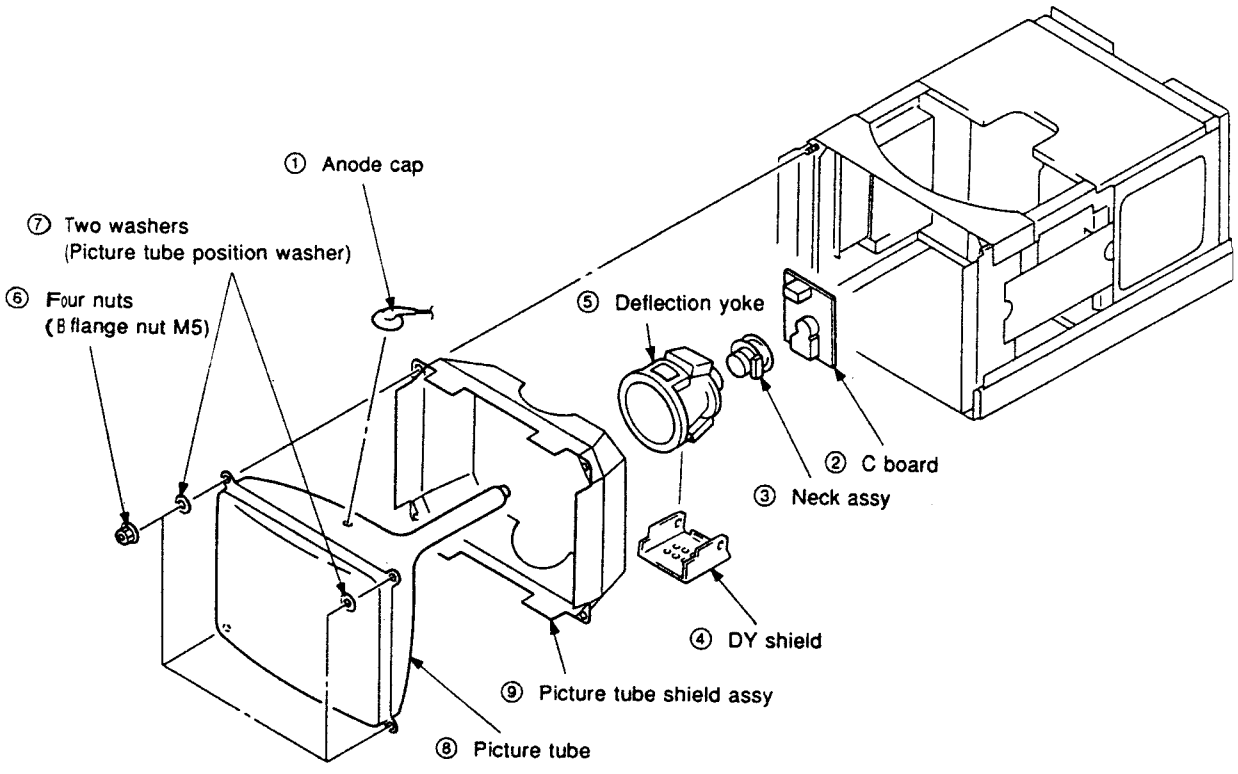
2-8-1-3. HA, HB, YA, YB AND YC BOARDS REMOVAL (BVM-14E5E/14E5U/14F5E/14F5U)



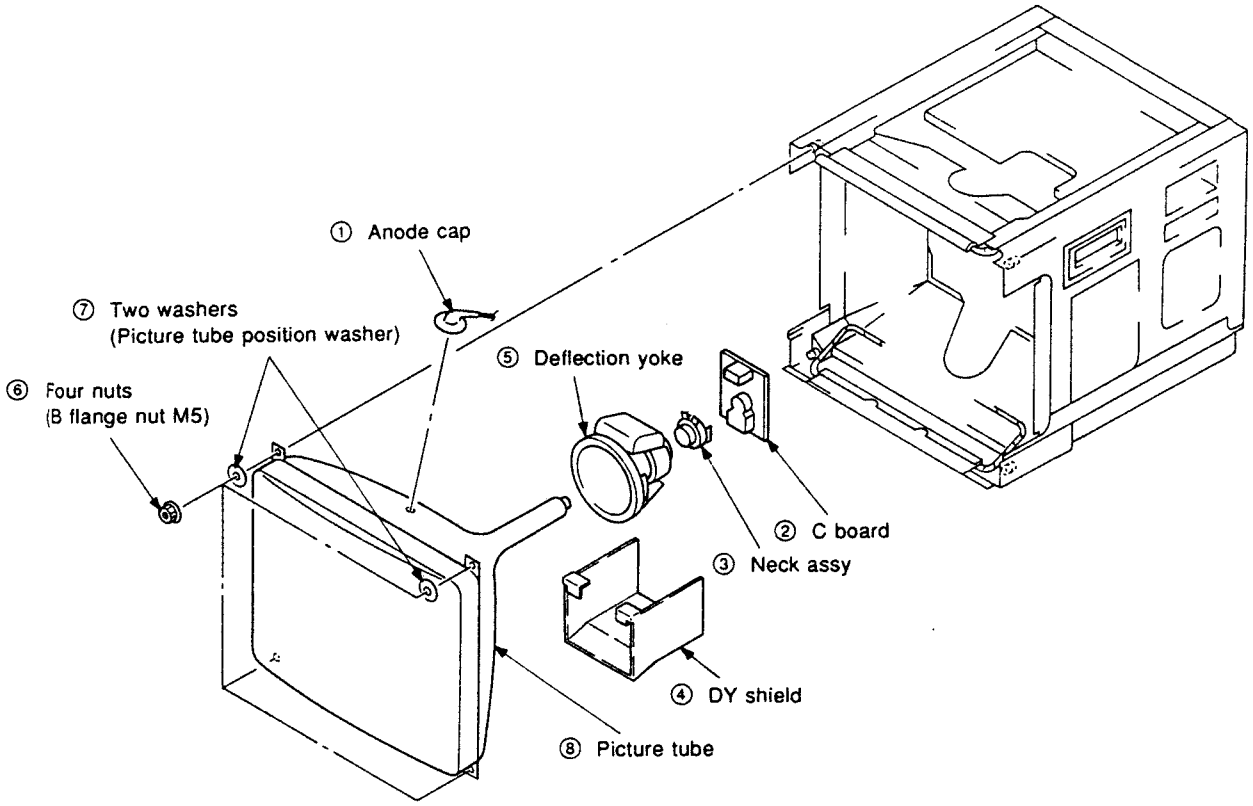
2-8-2. YA, YB AND YC BOARDS REMOVAL (BVM-20E1E/20E1U/20F1E/20F1U)



2-9-1. PICTURE TUBE REMOVAL (BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)



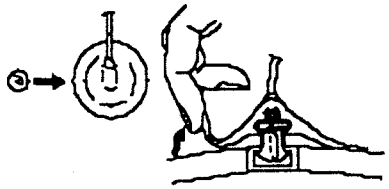
2-9-2. PICTURE TUBE REMOVAL (BVM-20E1E/20E1U/20F1E/20F1U)



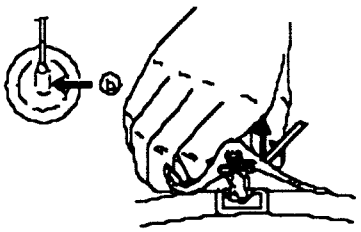
• REMOVAL OF ANODE-CAP

NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, picture tube shield or carbon painted on the picture tube, after removing the anode.

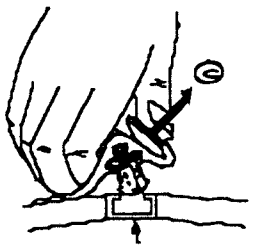
• REMOVING PROCEDURES



1. Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



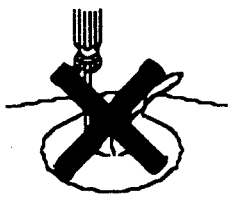
2. Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.

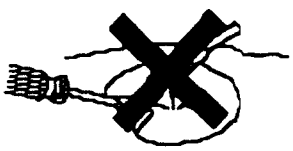


3. When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

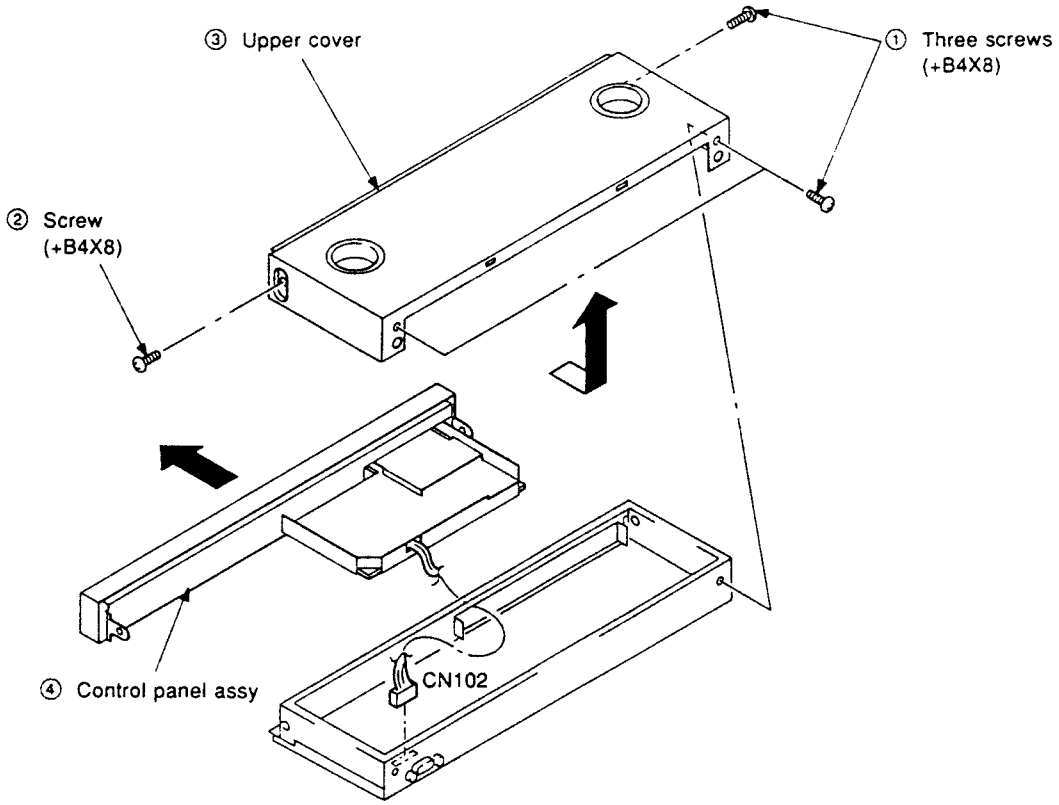
• HOW TO HANDLE AN ANODE-CAP

1. Don't hurt the surface of anode-caps with shartp shaped material!
2. Don't press the rubber hardly not to hurt inside of anode-caps!
   A material fitting called as shatter-hook terminal is built in the rubber .
3. Don't turn the foot of rubber over hardly!
   The shatter-hook terminal will stick out or hurt the rubber .

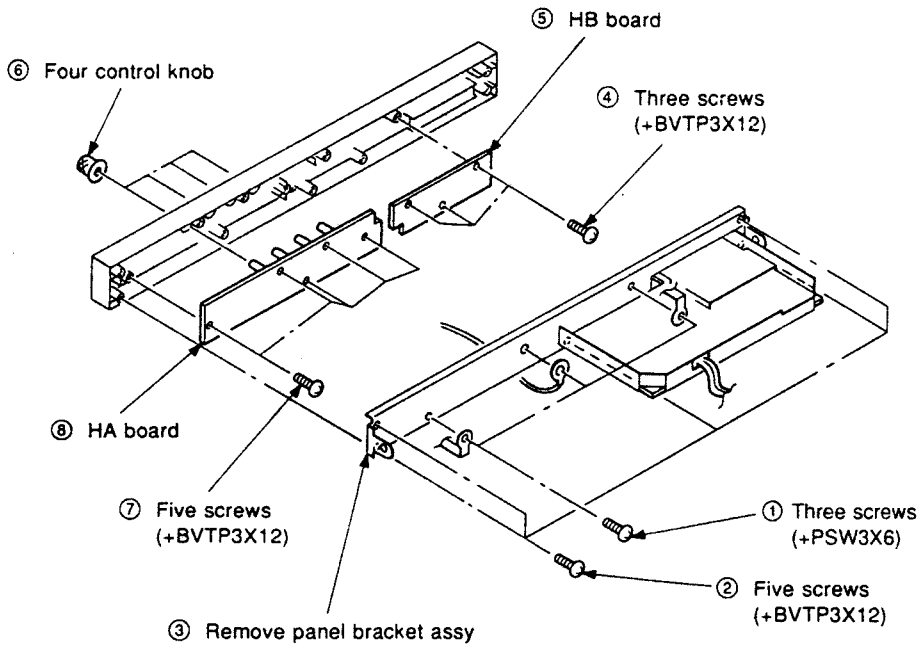




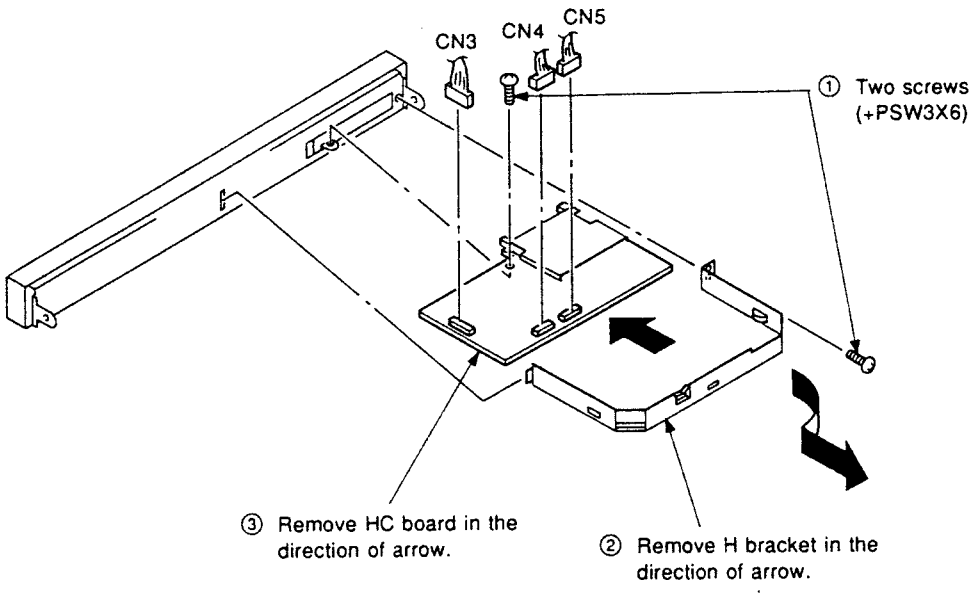
2-10. UPPER COVER REMOVAL (BKM-10R)



2-11. HA AND HB BOARDS REMOVAL (BKM-10R)



2-12. HC BOARD REMOVAL (BKM-10R)



SECTION 3
CIRCUIT DESCRIPTIONS

3-1. BK Board Descriptions

1-1. BK Select Switch

When the $\overline{\text{BK SELECT}}$ signal is LOW, the Y/G signal input to the Y/G terminal (TB1) is input to IC101 via the buffer amplifier (Q100 and Q102). When HIGH, the Y/G signal input to the (11B) terminal of CN2 is input to IC101.
At IC101, the 2Y/2G signal input to the (12B) terminal of CN2 is switched.
The same is performed for the PB/B signal and PR/R signal.

1-2. Clamp Circuit (1)

The analog switch (IC101) turns on according to the Y-CLP-P pulse. As a result, the pedestal voltage of the Y/G signal is sample-held. At IC102 (1/2), this voltage and the reference voltage (0 Vdc) are compared, the bias current of the Y/G signal clamp amplifier (Q103 to Q105) is controlled so that the pedestal voltage of the Y/G signal becomes 0 Vdc. The same is performed for the PB/B signal and PR/R signal. However, the PR signal (R–Y signal) and PB signal (B–Y signal) are clamped by the C–CLP–P pulse.

1-3. W B INSERT Pulse Insertion Circuit

To adjust the level of the R–Y signal and B–Y signal, the WHITE pulse and BLACK pulse are alternately inserted in the horizontal blanking period of the signals.
For the Y/G signal, at IC101 (3/3), the voltage in the period where the WHITE and BLACK pulses are inserted is made 0 Vdc. For the R–Y signal, the WHITE and BLACK pulses are inserted at IC301 (3/3). The level of the WHITE pulse is set by the R–Y PULSE LEVEL voltage. The level of the BLACK pulse is set by the R–Y CLAMP OFFSET voltage. These two voltages are switched by the WHITE INSERT P at IC500 (2/3), passed through IC300 (1/2), and input to IC301 (3/3). The same is performed for the B–Y signal.

1-4. Chroma Level Adjustment Circuit

The R–Y signal is level-adjusted by IC303 (gain control amplifier). The R–Y signal output from IC303 is input to IC304 (1/3) and the voltage of the WHITE pulse is sample-held. At IC302 (2/2), this voltage and the CHROMA voltage are compared, and the gain of IC303 is controlled. As a result, the WHITE pulse voltage becomes equal to the CHROMA voltage. Consequently, by varying the CHROMA voltage, the chroma level can be adjusted. The R–Y signal output from IC303 is also input to IC325. Here, the voltage of the BLACK pulse is sample-held. At IC320 (2/2), this voltage and the GND level is compared to control the DC bias of IC303. As a result, the pedestal level of the R–Y signal is fixed at the GND level.
The same is performed for the B–Y signal.

1-5. Matrix Circuit

The R, G, and B signals are created by inputting the Y, R–Y, and B–Y signals to the matrix circuit.

• R signal matrix circuit

At Q140, the Y signal and R–Y signal are added to create the R signal.

• G signal matrix circuit

At Q306, the R–Y signal which had passed through IC305 (gain control amplifier) is added with the B–Y signal. This signal is inverted, amplified, and added to the Y signal at Q350 to create the G signal. The mixing rate is determined by R332, R333, and R338. The R–Y, and B–Y GAIN is finely adjusted.

• B signal matrix circuit

At Q540, the Y signal and B–Y signal are added to create the B signal.

1-6. RGB switch

The RGB signal and R, G, and B signals are switched after the matrix circuit.

1-7. Clamp Circuit (2)

The voltage of the BLACK pulse of the R signal is sample-held by IC107. At IC106 (1/2), this voltage and the GND level are compared and the DC bias of the R signal amplifier (Q142 to Q144) is controlled. As a result, the pedestal level of the R signal is fixed at the GND level.
The same is performed for the G and B signals.

1-8. Half Blanking Switch

The character is half-blanked by the CHAR BLK signal.

1-9. 100 IRE Pulse, SET UP Pulse Insertion Circuit

To adjust the contrast, the 100 IRE pulse and SET UP pulse are alternately inserted in the horizontal blanking period of the R, G, and B signals.
For the R signal, at IC110 (1/3), the 100 IRE pulse and SET UP pulse are inserted. The level of the 100IRE pulse is set by the R 100 IRE voltage. The level of the SET UP pulse is set by the R SET UP voltage. These two voltages are switched by WHITE INSERT P by IC113 (3/3), and input to IC110 (1/3). The same is performed for the G and B signals.

1-10. Blue-Only Switch

In the blue-only mode, the B signal is output instead of the R signal at IC110 (3/3), and the B signal is output instead of the G signal at IC310 (3/3).

1-11. Contrast, Bright Adjustment Circuit

The R signal is contrast-adjusted by IC112 (gain control amplifier). The R signal output from IC112 and amplified by Q167 to Q169, input to IC113 (1/3), and the voltage of the 100 IRE pulse is sample-held. At IC114 (1/2), this voltage and the CONT voltage are compared, and the IC112 gain is controlled. As a result, the 100 IRE pulse and CONT voltage becomes equal. Consequently, by varying the CONT voltage, the contrast level can be adjusted. The R signal output from Q167 to Q169 is also input to IC113 (2/3). Here, the voltage of the SET UP pulse is sample-held. At IC114 (2/2), this voltage and the GND level is compared to control the DC bias of IC112. As a result, the pedestal level of the R signal is fixed at the GND level.
The DC bias of the R signal amplifier (Q167 to Q169) is controlled by the BRT voltage to adjust BRIGHT.
At IC701 (1/3), the BRT voltage is created by switching the BRIGHT voltage and BRT CENTER voltage in the period inserted with the pulse (100IRE pulse, and SET UP pulse) and in other periods.
The same is performed for the B and G signals.

1-12. Pulse Insertion Circuit

At IC116, The BIAS REF pulse, DRIVE REF pulse, and character pulse are inserted in the R signal. The level of the BIAS REF pulse is set by the BIAS REF voltage. The level of the DRIVE REF pulse is set by the DRIVE REF voltage.
The same is performed for the B and G signals.

1-13. Drive Control Amplifier

To prevent the drive current of the CRT cathode from exceeding the reference value, and the drive voltage from exceeding the reference value, the levels of the R, G, and B signals are controlled.
The drive current of the CRT cathode is detected by the current of Pin ⑤ of the VIDEO OUT amplifier (IC119). The current of Pin ⑤ is clamped, I/V-converted by IC123 (2/2), sampled by IC126 (2/3), and compared with the reference voltage (R DRIVE IK) at IC127 (2/2). When the drive current exceeds the reference value, the signal output from IC127 (2/2) is passed through IC117 (3/3), Q170 to Q172, and input to IC115 (R drive control amplifier) to lower its gain.
The drive voltage of the CRT cathode is detected by the voltage of Pin ⑨ of the VIDEO OUT amplifier (IC119). The voltage of Pin ⑨ is clamped by IC121 (1/2), sampled by IC126 (1/3), and compared with the reference voltage (R DRIVE V) at IC127 (1/2). When the drive voltage exceeds the reference value, the signal output from IC127 (1/2) is passed through IC117 (3/3) and Q170 to Q172 and input to IC115 (R drive control amplifier) to lower its gain.

The SUB CPU (IC902) sets whether to control the drive amount based on the drive current (current mode) or control the drive amount according to the drive voltage (voltage mode) (IK/V SW). Normally, the SUB CPU operates in the voltage mode and sets into the current mode during WB adjustment. The DRIVE COMP is used for converting the data of DRIVE V in the voltage mode, and the data of DRIVE IK in the current mode.

1-14. Clamp Circuit (3)

The voltage of the BLACK pulse of the R signal is sample-held by IC117 (2/3). At IC118 (1/2), this voltage and the GND level are compared and the DC bias of the R signal amplifier (Q174 to Q176) is controlled. As a result, the pedestal level of the R signal is fixed at the GND level.
The same is performed for the G and B signals.

1-15. Cut-Off Switch

At IC117 (1/3), the VIDEO TIMING pulse is used to switch between the R signal and cut-off voltage (–0.3 Vdc).
The same is performed for the G and B signals.

1-16. VIDEO OUT Amplifier

IC119 is used to drive the R signal cathode of the CRT.
The same is performed for the G and B signals.

1-17. G2 Control

Of the G2 R signal, G2 G signal, and G2 B signal, the signal with the lowest voltage is input to IC705 (1/2), compared with the reference voltage (G2 REF) to become the G2 CONTROL signal, and output from Pin (10B) of CN1 to the PA board to control the G2 voltage of the CRT.

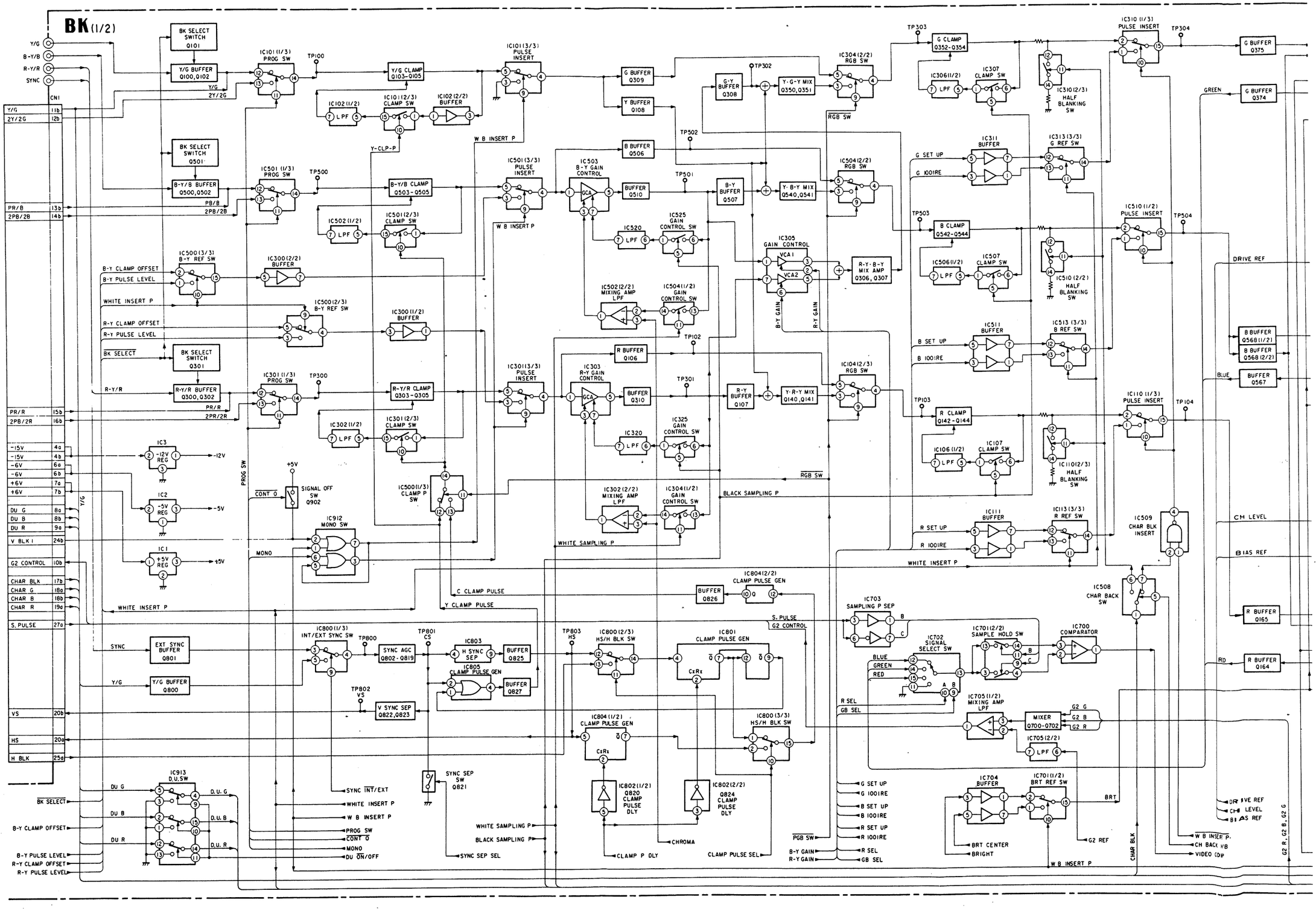
2. ABL, Overload Detection

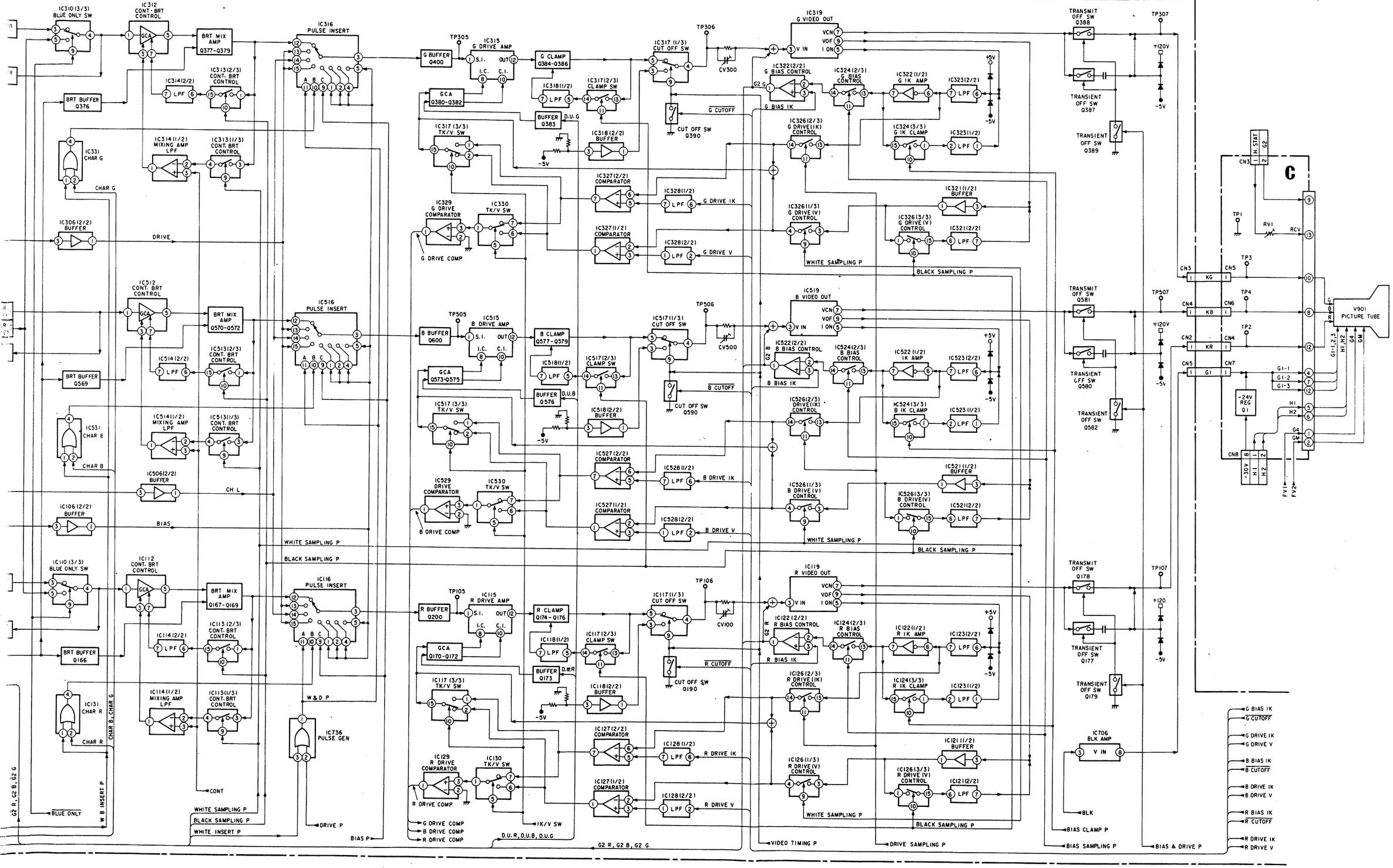
At IC901 (1/2), the ABL voltage and reference voltage (–1 Vdc) are compared. Normally, the ABL voltage is above –1 Vdc and therefore the output level of IC901 (1/2) is HIGH. If the ABL voltage goes down and it becomes less than –1 Vdc, the CONT. BRT will be therefore controlled so that this voltage will become –1 Vdc (constant). The output level of IC901 (1/2) is set to lower than the CONTRAST voltage and therefore the OVERLOAD signal and therefore the OVERLOAD signal output from IC904 (1/2) beccomes HIGH.

3. Control Circuit

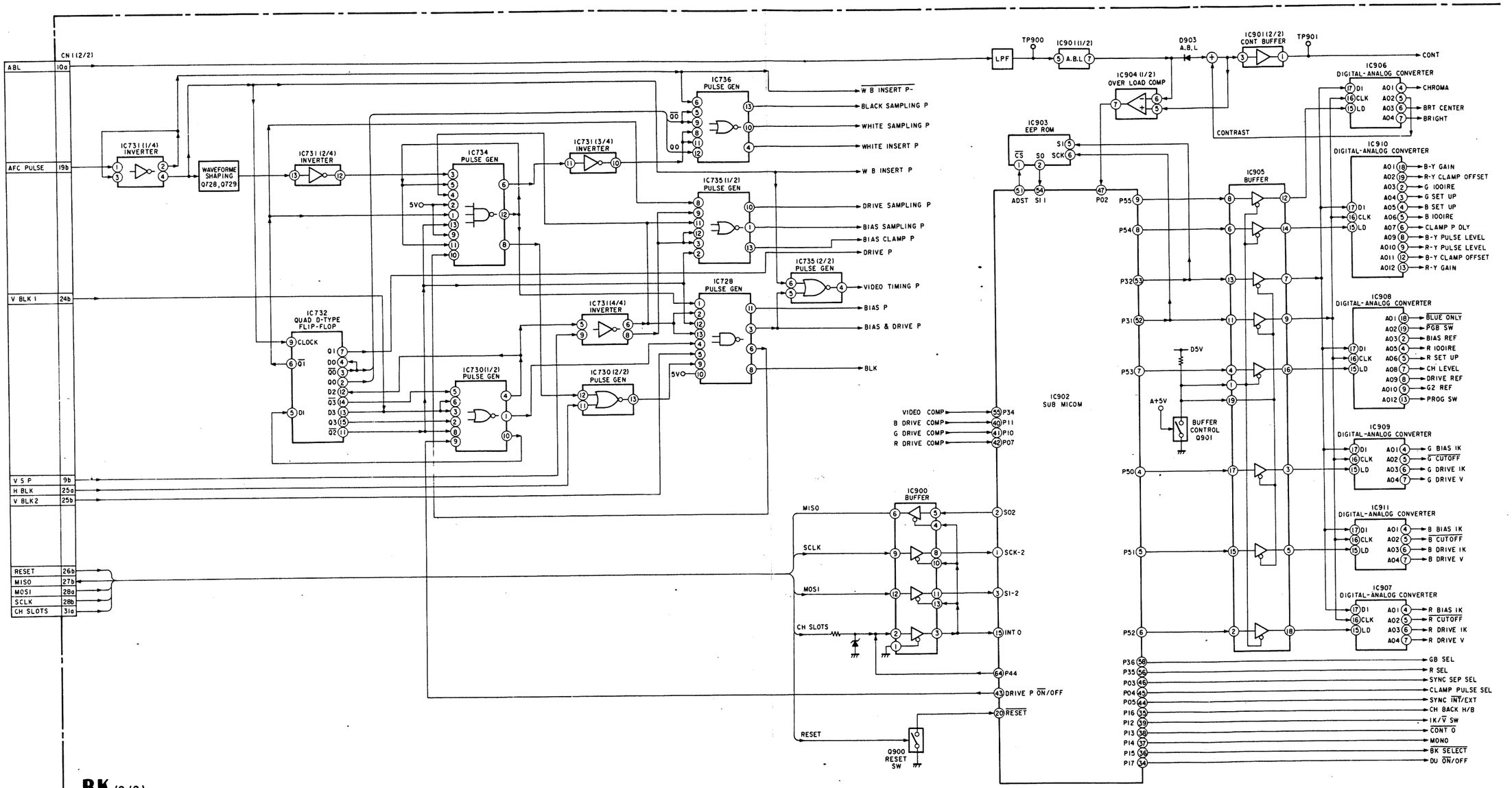
The sub CPU (IC902) performs serial communication with system controller using the three signals MISO, MOSI, and SCLK, and outputs the control signal according to the instructions of the system controller.
This IC also reads the adjustment data of the EEPROM (IC915) and outputs the adjustment voltage from the D/A converter (IC906 to IC911).

BK Board Block Diagram (1)




IC310(3/3) BLUE ONLY SW
IC312 CONT-BRT CONTROL
BRT MIX AMP Q377-Q379
BRT BUFFER Q376
IC314(2/2) LPF
IC313(2/3) CONT. BRT CONTROL
IC316 PULSE INSERT
IC331 CHAR G
IC314(1/2) MIXING AMP LPF
IC313(1/3) CONT. BRT CONTROL
CHAR G
IC306(2/2) BUFFER
DRIVE
IC512 CONT. BRT CONTROL
BRT MIX AMP Q570-Q572
BRT BUFFER Q569
IC514(2/2) LPF
IC513(2/3) CONT. BRT CONTROL
IC516 PULSE INSERT
IC531 CHAR B
IC514(1/2) MIXING AMP LPF
IC513(1/3) CONT. BRT CONTROL
CHAR B
IC506(2/2) BUFFER
CH L
IC106(2/2) BUFFER
BIAS
WHITE SAMPLING P
BLACK SAMPLING P
IC110(3/3) BLUE ONLY SW
IC112 CONT. BRT CONTROL
BRT MIX AMP Q167-Q169
BRT BUFFER Q166
IC114(2/2) LPF
IC113(2/3) CONT. BRT CONTROL
IC116 PULSE INSERT
IC131 CHAR R
IC114(1/2) MIXING AMP LPF
IC113(1/3) CONT. BRT CONTROL
CHAR R
CHAR B, CHAR G
W & D P
IC736 PULSE GEN
G2 R, G2 B, G2 G
BLUE ONLY
W & B INSERT P
CONT
WHITE SAMPLING P
BLACK SAMPLING P
WHITE INSERT P
DRIVE P
BIAS P
TP305
G BUFFER Q400
IC315 G DRIVE AMP
S.I.
I.C.
C.I.
OUT
GCA Q380-Q382
BUFFER Q383
D.U.G
-5V
G CLAMP Q384-Q386
IC318(1/2) LPF
IC317(2/3) CLAMP SW
IC317(3/3) TK/V SW
IC318(2/2) BUFFER
IC327(2/2) COMPARATOR
IC328(1/2) LPF
G DRIVE IK
IC329 G DRIVE COMPARATOR
IC330 TK/V SW
IC327(1/2) COMPARATOR
IC328(2/2) LPF
G DRIVE V
G DRIVE COMP
TP306
IC317(1/3) CUT OFF SW
CV300
G CUTOFF
CUT OFF SW Q390
IC319 G VIDEO OUT
VCN
VOF
I ON
V IN
IC322(2/2) G BIAS CONTROL
IC324(2/3) G BIAS CONTROL
IC322(1/2) G IK AMP
IC323(2/2) LPF
+5V
-5V
G BIAS IK
IC326(2/3) G DRIVE(IK) CONTROL
IC324(3/3) G IK CLAMP
IC323(1/2) LPF
IC326(1/3) G DRIVE(V) CONTROL
IC321(1/2) BUFFER
IC326(3/3) G DRIVE(V) CONTROL
IC321(2/2) LPF
WHITE SAMPLING P
BLACK SAMPLING P
TP505
B BUFFER Q600
IC515 B DRIVE AMP
GCA Q573-Q575
BUFFER Q576
D.U.B
IC518(1/2) LPF
IC517(2/3) CLAMP SW
IC517(3/3) TK/V SW
IC518(2/2) BUFFER
IC527(2/2) COMPARATOR
IC528(1/2) LPF
B DRIVE IK
IC529 DRIVE COMPARATOR
IC530 TK/V SW
IC527(1/2) COMPARATOR
IC528(2/2) LPF
B DRIVE V
B DRIVE COMP
TP506
IC517(1/3) CUT OFF SW
CV500
B CUTOFF
CUT OFF SW Q590
IC519 B VIDEO OUT
VCN
VOF
I ON
V IN
IC522(2/2) B BIAS CONTROL
IC524(2/3) B BIAS CONTROL
IC522(1/2) IK AMP
IC523(2/2) LPF
+5V
-5V
B BIAS IK
IC526(2/3) DRIVE(IK) CONTROL
IC524(3/3) B IK CLAMP
IC523(1/2) LPF
IC526(1/3) B DRIVE(V) CONTROL
IC521(1/2) BUFFER
IC526(3/3) B DRIVE(V) CONTROL
IC521(2/2) LPF
WHITE SAMPLING P
BLACK SAMPLING P
TP105
R BUFFER Q200
IC115 R DRIVE AMP
GCA Q170-Q172
BUFFER Q173
D.U.R
IC118(1/2) LPF
IC117(2/3) CLAMP SW
IC117(3/3) TK/V SW
IC118(2/2) BUFFER
IC127(2/2) COMPARATOR
IC128(1/2) LPF
R DRIVE IK
IC129 R DRIVE COMPARATOR
IC130 TK/V SW
IC127(1/2) COMPARATOR
IC128(2/2) LPF
R DRIVE V
R DRIVE COMP
G DRIVE COMP
B DRIVE COMP
R DRIVE COMP
IK/V SW
D.U.R, D.U.B, D.U.G
TP106
IC117(1/3) CUT OFF SW
CV100
R CUTOFF
CUT OFF SW Q190
IC119 R VIDEO OUT
VCN
VOF
I ON
V IN
IC122(2/2) R BIAS CONTROL
IC124(2/3) R BIAS CONTROL
IC122(1/2) R IK AMP
IC123(2/2) LPF
+5V
-5V
R BIAS IK
IC126(2/3) R DRIVE(IK) CONTROL
IC124(3/3) R IK CLAMP
IC123(1/2) LPF
IC121(1/2) BUFFER
IC126(1/3) R DRIVE(V) CONTROL
IC126(3/3) R DRIVE(V) CONTROL
IC121(2/2) LPF
WHITE SAMPLING P
BLACK SAMPLING P
VIDEO TIMING P
DRIVE SAMPLING P
TRANSMIT OFF SW Q388
TRANSIENT OFF SW Q387
TRANSIENT OFF SW Q389
TP307
+120V
-5V
TRANSMIT OFF SW Q581
TRANSIENT OFF SW Q580
TRANSIENT OFF SW Q582
TP507
+120V
-5V
TRANSMIT OFF SW Q178
TRANSIENT OFF SW Q177
TRANSIENT OFF SW Q179
TP107
+120
-5V
IC706 BLK AMP
V IN
BLK
BIAS CLAMP P
BIAS SAMPLING P
BIAS & DRIVE P
G BIAS IK
G CUTOFF
G DRIVE IK
G DRIVE V
B BIAS IK
B CUTOFF
B DRIVE IK
B DRIVE V
R BIAS IK
R CUTOFF
R DRIVE IK
R DRIVE V
C
CN3
H. STAT
G2
TP1
RV1
RCV
TP3
CN5
KG
TP4
CN6
KB
TP2
CN4
KR
CN7
G1
G1-1
G1-2
G1-3
-24V REG Q1
H1
H2
G4
GM
CN8
-30V
V901 PICTURE TUBE
FV1
FV2

BK Board Block Diagram (2)



BK (2/2)

3-2. BC Board Descriptions

Carries out the switching of the switches on each board and setting of DAC data.

1. Serial Communication with Boards

The system control CPU (IC1) carries out serial communication with the sub CPU of each board inserted in the slots using the 4 signals-MISO, MOSI, SLCK, and SLOT NO. It regularly receives abnormal detection signals from the power supply circuit and deflection circuit, and information (KILLER) for discriminating between color and black/white for signals input from each input adapter. It chooses who to communicate with using the signals SLOT-0 to SLOT-7.

2. Internal Signal Generation

IC104 to IC110 generates internal signals (PLUGE, 5STEP, WHITE, GRAY, CROSS HATCH). The clock generated by IC121 (525 mode:14.3181 MHz, 625 mode:14.1875 MHz) is input to IC120 (sync generator) to generate the sync signal.

3. VITC Reading

The Y/G signal is input to IC102, IC103, and IC126, and the VITC signal is read and input to the CPU and to display the IC7 (character generator).
The Y/G signal is input to IC124 to display the closed caption signal.

4. Character Generator

IC7 (character generator) is controlled to display the menu, etc.

5. Parallel Remote Control

The input signal of CN5 (parallel remote control terminal) is read by IC5 (I/O PORT EXPANDER).

6. ISR Terminal

The CPU (IC1) carries out communication with the ISR devices via IC23 (serial control unit) and IC27 and IC28 (RS232C transceiver).

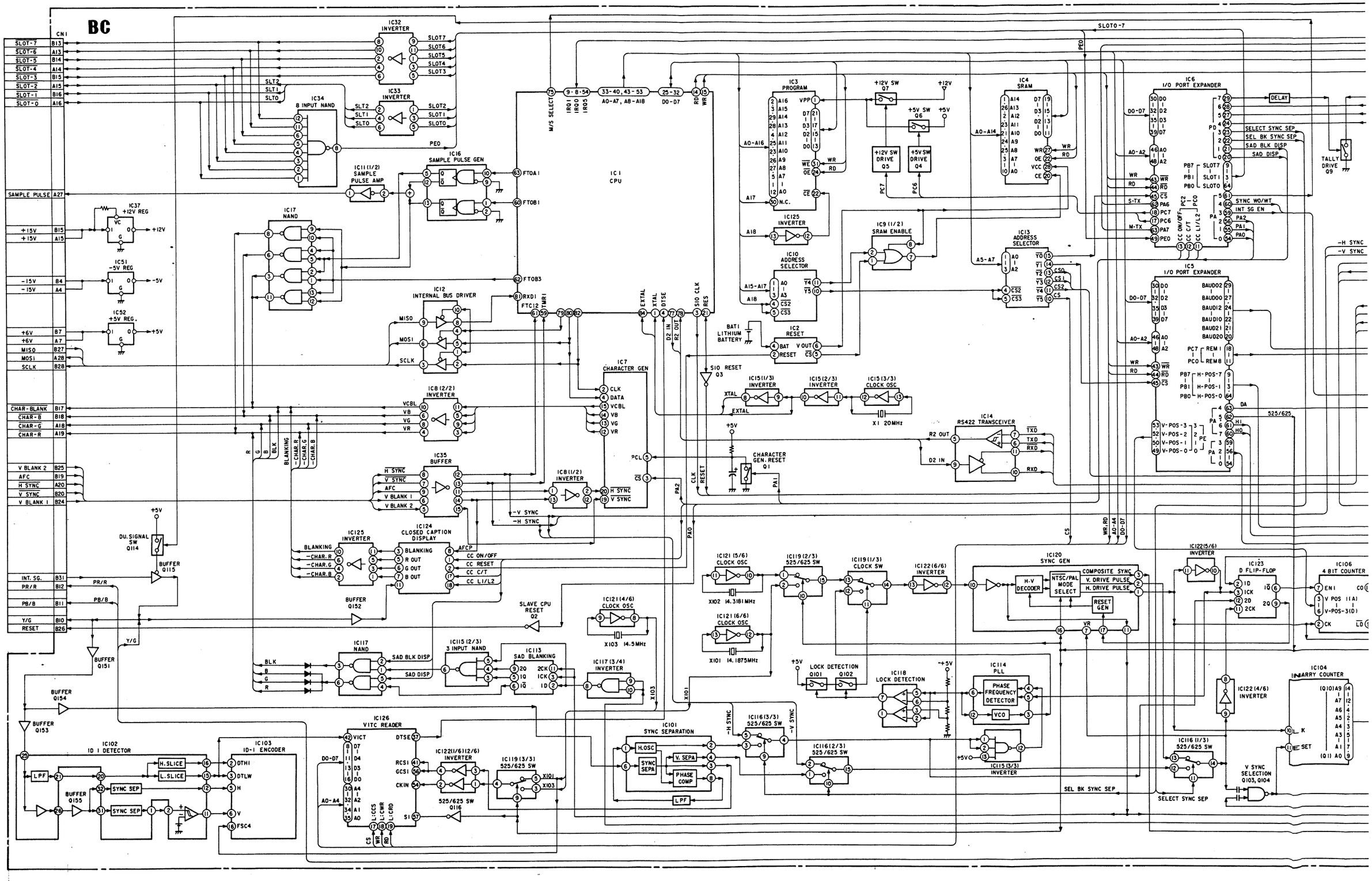
7. Serial Remote Terminal

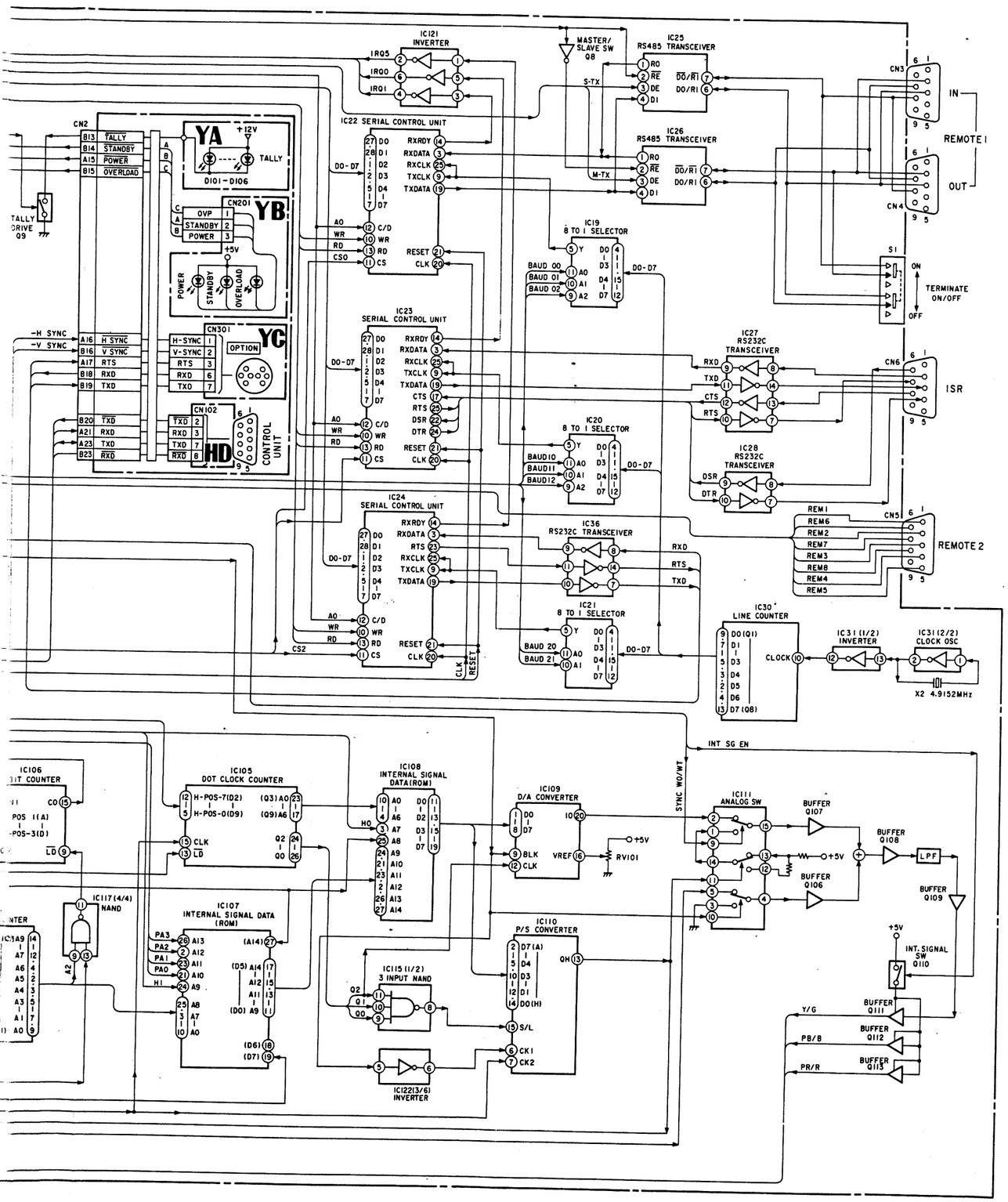
The CPU (IC1) carries out communication with the remote devices via IC22 (serial control unit) and IC25 and IC26 (RS485 transceiver).

8. Communication with Control Block (HC Board)

The CPU (IC1) carries out communication with the control block (HC board) via IC14 (RS422 transceiver), receives key input information and the memory card reading data, and transmits LED light information and the memory card writing data.

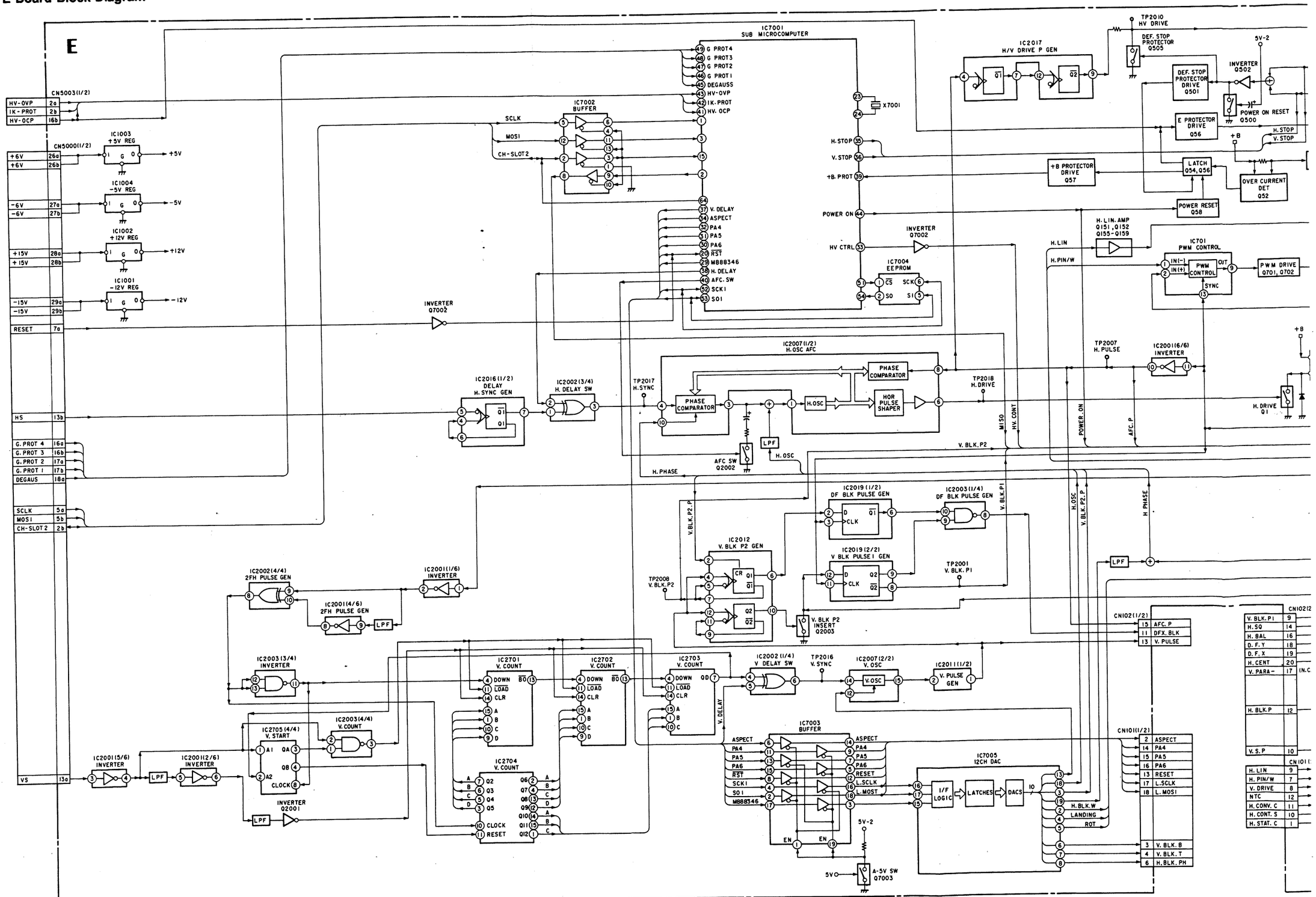
BC Board Block Diagram

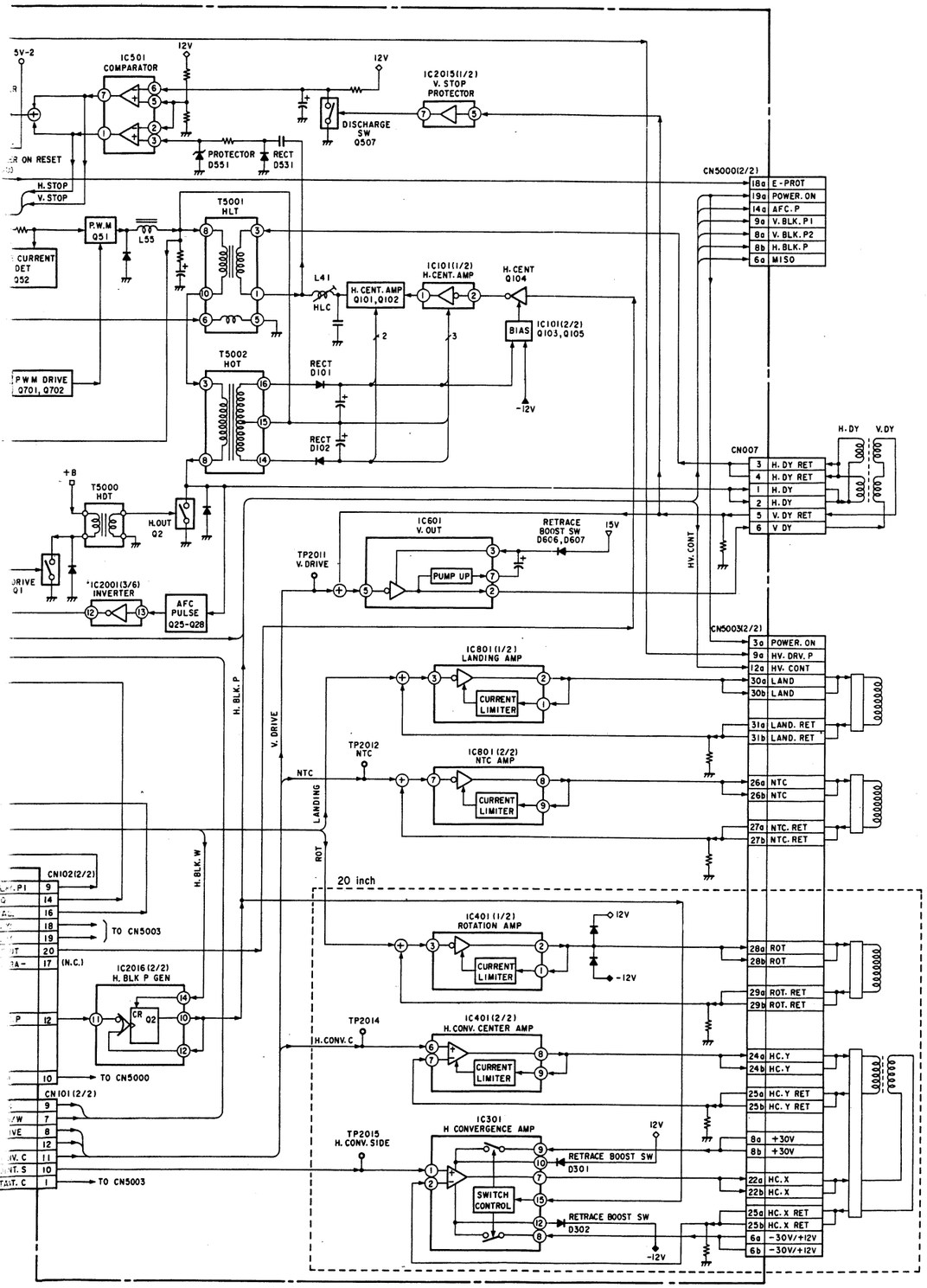



IC121 INVERTER
IRQ5
IRQ0
IRQ1
MASTER/ SLAVE SW Q8
IC25 RS485 TRANSCEIVER
S-TX
IC26 RS485 TRANSCEIVER
M-TX
CN3
IN
REMOTE 1
OUT
CN4
S1
ON
TERMINATE ON/OFF
OFF
IC22 SERIAL CONTROL UNIT
D0-D7
A0
WR
RD
CS0
C/D
RESET
CLK
IC19 8 TO 1 SELECTOR
BAUD 00
BAUD 01
BAUD 02
CN2
TALLY
STANDBY
POWER
OVERLOAD
YA
+12V
D101-D106
CN201
YB
OVP
+5V
CN301
YC
H-SYNC
V-SYNC
OPTION
RTS
RXD
TXD
CN102
HD
CONTROL UNIT
IC23 SERIAL CONTROL UNIT
IC27 RS232C TRANSCEIVER
CN6
ISR
IC20 8 TO 1 SELECTOR
BAUD10
BAUD11
BAUD12
IC28 RS232C TRANSCEIVER
DSR
DTR
IC24 SERIAL CONTROL UNIT
IC36 RS232C TRANSCEIVER
REM1
REM6
REM2
REM7
REM3
REM8
REM4
REM5
CN5
REMOTE 2
IC21 8 TO 1 SELECTOR
BAUD 20
BAUD 21
CS2
CLK RESET
IC30* LINE COUNTER
CLOCK
IC31 (1/2) INVERTER
IC31 (2/2) CLOCK OSC
X2 4.9152MHz
INT SG EN
SYNC WO/WM
IC106 INT COUNTER
IC105 DOT CLOCK COUNTER
H-POS-7(D2)
H-POS-0(D9)
IC108 INTERNAL SIGNAL DATA(ROM)
IC109 D/A CONVERTER
VREF
RV101
IC111 ANALOG SW
BUFFER Q107
BUFFER Q108
BUFFER Q106
BUFFER Q109
LPF
IC117 (4/4) NAND
IC107 INTERNAL SIGNAL DATA (ROM)
IC110 P/S CONVERTER
IC115 (1/2) 3 INPUT NAND
IC122(3/6) INVERTER
INT. SIGNAL SW Q110
BUFFER Q111
BUFFER Q112
BUFFER Q113
Y/G
PB/B
PR/R

3-3. E Board Descriptions

E Board Block Diagram





1. Horizontal System

1-1. H DELAY Circuit

Negative pulses are generated at IC2016 with the H SYNC falling edge as the trigger. In the normal mode, these pulses are passed through IC2002 as they are and input to the AFC circuit. In the H DELAY mode, they are inverted by IC2002 and input to the AFC circuit.

In the AFC circuit, as the falling edge of the input pulse is taken as the reference signal for phase comparison, the reference signal only delays the width of the negative pulses in the H DELAY mode.

1-2. AFC Circuit

In IC2007 the H SYNC input to Pin ④ and the H.OSC signal inside the IC are phase-compared, output to Pin ③, and passed through the low pass filter to control the H.OSC of Pin ①. The freerunning frequency of H.OSC is set by the H.OSC output from the D/A converter (IC7005). The H.PHASE voltage is input to Pin ⑩ to set the oscillation phase of H.OSC. The H.BAL signal from IC115 of the D board is added to the H.PHASE voltage to correct the H.PIN.BAL, H KEY.BAL.

The H.PULSE generated by T5002 (HOT:Horizontal output transformer) is waveform-shaped by Q25 to Q28 and input to Pin ⑧ of IC2007. Inside the IC, it is phase-compared with H.OSC to control the H.DRIVE pulse output from Pin ⑥.

1-3. Horizontal Deflection Circuit

The H.DRIVE pulse is passed through Q1, T500 (HDT), supplied to Q2 (H.OUT) to switch Q2 and drive T5002 (HOT) and H.DY.

The power supply of the horizontal output circuit is generated by IC701 (RWM control) by switching Q51 to improve the power efficiency. The H PIN/W voltage from IC114 of the D board is input to IC701 to control the power voltage.

1-4. H Center Circuit

Positive and negative power supplies from the secondary side output of T5002 (HOT:Horizontal output transformer) are generated as the power supply of the H center circuit. In the H center circuit (IC101, Q101 to Q105), the DC current flowing through the H.DY is controlled by the H.CENT signal from IC115 of the D board.

1-5. Landing Circuit

The LANDING voltage output from the D/A converter IC 7005 is input to IC801 to control the current flowing through the LANDING coil.

1-6. NTC Drive Circuit

The NTC signal output from IC108 of the D board is amplified to drive the NTC.

1-7. H Linearity Circuit

The H.LIN signal output from IC119 of the D board is amplified by Q151 to Q159, T5001 (HLT) is driven, and the H linearity compensation current is passed through the H.DY.

1-8. Rotation Circuit (20-Inch Model)

The ROTATION voltage output from IC7005 of the D/A converter is input to IC401 to control the current flowing through the ROTATION coil.

1-9. H Convergence Circuit (20-Inch Model)

The H.CONV.C signal output from IC111 of the D board is amplified by IC401 to drive the HC.Y.

The H.CONT.S signal output from IC108 of the D board is amplified by IC301 to drive the HC.X.

2. Vertical System

2-1. V Counter

The H.SQ signal input to Pin ⑭ of CN104 is input to IC2002 to create the 2FH signal, which is used as the clock of the V counter. The V counter is reset by the V SYNC input to Pin (13A) of CN5000. Consequently, the pulse output from the V counter synchronizes with the V SYNC. IC2002 inverts the pulse output from the V counter in the V DELAY mode to delay the falling edge of the waveform for the width of the pulse.

2-2. V.OSC Circuit

IC2007 synchronizes with the pulse from the V counter, oscillates, and generates the V period sawtooth waveform. This sawtooth waveform is compared with the reference voltage by IC2011 to create the V.PULSE. The freerunning frequency of V.OSC is set by the V.OSC voltage output from IC7005. The V.PULSE signal is input to the D board together with the AFC P signal to generate the V.DRIVE signal and various deflection correction signals.

2-3. Vertical Deflection Circuit

The V.DRIVE signal output from IC115 of the D board is amplified by IC601 to drive the V.DY.

3. Protection Circuit

3-1. H.STOP, V.STOP Detection Circuit

The pulse generated for L41 and L101 by the H.DY drive current is detected by D531, the voltage obtained is input to Pin ③ of IC501, and compared with the reference voltage (6 Vdc) of Pin ②. When no more pulses are input, the voltage of Pin ③ of IC501 falls below the reference voltage so that the H.STOP signal output from Pin ① becomes LOW.

The pulse generated for R606 by the V.DY drive current is amplified by IC2015 (1/2) to switch Q507. Consequently, while pulses are input, C505 continuously discharges electricity. As a result, the voltage of Pin ⑥ of IC501 does not reach the reference voltage (6 Vdc) of Pin ⑤ and when no more pulses are input, the voltage of Pin ⑥ exceeds the reference voltage of Pin ⑤, and therefore the V.STOP signal output from Pin ⑦ becomes LOW.

When the H.STOP or V.STOP signal becomes LOW, Q502 turns OFF, Q505 turns ON, and the HV.DRV. pulse output is stopped. At the same time, as Q501 also turns ON, Q54 to Q56 turn ON, the E PROT signal becomes HIGH, and the power supply circuit sets into the standby state, Q57 also turns ON, and the +B PROT signal becomes LOW to indicate that a sub CPU error has occurred.

3-2. Excessive Current Protection Circuit for Horizontal Deflection Circuit Power Supply

When the current of the horizontal deflection circuit power supply becomes abnormally great, Q52 turns ON. As a result, Q54 to Q57 turn ON, the E PROT signal becomes HIGH, and the +B PROT signal becomes LOW.

4. Control Circuit

The sub CPU (IC7001) performs serial communication with the system control CPU of the BC board using the three signals MISO, MOSI, and SCLK, and outputs the control signals POWER ON, DEGAUSE, AFC SW, H.DELAY, V.DELAY, etc. according to the instructions of the system control CPU (BC board IC1). It also reads the adjustment data of the EEPROM (IC7004) and output the adjustment voltage from the D/A converter (IC7005). In addition, it also controls the waveform output from IC112, IC115, and IC118 of the D board. The following protect detection signals are transmitted to the system control CPU from the sub CPU.

H. STOP, V. STOP, +B. PROT, HV_OVP
IK_PROT, HV_OVP, G.PROT1–4

3-4. D Board Descriptions

1-1. Signal Generator (IC105)

The deflection correction waveform is generated.

Based on the V.PULSE obtained by waveform-shaping the V.SAW waveform output from IC2007 of the E board at IC2011, the V period deflection correction signals (V4TH, VSIN, VPARA, and VSAW) are generated. Based on the AFC.PULSE waveform-shaped by IC2001 (Q25 to Q28) of the E board, the H period deflection correction signals (HSAW, HPARA, and HSQ) are generated.

1-2. DEFLECTION Generator

Based on the VSIN, V.PARA+, and VSAW+ signals output from the signal generator (IC105), the following signals are generated. The signal level and waveform can be varied using the serial data from the system control circuit.

H. STAT. C, V. DRIVE, V. CONV T & B,
H. BAL, H. CENT, V. CONV. C, H. LIN. GAIN,

1-3. H. CONVER Generator

Based on the VSIN, V.PARA+, V.PARA–, and VSAW+ signals output from the signal generator (IC105), the following H convergence correction signals are generated. The signal level and waveform can be varied using the serial data from the system control circuit.

H. CONV. C, STAT, V. STAT, H. C. L, H. C. R

1-4. D/A Converter

Based on the V4TH, V.PARA+, and VSAW+ signals output from the signal generator (IC105), the D/A conversion reference voltage is modulated and the following signals are generated. The signal level can be varied using the serial data from the system control circuit.

The adjustment voltage is also output.

- Modulated by V4TH signal
  CORNER PIN
- Modulated by VPARA+ signal
  H. MID. PIN, H. CENTER. PIN,
  DFY, T&B, DFY. SIDE
- Modulated by VSAW+ signal.
  DFY. PHASE
- Adjustment voltage
  DFX. CENTER, DFX. PHASE

1-5. NTC Signal Generation

The V.CONV.T&B signal output from IC115 (DEFLECTION GEN) and the V.STAT signal generated by IC112 (H.CONVER GEN) are added and inverted by IC108 to create the NTC signal. The adjusting points are the following three.

V.STAT
V.CONV. TOP
V.CONV. BOT

1-6. H.CONV. SIDE Signal Generation

IC108 modulates the H.C.L signal or H.C.R signal generated by IC112 (H.CONVER GEN) using the H.PARA+ signal output by IC105 (signal generator) to create the H.CONV.S signal. As for the HSQ signal, the H.C.L signal is selected at the left side of the screen, while the H.C.R signal is selected at the right side of the screen.

There are 5 adjusting points on the left and right sides each.

1-7. H.LIN Signal Generation

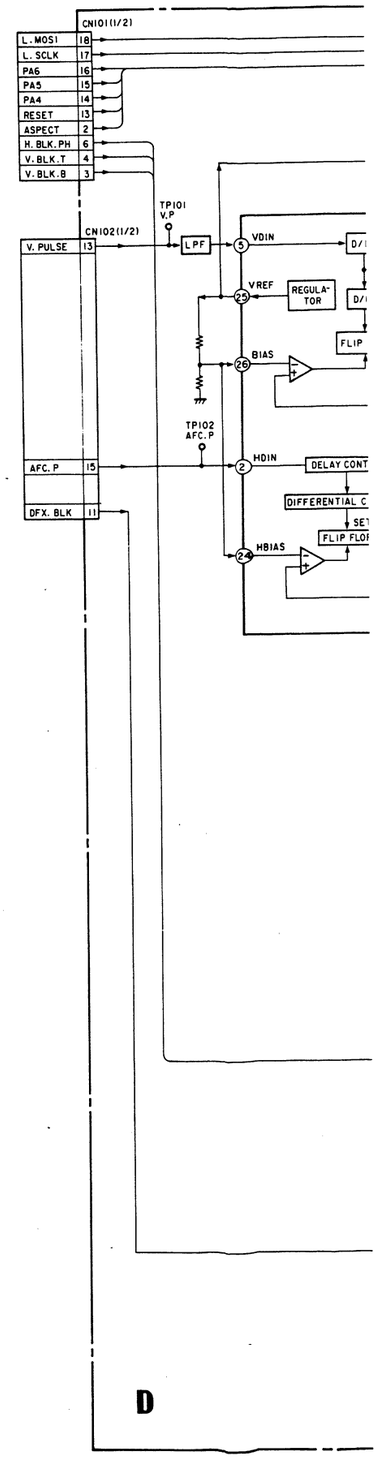
IC203, IC108, and IC119 modulate and add the H.PARA— signal and H.SAW signal output by IC105 (signal generator) using the H.LIN GAIN signal and H.LIN BAL signal output by IC115 (DEFLECTION GEN), and H.MID.PIN signal and H.CENT.PIN signal output by IC118 (D/A converter) to create the H.LIN signal.

1-8. D.F.X. Signal, D.F.Y. Signal Generation

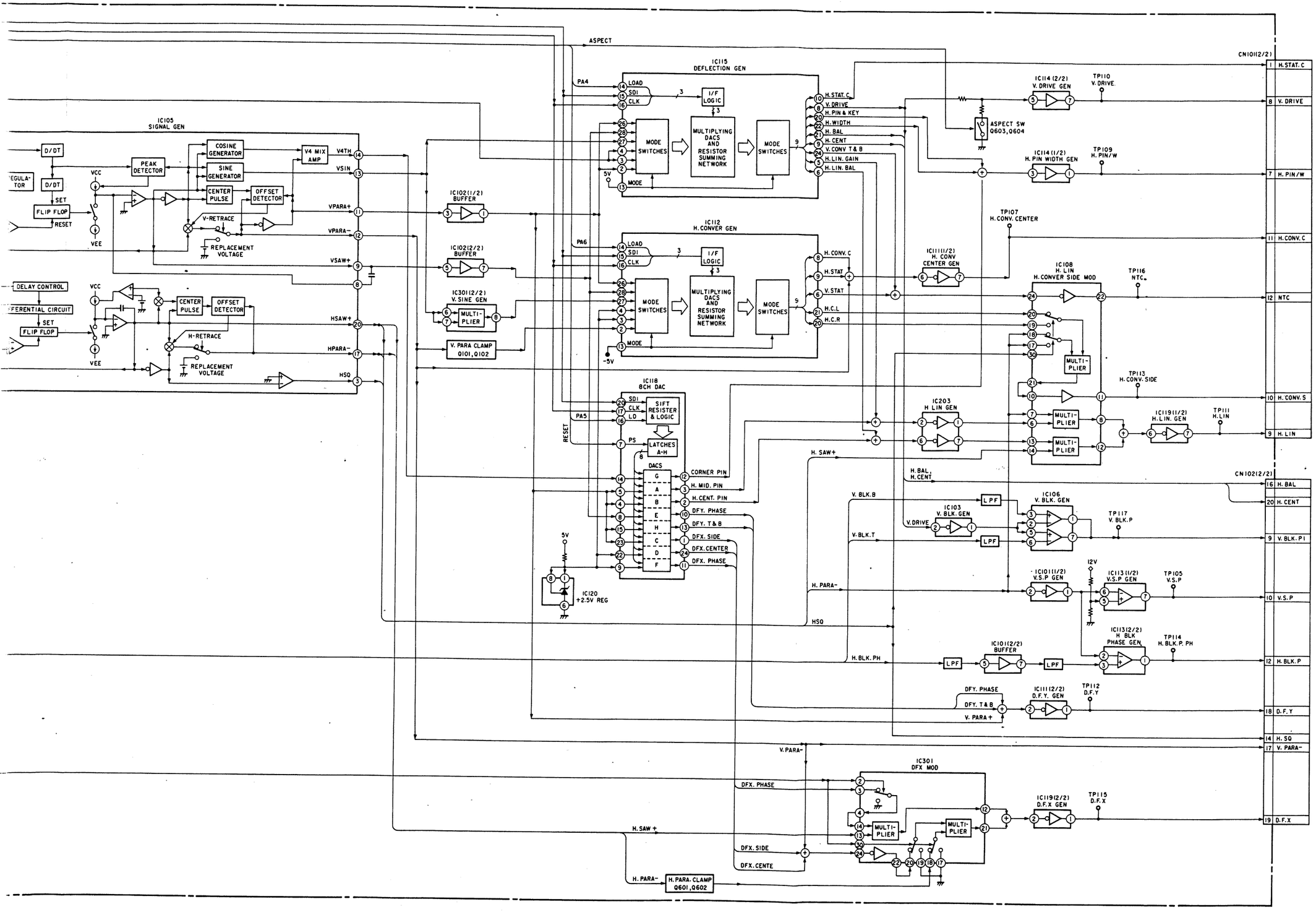
IC301 modulates and adds the H.SAW+ signal and H.PARA— signal output by IC105 (signal generator) using the DFX.PHASE signal, DFX SIDE signal, DFX CENTER voltage output by IC118 (D/A converter) and V.PARA— signal output by IC105 to create the D.F.X signal.

IC111 (2/2) adds the DFY.PHASE signal and DFY.T&B signal output by IC118 (D/A converter) with the V.PARA+ signal output by IC105 (signal generator) to create the D.F. YX signal.

D Board Block Diagram



D


ASPECT
IC105
SIGNAL GEN
D/DT
D/DT
SET
FLIP FLOP
RESET
VCC
VEE
PEAK DETECTOR
COSINE GENERATOR
SINE GENERATOR
CENTER PULSE
OFFSET DETECTOR
V4 MIX AMP
V-RETRACE
REPLACEMENT VOLTAGE
V4TH
VSIN
VPARA+
VPARA−
VSAW+
DELAY CONTROL
FERENTIAL CIRCUIT
SET
FLIP FLOP
CENTER PULSE
OFFSET DETECTOR
H-RETRACE
REPLACEMENT VOLTAGE
HSAW+
HPARA−
HSQ
IC102(1/2) BUFFER
IC102(2/2) BUFFER
IC301(2/2) V. SINE GEN
MULTI-PLIER
V. PARA CLAMP Q101, Q102
IC115 DEFLECTION GEN
PA4
LOAD
SDI
CLK
I/F LOGIC
MODE SWITCHES
MULTIPLYING DACS AND RESISTOR SUMMING NETWORK
MODE SWITCHES
MODE
5V
H. STAT. C
V. DRIVE
H. PIN & KEY
H. WIDTH
H. BAL
H. CENT
V. CONV T & B
H. LIN. GAIN
H. LIN. BAL
IC112 H. CONVER GEN
PA6
-5V
H. CONV. C
H. STAT
V. STAT
H.C.L
H.C.R
IC118 8CH DAC
PA5
RESET
SIFT RESISTER & LOGIC
PS
LATCHES A-H
DACS
G
A
B
E
H
C
D
F
CORNER PIN
H. MID. PIN
H. CENT. PIN
DFY. PHASE
DFY. T&B
DFX. SIDE
DFX. CENTER
DFX. PHASE
IC120 +2.5V REG
ASPECT SW Q603, Q604
IC114(2/2) V. DRIVE GEN
TP110 V. DRIVE
IC114(1/2) H. PIN WIDTH GEN
TP109 H. PIN/W
TP107 H. CONV. CENTER
IC111(1/2) H. CONV CENTER GEN
IC108 H. LIN H. CONVER SIDE MOD
TP116 NTC
MULTI-PLIER
TP113 H. CONV. SIDE
IC203 H. LIN GEN
MULTI-PLIER
MULTI-PLIER
IC119(1/2) H. LIN. GEN
TP111 H. LIN
H. SAW+
H. BAL, H. CENT
V. BLK.B
V. BLK.T
IC103 V. BLK. GEN
V. DRIVE
LPF
LPF
IC106 V. BLK. GEN
TP117 V. BLK.P
12V
IC101(1/2) V.S.P GEN
IC113(1/2) V.S.P GEN
TP105 V.S.P
H. PARA−
HSQ
IC113(2/2) H BLK PHASE GEN
TP114 H. BLK.P. PH
IC101(2/2) BUFFER
H. BLK. PH
LPF
LPF
DFY. PHASE
DFY. T&B
V. PARA+
IC111(2/2) D.F.Y. GEN
TP112 D.F.Y
V. PARA−
IC301 DFX MOD
DFX. PHASE
H. SAW+
DFX. SIDE
DFX. CENTE
MULTI-PLIER
MULTI-PLIER
IC119(2/2) D.F.X GEN
TP115 D.F.X
H. PARA−
H. PARA. CLAMP Q601, Q602
CN101(2/2)
1 H. STAT. C
8 V. DRIVE
7 H. PIN/W
11 H. CONV. C
12 NTC
10 H. CONV. S
9 H. LIN
CN102(2/2)
16 H. BAL
20 H. CENT
9 V. BLK. P1
10 V. S. P
12 H. BLK. P
18 D. F. Y
14 H. SQ
17 V. PARA−
19 D. F. X

3-5. PA Board Descriptions

1. High Voltage Regulator Circuit

The high voltage regulator of this unit uses a DC converter type power supply circuit to reduce the power consumption. The following is an outline of the operations of the high voltage regulator.

The detection voltage which is obtained by resistance-dividing the HV voltage with the high voltage detection resistance HVR inside the FBT is passed through the IC801 (2/2) buffer and input to IC501. IC501 compares the reference voltage inside IC501 and this detection voltage (difference amplification) and performs PWM modulation. Q102 is PWM-modulated and driven by the output of IC501. The voltage supplied to the FBT drive circuit (Q109, C108, C104, and FBT) is controlled by the ON/OFF of Q102. The HV voltage can be adjusted by changing the level of the detection voltage.

Next, when the HV voltage drops, the HV detection voltage also drops. As a result, the PWM output of IC501 works to expand the ON period of the Q102 switching FET.

The voltage switched by Q102 is passed through the combination choke (LOT) and supplied to the converter circuit for driving FBT. As the PWM modulator is synchronized by the HV DRV pulse, the size of the drain current of the FET output from Q109 of the FBT drive circuit depends on the ON period of Q102. Consequently, when the ON period of Q102 increases, the Q109 collector current increases and the C104 potential increases.

When Q109 turns OFF, a flyback pulse is generated by the combined inductance of the LOT and FBT and the resonance of C108 and transmitted to the secondary side of the FBT to generate the HV voltage.

1-2. High Voltage Protector Circuit

HV is detected using the voltage of the HV.PROT winding, the tertiary winding of FBT.

The HV.PROT is connected to the ⊖ input terminal of IC502 (2/2) via the rectification circuit composed of D802, R808, and C801.

When HV increases due to some error, fault, etc., the HV.PROT voltage also increases. When the voltage of the ⊖ input terminal increases above the ⊕ input terminal voltage, the operation reference voltage, the comparator output becomes LOW, and turns OFF IC501 via D502.

Consequently, the drive pulse of the high voltage converter is shut down and the high voltage output circuit is stopped.

1-3. High Voltage Current Protector, ABL Circuit

The high voltage current protector holds down the high voltage regulator when the current Ik flowing through the CRT exceeds the setting value in errors and malfunctions.

The voltage obtained by resistance-dividing at R514 and R515 the difference between Vz (D901 Zener voltage) and the VABL1 obtained by voltage-converting the current flowing through the FBT secondary winding at R6 is supplied to the ⊕ terminal of the comparator, and the operating point voltage Vref is supplied to the ⊖ pin of the comparator.

The ⊕ terminal voltage of the comparator is normally higher than the ⊖ terminal voltage. When the CRT beam current increases, the VABL1 voltage decreases and consequently the ⊕ terminal voltage of the comparator also decreases. Therefore when the beam current, which makes the ⊕ terminal voltage drop below the ⊖ terminal voltage, flows through the CRT, the protector operates and shuts down the PWM control IC DRIVE, and holds down the high voltage regulator.

The ABL circuit serves to protect the CRT by preventing the beam current from exceeding the reference value.

The beam current flowing through the CRT flows to R3. VABL2 is obtained by converting this current to voltage. VABL2 is supplied to the ⊕ terminal of IC901, and when it drops below the reference voltage of the ⊖ terminal, ABL operates and makes the luminance consistent. Consequently, even if BRIGHT and CONTRAST are rotated, DRIVE is increased or the terminating resistor is removed so that the CRT beam current does not change.

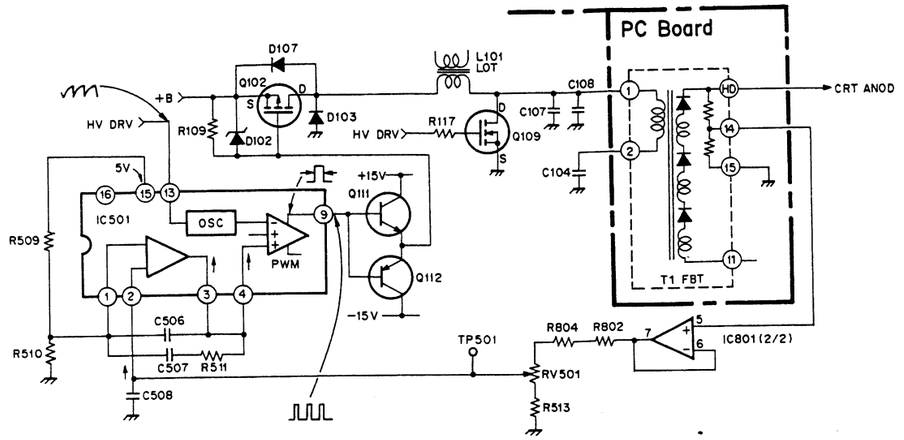
1-4. Screen (G2) Voltage Regulator

The drain pulse voltage of Q109 is rectified by the diode D201. The regulator is composed of Q201, Q202, and IC401 (2/2). The G2 voltage is supplied to be optimum the CRT cathode with the G2 CTRL voltage from the BK board.

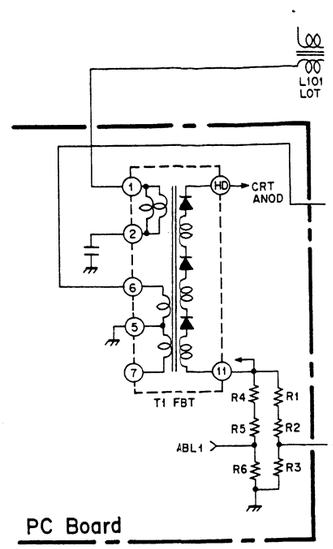
1-5. DF Drive Circuit

The DFX and DFY signal from the D board is amplified by Q301 to Q305 and T301 (DFX), and DFY is amplified by Q321 and Q322 to modulate the G4 and GM voltage of the CRT.

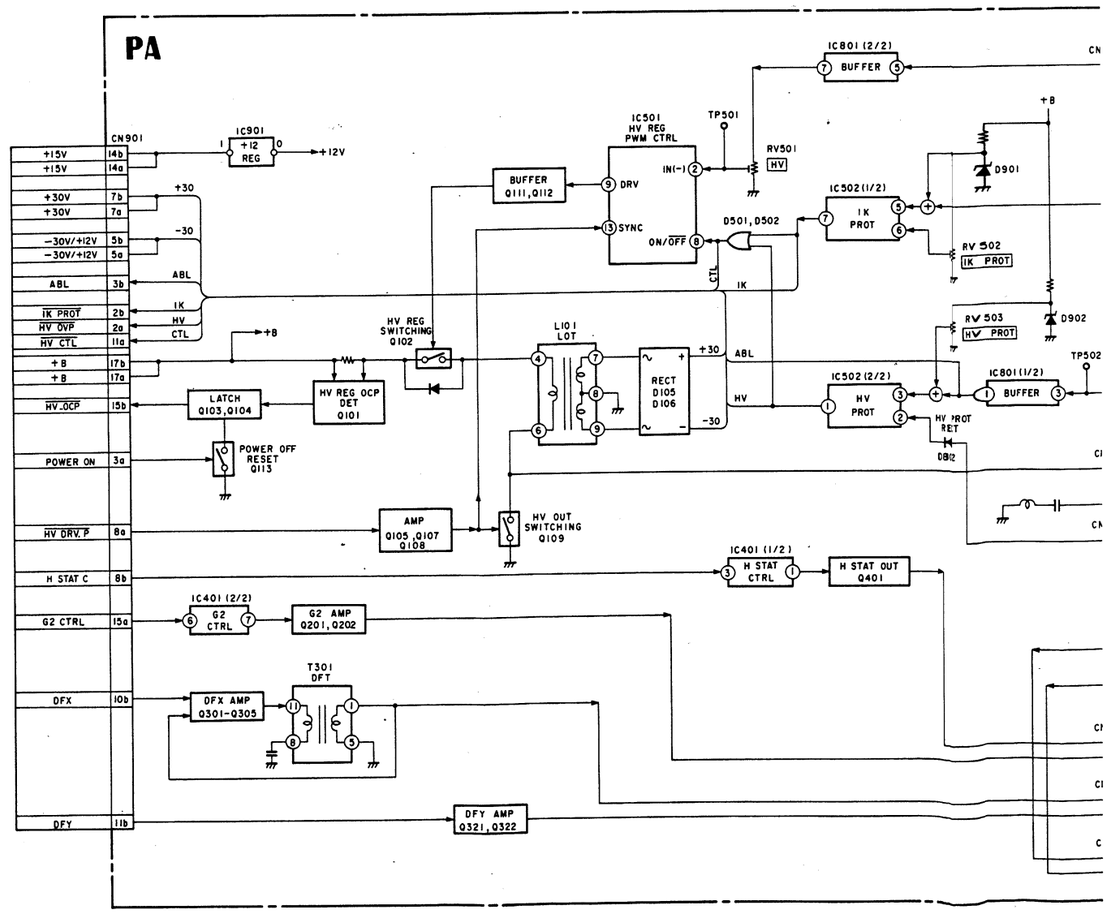
• High Voltage Regulator Circuit

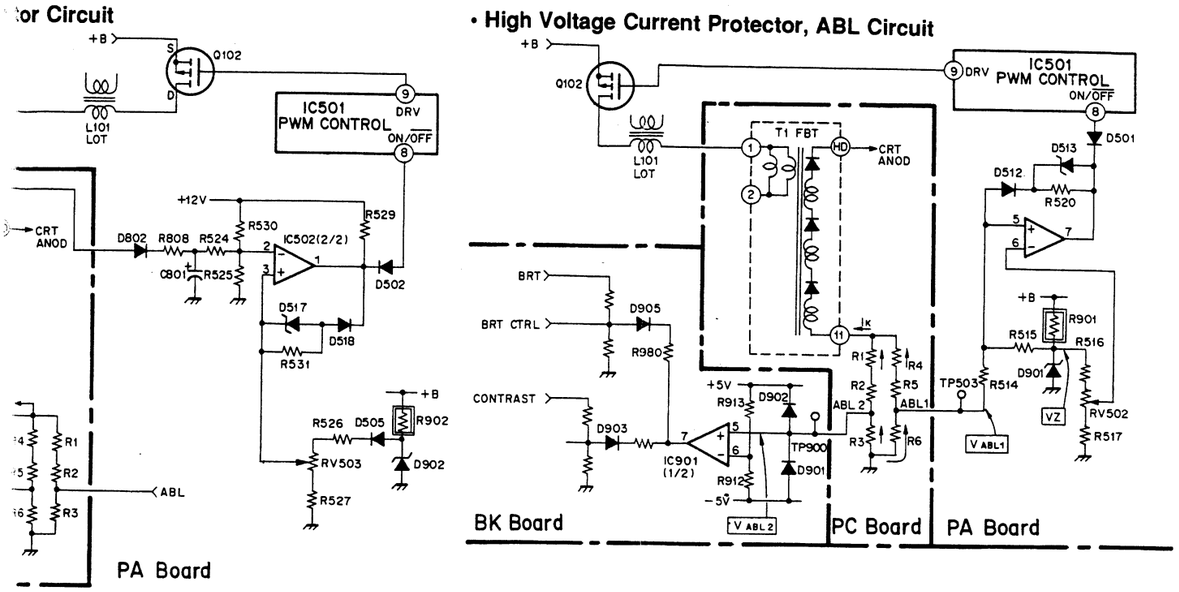


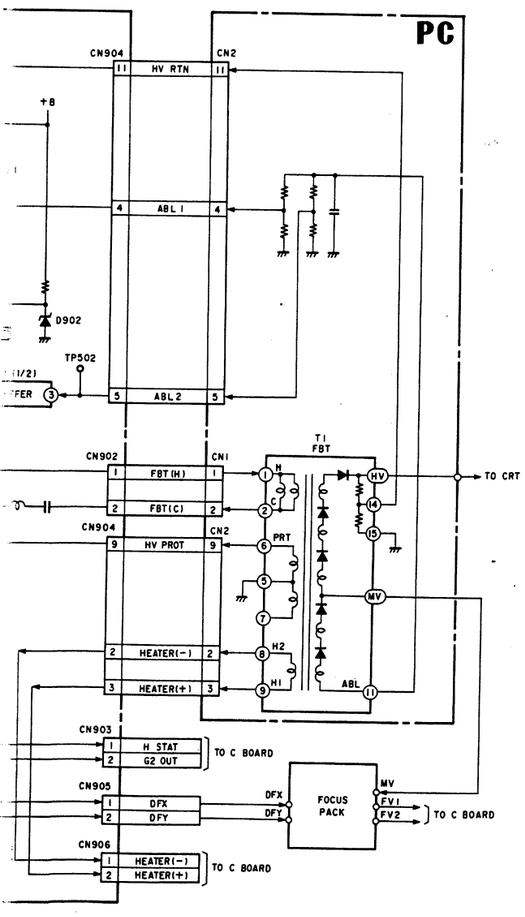
• High Voltage Protector Circuit



• PA, PC Board Block Diagrams







3-6. Power Supply Circuit Descriptions (G Board, GA Board, GB Board, and GC Board)

1. RCC Switching Regulator (IC4 and T5)

The blocking oscillator is composed of IC4 and T5 (SRT). Immediately after the Main Power switch at the rear is turned on, first the regulator starts up because IC4 operates and generates the 5V voltage for DIGITAL, +12V voltage, and –12V voltage at the secondary side of T5. At the same time, the 18V voltage (For PFC CTRL IC) and 15V voltage (For half bridge switching regulator) are generated at the primary side of T5.

2. PFC Switiching Regulator

The power factor improvement circuit is composed of IC1, Q5, D10, T3, C28 of the G board, the GC board, and related parts. The power factor improvement circuit (referred to as PFC hereafter) of this power supply adopts the boost PWM control method. As it basically operates as the boost switching regulator in continuous current operation, the output voltage Vpfc is always higher than the peak value of the input power supply voltage. As the input voltage is a sine wave, in addition to voltage control, it controls current in proportion to the input voltage.

IC1 not only keeps the Vpfc voltage constant but also PWM-controls Q5 so that the current flowing to T3, that is the main power supply current is similar to the input voltage waveform. As a result, the power factor is improved because the input current and input voltage waveforms are similar.

The GC board is composed of IC1, Q1, and the output voltage detection resistor. It creates a control signal which varies Vpfc in proportion to the input power supply voltage, and supplies them to IC1. This reduces the loss of Q5 and T3.

3. PFC OVP Circuit

The comparator of IC2 (1/2) is an OVP circuit for protection when the V_{pfc} rises abnormally in the malfunction of the feedback system of the PFC CTRL.

Normally, the output of this comparator is "LOW". It becomes "HIGH" when OVP operates. Consequently, Pin ⑩ of IC1 (ENABLE pin) becomes "LOW" via the latch of Q3 and Q4 to stop the PFC switching. At the same time, D21 (red LED) is lit to inform of the error.

4. Half Bridge Switching Regulator (Q6, Q7, T4, GA Board IC101, IC102)

The voltage obtained by dividing the PFC output voltage by two at C29 and C30 is used as the power supply of T5. The +B feedback voltage from IC101 of the G Board is given to IC102 of the GA board which is passed through isolator PC1. The PWM pulse generated at IC102 of the GA board is passed through the DRIVER IC (IC101) to switch between Q6 and Q7 alternately. As the result, +6V, –6V, +15V, –15V, and +B voltages are generated at the secondary side of T4.

5. Power Supply Control

In the standby state, only the RCC switching regulator and PFC switching regulator operate. In this state, when the $\overline{\text{POWER ON}}$ signal from the sub CPU (IC7001) of the E board becomes "LOW", Q104 goes OFF, the LED inside the isolator PC2 lights up, and the photo-resistor turns ON. As Q12 is ON the rush current protection resistor R2 is short-circuited by RY2, Pin ⑤ of PC2 becomes "LOW", Q101 of the GA board goes OFF, IC101 oscillates, and H.B operates.

6. PFC Failure Detection Circuit

The circuit which monitors if the PFC circuit is operating normally is composed of IC106, D113, D114, and other circuit parts.

The pulse generated at the secondary side of T3 (PFCT) is rectified by D113 and D114, input to the ⊕ terminal of the comparator (IC106 (2/2)), and compared with the reference voltage. When PFC is not operating, the comparator output ($\overline{\text{PFC FAILURE}}$) becomes "LOW" because the comparator ⊕ terminal voltage cannot reach the reference voltage. Normally, D112 (green LED) is operated to indicate that operations are carried out normally.

7. OVP (Over voltage protection), OCP (Over current protection) Circuits (GB)

• OVP (Over voltage protection) circuit

The voltage of each power supply line is compared with the reference voltage by the comparator of the GB board to detect over voltage.

The output of each comparator is normally "LOW" and becomes "HIGH" when errors occur.

• OCP (Over current protection) circuit

Over current is detected by supplying the voltage generated when the current detection resistor is inserted in each power supply line and current is passed through this resistor to the comparator of the GB board.

The output of each comparator is normally "LOW" and becomes "HIGH" when errors occur.

8. SHUT DOWN Circuit (Q301 to Q312 of GB Board)

When the $\overline{\text{PFC FAILURE}}$ signal becomes "LOW" or when the OVP or OCP signal works so that the SHUT DOWN signal becomes HIGH, Q105 of the G board turns ON and the operations of the half bridge switching regulator stop. In this circuit, the OVP and OCP signals are latched and input to the encoder.

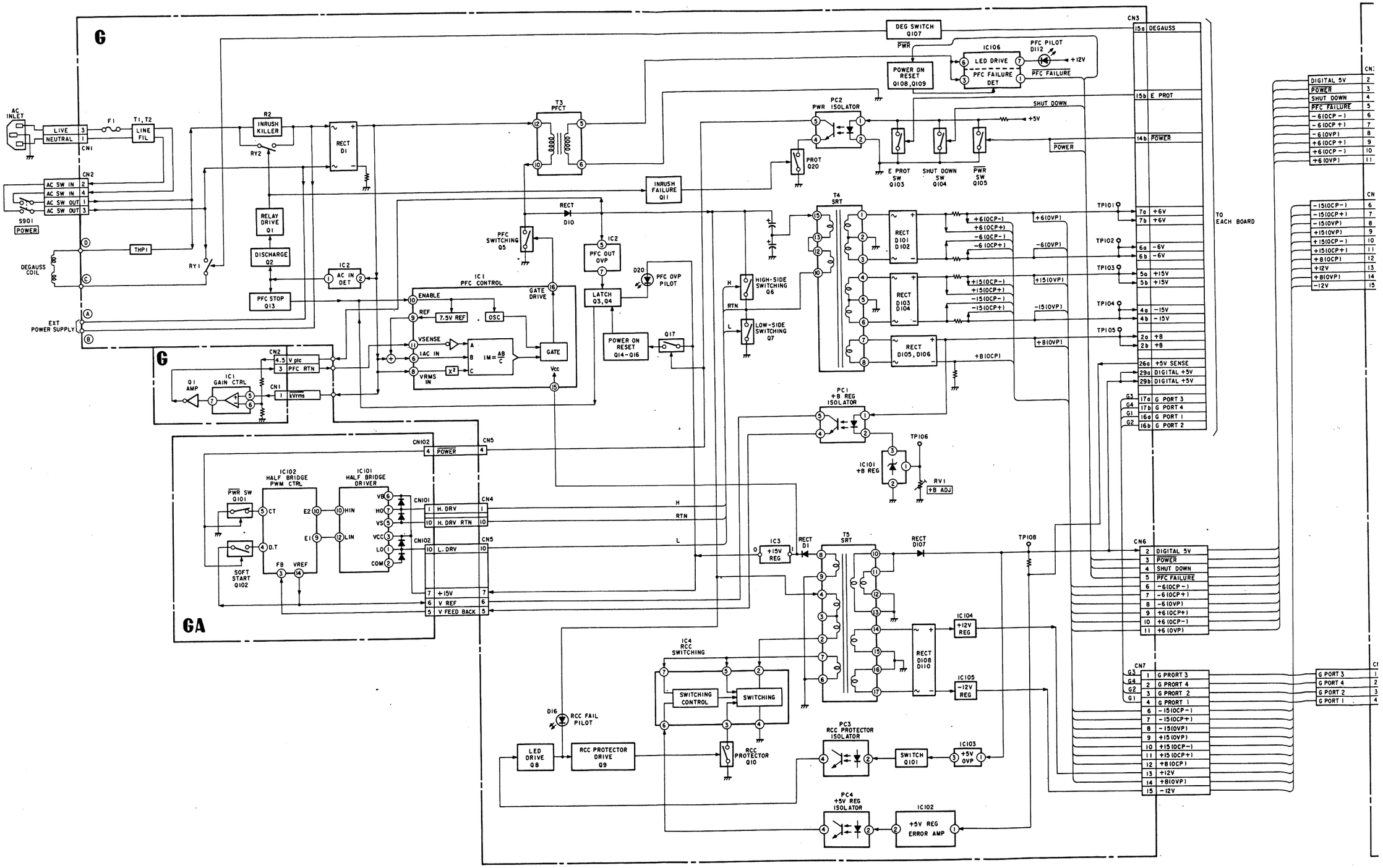
9. Encoder (GB Board)

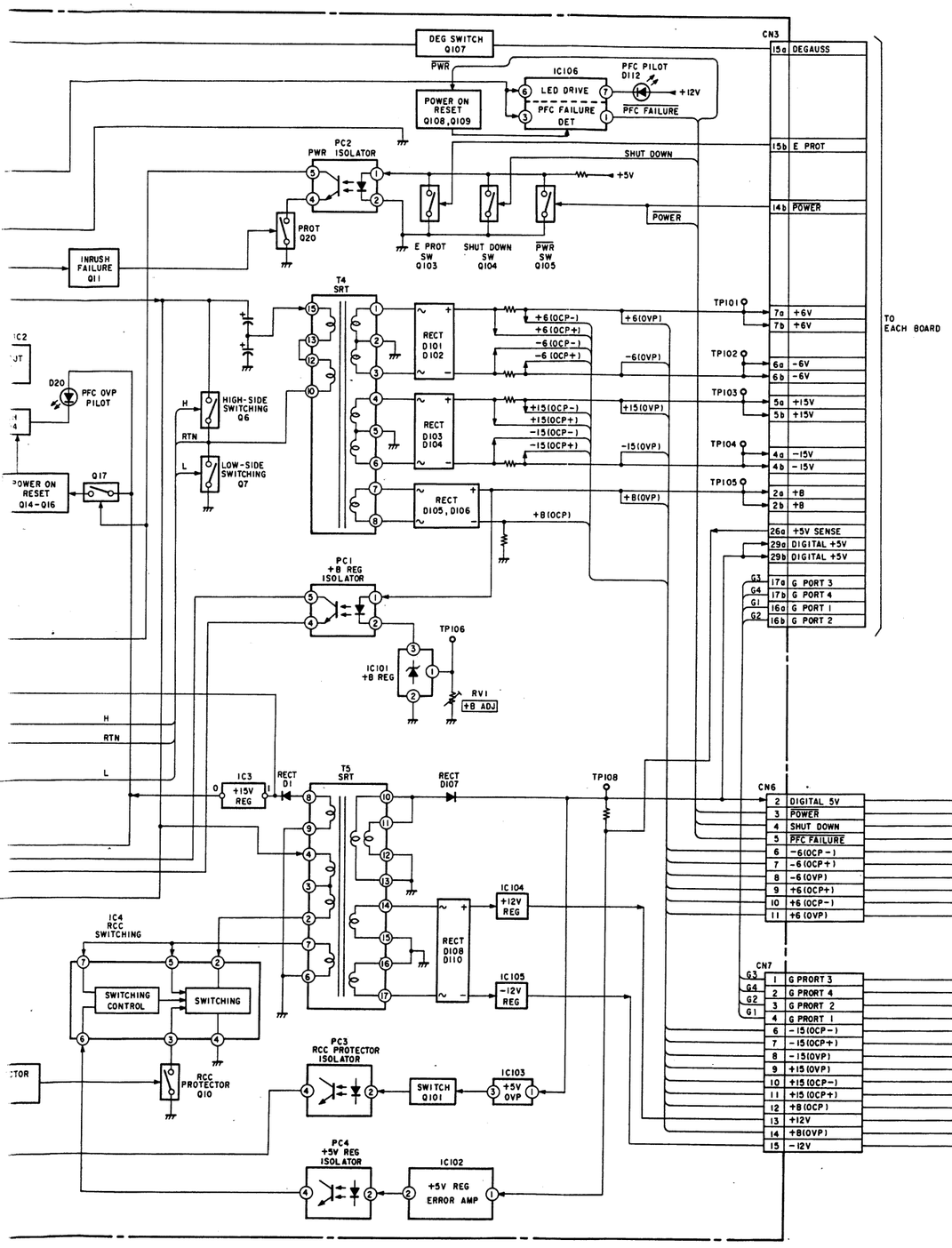
A total of 11 signals (5 OVP signals, 5 OCP signals, and one $\overline{\text{PFC FAILURE}}$ signal) are encoded into 4-bit signals, to inform the sub CPU (IC902) of the E board of errors.

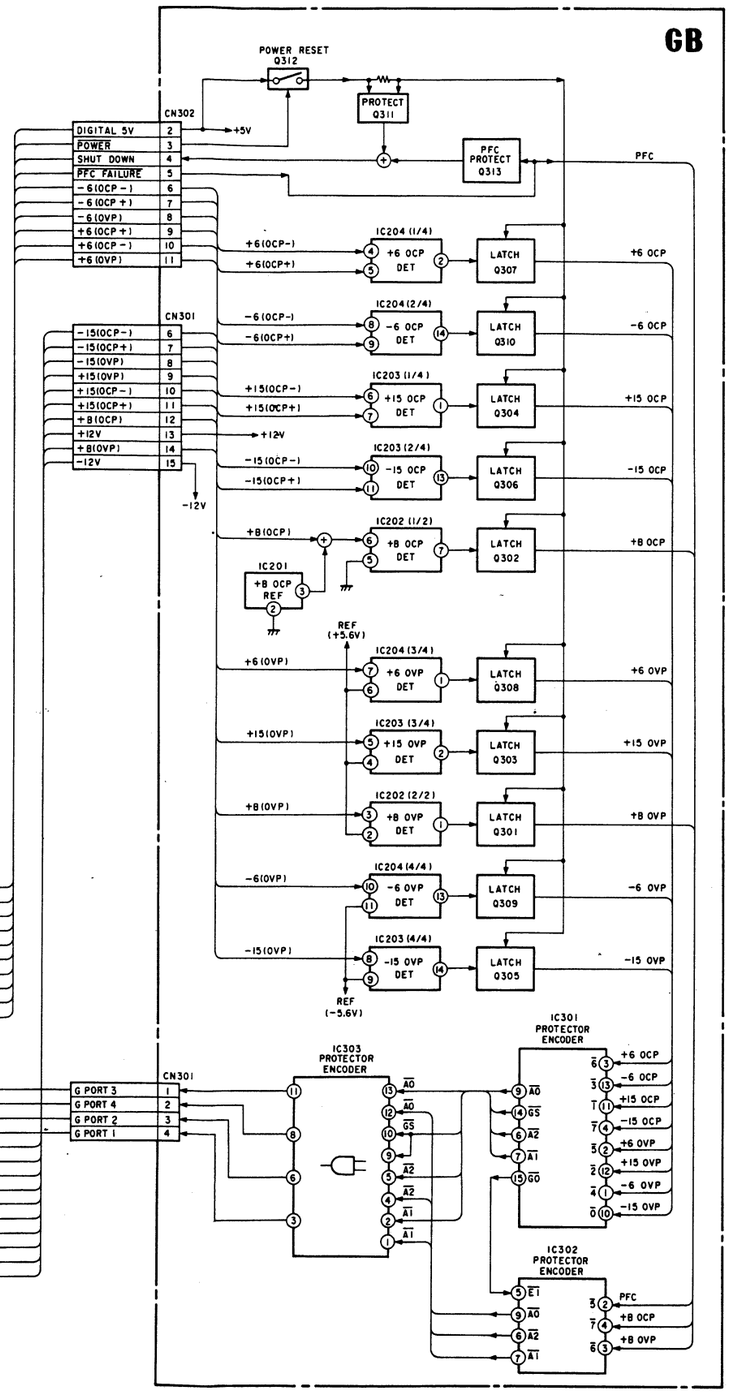
10. CRT Protector

If the horizontal/vertical deflection circuits stop due to some reason, the E PROT signal from the E board becomes "HIGH". As a result, Q103 of the G board turns ON and the operations of the half bridge switching regulator stop.

G, GA, GB and GC Board Block Diagrams




DEG SWITCH Q107
PWR
IC106
LED DRIVE
PFC FAILURE DET
PFC PILOT D112
+12V
PFC FAILURE
POWER ON RESET Q108, Q109
PC2 PWR ISOLATOR
SHUT DOWN
+5V
POWER
PROT Q20
E PROT SW Q103
SHUT DOWN SW Q104
PWR SW Q105
INRUSH FAILURE Q11
T4 SRT
RECT D101 D102
RECT D103 D104
RECT D105, D106
+6(OCP-)
+6(OCP+)
-6(OCP-)
-6(OCP+)
+6(OVP)
-6(OVP)
+15(OCP-)
+15(OCP+)
-15(OCP-)
-15(OCP+)
+15(OVP)
-15(OVP)
+8(OCP)
+8(OVP)
TP101
TP102
TP103
TP104
TP105
D20
PFC OVP PILOT
Q17
POWER ON RESET Q14-Q16
H
RTN
L
HIGH-SIDE SWITCHING Q6
LOW-SIDE SWITCHING Q7
PC1 +B REG ISOLATOR
TP106
IC101 +B REG
RV1 +B ADJ
IC3 +15V REG
RECT D1
T5 SRT
RECT D107
TP108
IC104 +12V REG
IC105 -12V REG
RECT D108 D110
IC4 RCC SWITCHING
SWITCHING CONTROL
SWITCHING
RCC PROTECTOR Q10
PC3 RCC PROTECTOR ISOLATOR
SWITCH Q101
IC103 +5V OVP
PC4 +5V REG ISOLATOR
IC102 +5V REG ERROR AMP
CN3
15a DEGAUSS
15b E PROT
14b POWER
7a +6V
7b +6V
6a -6V
6b -6V
5a +15V
5b +15V
4a -15V
4b -15V
2a +8
2b +8
26a +5V SENSE
29a DIGITAL +5V
29b DIGITAL +5V
17a G PORT 3
17b G PORT 4
16a G PORT 1
16b G PORT 2
CN6
2 DIGITAL 5V
3 POWER
4 SHUT DOWN
5 PFC FAILURE
6 -6(OCP-)
7 -6(OCP+)
8 -6(OVP)
9 +6(OCP+)
10 +6(OCP-)
11 +6(OVP)
CN7
G3 1 G PRORT 3
G4 2 G PRORT 4
G2 3 G PRORT 2
G1 4 G PRORT 1
6 -15(OCP-)
7 -15(OCP+)
8 -15(OVP)
9 +15(OVP)
10 +15(OCP-)
11 +15(OCP+)
12 +8(OCP)
13 +12V
14 +8(OVP)
15 -12V
TO EACH BOARD
CN301
G PORT 3 1
G PORT 4 2
G PORT 2 3
G PORT 1 4


GB
POWER RESET Q312
PROTECT Q311
PFC PROTECT Q313
PFC
CN302
DIGITAL 5V 2
POWER 3
SHUT DOWN 4
PFC FAILURE 5
-6(OCP-) 6
-6(OCP+) 7
-6(OVP) 8
+6(OCP+) 9
+6(OCP-) 10
+6(OVP) 11
CN301
-15(OCP-) 6
-15(OCP+) 7
-15(OVP) 8
+15(OVP) 9
+15(OCP-) 10
+15(OCP+) 11
+8(OCP) 12
+12V 13
+8(OVP) 14
-12V 15
IC204 (1/4)
+6 OCP DET
LATCH Q307
+6 OCP
IC204 (2/4)
-6 OCP DET
LATCH Q310
-6 OCP
IC203 (1/4)
+15 OCP DET
LATCH Q304
+15 OCP
IC203 (2/4)
-15 OCP DET
LATCH Q306
-15 OCP
IC202 (1/2)
+8 OCP DET
LATCH Q302
+8 OCP
IC201
+8 OCP REF
REF (+5.6V)
IC204 (3/4)
+6 OVP DET
LATCH Q308
+6 OVP
IC203 (3/4)
+15 OVP DET
LATCH Q303
+15 OVP
IC202 (2/2)
+8 OVP DET
LATCH Q301
+8 OVP
IC204 (4/4)
-6 OVP DET
LATCH Q309
-6 OVP
IC203 (4/4)
-15 OVP DET
LATCH Q305
-15 OVP
REF (-5.6V)
IC303 PROTECTOR ENCODER
IC301 PROTECTOR ENCODER
+6 OCP
-6 OCP
+15 OCP
-15 OCP
+6 OVP
+15 OVP
-6 OVP
-15 OVP
IC302 PROTECTOR ENCODER
PFC
+8 OCP
+8 OVP

3-7. Control Unit Descriptions (BVM-14E5E/14E5U/14F5E/14F5U, BKM-10R)

• HC Board

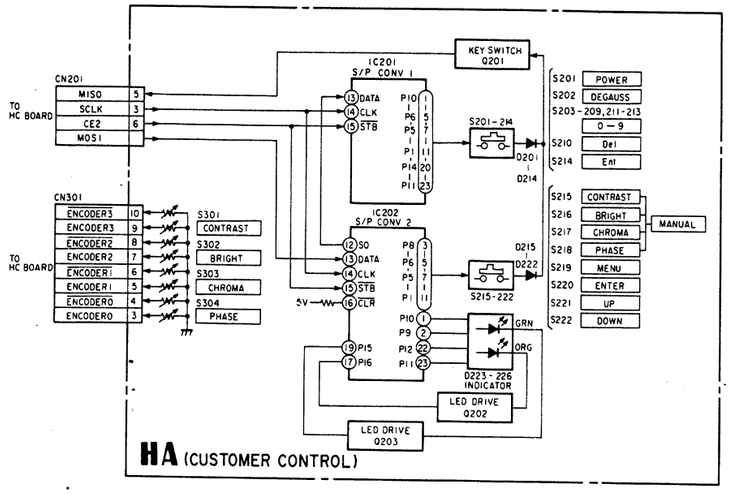
1. Key Scan, LED Lighting

The sub CPU (IC1) transmits the LED lighting signal and key scanning output signal to the HA board and HB board using the serial signals (MISO, MOSI, SCLK), and receives the key scanning input signals.

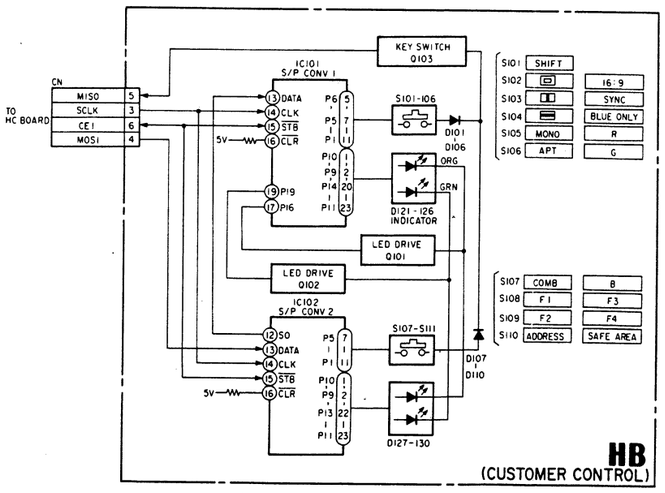
2. Memory Card

The sub CPU (IC1) reads/writes the data (adjustment data, etc.) from/on the memory card connected to CN1.

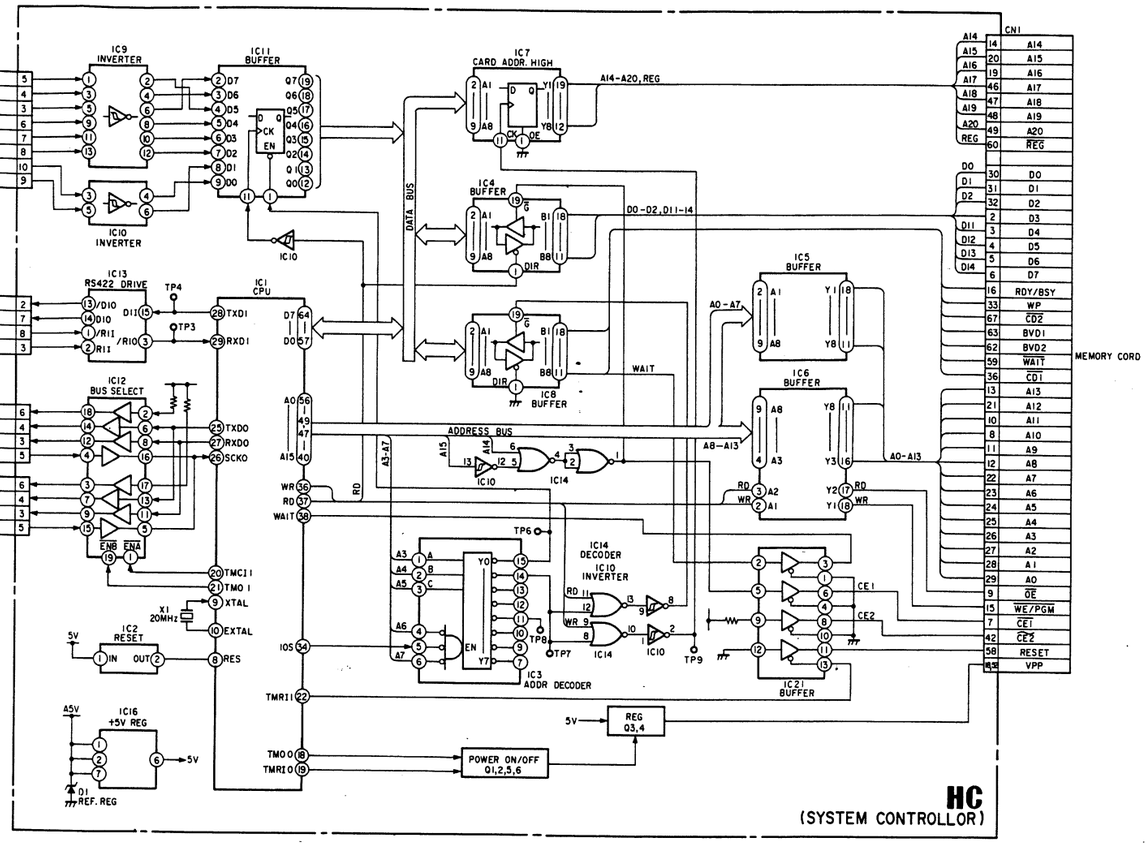
HA Board block Diagram



HB Board block Diagram



HC Board block Diagram



SECTION 4
ELECTRICAL ADJUSTMENTS

4-1. Basic Adjustments in Replacement of CRT

Perform the following adjustments when replacing the CRT.

[Required Tools and Measuring Instruments]

1. Signal generator
2. Oscilloscope
3. Color analyzer (MINOLUTA CA-100)
4. Following specified cables for connecting RS-232C pin of CA-100 and OPTION pin of monitor.

BVM Option connector side — Mini DIN 8pin

H SYNC	1
V SYNC	2
RTS	3
GND	4
NC	5
TXD	6
+5V	7
RXD	8

CA-100 RS-232C connector side — D Sub 25pin

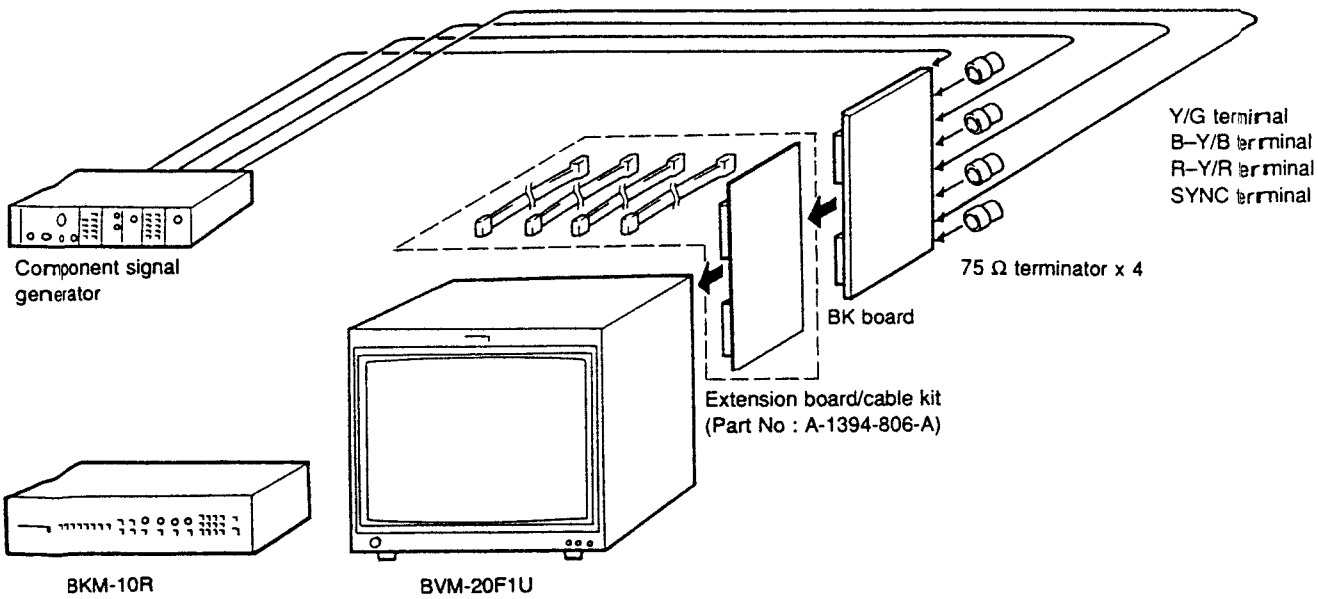
1	FG
2	TXD
3	RXD
4	RTS
5	CTS
6	NC
7	GND
8	NC
9 to 19	NC
20	DTR
21 to 25	NC

[Setting of INPUT CONFIGURATION Menu]

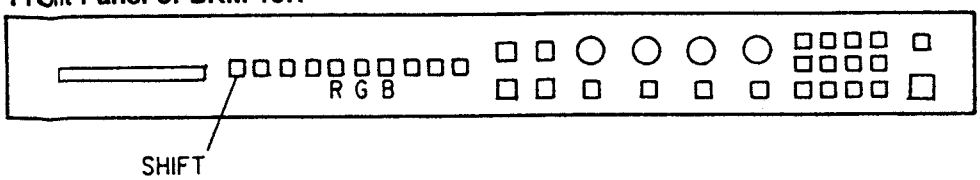
Unless specified otherwise, set the INPUT CONFIGURATION menu of the SETUP menu as follows.

FORMAT ..... COMPONENT YUV SMPTE/EBU N-10
SLOT NO 6
SYNC MODE ..... INT
SCREEN MODE ..... 4 : 3 NORM
CONTROL ..... CH SET
COLOR TEMP ..... STD
H PHASE 00

• CONNECT



Front Panel of BKM-10R



[Focus Adjustment]

1. Input the dot signal or cross hatch signal.
2. Set the following DF adjustment data to the center value (128).
   DF SIDE
   DF CORNER
   DF SIDE PHASE
   DF T&B PHASE
   DF T&B

   Note: The above adjustment menu is under the E BOARD menu of the MAINTENANCE menu.
3. Adjust the center of the screen to the optimum focus using the FOCUS 1 VR (vertical focus adjustment) and FOCUS 2 VR (horizontal focus adjustment).
4. Input the cross hatch signal.
5. Adjust the following DF adjustment data so that the cross hatch lines at the ends of the screen become the same thickness as those at the center of the screen.
   DF SIDE
   DF CORNER
   DF SIDE PHASE
   DF T&B PHASE
   DF T&B
6. Adjust the DF data in the same way in the following modes.
   4 : 3 UNDERSCAN mode
   16 : 9 NORMAL SCAN mode
   16 : 9 UNDER SCAN mode

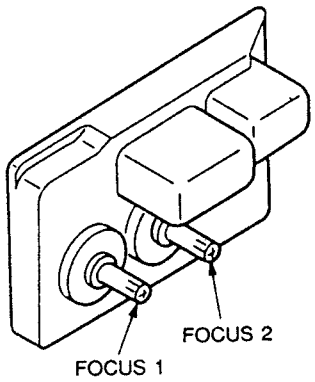


Fig. 1-1.

[Landing Adjustment]

1. Input the white signal.
2. Press the BRIGHTNESS VR and CONTRAST VR buttons to the preset condition. (The LEDs (green) on the buttons go off.)
3. Face the CRT screen towards the east (west) and press the DEGAUSS button.
4. Set the Purity knob to the mechanical center.

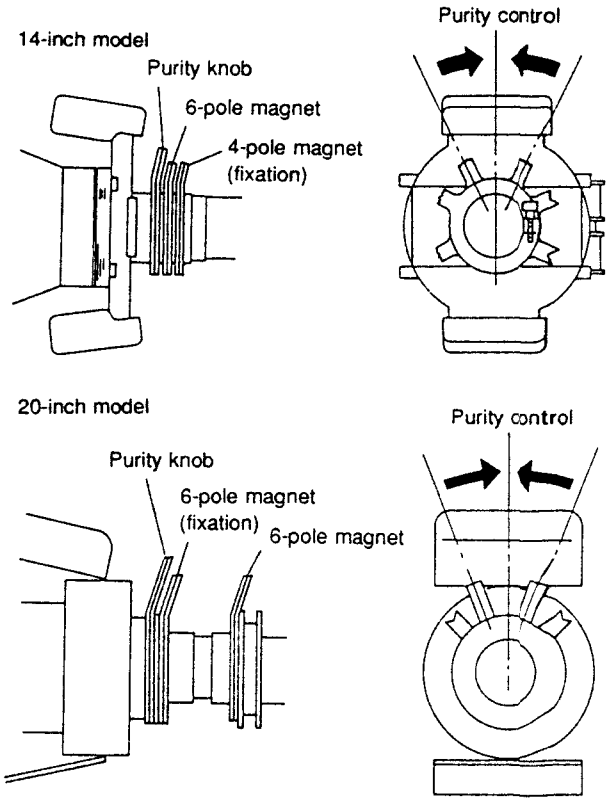


Fig. 1-2.

5. Push the DY (deflection york) to the front as much as possible.
6. Secure the neck assembly in the position shown in Fig. 1-3.

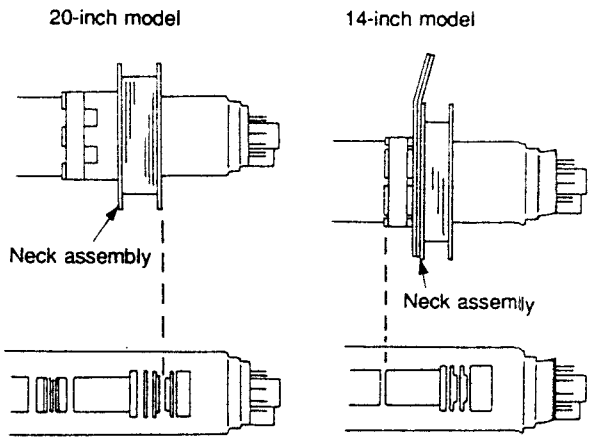


Fig. 1-3.

7. Set the color of the screen to green only (Turn on the SHIFT button (LED lights up in orange), and turn on the R button or B button (LED lights up).)
8. Rotate the Purity knob, and adjust so that the green comes to the center of the screen as shown in Fig. 1-4.

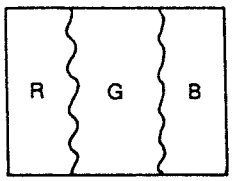


Fig. 1-4.

9. Move DY backwards, and adjust so that the color of the whole screen becomes green only.
10. Adjust the tilt of DYat cross hatch signal and tighten the screw of DY.
11. Secure the deflection york with four (20 Inch), three (14 Inch) spacers.

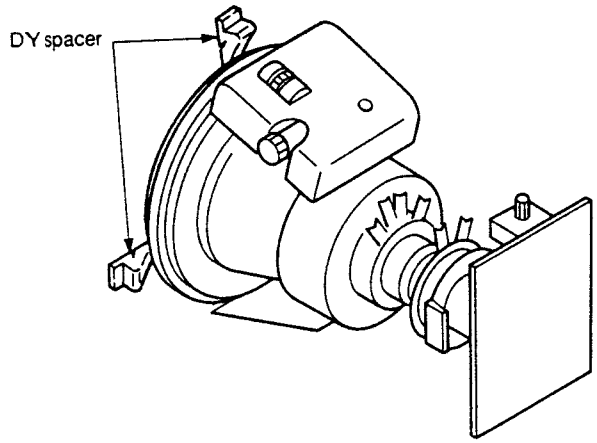


Fig. 1-5.

• Final check

After adjusting, check that there is no mislanding when the unit is faced in all four directions, north, south, east, west.

[H Blanking Adjustment]

• Preparations

1. Connect the signal generator and input the monoscope signal.
2. Increase BRIGHT until the blanking can be seen.

Note: The following adjustment menus are under the E BOARD menu of the MAINTENANCE menu.

H BLK WIDTH
H BLK PHASE
H CENTER
H PHASE
H SIZE

• 4 : 3 NORMAL SCAN Mode H Blanking Adjustment

1. Set the SCREEN MODE to 4 : 3 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Decrease the H SIZE so that the whole left and right edges of the luster can be seen.
3. Maximize (255) the H BLK WIDTH data and H BLK PHASE data.
4. Adjust the H CENTER data so that the luster comes to the center of the screen (so that A ≒ B).
   Write down the H CENTER data at this time.
5. Adjust the H PHASE data so that the monoscope screen comes to the center of the luster (so that C ≒ D).
   Write down the H PHASE data.

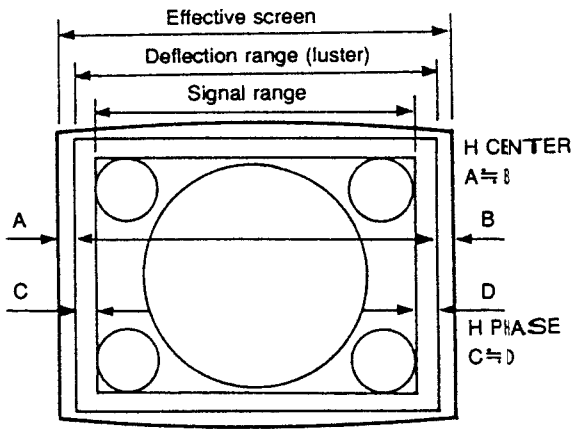


Fig. 1-6.

6. Adjust the H BLK PHASE data so that the outer right edge of the monoscope signal range is slightly chipped, and then adjust the data until the whole edge can be seen.
7. Set the H BLK PHASE data to +20.
8. Adjust the H BLK WIDTH data so that the outer left edge of the monoscope signal range is slightly chipped, and then adjust the data until the whole edge can be seen.
9. Set the H BLK WIDTH data to +20.
10. Set the original H SIZE.

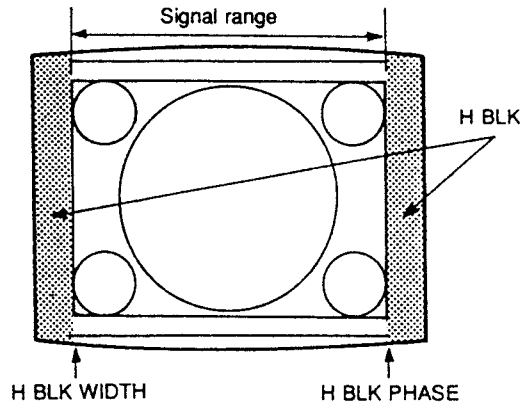


Fig. 1-7.

• 4 : 3 UNDER SCAN Mode H Blanking Adjustment
1. Set the SCREEN MODE to 4 : 3 UNDER at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the H CENTER data to the same value as the 4 : 3 NORMAL SCAN mode.
3. Set the H PHASE data to the same value as the 4 : 3 NORMAL SCAN mode.
4. Adjust the H BLK PHASE data until the blanking at the right side of the screen just disappears outside the effective screen.
5. Set the H BLK PHASE data to +20.
6. Adjust the H BLK WIDTH data until the blanking at the left side of the screen just disappears outside the effective screen.
7. Set the H BLK WIDTH data to +20.

• 16 : 9 NORMAL SCAN Mode H Blanking Adjustment
1. Set the SCREEN MODE to 16 : 9 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the H CENTER data to the same value as the 4 : 3 NORMAL SCAN mode.
3. Set the H PHASE data to the same value as the 4 : 3 NORMAL SCAN mode.
4. Adjust the H BLK PHASE data until the blanking at the right side of the screen just disappears outside the effective screen.
5. Set the H BLK PHASE data to +20.
6. Adjust the H BLK WIDTH data until the blanking at the left side of the screen just disappears outside the effective screen.
7. Set the H BLK WIDTH data to +20.

• 16 : 9 UNDER SCAN Mode H Blanking Adjustment
1. Set the SCREEN MODE to 16 : 9 UNDER at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the H CENTER data to the same value as the 4 : 3 NORMAL SCAN mode.
3. Set the H PHASE data to the same value as the 4 : 3 NORMAL SCAN mode.
4. Adjust the H BLK PHASE data until the blanking at the right side of the screen just disappears outside the effective screen.
5. Set the H BLK PHASE data to +20.
6. Adjust the H BLK WIDTH data until the blanking at the left side of the screen just disappears outside the effective screen.
7. Set the H BLK WIDTH data to +20.

[V Blanking Adjustment]

• Preparations

1. Connect the signal generator and input the monoscope signal.
2. Set the H DELAY mode and increase BRIGHT.

Note: The following adjustment menus are under the E BOARD menu of the MAINTENANCE menu.

V BLK TOP
V BLK BOT
V ITS BLK

• 4 : 3 NORMAL SCAN Mode V Blanking Adjustment

1. Set the SCREEN MODE to 4 : 3 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Adjust the V BLK TOP data until the blanking at the top of the screen just disappears outside the effective screen.
3. Set the V BLK TOP data to +30.
4. Adjust the V BLK BOTTOM data until the blanking at the bottom of the screen just disappears outside the effective screen.
5. Set the V BLK BOTTOM data to –30.
6. Set the V BLK P POS data to 255.

• 4 : 3 UNDER SCAN Mode V Blanking Adjustment

1. Set the SCREEN MODE to 4 : 3 UNDER at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the V BLK TOP data to the same value as the 4 : 3 NORMAL SCAN mode.
3. Set the V BLK BOTTOM data to the same value as the 4 : 3 NORMAL SCAN mode.
4. Adjust the V BLK POS data to 255.

• 16 : 9 NORMAL SCAN Mode V Blanking Adjustment

1. Set the SCREEN MODE to 16 : 9 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the V BLK TOP data to 255.
3. Set the V BLK BOTTOM data to 00.
4. Set the V BLK P POS data to 255.

• 16 : 9 UNDER SCAN Mode V Blanking Adjustment

1. Set the SCREEN MODE to 16 : 9 UNDER at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the V BLK TOP data to 255.
3. Set the V BLK BOTTOM data to 00.
4. Set the V BLK P POS data to 255.

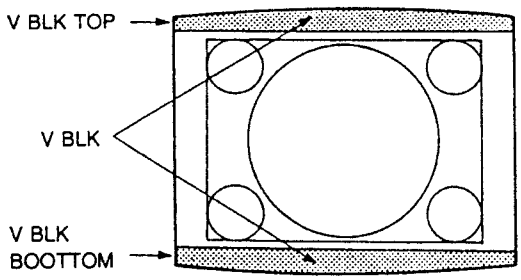


Fig. 1-8.

[Linearity Adjustment]

Note: The following adjustment menus are under the E BOARD menu of the MAINTENANCE menu.

H PHASE
V CENTER
H LIN BAL
H LIN
V LIN BAL
V LIN AMP
H KEY BAL
H KEY
H PIN BAL
H PIN
H CENTER PIN
H MID PIN
H CORNER PIN

1. Input the cross hatch signal.
2. Check that the image is not tilting, and there is no top and bottom PIN distortion nor horizontal trapezoid distortion.
   Tilt : Adjust the DY tilt.
   Top/bottom Pin distortion : Adjust the top and bottom DY head swing
   Horizontal trapezoid distortion : Adjust using the DY TLV VR (take note that the convergence may be disrupted.)
3. Input the monoscope signal.
4. Set the SCREEN MODE to 4 : 3 NORM at the INPUT CONFIGURATION menu.
5. Adjust the H PHASE data, and adjust the horizontal center of the image.
6. Adjust the vertical center of the image.
7. Input the cross hatch signal.
8. Adjust the V SIZE, V LIN BAL, and V LIN data as shown in Fig. 1-9.
9. Adjust the H SIZE, H LIN BAL, and H LIN data as shown in Fig. 1-10.

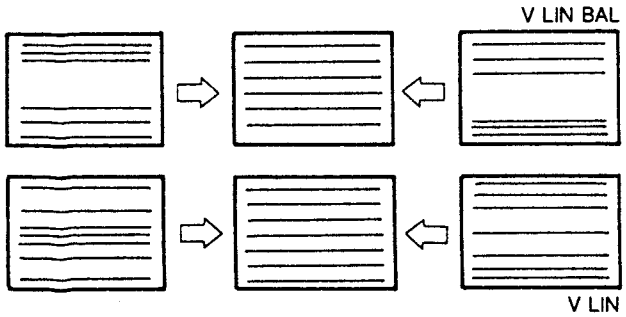


Fig. 1-9.

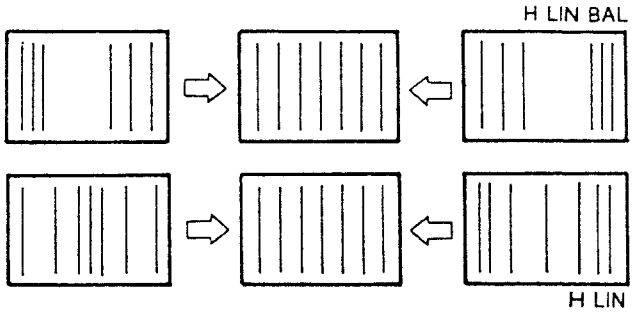


Fig. 1-10.

10. Adjust the H KEY BAL, H KEY, H PIN BAL, and H PIN data so that there is no side trapezoid distortion and PIN distortion as shown in Fig. 1-11.
11. Adjust the H CENTER PIN, H MID PIN, and H CORNER PIN data as shown in Fig. 1-12.
12. Repeat the above adjustment to optimize the horizontal and vertical linearity.
13. Adjust in the same way in the following modes.
    4 : 3 UNDER SCAN mode
    16 : 0 NORMAL SCAN mode
    16 : 9 UNDER SCAN mode

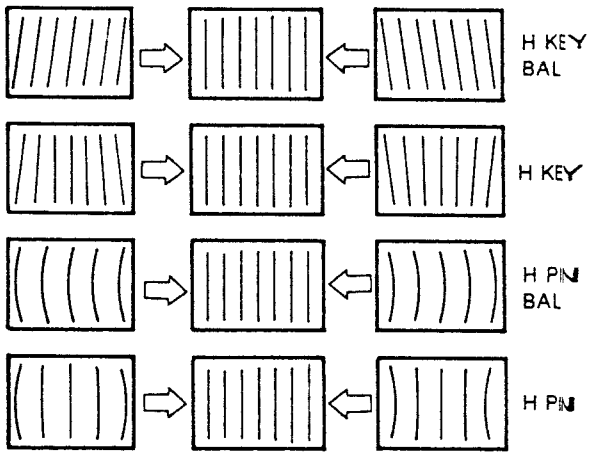


Fig. 1-11.

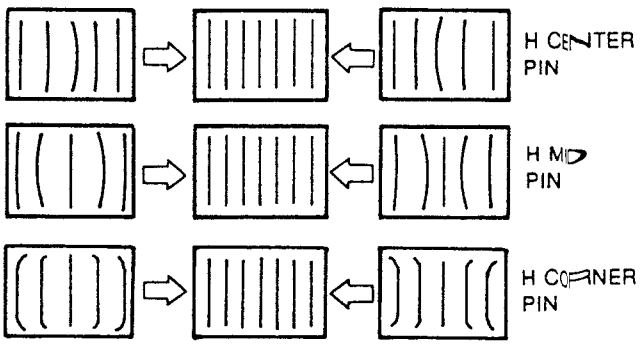


Fig. 1-12.

[Convergence Adjustment]

• Preparation

1. Set the SCREEN MODE to 4:3 NORM at the INPUT CONFIGURATION menu.
2. Input the cross hatch signal.
3. Check that the H STAT data is the center value (128).

Note: The H STAT adjustment menu is under the E BOARD menu of the MAINTENANCE menu.

4. For the 14 inch model, set the 4-pole magnet of the DY to the OFFSET state.
5. For the 20 inch model, set the 6-pole magnet of the DY to the OFFSET state.

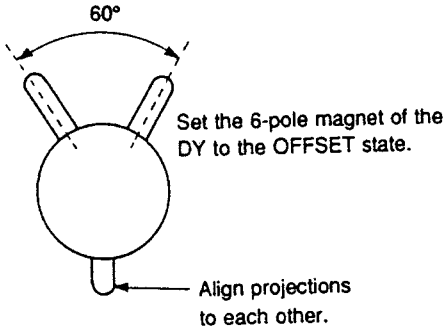


Fig. 1-13.

[Static Convergence Adjustment]

• Horizontal Static Convergence

1. Adjust RV1 (H STAT) of the C board so that the red and green dots coincide in the horizontal direction at the screen center.
2. If the blue dot is out of convergence from the red and green dots:
   • For the 14-inch model:
   Perform HMC (horizontal misconvergence) correction using the 6-pole magnet of the DY (See Fig. 1-2.).
   (The 4-pole magnet of the DY is not used. Set to the OFFSET state.)
   • For the 20-inch model:
   Perform HMC (horizontal misconvergence) correction using the 6-pole magnet of the NTC (See Fig. 1-2.).
   (The 6-pole magnet of the DY is not used. Set to the OFFSET state.)

• Vertical Static Convergence

1. Adjust the V STATIC CONV data so that the red and green dots coincide in the vertical direction at the screen center.

Note: The V STATIC CONV adjustment menu is under the E BOARD menu of the MAINTENANCE menu.

2. If the blue dot is out of convergence from the red and green dots:
   • For the 14-inch model:
   Perform VMC (vertical misconvergence) correction using the 6-pole magnet of the DY (See Fig. 1-2.).
   (The 4-pole magnet of the DY is not used. Set to the OFFSET state.)
   • For the 20-inch model:
   Perform VMC correction using the 6-pole magnet of the NTC (See Fig. 1-2.).
   (The 6-pole magnet of the DY is not used. Set to the OFFSET state.)

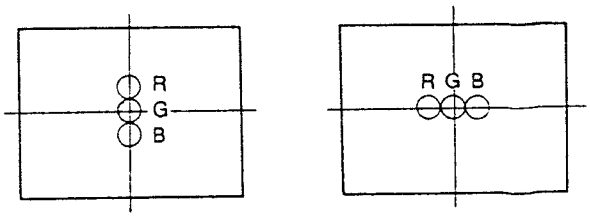


Fig. 1-14.

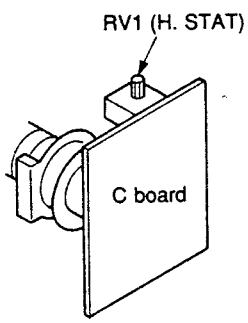
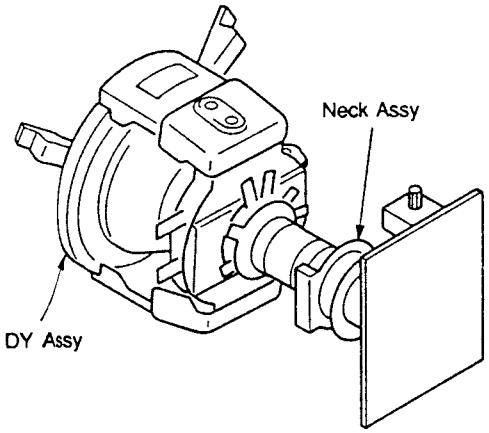


Fig. 1-15.

14-inch model



20-inch model

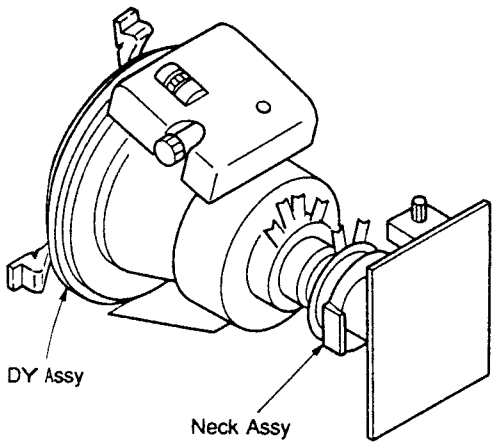


Fig. 1-16.

• HMC and VMC correction with 6-pole magnet

1. HMC (horizontal misconvergence) correction of 6-pole magnet and movement of electron beam.

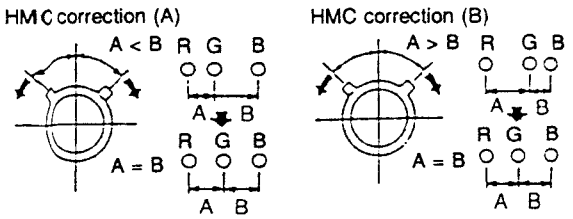


Fig. 1-17.

2. VMC (vertical misconvergence) correction of 6-pole magnet and movement of electron beam.

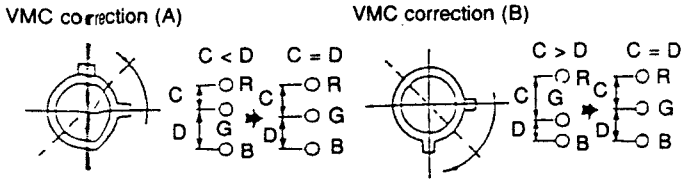


Fig. 1-18.

[20-inch Model Convergence Adjustment]

• Preparation

1. Set the SCREEN MODE to 4 : 3 NORM at the INPUT CONFIGURATION menu.
2. Input the cross hatch signal.

• Vertical Convergence Adjustment

1. Minimize the vertical misconvergence at the center of the left side of the screen and the center of the right side of the screen using the DY correction reactors XBV and XCV.
2. Minimize the vertical misconvergence at the top and bottom of the screen using the DY correction reactor TLV.
3. Adjust the V CONV TOP data and V CONV BOT data so that the vertical misconvergence at the top and bottom of the screen becomes minimum.

Note: The V CONV TOP and V CONV BOT adjustment menu is under the E BOARD menu of the MAINTENANCE menu.

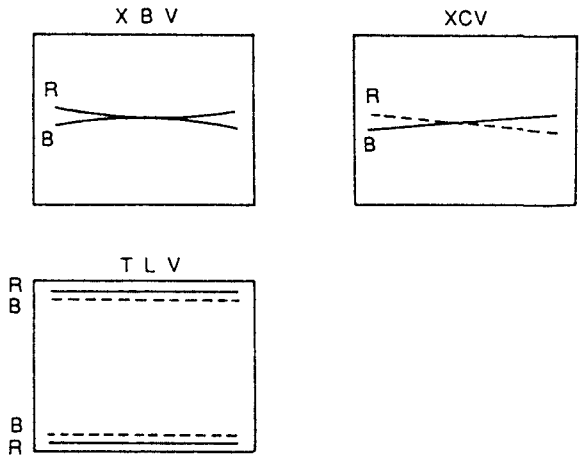


Fig. 1-19.

• Horizontal Convergence Adjustment

1. Adjust the horizontal convergence adjustment data (H CONV data) in the following order so that the red, green, and blue dots coincide on the whole screen.
   (Do not change the value of the H STAT data (128).)

Note: The horizontal convergence adjustment menu is under the E BOARD menu of the MAINTENANCE menu.

1. H CONV C T
2. H CONV C B
3. H CV C M T
4. H CV C M B
5. H CV L C
6. H CV L T
7. H CV L B
8. H CV L M T
9. H CV L M B
10. H CV R C
11. H CV R T
12. H CV R B
13. H CV R M T
14. H CV R M B

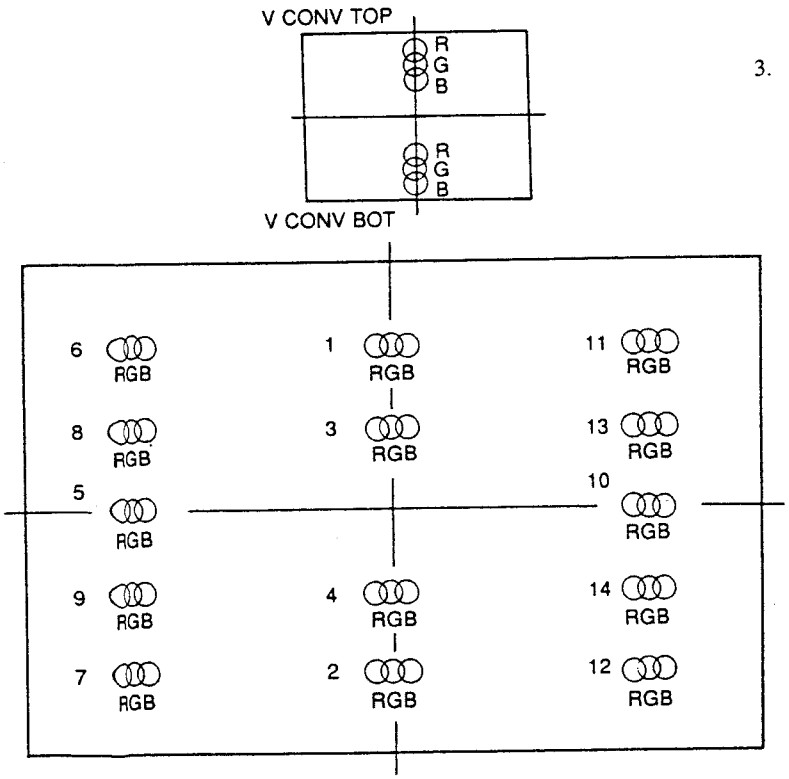


Fig. 1-20.

• 4 : 3 UNDER SCAN Mode Convergence Adjustment

1. Set the SCREEN MODE to 4 : 3 UNDER at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) and horizontal convergence adjustment data (H CONV data) to the same value as the 4 : 3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

• 16 : 9 NORMAL SCAN Mode Convergence Adjustment

1. Set the SCREEN MODE to 16 : 9 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) and horizontal convergence adjustment data (H CONV data) to the same value as the 4 : 3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

• 16 : 9 UNDER SCAN Mode Convergence Adjustment

1. Set the SCREEN MODE to 16 : 9 UNDER at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) and horizontal convergence adjustment data (H CONV data) to the same value as the 4 : 3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

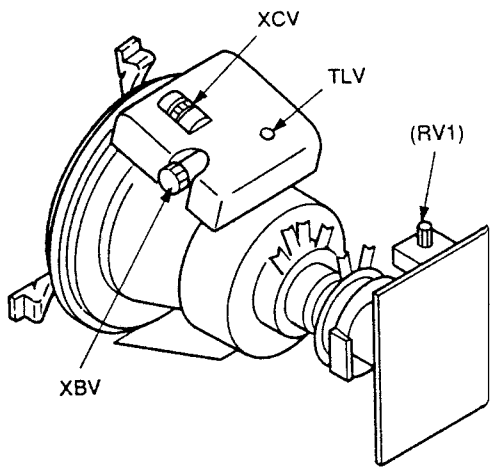


Fig. 1-21.

[14-inch Model Convergence Adjustment]

• Preparation

1. Set the SCREEN MODE to 4 : 3 NORM at the INPUT CONFIGURATION menu.
2. Input the cross hatch signal.

• Convergence Adjustment

1. Minimize the vertical misconvergence at the center of the left side of the screen and the center of the right side of the screen using the DY correction reactor XCV (TH).
2. Minimize the vertical misconvergence at the top and bottom of the screen using the DY correction reactor TLV.
3. Adjust the V CONV TOP data and V CONV BOT data so that the vertical misconvergence at the top and bottom of the screen becomes minimum.
   (Do not change the value of the H STAT data and H CONV data (128).)

Note: The V CONV TOP and V CONV BOT adjustment menus are under the E BOARD menu of the MAINTENANCE menu.

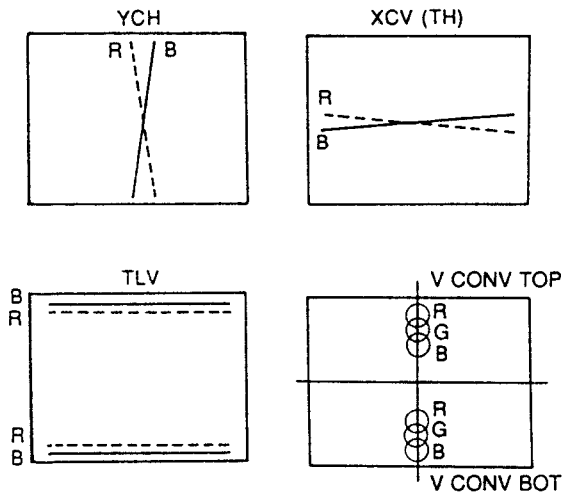


Fig. 1-22.

• 4 : 3 UNDER SCAN Mode Convergence Adjustment

1. Set the SCREEN MODE to 4 : 3 UNDER at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) to the same value as the 4 : 3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

• 16 : 9 NORMAL SCAN Mode Convergence Adjustment

1. Set the SCREEN MODE to 16 : 9 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) to the same value as the 4 : 3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

• 16 : 9 UNDER SCAN Mode Convergence Adjustment

1. Set the SCREEN MODE to 16 : 9 UNDER at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) to the same value as the 4 : 3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

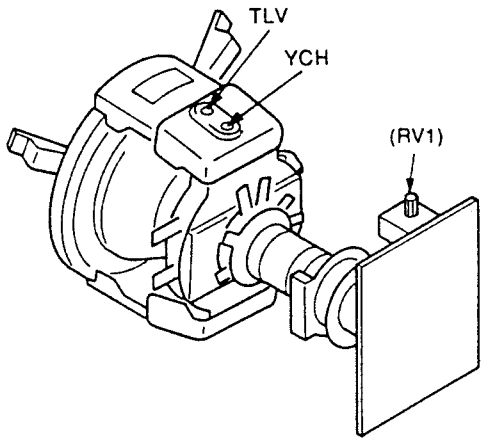


Fig. 1-23.

[G2 Adjustment]

Note: The G2 REF Adjustment menu is under the BK BOARD menu of the MAINTENANCE menu.

1. Input the color bar signal.
2. Connect the R, G, and B cathodes of the C board to the probes of the oscilloscope, and check the DC voltage of the color bar signal pedestal.
   (20V/Div)
3. Connect the cathode with the highest pedestal DC voltage to the probe of the oscilloscope.
4. Adjust the G2 REF data so that the pedestal DC voltage becomes 97.5V.

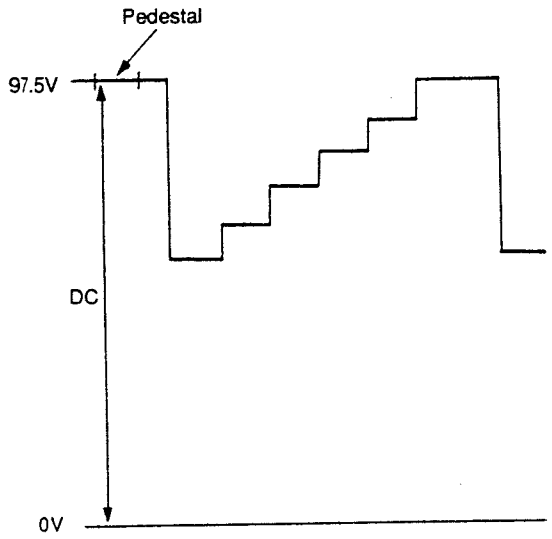


Fig. 1-24.

— C Board — ‹Conductor side›

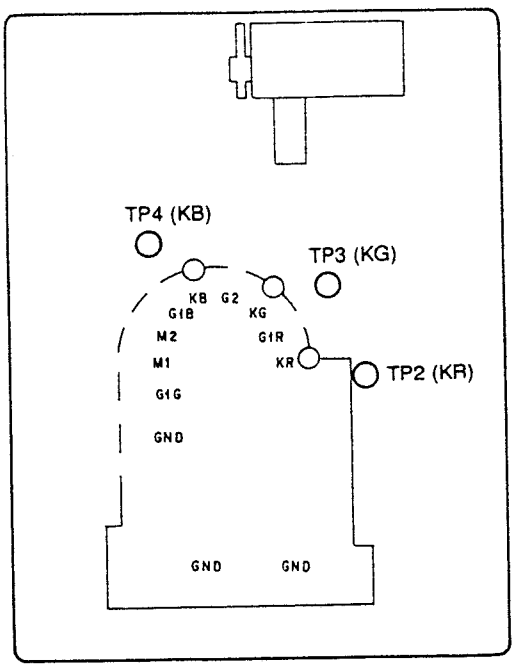


Fig. 1-25.

[White Balance Adjustment]

1. Outline of Adjustments and Calibration of Color Analyzer Used for Adjustments

Perform the following adjustments.

1.1 Creating the parameters used for converting the CRT RGB drive voltage into color temperature coordinates

This monitor is equipped with a function for copying color temperature between several monitors.

Because the CRT drive voltage depends on the CRT, the same color temperature will not be attained amongst several monitors even if the same drive voltage has been supplied.

For this reason, to copy a color temperature between several monitors, it is necessary to send the required data using parameters which do not depend on the CRT such as the xyY color temperature coordinates.

Select and execute the SYSTEM/COLOR TEMP/ FACTORY ADJ menu on the MAINTENANCE menu. The D93 color temperature will automatically be adjusted and at the same time, the drive voltage and color temperature coordinates conversion parameter will be created.

Use this parameter for copying the color temperature to other monitors and for copying the color temperature to the memory card.

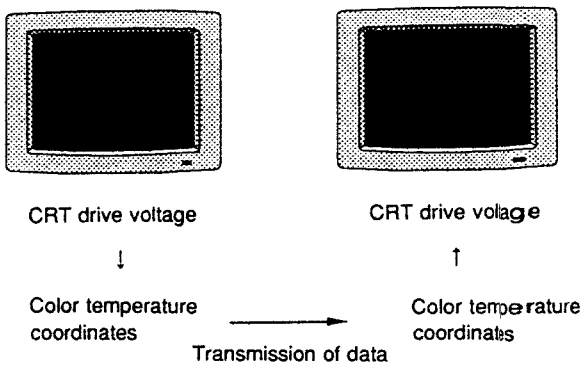


Fig. 1-26.

1.2 D65/D56 Color Temperature Adjustment

Perform the D56 adjustment only for BVM-14E1U/14E5U/ 14F1U/14F5U/20E1U/20F1U.

1.3 Copying Color Temperature Data D65/D93/D56 to Color Temperature STD, COLOR1, COLOR2, AUX

Calibration of Color Analyzer

Generally, to measure the color temperature of a monitor using several color analyzers, these color analyzers will show different values. The values measured by the color analyzer will also change with time. For this reason, color analyzers used for this adjustment should be calibrated first so that they will show the correct values for the following color temperature coordinates.

	x	y	Y (cd/m2)
D65	0.313	0.329	1.7
	0.313	0.329	100
D93	0.284	0.298	1.7
	0.284	0.298	100
D56	0.331	0.346	1.7
	0.331	0.346	100

2. Adjustment Standard

2.1 Input the following signal to the G/Y input terminal of the BK board to display it on the screen.
For BVM-14E1U/14E5U/14F1U/14F5U/20E1U/20F1U : NTSC signal
For BVM-14E1E/14E5E/14F1E/14F5E/20E1E/20F1E : PAL signal

2.2 Connect the RS-232C terminal of the CA-100 with the OPTION terminal of the monitor using the cable shown in "Required Tools and Measuring Instruments 5.".

2.3 Set the CA-100 as shown below, and connect the measuring probe of the CA-100 at the center of the CRT screen.
Display mode : xyY mode
Baud Rate : 9600

3. Select the SYSTEM/COLOR TEMP menu on the MAINTENANCE menu.
4. Select D93 of COLOR TEMP, cover the CRT screen with a black cloth, select FACTORY ADJ, and start automatic adjustments.
5. Select D65 of COLOR TEMP, and select the PROBE/ MINOLTA CA-100 menu. After selecting D65, cover the CRT screen with a black cloth, and select START to start automatic operations.
6. Execute this adjustment only for BVM-14E1U/14E5U/ 14F1U/14F5U/20E1U/20F1U.
Select AUX of COLOR TEMP, and select the PROBE/ MINOLTA CA-100 menu.
After setting X=0.331, Y=0.346, LOWLIGHT=2.7, and HIGHLIGHT=100, cover the CRT screen with a black cloth, and select START to start automatic operations.
7. Select the SYSTEM/COLOR TEMP/COPY/OTHER VALUE menu on the MAINTENANCE menu.
8. Select STD of COLOR TEMP, perform the following "D65", and copy the color temperature data to STD.
9. Select COLOR1 of COLOR TEMP, perform the following "D93", and copy the color temperature data to COLOR1.
10. Select COLOR2 of COLOR TEMP, perform the following step, and copy the color temperature data to COLOR2.
For BVM-14E1U/14E5U/14F1U/14F5U/20E1U/20F1U : Select AUX
For BVM-14E1E/14E5E/14F1E/14F5E/20E1E/20F1E : Select D65
11. Execute this adjustment only for BVM-14E1E/14E5E/ 14F1E/14F5E/20E1E/20F1E.
Select AUX of COLOR TEMP, perform the following "D65", and copy the color temperature data to AUX.

4-2. SAFETY RELATED ADJUSTMENTS

+B (120V) Voltage Adjustment (⊠RV101)

Perform the following checks/adjustments when replacing the following components (marked ◪ on the schematic diagram).

◪G board RV101, R115, R116, R119, R120, R121, R122, IC101, PC1
GA board R111, IC102

1. Connect a digital voltmeter to TP105 of the G board. (GND : TP107 of G board)
• Digital voltmeter : More than 4 digits
2. Input the cross hatch signal.
3. Set the BRIGHTNESS VR and CONTRAST VR buttons to the preset condition. (The LEDs (green) on the buttons go off.)
4. Rotate RV101 of the G board in the clockwise direction to maximize the TP105 voltage.
Check that the TP105 voltage is 126.0 V ± 6.0 V.
5. Adjust the TP105 voltage to 120.0 V ± 0.5 V using RV101 of the G board.

High Voltage Regulator Check/Adjustment (⊠RV501)

Perform the following checks/adjustments when replacing the following components (marked • on the schematic diagram).

◪PA board RV501, IC501, R509, R510, R513, R801, R802, R804

1. Turn off the power.
2. Connect a static voltmeter to the CRT anode cap.
• Static voltmeter : Whose input impedance calibrated to above 2 x 10^9 Ω.
(Example : Singer's ESH-27X or ESH-23X)
3. Turn on the power.
4. Input the monoscope signal.
5. Set the BRIGHTNESS VR and CONTRAST VR buttons to the preset condition. (The LEDs (green) on the buttons go off.)
4. Check that the voltage value is within the following ranges.
20-inch model : 27.00 kV ± 0.15 kV
14-inch model : 25.00 kV ± 0.15 kV
5. If step 4 is not satisfied, replace RV501 of the PA board, adjust RV501 so that the specification is satisfied.
6. If replacing RV501 in step 5, after adjusting the RV, secure RV501 using epoxy resin (DP-190 3M).

High Voltage Hold-down Check/Adjustment (⊠RV503)

Perform the following checks/adjustments when replacing the following components (marked ◪ on the schematic diagram).

◪PA board RV503, IC502, R524, R525, R526, R527, R530, R808

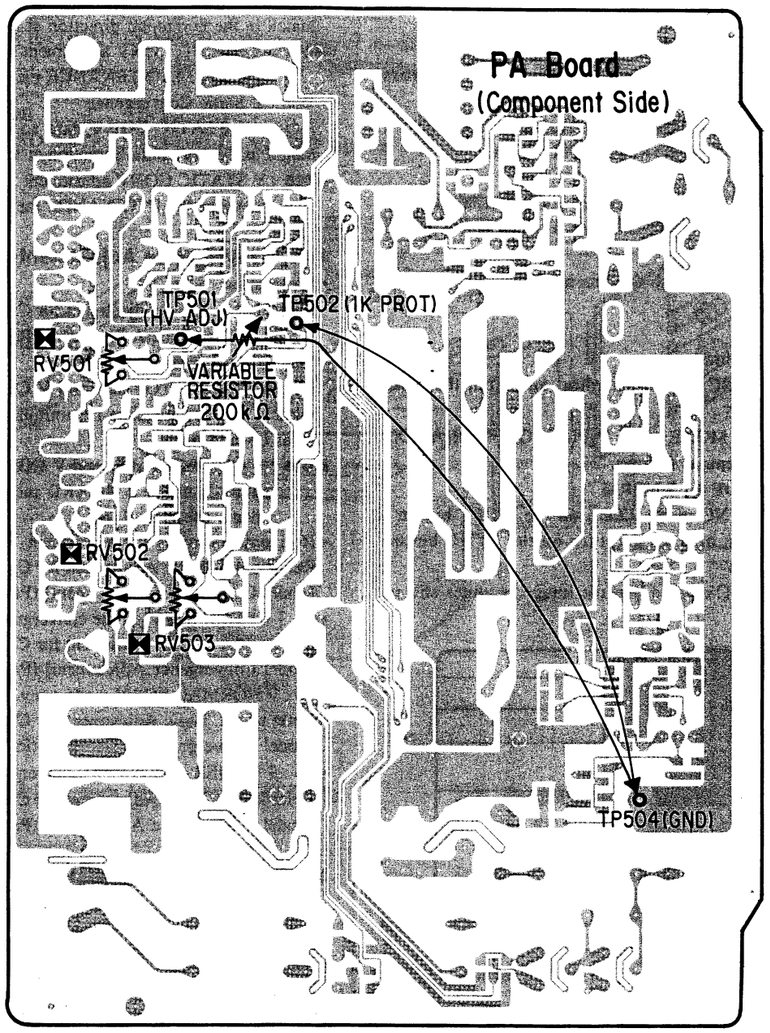
1. Turn off the power.
2. Connect the static voltmeter to the CRT anode cap.
   - Static voltmeter : Whose input impedance calibrated to above 2 x 10^9 Ω.
     (Example : Singer's ESH-27X or ESH-23X)
3. Connect a 200 kΩ variable resistor between TP501 and GND of the PA board.
   (Maximize the resistance of the 200 kΩ variable resistor.)
4. Turn on the power.
5. Input the cross hatch signal.
6. Set the BRIGHTNESS VR and CONTRAST VR buttons to the preset condition. (The LEDs (green) on the buttons go off.)
7. Cut-off R, G, and B. (Turn on the SHIFT button (LED lights up in orange), and turn on the R, G, and B buttons (LEDS light up).)
8. Check that when the resistance of the 200 kΩ variable resistor connected to TP501 is gradually reduced, the high voltage drops rapidly at the following values.
   20-inch model : 30.00 kV ± 0.50 kV
   14-inch model : 27.00 kV ± 0.50 kV
9. If step 8 is not satisfied, replace RV503 of the PA board, and adjust RV503 so that the specification is satisfied.
10. Disconnect the 200 kΩ variable resistor.
11. Check that the high voltage satisfies the following values.
    20-inch model : 27.00 kV ± 0.15 kV
    14-inch model : 25.00 kV ± 0.15 kV
12. Disconnect the static voltmeter.
13. If replacing RV503 in step 9, after adjusting the RV, secure RV503 using epoxy resin (DP-190 3M).

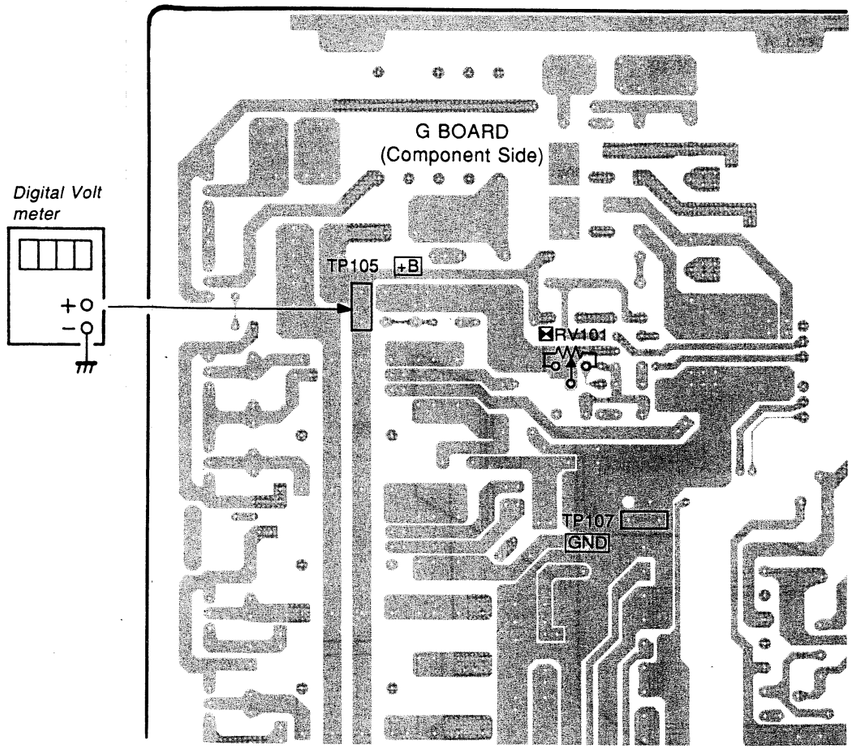
Beam Current Protector Check/Adjustment (⊠RV502)

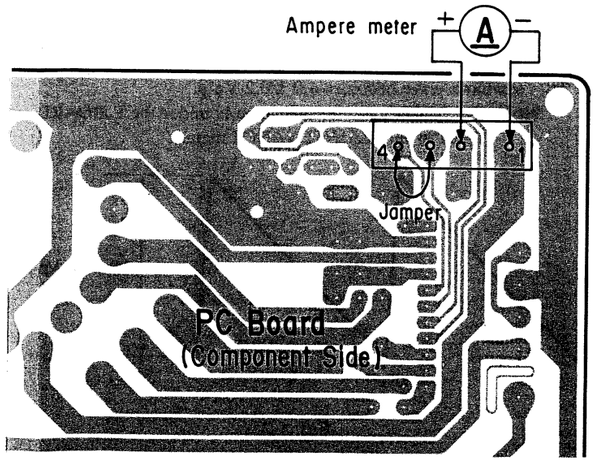
Perform the following checks/adjustments when replacing the following components (marked • on the schematic diagram).

◪PA board RV502, IC502, R101, R514, R515, R516, R517
PC board R1, R2, R3, R4, R5, R6
BK board R912, R913, IC901

1. Turn off the power.
2. Disconnect the CN3 connector of the PC board.
3. Connect a DC ammeter between Pins ① and ② of CN3 of the PC board.
4. Short-circuit Pin ③ and ④ of CN3 using a jumper.
5. Short-circuit TP502 and TP504 (GND) of the PA board using a jumper.
6. Turn on the power.
7. Input the 100% all-white signal.
8. Set the BRIGHTNESS VR and CONTRAST VR buttons to set the MANUAL adjustment condition. (The LEDs (green) on the buttons light up.)
9. Gradually rotate the BRIGHTNESS VR and CONTRAST VR from MIN to MAX, and check that the protector starts operating when the readings of the ammeter becomes as follows.
   20-inch model : 2.0 mA ± 0.2 mA
   14-inch model : 1.5 mA ± 0.2 mA
10. Replace RV502 if step 9 is not satisfied, adjust RV502 so that the specification is satisfied.
11. Disconnect the jumper between TP502 and TP504 (GND) of the PA board.
12. Turn on the power again.
13. Check that when the BRIGHTNESS VR and CONTRAST VR buttons are rotated from MIN to MAX, ABL operates (the reading of the ammeter is as follows).
    20-inch model : Below 1.5 mA
    14-inch model : Below 1.3 mA
14. Disconnect the DC ammeter.
15. Disconnect the jumper between Pins ③ and ④ of CN3 of the PC board.
16. Connect the CN3 connector of the PC board.
17. If RV502 is replaced at step 10, after adjusting the RV, secure it with epoxy resin (DP-190 3M).


PA Board
(Component Side)
TP501
(HV ADJ)
TP502 (1K PROT)
RV501
VARIABLE
RESISTOR
200KΩ
RV502
RV503
TP504(GND)


Digital Volt
meter
+
−
G BOARD
(Component Side)
TP105 +B
RV101
TP107
GND


Ampere meter
+
A
−
4
3
1
Jamper
PC Board
(Component Side)

4-3. ELECTRICAL ADJUSTMENTS

1. E Board Adjustment

1-1. Adjust Preparation

Set as follows at the INPUT CONFIGURATION menu of the SETUP menu.

FORMAT ..... COMPONENT YUV SMPTE/EBU N-10
SLOT NO 6
SYNC MODE ..... INT

Select E BOARD DATA LOAD from E BOARD menu of MAINTENANCE menu and execute.

• Connection

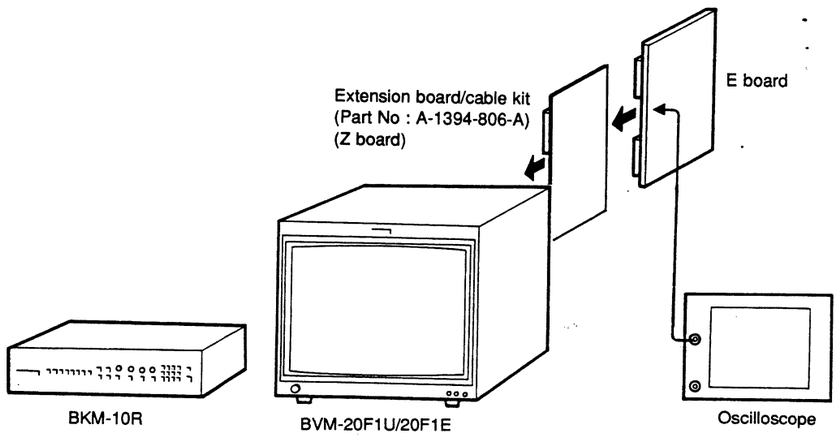


Fig. 1-1.

• Arrangement Diagram for Adjustment Parts

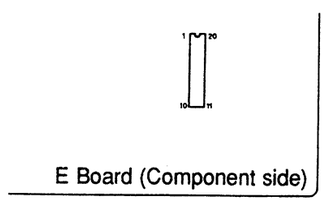


Fig. 1-2.

1-2. V OSC Adjustment

1. Connect an oscilloscope to Pin ⑬ of IC2007 of the E board.
2. Adjust the V OSC data so that the amplitude of the V sawtooth wave becomes 4.0 ± 0.2 Vp-p.

Note: The V OSC adjustment menu is under the E BOARD menu of the MAINTENANCE menu.

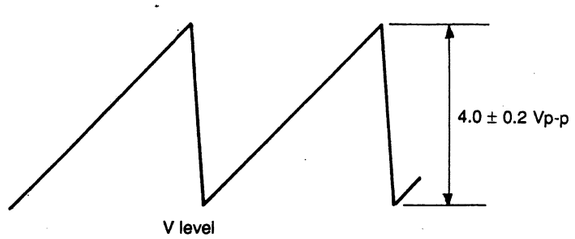


Fig. 1-3.

1-3. H OSC Adjustment

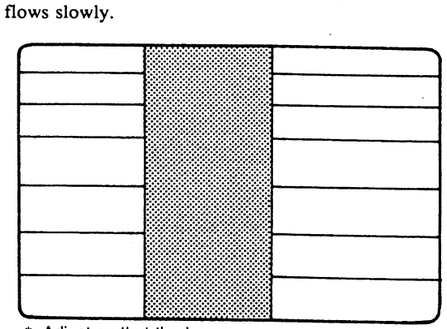
Note: The H OSC adjustment menu is under the E BOARD menu of the MAINTENANCE menu.

• NTSC H OSC Adjustment

1. Connect the NTSC signal generator, and input the cross hatch signal.
2. Set the SCREEN MODE as follows at the INPUT CONFIGURATION menu of the SETUP menu.
   SCREEN MODE 4 : 3 NORM
3. Set the EXT SYNC mode. (Turn on the SHIFT button (LED lights up in orange) and turn on the SYNC button (LED lights up).)
4. Adjust the H OSC data so that the image becomes still or flows slowly.

• PAL H OSC Adjustment

1. Connect the NTSC signal generator, and input the cross hatch signal.
2. Set the SCREEN MODE of the INPUT CONFIGURATION of the SETUP menu as follows.
   SCREEN MODE 4 : 3 NORM
3. Set the EXT SYNC mode. (Turn on the SHIFT button (LED lights up in orange) and turn on the SYNC button (LED lights up).)
4. Adjust the H OSC data so that the image becomes still or flows slowly.



* Adjust so that the image becomes still or flows slowly.

Fig. 1-4.

1-4. H Blanking Adjustment

Refer to 4-1. Basic Adjustment for CRT Replacement [H Blanking Adjustment] (Page 4-3).

1-5. V Blanking Adjustment

Refer to 4-1. Basic Adjustment for CRT Replacement [V Blanking Adjustment] (Page 4-5).

1-6. Linearity Adjustment

Refer to 4-1. Basic Adjustment for CRT Replacement [Linearity Adjustment] (Page 4-6).

1-7. Convergence Adjustment Preparation

Refer to 4-1. Basic Adjustment for CRT Replacement [Focus Adjustment], [Landing Adjustment], [H Blanking Adjustment].

1-8. Static Convergence Adjustment

• Horizontal Static Convergence
Adjust H STATIC CONV data so that red and green dots match in the horizontal direction at the center of the screen.

Note : H STATIC CONV adjustment menu is under E BOARD menu of MAINTENANCE menu. (See Fig. 1-14)

• Vertical Static Convergence
Adjust V STATIC CONV data so that red and green dots match in the horizontal direction at the center of the screen.

Note : V STATIC CONV adjustment menu is under E BOARD menu of MAINTENANCE menu. (See Fig. 1-14)

1-9. Convergence Adjustment 20-Inch Model

• Preparation
Refer to 4-1. Basic Adjustment for CRT Replacement [20-Inch Model Convergence Adjustment] (Page 4-8).

• Vertical convergence adjustment
Adjust V CONV TOP data and V CONV BOT data so that a vertical mis-convergence is minimized at the top and bottom areas of the screen.

Note : V CONV TOP data and V CONV BOT data adjustment menu is under E BOARD menu of MAINTENANCE menu. (See Fig. 1-20)

• Horizontal convergence adjustment
Refer to 4-1. Basic Adjustment for CRT Replacement [20-Inch Model Convergence Adjustment] (Page 4-9).

• 4 : 3 UNDER SCAN mode convergence adjustment
Refer to 4-1. Basic Adjustment for CRT Replacement [20-Inch Model Convergence Adjustment] (Page 4-9).

• 16 : 9 NORMAL SCAN mode convergence adjustment
Refer to 4-1. Basic Adjustment for CRT Replacement [20-Inch Model Convergence Adjustment] (Page 4-9).

• 16 : 9 UNDER SCAN mode convergence adjustment
Refer to 4-1. Basic Adjustment for CRT Replacement [20-Inch Model Convergence Adjustment] (Page 4-9).

1-10. Convergence Adjustment of 14-inch Model

• Preparation
Refer to 4-1. Basic Adjustment for CRT Replacement [14-Inch Model Convergence Adjustment] (Page 4-10).

• Convergence adjustment
Adjust V CONV TOP data and V CONV BOT data so that a vertical mis-convergence is minimized at the top and bottom areas of the screen.

Note : V CONV TOP data and V CONV BOT data adjustment menu is under E BOARD menu of MAINTENANCE menu. (See Fig. 1-22.)

• 4 : 3 UNDER SCAN mode convergence adjustment
Refer to 4-1. Basic Adjustment for CRT Replacement [14-Inch Model Convergence Adjustment] (Page 4-10).

• 16 : 9 NORMAL SCAN mode convergence adjustment
Refer to 4-1. Basic Adjustment for CRT Replacement [14-Inch Model Convergence Adjustment] (Page 4-10).

• 16 : 9 UNDER SCAN mode convergence adjustment
Refer to 4-1. Basic Adjustment for CRT Replacement [14-Inch Model Convergence Adjustment] (Page 4-10).

2. BK Board Adjustment

2-1. Adjust Preparation 1

Set as follows at the INPUT CONFIGURATION menu of the SETUP menu.

FORMAT..... COMPONENT YUV SMPTE/EBU N-10
SLOT NO 6
SYNC MODE ..... INT

Select BK BOARD DATA LOAD from BK BOARD menu of MAINTENANCE menu and execute.

• Connection

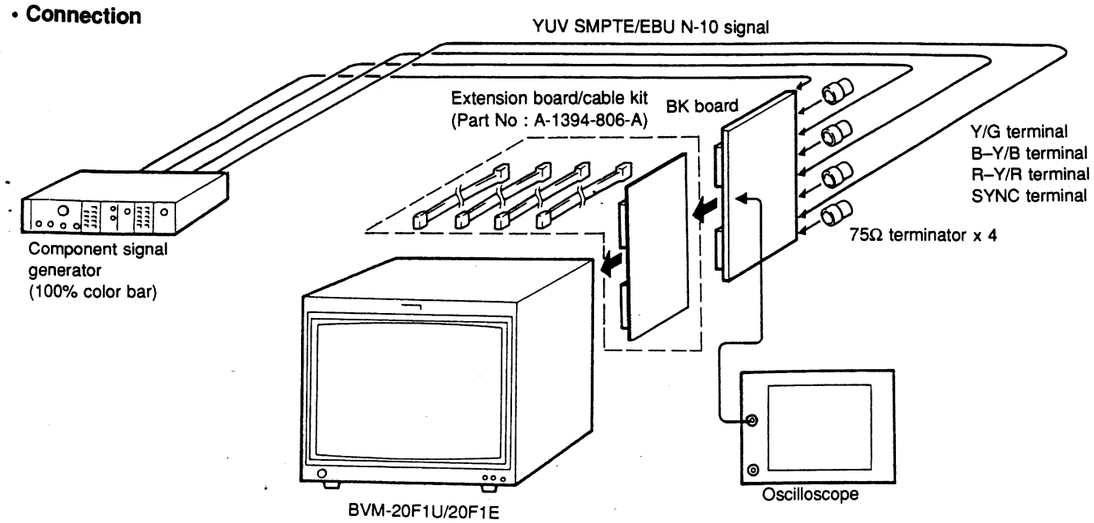


Fig. 2-1.

• Arrangement Diagram for Adjustment Parts

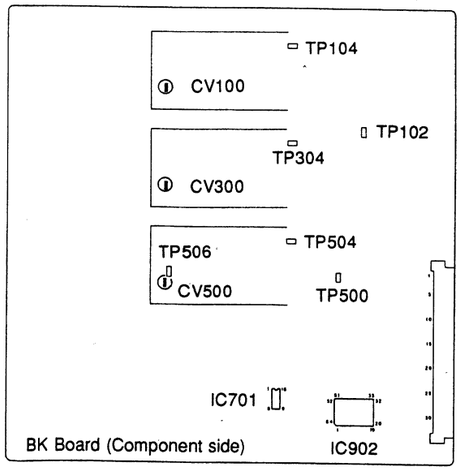


Fig. 2-2.

2-2. Bright Center Adjustment

1. Input the component color bar signal (YUV SMPTE/EBU N-10).
2. Set the BRIGHT data to 800 using the BRIGHT knob.
3. Connect an oscilloscope to Pin ⑮ of IC701 of the BK board.
4. As shown in Fig. 2-3, adjust the BRT CENTER data so that the waveform becomes flat.

Note: The BRT CENTER adjustment menu is under the BK BOARD menu of the MAINTENANCE menu.

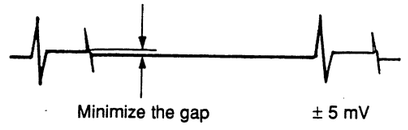


Fig. 2-3.

2-3. Clamp Level Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.
R-Y CLAMP OFFSET
B-Y CLAMP OFFSET

1. Input the component color bar signal (YUV SMPTE/EBU-N10).
2. Connect the oscilloscope to TP102.
3. As shown in Fig. 2-4, adjust the R-Y CLAMP OFFSET data so that the pedestal and clamp offset pulse level becomes equal.
4. Connect the oscilloscope to TP502.
5. As shown in Fig. 2-5, adjust the B-Y CLAMP OFFSET data so that the pedestal and clamp offset pulse level becomes equal.

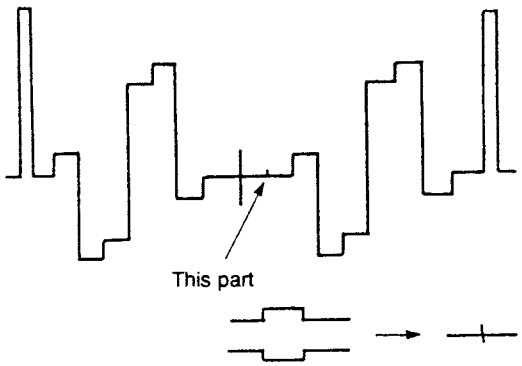


Fig. 2-4.

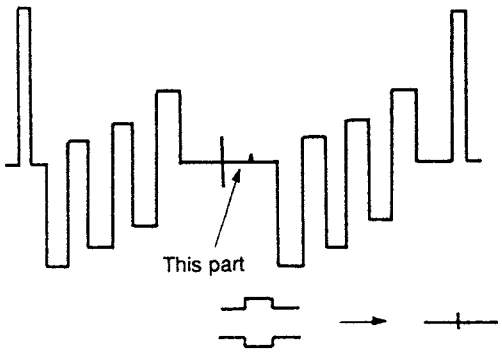


Fig. 2-5.

2-4. Adjustment Preparations 2

Perform the following adjustments for each of the following five input signals.
Set the settings required for each signal at the INPUT CONFIGURATION of the SETUP menu. When inputting the composite signal, insert the NTSC input adapter BKM-24N into the empty slot of the unit.

1. COMPONENT SMPTE/EBU-N10
   100% color bar signal
   All white peak 700 mV
   B-Y 700 mVp-p
   R-Y 700 mVp-p
   100 IRE all white signal
   All white peak 700 mV
   20 IRE all white signal
   All white peak 140 mV
2. COMPONENT BETACAM SETUP 7.5
   75% color bar signal
   All white peak 714.29 mV
   B-Y 700 mVp-p
   R-Y 700 mVp-p
   100 IRE all white signal
   All white peak 714.29 mV
   20 IRE all white signal
   All white peak 142.86 mV
3. COMPOSITE NTSC SETUP 7.5
   100% color bar signal
   All white peak 714 mV
4. COMPOSITE NTSC SETUP 0
   75% color bar signal
   All white peak 714 mV
5. COMPOSITE NTSC SETUP 0
   100% color bar signal
   All white peak 714 mV

Set as follows at the INPUT CONFIGURATION menu of the SETUP menu.
FORMAT ..... Set according to the input signal
SLOT NO ..... When component signal is input: 6
When composite signal is input : Slot no. when BKM-24N is mounted.
SYNC MODE ..... INT

Configuration when Component Signal is Input

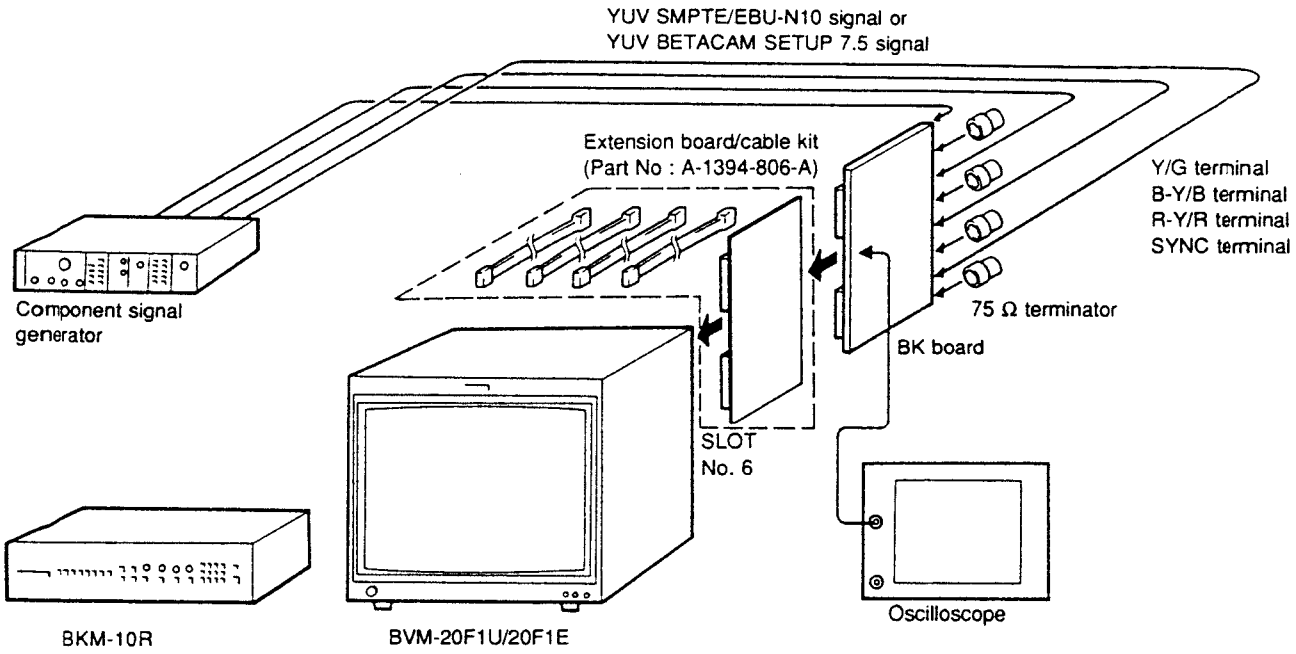


Fig. 2-6.

Configuration when Composite Signal is Input

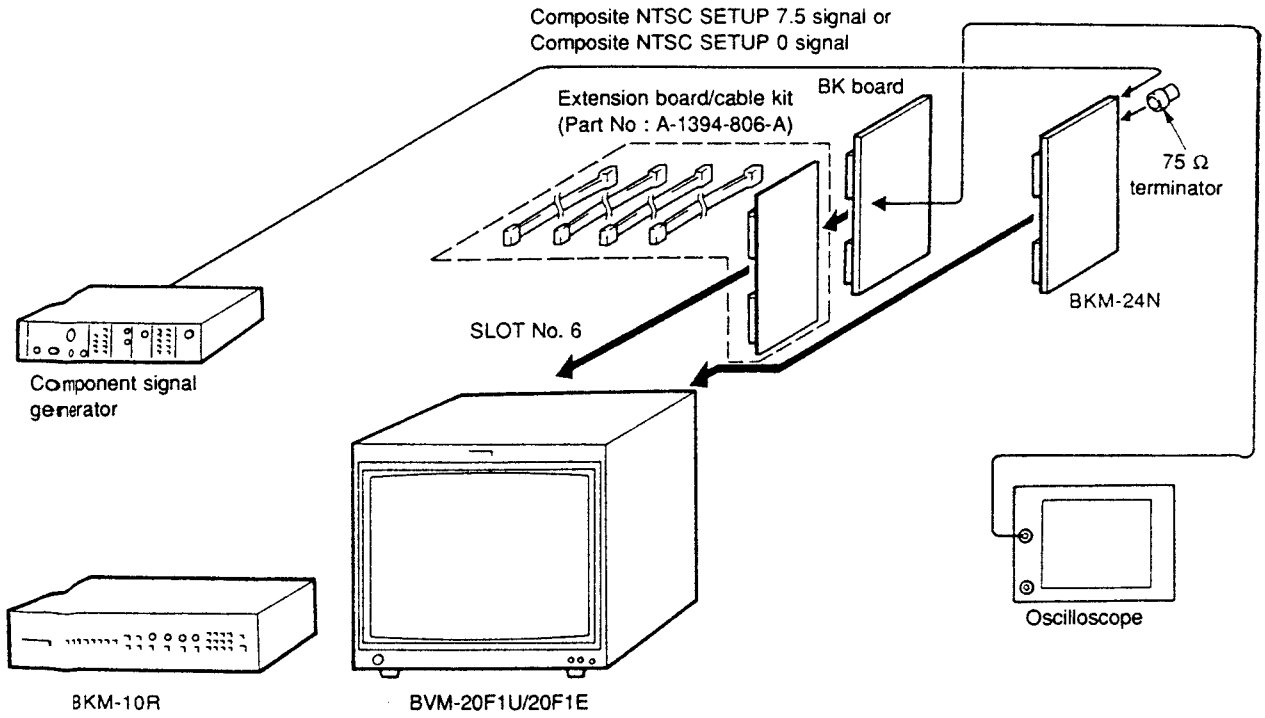


Fig. 2-7.

2-5. Pulse Level Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.
B–Y PULSE LEVEL
R–Y PULSE LEVEL

1. Input the color bar signal.
2. Set the CHROMA data to 500 using the CHROMA knob.
3. Connect the oscilloscope to TP504.
4. As shown in Fig. 2-8, adjust the B–Y PULSE LEVEL data so that the BLUE waveform becomes flat.

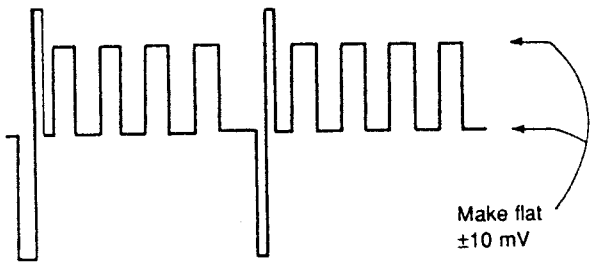


Fig. 2-8.

5. Connect the oscilloscope to TP104.
6. As shown in Fig. 2-9, adjust the R–Y PULSE LEVEL data so that the RED waveform becomes flat.

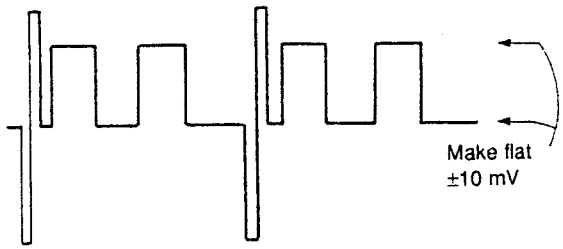


Fig. 2-9.

2-6. R–Y Gain, B–Y Gain Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.
B–Y GAIN
R–Y GAIN

1. Input the color bar signal.
2. Set the CHROMA data to 500 using the CHROMA knob.
3. Connect the oscilloscope to TP304.
4. As shown in Fig. 2-10, adjust the R–Y GAIN data and B–Y GAIN data so that the GREEN waveform becomes flat.

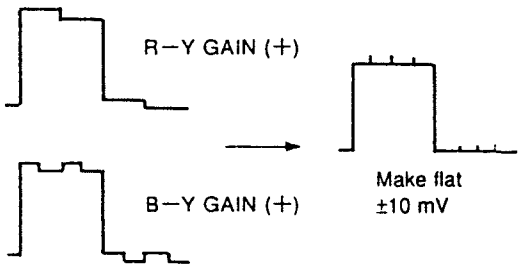


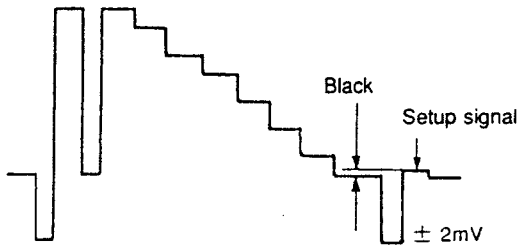
Fig. 2-10.

2-7. 0% Setup Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.
R SETUP
G SETUP
B SETUP

1. Input only the Y signal of the color bar signal (Turn off the R–Y signal and B–Y signal.).
2. Connect the oscilloscope to TP104.
3. As shown in Fig. 2-11, adjust the R SETUP data so that the black level and setup signal level becomes equal.
4. Connect the oscilloscope to TB304.
5. As shown in Fig. 2-11, adjust the G SETUP data so that the black signal level and setup signal level become equal.
6. Connect the oscilloscope to TP504.
7. As shown in Fig. 2-11, adjust the B SETUP data so that the black signal level and setup signal level become equal.

When SETUP 0% signal is input



When SETUP 7.5% signal is input

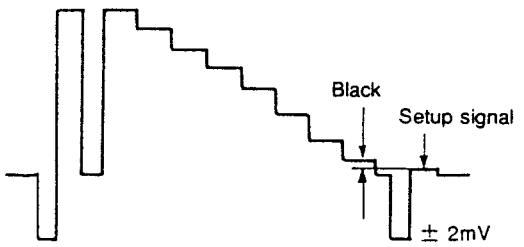


Fig. 2-11.

2-8. 100 IRE Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.
R 100 IRE
G 100 IRE
B 100 IRE

1. Input only the Y signal of the color bar signal (Turn off the R–Y signal and B–Y signal.).
2. Connect the oscilloscope to TP104.
3. As shown in Fig. 2-12, adjust the R 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.
4. Connect the oscilloscope to TB304.
5. As shown in Fig. 2-12, adjust the G 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.
6. Connect the oscilloscope to TB504.
7. As shown in Fig. 2-12, adjust the B 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.

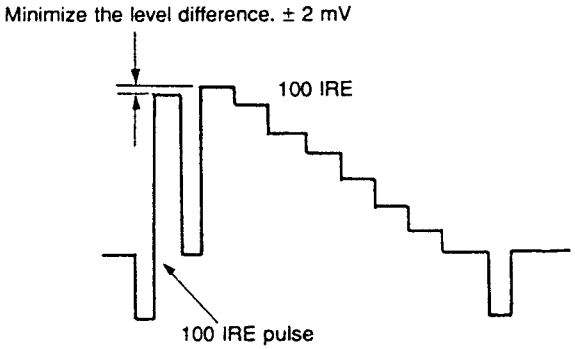


Fig. 2-12.

2-9. BIAS REF Adjustment

Note: The following adjustment menu is under the BK BOARD menu of the MAINTENANCE menu.
BIAS REF

1. Input the 20 IRE all-white signal.
2. Connect the oscilloscope to TP506.
3. As shown in Fig. 2-13, adjust the BIAS REF data so that the all white peak level and BIAS REF pulse level of the signal become equal.
(Oscilloscope is V period)

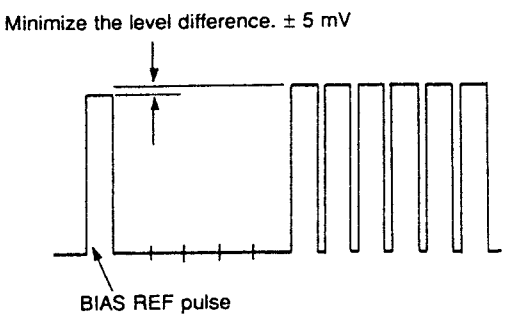


Fig. 2-13.

2-10. DRIVE REF Adjustment

Note: The following adjustment menu is under the BK BOARD menu of the MAINTENANCE menu.
DRIVE REF

1. Input the 100 IRE all-white signal.
2. Connect the oscilloscope to TP506.
3. As shown in Fig. 2-14, adjust the DRIVE REF data so that the all white peak level and DRIVE REF pulse level of the signal become equal.

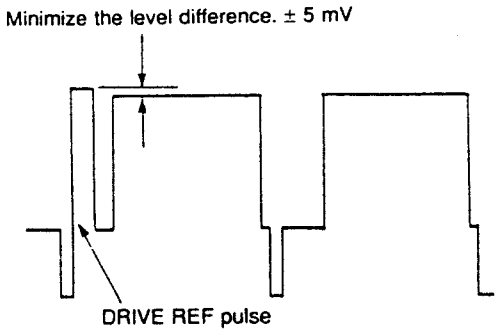


Fig. 2-14.

2-11. Adjustment Preparation 3

Perform the following adjustments using the RGB input signals.
Set as follows at the INPUT CONFIGURATION menu of the SETUP menu.

FORMAT ..... COMPONENT RGB
SLOT NO 6
SYNC MODE ..... INT

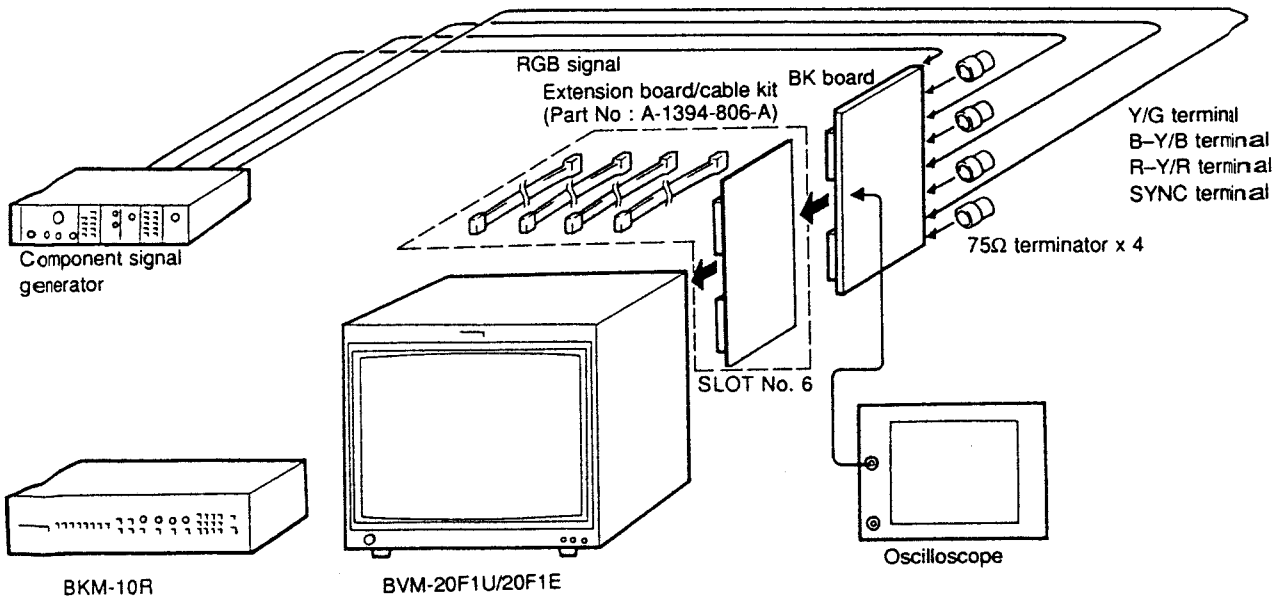


Fig. 2-15.

2-12. RGB Signal SETUP Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.

R SETUP
G SETUP
B SETUP

1. Input 100 IRE RGB signal.
2. Connect the oscilloscope to TP104.
3. Adjust the R SETUP data so that the black level and setup signal level become equal.
4. Connect the oscilloscope to TP304.
5. Adjust the G SETUP data so that the black signal level and setup signal level become equal.
6. Connect the oscilloscope to TP504.
7. Adjust the B SETUP data so that the black signal level and setup signal level become equal.

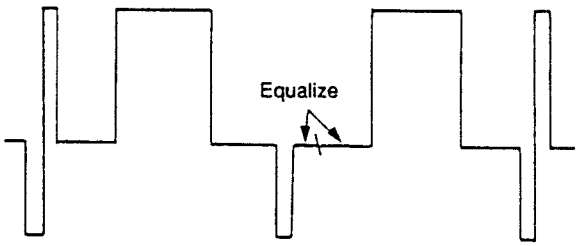


Fig. 2-16.

2-13. RGB Signal 100 IRE Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.

R 100 IRE
G 100 IRE
B 100 IRE

1. Input the 100 IRE RGB signal.
2. Connect the oscilloscope to TP104.
3. Adjust the R 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.
4. Connect the oscilloscope to TP304.
5. Adjust the G 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.
6. Connect the oscilloscope to TP504.
7. Adjust the B 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.

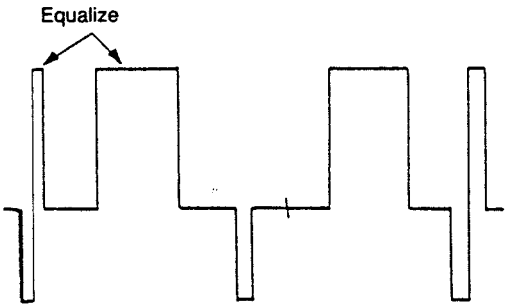


Fig. 2-17.

2-14. Characteristics Adjustment

1. Input the 0 to 10 MHz sweep signal to the R–Y/R terminal.
2. Connect the oscilloscope to TP2 (RK) of the C board.
3. Adjust CV100 of the BK board so that the 0 to 10 MHz range of the waveform becomes flat.
4. Input the 0 to 10 MHz sweep signal to the Y/G terminal.
5. Connect TP3 (GK) of the C board to the oscilloscope.
6. Adjust CV300 of the BK board so that the 0 to 10 MHz range of the waveform becomes flat.
7. Input the 0 to 10 MHz sweep signal to the B–Y/B terminal.
8. Connect TP4 (BK) of the C board to the oscilloscope.
9. Adjust CV500 of the BK board so that the 0 to 10 MHz range of the waveform becomes flat.

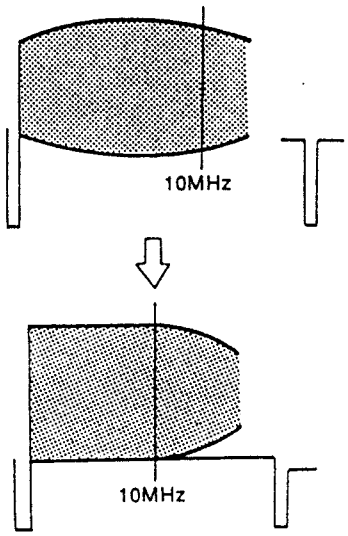


Fig. 2-18.

2-15.White Balance Adjustment

Refer to 4-1. Basic Adjustment for CRT Replacement [White Balance Adjustment] (Page 4-11).

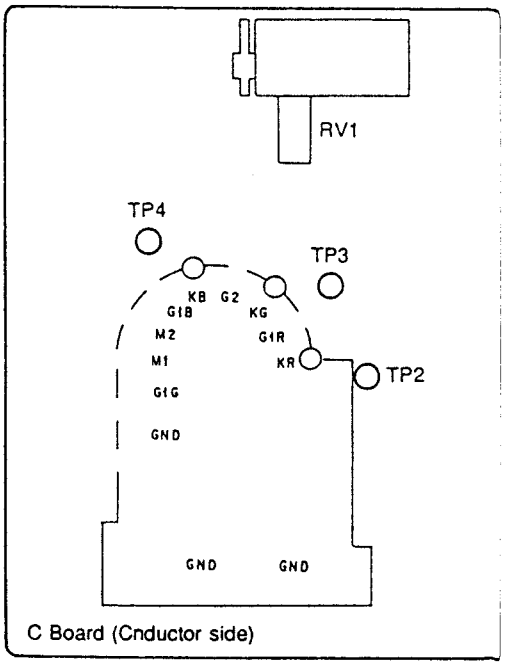


Fig. 2-19.

3. BC Board Adjustment
3-1. Adjust Preparation

Set 1CH as follows using INPUT CONFIGURATION menu of SETUP menu.

FORMAT ..... COMPONENT YUV SMPTE/EBU N-10
SLOT NO 6
SYNC MODE ..... INT

• Connection

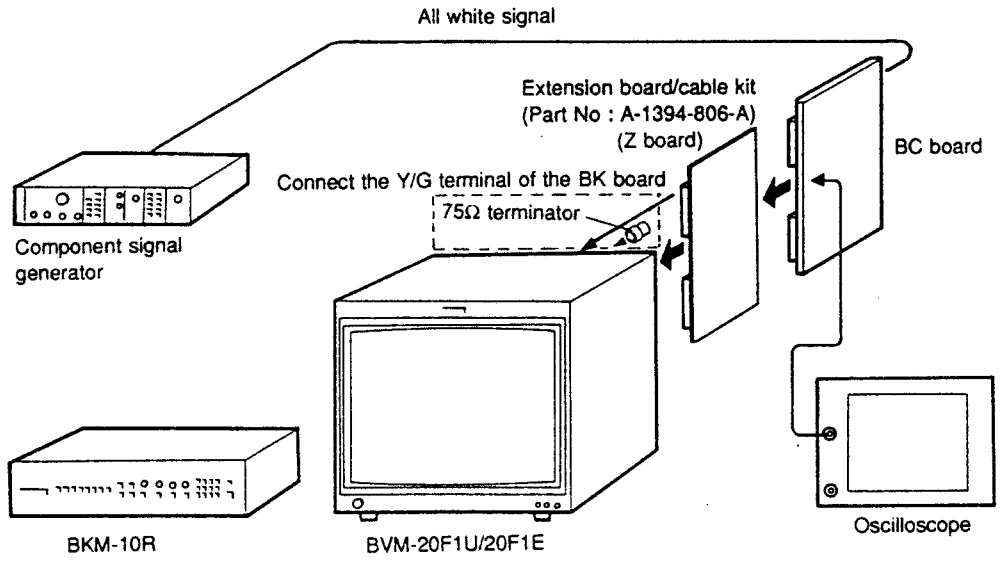


Fig. 3-1.

• Arrangement Diagram for Adjustment Parts

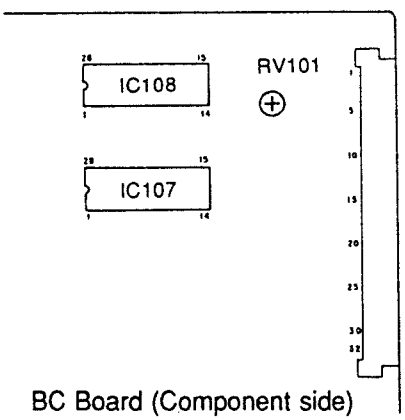


Fig. 3-2.

3-2. Built-in Signal Level Adjustment

1. Input the all-white signal to the Y/G terminal of the BK board.
2. Connect the oscilloscope to Pin (B10) of CN1 of the BC board.
3. Select 1CH and measure and all-white signal level of Y/G terminal input signal.
4. Select 93CH and select an internal white signal.
5. Adjust RV101 of the BC board so that the internal white signal level becomes the same as (measured level in step 3.) the all-white signal of the Y/G terminal input.

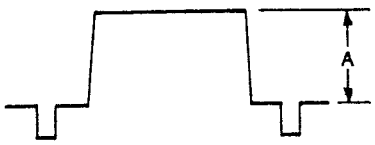
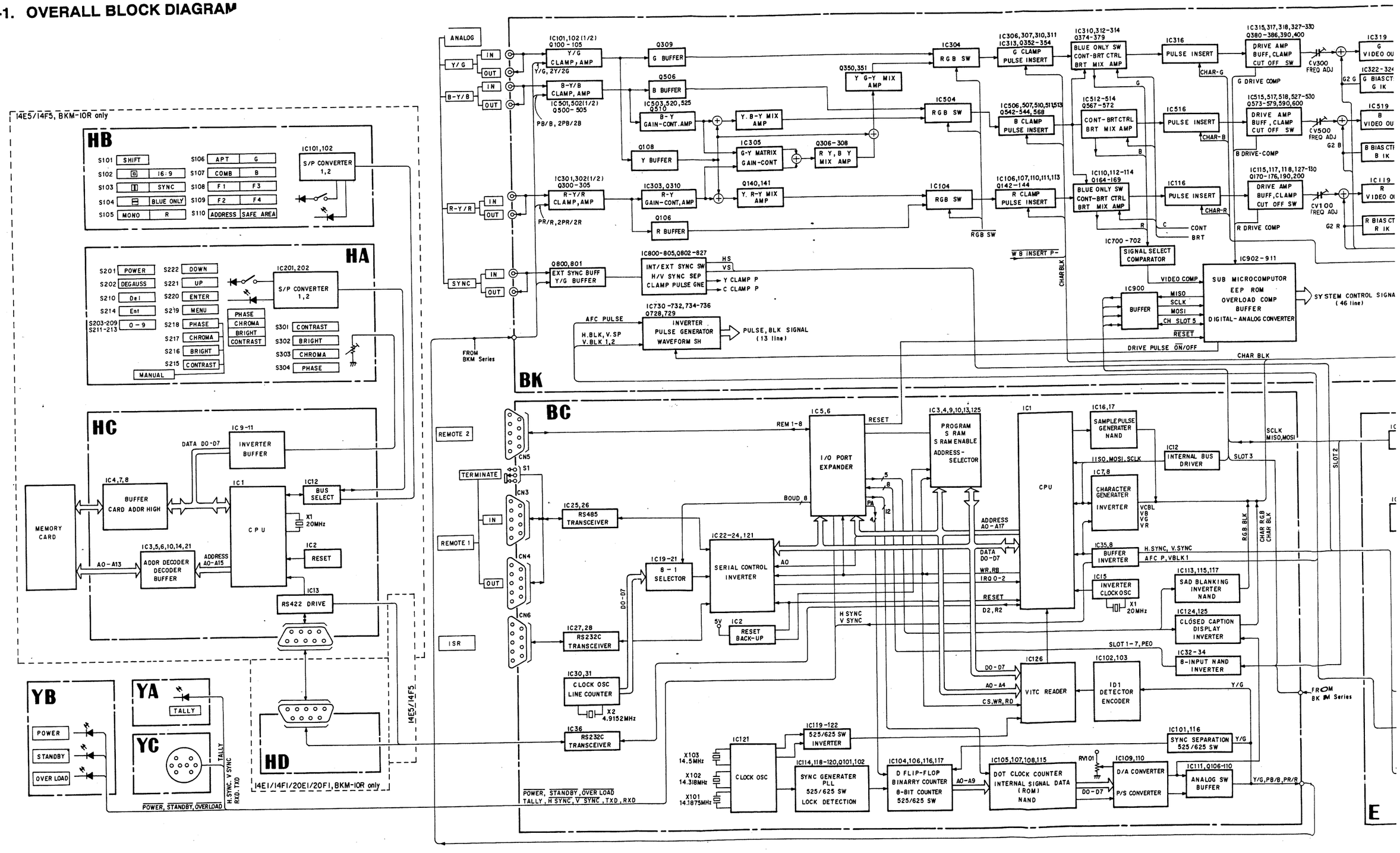
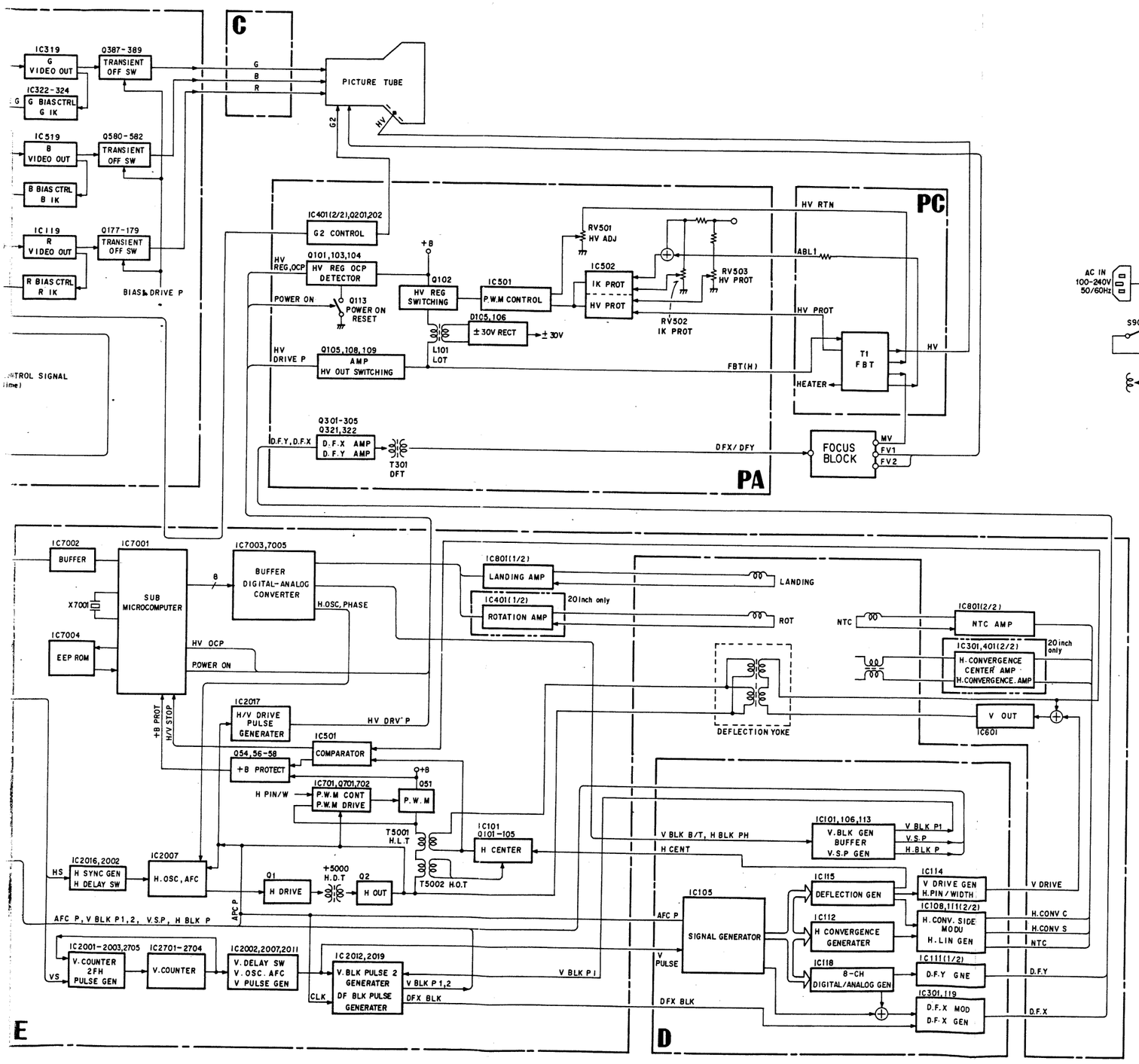


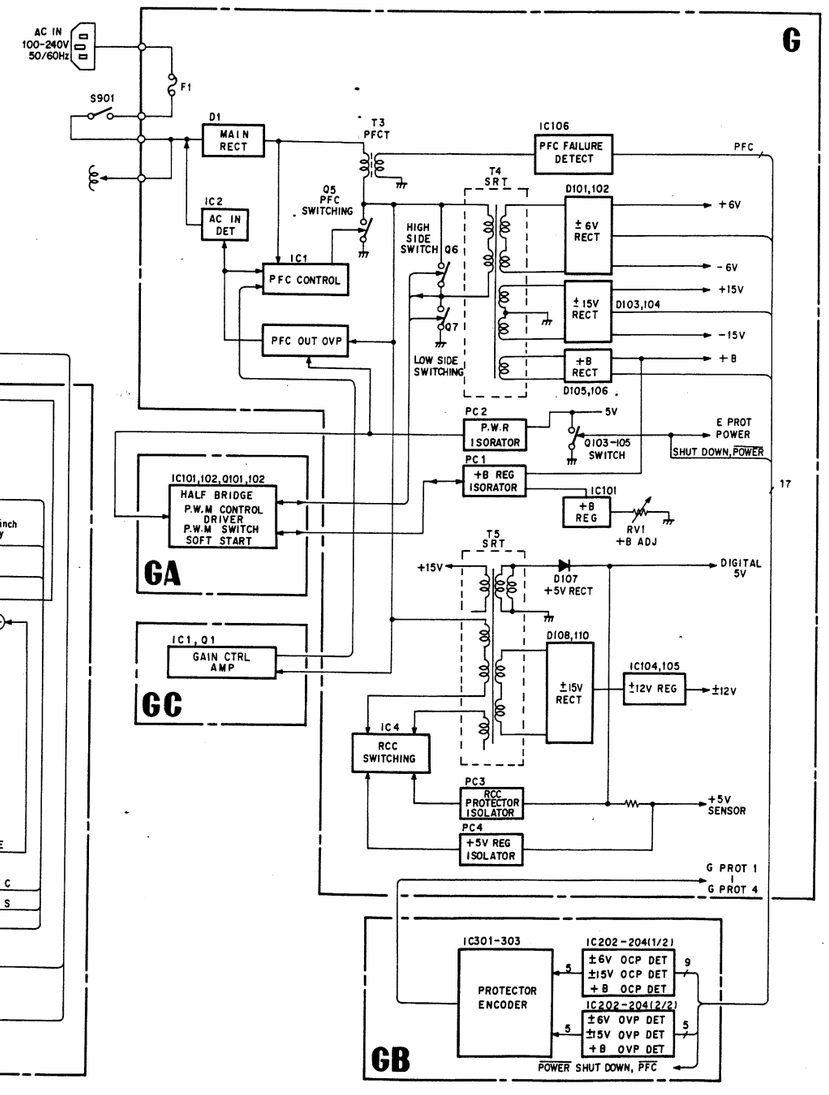
Fig. 3-3.

SECTION 5
DIAGRAMS

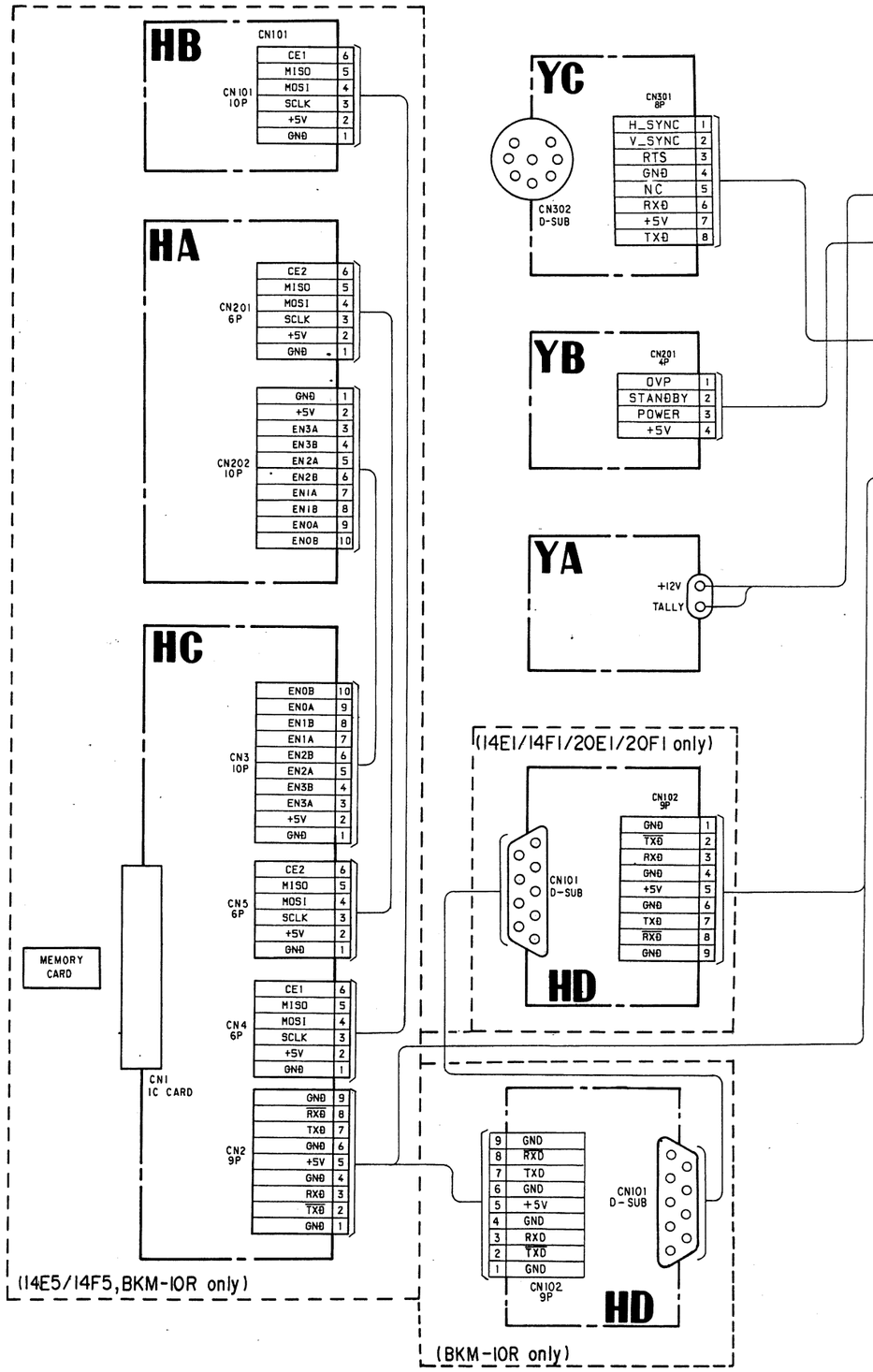
5-1. OVERALL BLOCK DIAGRAM

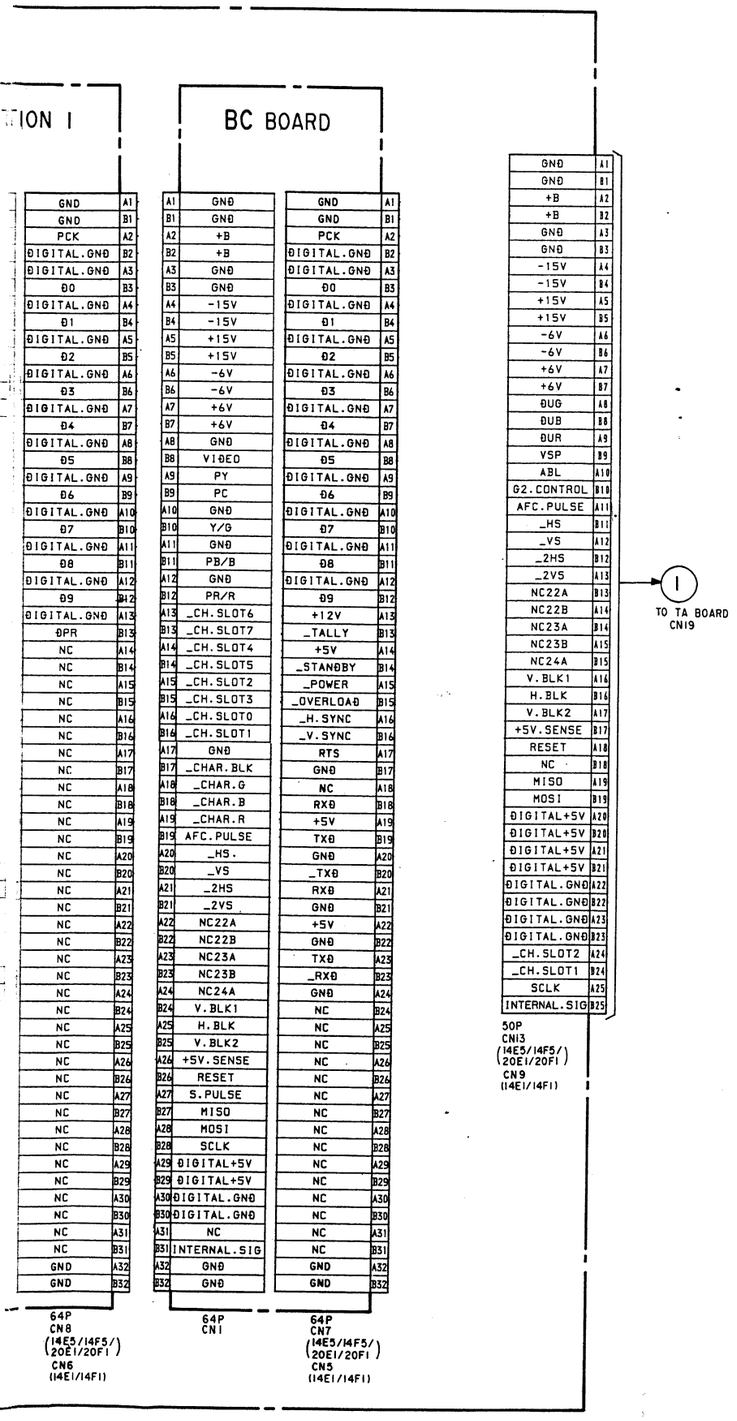


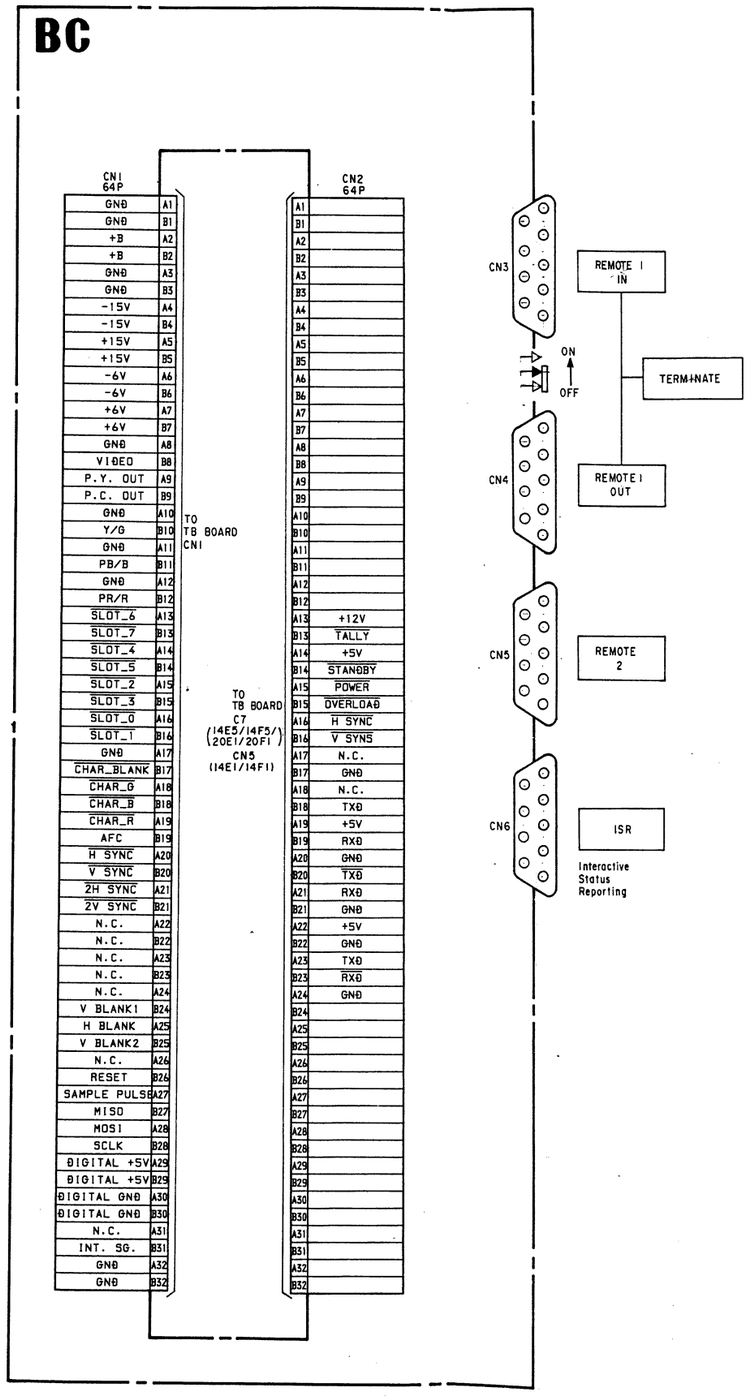

C
IC319
G VIDEO OUT
Q387~389
TRANSIENT OFF SW
IC322~324
G BIAS CTRL G IK
IC519
B VIDEO OUT
Q580~582
TRANSIENT OFF SW
B BIAS CTRL B IK
IC119
R VIDEO OUT
Q177~179
TRANSIENT OFF SW
R BIAS CTRL R IK
BIAS & DRIVE P
G
B
R
PICTURE TUBE
G2
HV
PC
HV RTN
IC401(2/2),0201,202
G2 CONTROL
RV501
HV ADJ
ABL1
+B
Q101,103,104
HV REG OCP DETECTOR
HV REG,OCP
Q102
HV REG SWITCHING
IC501
P.W.M CONTROL
IC502
IK PROT
HV PROT
RV503
HV PROT
POWER ON
Q113
POWER ON RESET
D105,106
±30V RECT
±30V
RV502
IK PROT
HV PROT
HV DRIVE P
Q105,108,109
AMP
HV OUT SWITCHING
L101
LOT
T1
FBT
HV
FBT(H)
HEATER
Q301~305
Q321,322
D.F.Y, D.F.X
D.F.X AMP
D.F.Y AMP
T301
DFT
DFX/DFY
FOCUS BLOCK
MV
FV1
FV2
PA
IC7002
BUFFER
IC7001
SUB MICROCOMPUTER
X7001
IC7004
EEP ROM
B
H.OSC, PHASE
HV OCP
POWER ON
IC7003,7005
BUFFER DIGITAL-ANALOG CONVERTER
IC801(1/2)
LANDING AMP
LANDING
IC401(1/2)
ROTATION AMP
20inch only
ROT
NTC
IC801(2/2)
NTC AMP
IC301,401(2/2)
H.CONVERGENCE CENTER AMP
H.CONVERGENCE AMP
20inch only
DEFLECTION YOKE
V OUT
IC601
+B PROT
H/V STOP
IC2017
H/V DRIVE PULSE GENERATER
HV DRV P
IC501
COMPARATOR
Q54,56~58
+B PROTECT
+B
Q51
H PIN/W
IC701,Q701,702
P.W.M CONT P.W.M DRIVE
P.W.M
T5001
H.L.T
IC101
Q101~105
H CENTER
V BLK B/T, H BLK PH
H CENT
IC101,106,113
V.BLK GEN BUFFER V.S.P GEN
V BLK P1
V.S.P
H.BLK P
IC2016,2002
H SYNC GEN H DELAY SW
HS
IC2007
H.OSC, AFC
Q1
H DRIVE
+5000
H.D.T
Q2
H OUT
T5002 H.O.T
AFC P
IC105
SIGNAL GENERATOR
IC115
DEFLECTION GEN
IC112
H CONVERGENCE GENERATER
IC118
8-CH DIGITAL/ANALOG GEN
IC114
V DRIVE GEN H.PIN/WIDTH
IC108,111(2/2)
H.CONV. SIDE MODU H.LIN GEN
IC111(1/2)
D.F.Y GNE
IC301,119
D.F.X MOD D.F.X GEN
V DRIVE
H.CONV C
H.CONV S
NTC
D.F.Y
D.F.X
AFC P, V BLK P1,2, V.S.P, H BLK P
IC2001~2003,2705
V.COUNTER 2FH PULSE GEN
VS
IC2701~2704
V.COUNTER
IC2002,2007,2011
V.DELAY SW V.OSC.AFC V.PULSE GEN
IC2012,2019
V.BLK PULSE 2 GENERATER
DF BLK PULSE GENERATER
CLK
V BLK P1,2
DFX BLK
V BLK P1
V PULSE
E
D

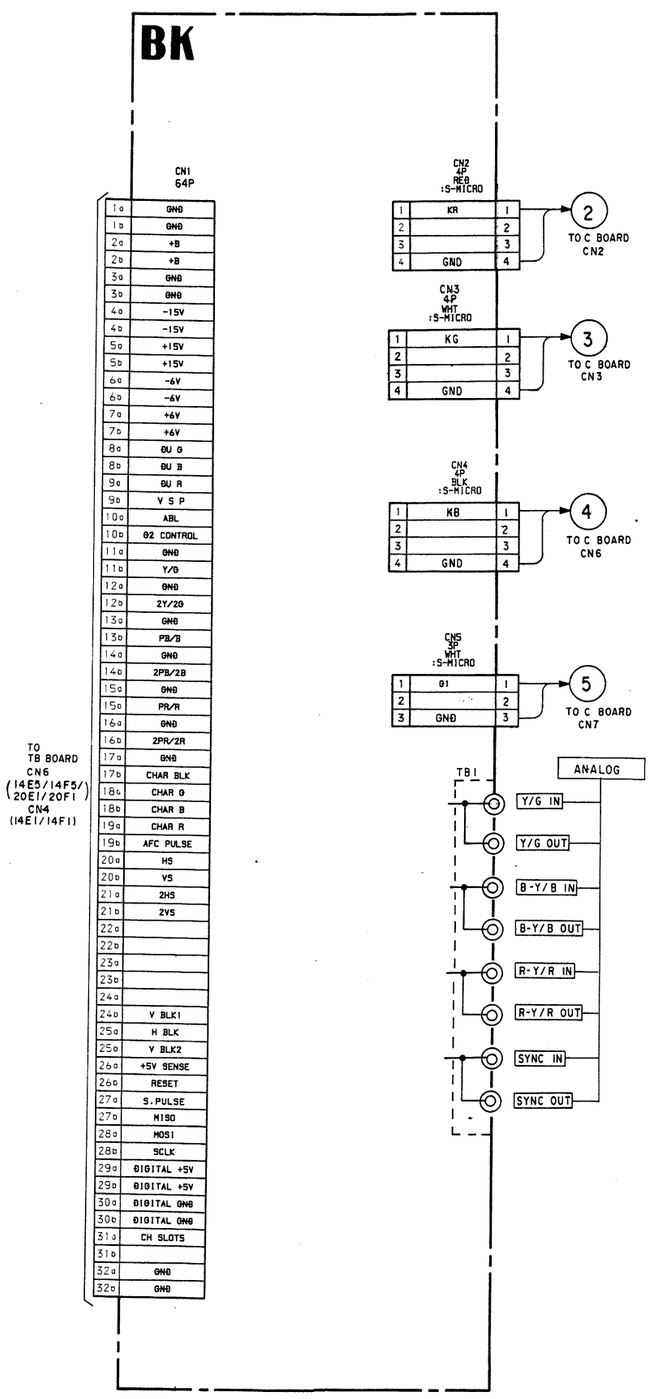

G
AC IN 100~240V 50/60Hz
F1
S901
D1
MAIN RECT
T3
PFCT
IC106
PFC FAILURE DETECT
PFC
IC2
AC IN DET
Q5
PFC SWITCHING
T4
SRT
D101,102
±6V RECT
+6V
-6V
IC1
PFC CONTROL
HIGH SIDE SWITCH Q6
Q7
LOW SIDE SWITCHING
±15V RECT
D103,104
+15V
-15V
PFC OUT OVP
+B RECT
D105,106
+B
PC2
P.W.R ISORATOR
5V
Q103~105 SWITCH
E PROT POWER SHUT DOWN, POWER
PC1
+B REG ISORATOR
IC101
+B REG
RV1
+B ADJ
17
IC101,102,0101,102
HALF BRIDGE P.W.M CONTROL DRIVER P.W.M SWITCH SOFT START
GA
T5
SRT
+15V
D107
+5V RECT
DIGITAL 5V
D108,110
±15V RECT
IC104,105
±12V REG
±12V
IC1, Q1
GAIN CTRL AMP
GC
IC4
RCC SWITCHING
PC3
RCC PROTECTOR ISOLATOR
+5V SENSOR
PC4
+5V REG ISOLATOR
G PROT 1
G PROT 4
IC301~303
PROTECTOR ENCODER
IC202~204(1/2)
±6V OCP DET
±15V OCP DET
+B OCP DET
IC202~204(2/2)
±6V OVP DET
±15V OVP DET
+B OVP DET
POWER SHUT DOWN, PFC
GB

5-2. FRAME SCHEMATIC DIAGRAM (1)

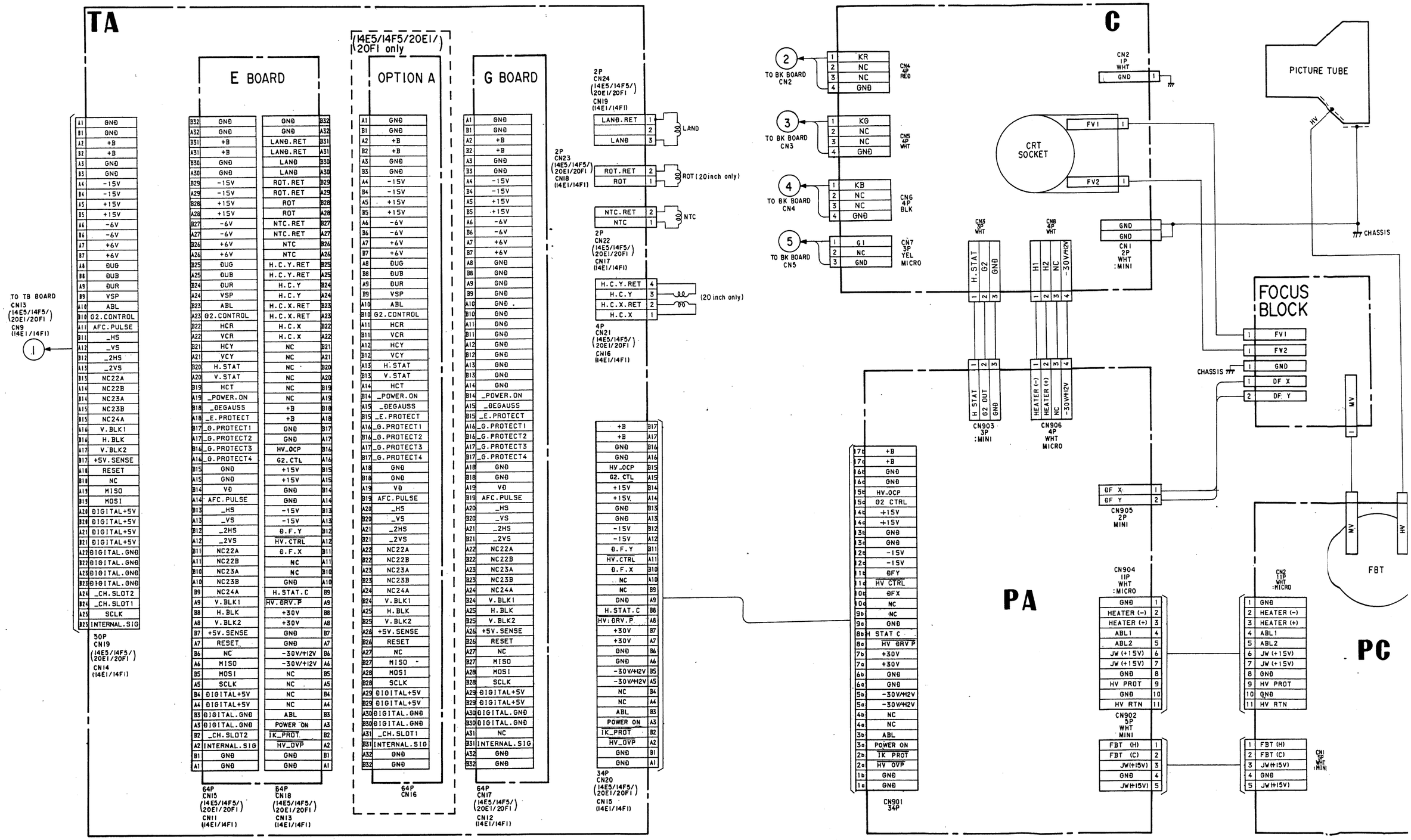



TION I
BC BOARD
GND A1 GND B1 PCK A2 DIGITAL.GND B2 DIGITAL.GND A3 D0 B3 DIGITAL.GND A4 D1 B4 DIGITAL.GND A5 D2 B5 DIGITAL.GND A6 D3 B6 DIGITAL.GND A7 D4 B7 DIGITAL.GND A8 D5 B8 DIGITAL.GND A9 D6 B9 DIGITAL.GND A10 D7 B10 DIGITAL.GND A11 D8 B11 DIGITAL.GND A12 D9 B12 DIGITAL.GND A13 DPR B13 NC A14 NC B14 NC A15 NC B15 NC A16 NC B16 NC A17 NC B17 NC A18 NC B18 NC A19 NC B19 NC A20 NC B20 NC A21 NC B21 NC A22 NC B22 NC A23 NC B23 NC A24 NC B24 NC A25 NC B25 NC A26 NC B26 NC A27 NC B27 NC A28 NC B28 NC A29 NC B29 NC A30 NC B30 NC A31 NC B31 GND A32 GND B32
64P CN8 (14E5/14F5/ 20E1/20F1 CN6 (14E1/14F1)
A1 GND B1 GND A2 +B B2 +B A3 GND B3 GND A4 -15V B4 -15V A5 +15V B5 +15V A6 -6V B6 -6V A7 +6V B7 +6V A8 GND B8 VIDEO A9 PY B9 PC A10 GND B10 Y/G A11 GND B11 PB/B A12 GND B12 PR/R A13 _CH.SLOT6 B13 _CH.SLOT7 A14 _CH.SLOT4 B14 _CH.SLOT5 A15 _CH.SLOT2 B15 _CH.SLOT3 A16 _CH.SLOT0 B16 _CH.SLOT1 A17 GND B17 _CHAR.BLK A18 _CHAR.G B18 _CHAR.B A19 _CHAR.R B19 AFC.PULSE A20 _HS. B20 _VS A21 _2HS B21 _2VS A22 NC22A B22 NC22B A23 NC23A B23 NC23B A24 NC24A B24 V.BLK1 A25 H.BLK B25 V.BLK2 A26 +5V.SENSE B26 RESET A27 S.PULSE B27 MISO A28 MOSI B28 SCLK A29 DIGITAL+5V B29 DIGITAL+5V A30 DIGITAL.GND B30 DIGITAL.GND A31 NC B31 INTERNAL.SIG A32 GND B32 GND
64P CN1
GND A1 GND B1 PCK A2 DIGITAL.GND B2 DIGITAL.GND A3 D0 B3 DIGITAL.GND A4 D1 B4 DIGITAL.GND A5 D2 B5 DIGITAL.GND A6 D3 B6 DIGITAL.GND A7 D4 B7 DIGITAL.GND A8 D5 B8 DIGITAL.GND A9 D6 B9 DIGITAL.GND A10 D7 B10 DIGITAL.GND A11 D8 B11 DIGITAL.GND A12 D9 B12 +12V A13 _TALLY B13 +5V A14 _STANDBY B14 _POWER A15 _OVERLOAD B15 _H.SYNC A16 _V.SYNC B16 RTS A17 GND B17 NC A18 RXD B18 +5V A19 TXD B19 GND A20 _TXD B20 RXD A21 GND B21 +5V A22 GND B22 TXD A23 _RXD B23 GND A24 NC B24 NC A25 NC B25 NC A26 NC B26 NC A27 NC B27 NC A28 NC B28 NC A29 NC B29 NC A30 NC B30 NC A31 NC B31 GND A32 GND B32
64P CN7 (14E5/14F5/ 20E1/20F1 CN5 (14E1/14F1)
GND A1 GND B1 +B A2 +B B2 GND A3 GND B3 -15V A4 -15V B4 +15V A5 +15V B5 -6V A6 -6V B6 +6V A7 +6V B7 DUG A8 DUB B8 DUR A9 VSP B9 ABL A10 G2.CONTROL B10 AFC.PULSE A11 _HS B11 _VS A12 _2HS B12 _2VS A13 NC22A B13 NC22B A14 NC23A B14 NC23B A15 NC24A B15 V.BLK1 A16 H.BLK B16 V.BLK2 A17 +5V.SENSE B17 RESET A18 NC B18 MISO A19 MOSI B19 DIGITAL+5V A20 DIGITAL+5V B20 DIGITAL+5V A21 DIGITAL+5V B21 DIGITAL.GND A22 DIGITAL.GND B22 DIGITAL.GND A23 DIGITAL.GND B23 _CH.SLOT2 A24 _CH.SLOT1 B24 SCLK A25 INTERNAL.SIG B25
50P CN13 (14E5/14F5/ 20E1/20F1 CN9 (14E1/14F1)
1
TO TA BOARD CN19

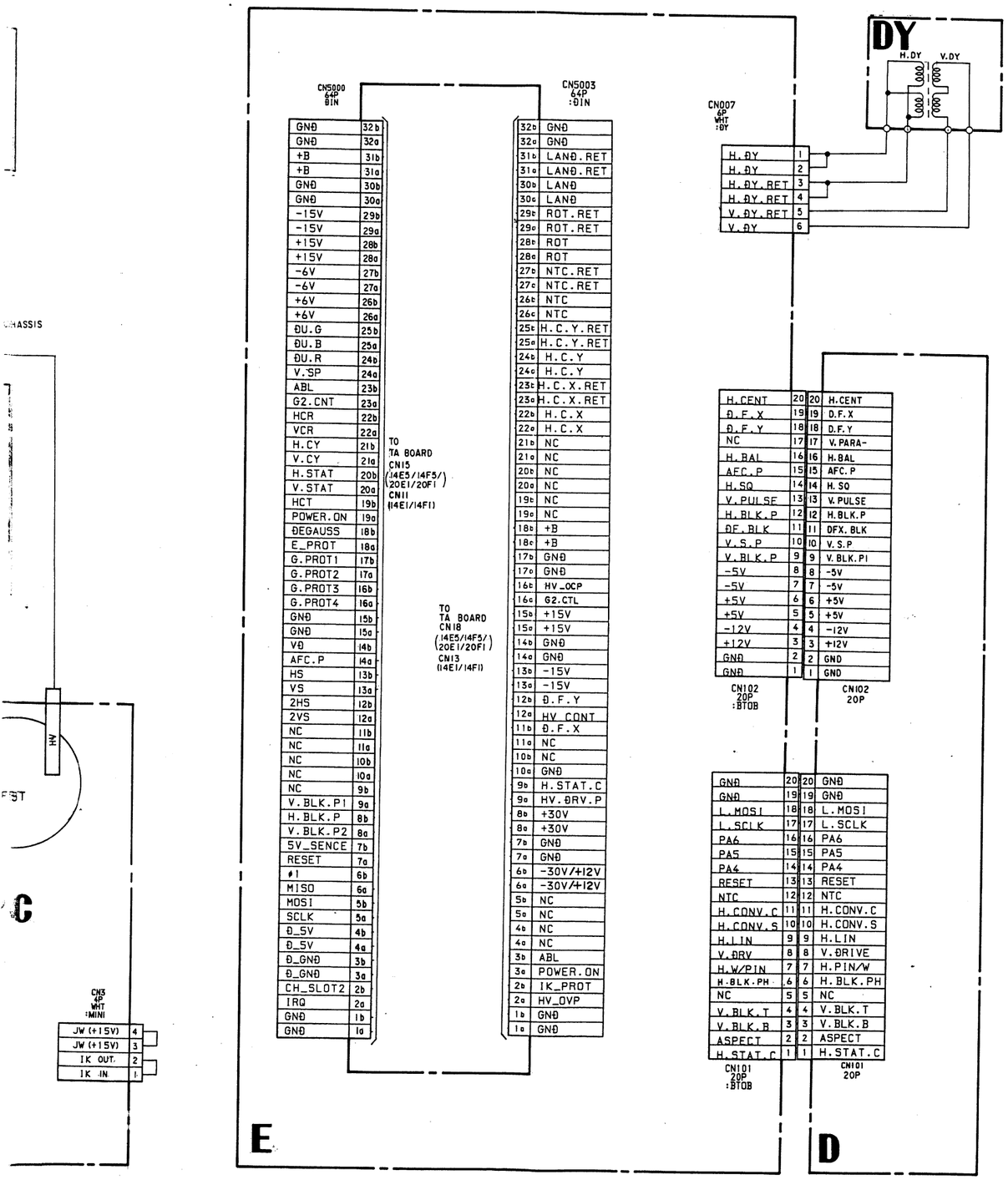

BC
CN1 64P
GND A1 GND B1 +B A2 +B B2 GND A3 GND B3 -15V A4 -15V B4 +15V A5 +15V B5 -6V A6 -6V B6 +6V A7 +6V B7 GND A8 VIDEO B8 P.Y. OUT A9 P.C. OUT B9 GND A10 Y/G B10 GND A11 PB/B B11 GND A12 PR/R B12 SLOT_6 A13 SLOT_7 B13 SLOT_4 A14 SLOT_5 B14 SLOT_2 A15 SLOT_3 B15 SLOT_0 A16 SLOT_1 B16 GND A17 CHAR_BLANK B17 CHAR_G A18 CHAR_B B18 CHAR_R A19 AFC B19 H SYNC A20 V SYNC B20 2H SYNC A21 2V SYNC B21 N.C. A22 N.C. B22 N.C. A23 N.C. B23 N.C. A24 V BLANK1 B24 H BLANK A25 V BLANK2 B25 N.C. A26 RESET B26 SAMPLE PULSE A27 MISO B27 MOSI A28 SCLK B28 DIGITAL +5V A29 DIGITAL +5V B29 DIGITAL GND A30 DIGITAL GND B30 N.C. A31 INT. SG. B31 GND A32 GND B32
TO TB BOARD CN1
CN2 64P
A1 B1 A2 B2 A3 B3 A4 B4 A5 B5 A6 B6 A7 B7 A8 B8 A9 B9 A10 B10 A11 B11 A12 B12 A13 +12V B13 TALLY A14 +5V B14 STANDBY A15 POWER B15 OVERLOAD A16 H SYNC B16 V SYNC A17 N.C. B17 GND A18 N.C. B18 TXD A19 +5V B19 RXD A20 GND B20 TXD A21 RXD B21 GND A22 +5V B22 GND A23 TXD B23 RXD A24 GND B24 A25 B25 A26 B26 A27 B27 A28 B28 A29 B29 A30 B30 A31 B31 A32 B32
TO TB BOARD C7 (14E5/14F5/ 20E1/20F1 CN5 (14E1/14F1)
CN3 ON OFF
REMOTE 1 IN
TERMINATE
CN4
REMOTE 1 OUT
CN5
REMOTE 2
CN6
ISR
Interactive Status Reporting

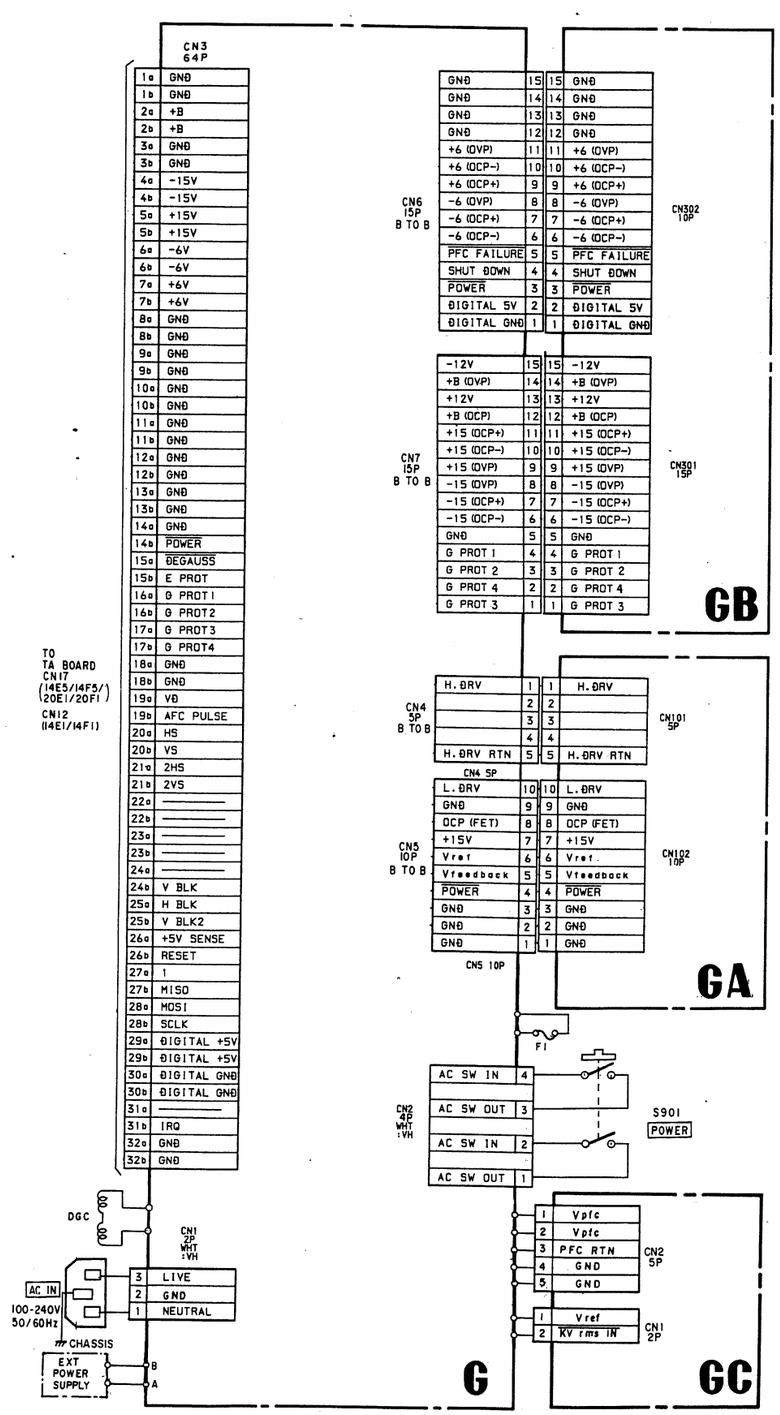

BK
CN1 64P
1a GND 1b GND 2a +B 2b +B 3a GND 3b GND 4a -15V 4b -15V 5a +15V 5b +15V 6a -6V 6b -6V 7a +6V 7b +6V 8a DU G 8b DU B 9a DU R 9b V S P 10a ABL 10b 02 CONTROL 11a GND 11b Y/G 12a GND 12b 2Y/2G 13a GND 13b PB/B 14a GND 14b 2PB/2B 15a GND 15b PR/R 16a GND 16b 2PR/2R 17a GND 17b CHAR BLK 18a CHAR G 18b CHAR B 19a CHAR R 19b AFC PULSE 20a HS 20b VS 21a 2HS 21b 2VS 22a 22b 23a 23b 24a 24b V BLK1 25a H BLK 25b V BLK2 26a +5V SENSE 26b RESET 27a S.PULSE 27b MISO 28a MOSI 28b SCLK 29a DIGITAL +5V 29b DIGITAL +5V 30a DIGITAL GND 30b DIGITAL GND 31a CH SLOTS 31b 32a GND 32b GND
TO TB BOARD CN6 (14E5/14F5/ 20E1/20F1 CN4 (14E1/14F1)
CN2 4P RED :S-MICRO
1 KR 2 3 4 GND
2
TO C BOARD CN2
CN3 4P WHT :S-MICRO
1 KG 2 3 4 GND
3
TO C BOARD CN3
CN4 4P BLK :S-MICRO
1 KB 2 3 4 GND
4
TO C BOARD CN6
CN5 3P WHT :S-MICRO
1 G1 2 3 GND
5
TO C BOARD CN7
TB1
ANALOG
Y/G IN
Y/G OUT
B-Y/B IN
B-Y/B OUT
R-Y/R IN
R-Y/R OUT
SYNC IN
SYNC OUT

FRAME SCHEMATIC DIAGRAM (2)



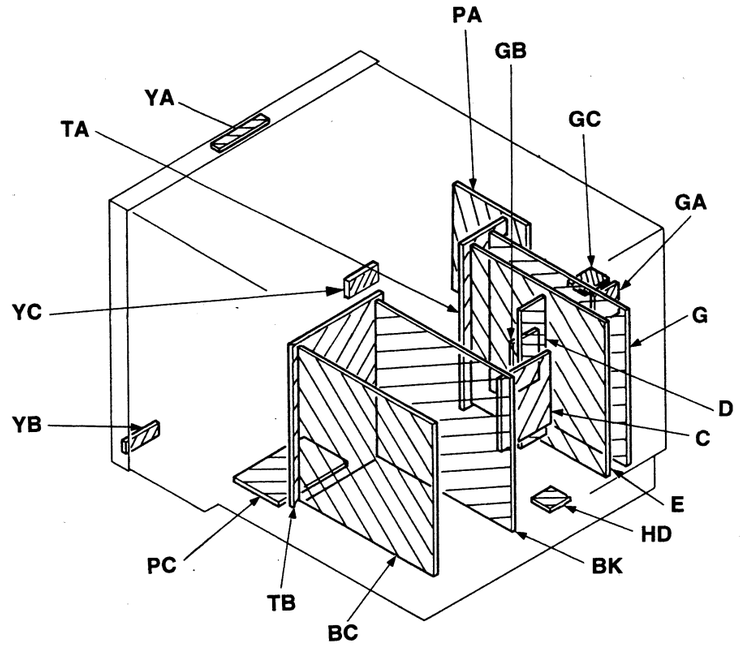
FRAME SCHEMATIC DIAGRAM



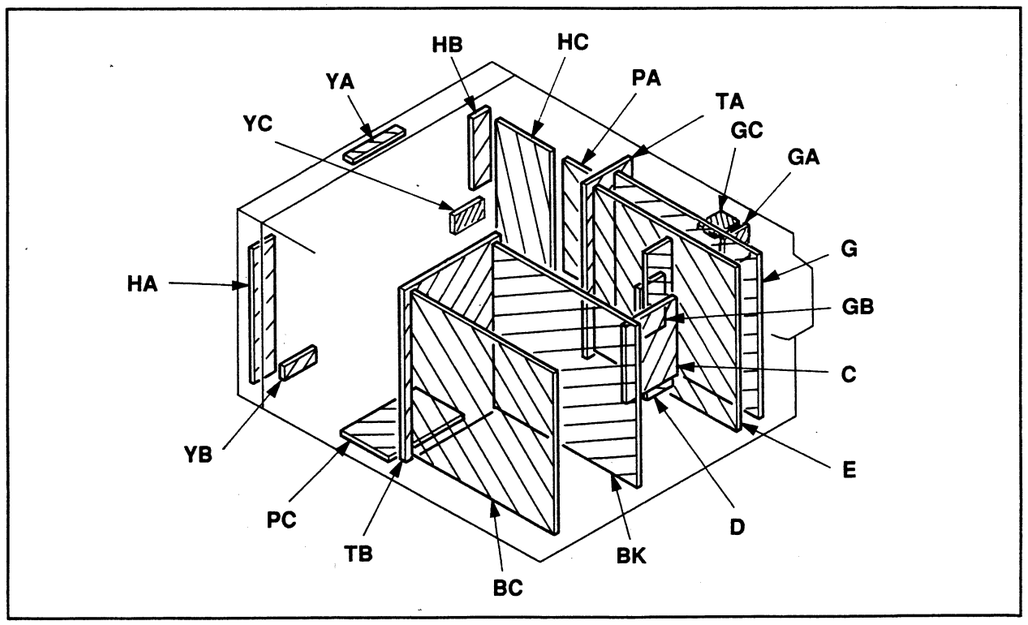


5-3. CIRCUIT BOARDS LOCATION

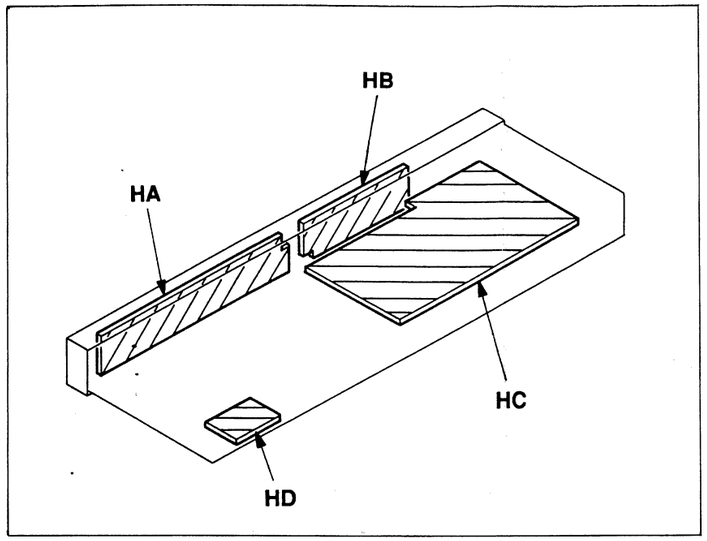
BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U



BVM-14E5E/14E5U/14F5E/14F5U



BKM-10R



5-4. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in μF unless otherwise noted.
  pF: μμF 50WV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4W

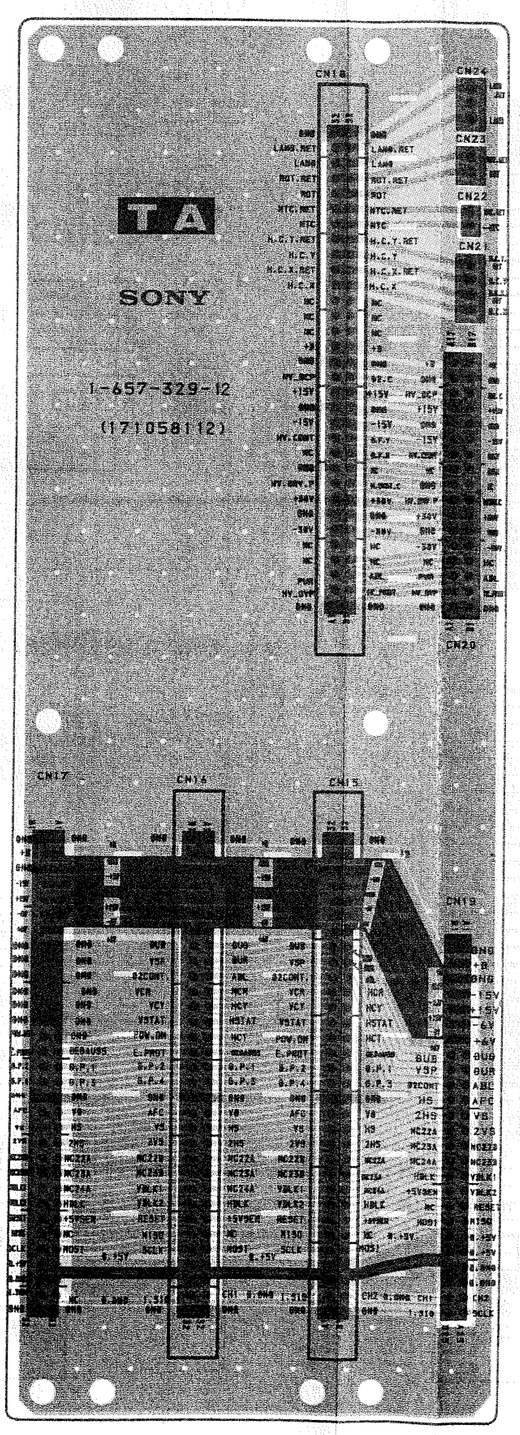
- All resistors are in ohms.
- : nonflammable resistor.
- Chip resister are 1/10W unless otherwise noted.
- : fusible resistor.
- : internal component.
- : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- METAL FILM (: RN) resister in 0.5%, 1/4W unless otherwise specified.
- The components identified by ⊠ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ⊠ and repeat the adjustment until the specified value is achieved. (Refer to ⊠RV101, ⊠RV501, ⊠RV502 and ⊠ RV503 on page 4-12 to 4-15.)

Part replaced (◪)	Adjustment (⊠)
IC101, PC1, R115, R116, R119, R120, R121, R122, RV101 ..... G board IC102, R111 ..... GA board	RV101 (+B VOLTAGE)
IC501, R509, R510, R513, R801, R802, R804, RV501 ..... PA board	RV501 (HIGH VOLTAGE)
IC502, R101, R514, R515, R516, R517, RV502 ..... PA board R1, R2, R3, R4, R5, R6 ..... PC board IC901, R912, R913 ..... BK board	RV502 (BEAM CURRENT)
IC502, R524, R525, R526, R527, R530, R808, RV503..PA board	RV503 (HOLD-DOWN)

- : Adjustment for repair.
- All voltages are in V.
- Reading are taken with component color-bar signal (R .G.B SYNC) input.
- Voltage are dc with respect to ground unless otherwise noted.
- no mark : 14inch model and comon
  ( ) : 20 inch model
- Voltage variations may be noted due to normal production tolerance.
- : B+ line.
- : B- line.
- : signal path.
- Circled numbers are waveforms reference.

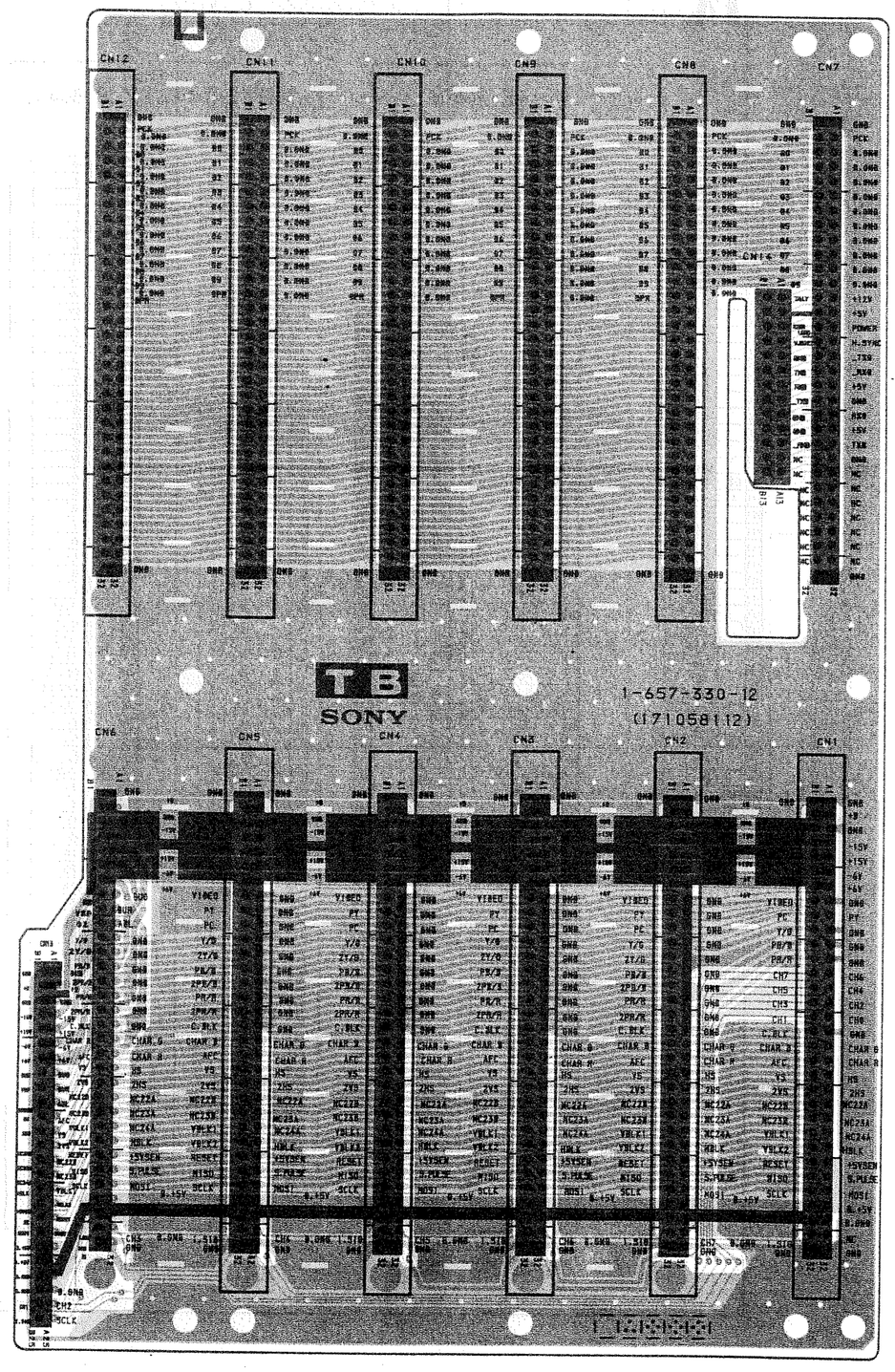
TA (MOTHER)
(BVM-14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)

— TA BOARD — <Conductor Side>



TB (MOTHER) (BVM-14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)

— TB BOARD — <Conductor Side>



Reference information

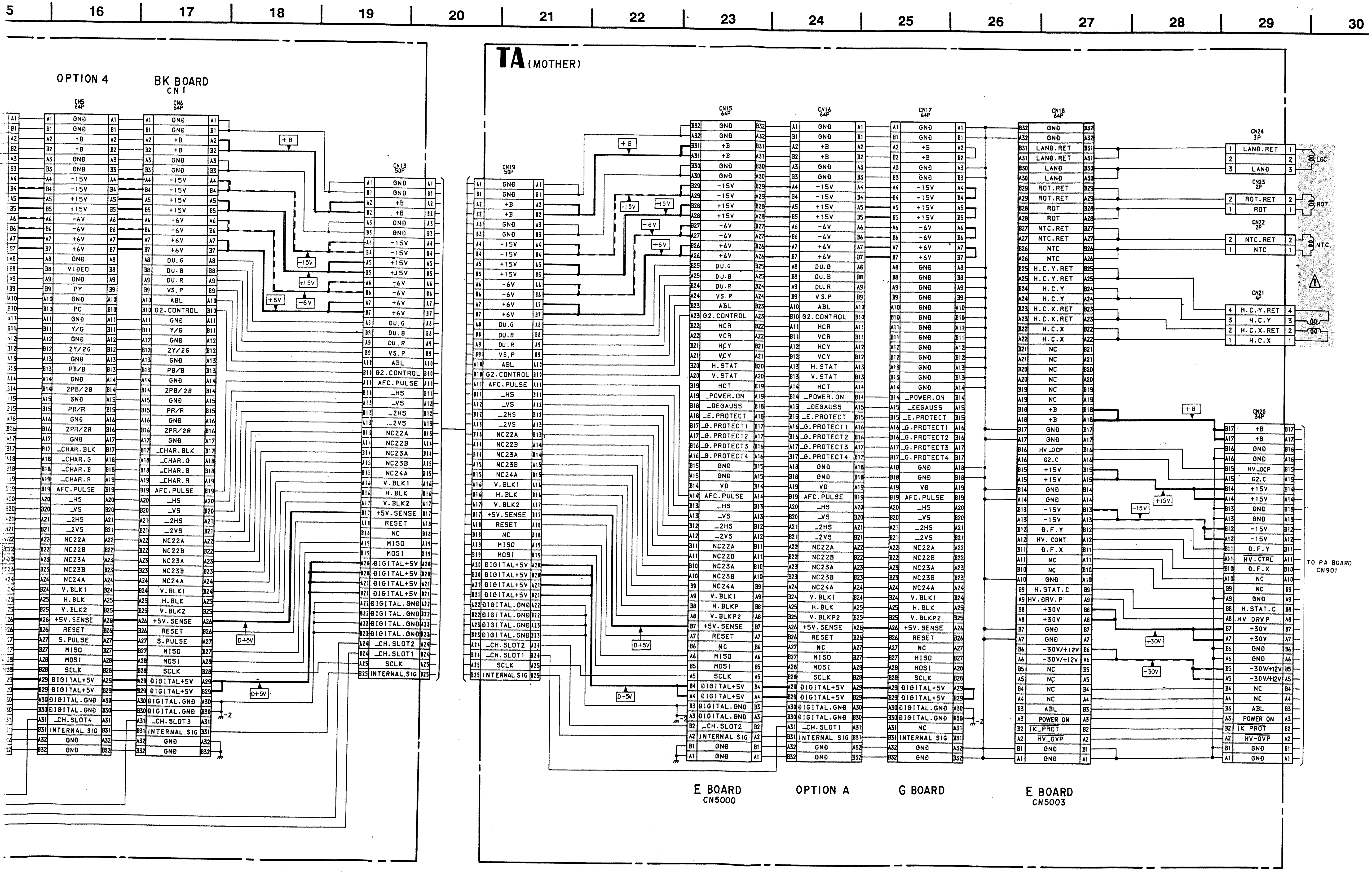
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note:
The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note:
Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

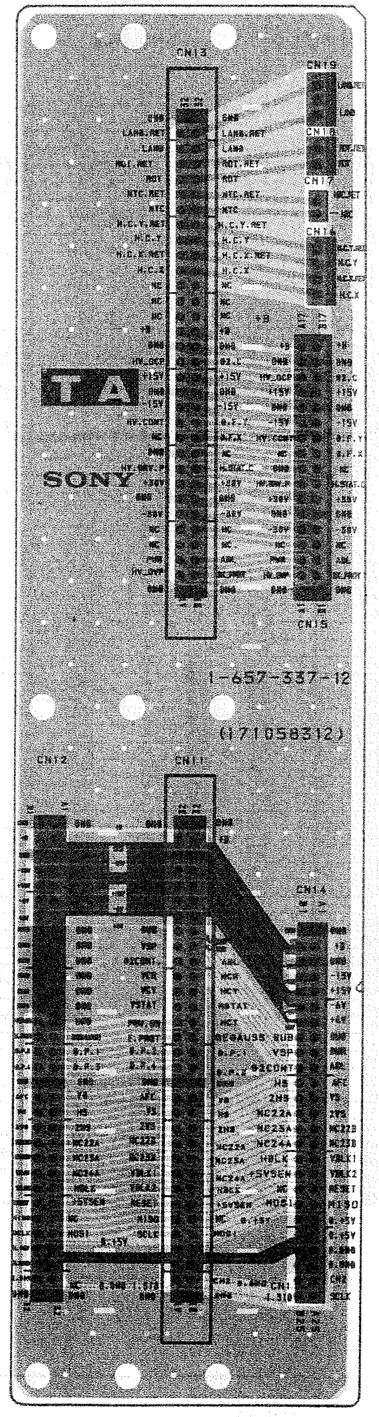
- : Pattern from the side which enables seeing.
- : **Pattern of the rear side**

• TA (MOTHER), TB (MOTHER) BOARD (BVM-14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)


5
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
TA (MOTHER)
OPTION 4
CN5 64P
A1 GND, B1 GND, A2 +B, B2 +B, A3 GND, B3 GND, A4 -15V, B4 -15V, A5 +15V, B5 +15V, A6 -6V, B6 -6V, A7 +6V, B7 +6V, A8 GND, B8 VIDEO, A9 GND, B9 PY, A10 GND, B10 PC, A11 GND, B11 Y/G, A12 GND, B12 2Y/2G, A13 GND, B13 PB/B, A14 GND, B14 2PB/2B, A15 GND, B15 PR/R, A16 GND, B16 2PR/2R, A17 GND, B17 _CHAR.BLK, A18 _CHAR.G, B18 _CHAR.B, A19 _CHAR.R, B19 AFC.PULSE, A20 _HS, B20 _VS, A21 _2HS, B21 _2VS, A22 NC22A, B22 NC22B, A23 NC23A, B23 NC23B, A24 NC24A, B24 V.BLK1, A25 H.BLK, B25 V.BLK2, A26 +5V.SENSE, B26 RESET, A27 S.PULSE, B27 MISO, A28 MOSI, B28 SCLK, A29 DIGITAL+5V, B29 DIGITAL+5V, A30 DIGITAL.GND, B30 DIGITAL.GND, A31 _CH.SLOT4, B31 INTERNAL SIG, A32 GND, B32 GND
BK BOARD CN1
CN6 64P
A1 GND, B1 GND, A2 +B, B2 +B, A3 GND, B3 GND, A4 -15V, B4 -15V, A5 +15V, B5 +15V, A6 -6V, B6 -6V, A7 +6V, B7 +6V, A8 DU.G, B8 DU.B, A9 DU.R, B9 VS.P, A10 ABL, B10 G2.CONTROL, A11 GND, B11 Y/G, A12 GND, B12 2Y/2G, A13 GND, B13 PB/B, A14 GND, B14 2PB/2B, A15 GND, B15 PR/R, A16 GND, B16 2PR/2R, A17 GND, B17 _CHAR.BLK, A18 _CHAR.G, B18 _CHAR.B, A19 _CHAR.R, B19 AFC.PULSE, A20 _HS, B20 _VS, A21 _2HS, B21 _2VS, A22 NC22A, B22 NC22B, A23 NC23A, B23 NC23B, A24 NC24A, B24 V.BLK1, A25 H.BLK, B25 V.BLK2, A26 +5V.SENSE, B26 RESET, A27 S.PULSE, B27 MISO, A28 MOSI, B28 SCLK, A29 DIGITAL+5V, B29 DIGITAL+5V, A30 DIGITAL.GND, B30 DIGITAL.GND, A31 _CH.SLOT3, B31 INTERNAL SIG, A32 GND, B32 GND
CN13 50P
A1 GND, B1 GND, A2 +B, B2 +B, A3 GND, B3 GND, A4 -15V, B4 -15V, A5 +15V, B5 +15V, A6 -6V, B6 -6V, A7 +6V, B7 +6V, A8 DU.G, B8 DU.B, A9 DU.R, B9 VS.P, A10 ABL, B10 G2.CONTROL, A11 AFC.PULSE, B11 _HS, A12 _VS, B12 _2HS, A13 _2VS, B13 NC22A, A14 NC22B, B14 NC23A, A15 NC23B, B15 NC24A, A16 V.BLK1, B16 H.BLK, A17 V.BLK2, B17 +5V.SENSE, A18 RESET, B18 NC, A19 MISO, B19 MOSI, A20 DIGITAL+5V, B20 DIGITAL+5V, A21 DIGITAL+5V, B21 DIGITAL+5V, A22 DIGITAL.GND, B22 DIGITAL.GND, A23 DIGITAL.GND, B23 DIGITAL.GND, A24 _CH.SLOT2, B24 _CH.SLOT1, A25 SCLK, B25 INTERNAL SIG
CN19 50P
A1 GND, B1 GND, A2 +B, B2 +B, A3 GND, B3 GND, A4 -15V, B4 -15V, A5 +15V, B5 +15V, A6 -6V, B6 -6V, A7 +6V, B7 +6V, A8 DU.G, B8 DU.B, A9 DU.R, B9 VS.P, A10 ABL, B10 G2.CONTROL, A11 AFC.PULSE, B11 _HS, A12 _VS, B12 _2HS, A13 _2VS, B13 NC22A, A14 NC22B, B14 NC23A, A15 NC23B, B15 NC24A, A16 V.BLK1, B16 H.BLK, A17 V.BLK2, B17 +5V.SENSE, A18 RESET, B18 NC, A19 MISO, B19 MOSI, A20 DIGITAL+5V, B20 DIGITAL+5V, A21 DIGITAL+5V, B21 DIGITAL+5V, A22 DIGITAL.GND, B22 DIGITAL.GND, A23 DIGITAL.GND, B23 DIGITAL.GND, A24 _CH.SLOT2, B24 _CH.SLOT1, A25 SCLK, B25 INTERNAL SIG
CN15 64P
B32 GND, A32 GND, B31 +B, A31 +B, B30 GND, A30 GND, B29 -15V, A29 -15V, B28 +15V, A28 +15V, B27 -6V, A27 -6V, B26 +6V, A26 +6V, B25 DU.G, A25 DU.B, B24 DU.R, A24 VS.P, B23 ABL, A23 G2.CONTROL, B22 HCR, A22 VCR, B21 HCY, A21 VCY, B20 H.STAT, A20 V.STAT, B19 HCT, A19 _POWER.ON, B18 _DEGAUSS, A18 _E.PROTECT, B17 _G.PROTECT1, A17 _G.PROTECT2, B16 _G.PROTECT3, A16 _G.PROTECT4, B15 GND, A15 GND, B14 VD, A14 AFC.PULSE, B13 _HS, A13 _VS, B12 _2HS, A12 _2VS, B11 NC22A, A11 NC22B, B10 NC23A, A10 NC23B, B9 NC24A, A9 V.BLK1, B8 H.BLKP, A8 V.BLKP2, B7 +5V.SENSE, A7 RESET, B6 NC, A6 MISO, B5 MOSI, A5 SCLK, B4 DIGITAL+5V, A4 DIGITAL+5V, B3 DIGITAL.GND, A3 DIGITAL.GND, B2 _CH.SLOT2, A2 INTERNAL SIG, B1 GND, A1 GND
E BOARD CN5000
CN16 64P
A1 GND, B1 GND, A2 +B, B2 +B, A3 GND, B3 GND, A4 -15V, B4 -15V, A5 +15V, B5 +15V, A6 -6V, B6 -6V, A7 +6V, B7 +6V, A8 DU.G, B8 DU.B, A9 DU.R, B9 VS.P, A10 ABL, B10 G2.CONTROL, A11 HCR, B11 VCR, A12 HCY, B12 VCY, A13 H.STAT, B13 V.STAT, A14 HCT, B14 _POWER.ON, A15 _DEGAUSS, B15 _E.PROTECT, A16 _G.PROTECT1, B16 _G.PROTECT2, A17 _G.PROTECT3, B17 _G.PROTECT4, A18 GND, B18 GND, A19 VD, B19 AFC.PULSE, A20 _HS, B20 _VS, A21 _2HS, B21 _2VS, A22 NC22A, B22 NC22B, A23 NC23A, B23 NC23B, A24 NC24A, B24 V.BLK1, A25 H.BLK, B25 V.BLKP2, A26 +5V.SENSE, B26 RESET, A27 NC, B27 MISO, A28 MOSI, B28 SCLK, A29 DIGITAL+5V, B29 DIGITAL+5V, A30 DIGITAL.GND, B30 DIGITAL.GND, A31 _CH.SLOT1, B31 INTERNAL SIG, A32 GND, B32 GND
OPTION A
CN17 64P
A1 GND, B1 GND, A2 +B, B2 +B, A3 GND, B3 GND, A4 -15V, B4 -15V, A5 +15V, B5 +15V, A6 -6V, B6 -6V, A7 +6V, B7 +6V, A8 GND, B8 GND, A9 GND, B9 GND, A10 GND, B10 GND, A11 GND, B11 GND, A12 GND, B12 GND, A13 GND, B13 GND, A14 GND, B14 _POWER.ON, A15 _DEGAUSS, B15 _E.PROTECT, A16 _G.PROTECT1, B16 _G.PROTECT2, A17 _G.PROTECT3, B17 _G.PROTECT4, A18 GND, B18 GND, A19 VD, B19 AFC.PULSE, A20 _HS, B20 _VS, A21 _2HS, B21 _2VS, A22 NC22A, B22 NC22B, A23 NC23A, B23 NC23B, A24 NC24A, B24 V.BLK1, A25 H.BLK, B25 V.BLKP2, A26 +5V.SENSE, B26 RESET, A27 NC, B27 MISO, A28 MOSI, B28 SCLK, A29 DIGITAL+5V, B29 DIGITAL+5V, A30 DIGITAL.GND, B30 DIGITAL.GND, A31 NC, B31 INTERNAL SIG, A32 GND, B32 GND
G BOARD
CN18 64P
B32 GND, A32 GND, B31 LAND.RET, A31 LAND.RET, B30 LAND, A30 LAND, B29 ROT.RET, A29 ROT.RET, B28 ROT, A28 ROT, B27 NTC.RET, A27 NTC.RET, B26 NTC, A26 NTC, B25 H.C.Y.RET, A25 H.C.Y.RET, B24 H.C.Y, A24 H.C.Y, B23 H.C.X.RET, A23 H.C.X.RET, B22 H.C.X, A22 H.C.X, B21 NC, A21 NC, B20 NC, A20 NC, B19 NC, A19 NC, B18 +B, A18 +B, B17 GND, A17 GND, B16 HV_OCP, A16 G2.C, B15 +15V, A15 +15V, B14 GND, A14 GND, B13 -15V, A13 -15V, B12 D.F.Y, A12 HV.CONT, B11 D.F.X, A11 NC, B10 NC, A10 GND, B9 H.STAT.C, A9 HV.DRV.P, B8 +30V, A8 +30V, B7 GND, A7 GND, B6 -30V/+12V, A6 -30V/+12V, B5 NC, A5 NC, B4 NC, A4 NC, B3 ABL, A3 POWER ON, B2 IK_PROT, A2 HV_OVP, B1 GND, A1 GND
E BOARD CN5003
CN24 3P
1 LAND.RET 1, 2 2, 3 LAND 3
LCC
CN23 2P
2 ROT.RET 2, 1 ROT 1
ROT
CN22 2P
2 NTC.RET 2, 1 NTC 1
NTC
CN21 4P
4 H.C.Y.RET 4, 3 H.C.Y 3, 2 H.C.X.RET 2, 1 H.C.X 1
CN20 34P
B17 +B, A17 +B, B16 GND, A16 GND, B15 HV_OCP, A15 G2.C, B14 +15V, A14 +15V, B13 GND, A13 GND, B12 -15V, A12 -15V, B11 D.F.Y, A11 HV.CTRL, B10 D.F.X, A10 NC, B9 NC, A9 GND, B8 H.STAT.C, A8 HV DRV P, B7 +30V, A7 +30V, B6 GND, A6 GND, B5 -30V/+12V, A5 -30V/+12V, B4 NC, A4 NC, B3 ABL, A3 POWER ON, B2 IK PROT, A2 HV-OVP, B1 GND, A1 GND
TO PA BOARD CN901
+B
-15V
+15V
+6V
-6V
D+5V
-2
+30V
-30V

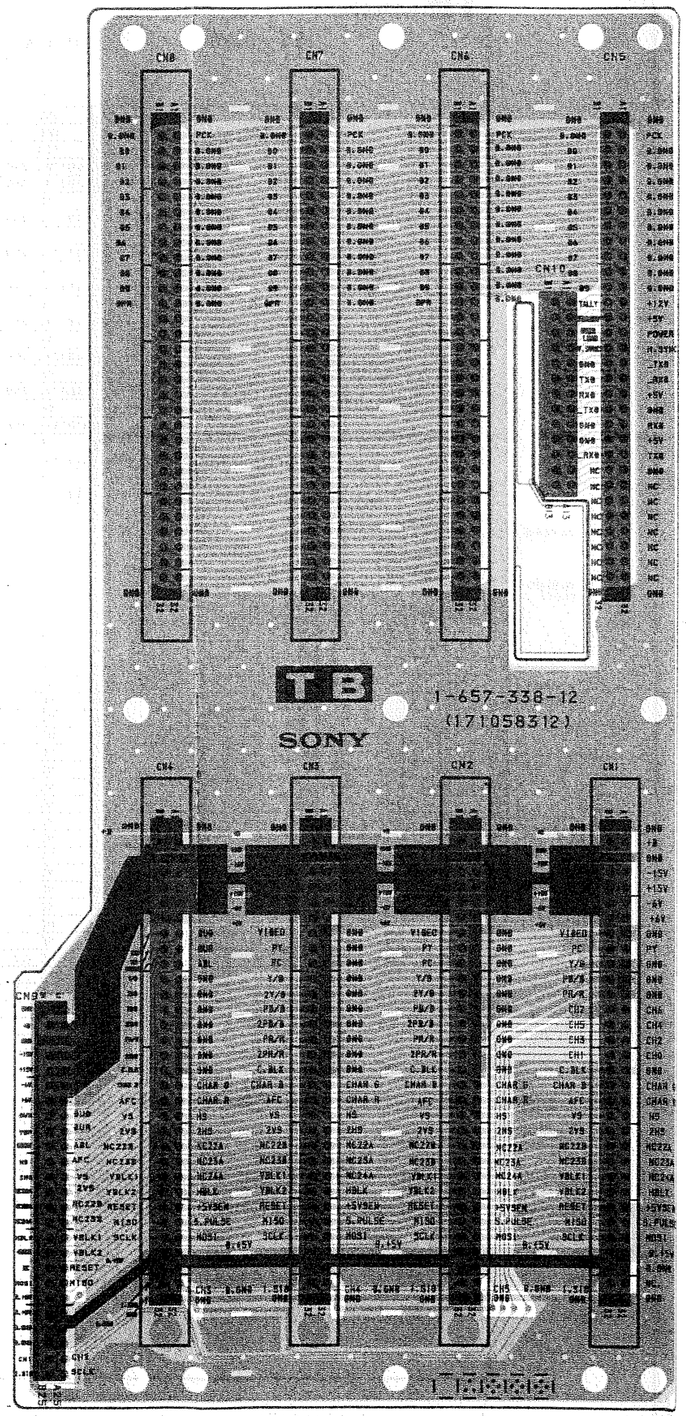
TA (MOTHER) (BVM-14E1E/14E1U/14F1E/14F1U)

— TA BOARD — <Conductor Side>



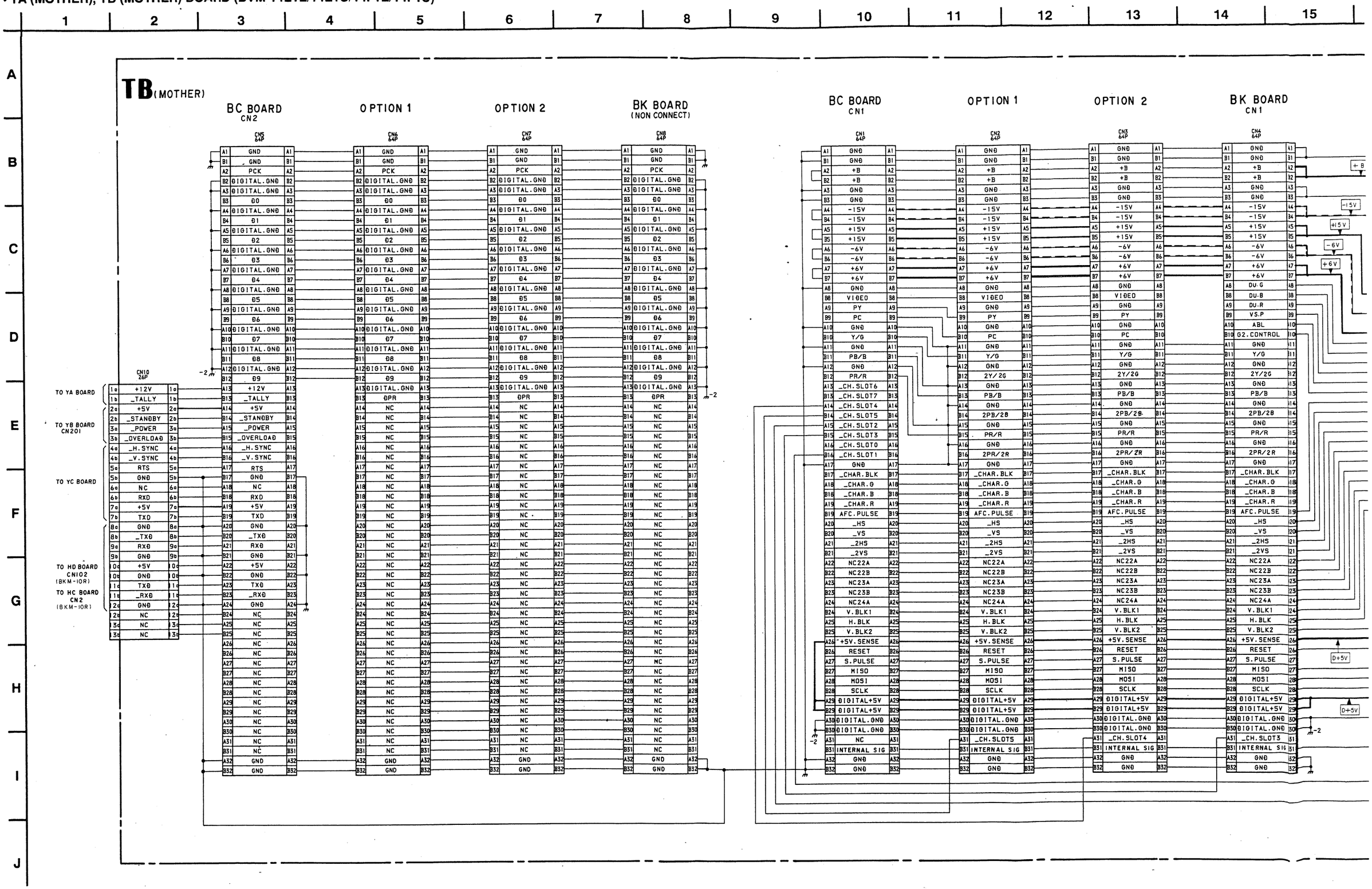
TB (MOTHER) (BVM-14E1E/14E1U/14F1E/14F1U)

— TB BOARD — <Conductor Side>



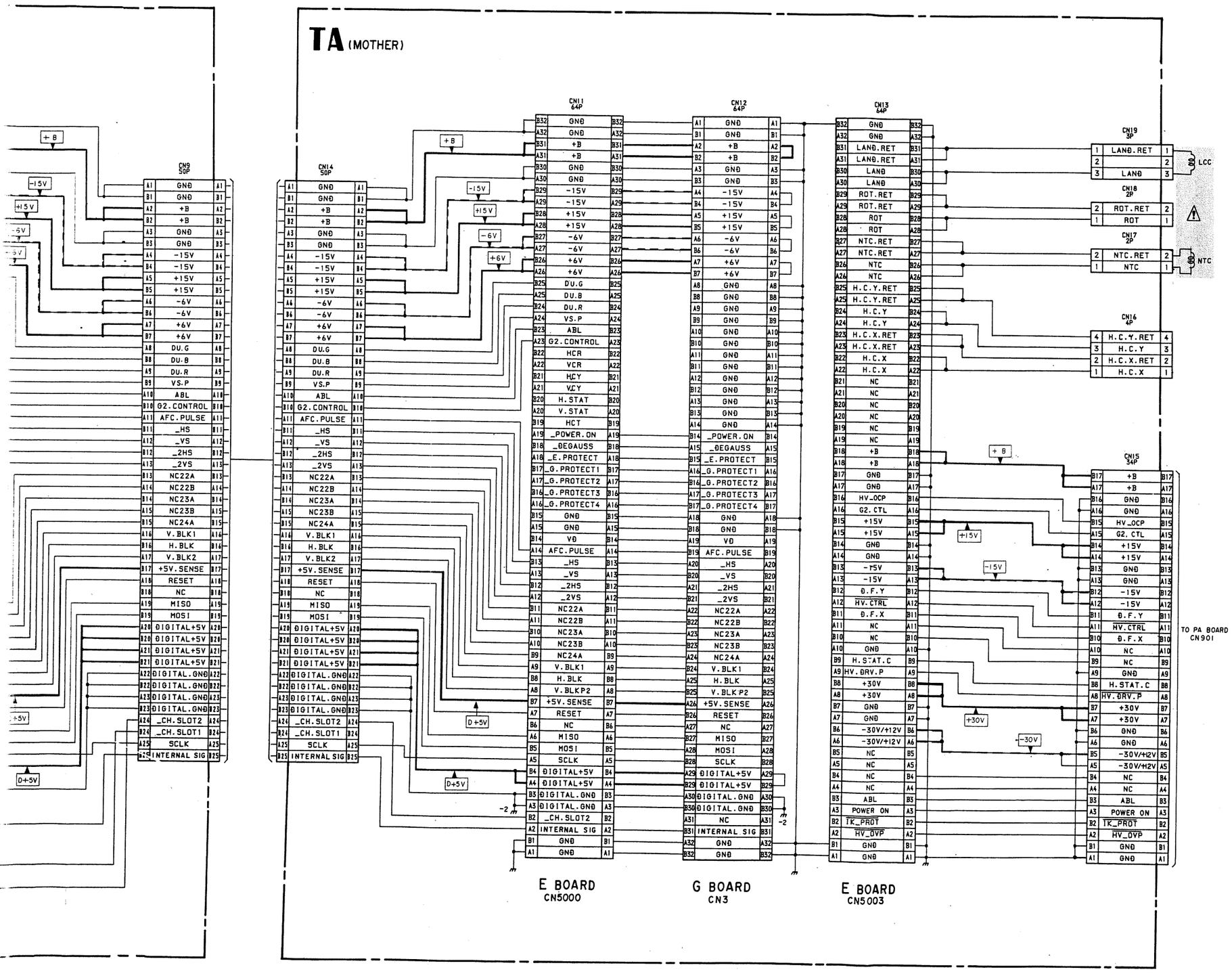
• : Pattern from the side which enables seeing.
• : Pattern of the rear side.

• TA (MOTHER), TB (MOTHER) BOARD (BVM-14E1E/14E1U/14F1E/14F1U)



16 17 18 19 20 21 22 23 24 25 26 27

TA (MOTHER)

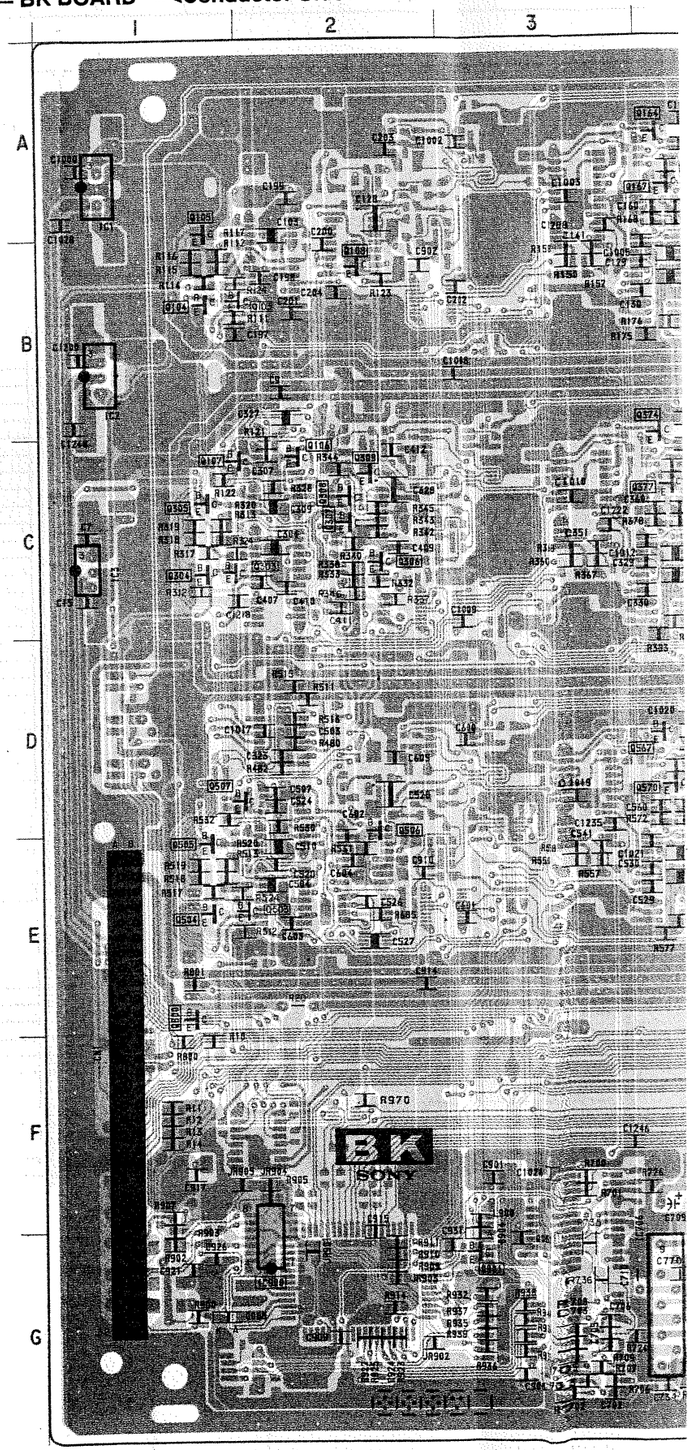


BK BOARD

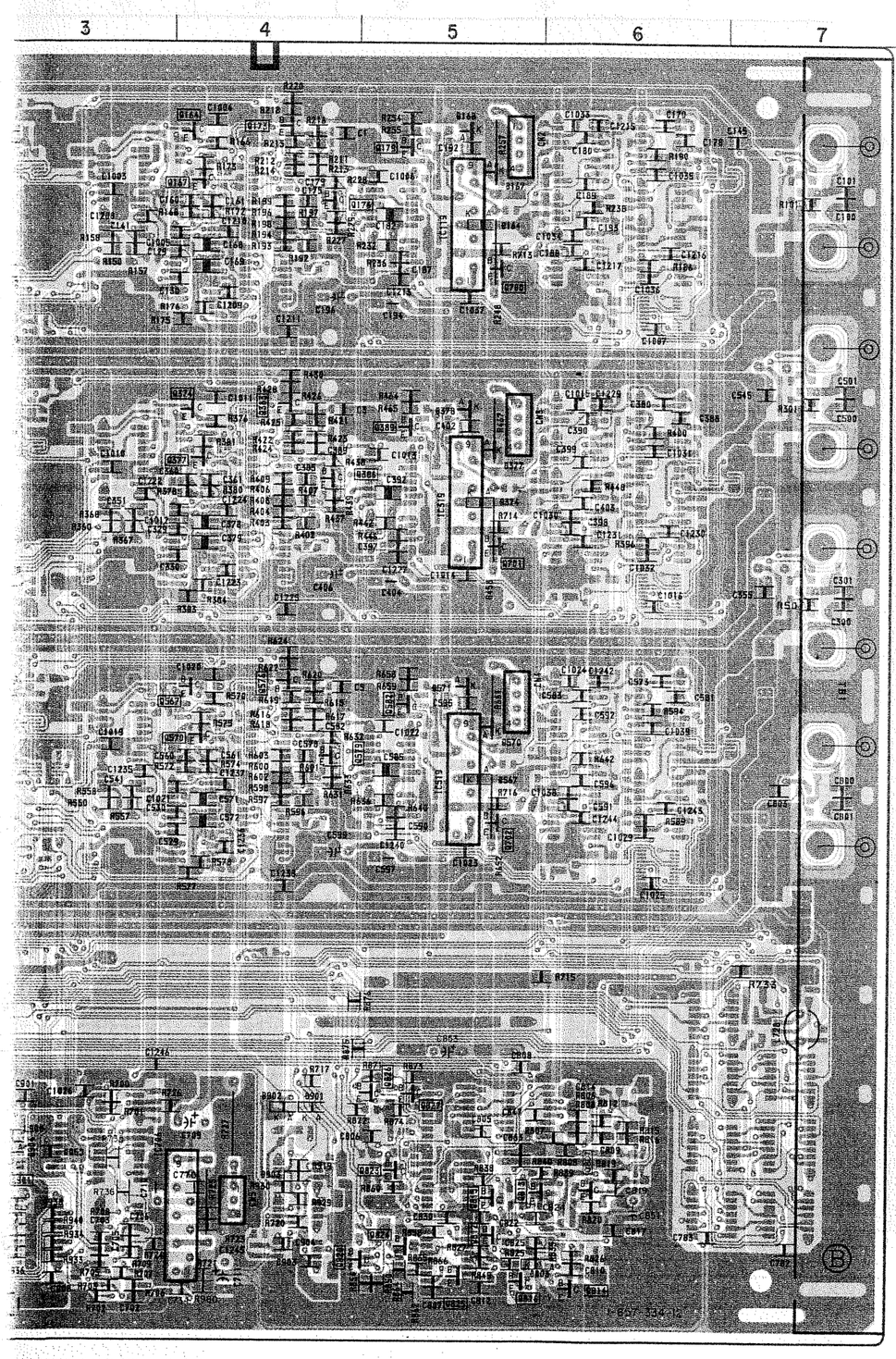
SEMICONDUCTOR LOCATION

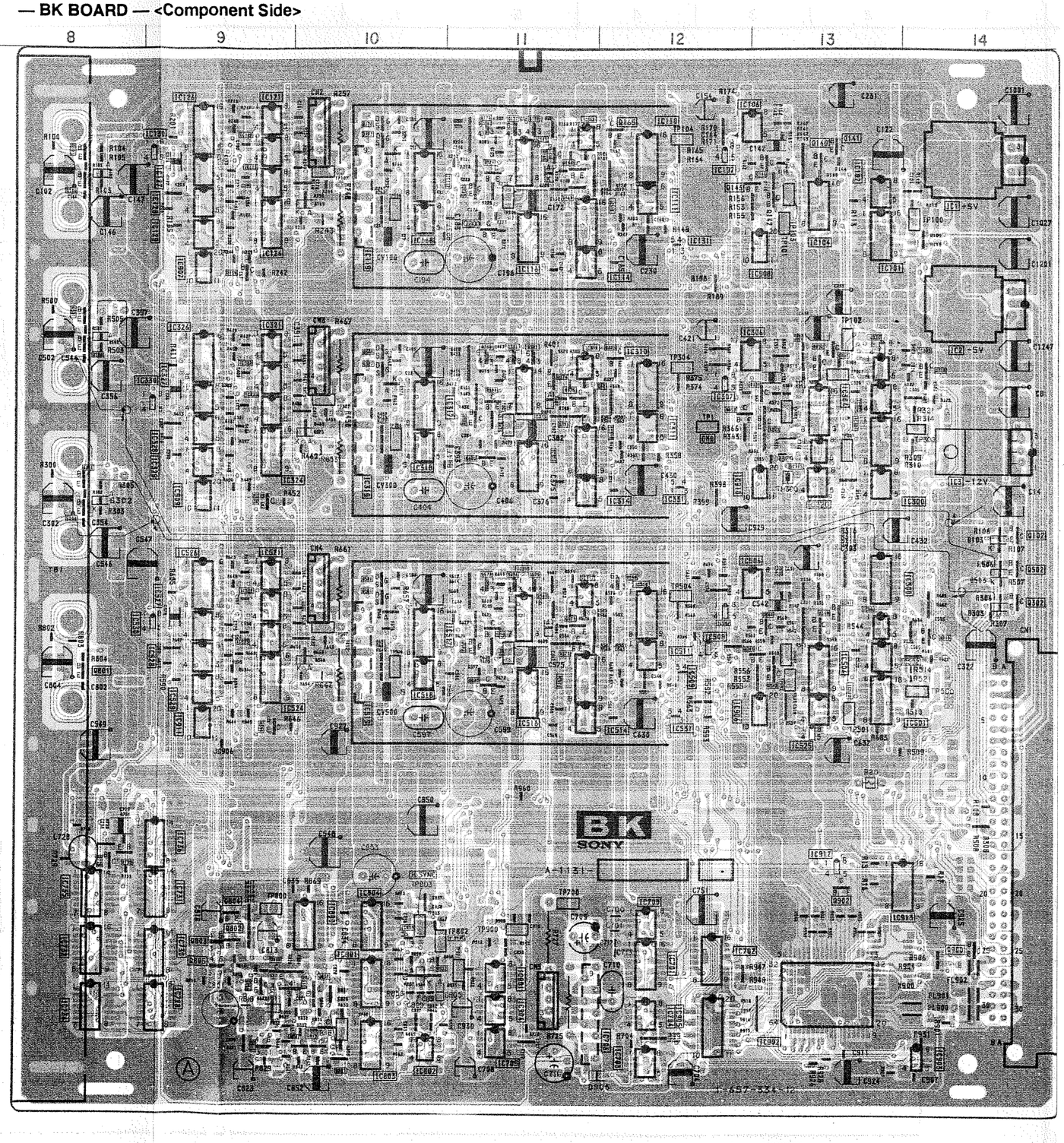
IC											
IC1	A-1	IC510	D-12	Q141	A-13	Q544	D-13	D303	D-14		
IC2	B-1	IC511	E-12	Q142	A-13	Q567	D-4	D374	C-5		
IC3	C-1	IC512	D-11	Q143	A-12	Q568	D-12	D375	C-10		
IC101	B-13	IC513	E-11	Q144	A-13	Q569	D-11	D376	C-10		
IC102	A-13	IC514	E-11	Q164	A-4	Q570	D-4	D377	C-5		
IC104	B-13	IC515	D-11	Q165	A-12	Q571	D-11	D378	C-5		
IC106	A-12	IC516	E-11	Q166	A-11	Q572	D-11	D400	C-11		
IC107	A-12	IC517	D-10	Q167	A-4	Q573	D-11	D401	C-11		
IC110	A-12	IC518	E-10	Q168	A-11	Q574	D-11	D502	B-8		
IC111	A-12	IC519	D-5	Q169	A-11	Q575	D-11	D503	D-14		
IC112	A-11	IC520	E-13			Q576	D-4	D567	D-5		
IC113	B-11	IC521	D-9	Q170	A-11			D568	E-10		
IC114	B-11	IC522	D-9	Q171	A-11	Q577	D-11	D569	D-10		
IC115	A-11	IC523	D-9	Q172	A-11	Q578	D-11	D570	D-5		
IC116	B-11	IC524	E-9	Q173	A-4	Q579	D-4	D571	D-5		
IC117	A-10	IC525	E-13	Q174	A-11	Q580	D-10	D600	D-11		
IC118	B-10	IC526	D-9	Q175	A-11	Q581	D-10	D601	D-11		
IC119	A-5	IC527	D-9	Q176	A-4	Q582	D-5	D802	G-9		
IC121	A-9	IC528	E-9	Q177	A-10	Q590	E-9	D803	G-5		
IC122	A-9	IC529	E-9	Q178	A-10	Q600	E-11	D804	G-10		
IC123	A-9	IC530	D-9	Q179	A-5	Q700	B-5	D805	G-10		
IC124	B-9	IC531	E-12	Q190	B-9	Q701	C-5	D900	G-1		
IC126	A-9	IC700	F-12	Q200	B-11	Q702	E-5	D901	F-4		
IC127	A-9	IC701	G-12	Q300	D-8	Q728	F-8	D902	F-4		
IC128	B-9	IC702	G-12	Q301	C-8	Q729	F-8	D903	G-4		
IC129	B-9	IC703	G-12	Q302	D-14	Q800	E-1	D904	G-3		
IC130	A-9	IC704	G-12	Q303	C-2	Q801	E-8	D905	G-11		
IC131	A-12	IC705	G-11	Q304	C-1	Q802	F-9	VARIABLE RESISTOR			
IC300	C-13	IC706	G-4	Q305	C-1	Q803	F-9				
IC301	C-13	IC728	G-9	Q306	C-2	Q804	F-9	CV100	B-10		
IC302	C-13	IC730	F-9	Q307	C-2	Q805	G-9	CV300	C-10		
IC303	C-13	IC731	F-9	Q308	C-2	Q806	G-9	CV500	E-10		
IC304	C-13	IC732	F-8	Q309	C-2	Q807	G-6	TEST POINT			
IC305	C-13	IC734	G-8	Q310	C-14	Q808	G-9				
IC306	C-12	IC735	F-8	Q350	C-13	Q809	G-9	TP1	C-12		
IC307	C-12	IC736	F-9	Q351	C-13	Q810	G-9	TP100	B-14		
IC310	C-12	IC800	F-10	Q352	C-13	Q811	G-10	TP101	B-13		
IC311	C-12	IC801	G-10	Q353	C-12	Q812	G-5	TP102	B-13		
IC312	C-11	IC802	G-10	Q354	C-13	Q813	G-5	TP103	A-13		
IC313	C-11	IC803	G-10	Q374	B-4	Q814	G-6	TP104	A-12		
IC314	C-11	IC804	F-10	Q375	C-12	Q815	G-5	TP105	A-11		
IC315	C-11	IC805	F-10	Q376	C-11	Q816	G-5	TP106	B-10		
IC316	C-11	IC900	G-2	Q377	B-4	Q817	G-10	TP107	A-10		
IC317	C-10	IC901	G-11	Q378	C-11	Q818	G-10	TP300	C-14		
IC318	C-10	IC902	G-13	Q379	C-11	Q819	G-10	TP301	C-13		
IC319	C-5	IC903	G-14	Q380	C-11	Q820	G-4	TP302	C-13		
IC320	C-13	IC904	G-11	Q381	C-11	Q821	G-10	TP303	C-13		
IC321	C-9	IC905	G-12	Q382	C-11	Q822	G-10	TP304	C-12		
IC322	C-9	IC906	E-13	Q383	B-4	Q823	G-5	TP305	C-11		
IC323	C-9	IC907	B-9	Q384	C-11	Q824	G-5	TP306	C-10		
IC324	C-9	IC908	B-13	Q385	C-11	Q825	G-5	TP307	C-10		
IC325	B-13	IC909	C-9	Q386	B-4	Q826	F-5	TP500	E-14		
IC326	C-9	IC910	C-13	Q387	C-10	Q827	F-5	TP501	E-13		
IC327	C-9	IC911	E-9	Q388	C-10	Q900	F-13	TP502	E-13		
IC328	C-9	IC912	F-13	Q389	C-5	Q901	G-3	TP503	E-13		
IC329	C-9	IC913	F-13	Q390	C-9	Q902	F-13	TP504	D-12		
IC330	C-9	TRANSISTOR		Q400	C-11	DIODE		TP505	E-11		
IC331	C-12			Q500	B-8			TP506	E-10		
IC500	D-13	Q100	A-8	Q501	B-8	D102	A-8	TP507	D-10		
IC501	E-13	Q101	A-8	Q502	D-14	D103	D-14	TP700	F-11		
IC502	E-13	Q102	D-14	Q503	E-2	D164	A-5	TP800	F-9		
IC503	D-13	Q103	B-2	Q504	E-1	D165	B-10	TP801	G-10		
IC504	E-13	Q104	B-1	Q505	E-1	D166	A-10	TP802	F-10		
IC506	D-12	Q105	A-1	Q506	D-2	D167	A-5	TP803	F-10		
IC507	D-12	Q106	C-1	Q507	D-1	D168	A-5	TP900	F-11		
IC508	D-12	Q107	C-1	Q510	D-14	D200	A-11	TP901	G-11		
IC509	E-12	Q108	B-2	Q540	D-13	D201	A-11				
		Q140	A-13	Q541	D-13	D302	D-8				
				Q542	E-13						
				Q543	E-13						

— BK BOARD — <Conductor Side>



— BK BOARD — <Component Side>

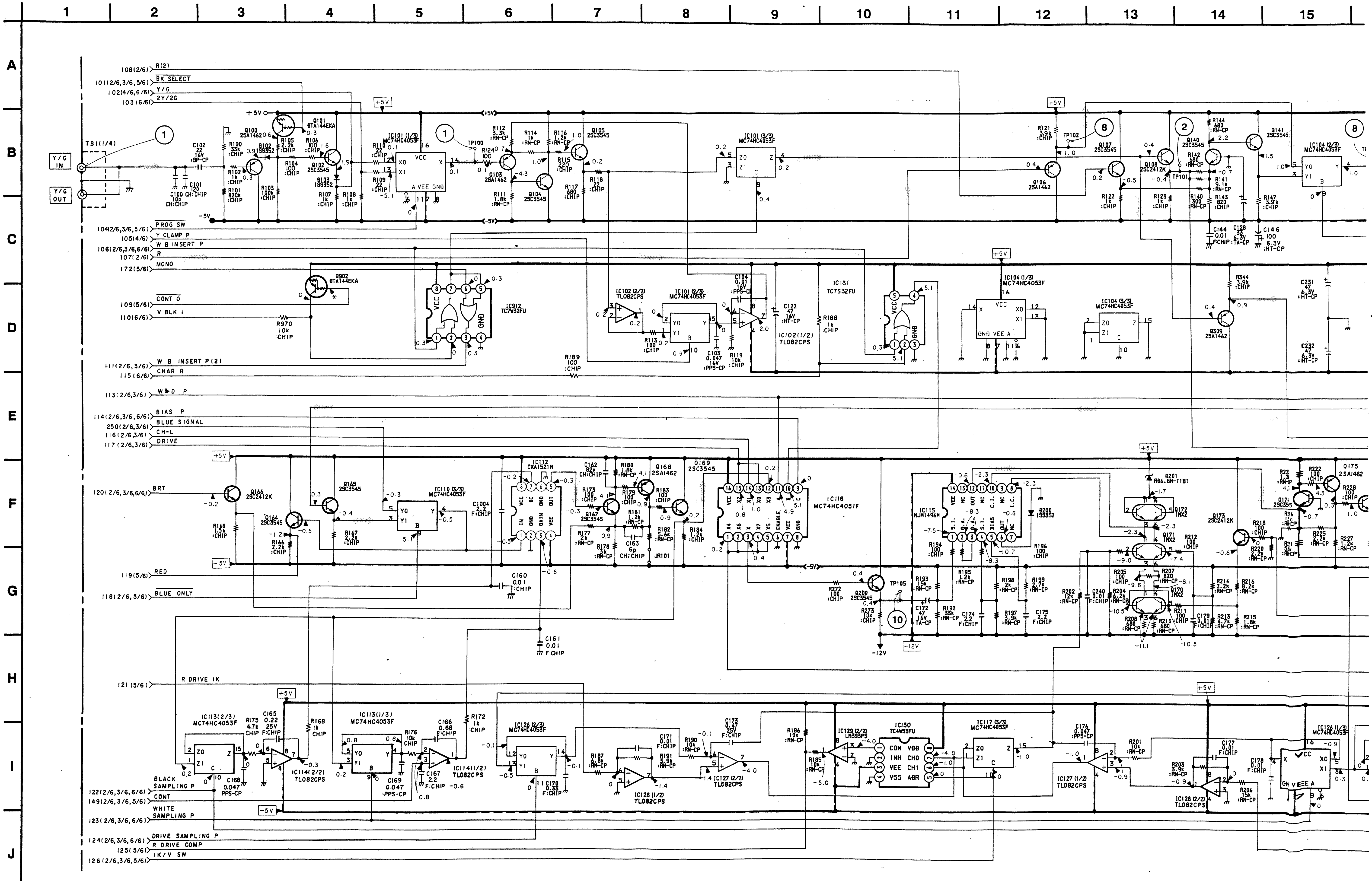




• : Pattern from the side which enables seein
• : Pattern of the rear side.

- Refer to page 5–58 for Function of Semiconductor
- Refer to page 5–57 for Waveforms

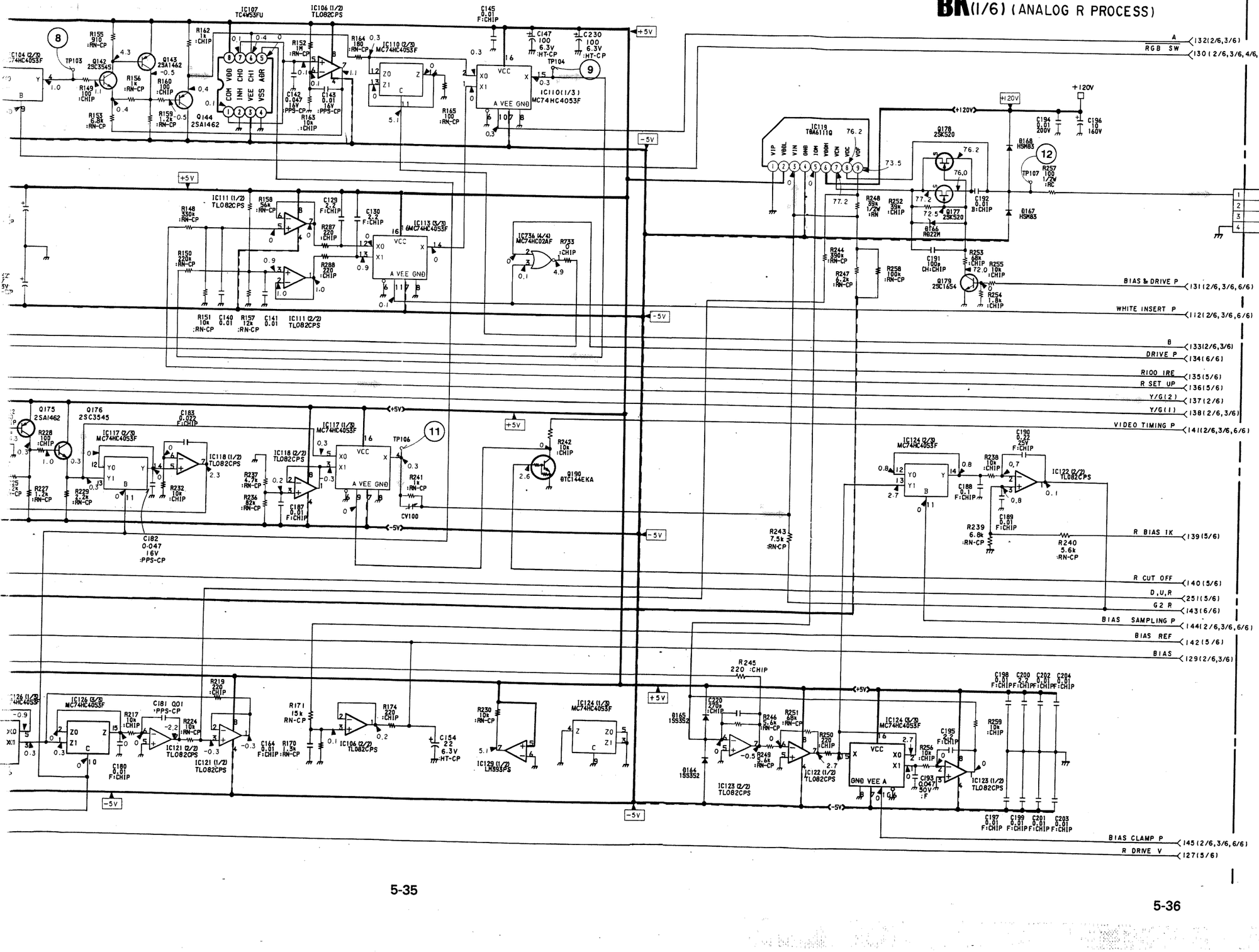
• BK (ANALOG R PROCESSOR) BOARD (1/6)



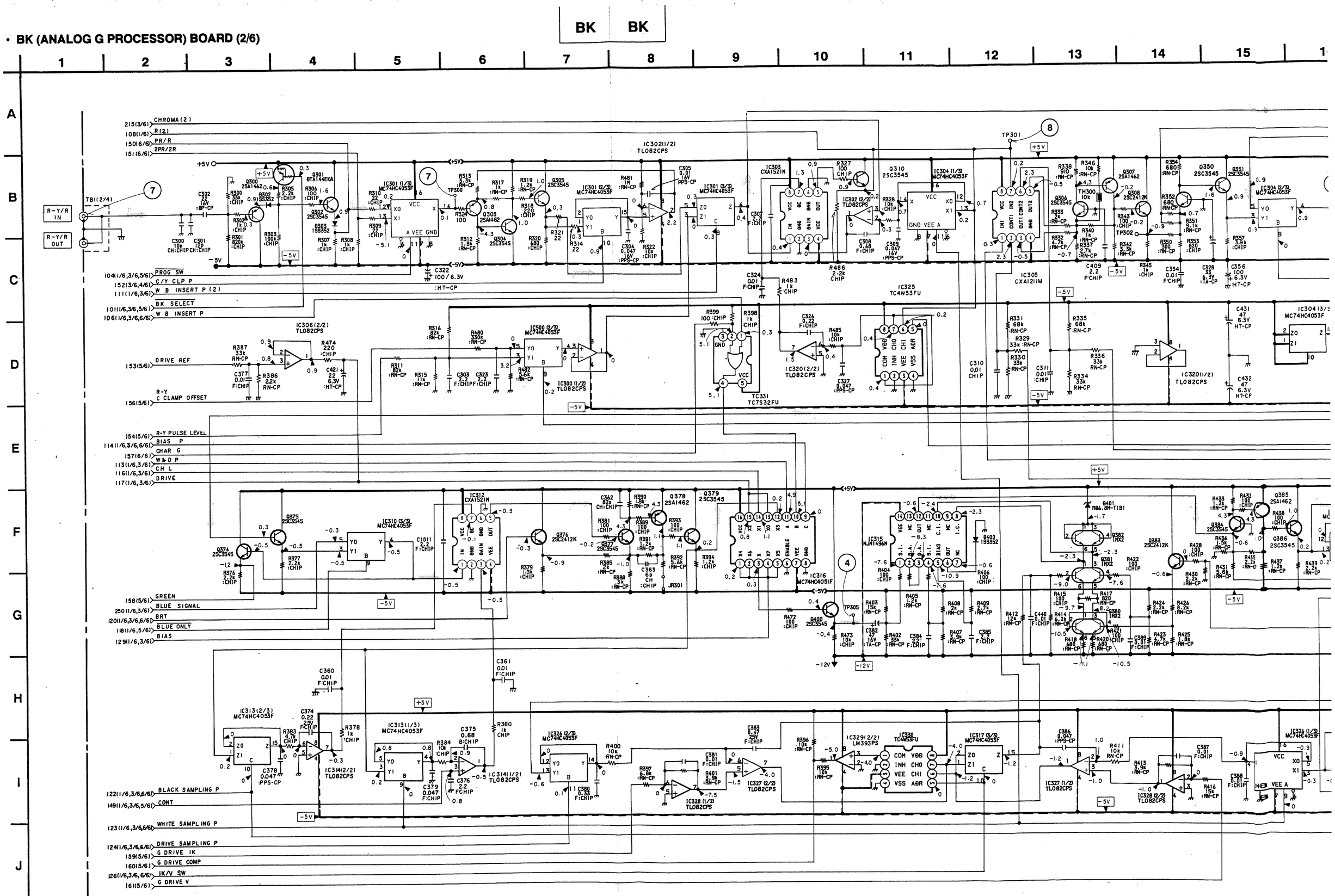
BK BK

15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

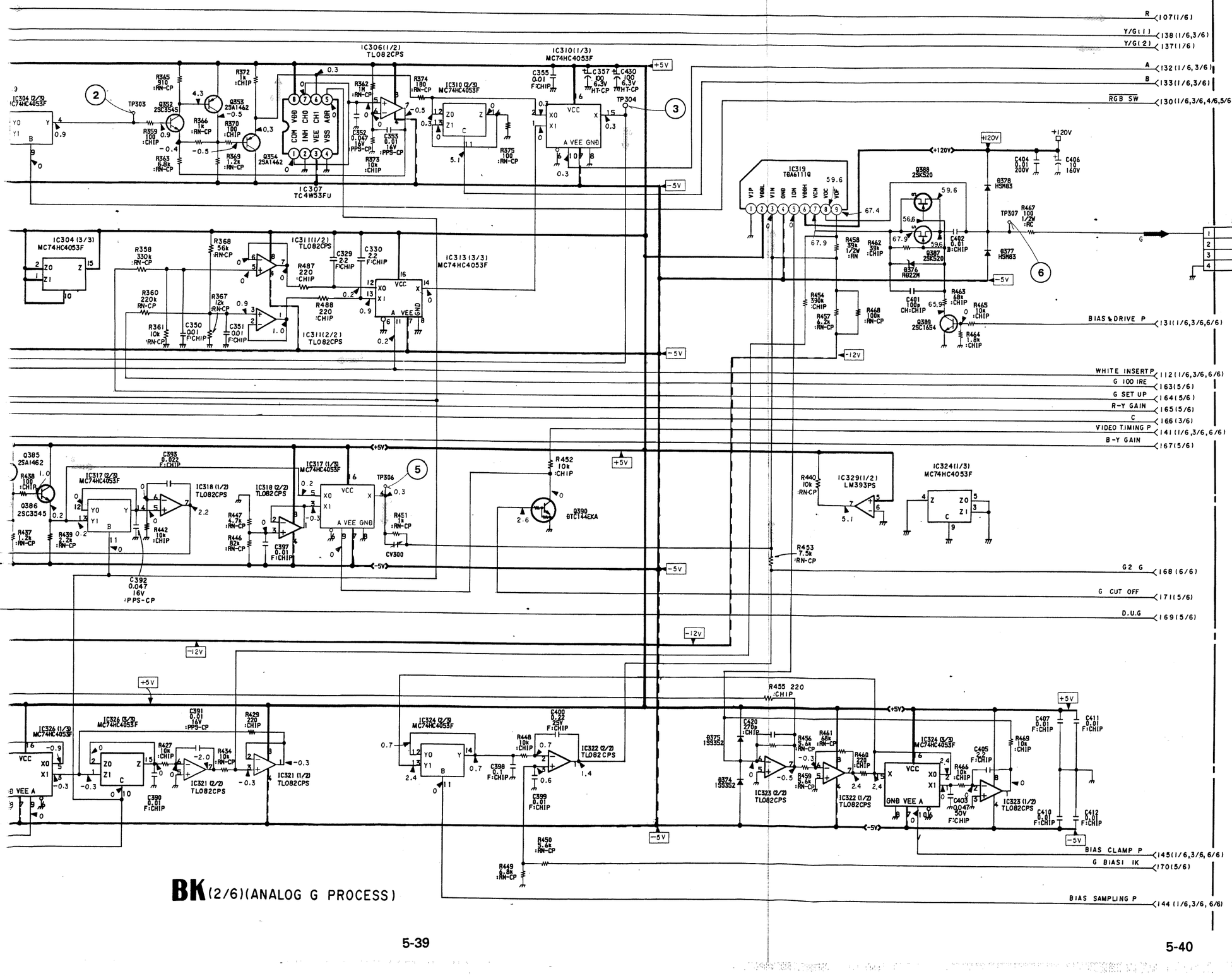
BK(1/6) (ANALOG R PROCESS)



• BK (ANALOG G PROCESSOR) BOARD (2/6)

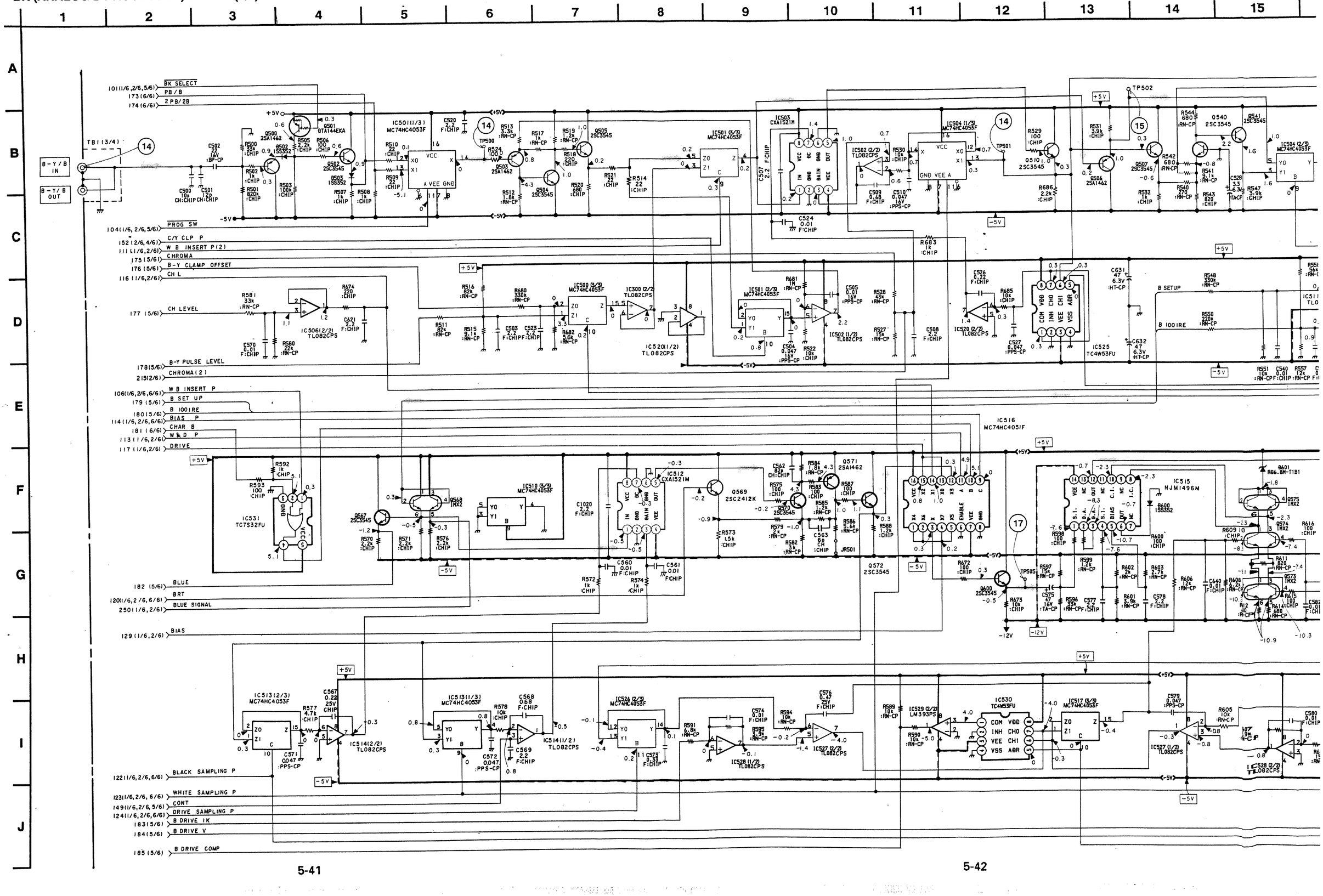


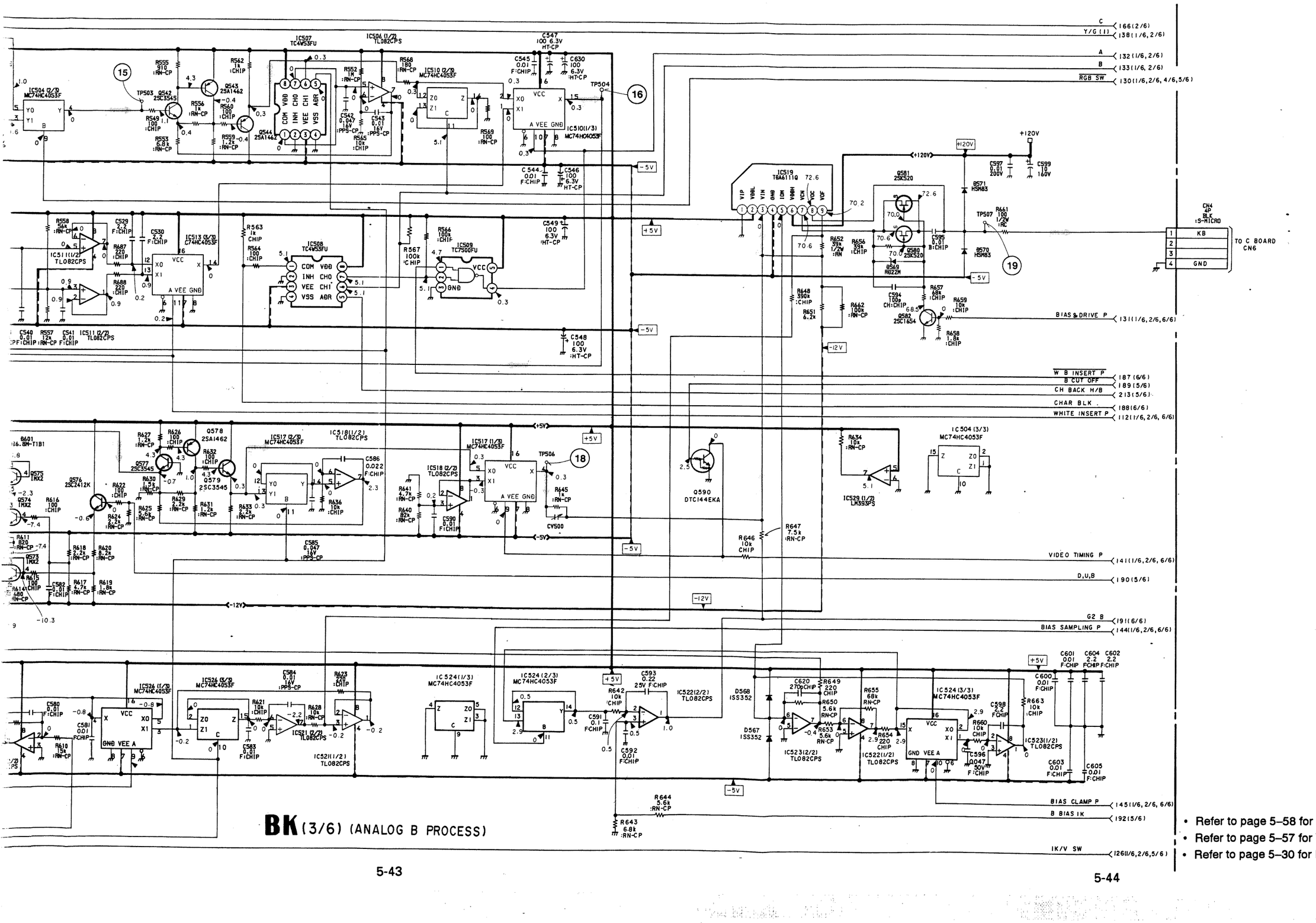
- Refer to page 5–58 for Function of Semiconductor
- Refer to page 5–57 for Waveforms
- Refer to page 5–30 for Printed Wiring Board



BK (2/6) (ANALOG G PROCESS)

• BK (ANALOG B PROCESSOR) BOARD (3/6)



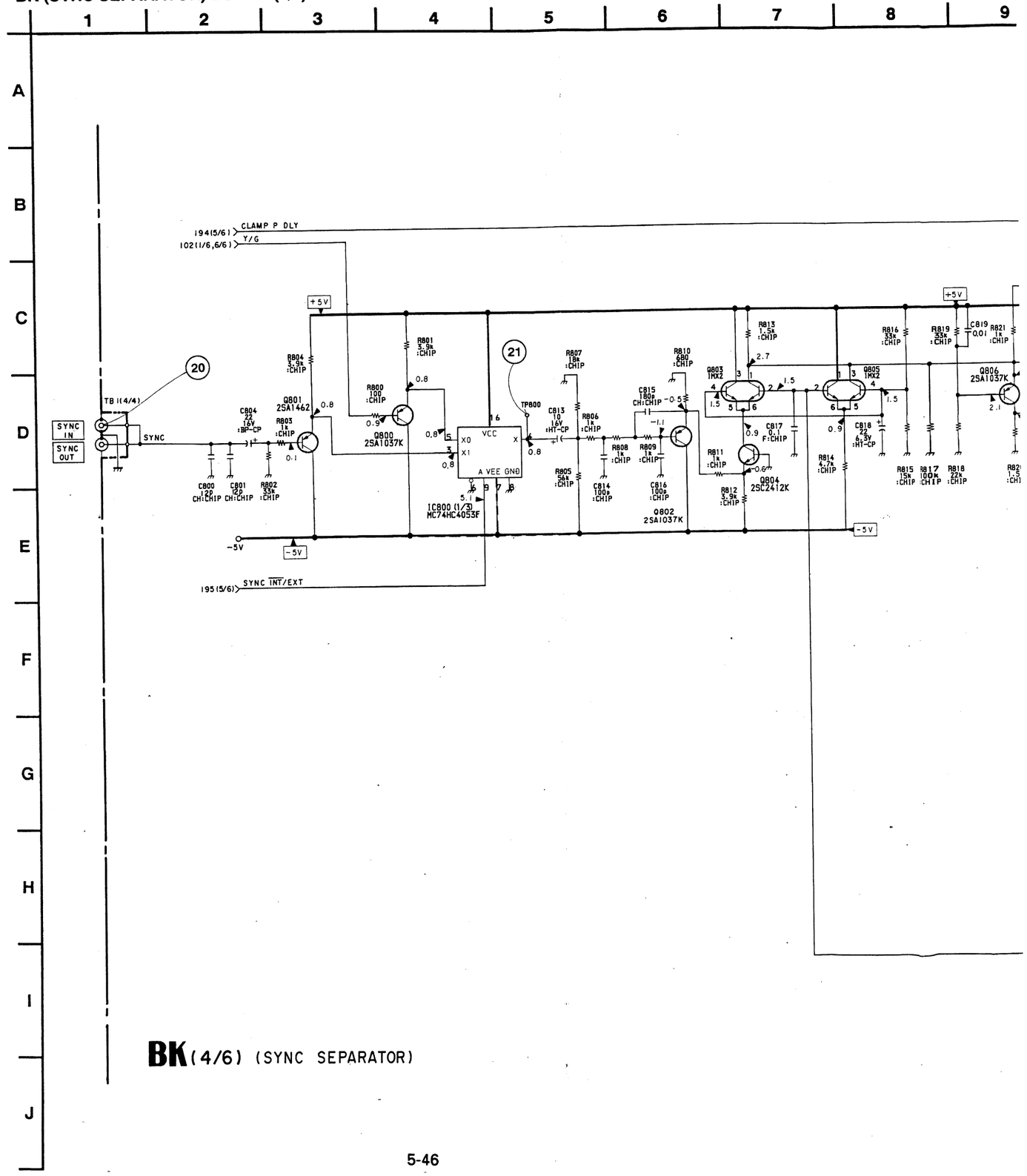


BK (3/6) (ANALOG B PROCESS)

- Refer to page 5–58 for Function of Semiconductor
- Refer to page 5–57 for Waveforms
- Refer to page 5–30 for Printed Wiring Board

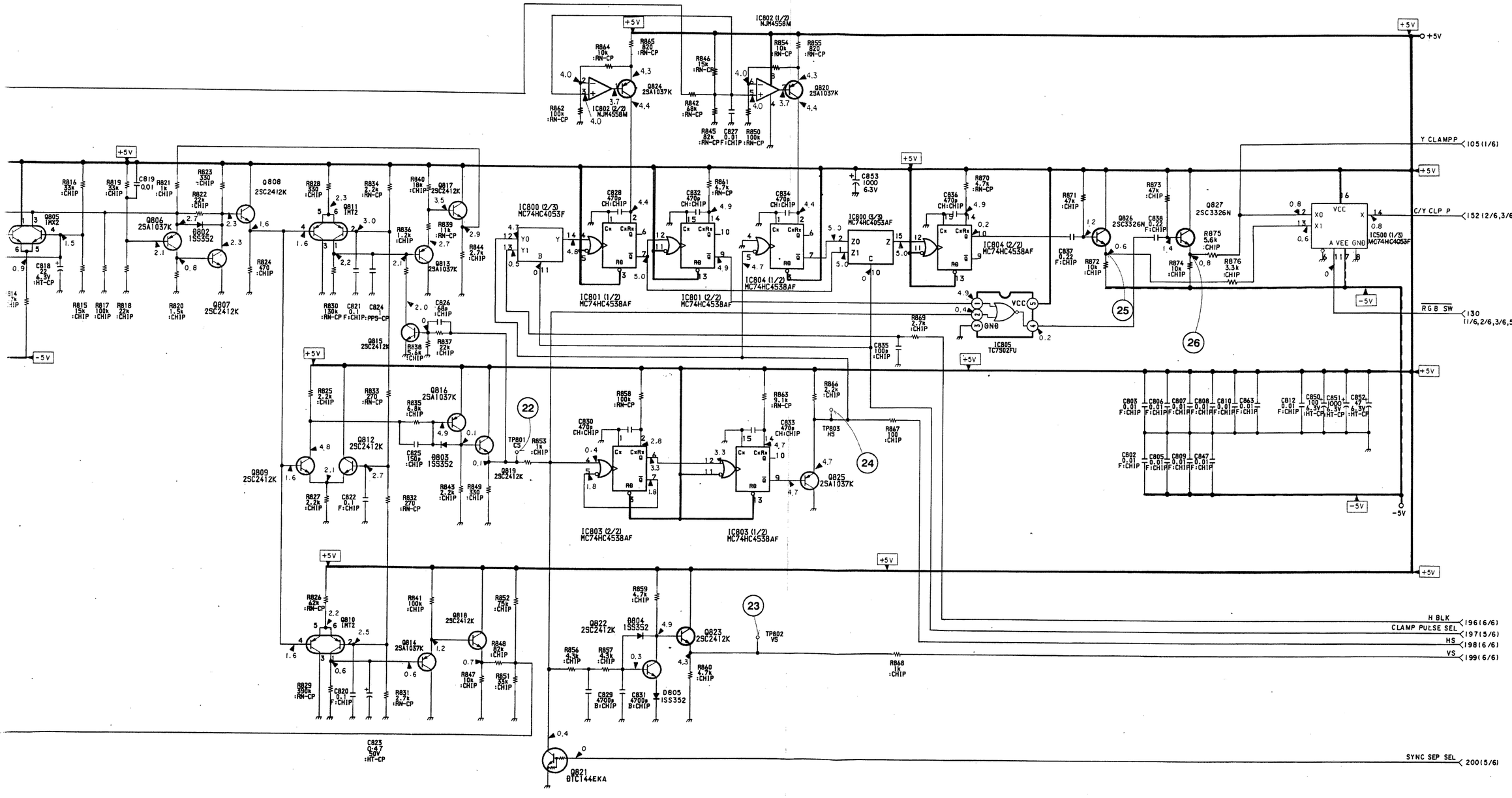
- Refer to page 5–58 for Function of Semiconductor
- Refer to page 5–57 for Waveforms
- Refer to page 5–30 for Printed Wiring Board

• BK (SYNC SEPARATOR) BOARD (4/6)



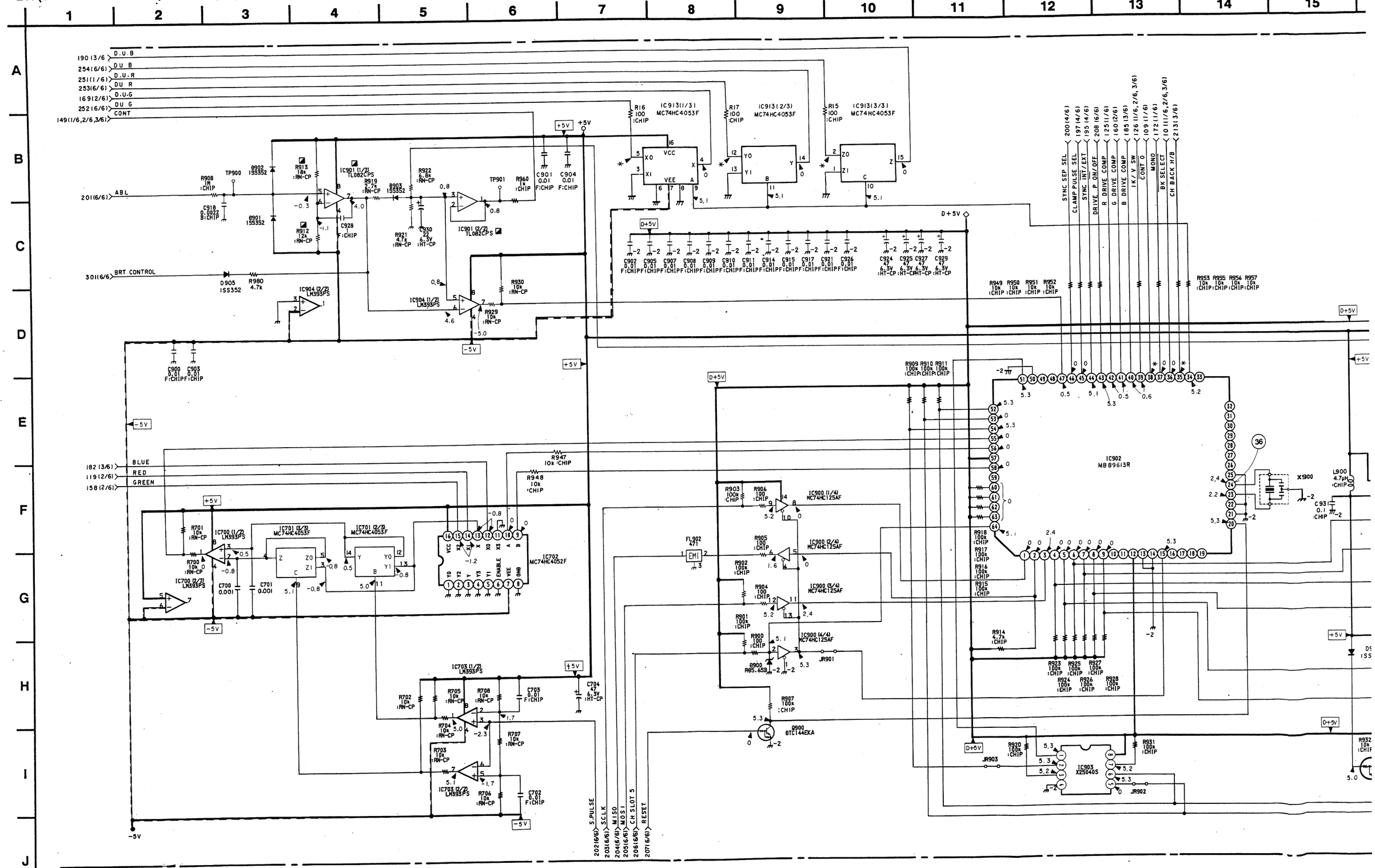
BK (4/6) (SYNC SEPARATOR)

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

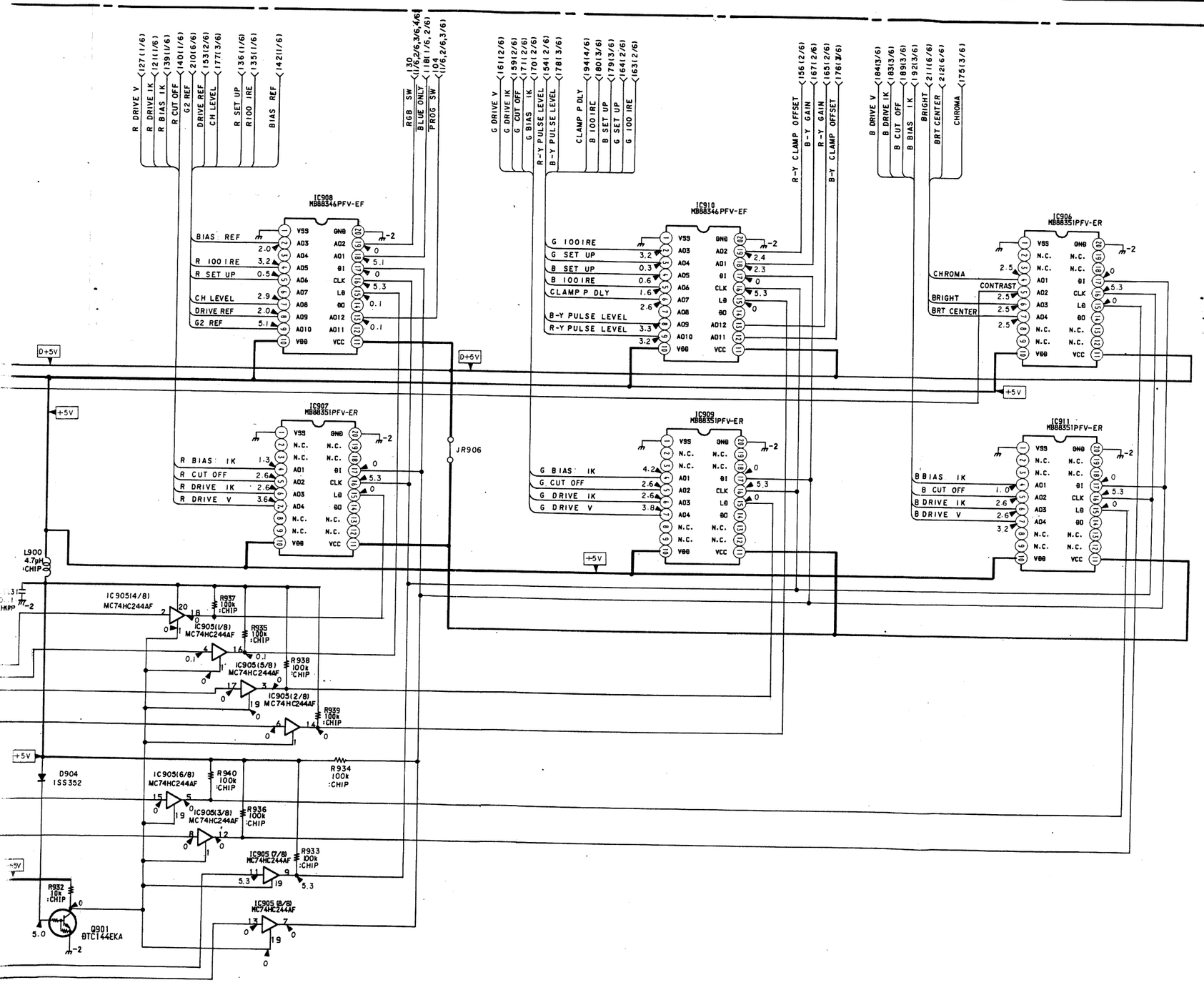


- Refer to page 5–58 for Function of Semiconductor
- Refer to page 5–57 for Waveforms
- Refer to page 5–30 for Printed Wiring Board

• BK (SYSTEM CONTROL) BOARD (5/6)



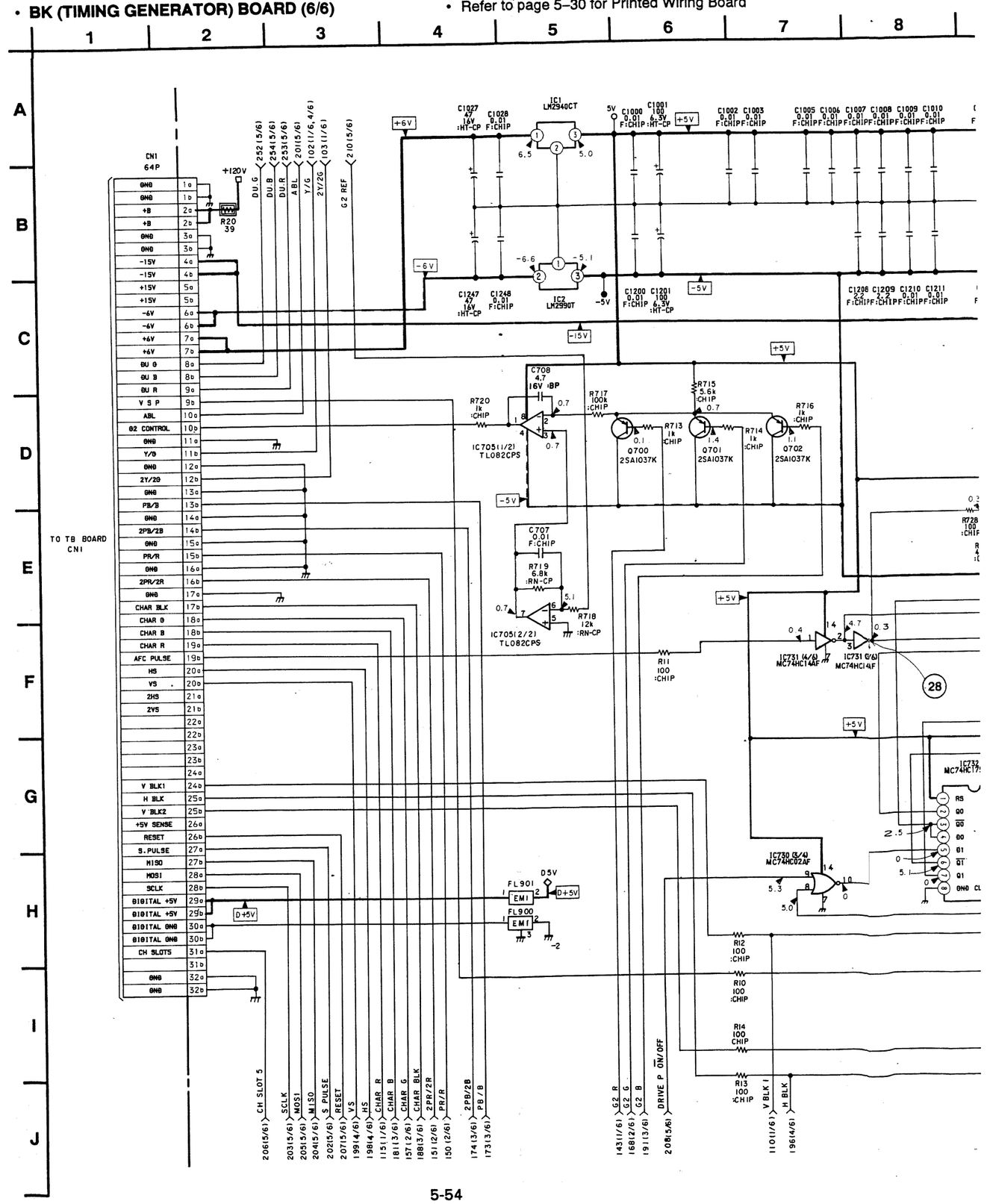
5 16 17 18 19 20 21 22 23 24 25 26



BK (5/6) (SYSTEM CONTROL)

• BK (TIMING GENERATOR) BOARD (6/6)

• Refer to page 5–30 for Printed Wiring Board



8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

BLK SAMPLING P 122(1/6,2/6,3/6)
WHITE SAMPLING P 123(1/6,2/6,3/6)
WHITE INSERT P 112(1/6,2/6,3/6)
W B INSERT P 187(3/6)
BRT CENTER 212(5/6)
BRIGHT 211(5/6)
BRT 120(1/6,2/6,3/6)
W B INSERT P 106(1/6,2/6,3/6)
BRT CONTROL 301(5/6)
DRIVE P 134(1/6)
BASE P 114(1/6,2/6,3/6)
BIAS DRIVE P 131(1/6,2/6,3/6)
DRIVE SAMPLING P 124(1/6,2/6,3/6)
VIDEO TIMING P 141(1/6,2/6,3/6)
BIAS SAMPLING P 144(1/6,2/6,3/6)
BIAS CLAMP P 145(1/6,2/6,3/6)

TO C BOARD CN7

BK (6/6) (TIMING GENERATOR)

• BK BOARD Waveforms

1 0.72Vp-p(H)	2 0.84Vp-p(H)	3 0.9Vp-p(H)	32 5Vp-p(H)	33 5Vp-p(V)	34 5Vp-p(V)
4 0.76Vp-p(H)	5 0.72Vp-p(H)	6 29Vp-p(H)	35 0.07Vp-p(V)	36 6Vp-p(8MHz)	
7 0.72Vp-p(H)	8 0.84Vp-p(H)	9 0.9Vp-p(H)			
10 0.76Vp-p(H)	11 0.72Vp-p(H)	12 29Vp-p(H)			
14 0.72Vp-p(H)	15 0.85Vp-p(H)	16 1.1Vp-p(H)			
17 0.76Vp-p(H)	18 0.76Vp-p(H)	19 29Vp-p(H)			
20 1.0Vp-p(H)	21 1.0Vp-p(H)	22 4.2Vp-p(H)			
23 4Vp-p(V)	24 4.4Vp-p(H)	25 4.6Vp-p(H)			
26 4.3Vp-p(H)	27 96Vp-p(H)	28 5Vp-p(H)			
29 5Vp-p(H)	30 5Vp-p(2H)	31 5Vp-p(V)			

BK

BK BOARD (1/3)

Function of Semiconductor

IC1	LM2940CT-5.0	+5V REG
2	LM2990T-5.0	-5V REG
3	NJM7912FA	-12V REG
101	MC74HC4053F	PROG. SW, PULSE INS., Y/G CLAMP
102	TL082CPS-E20	Y/G CLAMP
104	MC74HC4053F	RGB SWITCH
106	TL082CPS-E20	BUFFER, R CLAMP
107	TC4W53FU	R CLAMP
110	MC7HC4053F	HALF BLK SW, PULSE INSERT
111	TL082CPS-E20	BUFFER
112	CXA1521M-T4	CONT. BRT CONTROL
113	MC74HC4053F	CONT. BRT CONTROL, R REF SW
114	TL082CPS-E20	CONT. BRT CONTROL
115	NJM1496M-TE2	R DRIVE AMP
116	MC74HC4051F	PULSE INSERT
117	MC74HC4053F	SR DRIVE AMP, IK/V, CUTOFF SW
118	TL082CPS-E20	R DRIVE AMP, BUFFER
119	TDA6111Q	R VIDEO OUT
121	TL082CPS-E20	R DRIVE(IK/V)CONTROL
122	TL082CPS-E20	R BIAS CONT, R IK CLAMP
123	TL082CPS-E20	R IK CLAMP
124	MC74HC4053F	R BIAS CONT, R IK CLAMP
126	MC74HC4053F	R DRIVE(IK/V)CONTROL
127	TL082CPS-E20	R DRIVE(IK/V)CONTROL
128	TL082CPS-E20	R DRIVE(IK/V)CONTROL
129	LM393PS-T5L	R DRIVE COMPARATOR
130	TC4W53FU	IK/V SWITCH
131	TC7S32FU	CHAR R
300	TL082CPS-E20	BUFFER
301	MC74HC4053F	PROG. SW, R-Y/R CLAMP, PULSE INSERT
302	TL082CPS-E20	R-Y/R CLAMP
303	CXA1521M-T4	R-Y GAIN CONTROL
304	MC74HC4053F	RGB SW, R-Y GAIN CONTROL
305	CXA1211M-T4	G-Y MATRIX AMP
306	TL082CPS-E20	BUFFER, G CLAMP
307	TC4W53FU	G CLAMP
310	MC74HC4053F	HALF BLK SW, PULSE INSERT
311	TL082CPS-E20	BUFFER
312	CXA1521M-T4	CONT. BRT CONTROL
313	MC74HC4053F	CONT. BRT CONTROL, G REF SW
314	TL082CPS-E20	CONT. BRT CONTROL
315	NJM1496M-TE2	G DRIVE AMP
316	MC74HC4051F	PULSE INSERT
317	MC74HC4053F	G DRIVE AMP, IK/V, CUTOFF SW
318	TL082CPS-E20	G DRIVE AMP, BUFFER
319	TDA6111Q	G VIDEO OUT
320	TL082CPS-E20	R-Y GAIN CONTROL
321	TL082CPS-E20	G DRIVE(V)CONTROL
322	TL082CPS-E20	G BIAS CONT, G IK CLAMP
323	TL082CPS-E20	G IK CLAMP
324	MC74HC4053F	G BIAS CONT, G IK CLAMP
325	TC4W53FU	R-Y GAIN CONTROL
326	MC74HC4053F	G DRIVE(IK/V)CONTROL
327	TL082CPS-E20	G DRIVE(IK/V)CONTROL
328	TL082CPS-E20	G DRIVE(IK/V)CONTROL
329	LM393PS	G DRIVE COMPARATOR
330	TC4W53FU	IK/V SWITCH
331	TC7S32FU	CHAR G
500	MC74HC4053F	CLAMP P, B-Y REF, R-Y REF SW

IC501	MC74HC4053F	PROG, PULSE INSERT SW
502	TL082CPS-E20	B-Y/B CLAMP, B-Y GAIN CONT
503	CXA1521M-T4	B-Y GAIN CONTROL
504	MC74HC4053F	PROG SW, B-Y GAIN CONT
506	TL082CPS-E20	BUFFER, B CLAMP
507	TC4W53FU	B CLAMP
508	TC4W53FU	CHAR BACK SW
509	TC7S00FU	CHAR BLK INSERT
510	MC74HC4053F	HALF BLK, PULSE INSERT SW
511	TL082CPS-E20	BUFFER
512	CXA1521M-T4	CONT. BRT CONTROL
513	MC74HC4053F	CONT. BRT CONTROL, B REF SW
514	TL082CPS-E20	CONT. BRT CONTROL
515	NJM1496M-TE2	B DRIVE AMP
516	MC74HC4051F	PULSE INSERT
517	MC74HC4053F	IK/V, CUTOFF SW, AMP
518	TL082CPS-E20	B DRIVE AMP, BUFFER
519	TDA6111Q	B VIDEO OUT
520	TL082CPS-E20	B-Y GAIN COTNROL
521	TL082CPS-E20	B DRIVE(V)CONTROL
522	TL082CPS-E20	B IK CLAMP, B BIAS CONTROL
523	TL082CPS-E20	B IK CLAMP
524	MC74HC4053F	B IK CLAMP, B BIAS CONTROL
525	TC4W53FU	B-Y GAIN CONTROL
526	MC74HC4053F	B DRIVE(IK/V)CONTROL
527	TL082CPS-E20	B DRIVE(IK/V)CONTROL
528	TL082CPS-E20	B DRIVE(IK/V)CONTROL
529	LM393PS-T5L	B DRIVE COMPARATOR
530	TC4W53FU	IK/V SWITCH
531	TC7S32FU	CHAR B
700	LM393PS-T5L	COMPARATOR
701	MC74HC4053F	SAMPLING HOLD, BRT REF SW
702	MC74HC4052F	SIGNAL SELECT SW
703	LM393PS-T5L	SAMPLING P SEP
704	TL082CPS-E20	BUFFER
705	TL082CPS-E20	G2 CONTROL
706	TDA6101Q	BLK AMP
728	MC74HC00AF	PULSE GENERATOR
730	MC74HC02AF	PULSE GENERATOR
731	MC74HC14AF	PULSE GENERATOR
732	MC74HC175F	PULSE GENERATOR
734	MC74HC11F	PULSE GENERATOR
735	MC74HC02AF	PULSE GENERATOR
736	MC74HC02AF	PULSE GENERATOR
800	MC74HC4053F	INT/EXT SYNC, HS/H BLK SW
801	MC74HC4538AF	CLAMP PULSE GEN
802	NJM4558M-T2	CLAMP PULSE DLY
803	MC74HC4538AF	H SYNC SEP
804	MC74HC4538AF	CLAMP PULSE GEN
805	TC7S02FU	CLAMP PULSE GEN
900	MC74HC125AF	BUFFER
901	TL082CPS-E20	A.B.L, CONT BUFFER
902	MB89613PF-SUB02	SUB MICROCOMPUTER
903	X25040S-C7000	EEP ROM
904	LM393PS-T5L	OVERLOAD COMPARATOR
905	MC74HC244AF	BUFFER
906	MB88351PFV-ER	DAC
907	MB88351PFV-ER	DAC
908	MB88346BPFV-EF	DAC

BK BOARD (2/3)

IC909	MB88351PFV-ER	DAC
910	MB88346BPFV-EF	DAC
911	MB88351PFV-ER	DAC
912	TC7W32FU-TE12L	MONO SW
913	MC74HC4053F	D.U SW
Q100	2SA1462	Y/G BUFFER
101	DTA144EKA	BK SELECT SW
102	2SC3545	Y/G BUFFER
103	2SA1462	Y/G CLAMP
104	2SC3545	Y/G CLAMP
105	2SC3545	Y/G CLAMP
106	2SA1462	R BUFFER
107	2SC3545	R-Y BUFFER
108	2SC2412K-QR	Y BUFFER
140	2SC3545	Y-R-Y MIX
141	2SC3545	Y-R-Y MIX
142	2SC3545	R CLAMP
143	2SA1462	R CLAMP
144	2SA1462	R CLAMP
164	2SC3545	R BUFFER
165	2SC3545	R BUFFER
166	2SC2412K-QR	BRT BUFFER
167	2SC3545	CONT. BRT CONTROL
168	2SA1462	CONT. BRT CONTROL
169	2SC3545	CONT. BRT CONTROL
170	IMX2	R DRIVE AMP
171	IMX2	R DRIVE AMP
172	IMX2	R DRIVE AMP
173	2SC2412K-QR	R DRIVE AMP
174	2SC3545	R DRIVE AMP
175	2SA1462	R DRIVE AMP
176	2SC3545	R DRIVE AMP
177	2SK520K44K45	TRANSIENT OFF SW
178	2SK520K44K45	TRANSIENT OFF SW
179	2SC1654	TRANSIENT OFF SW
190	DTC144EKA	CUTOFF SW
200	2SC3545	R BUFFER
300	2SA1462	R-Y/R BUFFER
301	DTA144EKA	BK SELECT SW
302	2SC3545	R-Y/R BUFFER
303	2SA1462	R-Y/R CLAMP
304	2SC3545	R-Y/R CLAMP
305	2SC3545	R-Y/R CLAMP
306	2SC3545	G-Y MATRIX AMP
307	2SA1462	G-Y MATRIX AMP
308	2SC2412K-QR	G-Y BUFFER
309	2SA1462	G BUFFER
310	2SC3545	R-Y GAIN CONTROL
350	2SC3545	Y-G-Y MIX
351	2SC3545	Y-G-Y MIX
352	2SC3545	G CLAMP
353	2SA1462	G CLAMP
354	2SA1462	G CLAMP
374	2SC3545	G BUFFER
375	2SC3545	G BUFFER
376	2SC2412K-QR	BTR BUFFER
377	2SC3545	CONT. BRT CONTROL
378	2SA1462	CONT. BRT CONTROL

Q379	2SC3545	CONT. BRT CONTROL
380	IMX2	G DRIVE AMP
381	IMX2	G DRIVE AMP
382	IMX2	G DRIVE AMP
383	2SC2412K-QR	G DRIVE AMP
384	2SC3545	G DRIVE AMP
385	2SA1462	G DRIVE AMP
386	2SC3545	G DRIVE AMP
387	2SK520K44K45	TRANSIENT OFF SW
388	2SK520K44K45	TRANSIENT OFF SW
389	2SC1654	TRANSIENT OFF SW
390	DTC144EKA	CUTOFF SW
400	2SC3545	G BUFFER
500	2SA1462	B-Y/B BUFFER
501	DTA144EKA	BK SELECT SW
502	2SC3545	B-Y/B BUFFER
503	2SA1462	B-Y/B CLAMP
504	2SC3545	B-Y/B CLAMP
505	2SC3545	B-Y/B CLAMP
506	2SA1462	B BUFFER
507	2SC3545	B-Y BUFFER
510	2SC3545	B-Y GAIN CONTROL
540	2SC3545	Y-B-Y MIX
541	2SC3545	Y-B-Y MIX
542	2SC3545	B CLAMP
543	2SA1462	B CLAMP
544	2SA1462	B CLAMP
567	2SC3545	B BUFFER
568	IMX2	B BUFFER
569	2SC2412K-QR	BRT BUFFER
570	2SC3545	CONT. BRT CONTROL
571	2SA1462	CONT. BRT CONTROL
572	2SC3545	CONT. BRT CONTROL
573	IMX2	B DRIVE AMP
574	IMX2	B DRIVE AMP
575	IMX2	B DRIVE AMP
576	2SC2412K-QR	B DRIVE AMP
577	2SC3545	B DRIVE AMP
578	2SA1462	B DRIVE AMP
579	2SC3545	B DRIVE AMP
580	2SK520K44K45	TRANSIENT OFF SW
581	2SK520K44K45	TRANSIENT OFF SW
582	2SC1654	TRANSIENT OFF SW
590	DTC144EKA	CUTOFF SWITCH
600	2SC3545	B BUFFER
700	2SA1037K-QR	G2 R CONTROL
701	2SA1037K-QR	G2 G CONTROL
702	2SA1037K-QR	G2 B CONTROL
728	2SC2412K-QR	PULSE GENERATOR
729	2SC2412K-QR	PULSE GENERATOR
800	2SA1037K-QR	Y/G BUFFER
801	2SA1037K-QR	EXT SYNC BUFFER
802	2SA1037K-QR	SYNC AGC
803	IMX2	SYNC AGC
804	2SC2412K-QR	SYNC AGC
805	IMX2	SYNC AGC
806	2SA1037K-QR	SYNC AGC
807	2SC2412K-QR	SYNC AGC
808	2SC2412K-QR	SYNC AGC

BK BOARD (3/3)

Q809	2SC2412K-QR	SYNC AGC
810	IMT2	SYNC AGC
811	IMT2	SYNC AGC
812	2SC2412K-QR	SYNC AGC
813	2SA1037K-QR	SYNC AGC
814	2SA1037K-QR	SYNC AGC
815	2SC2412K-QR	SYNC AGC
816	2SA1037K-QR	SYNC AGC
817	2SC2412K-QR	SYNC AGC
818	2SC2412K-QR	SYNC AGC
819	2SC2412K-QR	SYNC AGC
820	2SA1037K-QR	CLAMP PULSE DLY
821	DTC144EKA	SYNC SEP SW
822	2SC2412K-QR	V SYNC SEP
823	2SC2412K-QR	V SYNC SEP
824	2SA1037K-QR	CLAMP PULSE DEL
825	2SA1037K-QR	H SYNC SEP
826	2SC4213A	CLAMP PULSE GEN
827	2SC4213A	CLAMP PULSE GEN
900	DTC144EKA	RESET SW
901	DTC144EKA	BUFFER CONTROL
902	DTA144EK	SIGNAL OFF SW
D102	1SS352	DC SHIFT
103	1SS352	PROTECTOR
164	1SS352	PROTECTOR
165	1SS352	PROTECTOR
166	RD22M	PROTECTOR
167	HSM83-TL	PROTECTOR
168	HSM83-TL	PROTECTOR
200	1SS352	DC SHIFT
201	RD6.8M-B3	R DRIVE AMP
302	1SS352	DC SHIFT
303	1SS352	PROTECTOR
374	1SS352	PROTECTOR
375	1SS352	PROTECTOR
376	RD22M-B3	PROTECTOR
377	HSM83-TL	PROTECTOR
378	HSM83-TL	PROTECTOR
400	1SS352	DC SHIFT
401	RD6.8M-B1	G DRIVE AMP
502	1SS352	DC SHIFT
503	1SS352	PROTECTOR
567	1SS352	PROTECTOR
568	1SS352	PROTECTOR
569	RD22M-B3	PROTECTOR
570	HSM83-TL	PROTECTOR
571	HSM83-TL	PROTECTOR
600	1SS352	DC SHIFT
601	RD6.8M-B1	B DRIVE AMP
802	1SS352	SYNC AGC
803	1SS352	SYNC AGC
804	1SS352	V SYNC SEP
805	1SS352	PROTECTOR
900	RD5.6SB	PROTECTOR
901	1SS352	PROTECTOR
902	1SS352	PROTECTOR
903	1SS352	A.B.L
904	1SS352	BUFFER CONTROL
905	1SS352	BRT CONTROL

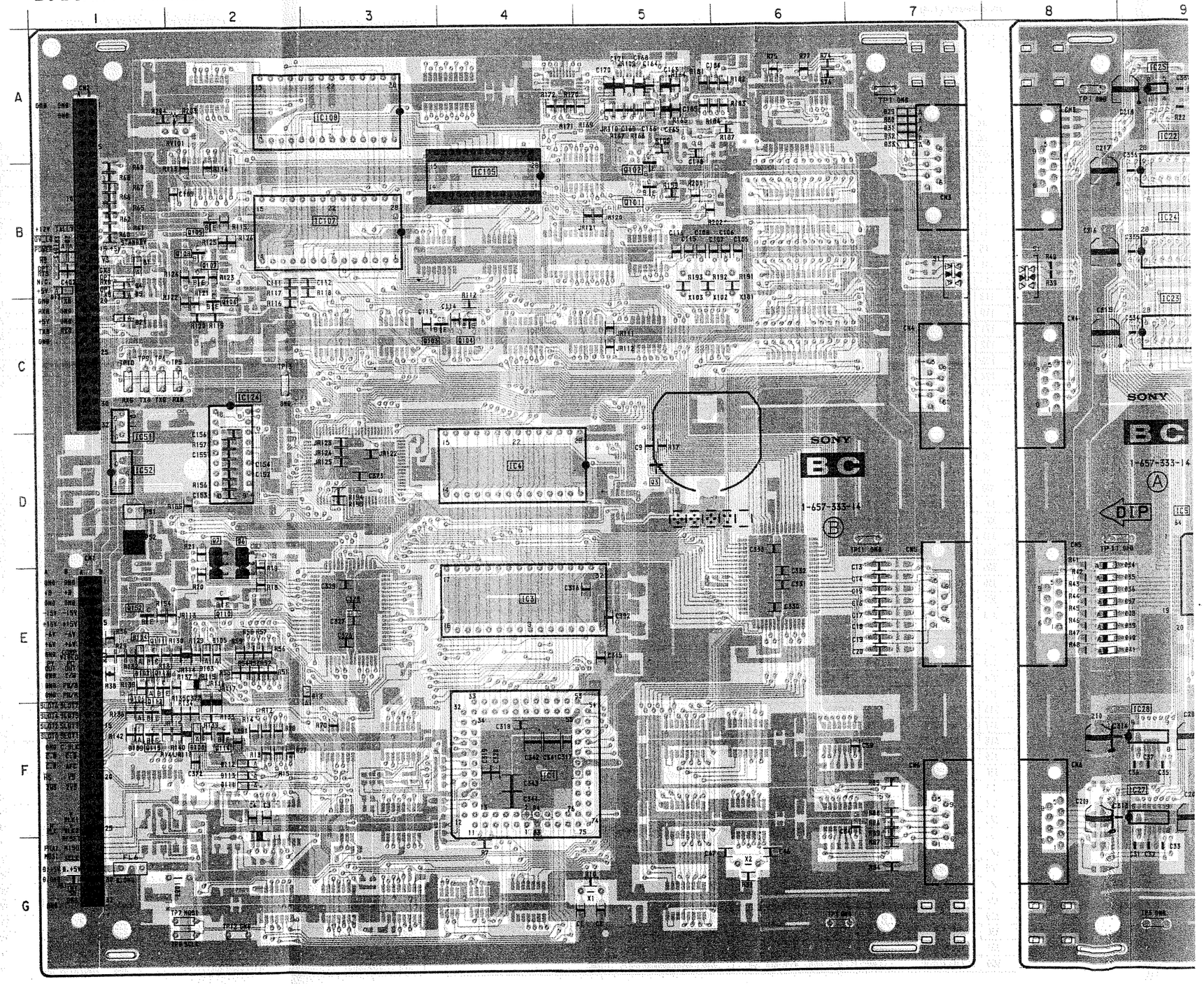
BC BOARD
SEMICONDUCTOR LOCATION

IC		Q6	D-2
		Q7	D-2
IC1	F-4	Q8	A-9
IC2	D-10	Q9	B-14
IC3	E-4	Q101	B-5
IC4	D-4	Q102	B-5
IC5	E-9	Q103	C-3
IC6	E-12	Q104	C-4
IC7	F-13	Q106	C-2
IC8	F-13	Q107	B-2
IC9	D-10	Q108	B-2
IC10	F-12	Q109	C-13
		Q110	E-2
IC11	F-12	Q111	E-1
IC12	G-13	Q112	F-1
IC13	F-12		
IC14	C-14	Q113	E-1
IC15	G-11	Q114	F-2
IC16	G-12	Q115	F-1
IC17	G-12	Q116	D-12
IC19	F-10	Q151	E-13
IC20	G-10	Q152	E-1
IC21	F-10	Q153	A-10
		Q154	A-10
IC22	B-9	Q155	A-10
IC23	C-9		
IC24	B-9	DIODE	
IC25	A-9		
IC26	A-9	D1	B-1
IC27	F-9	D2	B-1
IC28	F-9	D3	B-1
IC30	F-9	D4	B-1
IC31	F-9	D5	B-1
IC32	E-13	D12	B-1
		D13	E-2
IC33	E-13	D29	A-7
IC34	E-14	D30	A-7
IC35	F-14	D31	A-7
IC36	B-14		
IC37	E-14	D32	A-7
IC51	C-1	D33	A-7
IC52	D-1	D34	E-8
IC101	A-10	D35	E-8
IC102	A-10	D36	E-8
IC103	A-11	D37	E-8
		D38	E-8
IC104	B-12	D39	E-8
IC105	B-4	D40	E-8
IC106	C-11	D41	E-8
IC107	B-3		
IC108	A-3	D103	E-2
IC109	B-13	D104	E-1
IC110	A-13	D105	E-2
IC111	C-12	D106	F-1
IC113	C-11	D107	E-1
IC114	B-10	D108	F-2
		D109	F-1
IC115	B-11	D111	F-2
IC116	B-11	D112	F-2
IC117	C-12	D113	F-2
IC118	B-10		
IC119	B-10	VARIABLE RESISTOR	
IC120	B-11		
IC121	C-10	RV101	A-13
IC122	C-10		
IC123	C-10	TEST POINT	
IC124	D-2		
		TP1	A-8
IC125	F-12	TP3	G-9
IC126	D-12	TP5	C-14
		TP6	C-14
TRANSISTOR		TP7	G-13
		TP8	G-13
Q1	G-13	TP9	C-14
Q2	F-13	TP10	C-14
Q3	D-5		
Q4	D-13		
Q5	D-13		

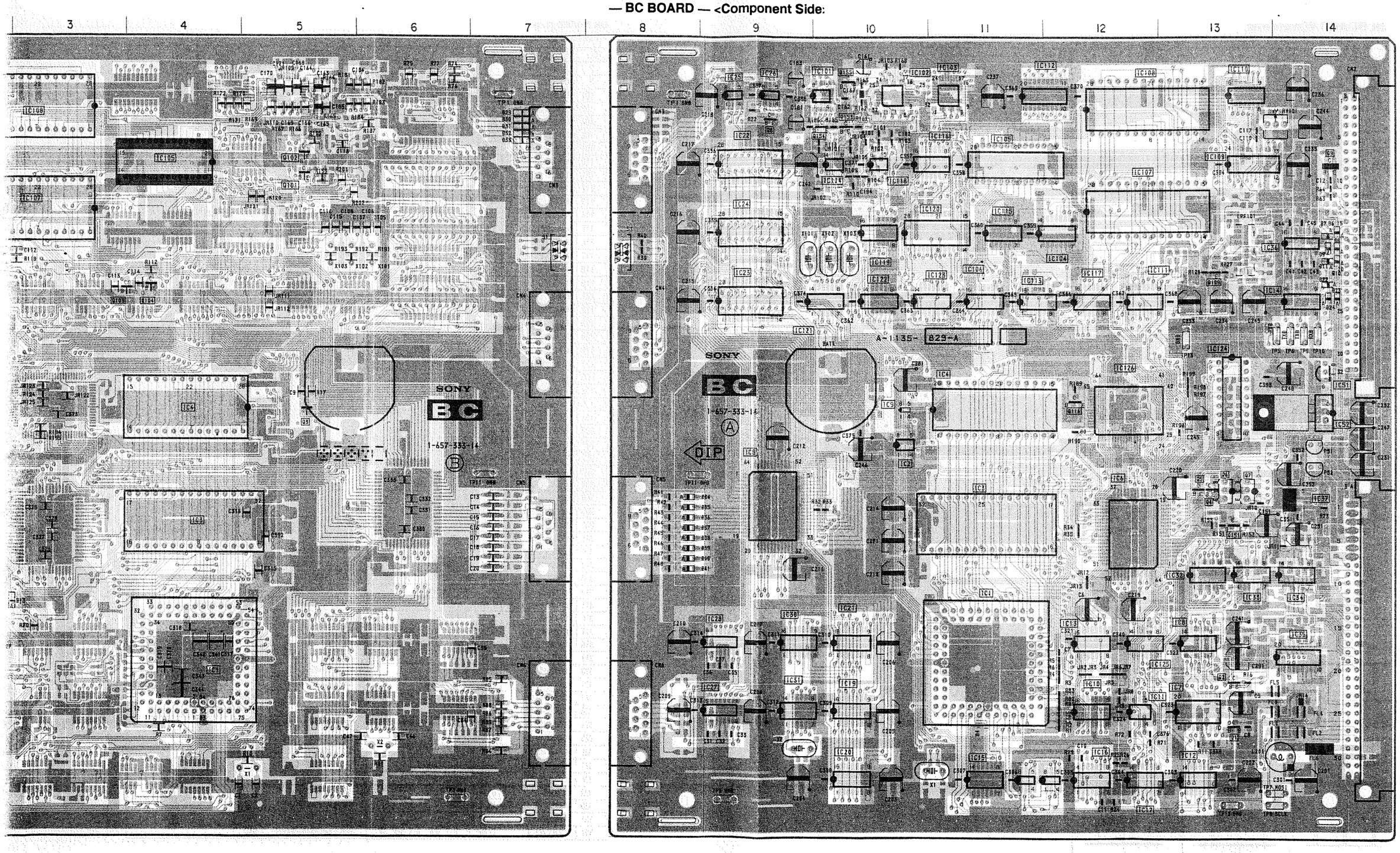
BC (SYSTEM CONTROL)

— BC BOARD — <Conductor Side>

— BC BOARD — <Compo



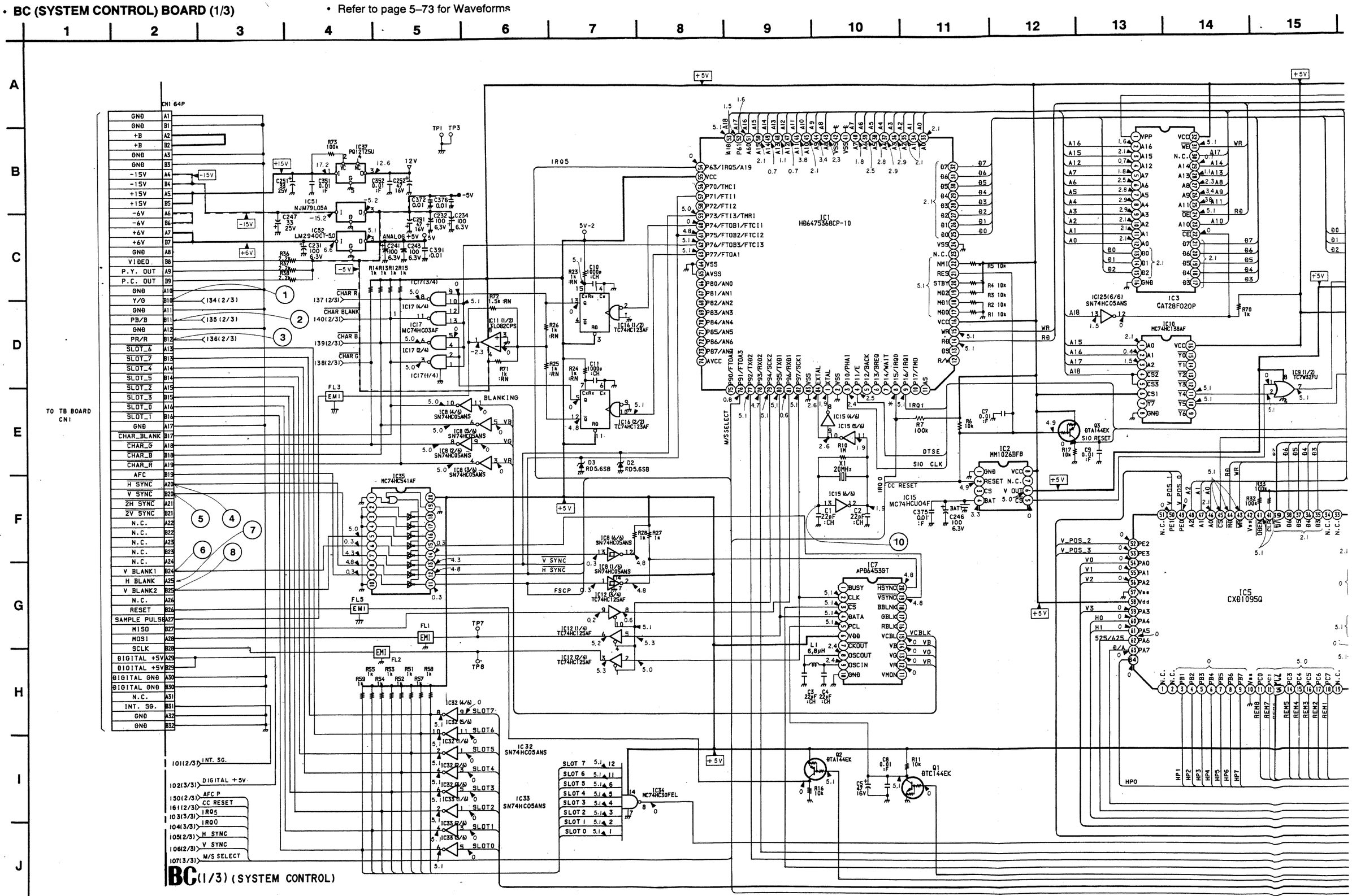
— BC BOARD — <Component Side:



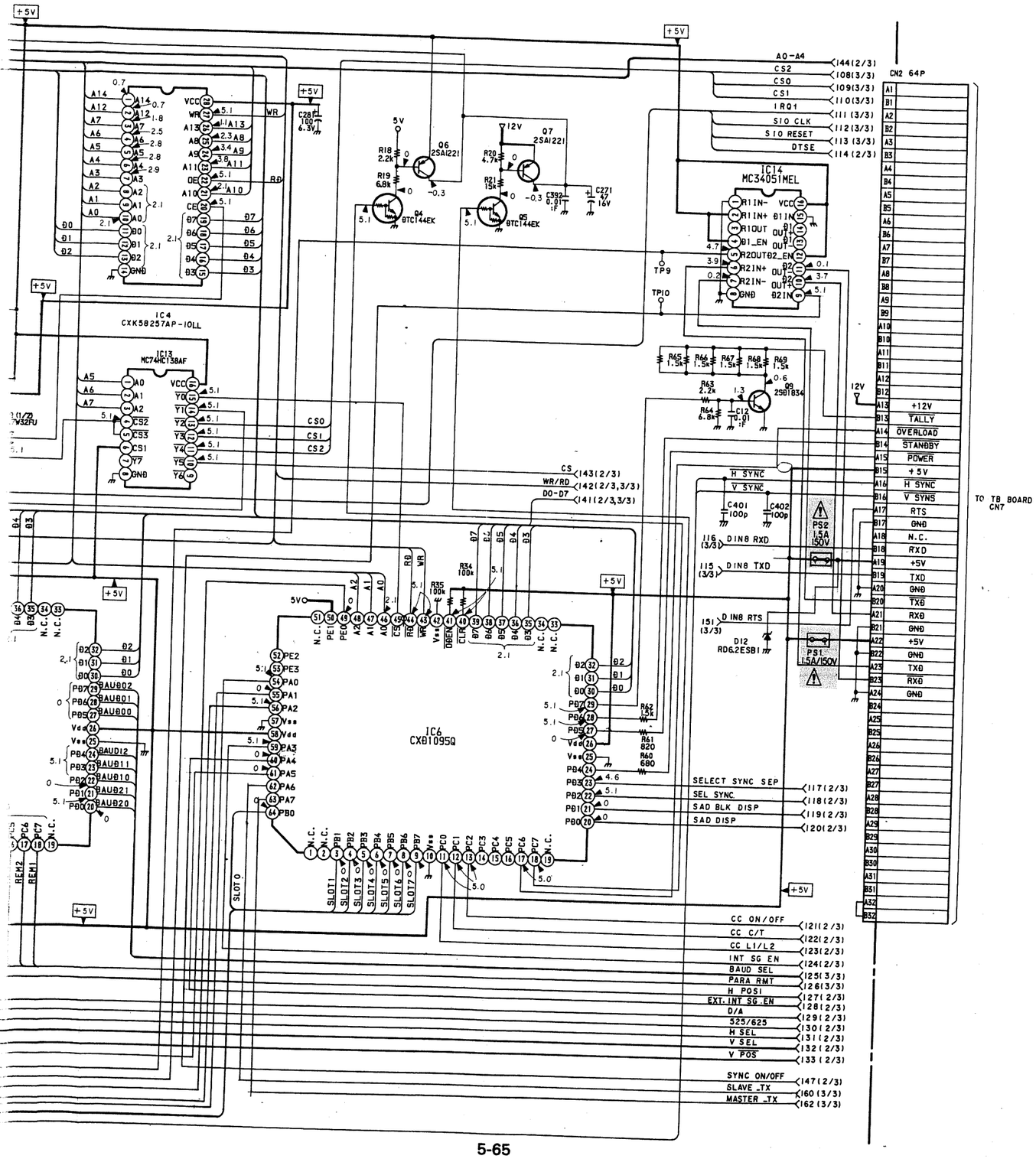
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

- Refer to page 5–74 for Function of Semiconductor
- Refer to page 5–73 for Waveforms

• BC (SYSTEM CONTROL) BOARD (1/3)



15 16 17 18 19 20 21 22 23 24

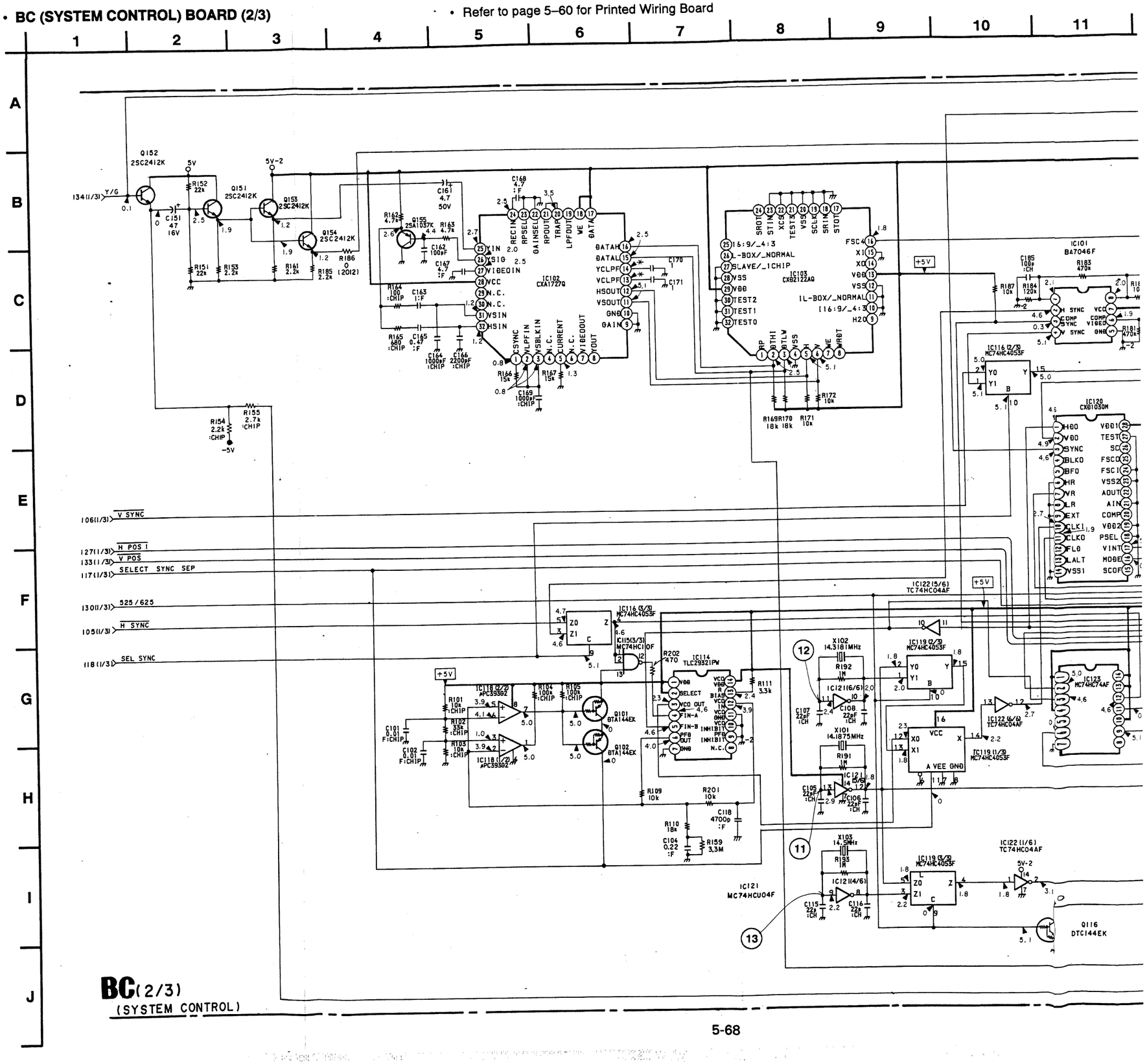


5-65

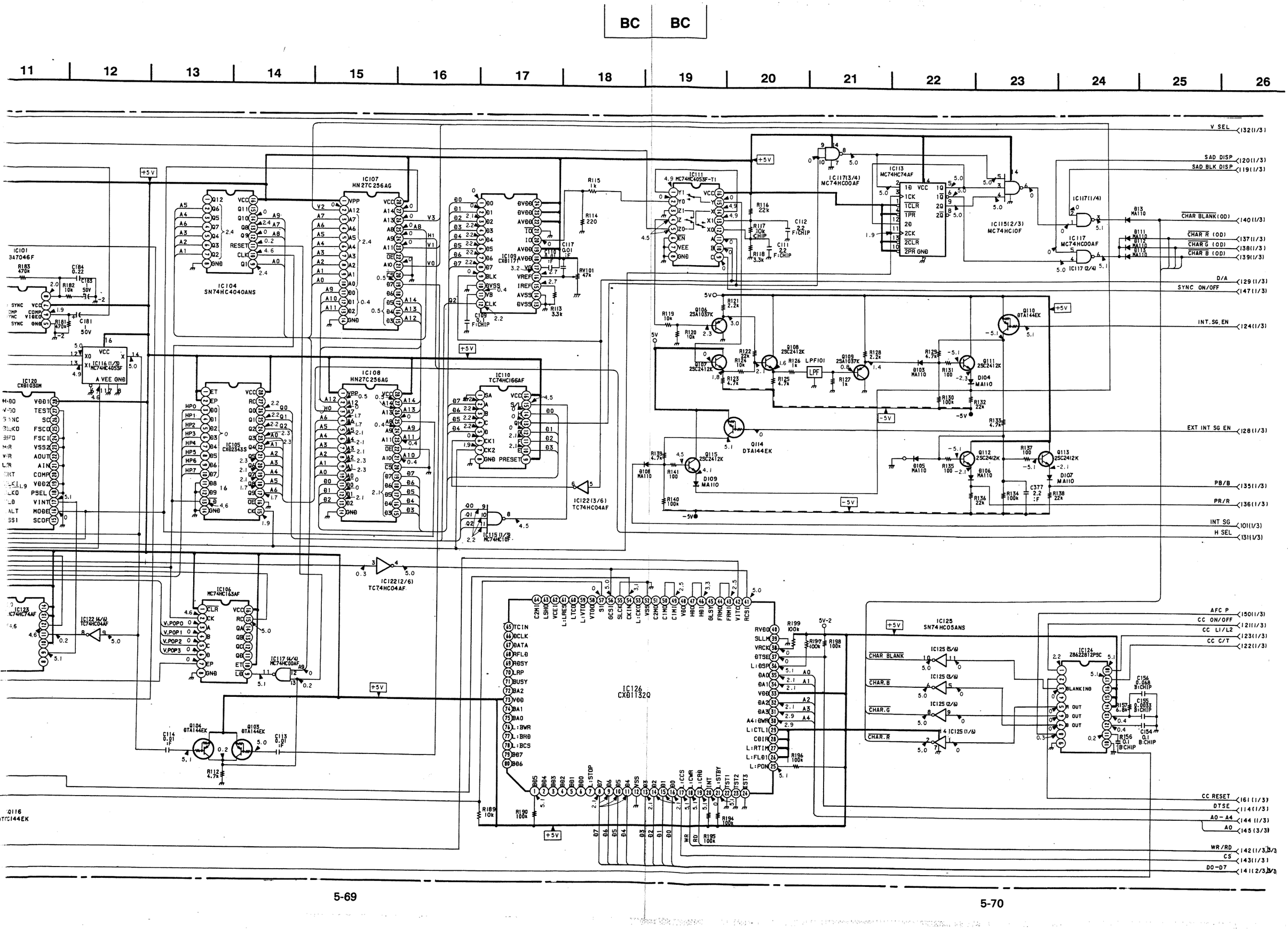
5-66

- Refer to page 5–74 for Function of Semiconductor
- Refer to page 5–73 for Waveforms
- Refer to page 5–60 for Printed Wiring Board

• BC (SYSTEM CONTROL) BOARD (2/3)

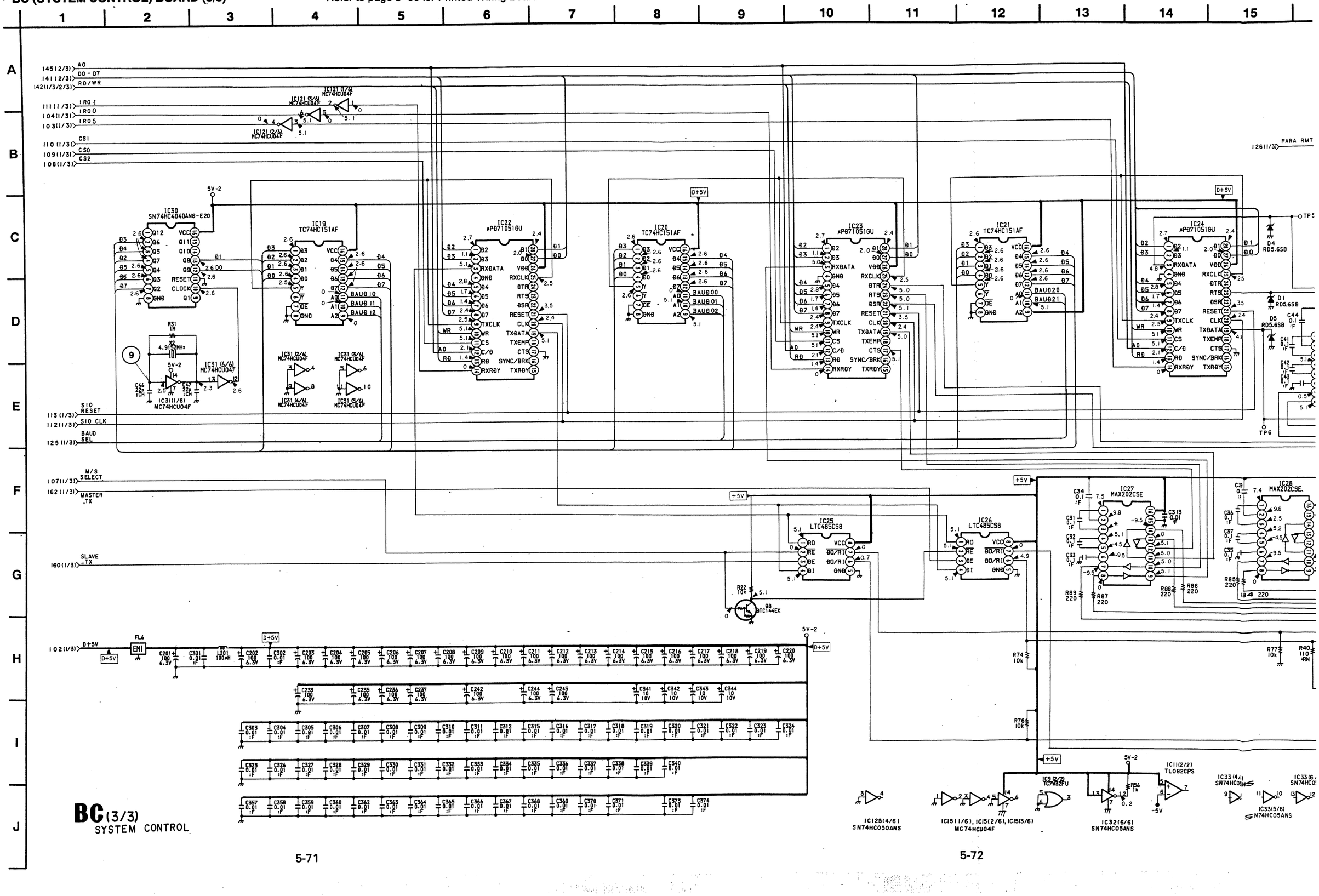


BC (2/3)
(SYSTEM CONTROL)

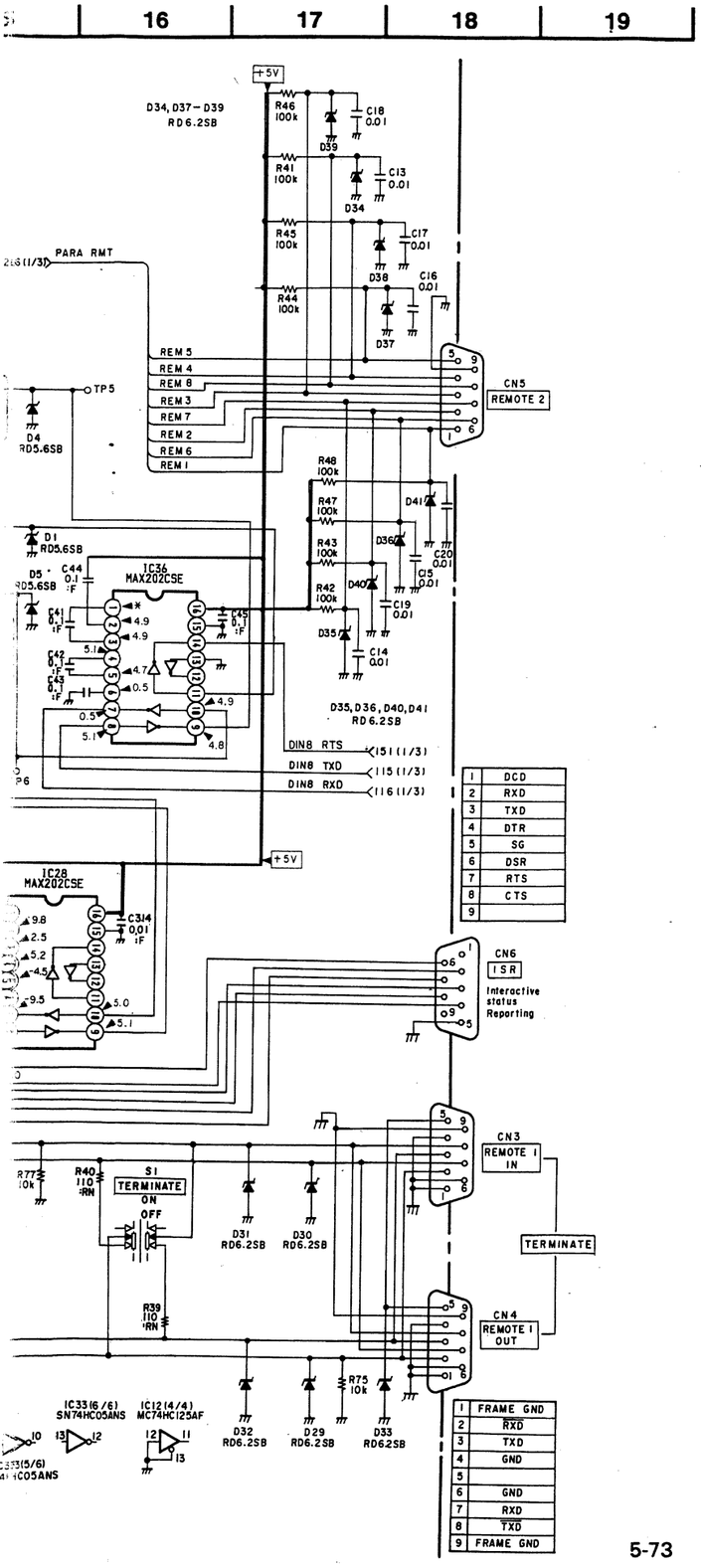

BC
BC
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
IC101 347046F
IC104 SN74HC4040ANS
IC107 HN27C256AG
IC108 HN27C256AG
IC109 CXB1172
IC110 TC74HC166AF
IC111 4.9 MC74HC4053F-T1
IC113 MC74HC74AF
IC115(2/3) MC74HC10F
IC117(3/4) MC74HC00AF
IC117(1/4)
IC117 (2/4)
IC117 MC74HC00AF
IC120 CXB1030M
IC122(3/6) TC74HC04AF
IC122(2/6) TC74HC04AF
IC105 CXB2343S
IC106 MC74HC163AF
IC117(4/4) MC74HC00AF
IC126 CXB1132Q
IC125 SN74HC05ANS
IC124 Z8622812PSC
Q106 2SA1037K
Q107 2SC2412K
Q108 2SC2412K
Q109 2SA1037K
Q110 BTA144EK
Q111 2SC2412K
Q112 2SC2412K
Q113 2SC2412K
Q114 DTA144EK
Q115 2SC2412K
Q103 BTA144EK
Q104 BTA144EK
LPF
V SEL
SAD DISP
SAD BLK DISP
CHAR BLANK (OD)
CHAR R (OD)
CHAR G (OD)
CHAR B (OD)
D/A
SYNC ON/OFF
INT.SG.EN
EXT INT SG EN
PB/B
PR/R
INT SG
H SEL
AFC P
CC ON/OFF
CC L1/L2
CC C/T
CC RESET
DTSE
A0 - A4
A0
WR/RD
CS
D0 - D7
+5V
-5V
5V
5V-2

• **BC (SYSTEM CONTROL) BOARD (3/3)**

• Refer to page 5–60 for Printed Wiring Board



BC (3/3)
SYSTEM CONTROL



1	DCD
2	RXD
3	TXD
4	DTR
5	SG
6	DSR
7	RTS
8	CTS
9	

1	FRAME GND
2	RXD
3	TXD
4	GND
5	
6	GND
7	RXD
8	TXD
9	FRAME GND

• BC BOARD Waveforms

① 0.67 Vp-p (H)

② 0.68Vp-p (H)

③ 0.68 Vp-p (H)

④ 4.25 Vp-p (H)

⑤ 4.1Vp-p (V)

⑥ 5 Vp-p (V)

⑦ 4.9 Vp-p (H)

⑧ 5Vp-p (V)

⑨ 6.6 Vp-p (4.9152MHz)

⑩ 4.2 Vp-p (20MHz)

⑪ 5.8Vp-p (14.318MHZ)

⑫ 6.7 Vp-p(14.1875MHz)

⑬ 6 Vp-p (4.5MHz)

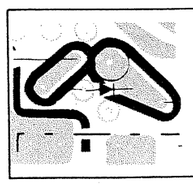
BC BOARD

Function of Semiconductor

IC01	HD6475368CP-10	CPU	Q01	DTC144EK	CHARACTER GEN. RESET
02	MM1026F	RESET	02	DTA144EK	SLAVE CPU RESET
03	CAT28F020P	PROGRAM	03	DTA144EK	SIO RESET
04	CXK58257AP	SRAM	04	DTC144EK	+5V SW
05	CXD1095Q	PARALLEL I/O	05	DTC144EK	+12V SW
06	CXD1095Q	PARALLEL I/O	06	2SA1221	+5V DRIVE
07	UPD6453GT-101	CHARACTER GEN.	07	2SA1221	+12V DRIVE
08	SN74HC05ANS	INVERTER	08	DTC144EK	MASTER/SLAVE SW
09	TC7W32FU	SRAM ENABLE	09	2SD1834	TALLY DRIVE
10	MC74HC138AF	ADDRESS SELECTER	101	DTA144EK	LOCK DETECTION
11	T082CPS	SAMPLE PULSE AMP.	102	DTA144EK	LOCK DETECTION
12	TC74HC125AF	INTERNAL BUS DRIVER	103	DTA144EK	V SYNC SELECTION
13	MC74HC138AF	ADDRESS SELECTER	104	DTA144EK	V SYNC SELECTION
14	MC34051M	RS422 TRANSCEIVER	105	2SC2412K	BUFFER
15	MC74HCU04F	INVERTER	106	2SA1037K	BUFFER
16	MC74HC123AF	SAMPLE PULSE GEN.	107	2SC2412K	BUFFER
17	TC74HC03AF	NAND(O.C.)	108	2SC2412K	BUFFER
19	TC74HC151AF	8 TO 1 SELECTER	109	2SA1037K	BUFFER
20	TC74HC151AF	8 TO 1 SELECTER	110	DTA144EK	INT. SIGNAL SW
21	TC74HC151AF	8 TO 1 SELECTER	111	2SC2412K	BUFFER
22	UPD71051GU-10	SERIAL CONTROL UNIT	112	2SC2412K	BUFFER
23	UPD71051GU-10	SERIAL CONTROL UNIT	113	2SC2412K	BUFFER
24	UPD71051GU-10	SERIAL CONTROL UNIT	114	DTA144EK	DU. SIGNAL SW
25	LTC485CS8	RS485 TRANSCEIVER	115	2SC2412K	BUFFER
26	LTC485CS8	RS485 TRANSCEIVER	116	DTA144EK	525/625 SW
27	MAX202CSE	RS232C TRANSCEIVER	151	2SC2412K	BUFFER
28	MAX202CSE	RS232C TRANSCEIVER	152	2SC2412K	BUFFER
30	SN74HC4040ANS	LINE COUNTER	153	2SC2412K	BUFFER
31	MC74HCU04F	INVERTER	154	2SC2412K	BUFFER
32	SN74HC05ANS	INVERTER(O.C.)	155	2SA1037K	BUFFER
33	SN74HC05ANS	INVERTER(O.C.)			
34	MC74HC30F	8 INPUT NAND	D01	RD5.6S-B	PROTECTION
35	MC74HC541AF	OCTAL BUFFER	02	RD5.6S-B	PROTECTION
36	MAX202CSE	RS232C TRANSCEIVER	03	RD5.6S-B	PROTECTION
37	PQ12TZ5U	+12V REGULATOR	04	RD5.6S-B	PROTECTION
51	NJM79L05A	-5V REGULATOR	05	RD5.6S-B	PROTECTION
52	LM2940CT-5.0	+5V REGULATOR	12	RD6.2ES-B1	PROTECTION
101	BA7046F	SYNC SEPARATION	13	RD6.2SB	SAD BLANKING
102	CXA1727Q	ID-1 DETECTOR	29	RD6.2SB	PROTECTION
103	CXD2122AQ	ID-1 ENCODER	30	RD6.2SB	PROTECTION
105	CXD2343S	DOT CLOCK COUNTER	31	RD6.2SB	PROTECTION
106	MC74HC163AF	4 BIT COUNTER	32	RD6.2SB	PROTECTION
107	HN27C256-10	INTERNAL SIGNAL DATA	33	RD6.2SB	PROTECTION
108	HN27C256-10	INTERNAL SIGNAL DATA	34	RD6.2SB	PROTECTION
109	CXD1171M	D/A CONVERTER	35	RD6.2SB	PROTECTION
110	TC74HC166AF	P/S CONVERTER	36	RD6.2SB	PROTECTION
111	MC74HC4053F	ANALOG SW	37	RD6.2SB	PROTECTION
113	MC74HC74AF	SAD BLANKING	38	RD6.2SB	PROTECTION
114	TLC2932IPW	PLL	39	RD6.2SB	PROTECTION
115	MC74HC10F	3 INPUT NAND	40	RD6.2SB	PROTECTION
116	MC74HC4053F	ANALOG SW	41	RD6.2SB	PROTECTION
117	MC74HC00AF	NAND	103	MAX110	INTERNAL SIGNAL Y SW
118	UPC393G2	OP. AMP	104	MAX110	INTERNAL SIGNAL Y OUT
119	MC74HC4053F	ANALOG SW	105	MAX110	INTERNAL SIGNAL PB/PR SW
120	CXD1030	SYNC GENERATOR	106	MAX110	INTERNAL SIGNAL PB OUT
121	MC74HCU04F	INVERTER	107	MAX110	INTERNAL SIGNAL PR OUT
122	TC74HC04AF	INVERTER	108	MAX110	D.U. SIGNAL SW
123	MC74HC74AF	D FLIP FLOP	109	MAX110	D.U. SIGNAL OUT
124	Z8622812PSC	CLOSED CAPTION DISPLAY	111	MAX110	SAD RCH
125	SN74HC05ANS	INVERTER(O.C.)	112	MAX110	SAD GCH
126	CXD1132Q	VITC READER	113	MAX110	SAD BCH

E BOARD
SEMICONDUCTOR LOCATION

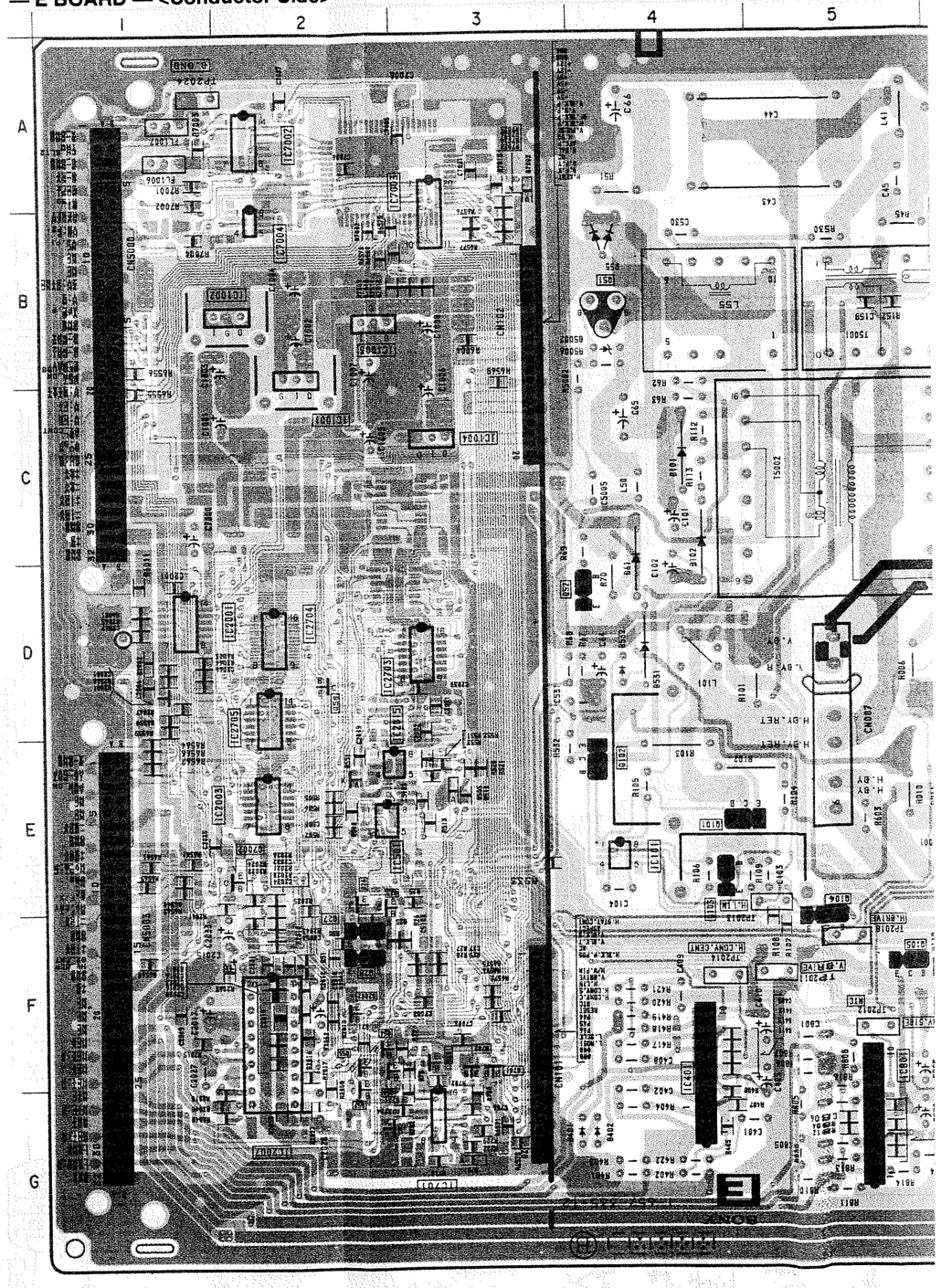
IC		IC		IC		TRANSISTOR		DIODE		DIODE		TEST POINT		TEST POINT	
IC101	E-4	IC2016	D-12	IC7005	F-12	Q1	D-6	D1	E-6	D606	E-6	TP1	G-12	TP2007	C-12
IC301	F-7	IC2017	C-12			Q2	C-7	D2	D-7	D607	D-7	TP3	B-13	TP2008	E-13
IC401	F-4	IC2019	E-13			Q25	E-2	D25	F-2	D701	G-3	TP4	B-12	TP2010	C-12
IC501	E-2	IC2701	D-13			Q26	E-2	D55	B-4	D702	G-2	TP5	B-12	TP2011	F-5
IC601	E-7	IC2702	D-12			Q27	F-2	D61	D-4	D5001	E-12	TP6	C-13	TP2012	F-5
IC701	G-3	IC2703	D-3			Q28	F-2	D101	C-4	D5002	B-4	TP7	E-6	TP2013	E-5
IC801	G-5	IC2704	D-2			Q51	B-4	D102	C-4	D7001	A-13	TP8	C-6	TP2014	F-4
IC1001	B-2	IC2705	D-2			Q52	D-4	D154	B-7	D7002	A-3	TP9	C-12	TP2015	F-6
IC1002	B-2	IC7001	A-12			Q54	F-2	D155	B-7			TP2001	E-13	TP2016	G-13
IC1003	B-2	IC7002	A-2			Q55	F-2	D301	F-6			TP2005	F-13	TP2017	F-13
IC1004	C-3	IC7003	A-3			Q56	F-2	D302	F-6					TP2018	F-5
IC2001	D-1	IC7004	B-2			Q57	G-2	D401	G-4					TP2023	F-14
IC2002	D-13					Q58	D-2	D402	G-4					TP2024	A-1
IC2003	E-2					Q101	E-4	D502	E-12					TP2025	D-12
IC2007	F-2					Q102	E-4	D503	E-12						
IC2011	F-13					Q103	E-4	D505	E-3						
IC2012	D-12					Q104	F-5	D531	D-4						
IC2015	E-2					Q105	F-5	D532	D-4						
						Q151	B-6	D551	E-2						
						Q152	A-6								
						Q155	A-6								
						Q156	B-7								
						Q157	B-7								
						Q158	B-7								
						Q159	A-7								
						Q501	F-3								
						Q502	E-12								
						Q505	E-13								
						Q507	E-12								
						Q701	F-3								
						Q702	F-3								
						Q2001	D-1								
						Q2002	F-2								
						Q2003	E-12								
						Q5000	E-12								
						Q7001	B-13								
						Q7002	E-2								
						Q7003	A-12								



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

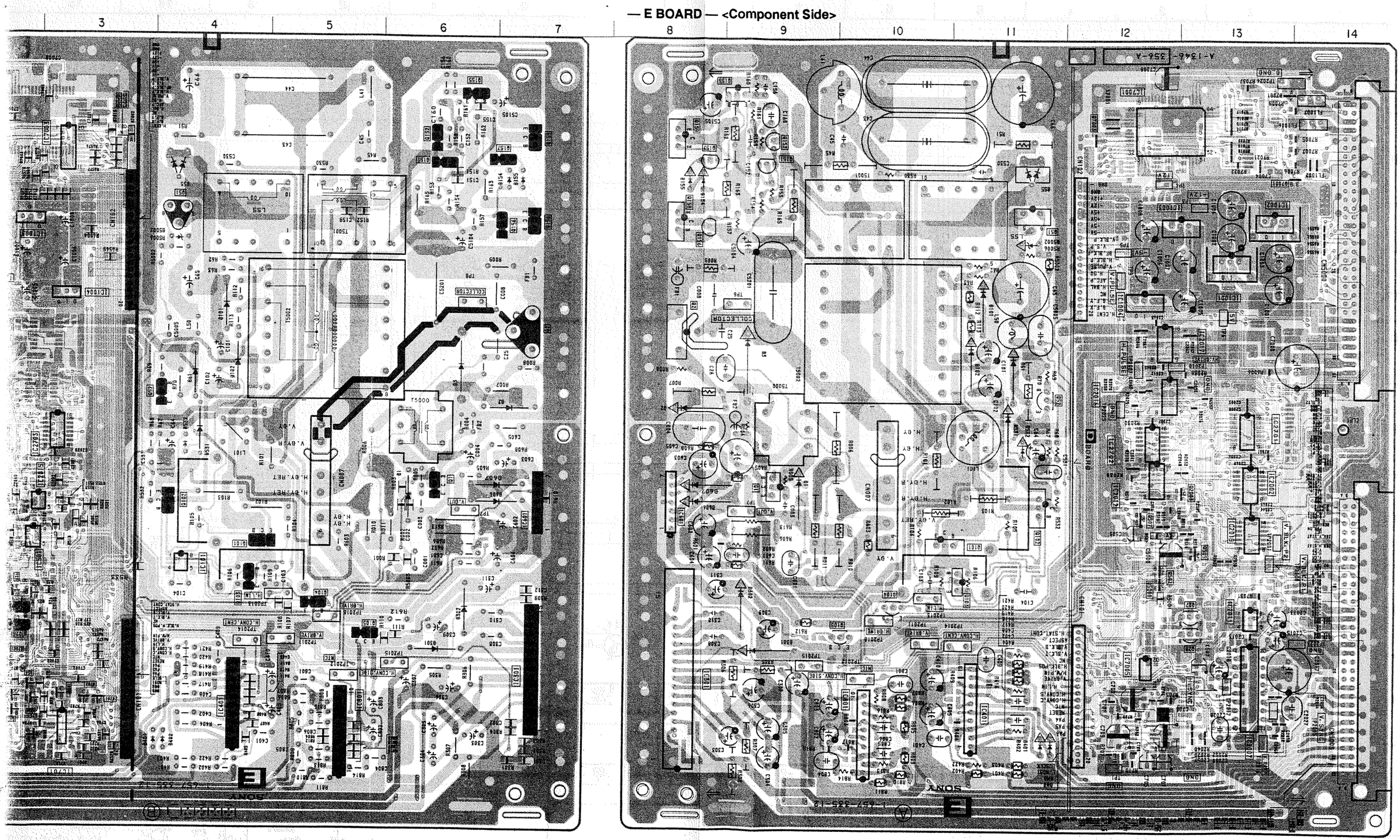
E (DEFLECTION DRIVE, PULSE GENERATOR, SYSTEM CONTROL, H•V OUT)

— E BOARD — <Conductor Side>



GENERATOR, SYSTEM CONTROL, H•V OUT)

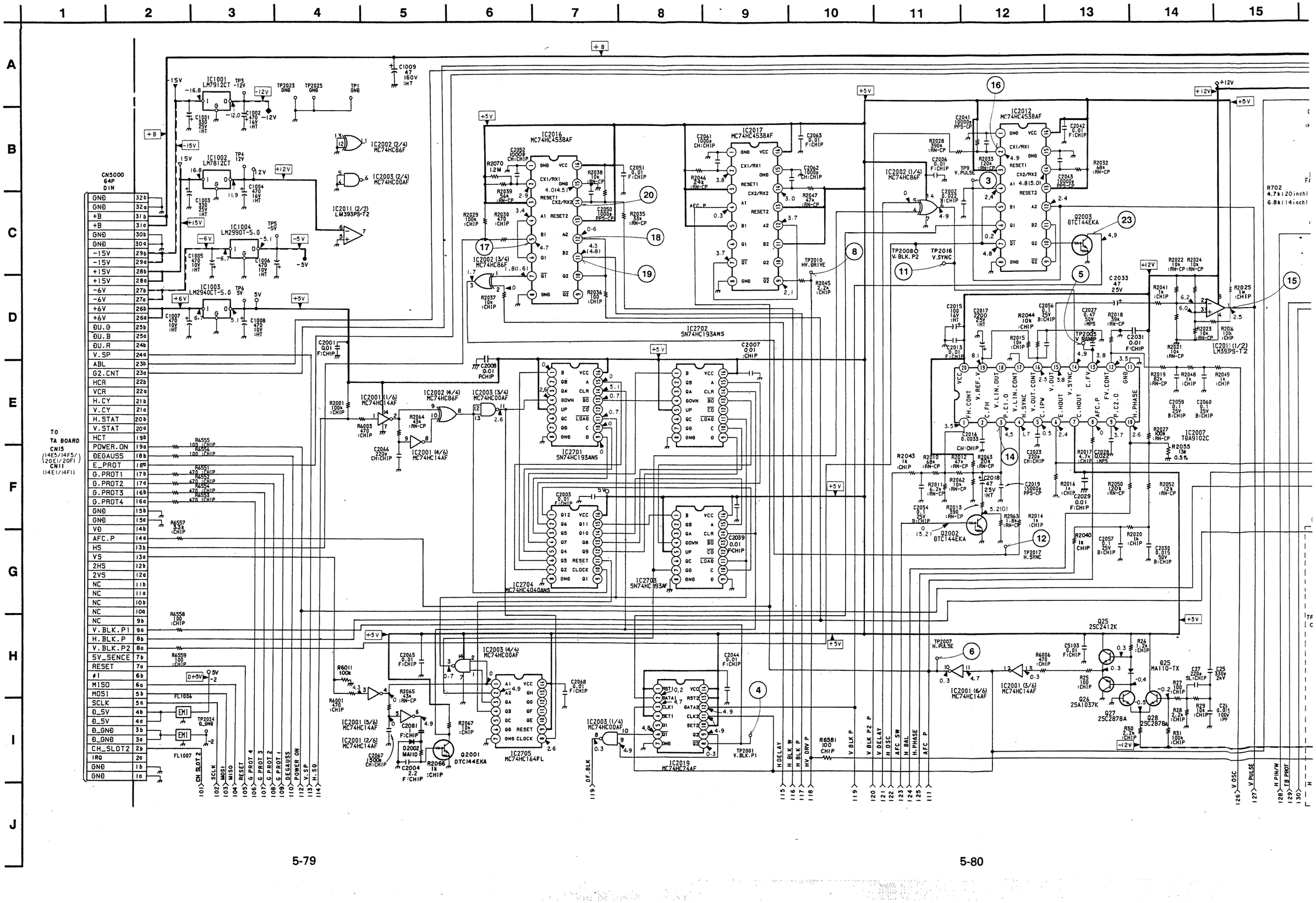
— E BOARD — <Component Side>



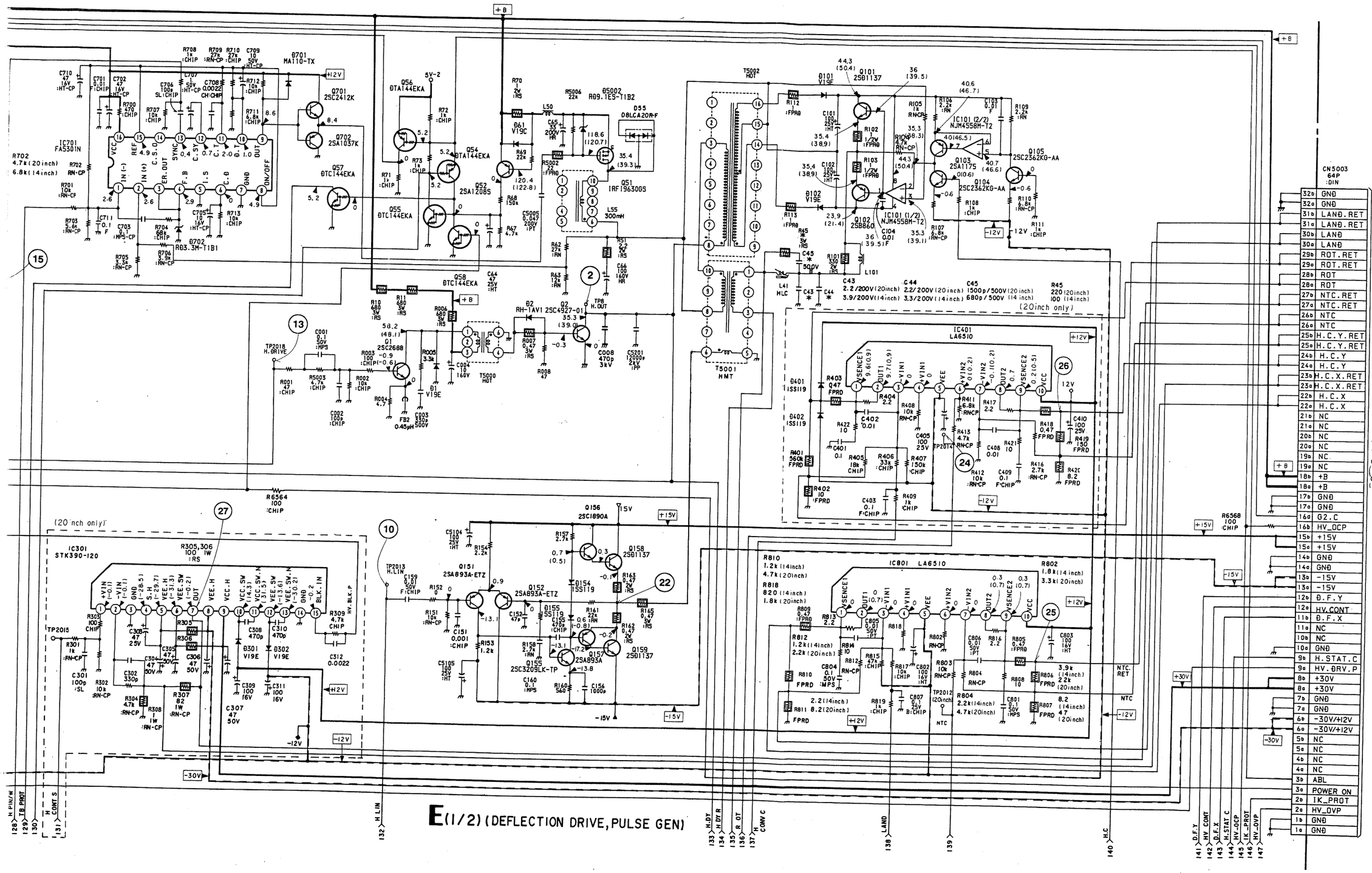
• : Pattern from the side which enables seeing.
• : Pattern of the rear side.

• E (DEFLECTION DRIVE, PULSE GEN) BOARD (1/2)

• Refer to page 5–87 for Function of Semiconductor
• Refer to page 5–87 for Waveforms



16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

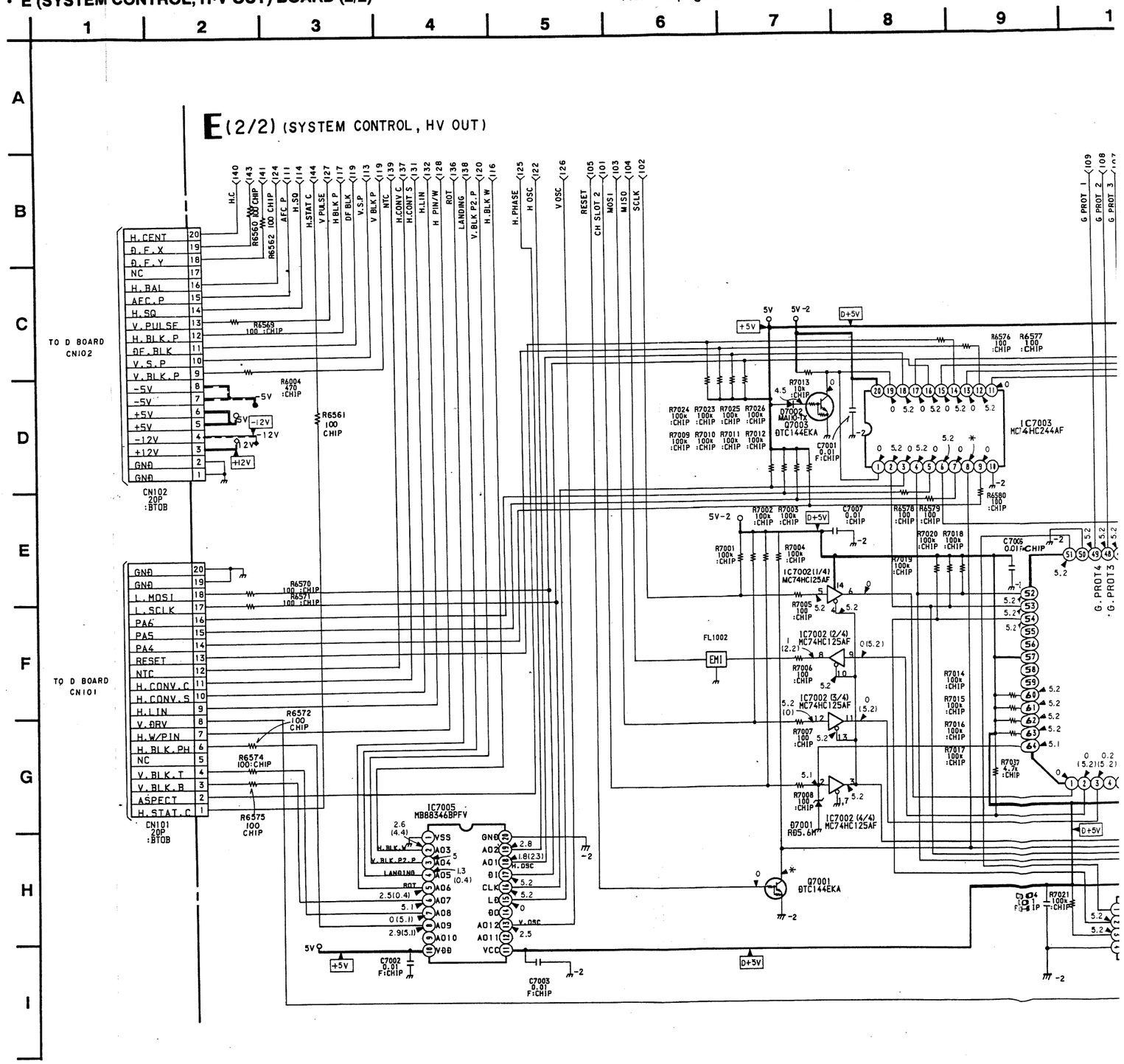


E(1/2) (DEFLECTION DRIVE, PULSE GEN)

E E

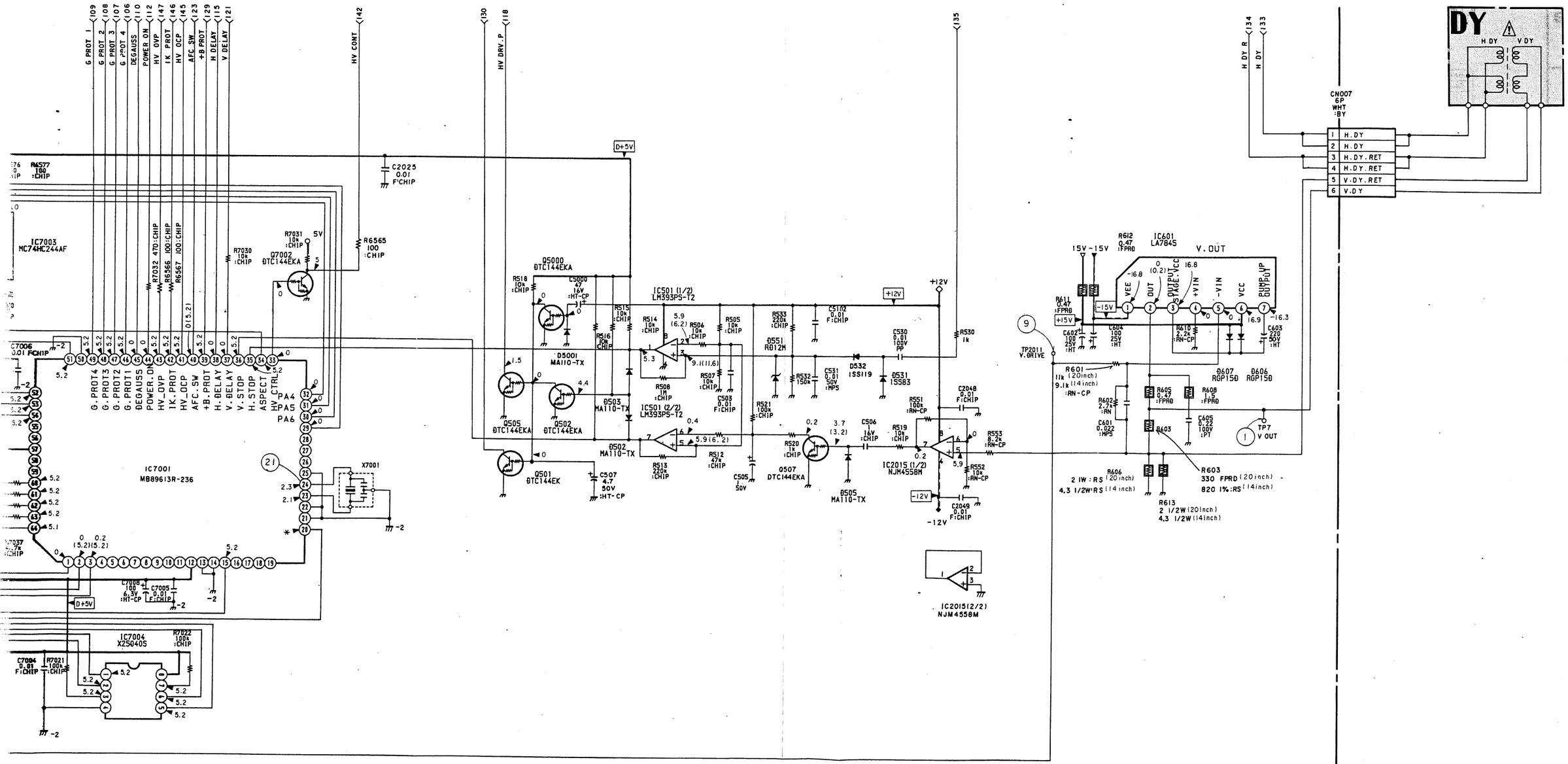
• E (SYSTEM CONTROL, H·V OUT) BOARD (2/2)

• Refer to page 5–76 for Printed Wiring Board



E E

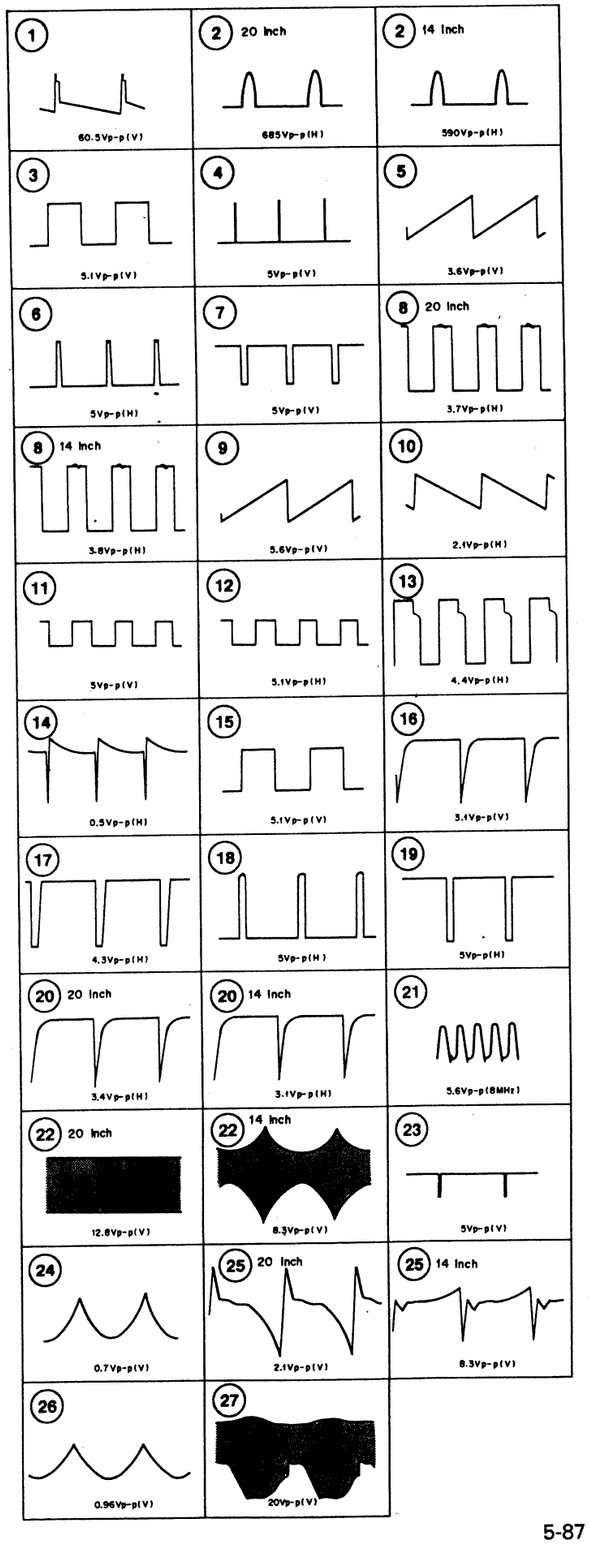
9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24



5-85

5-86

• E BOARD Waveforms



E BOARD

Function of Semiconductor

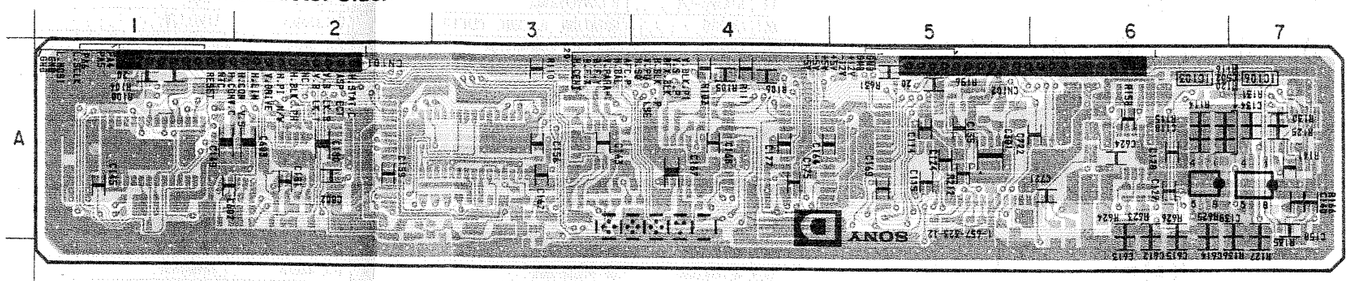
IC101	NJM4558M	H CENTER AMP	Q151	2SA893A	H LIN AMP
301	STK390-120	H CONVERGENCE	152	2SA893A	CLAMP
401	LA6510	ROTATION, H. CONV. CENTER	155	2SC3209LK	LEVEL SW
501	LM393PS	H/V STOP COMPARATOR	156	2SC1890A	H LIN AMP
601	LA7845	V OUT	157	2SA893A	H LIN AMP
701	FA5301N-TE1	PWM CONTROL	158	2SD1137	H LIN OUT
801	LA6510	LANDING, NTC	159	2SD1137	H LIN OUT
1001	LM7912CT	-12V REG	501	DTC144EKA	DEF STOP PROT DRIVE
1002	LM7812CT	+12V REG	502	DTC144EKA	INVERTER
1003	LM2940CT-5.0	+5V REG	505	DTC144EKA	DEF STOP PROTECTOR
1004	LM2990T-5.0	-5V REG	507	DTC144EKA	DISCHAGE SW
2001	MC74HC14AF	INVERTER	701	2SC2412K-QR	PWM DRIVE
2002	MC74HC86F	V DELAY SW	702	2SA1037K-QR	PWM DRIVE
2003	MC74HC00AF	DF PULSE GEN	2001	DTC144EKA	INVERTER
2007	TDA9102C	V OSC, H OSC, AFC	2002	DTC144EKA	AFC SW
2011	LM393PS	V PULSE GEN	2003	DTC144EKA	V BLK PULSE SW
2012	MC74HC4538AF	V BLK P2 GEN	5000	DTC144EKA	POWER ON RESET
2015	NJM4558M	V STOP PROT	7001	DTC144EKA	RESET SW
2016	MC74HC4538AF	H BLK GEN, DELAY	7002	DTC144EKA	INVERTER
2017	MC74HC4538AF	H/V DRIVE PULSE GEN	7003	DTC144EKA	A5V SW
2019	MC74HC74AF	V BLK PULSE GEN			
2701	SN74HC193ANS	V COUNTER	D1	V19E-T52	PROTECT
2702	SN74HC193ANS	V COUNTER	2	RH-1AV1	DAMPER
2703	SN74HC193ANS	V COUNTER	25	MA110-TX	DAMPER
2704	MC74HC4040AF	V COUNTER	55	D8LCA20R-F	DAMPER
2705	MC74HC164F	V. START	61	V19C-T52	SWITCH
7001	MB89613PF-SUB02	SUB MICROCOMPUTER	101	V19C-T52	H CENT
7002	MC74HC125AF	BUFFER	102	V19C-T52	H CENT
7003	MC74HC244AF	BUFFER	154	1SS119	PROTECTOR
7004	X25040S-C7000	EEP ROM	155	1SS119	PROTECTOR
7005	MB88346BPFV-EF	12CH DAC	301	V19E-T52	VCC SW
			302	V19E-T52	VEE SW
Q1	2SD1138-C	H DRIVE	401	1SS119	SWITCH
2	2SC4927-01	H OUT	402	1SS119	SWITCH
25	2SC2412K-QR	AFC PULSE	502	MA110-TX	SWITCH
26	2SA1037K-QR	AFC PULSE	503	MA110-TX	SWITCH
27	2SC2878A	AFC PULSE	505	MA110-TX	PROTECTOR
28	2SC2878A	AFC PULSE	531	1SS83TA	PROTECTOR
51	IRF19630GS-LF	PWM	532	1SS119	PROTECTOR
52	2SA1208S	H WIDTH AMP	551	RD12M-B1	PROTECTOR
54	DTA144EKA	LATCH	606	RGP15DPKG23	PUMP UP
55	DTC144EKA	H WIDTH SW	607	RGP15DPKG23	PUMP UP
56	DTA144EKA	LATCH	701	MA110-TX	SWITCH
57	DTC144EKA	DRIVE	702	RD3.3M-B1	PROTECTOR
58	DTC144EKA	POWER RECET	2002	MA110-TX	PROTECTOR
101	2SD1137	H CENT AMP	5001	MA110-TX	PROTECTOR
102	2SB860	H CENT AMP	5002	RD9.1ES-B2	PROTECTOR
103	2SA1175-HFE	BIAS	7001	RD5.6M-B	DC LEVEL SHIFT
104	2SC2362KG-AA	H CENT AMP	7002	MA110-TX	SWITCH
105	2SC2362KG-AA	BIAS			

D (H•DEFLECTION DRIVE)

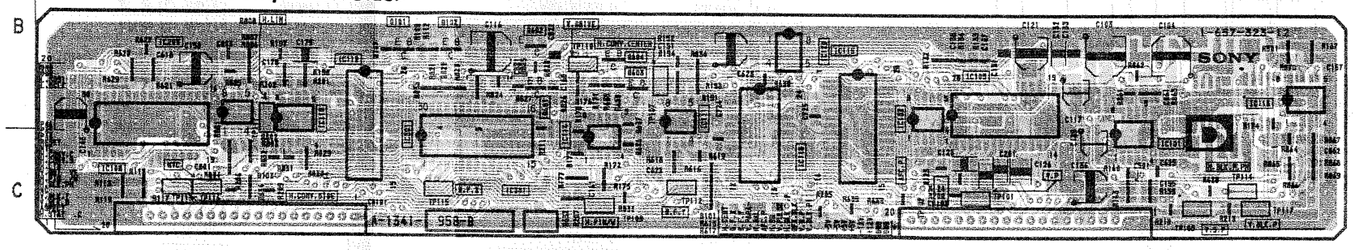
D BOARD
SEMICONDUCTOR LOCATION

IC	
IC101	B-6
IC102	B-5
IC103	A-6
IC105	B-5
IC106	A-7
IC108	B-1
IC111	B-4
IC112	B-2
IC113	B-7
IC114	C-3
IC115	B-5
IC118	C-4
IC119	B-2
IC120	B-4
IC203	B-1
IC301	C-3
TRANSISTOR	
Q101	B-2
Q102	B-3
Q601	B-3
Q602	B-3
Q603	B-4
Q604	B-3
DIODE	
TP101	C-5
TP102	C-5
TP105	C-6
TP107	B-4
TP109	C-3
TP110	B-3
TP111	B-2
TP112	C-4
TP113	C-1
TP114	C-7
TP115	C-3
TP116	C-1
TP117	C-7

— D BOARD — <Conductor Side>

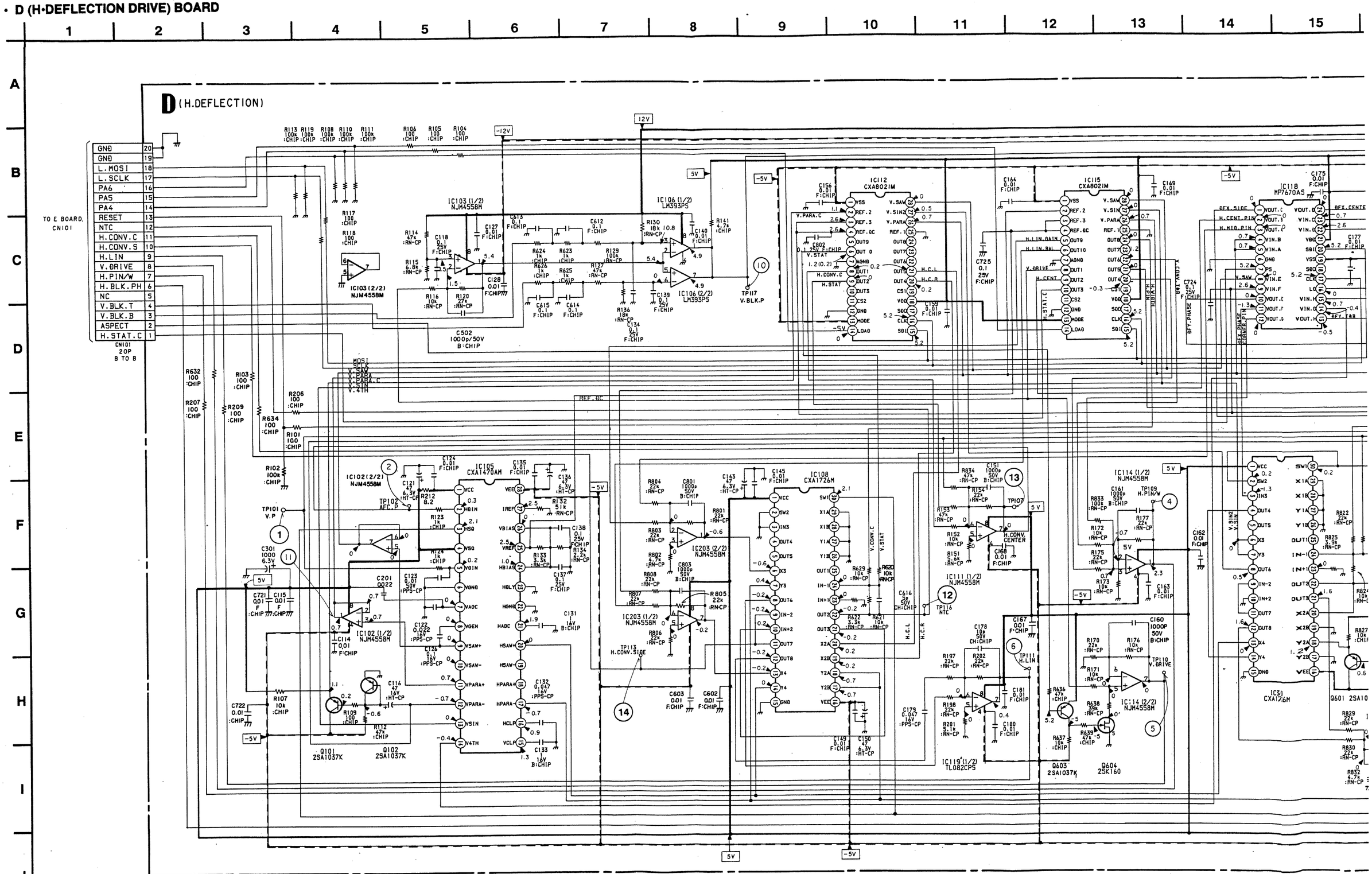


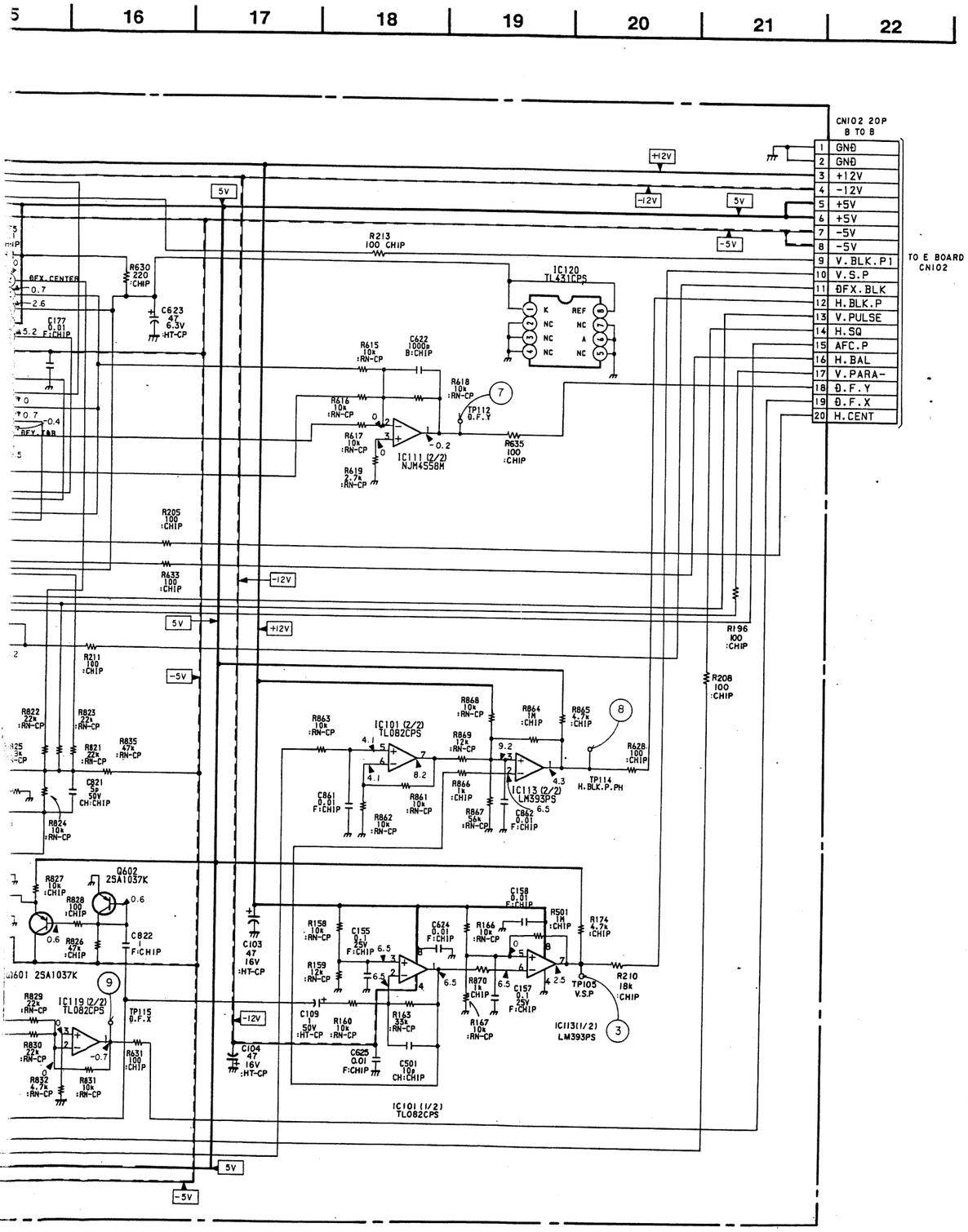
— D BOARD — <Component Side>



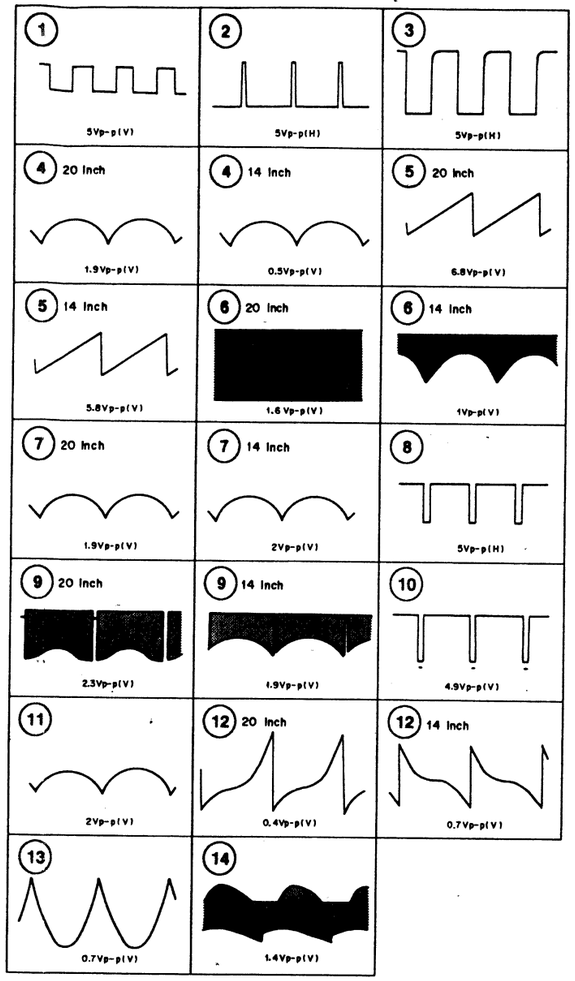
• : Pattern from the side which enables seeing.
• : Pattern of the rear side.

• D (H·DEFLECTION DRIVE) BOARD





• D BOARD Waveforms



D BOARD

Function of Semiconductor

IC101	TL082CPS-E20	H. BLK, PHASE, VSP GEN
102	NJM4558M	BUFFER
103	NJM4558M	V. BLK GENERATOR
105	CXA1470AM	SIGNAL GENERATOR
106	LM393PS	V. BLK GENERATOR
108	CXA1726M	H. LIN., CONVER., SIDE MOD
111	NJM4558M	H. CONV. CENTER, D.F.Y GEN
112	CXA8021M	H. CONVER GENERATOR
113	LM393PS	H. BLK, PHASE, V.S.P GEN
114	NJM4558M	V. DRIVE, H. PIN WIDTH GEN
115	CXA8021M	DEFLECTION GEN
118	MP7670AS	8CH DAC
119	TL082CPS-E20	H. PARA. CLAM, LIN GEN
120	TL431CPS-E05	+2.5V REG
203	NJM4558M	H. LIN. GENERATOR
301	CXA1726M	DFX MOD
Q101	2SA1037K-QR	V PARA CLAMP
102	2SA1037K-QR	V PARA CLAMP
601	2SA1037K-QR	H PARA CLAMP
602	2SA1037K-QR	H PARA CLAMP
603	2SA1037K-QR	ASPECT SWITCH
604	2SK160	ASPECT SWITCH

• PA (HIGH VOLTAGE SUPPLY), PC (F.B.T), C (CRT SOCKET) BOARD

PA BOARD

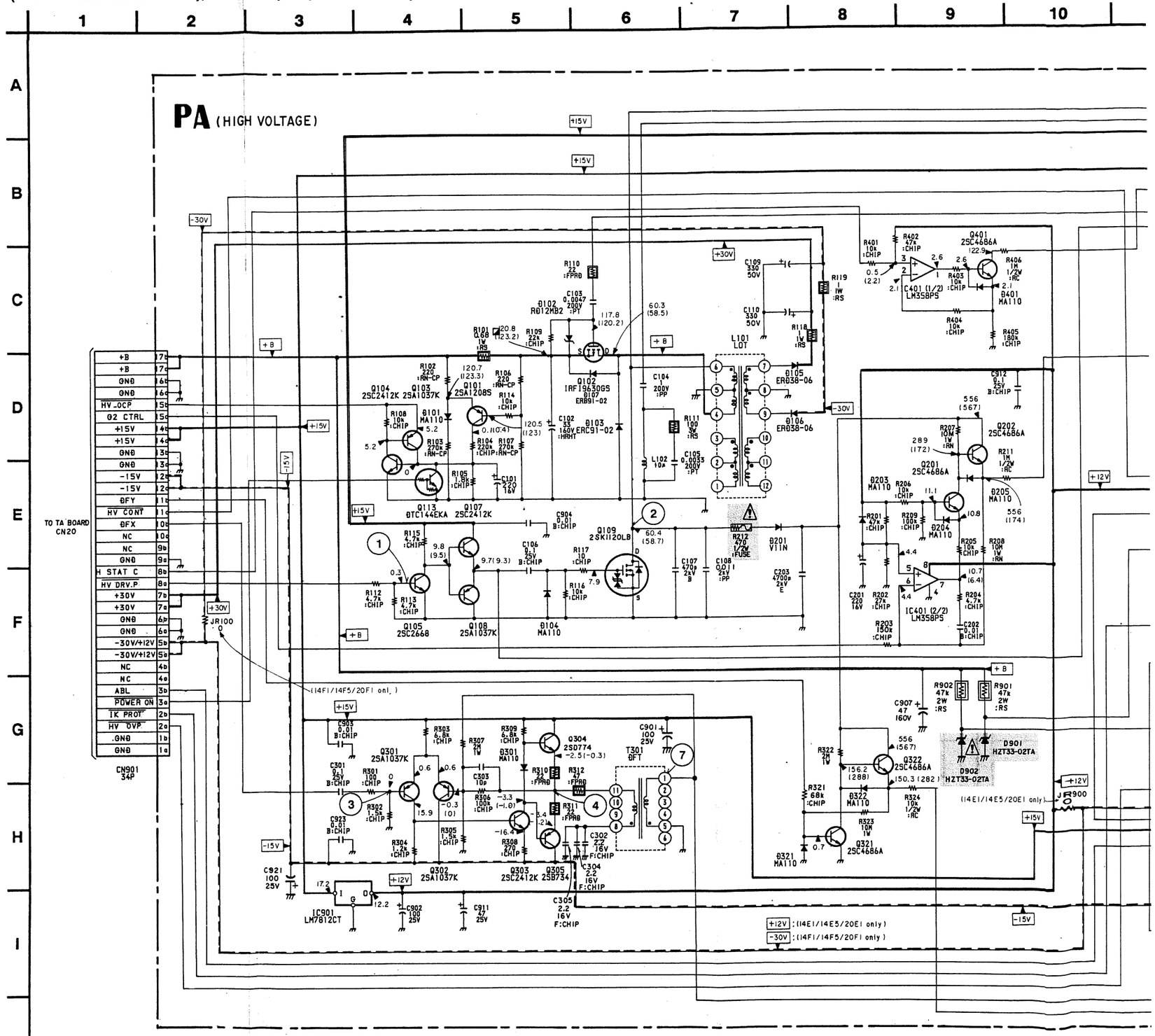
Function of Semiconductor

IC401	LM358PS-T5L	G2/H STAT CONTROL	D103	ERC91-02TP11	FLYWHEEL
501	FA5301N-TE1	PWM CONTROL	104	MA110-TX	CLAMP
502	LM393PS-T5L	DISCHARGE	105	ERD38-06TP11	+30V RECT
801	LM358PS-T5L	BUFFER	106	ERD38-06TP11	-30V RECT
901	LM7812CT	+12V REG	107	ERB91-02TP1	PROTECTOR
			201	V11N	+500V RECT
Q101	2SA1208S	HV REG OCP DET	203	MA110-TX	DISCHARGE
102	IRFI9630GS	HV REG SWITCHING	204	MA110-TX	PROTECTOR
103	2SA1037K-Q	LATCH	205	MA110-TX	PROTECTOR
104	2SC2412K-Q	LATCH	301	MA110-TX	BIAS
105	2SC2668-OTP	AMP	321	MA110-TX	PROTECTOR
107	2SC2412K-Q	BUFFER	322	MA110-TX	PROTECTOR
108	2SA1037K-Q	BUFFER	401	MA110-TX	PROTECTOR
109	IRFPG50LF	HV OUT SWITCHING	501	MA110-TX	SWITCH
111	2SC2412K-Q	BUFFER	502	MA110-TX	SWITCH
112	2SA1037K-Q	BUFFER	505	MA110-TX	THERMAL COMP
113	DTC144EKA	PWR OFF RESET	511	MA110-TX	DISCHARGE
201	2SC4686A	G2 AMP	512	MA110-TX	SWITCH
202	2SC4686A	G2 BUFFER	513	RD3.0M-B	LIMITER
301	2SA1037K-Q	DFX AMP	514	MA110-TX	SWITCH
302	2SA1037K-Q	DFX AMP	516	MA110-TX	DISCHARGE
303	2SC2412K-Q	DFX AMP	517	RD3.0M-B	LIMITER
304	2SD774-34	DFX DRIVER	518	MA110-TX	SWITCH
305	2SB734-34	DFX DRIVER	519	MA110-TX	SWITCH
321	2SC4686A	DFY AMP	521	MA110-TX	SWITCH
322	2SC4686A	DFY BUFFER	801	RD12M-B2	PROTECTOR
401	2SC4686A	H STAT OUT	802	MA110-TX	HV PROT RECT
			901	HZT33-02TA	IK PROT REF
D101	MA110-TX	THERMAL COMP	902	HZT33-02TA	HV PROT REF
102	RD12M-B2	PROTECT			

C BOARD

Function of Semiconductor

Q1	2SB734-3	G1 BIAS
D1	EGP10GPKG23	BLANKING CLAMP
2	RD24ES-B2	G1 BIAS



11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

CN902 5P WHT :MINI
1 FBT (H)
2 FBT (C)
3 JW (+15V)
4 GNΘ
5 JW (+15V)

CN903 3P :MINI
1 H STAT
2 G2 OUT
3 GNΘ

FOCUS BLOCK ⚠

C (CRT SOCKET)

CN7 3P YEL :MICRO
TO BK BOARD CN5
G1
NC
GND

CN2 1P WHT
GND
CHASSIS

CN4 4P RED :MICRO
TO BK BOARD CN2
KR
NC
NC
GNΘ

CN5 4P WHT:MICRO
TO BK BOARD CN3
KG
NC
NC
GNΘ

CN8 4P WHT :MICRO
H1
H2
NC
-30/+12V

CN5 3P WHT :MINI
H.STAT
G2
GNΘ

CN1 2P WHT :MINI
GND
GND

CN6 4P BLK :MICRO
KB
NC
NC
GNΘ
TO BK BOARD CN4

V901 PICTURE TUBE
G1 G4 GM RCV
H1
H2
KR KG KB
HV
CHASSIS GND

C BOARD * MARK

Ref. No.	14F1/14F5/20F1	14E1/14E5/20E1
C7	10 50V	—
C8	10 50V	10 25V:BP
D2	RD24ESB2	—
JW1	—	JW(5)
Q1	2SB734-3	—
R17	12k	JW(5)
R18	5.6k	—

V901
14MP1 (14E1E/14E5E)
14MP3 (14E1U/14E5U)
20MP1 (20E1E)
20MT3 (20F1U)
20MT1 (20F1E:NORTH)
20MT1(S) (20F1E:SOUTH)
14MT3 (14F1U/14F5U)
14MT1 (14F1E/14F5E)
Y20MPDM (20E1U)

(F.B.T) PC

CN1 5P WHT :MINI
FBT (H)
FBT (C)
JW (+15V)
GNΘ
JW (+15V)

CN2 8P WHT :MICRO
GNΘ
HEATER (-)
HEATER (+)
ABL1
ABL2
JW (+15V)
JW (+15V)
GNΘ
HV PROT
GNΘ
HV RTN

CN3 4P WHT :MICRO
JW (+15V)
JW (+15V)
IK OUT
IK IN

R7 2.2 (20 inch) 1 (14 inch) 3W :RS

R3 1.6k(20 inch) 2k (14 inch)
R6 1.5k(20 inch) 1.8k(14 inch)

CN906 4P WHT :MICRO
HEATER (-)
HEATER (+)
NC
-30V/+12V

CN904 11P WHT :MICRO
GNΘ
HEATER (-)
HEATER (+)
ABL1
ABL2
JW (+15V)
JW (+15V)
GNΘ
HV PROT
GNΘ
HV RTN

CN905 2P :MINI
ΘF X
ΘF Y

R802 10k (20inch) 6.8k (14inch)

RV501 HV ADJ ⚠

RV502 IK PROT

RV503 10k(20inch) 4.7k(14inch) HV PRONT

IC501 FA5301N
IC502(1/2) LM393PS
IC502(2/2) LM393PS
IC801(1/2) TL082CPS
IC801(2/2) TL082CPS

Q111 2SC2412K
Q112 2SA1037K

D801 RD12MB2

TP501 TP502 TP503 TP504

PA (HIGH VOLTAGE SUPPLY) PC (F.B.T) C (CRT SOCKET)

PA BOARD
SEMICONDUCTOR LOCATION

IC	
IC401	D-3
IC501	B-2
IC502	C-1
IC801	B-2
IC901	A-1

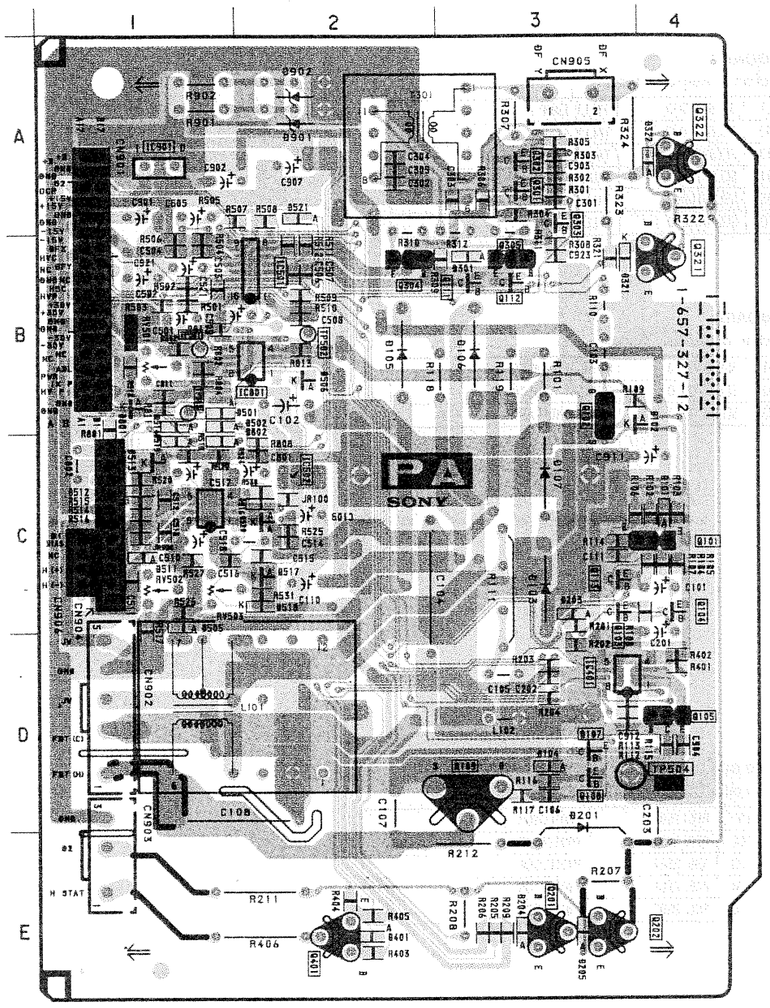
TRANSISTOR	
Q101	C-4
Q102	B-3
Q103	C-3
Q104	C-4
Q105	D-4
Q107	D-3
Q108	D-3
Q109	D-3
Q111	B-3
Q112	B-3
Q113	C-3
Q201	E-3
Q202	E-3
Q301	A-3
Q302	A-3
Q303	A-3
Q304	B-2
Q305	B-3
Q321	B-4
Q322	A-4
Q401	E-2

DIODE	
D101	C-4
D102	B-4
D103	C-3
D104	D-3
D105	B-2
D106	B-3
D107	C-3
D201	D-3
D203	C-3
D204	E-3
D205	E-3
D301	B-3
D321	B-3
D322	A-4
D401	E-2
D501	B-1
D502	B-1
D505	C-1
D511	C-1
D512	C-1
D513	C-1
D514	B-1
D516	C-2
D517	C-2
D518	C-2
D519	C-1
D521	A-2
D801	B-1
D802	C-1
D901	A-2
D902	A-2

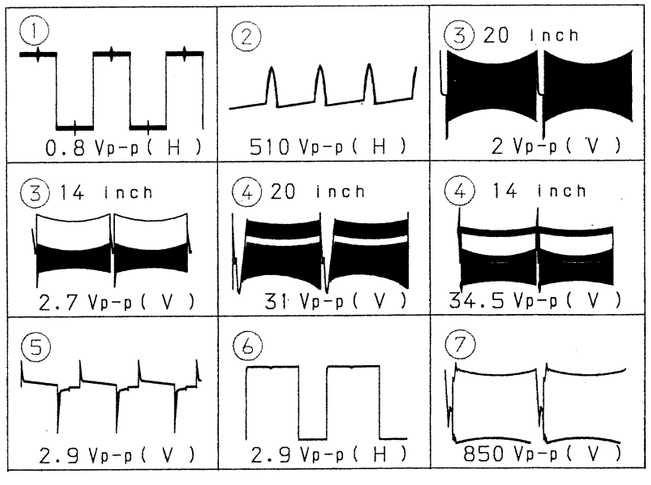
VARIABLE RESISTOR	
RV501	B-1
RV502	C-1
RV503	C-1

TEST POINT	
TP501	B-1
TP502	B-1
TP503	B-1
TP504	D-3

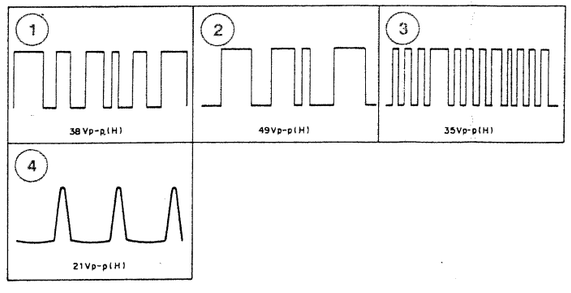
— PA BOARD — <Conductor Side>



• PA BOARD Waveforms

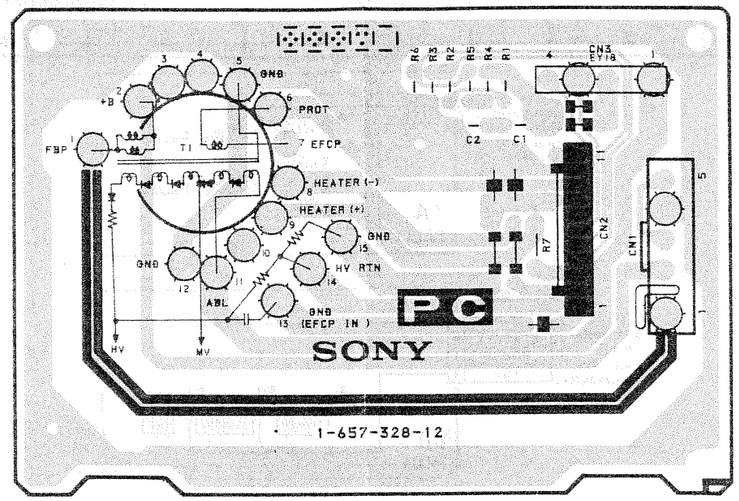


• C BOARD Waveforms

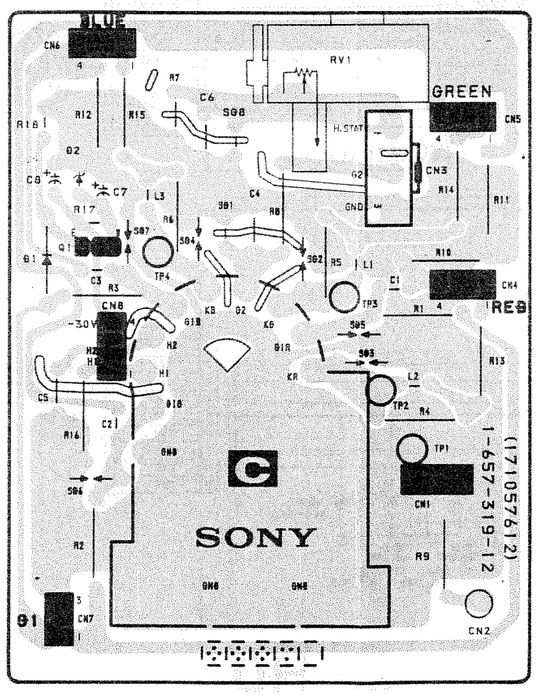


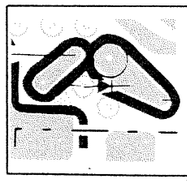
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

— PC BOARD — <Conductor Side>



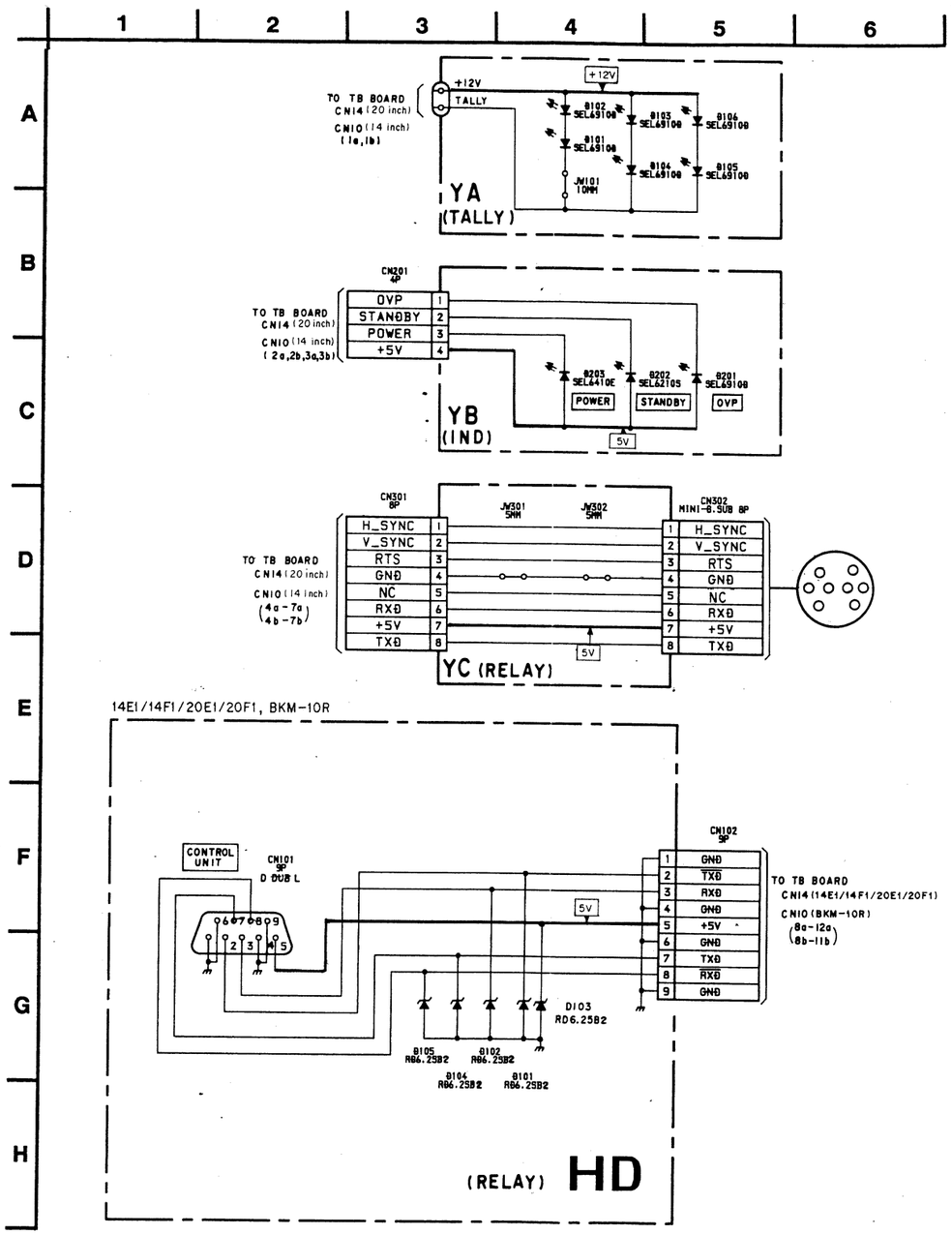
— C BOARD — <Conductor Side>





NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

• YA (TALLY), YB (INDICATOR), YC (RELAY) BOARD
• HD (RELAY) BOARD (BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/20F1E/20F1U, BKM-10R)



YA BOARD

Function of Semiconductor

D101	SEL6910D-D	TALLY LAMP
102	SEL6910D-D	TALLY LAMP
103	SEL6910D-D	TALLY LAMP
104	SEL6910D-D	TALLY LAMP
105	SEL6910D-D	TALLY LAMP
106	SEL6910D-D	TALLY LAMP

YB BOARD

Function of Semiconductor

D201	SEL6910D-D	OVERLOAD INDICATOR
202	SEL6910D-D	STANDBY INDICATOR
203	SEL6910D-D	POWER INDICATOR

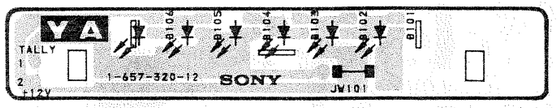
HD BOARD

Function of Semiconductor

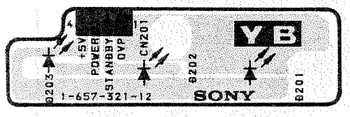
D101	RD6.2SB2	PROTECTOR
102	RD6.2SB2	PROTECTOR
103	RD6.2SB2	PROTECTOR
104	RD6.2SB2	PROTECTOR
105	RD6.2SB2	PROTECTOR

YA (TALLY) **YB** (INDICATOR) **YC** (RELAY) **HD** (RELAY)
(BVM-14E1E/14E1U/14F1E/14F1U/20E1E/20E1U/
20F1E/20F1U, BKM-10R)

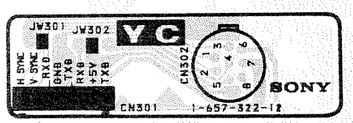
— YA BOARD — <Conductor Side>



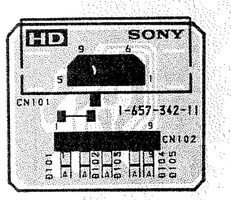
— YB BOARD — <Conductor Side>



— YC BOARD — <Conductor Side>



— HD BOARD — <Conductor Side>

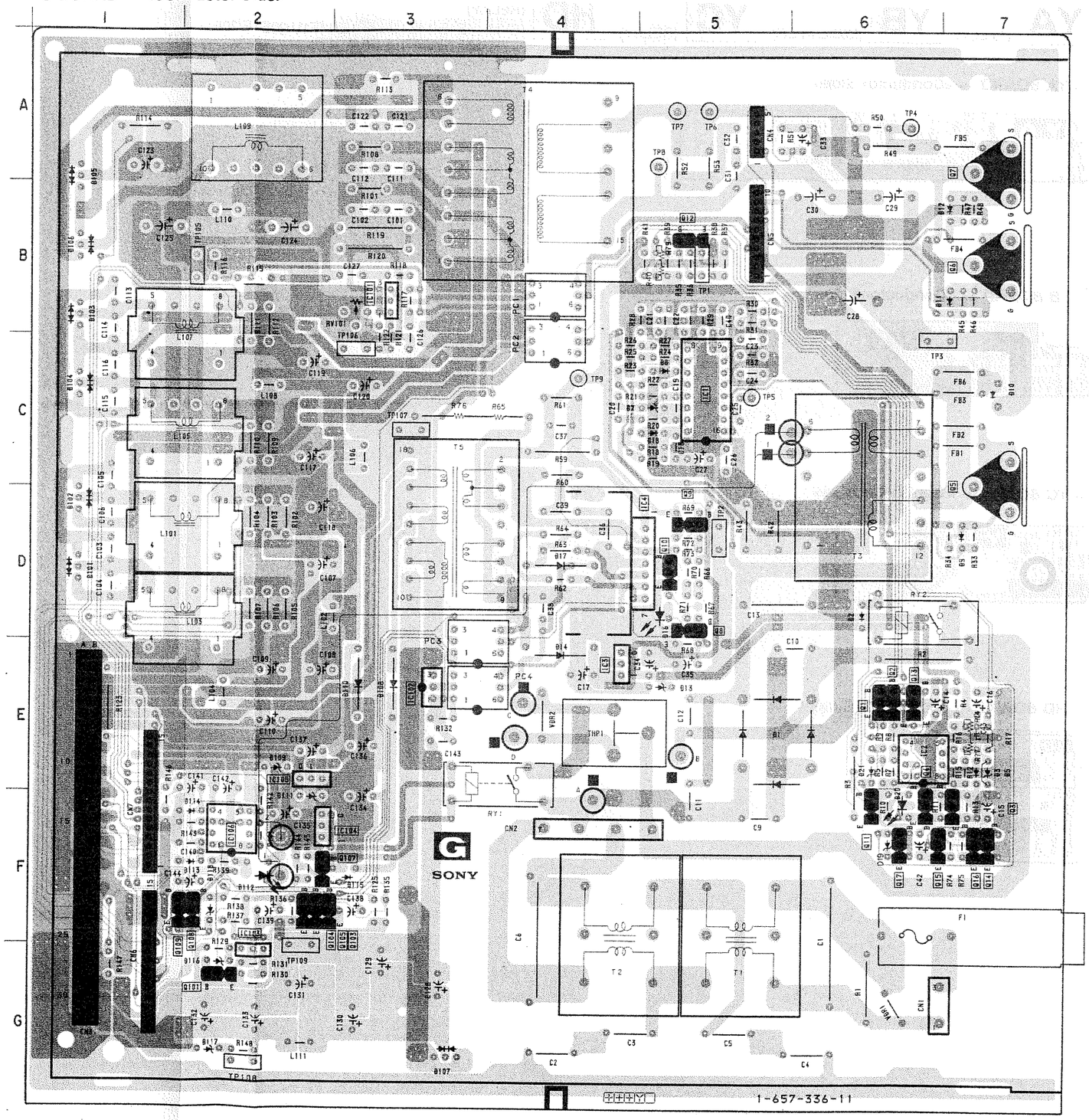


G (MAIN RECT, POWER SUPPLY)

G BOARD
SEMICONDUCTOR LOCATION

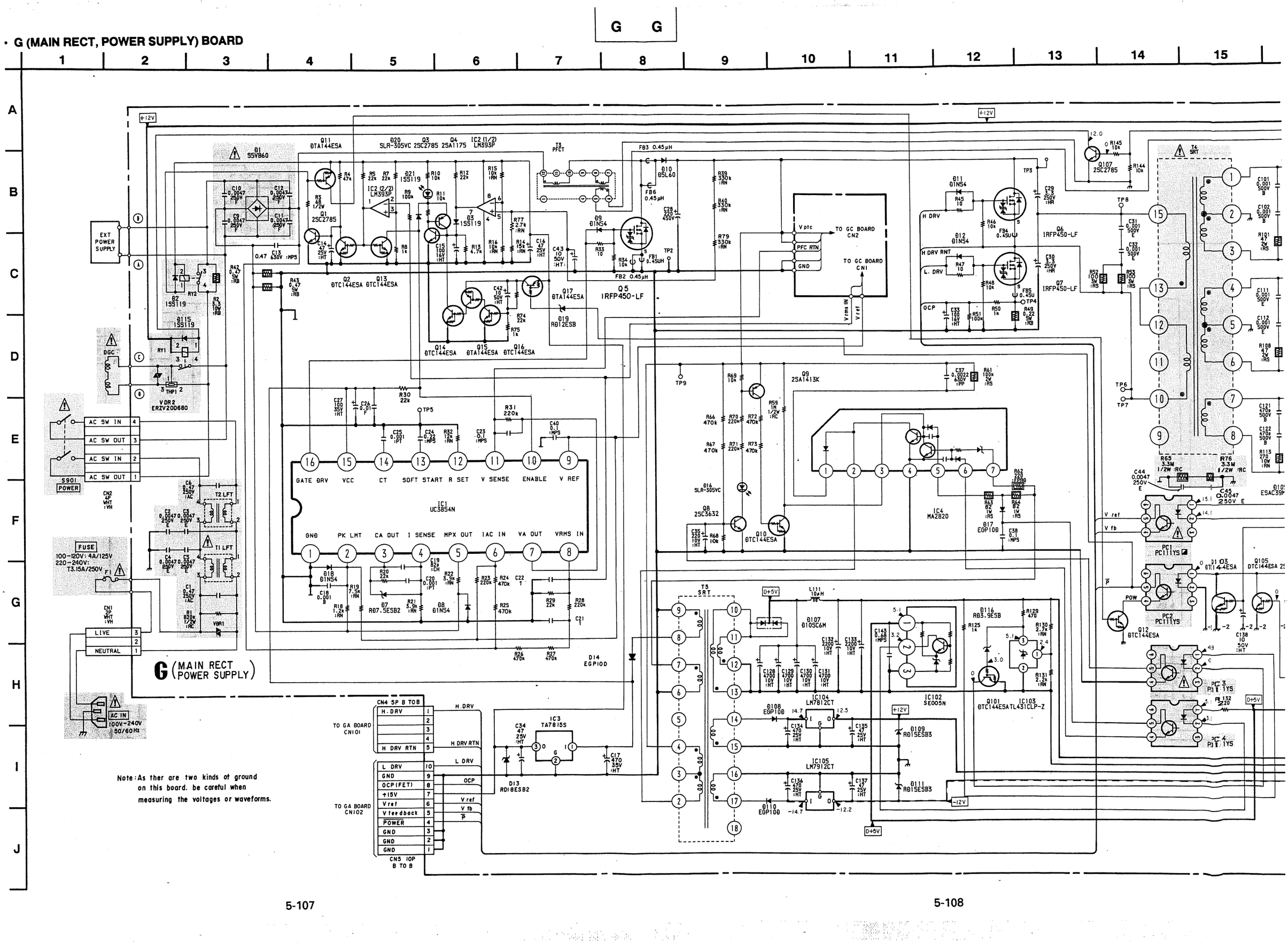
IC		D12	B-7
		D13	E-5
IC1	C-5	D14	E-4
IC2	E-6	D16	D-5
IC3	E-4	D17	D-4
IC4	D-4	D18	C-5
IC101	B-3	D19	F-6
IC102	E-3	D20	F-6
IC103	G-2	D21	E-6
IC104	F-2	D101	D-1
IC105	E-2	D102	D-1
IC106	F-2	D103	B-1
TRANSISTOR		D104	C-1
		D105	A-1
Q1	E-6	D106	B-1
Q2	E-6	D107	G-3
Q3	F-7	D108	E-3
Q4	F-6	D109	E-2
Q5	C-7	D110	E-3
Q6	B-7	D111	F-2
Q7	A-7	D112	F-2
Q8	D-5	D113	F-2
Q9	D-5	D114	F-2
Q10	D-5	D115	F-3
Q11	F-6	D116	G-2
Q12	B-15	D117	G-2
Q13	E-6	D118	F-3
Q14	F-7	VARIABLE RESISTOR	
Q15	F-6		
Q16	F-7	RV101	B-3
Q17	F-6	TEST POINT	
Q101	G-2		
Q103	F-2	TP1	B-5
Q104	F-2	TP2	D-5
Q105	F-2	TP3	C-6
Q107	F-4	TP4	A-6
Q108	F-4	TP5	C-5
Q109	F-1	TP6	A-5
DIODE		TP7	A-5
		TP8	A-5
D1	E-5	TP9	C-4
D2	D-6	TP105	B-1
D3	E-7	TP106	C-3
D7	C-5	TP107	C-3
D8	C-5	TP108	G-2
D9	D-7	TP109	G-2
D10	C-7		
D11	B-7		

— G BOARD — <Conductor Side>



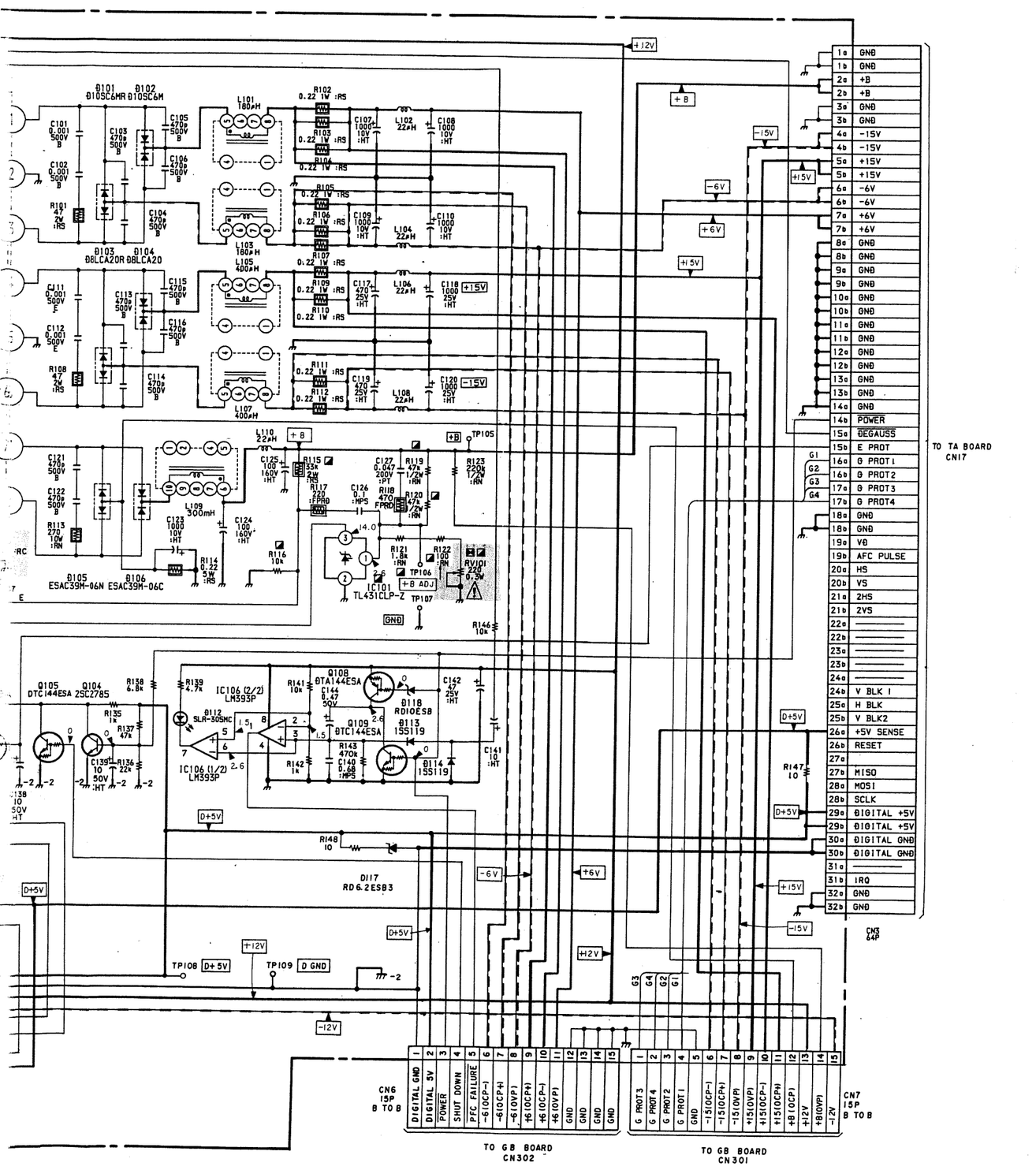
• : Pattern from the side which enables seeing.
• : Pattern of the rear side.

• G (MAIN RECT, POWER SUPPLY) BOARD



5-107

5-108



G BOARD

Function of Semiconductor

IC1	UC3854N	PFC CONTROL	D5	RD7.5ES-B2	DC LEVEL SHIFT
2	LM393P	AC IN DET, PFC OUT OVP	7	RD7.5ES-B2	CLAMP
3	LM7815CT	+15V REG	8	D1NS4	CLAMP
4	MA2820	RCC SWITCHING	9	D1NS4	SPEED UP
101	TL431CLP-Z	+B REG	10	D5L60	FLYHOOL
102	SE005N	+5V REG	11	D1NS4	SPEED UP
103	TL431CLP-Z	+5V OVP	12	D1NS4	SPEED UP
104	LM7812CT	12V REG	13	RD18ESB2	PROTECTOR
105	LM7912CT	-12V REG	14	EGP10DPKG23	+18V RECT
106	LM393P	PFC FAILUVE DET	16	SEL6210S-D	RCC FAIL PILOT
			17	EGP10DPKG23	RECT
Q1	2SC2785-HFE	RELAY DRIVE	18	D1NS4	CLAMP
2	DTC144ESA	DISCHARGE	19	RD12ES-B	DC LEVEL SHIFT
3	2SC2785-HFE	LATCH	20	SEL6210S-D	PFC OVP PILOT
4	2SA1175-HFE	LATCH	21	1SS119	SWITCH
5	IRFP450LF	PFC SWITCHING	101	D10SC6MR	-6V RECT
6	IRFP450LF	HIGH SIDE SWITCHING	102	D10SC6M	+6V RECT
7	IRFP450LF	LOW SIDE SWITCHING	103	D8LCA20R	-15V RECT
8	2SC3632-M	RCC PROTECTOR	104	D8LCA20	+15V RECT
9	2SC3632-M	RCC PROTECTOR	105	ESAC39M-06N	+B RECT
10	DTC144ESA	RCC PROTECTOR	106	ESAC39M-06C	+B RECT
11	DTA144ESA	INRUSH FAILUVE	107	D10SC6M	DIGITAL 5V RECT
12	DTC144ESA	SOFT START	108	EGP10DPKG23	+15V RECT
13	DTC144ESA	PFC STOP	109	RD15ES-B3	PROTECTOR
14	DTC144ESA	PWR ON RESET	110	EGP10DPKG23	-15V RECT
15	DTA144ESA	PWR ON RESET	111	RD15ES-B3	PROTECTOR
16	DTC144ESA	PWR ON RESET	112	SEL6410E-D	PFC PILOT
17	DTA144ESA	SWITCH	113	1SS119	RECT
101	DTC144ESA	$\overline{\text{PWR}}$ SWITCH	114	1SS119	CLAMP
103	DTC144ESA	$\overline{\text{E PROT}}$ SWITCH	115	1SS119	CLAMP
104	2SC2785-HFE	$\overline{\text{PWR}}$ SW	116	RD3.9ES-B	DC LEVEL SHIFT
105	DTC144ESA	$\overline{\text{SHUT DWN}}$ SW	117	RD6.2ES-B3	PROTECTOR
107	2SC2785-HFE	DGC SWITCH	118	10V	DC LEVEL SHIFT
108	DTA144ESA	$\overline{\text{PWR}}$ ON RESET			
109	DTC144ESA	$\overline{\text{PWR}}$ ON RESET	PC1	PC111YS	+B REG ISOLATOR
			PC2	PC111YS	$\overline{\text{PWR}}$ ISOLATOR
D1	S5VB60	MAIN RECT	PC3	PC111YS	RCC PROTECT ISOLATOR
2	1SS119	CLAMP	PC4	PC111YS	+5V REG ISOLATOR
3	1SS119	SWITCH			

GA, GB, GC

GA BOARD

Function of Semiconductor

IC101	IR2112	HALF BRIDGE DRIVER
102	TL494CNS-E20	HALF BRIDGE PWM CONTROL
Q101	2SC2412K-Q	POWER SW
102	2SA1037K-Q	SOFT START
103	2SC2412K-Q	SOFT START
D101	MA110-TX	LEVEL SHIFT
102	SC311-6	PROTECTOR
103	SC311-6	PROTECTOR
104	RD18M-B2	PROTECTOR
105	MA110-TX	PROTECTOR
106	MA110-TX	PROTECTOR
107	MA110-TX	PROTECTOR
108	MA110-TX	PROTECTOR

GB BOARD

Function of Semiconductor

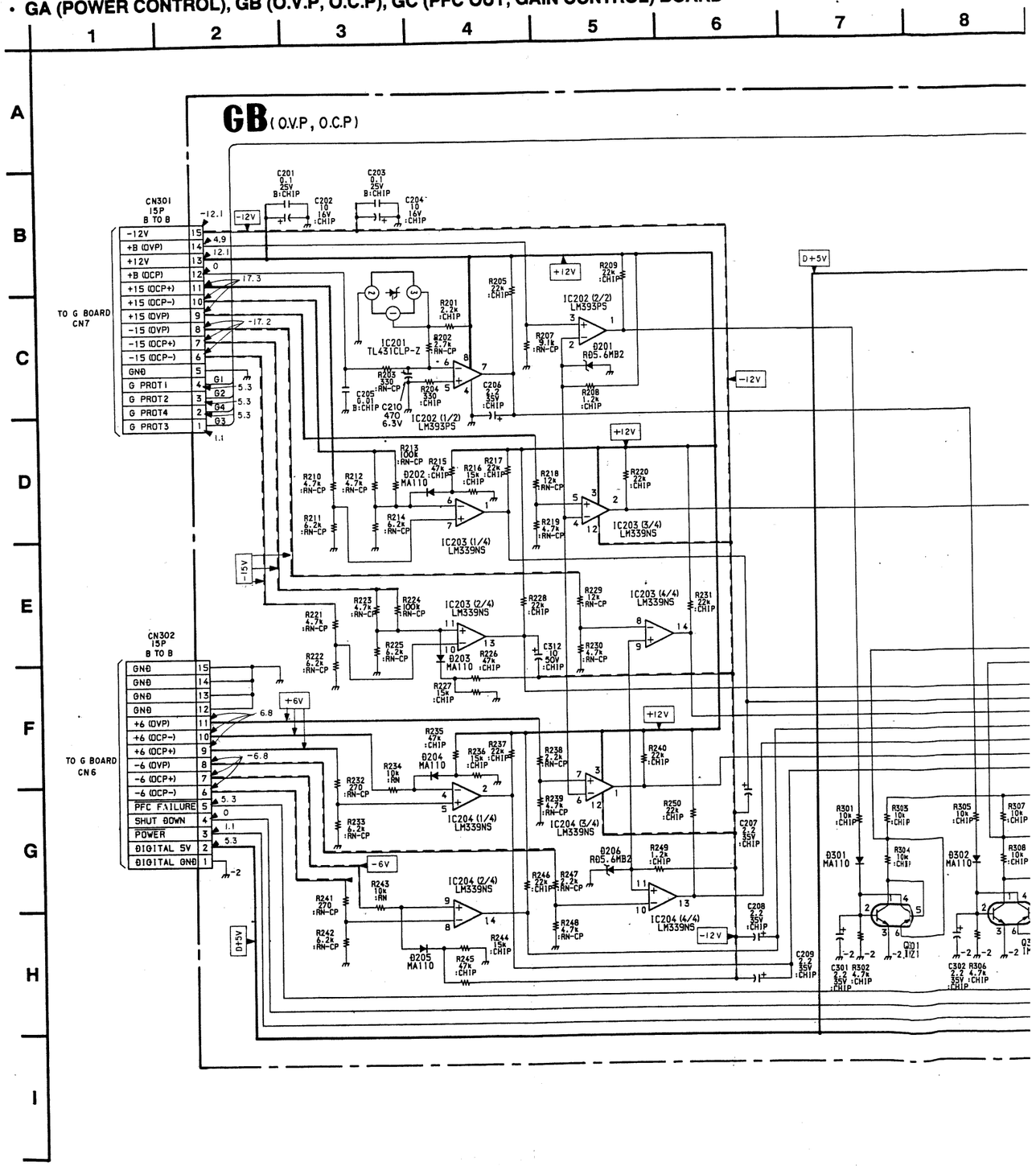
IC201	TL431CLP-Z	+B OCP REF
202	LM393PS	+B O. V. P/O. C. P DETECTOR
203	LM339NS-E20	±15V O. V. P/O. C. P DETECTOR
204	LM339NS-E20	±6V O. V. P/O. C. P DETECTOR
301	TC74HC148AF	PROTECTOR ENCODER
302	TC74HC148AF	PROTECTOR ENCODER
303	MC74HC08AF	PROTECTOR ENCODER
Q301	IMZ1T109	+B O. V. P
302	IMZ1T109	+B O. C. P
303	IMZ1T109	+15V O. V. P
304	IMZ1T109	+15V O. C. P
305	IMZ1T109	-15V O. V. P
306	IMZ1T109	-15V O. C. P
307	IMZ1T109	+6V O. C. P
308	IMZ1T109	+6V O. V. P
309	IMZ1T109	-6V O. V. P
310	IMZ1T109	-6V O. C. P
311	2SA1037K-Q	POWER SW
312	DTA144EKA	POWER RESET
313	DTA144EKA	PFC PROTECT
D201	RD5. 6M-B2	OVP REF
202	MA110-TX	SWITCH
203	MA110-TX	SWITCH
204	MA110-TX	SWITCH
205	MA110-TX	SWITCH
206	RD5. 6M-B2	OVP REF
301	MA110-TX	SWITCH
302	MA110-TX	SWITCH
303	MA110-TX	SWITCH
304	MA110-TX	SWITCH
305	MA110-TX	SWITCH
306	MA110-TX	SWITCH
307	MA110-TX	SWITCH
308	MA110-TX	SWITCH
309	MA110-TX	SWITCH
310	MA110-TX	SWITCH

GC BOARD

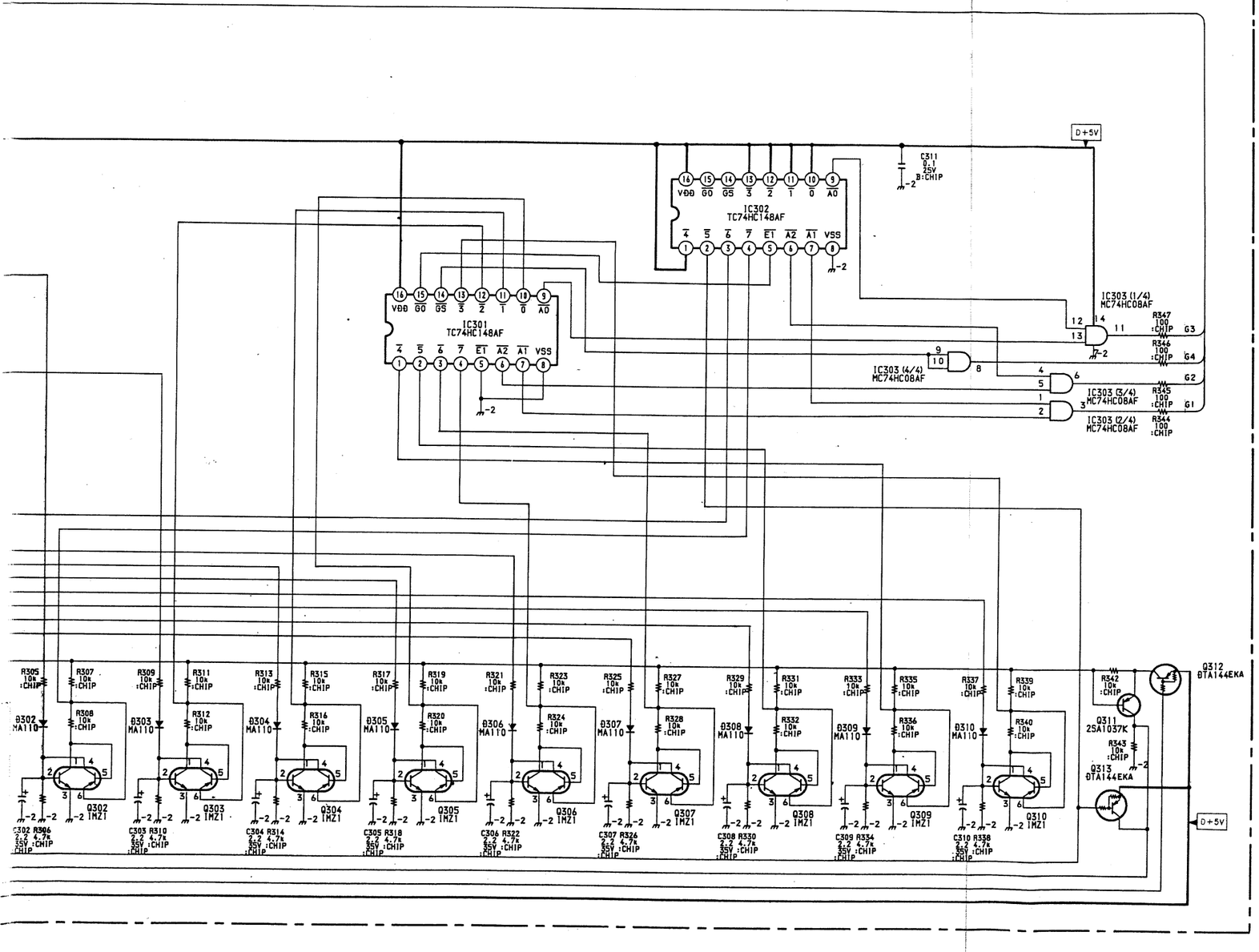
Function of Semiconductor

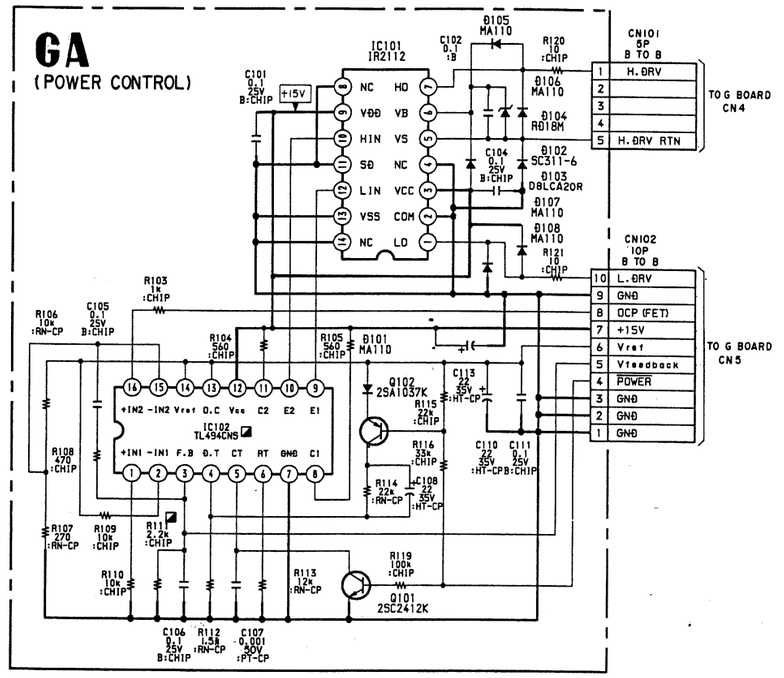
IC1	LM358P	GAIN CONTROL
Q1	DTC144ESA	PFC OUT

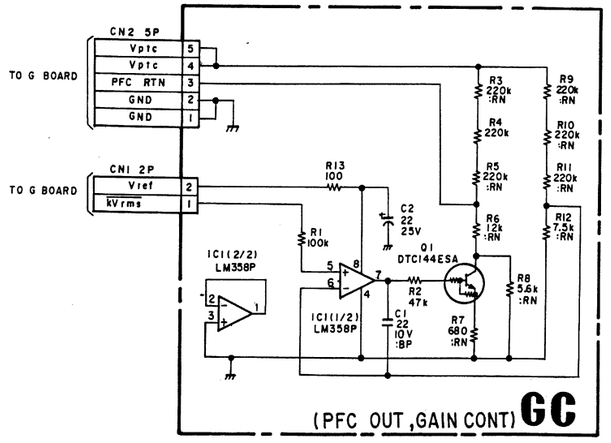
• **GA (POWER CONTROL), GB (O.V.P, O.C.P), GC (PFC OUT, GAIN CONTROL) BOARD**



8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23

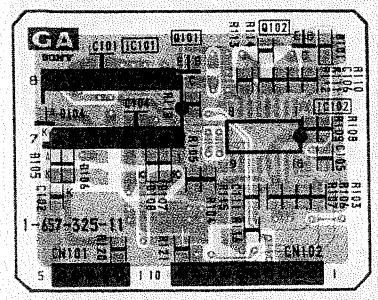




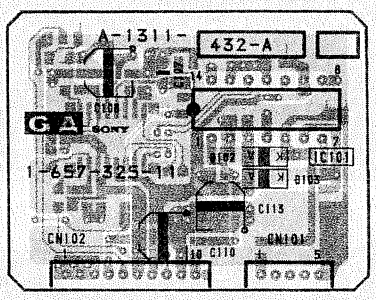


GA (POWER CONTROL) **GB** (O.V.P, O.C.P) **GC** (PFC OUT, GAIN CONTROL)

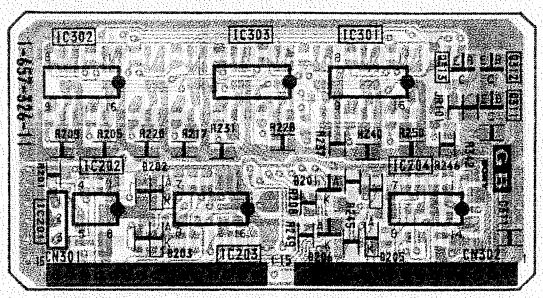
— GA BOARD — <Conductor Side>



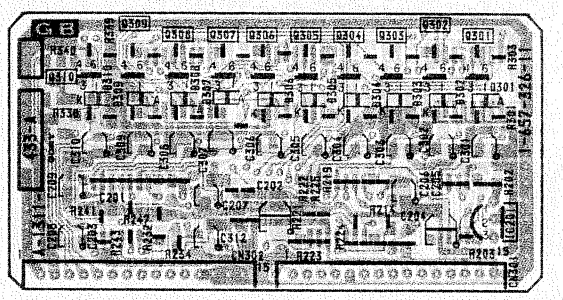
— GA BOARD — <Component Side>



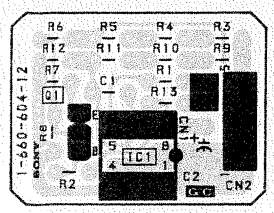
— GB BOARD — <Conductor Side>



— GB BOARD — <Component Side>



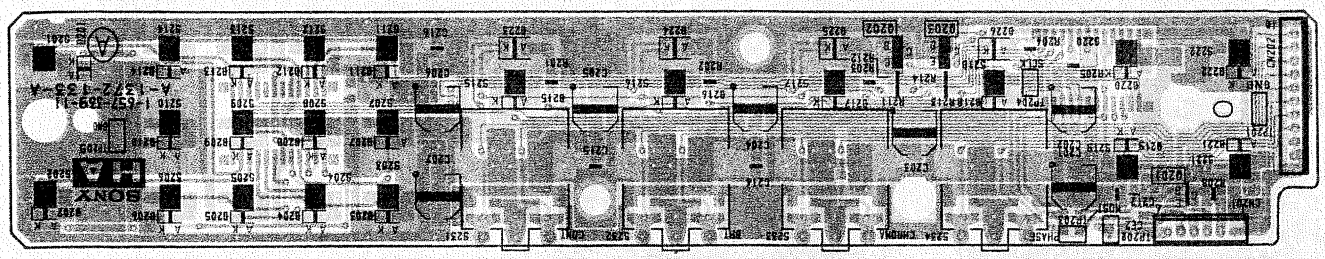
— GC BOARD — <Conductor Side>



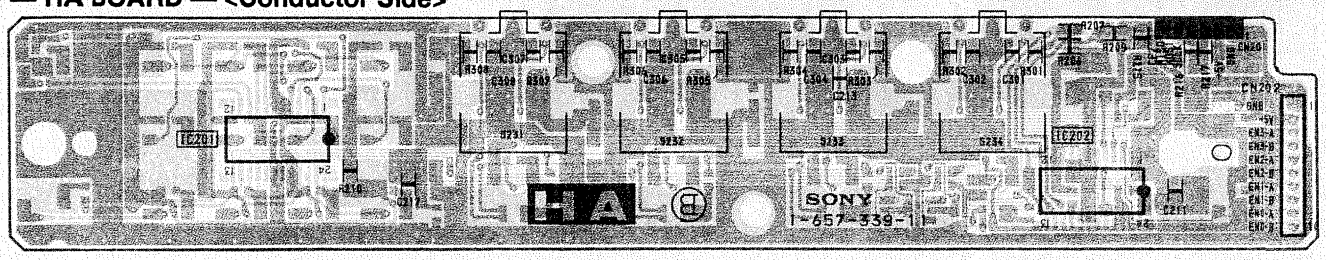
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

HA (FUNCTION CONTROL) (BVM-14E5E/14E5U/14F5E/14F5U, BKM-10R)

— HA BOARD — <Component Side>

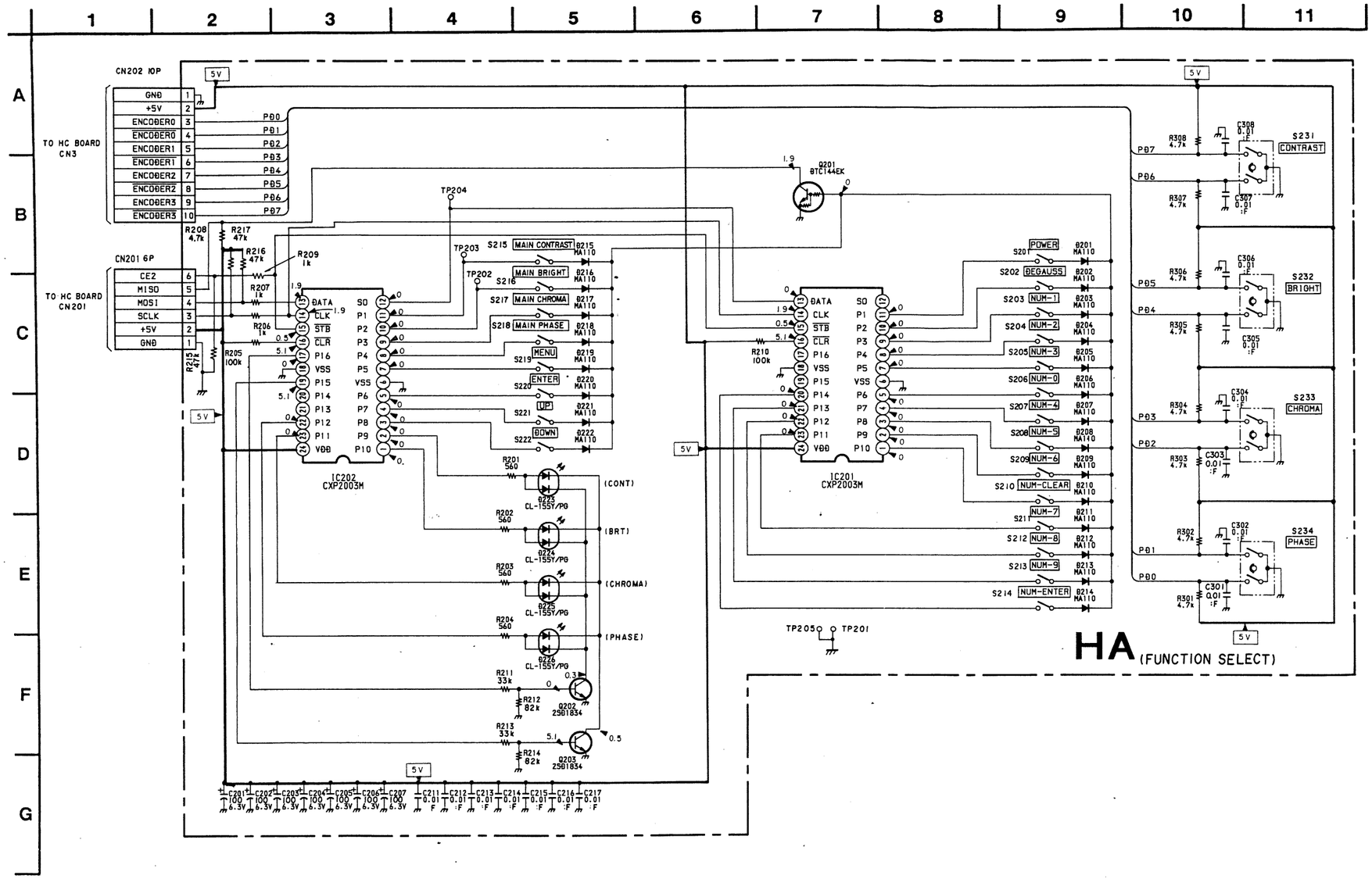


— HA BOARD — <Conductor Side>



- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

• HA (FUNCTION CONTROL) BOARD (BVM-14E5E/14E5U/14F5E/14F5U, BKM-10R)



HA BOARD

Function of Semiconductor

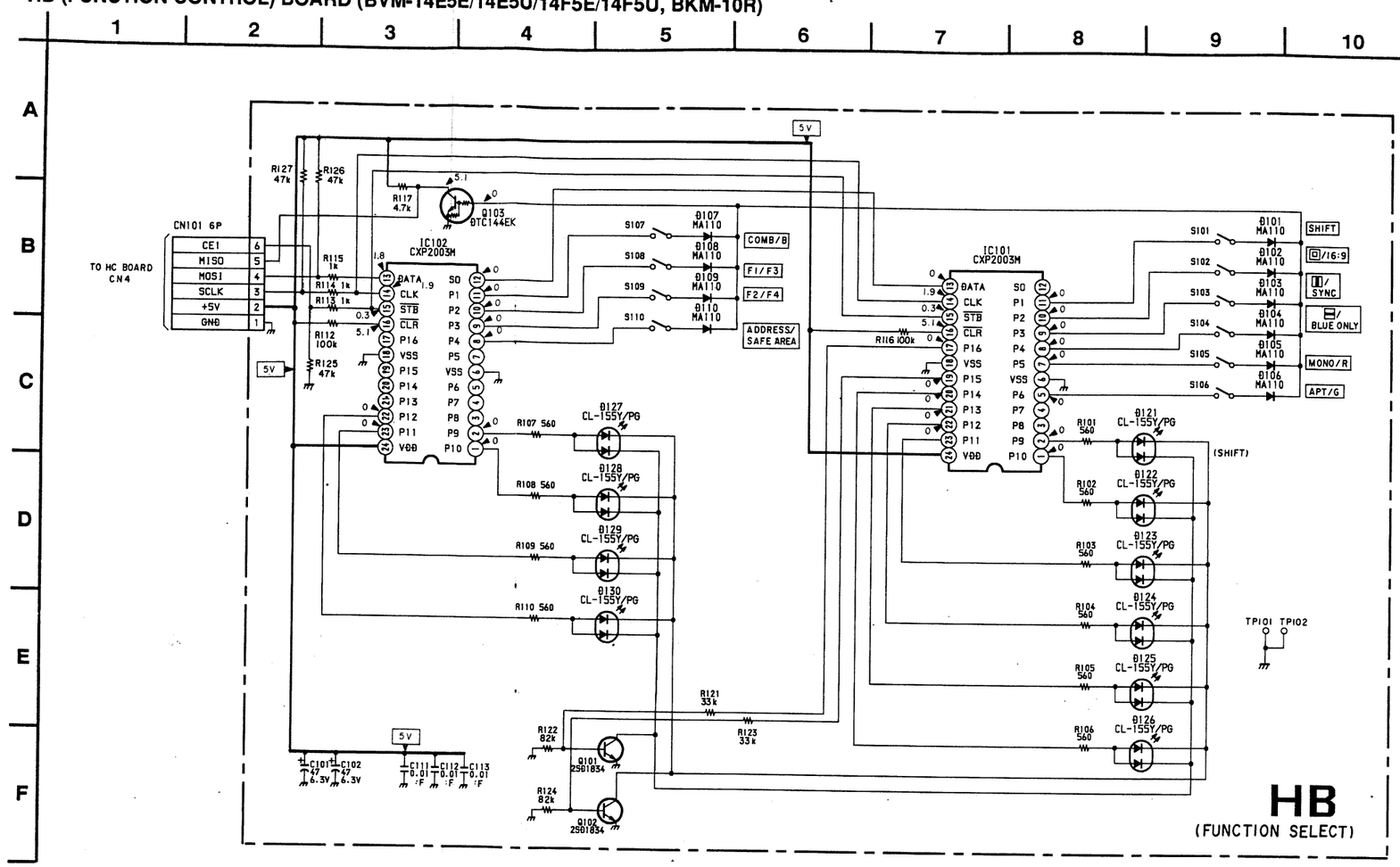
IC201	CXP2003M	S/P CONV 1
202	CXP2003M	S/P CONV 2
Q201	DTC144EK	SWITCH OUT
202	2SD1834	ORANGE DRIVE
203	2SD1834	GREEN DRIVE
D201	MA110	SWITCH
202	MA110	SWITCH
203	MA110	SWITCH
204	MA110	SWITCH
205	MA110	SWITCH
206	MA110	SWITCH
207	MA110	SWITCH
208	MA110	SWITCH
209	MA110	SWITCH
210	MA110	SWITCH
211	MA110	SWITCH
212	MA110	SWITCH
213	MA110	SWITCH
214	MA110	SWITCH
215	MA110	SWITCH
216	MA110	SWITCH
217	MA110	SWITCH
218	MA110	SWITCH
219	MA110	SWITCH
220	MA110	SWITCH
221	MA110	SWITCH
222	MA110	SWITCH
223	CL155Y/PG-CD	INDICATOR(CONT MANUAL)
224	CL155Y/PG-CD	INDICATOR(BRT MANUAL)
225	CL155Y/PG-CD	INDICATOR(CHR MANUAL)
226	CL155Y/PG-CD	INDICATOR(PHA MANUAL)

HB BOARD

Function of Semiconductor

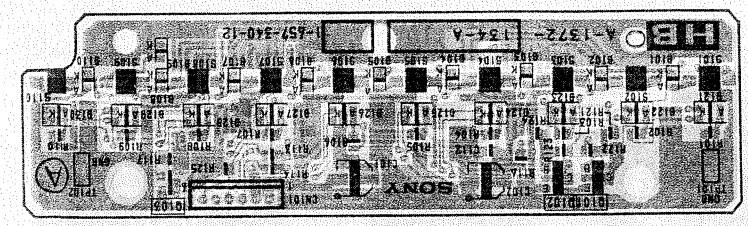
IC101	CXP2003M	S/P CONV 1
102	CXP2003M	S/P CONV 2
Q101	2SD1834	ORANGE DRIVE
102	2SD1834	GREEN DRIVE
103	DTC144EK	SWITCH OUT
D101	MA110	SWITCH
102	MA110	SWITCH
103	MA110	SWITCH
104	MA110	SWITCH
105	MA110	SWITCH
106	MA110	SWITCH
107	MA110	SWITCH
108	MA110	SWITCH
109	MA110	SWITCH
110	MA110	SWITCH
121	CL-155Y/PG-CD	INDICATOR(SHIFT)
122	CL-155Y/PG-CD	INDICATOR(UND/16:9)
123	CL-155Y/PG-CD	INDICATOR(H DLY/SYNC)
124	CL-155Y/PG-CD	INDICATOR(V DLY/BLUE ONLY)
125	CL-155Y/PG-CD	INDICATOR(MONO/R)
126	CL-155Y/PG-CD	INDICATOR(APT/G)
127	CL-155Y/PG-CD	INDICATOR(COMB/B)
128	CL-155Y/PG-CD	INDICATOR(F1/F3)
129	CL-155Y/PG-CD	INDICATOR(F2/F4)
130	CL-155Y/PG-CD	INDICATOR(ADDR/SAD)

• HB (FUNCTION CONTROL) BOARD (BVM-14E5E/14E5U/14F5E/14F5U, BKM-10R)

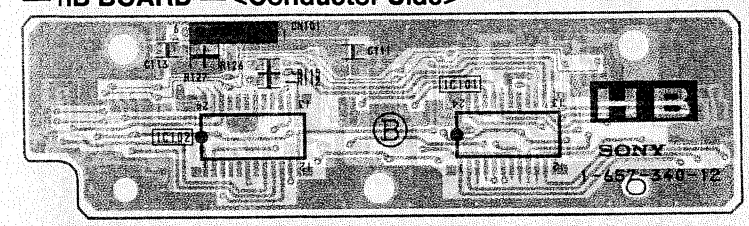


HB (FUNCTION CONTROL) (BVM-14E5E/14E5U/14F5E/14F5U, BKM-10R)

— HB BOARD — <Component Side>



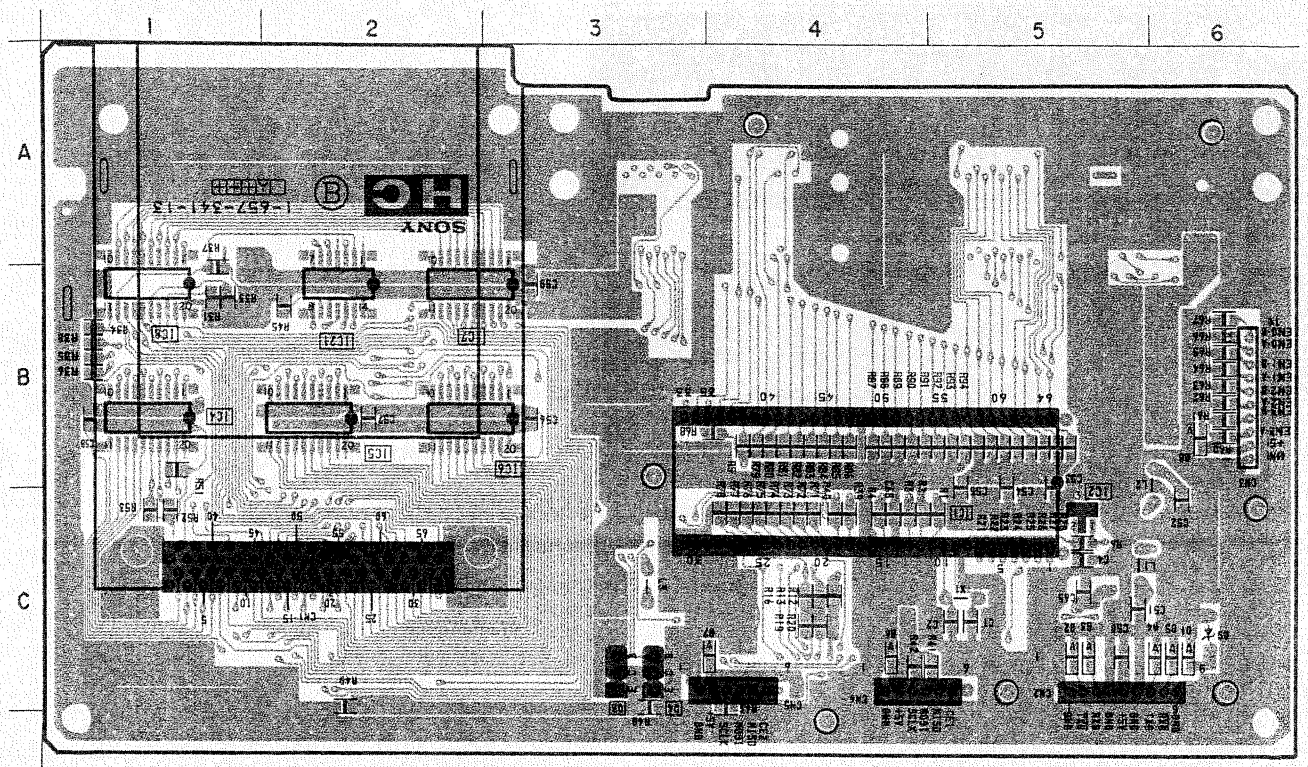
— HB BOARD — <Conductor Side>



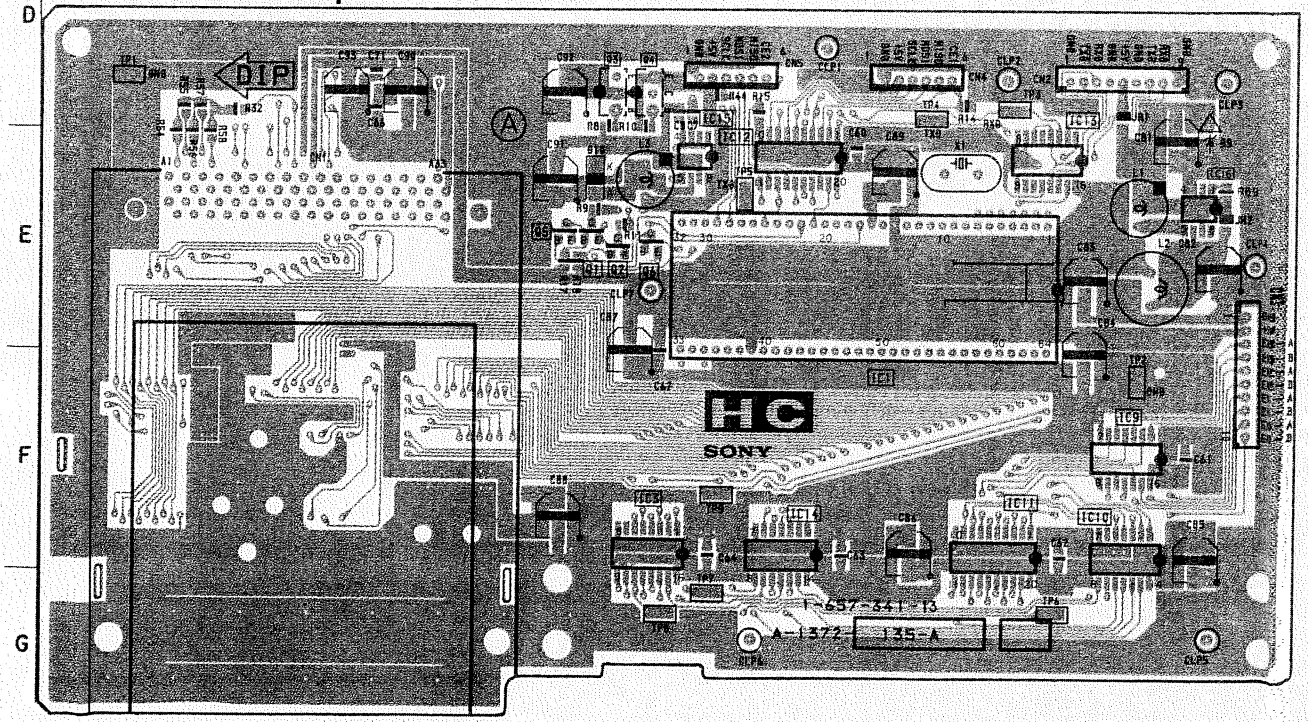
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.

HC (SYSTEM CONTROL) (BVM-14E5E/14E5U/14F5E/14F5U, BKM-10R)

— HC BOARD — <Conductor Side>



—HC BOARD — <Component Side>



• : Pattern from the side which enables seeing.
• : Pattern of the rear side.

HC BOARD
SEMICONDUCTOR
LOCATION

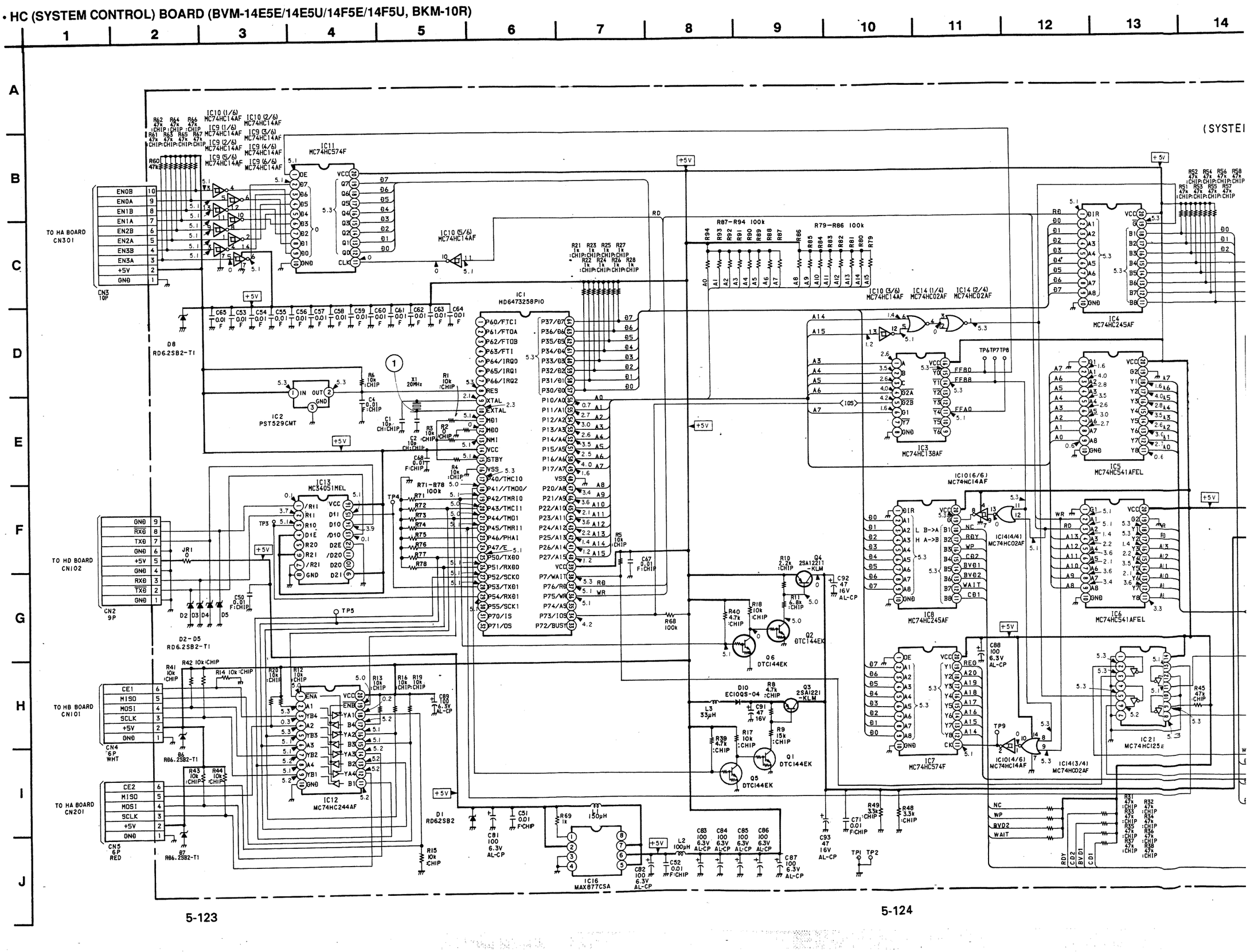
IC	
IC1	B-4
IC2	C-5
IC3	F-3
IC4	B-1
IC5	B-2
IC6	B-2
IC7	B-2
IC8	B-1
IC9	F-5
IC10	F-5
IC11	F-5
IC12	E-4
IC13	E-5
IC14	F-4
IC16	E-6
IC21	B-2

TRANSISTOR	
Q1	E-3
Q2	E-3
Q3	C-3
Q4	C-3
Q5	E-3
Q6	E-3

DIODE	
D1	C-6
D2	C-5
D3	C-5
D4	C-6
D5	C-6
D6	C-4
D7	C-4
D8	B-6
D10	E-3

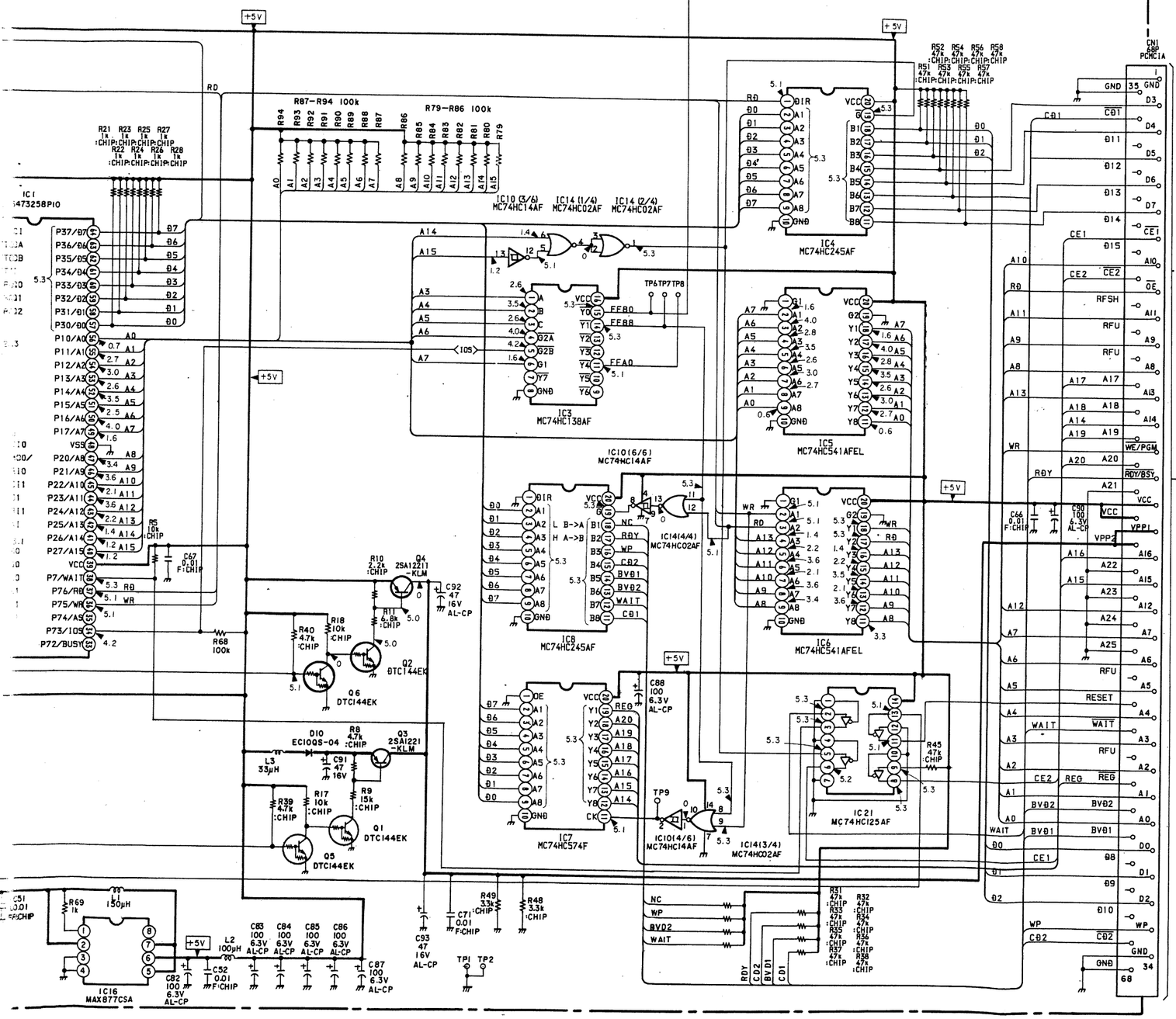
TEST POINT	
TP1	D-1
TP2	F-5
TP3	D-5
TP4	D-5
TP5	E-4
TP6	G-5
TP7	G-4
TP8	G-3
TP9	F-4

• HC (SYSTEM CONTROL) BOARD (BVM-14E5E/14E5U/14F5E/14F5U, BKM-10R)



6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17

HC
(SYSTEM CONTROL)

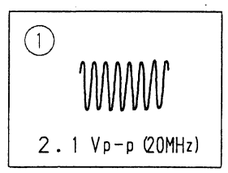


HC BOARD

Function of Semiconductor

IC1	HD6473258P10	CPU
2	PST529CMT-T1	RESET
3	TC74HC138AF	ADDR DECODER
4	TC74HC245AF	BUFFER
5	MC74HC541AFEL	BUFFER
6	MC74HC541AFEL	BUFFER
7	TC74HC574AF	CARD ADDR. HIGH
8	TC74HC245AF	BUFFER
9	TC74HC14AF	INVERTER
10	TC74HC14AF	INVERTER
11	TC74HC574AF	BUFFER
12	TC74HC244AF	BUS SELECT
13	MC34051MEL	RS422 DRIVE
14	SN74HC02ANS	DECODER
16	MAX877CSA	REGURATOR
21	MC74HC125AF	BUFFER
Q1	DTC144EK	VPP 5V SWITCH
2	DTC144EK	VPP 5V SWITCH
3	2SA1221	VPP 5V REG
4	2SA1221	VPP 5V REG
5	DTC144EK	VPP 5V SWITCH
6	DTC144EK	VPP 5V SWITCH
D1	RD6.2SB2	PROTECTOR
2	RD6.2SB2	PROTECTOR
3	RD6.2SB2	PROTECTOR
4	RD6.2SB2	PROTECTOR
5	RD6.2SB2	PROTECTOR
6	RD6.2SB2	PROTECTOR
7	RD6.2SB2	PROTECTOR
8	RD6.2SB2	PROTECTOR
10	EC10QS04-TE12L5	SW

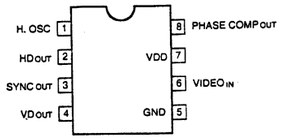
- **HC BOARD Waveform**

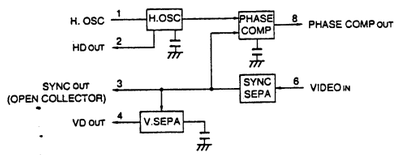


5-5. SEMICONDUCTORS

BA7046F (ROHM)
VIDEO SIGNAL SYNC SEPARATOR +AFC

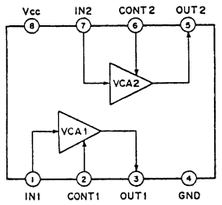
– TOP VIEW –





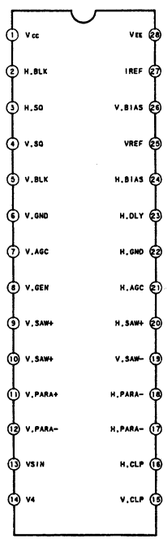
CXA1211M (SONY)
VIDEO SIGNALS AND OTHER WIDE BAND VCA

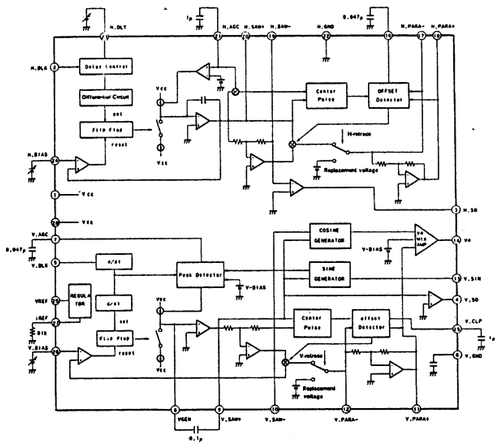
– TOP VIEW –



CXA1470AM (SONY)
WAVEFORM GENERATION IC FOR DEFLECTION COMPENSATION

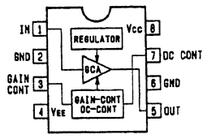
– TOP VIEW –





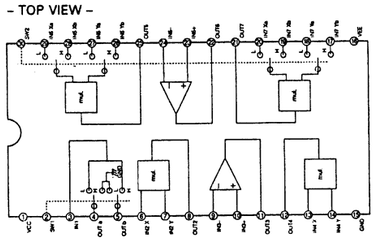
CXA1521M (SONY)
GAIN CONTROL AMP

– TOP VIEW –



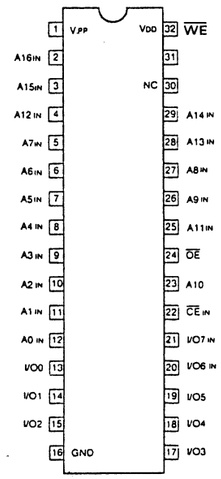
CXA1726M
MULTIPLIER IC FOR DISPLAYS

– TOP VIEW –



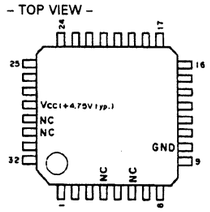
CAT28F020P (CATALYST SEMICONDUCTOR)
C-MOS PROGRAMABLE ROM

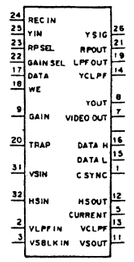
– TOP VIEW –



CXA1727Q (SONY)
ID ADDER/DETECTOR FOR WIDE TV SIGNAL

– TOP VIEW –





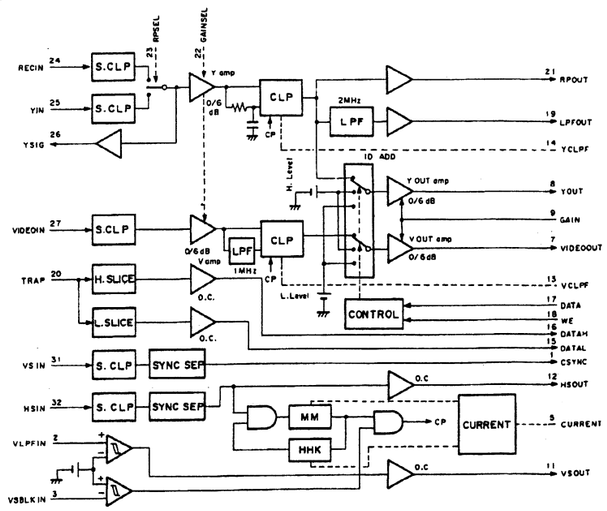
(Vcc = + 4.75V typ.)

PIN No.	I/O	SIGNAL	PIN No.	I/O	SIGNAL
1	O	CSYNC	17	I	DATA
2	I	VLPFIN	18	I	WE
3	I	VSBLKIN	19	O	LPFOUT
4	–	NC	20	I	TRAP
5	O	CURRENT	21	O	RPOUT
6	–	NC	22	I	GAINSEL
7	O	VIDEOOUT	23	I	RPSEL
8	O	YOUT	24	I	RECIN
9	I	GAIN	25	I	YIN
10	–	GND	26	O	YSIG
11	O	VSOUT	27	I	VIDEOIN
12	O	HSOUT	28	–	Vcc
13	O	VCLPF	29	–	NC
14	O	YCLPF	30	–	NC
15	O	DATAL	31	I	VSIN
16	O	DATAH	32	I	HSIN

INPUT
DATA : ID DATA
GAIN : VIDEO／Y OUT AMP GAIN SELECT
GAINSEL : Y AMP GAIN SELECT
HSIN : H SYNC SEP.
RECIN : REC Y
RPSEL : Y R／P SELECT
TRAP : TRAPPED Y
VIDEOIN : VIDEO
VLPFIN : LOW-PASSED CSYNC
VSBLKIN : LOW-PASSED CSYNC
VSIN : V SYNC SEP.
WE : ID WRITE ENABLE
YIN : PB Y

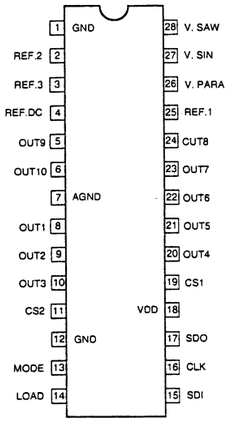
OUTPUT
CSYNC : COMPOSITE SYNC
DATAH : Y LEVEL HIGH
DATAL : Y LEVEL LOW
HSOUT : H SYNC
LPFOUT : LOW-PASSED Y
RPOUT : R／P Y
VIDEOOUT : VIDEO
VSOUT : V SYNC
YOUT : Y MAIN
YSIG : R／P SELECTED Y

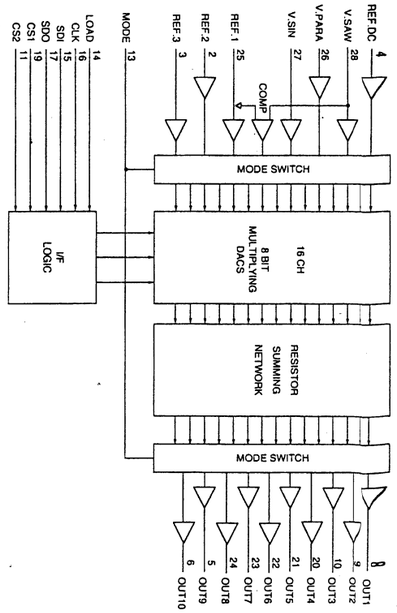
OTHER
CURRENT : REF CURRENT RESISTOR
VCLPF : CAPACITOR FOR VIDEO CLAMP
YCLPF : CAPACITOR FOR Y CLAMP



CXA8021M (SONY)
C-MOS 16 CHANNEL IDEPENDENT 8 BIT ADJUSTMENT DAC

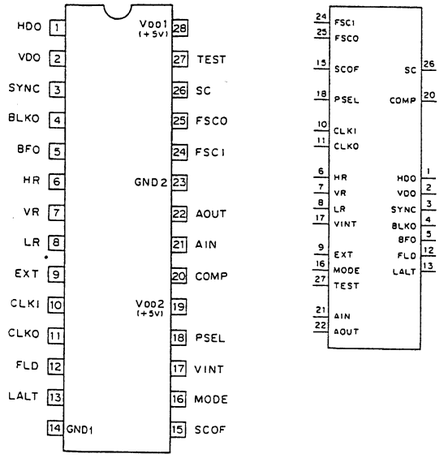
– TOP VIEW –



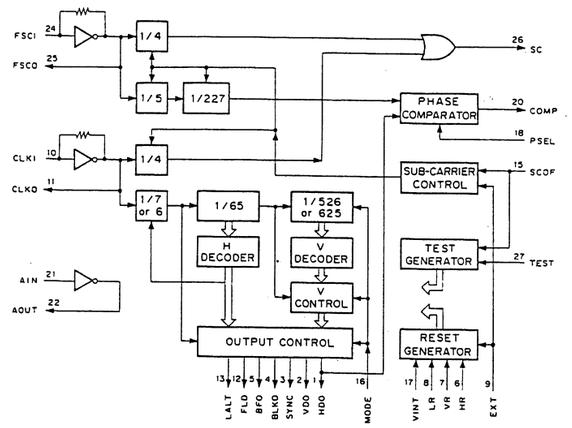


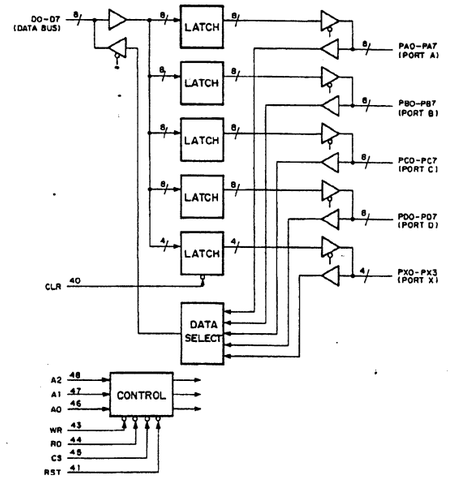
CXD1030M (SONY) FLAT PACKAGE
C-MOS SYNCHRONOUS SIGNAL GENERATOR

– TOP VIEW –



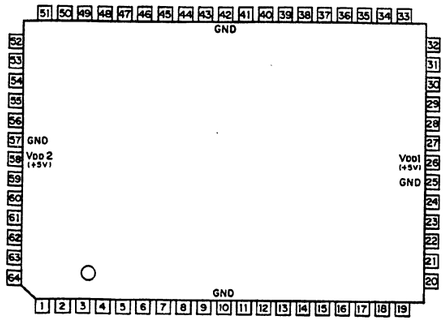
PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL	PIN NO.	IN	OUT	SYMBOL
1			NC	17	O	O	PC6	33			NC	49	O	O	PX0
2			NC	18	O	O	PC7	34			NC	50	O	O	PX1
3	O	O	PB1	19			NC	35	O	O	D3	51			NC
4	O	O	PB2	20	O	O	PD0	36	O	O	D4	52	O	O	PX2
5	O	O	PB3	21	O	O	PD1	37	O	O	D5	53	O	O	PX3
6	O	O	PB4	22	O	O	PD2	38	O	O	D6	54	O	O	PA0
7	O	O	PB5	23	O	O	PD3	39	O	O	D7	55	O	O	PA1
8	O	O	PB6	24	O	O	PD4	40	O		CLR	56	O	O	PA2
9	O	O	PB7	25			GND	41	O		RST	57			GND
10			GND	26	O		VDD(+5V)	42			GND	58	O		VDD(+5V)
11	O	O	PC0	27	O	O	PD5	43	O		WR	59	O	O	PA3
12	O	O	PC1	28	O	O	PD6	44	O		RD	60	O	O	PA4
13	O	O	PC2	29	O	O	PD7	45	O		CS	61	O	O	PA5
14	O	O	PC3	30	O	O	D0	46	O		A0	62	O	O	PA6
15	O	O	PC4	31	O	O	D1	47	O		A1	63	O	O	PA7
16	O	O	PC5	32	O	O	D2	48	O		A2	64	O	O	PB0

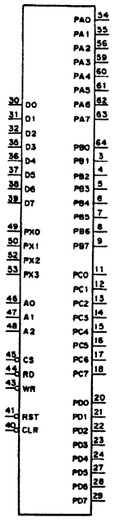




CXD1095Q (SONY) FLAT PACKAGE
C-MOS I/O PORT EXPANDER

– TOP VIEW –





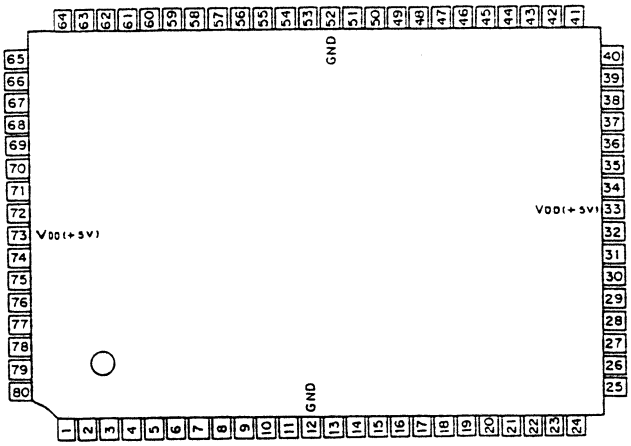
CS	RD	WR	A2	A1	A0	MODE
0	0	1	0	0	0	PORT A → DATA BUS
0	0	1	0	0	1	PORT B → DATA BUS
0	0	1	0	1	0	PORT C → DATA BUS
0	0	1	0	1	1	PORT D → DATA BUS
0	0	1	1	0	0	PORT X → DATA BUS
0	0	1	1	0	1	——
0	0	1	1	1	0	——
0	0	1	1	1	1	——
0	1	0	0	0	0	DATA BUS → PORT A
0	1	0	0	0	1	DATA BUS → PORT B
0	1	0	0	1	0	DATA BUS → PORT C
0	1	0	0	1	1	DATA BUS → PORT D
0	1	0	1	0	0	DATA BUS → PORT X
0	1	0	1	0	1	——
0	1	0	1	1	0	DATA BUS → CTL REG.1
0	1	0	1	1	1	DATA BUS → CTL REG.2
1	X	X	X	X	X	DATA BUS ; HI-Z

'0' ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z , HIGH IMPEDANCE

D0-D7 ; DATA BUS INPUTS/OUTPUTS
CS ; CHIP SELECT INPUT
RD ; READ STROBE INPUT
WR ; WRITE STROBE INPUT
A0-A2 ; ADDRESS INPUT
RST ; RESET INPUT
CLR ; CLEAR INPUT
PA0-PA7 ; PORT A INPUTS/OUTPUTS
PB0-PB7 ; PORT B INPUTS/OUTPUTS
PC0-PC7 ; PORT C INPUTS/OUTPUTS
PD0-PD7 ; PORT D INPUTS/OUTPUTS
PX0-PX3 ; PORT X INPUTS/OUTPUTS

CXD1132Q (SONY) FLAT PACKAGE
C-MOS TIME CODE GENERATOR/READER

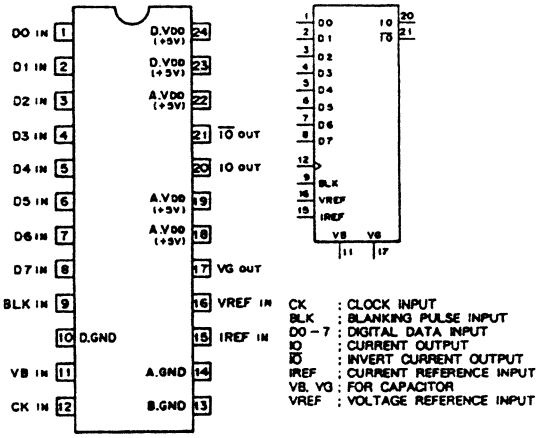
- TOP VIEW -



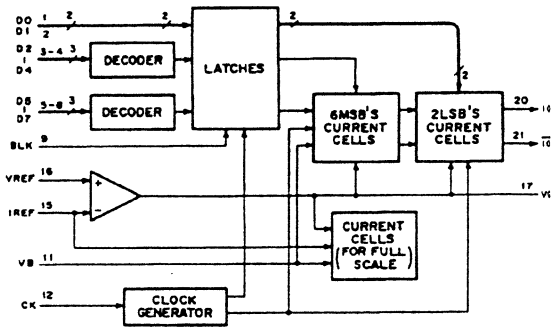
PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL	PIN NO.	I/O	SYMBOL
1	I/O	DB5	17	I	CCS	33	–	V_{SS}	49	I	C1MI	65	I	TCIN
2	I/O	DB4	18	I	CWR	34	I/O	DA1	50	O	C1MO	66	O	DCLK
3	I/O	DB3	19	I	CRD	35	I/O	DA0	51	O	C2MO	67	O	DATA
4	I/O	DB2	20	O	INT	36	I	DSP	52	–	GND	68	O	RFLD
5	I/O	DB1	21	I	STBY	37	O	DTSE	53	O	CKO	69	O	RDSY
6	I/O	DB0	22	I	TST1	38	O	VRCK	54	I	CKIN	70	O	LRP
7	O	STOP	23	I	TST2	39	I	SLLM	55	I	SLCK	71	O	BUSY
8	I/O	D7	24	I	TST3	40	O	RVDO	56	I	GCSI	72	I	BA2
9	I/O	D6	25	I	PON	41	I	RCSI	57	I	S1	73	–	V_{DD}
10	I/O	D5	26	I	FLDI	42	I	VITC	58	O	VTGO	74	I	BA1
11	I/O	D4	27	I	RTIM	43	I	FRMI	59	O	VTO	75	I	BA0
12	–	GND	28	I	CDIR	44	O	FRMO	60	O	LTCO	76	I	BWR
13	I/O	D3	29	I	CTLI	45	O	GLSY	61	I	LRES	77	I	BRD
14	I/O	D2	30	I/O	DWR	46	I	HDI	62	I	VCEI	78	I	BCS
15	I/O	D1	31	I/O	DA3	47	O	HDO	63	O	LSHO	79	I/O	BD7
16	I/O	D0	32	I/O	DA2	48	O	VDO	64	I	C2MI	80	I/O	BD6

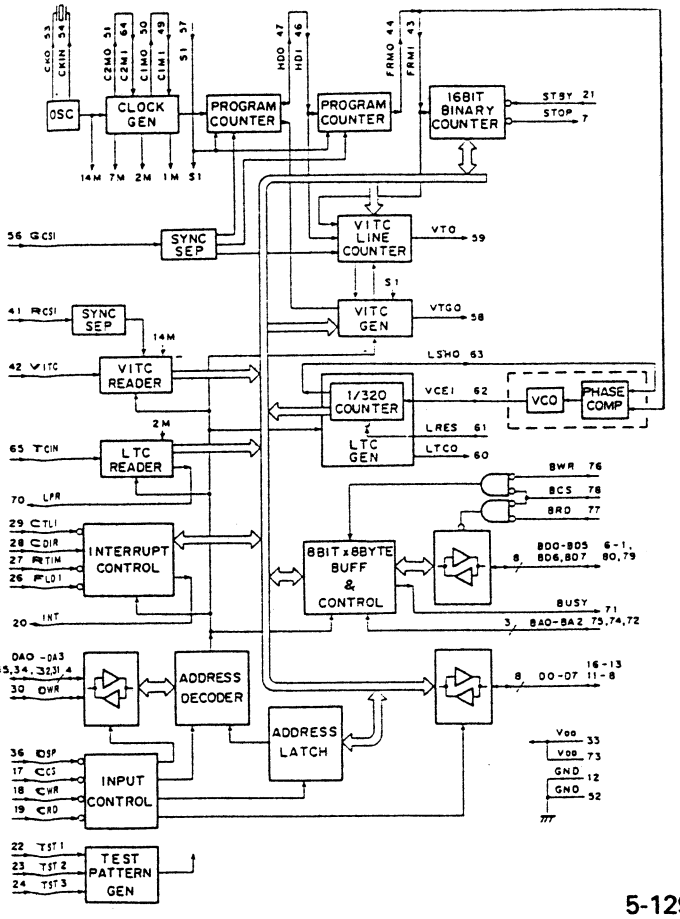
CXD1171M (SONY) FLAT PACKAGE
C-MOS 8-BIT D/A CONVERTER

- TOP VIEW -



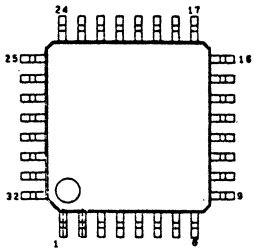
CK : CLOCK INPUT
BLK : BLANKING PULSE INPUT
D0 – 7 : DIGITAL DATA INPUT
IO : CURRENT OUTPUT
$\overline{IO}$: INVERT CURRENT OUTPUT
IREF : CURRENT REFERENCE INPUT
VB, VG : FOR CAPACITOR
VREF : VOLTAGE REFERENCE INPUT

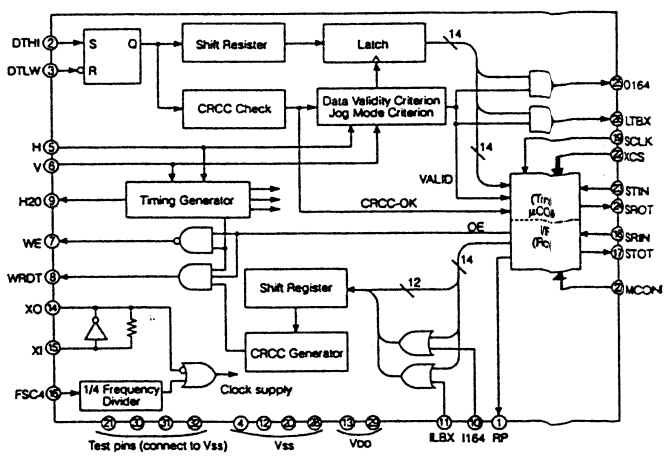




CXD2122AQ
VIDEO ASPECT RATIO IDENTIFICATION SIGNAL ENCODER/DECODER

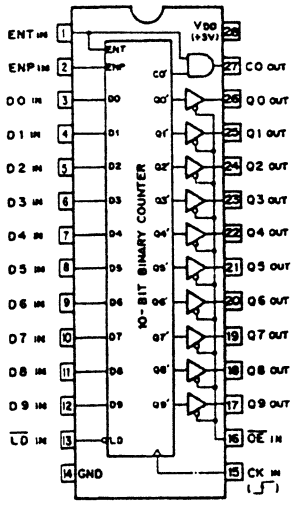
- TOP VIEW -

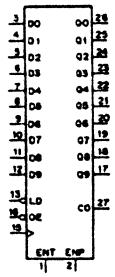




CXD2343S (SONY)
N-MOS SYNCHRONOUS 10-BIT BINARY COUNTER

– TOP VIEW –





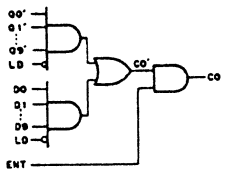
ENT	ENP	LD	FUNCTION
1	1	1	COUNT
0	X	1	NO COUNT
X	0	1	NO COUNT
X	X	0	LOAD

OE	Q0 to Q9 OUTPUT
0	Q0 to Q9
1	HI-IMPEDANCE

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

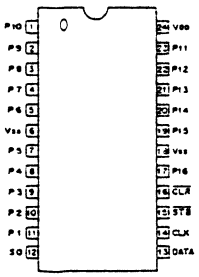
Q0 to Q9 : OUTPUTS
Q0' to Q9' : COUNTER OUTPUTS
D0 to D9 : INPUTS DATA
CO : CARRY OUTPUT
OE : OUTPUT ENABLE INPUT
LD : INPUT DATA LOAD
ENT : CLOCK & CARRY OUT ENABLE
ENP : CLOCK ENABLE
CK : CLOCK INPUT

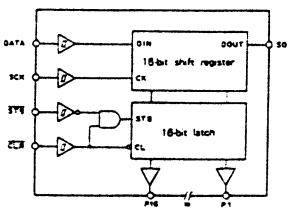
CARRY OUTPUT "CO"



CXP2003M
C-MOS SERIAL TO PARALLEL CONVERTER

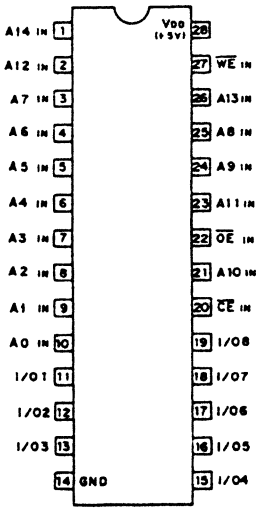
– TOP VIEW –

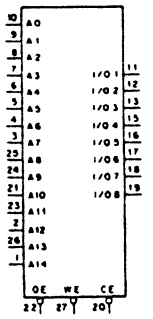




CXK58257AP10LL (SONY)
C-MOS 32768-WORDx8-BIT STATIC RAM

– TOP VIEW –

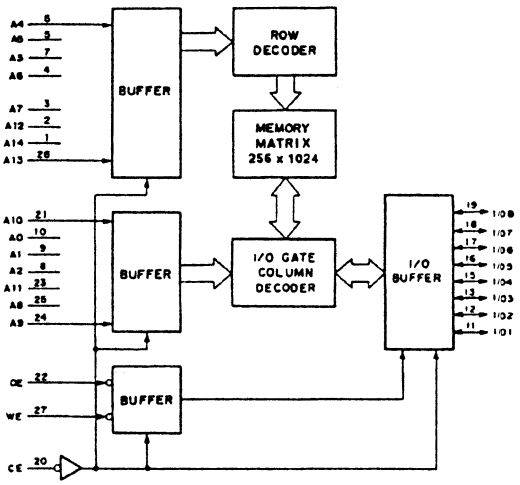




A0 – A14 : ADDRESS INPUTS
CE : CHIP ENABLE INPUT
I/O1 – I/O8 : DATA INPUTS/OUTPUTS
OE : OUTPUT ENABLE INPUT
WE : WRITE ENABLE INPUT

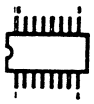
CE	OE	WE	MODE	I/O TERMINAL
1	X	X	NOT SELECT	HIGH IMPEDANCE
0	1	1	OUTPUT DISABLE	HIGH IMPEDANCE
0	0	1	READ	OUTPUT DATA
0	X	0	WRITE	INPUT DATA

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE



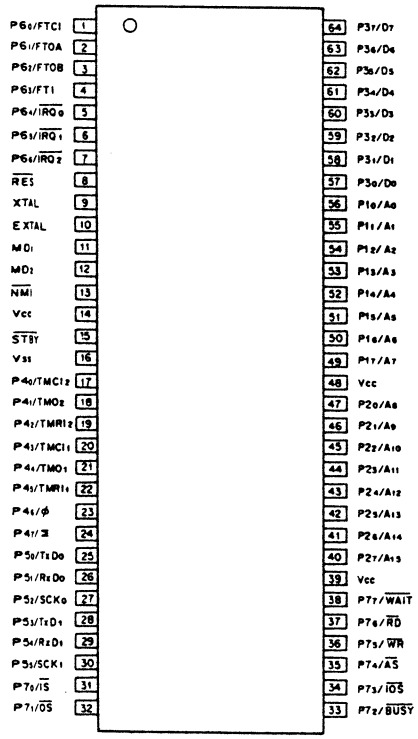
FA5301N

– TOP VIEW –



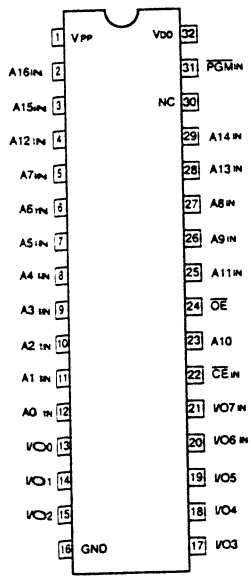
HD6473258P10
C-MOS 8 BIT CHIP ONE CHIP MICROCOMPUTER FOR MONITOR

- TOP VIEW -



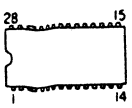
HN27C101AG-12 (HITACHI)
C-MOS PROGRAMABLE ROM

- TOP VIEW -



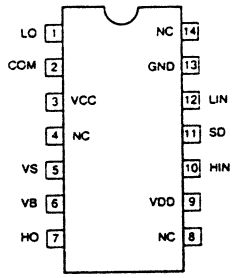
HN27C256AG-10

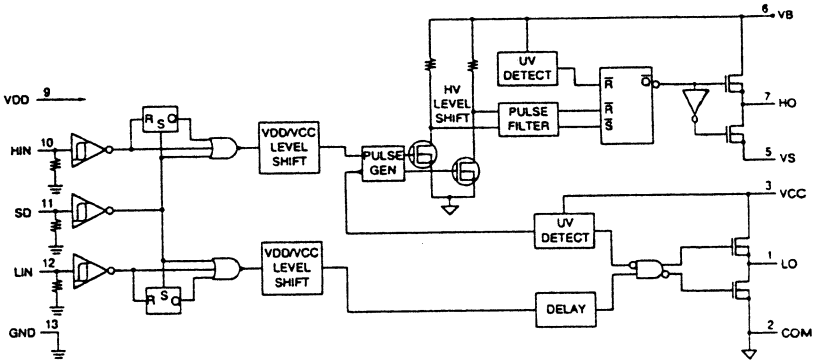
- TOP VIEW -



IR2112 (IRF)
C-MOS HIGH VOLTAGE MOS GATE DRIVER

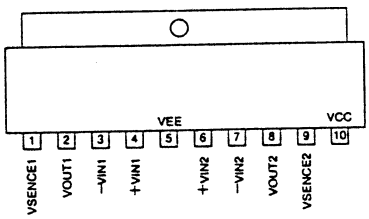
- TOP VIEW -

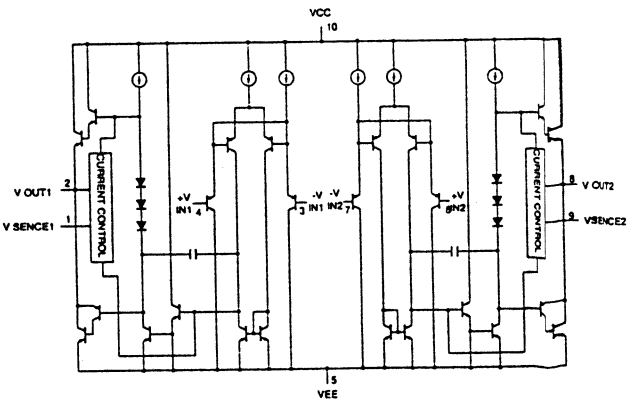




LA6510 (SANYO)
DUAL POWER OPERATIONAL AMPLIFIER

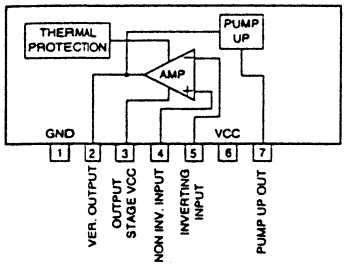
- SIDE VIEW -





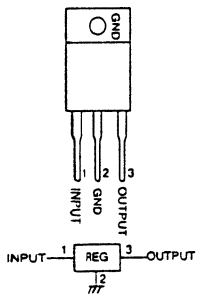
LA7845 (SANYO)
VERTICAL OUTPUT FOR TV DISPLAY

- SIDE VIEW -



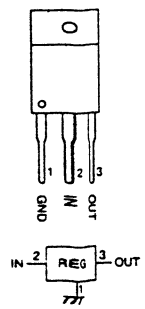
LM2940CT-5.0 (NSC)
C-MOS LOW DROPOUT REGULATOR

- PRINTED SIDE VIEW -



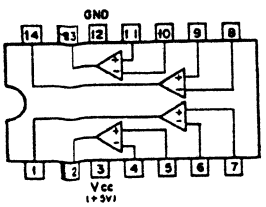
LM2990T-5.0 (NSC)
C-MOS NEGATIVE LOW DROPOUT REGULATOR

- PRINTED SIDE VEIW -



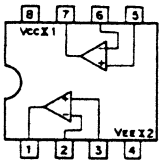
LM339NS
QUAD COMPARATORS

- TOP VIEW -



LM358PS
DUAL OPERATIONAL AMPLIFIERS

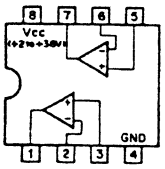
- TOP VIEW -



	Vcc*1	Vee*2
SINGLE SUPPLY	+3 to +32V	GND
SPLIT SUPPLIES	+1.5 to +16V	− 1.5 to − 16V

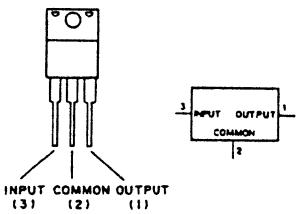
LM393P
LM393PS
μPC393G2

- TOP VIEW -



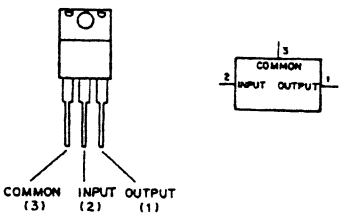
LM7812CT
TA7815S
POSITIVE VOLTAGE REGULATOR

- FRONT VIEW -



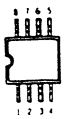
LM7912CT
NJM7912FA
NEGATIVE VOLTAGE REGULATOR

- FRONT VIEW -



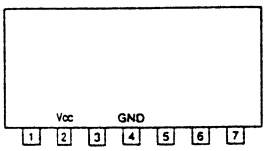
LTC485CS8
TC7W32FU

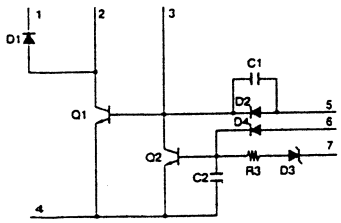
- TOP VIEW -



MA2820 (SHINDEN)
POWER SUPPLY

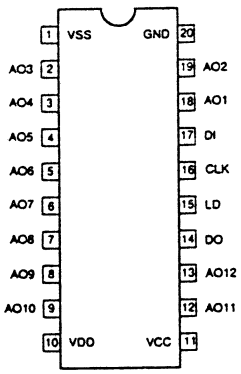
- PRINTED SIDE VEIW -

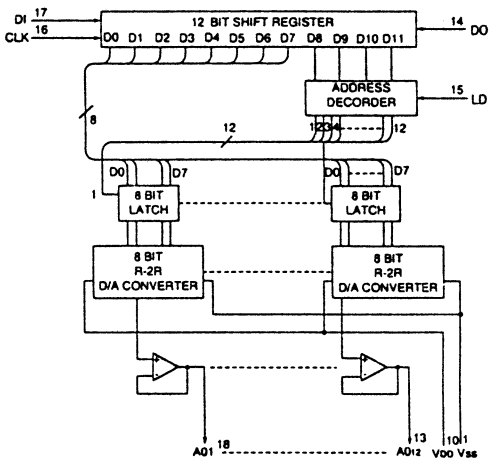




MB88346BPFV (FUJITSU)
C-MOS D/A CONVERTER

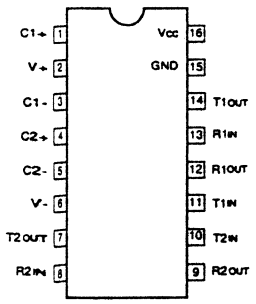
- TOP VIEW -

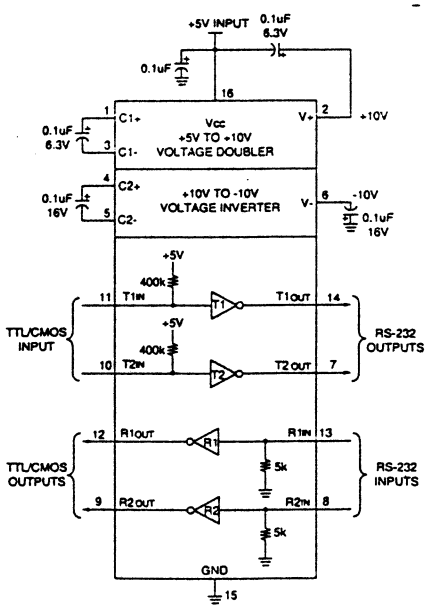




MAX202CS (MAXIM)
C-MOS RS-232 TRANSMITTER/RECEIVER

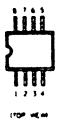
- TOP VIEW -





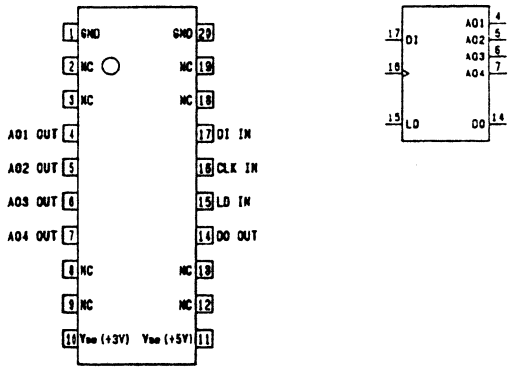
MAX877CSA

- TOP VIEW -



MB88351PFV (FUJITSU) FLAT PACKAGE
C-MOS 12-BIT D/A CONVERTER WITH OPERATIONAL AMPLIFIER

- TOP VIEW -

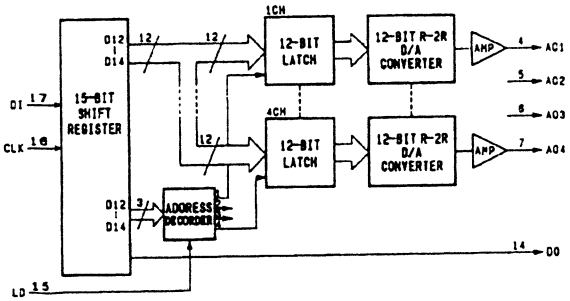


INPUT
CLK : SHIFT CLOCK
DI : SERIAL DATA
LD : DECODER AND D/A REGISTER TO LOAD

OUTPUT
AO1 – AO4 : ANALOG DATA
DO : MBS BIT DATA IN 15-BIT SHIFT REGISTER

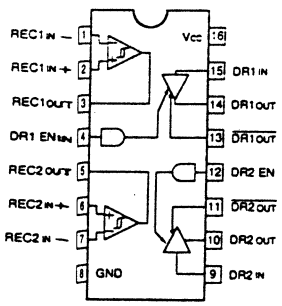
D12	D13	D14	ADDRESS SELECT
0	0	0	DON'T CARE
0	0	1	AO1 SELECT
0	1	0	AO2 SELECT
0	1	1	AO3 SELECT
1	0	0	AO4 SELECT
1	0	1	DON'T CARE
1	1	0	DON'T CARE
1	1	1	DON'T CARE

0 : LOW LEVEL
1 : HIGH LEVEL



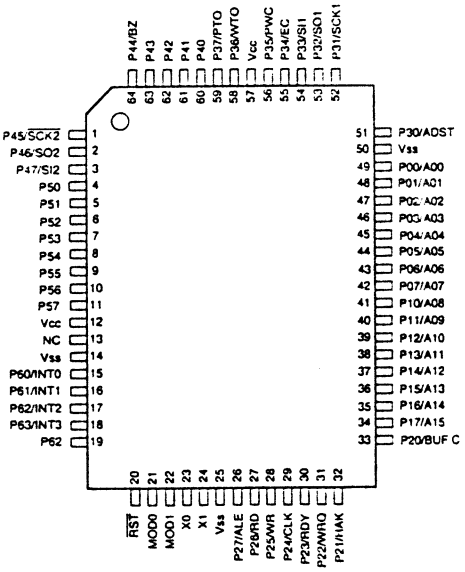
MC3405IMEL
RS-422 LINE DRIVER/RECEIVER

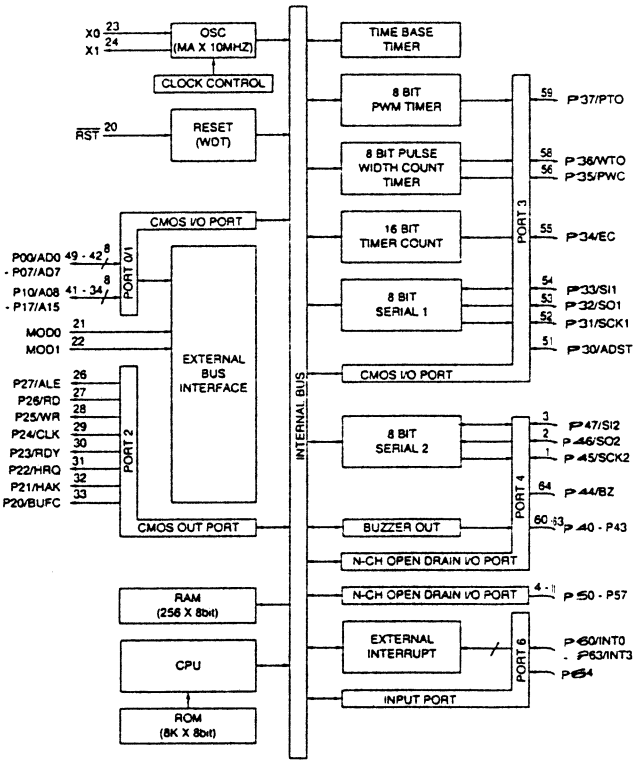
- TOP VIEW -



MB89613PF (FUJITSU)
C-MOS 8 BIT ONE CHIP MICRO CONTROLLER

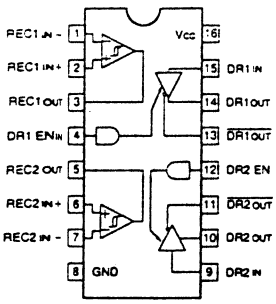
- TOP VIEW -





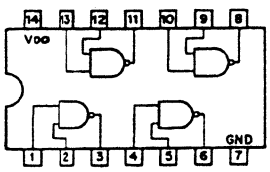
MC34051MEL
RS-422 LINE DRIVER/RECEIVER

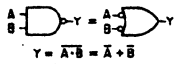
- TOP VIEW -



MC74HC02AF
SN74HC02ANS
C-MOS QUAD 2-INPUT NOR GATES

- TOP VIEW -





$Y = \overline{A \cdot B} = \overline{A} + \overline{B}$

A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

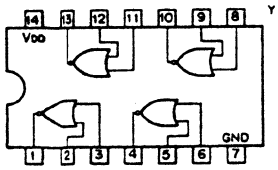
0; LOW LEVEL
1; HIGH LEVEL

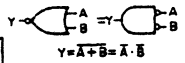
NOTE :

TYPE	V_{DD}
TC74AC00 TYPE TC74VHC00	+2 to +5.5V
MC74HCT00N	+5V
74ACT00 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

MC74HC02AF
SN74HC02ANS
C-MOS QUAD 2-INPUT NOR GATES

- TOP VIEW -





$Y = \overline{A + B} = \overline{A} \cdot \overline{B}$

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

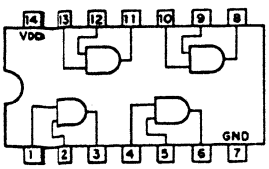
0; LOW LEVEL
1; HIGH LEVEL

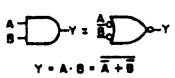
NOTE :

TYPE	V_{DD}
HC	+2 to +6V
AC/VHC	+2 to +5.5V
HCT/ACT	+5V

MC74HC08AF
C-MOS QUAD 2-INPUT AND GATES

- TOP VIEW -





$Y = A \cdot B = \overline{\overline{A} + \overline{B}}$

A	B	Y
0	0	0
0	1	0
1	0	0
1	1	1

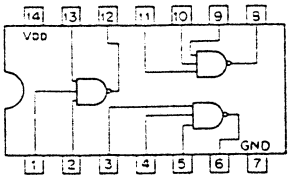
0; LOW LEVEL
1; HIGH LEVEL

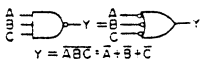
NOTE :

TYPE	V_{DD}
TC74AC08 TYPE MC74ACT08M	+2 to +5.5V
TC40H	+2 to +8V
OTHER TYPES	+2 to +6v

MC74HC10F
C-MOS 3-INPUT NAND GATE

- TOP VIEW -





$Y = \overline{ABC} = \overline{A} + \overline{B} + \overline{C}$

A	B	C	Y
0	0	0	1
0	0	1	1
0	1	0	1
0	1	1	1
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

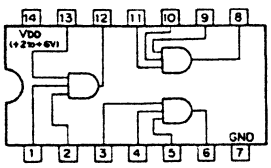
0 ; LOW LEVEL
1 ; HIGH LEVEL

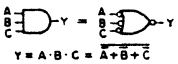
NOTE :

TYPE	V_{DD}
TC40H	+2 to +8V
OTHERS	+2 to +6V

MC74HC11F
C-MOS 3-INPUT POSITIVE-AND GATES

- TOP VIEW -





$Y = A \cdot B \cdot C = \overline{\overline{A} + \overline{B} + \overline{C}}$

A	B	C	Y
0	0	0	0
0	0	1	0
0	1	0	0
0	1	1	0
1	0	0	0
1	0	1	0
1	1	0	0
1	1	1	1

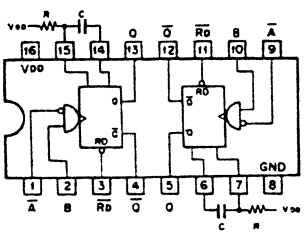
0;LOW LEVEL
1;HIGH LEVEL

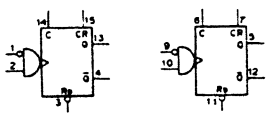
NOTE :

TYPE	V_{DD}
TC74VHC11	+2V to +5.5V
OTHER TYPES	+2V to +6V

MC74HC123AF
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATORS

- TOP VIEW -





INPUT			OUTPUT	
$\overline{RD}$	A	B	Q	$\overline{Q}$
0	X	X	0	1
1	1	X	0	1
1	X	0	0	1
1	0	↑	⊓	⊔
1	↓	1	⊓	⊔
↑	0	1	⊓	⊔

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

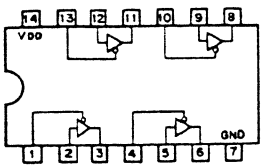
OUTPUT PULSE WIDTH = 0.46CR

NOTE :

TYPE	V_{DD}
TC74HCT123AF	+5V
OTHER TYPES	+2 to +6V

MC74HC125AF
TC74HC125AF
C-MOS BUS BUFFER GATES WITH 3-STATE OUTPUT

- TOP VIEW -



G	A	Y
0	0	0
0	1	1
1	X	HI-Z

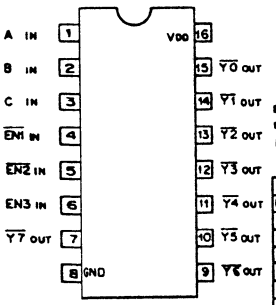
0;LOW LEVEL X;DON'T CARE
1;HIGH LEVEL HI-Z;HIGH IMPEDANCE

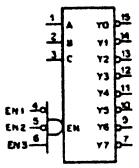
NOTE:

TYPE	Vcc
AC HC	+2 to +6V
LVT	+2.7 to +3.6V

MC74HC138AF
C-MOS 3-TO-8 LINE DECODER/DEMULTIPLEXER

- TOP VIEW -





INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	X	X	X	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

EN = ENT · EN2 · EN3

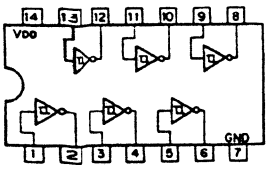
0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

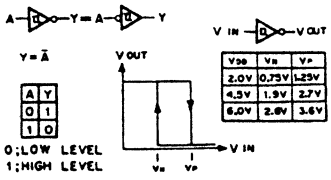
NOTE:

TYPE	Vcc
74HCT138 TYPE	+5V
74ACT138 TYPE	+4.5 to +5.5V
TC74AC138 TYPE TC74VHC138	+2 to +5.5V
OTHER TYPES	+2 to +6V

MC74HC14AF
C-MOS HEX SCHMITT TRIGGER INVERTERES

- TOP VIEW -





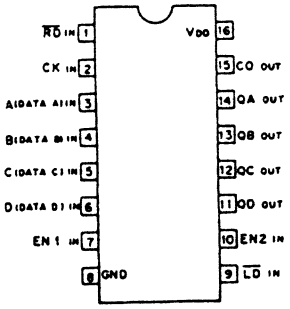
VDD	VT-	VT+
2.0V	0.73V	1.25V
4.5V	1.9V	2.7V
6.0V	2.6V	3.6V

NOTE:

TYPE	Vcc
TC74AC/VHC	+2 to +5.5V
OTHER TYPES	+2 to +6V

MC74HC163AF
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT BINARY COUNTER

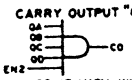
- TOP VIEW -



MODE SELECTION

CONTROL INPUTS				MODE
RD	LD	EN1	EN2	
0	X	X	X	RESET (SYNCHRONOUS)
1	0	X	X	PRESET (SYNCHRONOUS)
1	1	0	X	NO COUNT
1	1	X	0	NO COUNT
1	1	1	1	COUNT

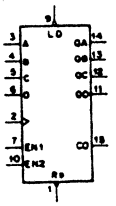
CARRY OUTPUT "CO"



CO IS HIGH WHEN EN2 INPUT IS HIGH AND COUNT IS "15".

NOTE:

TYPE	Vcc
HC	+2 to +6V
AC/VHC	+2 to +5.5V
HCT/ACT/FCT	+5V

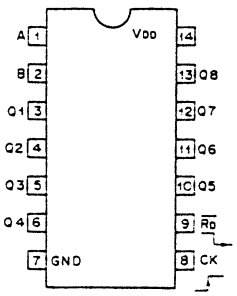


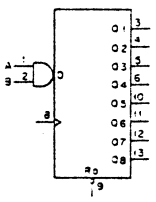
COUNT SEQUENCE

COUNT	OUTPUTS			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

MC74HC164FL
C-MOS 8-BIT SERIAL-IN/PARALLEL-OUT SHIFT REGISTER

- TOP VIEW -



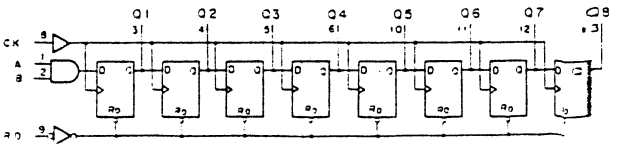


INPUTS				OUTPUTS	
RD	CK	A	B	Q1	Q2, ---- Q8
0	X	X	X	0	0 0 0 0
1	0	X	X	Q1o	Q2o ---- Q8o
1	↑	1	1	1	Q1n ---- Q7n
1	↑	0	X	0	Q1n ---- Q7n
1	↑	X	0	0	Q1n ---- Q7n

0;LOW LEVEL
1;HIGH LEVEL
X;DON'T CARE

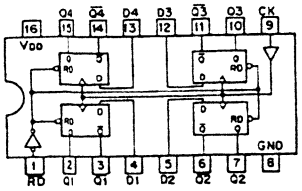
NOTE:

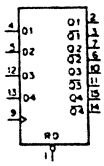
TYPE	Vcc
AC/VHC	+2 to +5.5V
HC	+2 to +6V
HCT	+5V



MC74HC175F
C-MOS QUAD D-TYPE FLIP-FLOPS WITH RESET

- TOP VIEW -





RD	CK	D	Q	Q̄
0	X	X	0	1
1	↑	1	1	0
1	↑	0	0	1
1	0	X	Q0	Q̄0

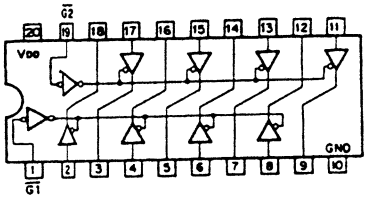
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
Q0 : NO CHANGE
Q̄0 : NO CHANGE

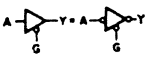
NOTE :

TYPE	VDD
AC TYPE	+2 to +5.5 V
74ACT175 TYPE	+4.5V to 5.5 V
OTHER TYPES	+2 to +6 V

MC74HC244AF
C-MOS BUS BUFFER WITH 3-STATE OUTPUTS

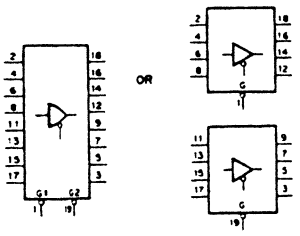
- TOP VIEW -





G	A	Y
0	0	0
0	1	1
X	X	HI-Z

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE

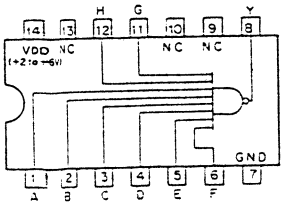


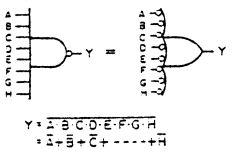
NOTE :

TYPE	VDD
AC HC 40H	+2 to +6V
ACT BCT FCT HCT	+5V
TC74AC244 TYPE TC74VHC244	+2 to +5.5V

MC74HC30F
C-MOS 8-INPUT POSITIVE-NAND GATE

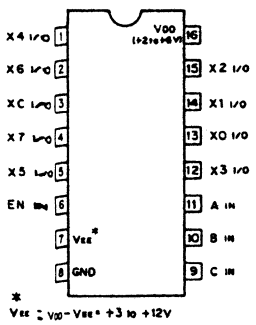
- TOP VIEW -



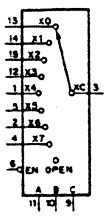


MC74HC4051F
C-MOS DUAL 8-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER

- TOP VIEW -



* VEE : VDD - VEE* +3 to +12V



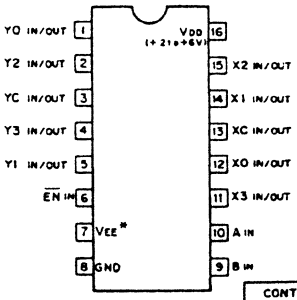
CONTROL INPUTS				SELECTED CHANNEL
EN	SELECT C	B	A	
0	0	0	0	X0
0	0	0	1	X1
0	0	1	0	X2
0	0	1	1	X3
0	1	0	0	X4
0	1	0	1	X5
0	1	1	0	X6
0	1	1	1	X7
1	X	X	X	OPEN

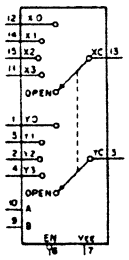
XO to X7; ANALOG INPUTS/OUTPUTS
XC; COMMON INPUT/OUTPUT
A,B,C; CHANNEL SELECT INPUT
EN; ENABLE INPUT

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

MC74HC4052F
C-MOS DUAL 4-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER

- TOP VIEW -





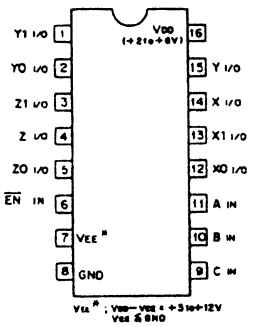
VEE* : VDD - VEE = +3 to +12V

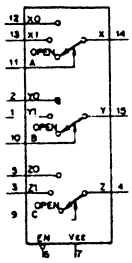
CONTROL INPUTS			"ON" CHANNEL
EN	B	A	
0	0	0	0
0	0	1	1
0	1	0	2
0	1	1	3
1	X	X	OPEN

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

MC74HC4053F (MOTOROLA) FLAT PACKAGE
C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXER/DEMULTIPLEXER

- TOP VIEW -





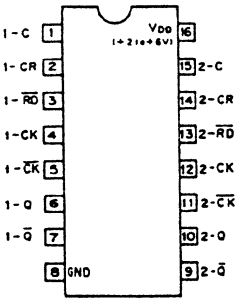
VEE* : VDD - VEE = +3 to +12V
VEE ≧ GND

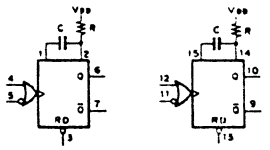
CONTROL INPUTS				ON CHANNEL		
EN	SELECT C	B	A			
0	0	0	0	Z0	Y0	X0
0	0	0	1	Z0	Y0	X1
0	0	1	0	Z0	Y1	X0
0	0	1	1	Z0	Y1	X1
0	1	0	0	Z1	Y0	X0
0	1	0	1	Z1	Y0	X1
0	1	1	0	Z1	Y1	X0
0	1	1	1	Z1	Y1	X1
1	X	X	X	OPEN		

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

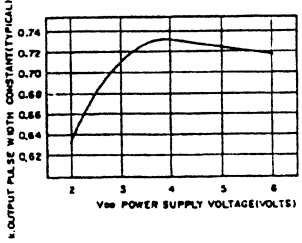
MC74HC4538AF
C-MOS DUAL RETRIGGERABLE/NON-RETRIGGERABLE MONOSTABLE MULTIVIBRATOR

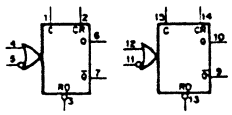
- TOP VIEW -



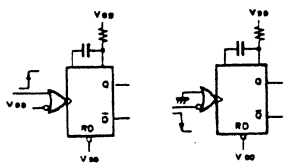


OUTPUT PULSE WIDTH = k·C·R

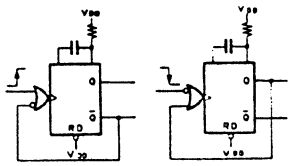




RETRIGGERABLE M.M.V

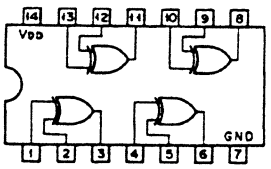


NON-RETRIGGERABLE M.M.V



MC74HC86F
C-MOS QUAD EXCLUSIVE OR GATES

- TOP VIEW -



A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

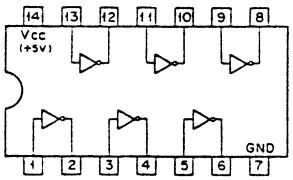
0 ; LOW LEVEL
1 ; HIGH LEVEL

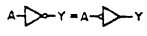
NOTE :

TYPE	VDD
TC74AC/VHC	+2 to +5.5V
TC74HCT	+5V
OTHER TYPES	+2 to +6V

MC74HCU04F (MOTOROLA) FLAT PACKAGE
TTL INVERTER

- TOP VIEW -





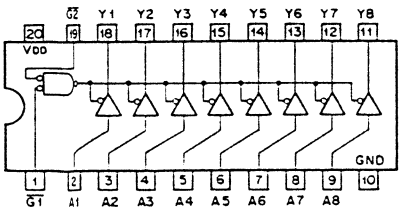
Y = Ā

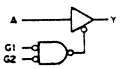
A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL

MC74HC541AFEL (MOTOROLA) FLAT PACKAGE
C-MOS BUFFER S AND LINE D

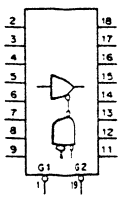
- TOP VIEW -





G1	G2	A	Y
0	0	0	0
0	0	1	1
1	X	X	HI-Z
X	1	X	HI-Z

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE
HI-Z ; HIGH IMPEDANCE

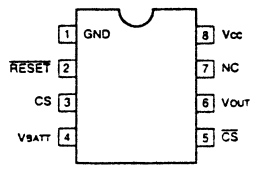


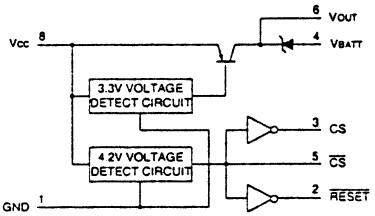
NOTE :

TYPE	VDD
AC/VHC	+2 to +5.5V
HC	+2 to +6V
ABT/ACT/BCT/HCT	+5V

MM1026BFB
SYSTEM RESET

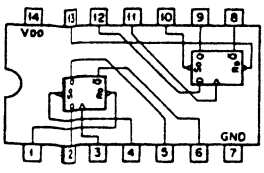
- TOP VIEW -





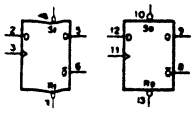
MC74HC74AF
C-MOS DUAL D-TYPE FLIP-FLOPS WITH DIRECT SET/RESET

- TOP VIEW -



INPUTS				OUTPUTS	
$\overline{S_D}$	$\overline{R_D}$	CK	D	Qn+1	$\overline{Q_{n+1}}$
0	1	X	X	1	0
1	0	X	X	0	1
0	0	X	X	1	1
1	1	↑	1	1	0
1	1	↑	0	0	1
1	1	0	X	Qn	$\overline{Q_n}$

0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

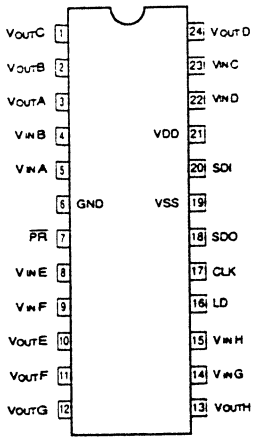


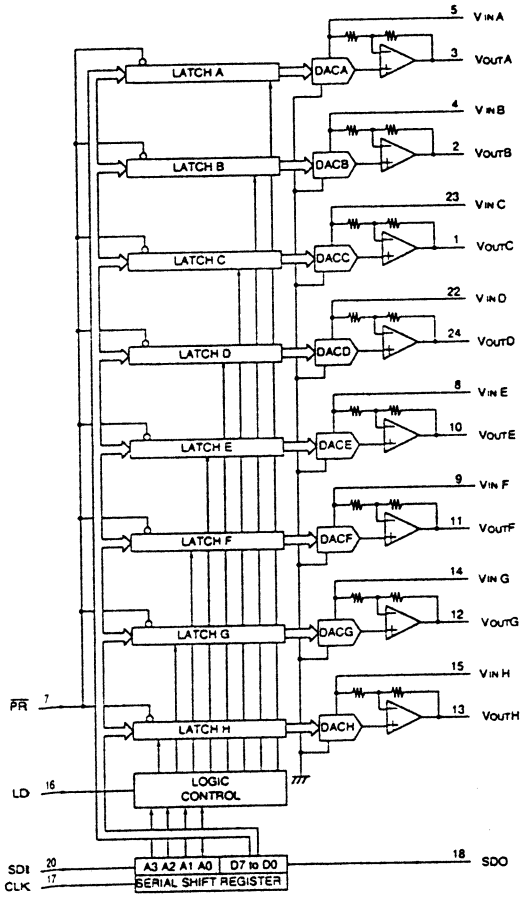
NOTE :

TYPE	VDD
HCT/ACT	+5V
TC74AC/VHC	+2 to +5.5V
OTHERS	+2 to +6V

MP7670AS (MICRO POWER SYSTEMS)
C-MOS 8 BIT 8 CHANNEL D/A CONVERTER

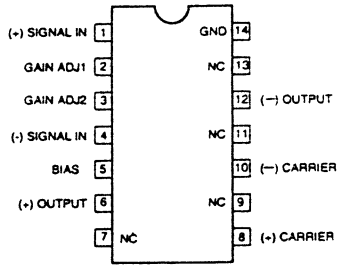
- TOP VIEW -

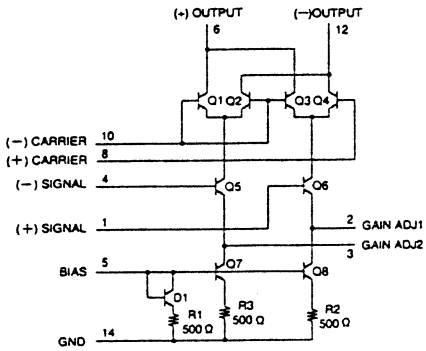




NJM1496M
DOUBLE BALANCED MODULATOR/DEMODULATOR

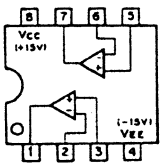
- TOP VIEW -



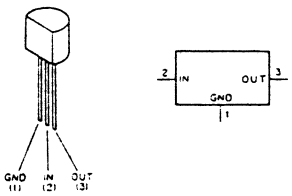


NJM4558M
DUAL OPERATIONAL AMPLIFIER

- TOP VIEW -

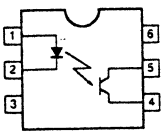


NJM79L05A (JRC) -5V (100mA)
NEGATIVE VOLTAGE REGULATOR



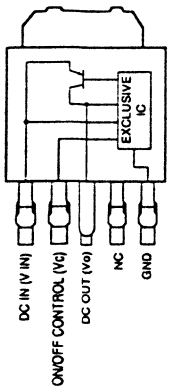
PC111YS (SHARP)
DETECTOR

- TOP VIEW -



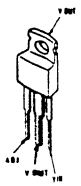
PQ12TZ5N
SEROES REGULATOR

- SIDE VIEW -



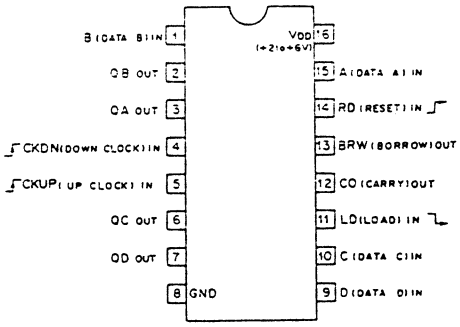
SE005N

- TOP VIEW -



SN74HC193ANS (TI) FLAT PACKAGE
C-MOS PRESETTABLE SYNCHRONOUS 4-BIT UP/DOWN COUNTER

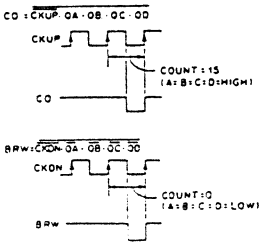
- TOP VIEW -



CONTROL INPUT				MODE
RD	LD	CKUP	CKDN	
1	X	X	X	RESET TO ZERO
0	0	X	X	PRESET
0	1	↑	1	UP COUNT
0	1	1	↑	DOWN COUNT
0	1	1	1	NO COUNT

COUNT	OUTPUT			
	QD	QC	QB	QA
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	1	0
15	1	1	1	1

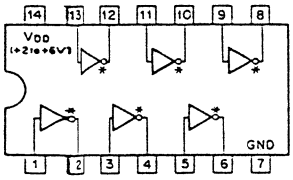
UP COUNT → DOWN COUNT

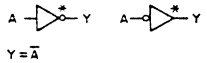


0 ; LOW LEVEL
1 ; HIGH LEVEL
X ; DON'T CARE

SN74HC05ANS (TI) FLAT PACKAGE
C-MOS HEX INVERTER WITH OPEN-DRAIN

- TOP VIEW -



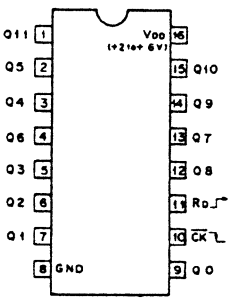


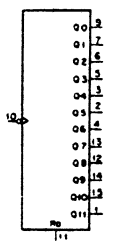
Y = $\overline{A}$

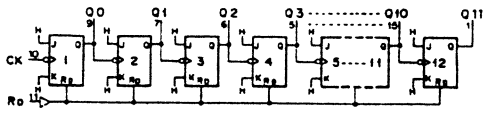
A	Y	
0	1	0 ; LOW LEVEL
1	0	1 ; HIGH LEVEL
		* ; OPEN DRAIN

SN74HC4040ANS
C-MOS 12-STAGE RIPPLE CARRY BINARY COUNTER/DRIVER

- TOP VIEW -







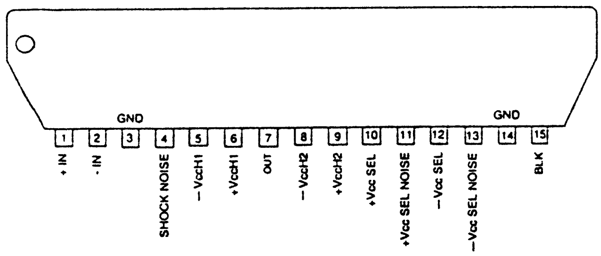
COUNT	Q11	Q10	Q9	Q8	Q7	Q6	Q5	Q4	Q3	Q2	Q1	Q0
0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	1
2	0	0	0	0	0	0	0	0	0	0	1	0
3	0	0	0	0	0	0	0	0	0	0	1	1
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
4095	1	1	1	1	1	1	1	1	1	1	1	1

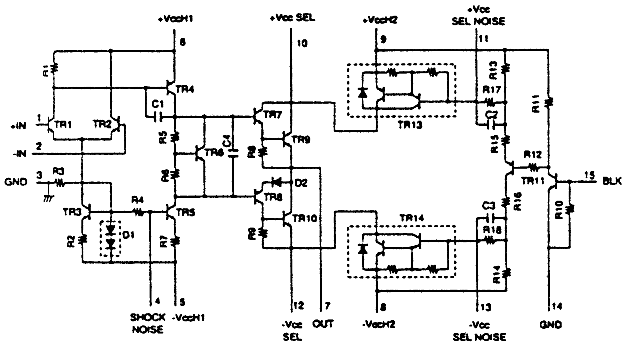
RD	Q11 ····· Q0
1	ALL LOW
0	COUNT

0 ; LOW LEVEL
1 ; HIGH LEVEL

STK390-120 (SANYO)
POWER AMPLIFIER

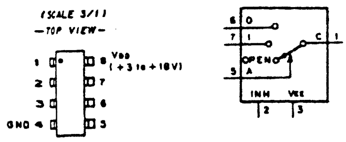
- SIDE VIEW -





TC4W53FU (TOSHIBA) CHIP PACKAGE
C-MOS 2-CHANNEL MULTIPLEXER/DEMULTIPLEXER

- TOP VIEW -

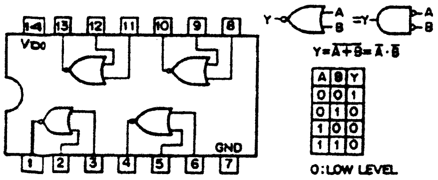


CONT. INPUT		ON CHANNEL
INH	A	
0	0	0
0	1	1
1	X	OPEN

0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE

TC74HC02AF
C-MOS QUAD 2-INPUT NOR GATES

- TOP VIEW -



$Y = \overline{A+B} = \bar{A} \cdot \bar{B}$

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

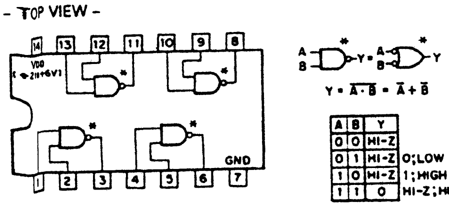
0 : LOW LEVEL
1 : HIGH LEVEL

NOTE:

TYPE	Vdd
HC	+2 to +6V
AC/VHC	+2 to +5.5V
HCT/ACT	+5V

TC74HC03AF
C-MOS 2-INPUT POSITIVE-NAND GATE WITH OPEN-DRAIN

- TOP VIEW -



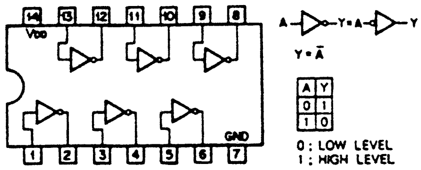
$Y = \overline{A \cdot B} = \bar{A} + \bar{B}$

A	B	Y
0	0	HI-Z
0	1	HI-Z
1	0	HI-Z
1	1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL
HI-Z ; HIGH IMPEDANCE

TC74HC04AF
C-MOS HEX INVERTERS

- TOP VIEW -



$Y = \bar{A}$

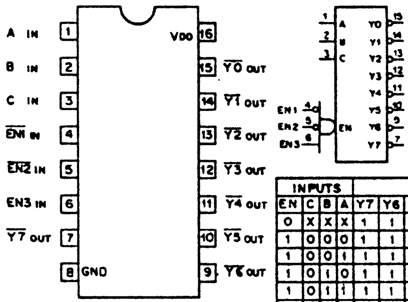
A	Y
0	1
1	0

0 : LOW LEVEL
1 : HIGH LEVEL

NOTE :

TYPE	Vdd
74HCT04 TYPE	+5V
TC74AC04 TYPE TC74VHC04 TYPE	+2 to +5.5V
74ACT04 TYPE	+4.5 to +5.5V
OTHER TYPES	+2 to +6V

TC74HC138AF
C-MOS 3-TO-8 LINE DECODER/DEMULTIPLEXER



INPUTS				OUTPUTS							
EN	C	B	A	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0
0	X	X	X	1	1	1	1	1	1	1	1
1	0	0	0	1	1	1	1	1	1	1	0
1	0	0	1	1	1	1	1	1	1	0	1
1	0	1	0	1	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1	0	1	1	1
1	1	0	0	1	1	1	0	1	1	1	1
1	1	0	1	1	1	0	1	1	1	1	1
1	1	1	0	1	0	1	1	1	1	1	1
1	1	1	1	0	1	1	1	1	1	1	1

$EN = \overline{EN1} \cdot \overline{EN2} \cdot EN3$

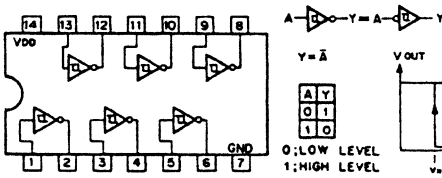
0 : LOW LEVEL
1 : HIGH LEVEL
X ; DON'T CARE

NOTE :

TYPE	Vdd
74HCT138 TYPE	+5V
74ACT138 TYPE	+4.5 to +5.5V
TC74AC138 TYPE TC74VHC138	+2 to +5.5V
OTHER TYPES	+2 to +6V

TC74HC14AF
C-MOS HEX SCHMITT TRIGGER INVERTERS

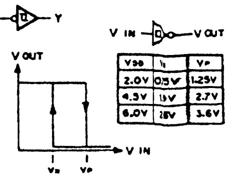
- TOP VIEW -



$Y = \bar{A}$

A	Y
0	1
1	0

0 ; LOW LEVEL
1 ; HIGH LEVEL



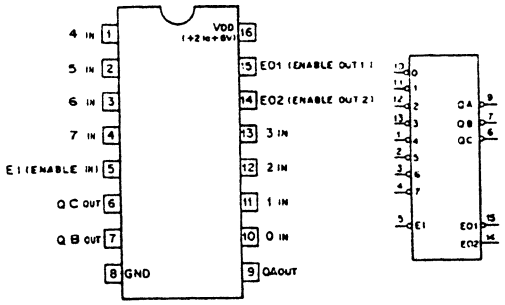
Vdd	Vn	Vp
2.0V	0.5V	1.25V
4.5V	1.5V	2.7V
6.0V	2.5V	3.6V

NOTE :

TYPE	Vdd
TC74AC/VHC	+2 to +5.5V
OTHER TYPES	+2 to +6V

TC74HC148AF
C-MOS 8-TO-3-LINE PRIORITY ENCODER

- TOP VIEW -

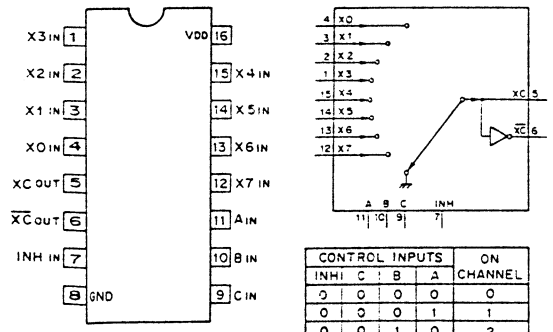


INPUTS									OUTPUTS				
E1	7	6	5	4	3	2	1	0	QC	QB	QA	EO1	EO2
1	X	X	X	X	X	X	X	X	1	1	1	1	1
0	1	1	1	1	1	1	1	1	1	1	1	0	1
0	1	1	1	1	1	1	1	0	1	1	1	1	0
0	1	1	1	1	1	1	0	X	1	1	0	1	0
0	1	1	1	1	1	0	X	X	1	0	1	1	0
0	1	1	1	1	0	X	X	X	1	0	0	1	0
0	1	1	1	0	X	X	X	X	0	1	1	1	0
0	1	1	0	X	X	X	X	X	0	1	0	1	0
0	1	0	X	X	X	X	X	X	0	0	1	1	0
0	0	X	X	X	X	X	X	X	0	0	0	1	0

0; LOW LEVEL 1; HIGH LEVEL X; DON'T CARE

TC74HC151AF (MOTOROLA) FLAT PACKAGE
C-MOS 8-LINE-TO-1-LINE DATA SELECTOR/MULTIPLEXER

- TOP VIEW -



CONTROL INPUTS				ON
INH	C	B	A	CHANNEL
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	X	X	X	GND

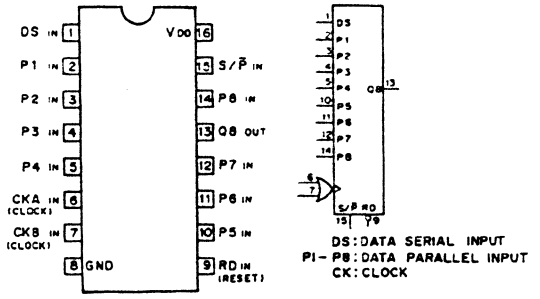
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

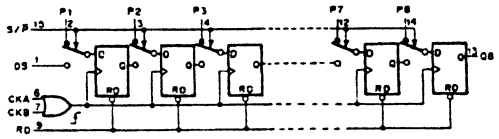
NOTE:

TYPE	Vdd
HC	+2 to +6V
AC/VHC	+2 to +5.5V
HCT/ACT/FCT	+5V

TC74HC166AF
C-MOS 8-BIT SHIFT REGISTER

- TOP VIEW -





CKA	CKB	CK
0	0	0
X	1	1
1	X	1
1	↓	1
↓	1	1
0	↑	↓
↑	0	↑

INPUT					OUTPUT
RD	S/P	CK	DS	P1-P8	Q8
0	X	X	X	X	0
1	X	0	X	X	Q8n
1	0	↑	X	1 – 8	8
1	1	↑	1	X	Q7n
:	1	↑	0	X	Q7n
1	X	↓	X	X	Q8n

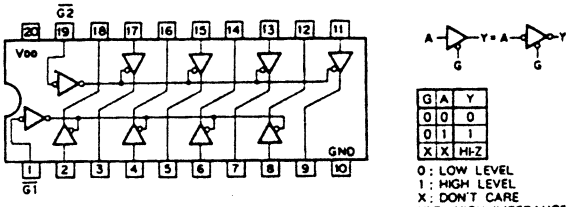
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

NOTE:

TYPE	Vdd
TC40H	+2 to +8V
OTHERS	+2 to +6V

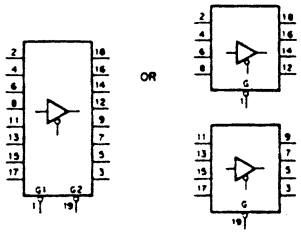
TC74HC244AF
C-MOS BUS BUFFER WITH 3-STATE OUTPUTS

- TOP VIEW -



G	A	Y
0	0	0
0	1	1
X	X	HI-Z

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE
HI-Z; HIGH IMPEDANCE

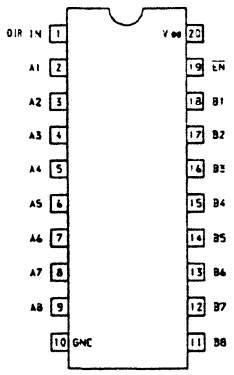


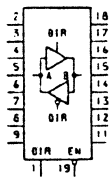
NOTE:

TYPE	Vdd
AC HC 40H	+2 to +6V
ACT BCT FCT HCT	+5V
TC74AC244 TYPE TC74VHC244	+2 to +5.5V

TC74HC245AF
C-MOS BILATERAL BUS TRANSCEIVERS WITH 3-STATE OUTPUTS

- TOP VIEW -



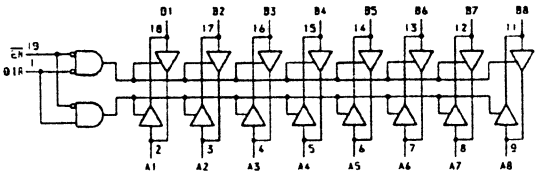


EN	DIR	OPERATION
0	0	B→A
0	1	A→B
1	X	HI-Z

0:LOW LEVEL
1:HIGH LEVEL
X:DON'T CARE
HI-Z:HIGH IMPEDANCE

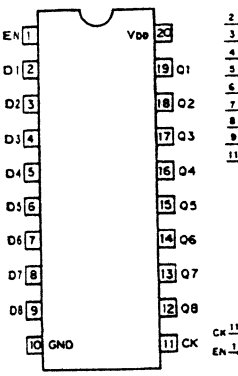
NOTE:

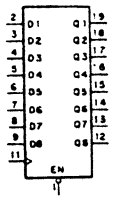
TYPE	VDD
AC HC	+2 to +6V
ABT ACT BCT HCT	+5V
TC74AC245F TC74AC245P TC74VHC245	+2 to +5.5V
74LVT	+2.7 to +3.6V



TC74HC574AF
C-MOS 3-STATE D-TYPE EDGE-TRIGGERED FLIP-FLOP

- TOP VIEW -

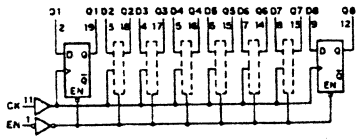




EACH FLIP-FLOP

INPUTS			OUT
EN	CK	D	Q
0	↑	1	1
0	↑	0	0
0	↓	X	Q0
1	X	X	HI-Z

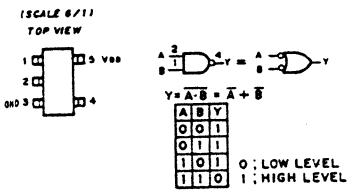
0 : LOW LEVEL
1 : HIGH LEVEL
X : DON'T CARE
HI-Z : HIGH IMPEDANCE
Q0 : NO CHANGE



NOTE :

TYPE	VDD
74AC/74HC	+ 2 to + 6V
74ACT/74FCT /74HCT	+ 5V
TC74AC574F TC74VHC574	+ 2 to + 5.5V

TC7S00FU
TC7S02FU
TC7S32FU
C-MOS 2-INPUT NAND GATE



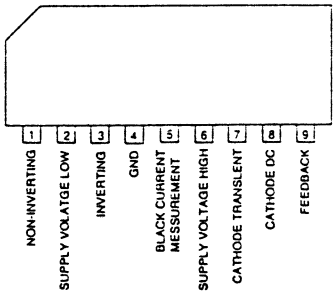
A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

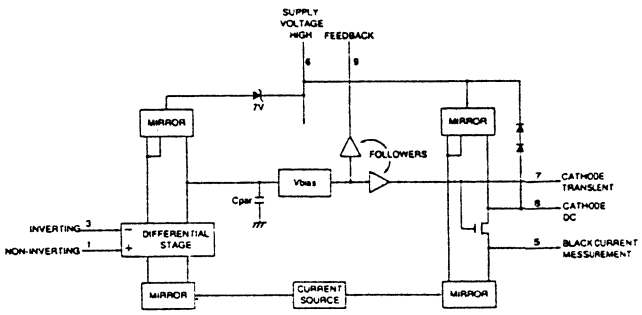
0 : LOW LEVEL
1 : HIGH LEVEL

TYPE	VDD
7S00F 7S00FU	+ 2 to + 6V
4S11F 4SU11F	+ 3 to + 18V
7SH00FU	+ 2 to + 5.5V

TDA6101Q (PHOLIPS)
TDA6111Q (PHILIPS)
VIDEO OUTPUT AMPLIFIER

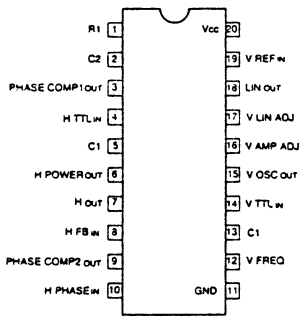
- LATTER SIDE -

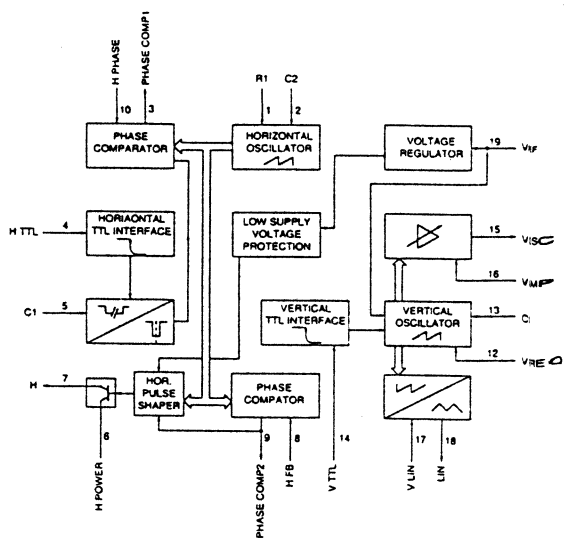




TDA9102C (SGS)
H/V PROCESSOR

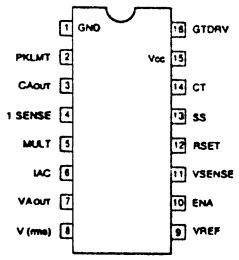
- TOP VIEW -

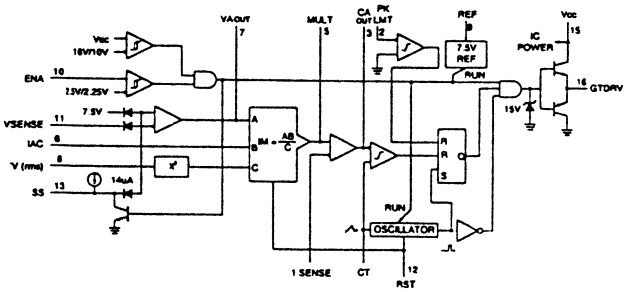




TK83854D
SWITCHING POWER MODULE

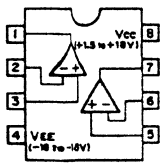
- TOP VIEW -



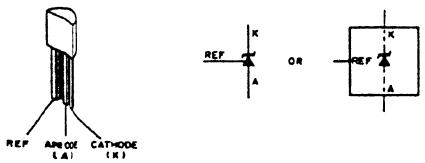


TL082CPS (TI)
OPERATIONAL AMPLIFIER (J FET INPUT)

- TOP VIEW -

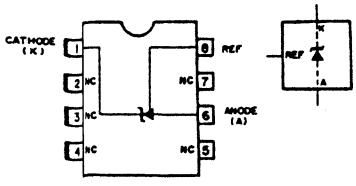


TL431CLP (TI) FLAT PACKAGE
ADJUSTABLE PRECISION SHUNT REGULATOR



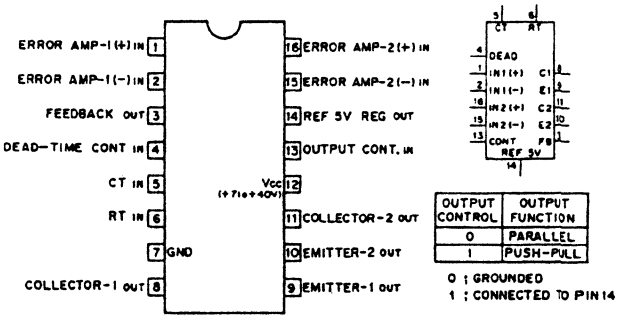
TL431CPS (TI) FLAT PACKAGE
ADJUSTABLE PRECISION SHUNT REGULATOR

- TOP VIEW -



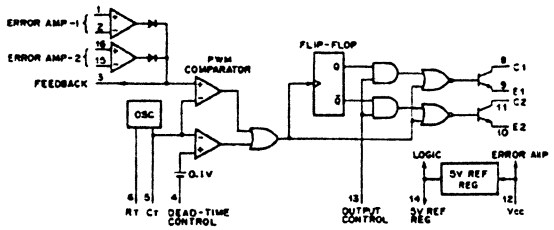
TL494CNS (TI)
PWM POWER CONTROL

- TOP VIEW -



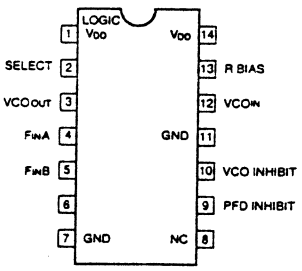
OUTPUT CONTROL	OUTPUT FUNCTION
0	PARALLEL
1	PUSH-PULL

0 : GROUNDED
1 : CONNECTED TO PIN 14



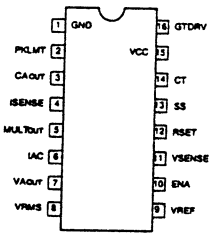
TLC2932IPW
C-MOS PHASE LOCKED LOOP

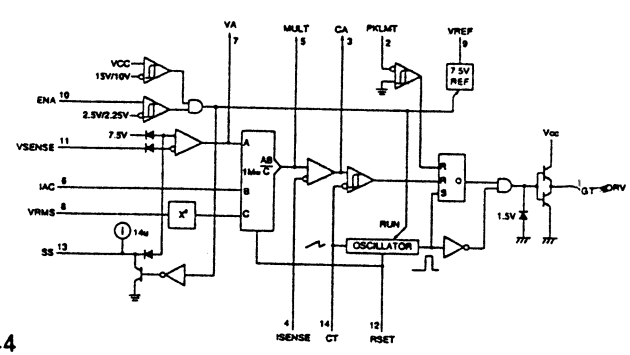
- TOP VIEW -



UC3854N (UNITRODE)
HIGH POWER FACTOR PREREGURATOR

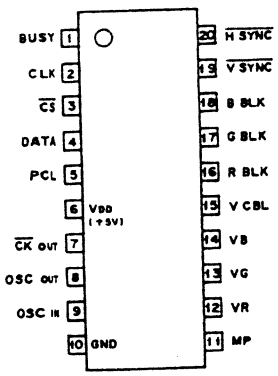
- TOP VIEW -

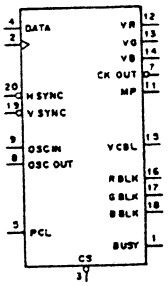




μPD6453GT (NEC) FLAT PACKAGE
C-MOS ON-SCREEN CHARACTER DISPLAY

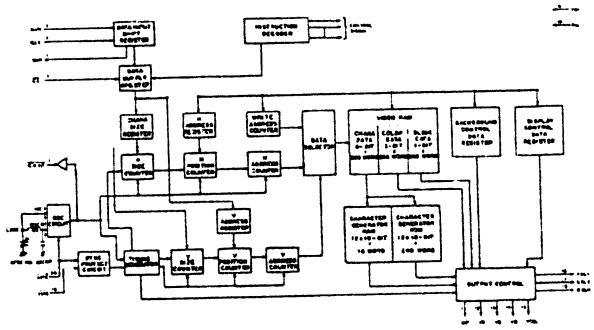
- TOP VIEW -





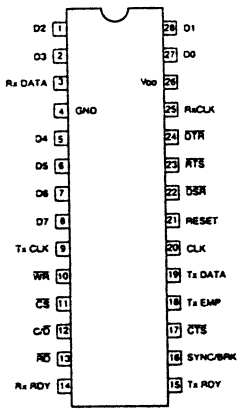
INPUT
CLK : CLOCK
CS : CHIP SELECT
DATA : SERIAL DATA
H SYNC : HORIZONTAL SYNC
OSC IN : OSCILLATOR IN
PCL : POWER ON CLEAR
V SYNC : VERTICAL SYNC

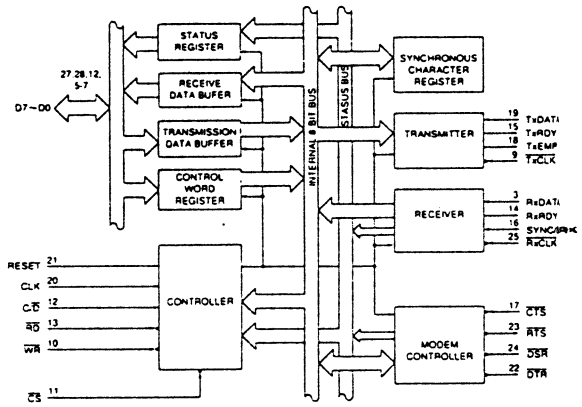
OUTPUT
B_{BLK}, R_{BLK}, G_{BLK} : B, R, G, BLANKING
BUSY : BUSY OUT
CK OUT : CLOCK
MP : MASK PULSE
OSC OUT : OSCILLATOR OUT
V_R, V_G, V_B : R, G, B, CHARACTER DATA
V_{CBL} : VIDEO CUT BLANKING



μPD71051GU
SERIAL CONTROL UNIT

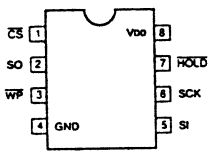
- TOP VIEW -

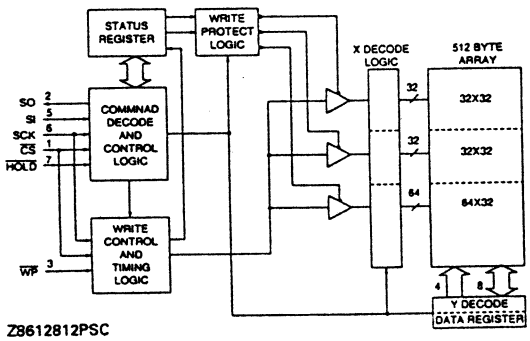




X25040S (XICOR)
C-MOS 4096 BIT SERIAL EEPROM

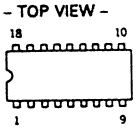
- TOP VIEW -





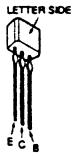
Z8612812PSC

- TOP VIEW -



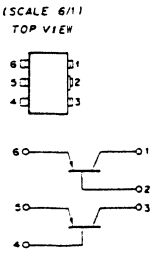
TRANSISTOR, DIODE

DTA144EKA
DTC144EKA
2SA1037K
2SA1462
2SC1654
2SC2412K
2SC3545
2SC4213A
2SK520



DTA144ESA
2SA1175
2SC2785

DTC144ESA
2SC2668

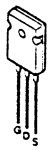


IMT2

IMX2

IMZ1

IRFI9630GS
2SB860
2SD1137
2SD1138-C



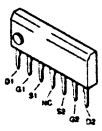
IRFPG50LE

IRFP450LF

2SA1208S
2SC1890A
2SC2362KG
2SC2878A
2SC3622-M

2SA1221
2SB734-3
2SB734-34
2SC3209LK
2SD774-34

2SA893A



2SC4686A
2SC4927

2SD1834

2SK160

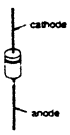
D1NS4
EGP10G
RD10ES-B2
RD12ES-B
RD15ES-B3
RD18ES-B2
RD3.9ES-B
RD6.2ES-B
RD7.5ES-B
RD9.1ES-B
1SS119

D10SC6M
D8LCA20

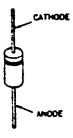
D10SC6MR

D5L60

D8LCA20R

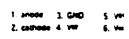


EPG10D
ERC91-02
RH1AV1



ERB91-02
HZT33-02
1SS83TA

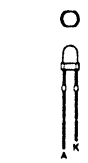
ERD38-06



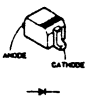
ESAC39M-06C

ESAC39M-06N

CL-155Y/PG-CD

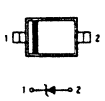


LR002-01
SEL6910D



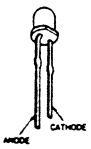
MA210
RD5.6S-B
RD6.2SB
RD6.2SB2
1SS352

RD12M-B1
RD12M-B2
RD18M-B2
RD22M
RD22M-B3
RD3.0M-B
RD3.3M-B1
RD5.6M-B
RD5.6M-B2
RD6.8M-B1
RD6.8M-B3



RD5.6S-B2

EC1-QS04
SC311-6



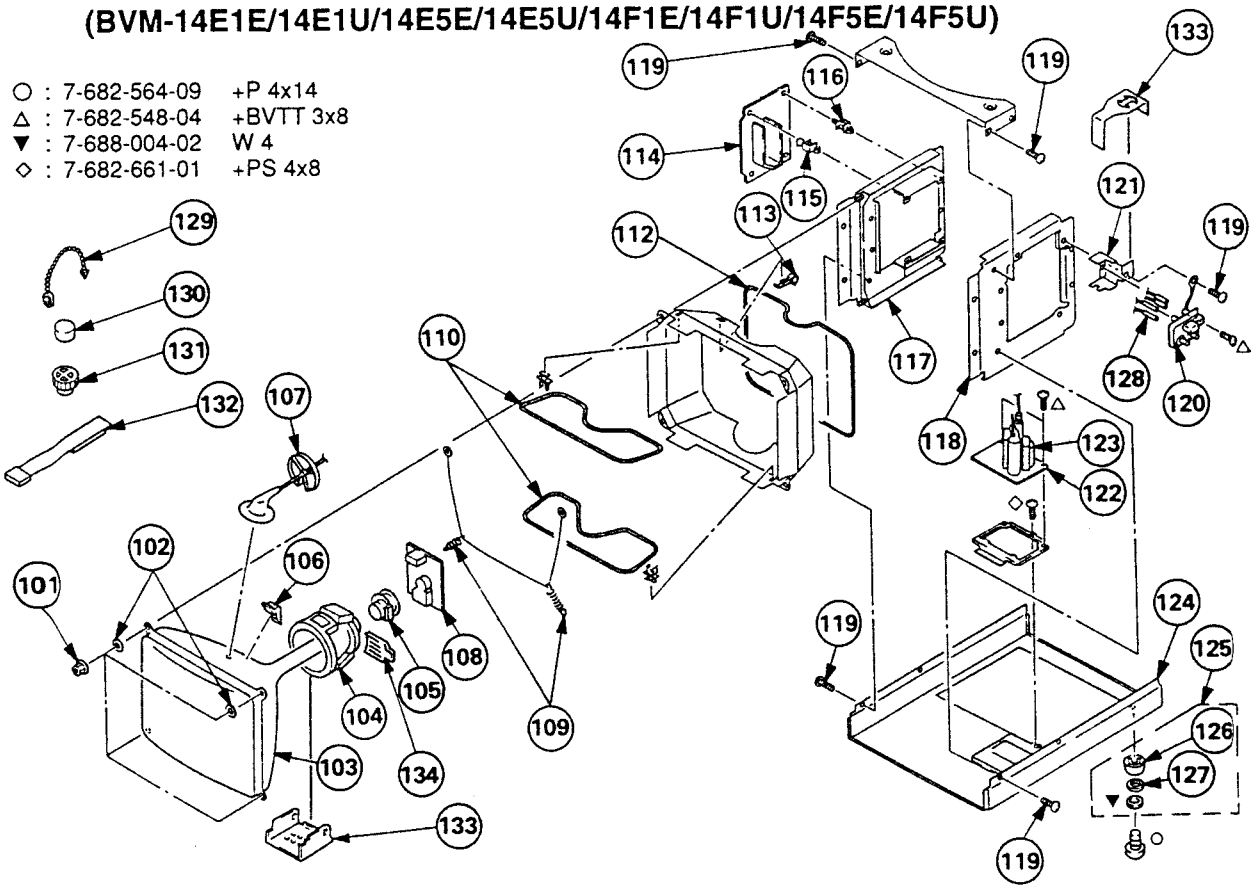
SEL6210S
SEL6410E

S5VB60

V11N
V19C
V19E

6-3. PICTURE TUBE (BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)

○ : 7-682-564-09 +P 4x14
△ : 7-682-548-04 +BVTT 3x8
▼ : 7-688-004-02 W 4
◇ : 7-682-661-01 +PS 4x8



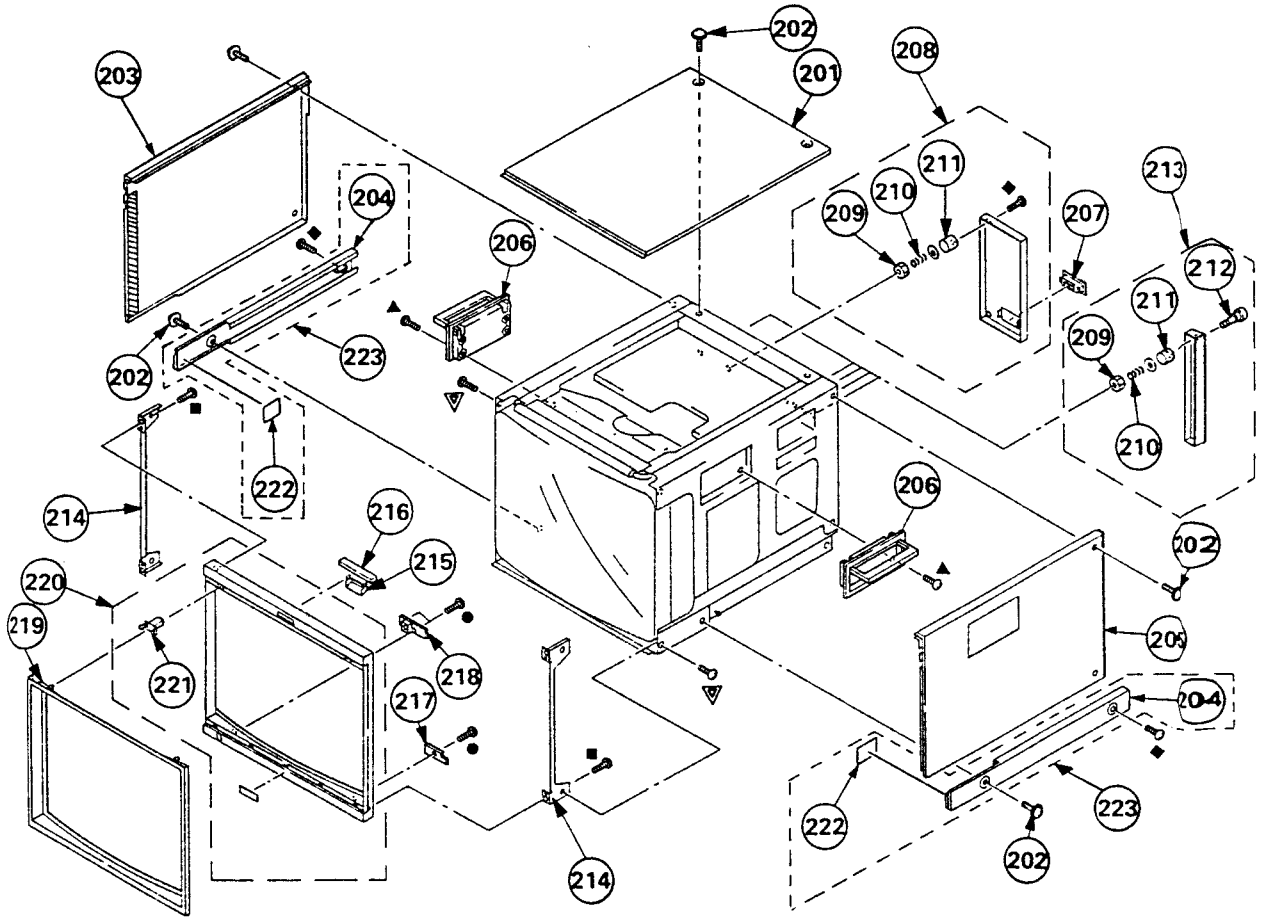
Les composants identifiés par une tramé et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with part number specified

REF NO.	PART NO.	DESCRIPTION	REMARK
101	4-306-034-01	NUT,(B) (M5), FLANGE	
102	4-348-567-01	WASHER, CRT POSITION	
103 ⚠	8-738-332-05	PICTURE TUBE 14MT1(BVM) (14F1E/14F5E)	
103 ⚠	8-738-334-05	PICTURE TUBE 14MT3(BVM) (14F1U/14F5U)	
103 ⚠	8-738-337-05	PICTURE TUBE 14MP1 (14E1E/14F14E5E)	
103 ⚠	8-738-338-05	PICTURE TUBE 14MP3 (14E1U/14F14E5U)	
104 ⚠	8-451-473-11	DY Y14MPDT	
105 ⚠	1-452-436-41	NECK ASSY, CRT (NA292)	
106	4-050-492-01	SPACER, DY	
107	* 4-047-349-01	HOLDER, HV CABLE	
108	* A-1331-457-A	MOUNTED PCB, C (14F1E/14F1U/14F5E/14F5U)	
108	* A-1331-520-A	MOUNTED PCB, C (14E1E/14E1U/14E5E/14E5U)	
109	4-303-774-03	SPRING	
110 ⚠	1-411-660-11	COIL, DEMAGNETIC	
111	* 4-395-824-01	HOLDER, DEGAUSSING COIL	
112 ⚠	1-411-658-11	COIL, LANDING CORRECTION	
113	4-045-123-01	HOLDER, DEGAUSSING COIL	
114	* A-1195-098-B	COMPLETE PCB, PA (14F1E/14F1U/14F5E/14F5U)	
114	* A-1195-111-A	COMPLETE PCB, PA (14E1E/14E1U/14E5E/14E5U)	
115	* 3-703-141-11	HOLDER, PCB	
116	* 4-353-620-11	HINGE, PC BOARD	
117	4-050-927-01	CHASSIS (L) (14E5E/14E5U/14F5E/14F5U)	
118	4-050-926-01	CHASSIS (R) (14E5E/14E5U/14F5E/14F5U)	
	4-050-962-01	CHASSIS (R) (14E1E/14E1U/14F1E/14F1U)	
119	7-685-881-01	SCREW +BVTT 4X8	
120 ⚠	1-223-417-12	RESISTOR ASSY (HIGH-VOLTAGE)	
121	* 4-050-921-01	BRACKET, FOCUS	
122	* A-1190-238-A	MOUNTED PCB, PC	
123 ⚠	X-4033-491-1	FBT ASSY, NX4201//J1F4	
124	* X-4033-129-2	CHASSIS ASSY, BOTTOM (14E5E/14E5U/14F5E/14F5U)	
124	X-4033-143-2	CHASSIS ASSY, BOTTOM (14E1E/14E1U/14F1E/14F1U)	
125	X-4033-117-1	FOOT ASSY	126, 127
126	X-4836-202-9	FOOT	
127	* 3-668-845-01	CUSHION, LEG	
128	1-900-214-62	LEAD ASSY, FOCUS	
129	4-308-870-00	CLIP, LEAD WIRE	
130	1-452-032-11	MAGNET, DISK; 10MM Ø	
131	1-452-094-00	MAGNET, ROTA TABLE DISK; 8MM Ø	
132	X-4308-815-8	PERMALLOY ASSY, CONVERGENCE	
133	4-053-410-01	SHIELD, DY	
134	X-2105-533-1	PLATE ASSY, CORRECTION, TL	

6-4. COVER
(BVM-20E1E/20E1U/20F1E/20F1U)

● : 7-685-648-71 +BVTP 3x12
▲ : 7-685-872-09 +BVTT 3x8
■ : 7-685-661-14 +BVTP 4x12
◆ : 7-682-566-04 +B 4x20
▽ : 7-682-561-09 +B 4x8



REF NO.	PART NO.	DESCRIPTION	REMARK
201	X-4033-308-1	CABINET ASSY, TOP	
202	4-847-802-11	SCREW (OS), CASE, CLAW	
203	X-4033-310-1	CABINET ASSY, LEFT	
204	4-050-836-01	COVER BLIND	
205	X-4033-309-1	CABINET ASSY, RIGHT	
206	X-3642-018-3	HANDLE ASSY	
207	4-050-821-02	ESCUTCHEON	
208	* X-4033-110-1	PANEL ASSY, REAR	209-211
209	* 3-648-057-01	NUT (ISO-4), U	
210	* 4-403-012-01	SPRING, STOPPER	
211	* 4-050-795-01	SPACER, REAR PANEL	
212	* 4-050-804-01	SCREW, PANEL STOPPER	
213	* X-4033-104-1	PANEL ASSY, BLANK	20-212
214	* 4-050-830-01	BRACKET, BEZEL	
215	* 4-050-876-02	PLATE, LIGHT INTERCEPTION	
216	* A-1373-523-A	MOUNTED PCB, YA	
217	* A-1373-524-A	MOUNTED PCB, YB	
218	* A-1373-525-A	MOUNTED PCB, YC	
219	X-4033-112-1	MASK (4:3) ASSY	
220	X-4033-111-1	BEZEL ASSY	22
221	4-051-061-02	HOLDER	
222	3-342-839-02	CUSHON	
223	X-4033-324-1	COVER ASSY, BLIND	20, 222

SECTION 6
EXPLODED VIEWS

NOTE :

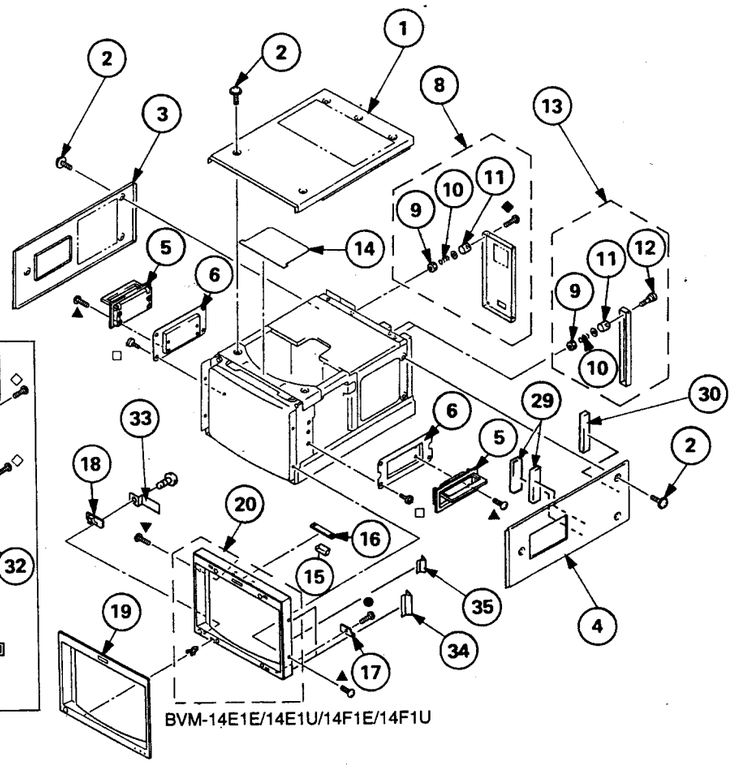
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with part number specified.

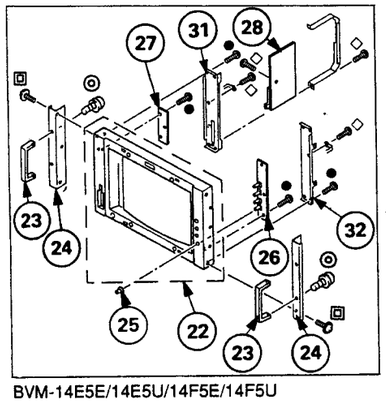
Les composants identifiés par une tramé et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

6-1. COVER (BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)

● : 7-685-648-79 +BVTP 3x12
▲ : 7-682-547-09 +P 3x6
▼ : 7-682-561-09 +B 4x8
◇ : 7-682-947-01 +PSW 3x6
◎ : 7-682-000-04 +PS 5x14
▣ : 7-682-663-09 +PSW 4x14
◆ : 7-682-566-04 +B 4x20
□ : 7-685-881-01 +BVTT 4x8



BVM-14E1E/14E1U/14F1E/14F1U

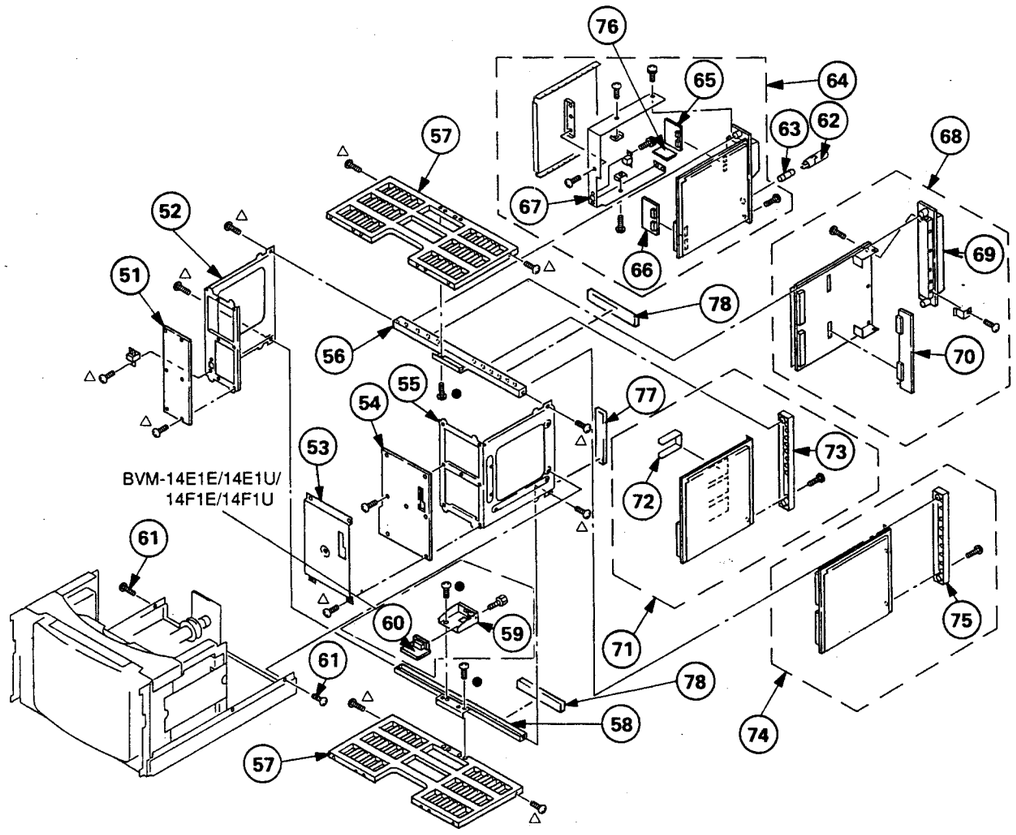


BVM-14E5E/14E5U/14F5E/14F5U

REF NO.	PART NO.	DESCRIPTION	REMARK
1	4-050-931-01	CABINET (UPPER) (14E5E/14E5U/14F5E/14F5U)	
1	4-050-967-01	CABINET (UPPER) (14E1E/14E1U/14F1E/14F1U)	
2	4-847-802-11	SCREW (OS), CASE, CLAW	
3	4-050-933-01	CABINET (LEFT)	
4	4-050-932-01	CABINET (RIGHT)	
5	X-3642-018-3	HANDLE ASSY	
6	* 4-050-928-01	BRACKET, HANDLE	
8	* X-4033-110-2	PANEL ASSY, REAR (14E5E/14E5U/14F5E/14F5U)	9-11
8	* X-4033-144-1	PANEL ASSY, REAR (14E1E/14E1U/14F1E/14F1U)	9-11
9	* 3-648-057-01	NUT (ISO-4), U	
10	* 4-403-012-01	SPRING, STOPPER	
11	* 4-050-795-01	SPACER, REAR PANEL	
12	* 4-050-804-01	SCREW, PANEL STOPPER	
13	* X-4033-104-1	PANEL ASSY, BLANK	9-12
14	* 4-050-913-01	INSULATOR (ANODE)	
15	* 4-050-876-02	PLATE, LIGHT INTERCEPTION	
16	* A-1373-542-A	MOUNTED PCB, YA	
17	* A-1373-543-A	MOUNTED PCB, YB	
18	* A-1373-525-A	MOUNTED PCB, YC	
19	X-4033-128-1	MASK (4:3) ASSY	
20	X-4033-145-2	BEZEL ASSY (14E1E/14E1U/14F1E/14F1U)	
22	X-4033-130-3	BEZEL ASSY (14E5E/14E5U/14F5E/14F5U)	
23	4-337-212-12	HANDLE (14E5E/14E5U/14F5E/14F5U)	
24	4-050-922-01	BASE, HANDLE (14E5E/14E5U/14F5E/14F5U)	
25	4-050-851-01	KNOB, CONTROL (14E5E/14E5U/14F5E/14F5U)	
26	* A-1372-133-A	MOUNTED PCB, HA (14E5E/14E5U/14F5E/14F5U)	
27	* A-1372-134-A	MOUNTED PCB, HB (14E5E/14E5U/14F5E/14F5U)	
28	* A-1375-149-A	COMPLETE PCB, HC (14E5E/14E5U/14F5E/14F5U)	
29	* 4-053-255-01	GASKET (S), EMI	
30	* 4-053-254-01	GASKET (L), EMI	
31	4-050-924-01	BRACKET (LEFT), BEZEL (14E5E/14E5U/14F5E/14F5U)	
32	4-050-925-01	BRACKET (RIGHT), BEZEL (14E5E/14E5U/14F5E/14F5U)	
33	* 4-053-987-01	INSULATOR, YC PC BOARD	
34	X-4033-276-1	GUARD ASSY, HARNESS (L) (14E1E/14E1U/14F1E/14F1U)	
35	X-4033-277-1	GUARD ASSY, HARNESS (S) (14E1E/14E1U/14F1E/14F1U)	

6-2. CHASSIS
(BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)

● : 7-685-648-71 +BVTP 3x12
△ : 7-682-548-04 +BVTT 3x8



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Replace only with part number specified.

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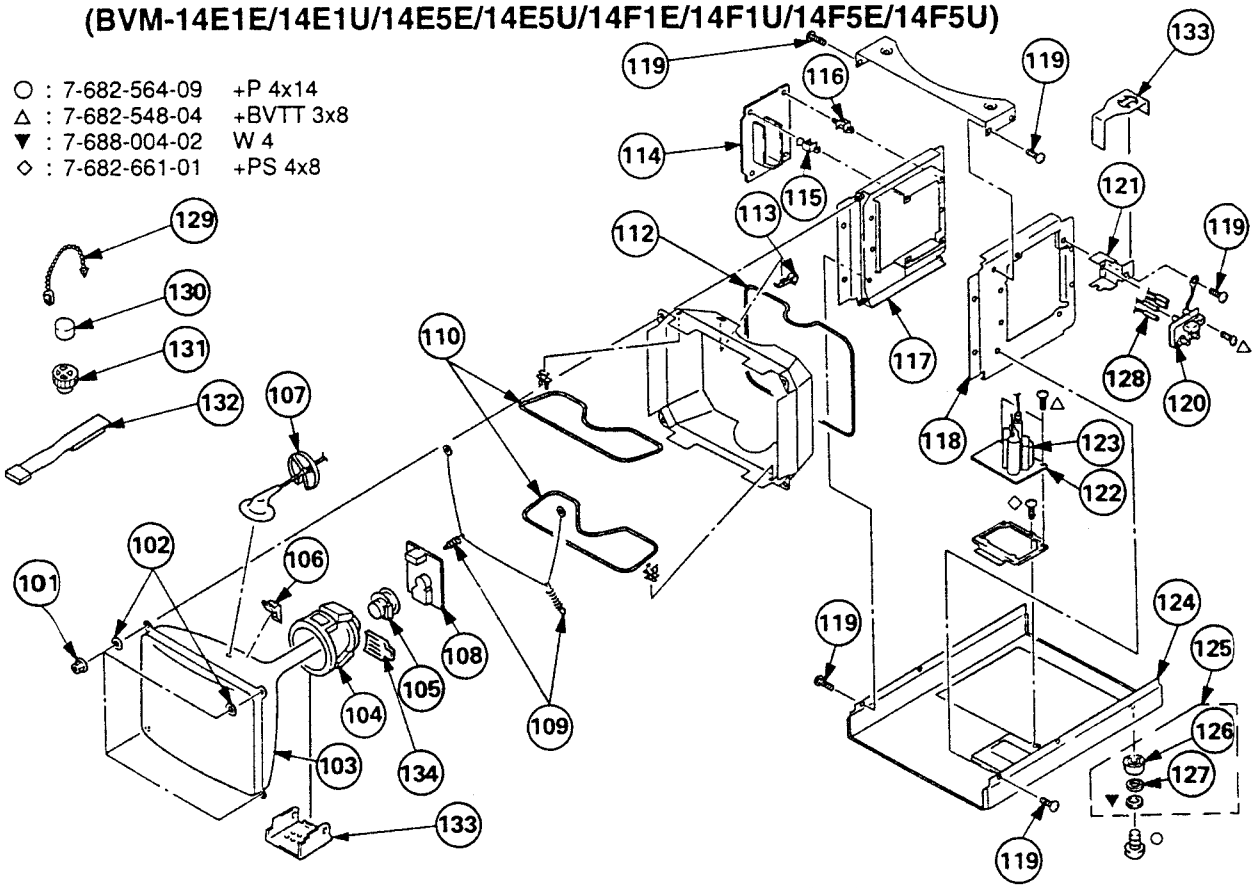
Ne les remplacer que par une piéce portant le numéro spécifié.

REF NO.	PART NO.	DESCRIPTION	REMARK
51	* A-1390-530-A	MOUNTED PCB, TA (14E1E/14E1U/14F1E/14F1U)	
51	* A-1390-532-A	MOUNTED PCB, TA (14E5E/14E5U/14F5E/14F5U)	
52	* 4-050-842-01	BRACKET (L), T (14E5E/14E5U/14F5E/14F5U)	
52	* 4-050-965-01	BRACKET (L), T (14E1E/14E1U/14F1E/14F1U)	
53	* 4-050-808-01	SHIELD, T (14E5E/14E5U/14F5E/14F5U)	
53	* 4-050-957-01	SHIELD, T (14E1E/14E1U/14F1E/14F1U)	
54	* A-1390-531-A	MOUNTED PCB, TB (14E1E/14E1U/14F1E/14F1U)	
54	* A-1390-606-A	MOUNTED PCB, TB (14E5E/14E5U/14F5E/14F5U)	
55	* 4-050-843-01	BRACKET (R), T (14E5E/14E5U/14F5E/14F5U)	
55	* 4-050-964-01	BRACKET (R), T (14E1E/14E1U/14F1E/14F1U)	
56	* 4-050-847-01	PLATE (UPPER), NUT (14E5E/14E5U/14F5E/14F5U)	
56	* 4-050-959-01	PLATE (UPPER), NUT (14E1E/14E1U/14F1E/14F1U)	
57	* 4-050-844-01	BOARD, CARD SLOT (14E5E/14E5U/14F5E/14F5U)	
57	* 4-050-969-01	BOARD, CARD SLOT (14E1E/14E1U/14F1E/14F1U)	
58	* 4-050-848-01	PLATE (LOWER), NUT (14E5E/14E5U/14F5E/14F5U)	
58	* 4-050-960-01	PLATE (LOWER), NUT (14E1E/14E1U/14F1E/14F1U)	
59	* 4-050-816-01	BRACKET, HD (14E1E/14E1U/14F1E/14F1U)	
60	* A-1372-136-A	MOUNTED PCB, HD (14E1E/14E1U/14F1E/14F1U)	
61	4-381-962-11	SCREW +BVTT 4X8 (S)	
62	1-533-702-11	HOLDER, FUSE	
63	⚠ 1-532-746-11	FUSE, GLASS TUBE 4A/125V (14E1U/14E5U/14F1U/14F5U)	
63	⚠ 1-576-230-31	FUSE (H.B.C) T3.15A/250V (14E1E/14E5E/14F1E/14F5E)	
64	* A-1316-258-A	COMPLETE PCB, G	65, 66, 76
65	* A-1311-432-A	MOUNTED PCB, GA	
66	* A-1311-433-A	MOUNTED PCB, GB	
67	* X-4033-116-2	FRAME ASSY, POWER	
68	* A-1346-357-B	COMPLETE PCB, E	69, 70
69	* X-4033-108-1	HEAT SINK (DEFLECTION) ASSY	
70	* A-1341-958-B	MOUNTED PCB, D	
71	* A-1135-861-B	COMPLETE PCB, BK	72, 73
72	X-4033-103-1	HEAT SINK ASSY (BK)	
73	* X-4033-105-1	PANEL (BK) ASSY, CONNECTOR	
74	* A-1135-825-B	COMPLETE PCB, BC	75
75	* X-4033-106-1	PANEL (BC) ASSY, CONNECTOR	
76	* A-1311-467-A	MOUNTED PCB GC	
77	* 4-053-287-01	GASKET	
78	* 4-053-287-11	GASKET (14E5E/14E5U/14F5E/14F5U)	
78	* 4-053-287-21	GASKET (14E1E/14E1U/14F1E/14F1U)	

6-3. PICTURE TUBE
(BVM-14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)

○ : 7-682-564-09 +P 4x14
△ : 7-682-548-04 +BVTT 3x8
▼ : 7-688-004-02 W 4
◇ : 7-682-661-01 +PS 4x8



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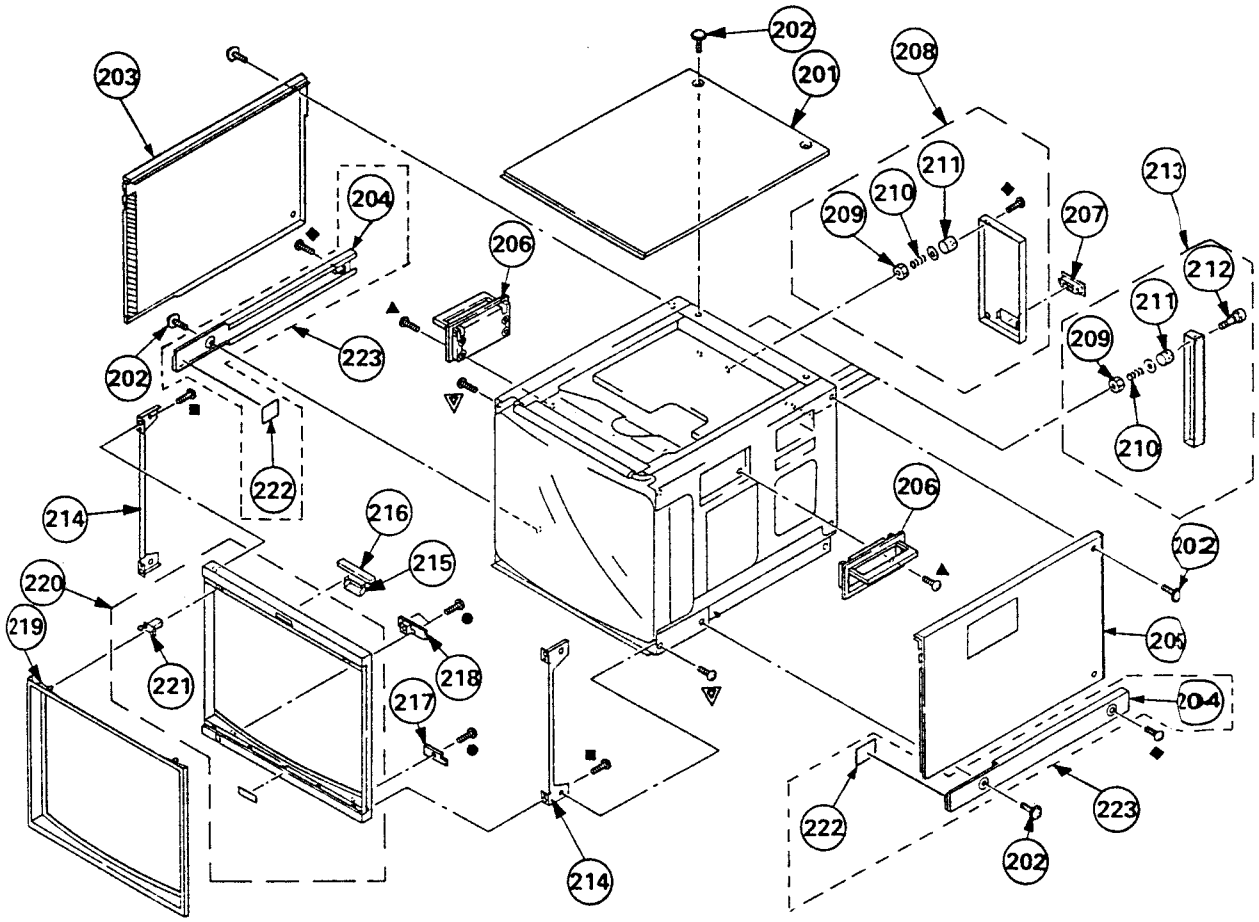
REF NO.	PART NO.	DESCRIPTION	REMARK
101	4-306-034-01	NUT,(B) (M5), FLANGE	
102	4-348-567-01	WASHER, CRT POSITION	
103 ⚠	8-738-332-05	PICTURE TUBE 14MT1(BVM) (14F1E/14F5E)	
103 ⚠	8-738-334-05	PICTURE TUBE 14MT3(BVM) (14F1U/14F5U)	
103 ⚠	8-738-337-05	PICTURE TUBE 14MP1 (14E1E/14F14E5E)	
103 ⚠	8-738-338-05	PICTURE TUBE 14MP3 (14E1U/14F14E5U)	
104 ⚠	8-451-473-11	DY Y14MPDT	
105 ⚠	1-452-436-41	NECK ASSY, CRT (NA292)	
106	4-050-492-01	SPACER, DY	
107	* 4-047-349-01	HOLDER, HV CABLE	
108	* A-1331-457-A	MOUNTED PCB, C (14F1E/14F1U/14F5E/14F5U)	
108	* A-1331-520-A	MOUNTED PCB, C (14E1E/14E1U/14E5E/14E5U)	
109	4-303-774-03	SPRING	
110 ⚠	1-411-660-11	COIL, DEMAGNETIC	
111	* 4-395-824-01	HOLDER, DEGAUSSING COIL	
112 ⚠	1-411-658-11	COIL, LANDING CORRECTION	
113	4-045-123-01	HOLDER, DEGAUSSING COIL	
114	* A-1195-098-B	COMPLETE PCB, PA (14F1E/14F1U/14F5E/14F5U)	
114	* A-1195-111-A	COMPLETE PCB, PA (14E1E/14E1U/14E5E/14E5U)	
115	* 3-703-141-11	HOLDER, PCB	
116	* 4-353-620-11	HINGE, PC BOARD	
117	4-050-927-01	CHASSIS (L) (14E5E/14E5U/14F5E/ 14F5U)	
118	4-050-926-01	CHASSIS (R) (14E5E/14E5U/14F5E/ 14F5U)	
	4-050-962-01	CHASSIS (R) (14E1E/14E1U/14F1E/ 14F1U)	
119	7-685-881-01	SCREW +BVTT 4X8	
120 ⚠	1-223-417-12	RESISTOR ASSY (HIGH-VOLTAGE)	
121	* 4-050-921-01	BRACKET, FOCUS	
122	* A-1190-238-A	MOUNTED PCB, PC	
123 ⚠	X-4033-491-1	FBT ASSY, NX4201//31P4	
124	* X-4033-129-2	CHASSIS ASSY, BOTTOM (14E5E/14E5U/14F5E/14F5U)	
124	X-4033-143-2	CHASSIS ASSY, BOTTOM (14E1E/14E1U/14F1E/14F1U)	
125	X-4033-117-1	FOOT ASSY	126, 127
126	X-4836-202-9	FOOT	
127	* 3-668-845-01	CUSHION, LEG	
128	1-900-214-62	LEAD ASSY, FOCUS	
129	4-308-870-00	CLIP, LEAD WIRE	
130	1-452-032-11	MAGNET, DISK; 10MM Ø	
131	1-452-094-00	MAGNET, ROTA TABLE DISK; 15MM Ø	
132	X-4308-815-8	PERMALLOY ASSY, CONVERGENCE	
133	4-053-410-01	SHIELD, DY	
134	X-2105-533-1	PLATE ASSY, CORRECTION, TL	

6-4. COVER
(BVM-20E1E/20E1U/20F1E/20F1U)

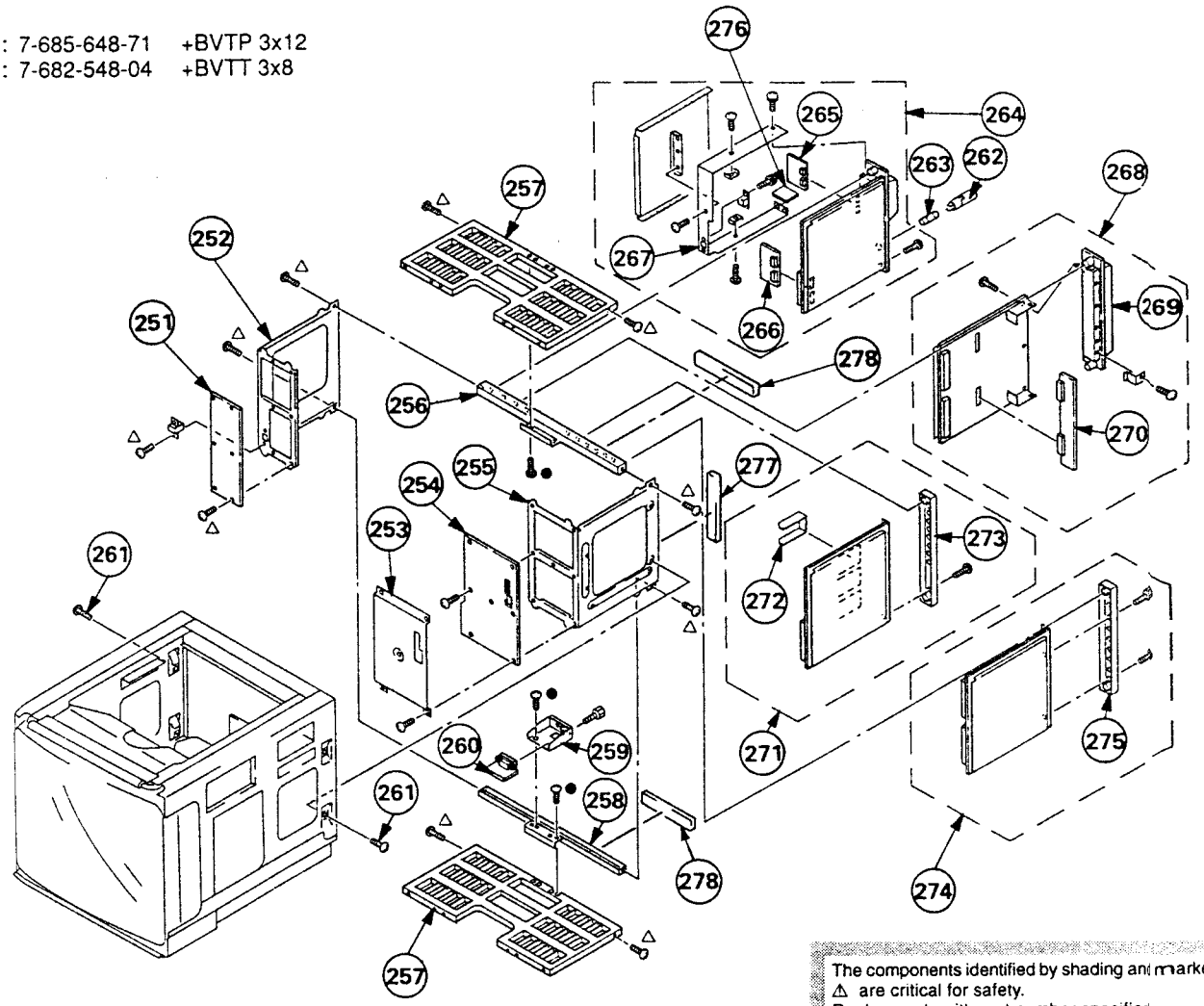
● : 7-685-648-71 +BVTP 3x12
▲ : 7-685-872-09 +BVTT 3x8
■ : 7-685-661-14 +BVTP 4x12
◆ : 7-682-566-04 +B 4x20
▽ : 7-682-561-09 +B 4x8



REF NO.	PART NO.	DESCRIPTION	REMARK
201	X-4033-308-1	CABINET ASSY, TOP	
202	4-847-802-11	SCREW (OS), CASE, CLAW	
203	X-4033-310-1	CABINET ASSY, LEFT	
204	4-050-836-01	COVER BLIND	
205	X-4033-309-1	CABINET ASSY, RIGHT	
206	X-3642-018-3	HANDLE ASSY	
207	4-050-821-02	ESCUTCHEON	
208	* X-4033-110-1	PANEL ASSY, REAR	209-211
209	* 3-648-057-01	NUT (ISO-4), U	
210	* 4-403-012-01	SPRING, STOPPER	
211	* 4-050-795-01	SPACER, REAR PANEL	
212	* 4-050-804-01	SCREW, PANEL STOPPER	
213	* X-4033-104-1	PANEL ASSY, BLANK	209-212
214	* 4-050-830-01	BRACKET, BEZEL	
215	* 4-050-876-02	PLATE, LIGHT INTERCEPTION	
216	* A-1373-523-A	MOUNTED PCB, YA	
217	* A-1373-524-A	MOUNTED PCB, YB	
218	* A-1373-525-A	MOUNTED PCB, YC	
219	X-4033-112-1	MASK (4:3) ASSY	
220	X-4033-111-1	BEZEL ASSY	221
221	4-051-061-02	HOLDER	
222	3-342-839-02	CUSHON	
223	X-4033-324-1	COVER ASSY, BLIND	202, 222

6-5. CHASSIS
(BVM-20E1E/20E1U/20F1E/20F1U)

● : 7-685-648-71 +BVTP 3x12
△ : 7-682-548-04 +BVTT 3x8



The components identified by shading and marked ⚠ are critical for safety.
Replace only with part number specified

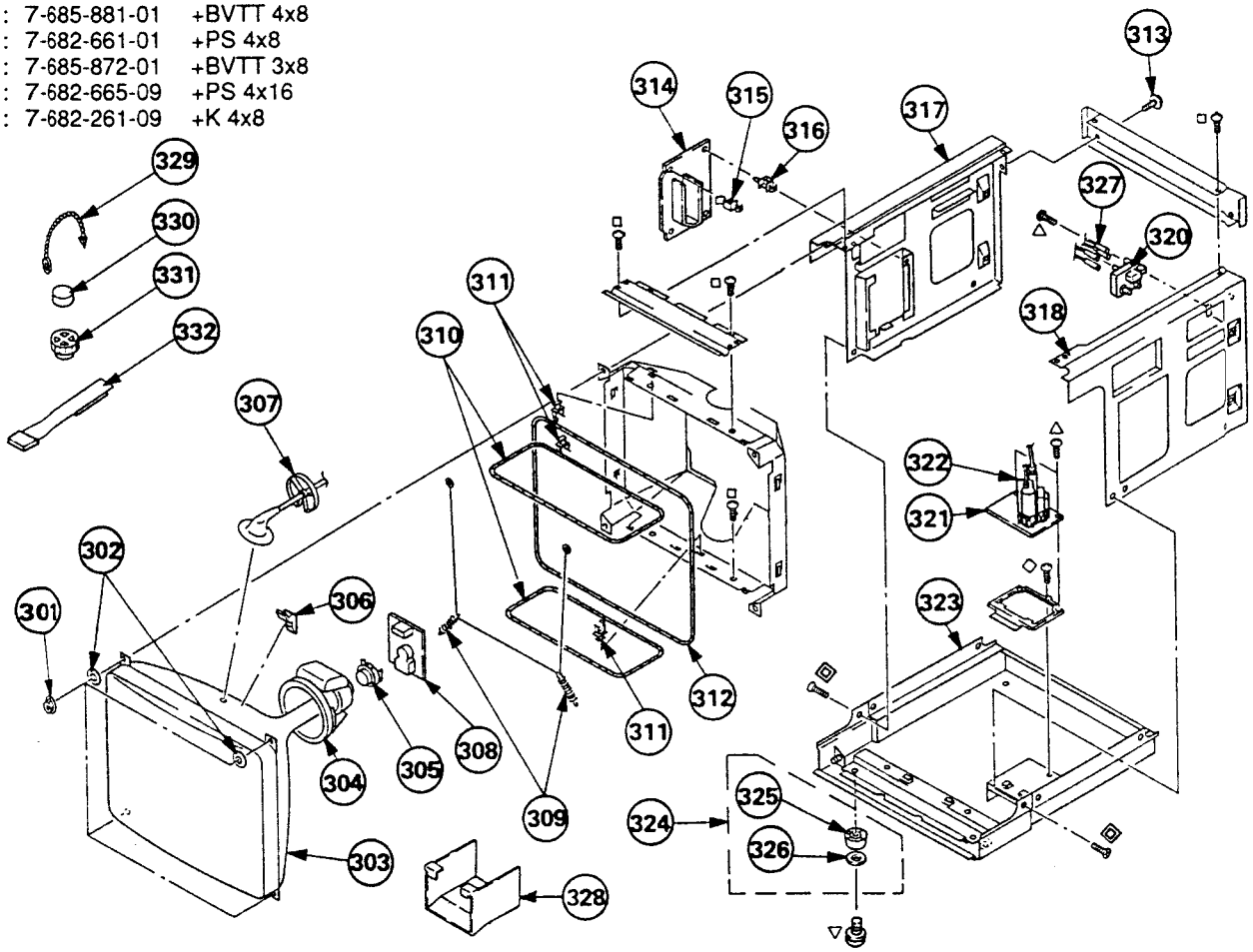
Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

REF NO.	PART NO.	DESCRIPTION	REMARK
251	* A-1390-532-A	MOUNTED PCB, TA	
252	* 4-050-842-01	BRACKET (L), T	
253	* 4-050-808-01	SHIELD, T	
254	* A-1390-533-A	MOUNTED PCB, TB	
255	* 4-050-843-01	BRACKET (R), T	
256	* 4-050-847-01	PLATE (UPPER), NUT	
257	* 4-050-844-01	BOARD, CARD SLOT	
258	* 4-050-848-01	PLATE (LOWER), NUT	
259	* 4-050-816-01	BRACKET, HD	
260	* A-1372-136-A	MOUNTED PCB, HD	
261	4-381-962-11	SCREW +BVTT4X8 (S)	
262	1-533-702-11	HOLDER, FUSE	
263 ⚠	1-576-230-81	FUSE (HLB,C) T3.15A/250V (20E1E/20F1E)	
263 ⚠	1-532-746-11	FUSE, GLASS TUBE 4A/125V (20E1U/20F1U)	

REF NO.	PART NO.	DESCRIPTION	REMARK
264	* A-1316-258-A	COMPLETE PCB, G	265,266, 276
265	* A-1311-432-A	MOUNTED PCB, GA	
266	* A-1311-433-A	MOUNTED PCB, GB	
267	* X-4033-116-2	FRAME ASSY, POWER	
268	* A-1346-356-B	COMPLETE PCB, E	269,270
269	* X-4033-108-1	HEAT SINK (DEFLECTION) ASSY	
270	* A-1341-958-B	MOUNTED PCB, D	
271	* A-1135-826-A	COMPLETE PCB, BK	
272	X-4033-103-1	HEAT SINK ASSY (BK)	
273	* X-4033-105-1	PANEL (BK) ASSY, CONNECTOR	
274	* A-1135-825-B	COMPLETE PCB, BC	275
275	* X-4033-106-1	PANEL (BC) ASSY, CONNECTOR	
276	* A-1311-467-A	MOUNTED PCB, GC	
277	4-053-287-01	GASKET	
278	4-053-287-11	GASKET	

6-6. PICTURE TUBE (BVM-20E1E/20E1U/20F1E/20F1U)

□ : 7-685-881-01 +BVTT 4x8
◇ : 7-682-661-01 +PS 4x8
△ : 7-685-872-01 +BVTT 3x8
▽ : 7-682-665-09 +PS 4x16
◈ : 7-682-261-09 +K 4x8



Les composants identifiés par une tramé et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

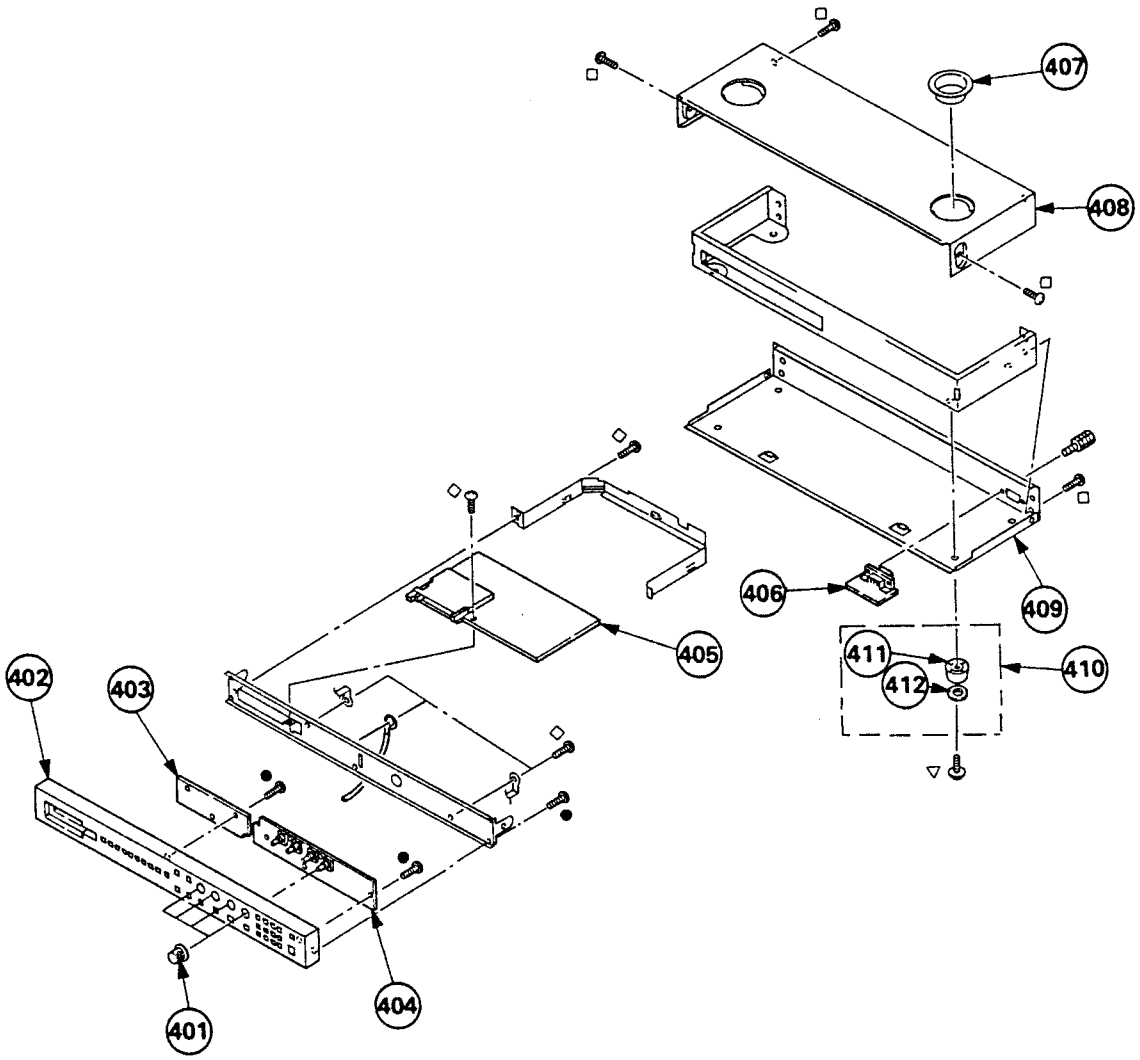
The components identified by shading and marked ⚠ are critical for safety.
Replace only with part number specified.

REF NO.	PART NO.	DESCRIPTION	REMARK
301	4-306-034-01	NUT,(B) (M5), FLANGE	
302	4-348-567-01	WASHER, CRT POSITION	
303 ⚠	8-736-375-05	PICTURE TUBE (20MT3) (20F1U)	
303 ⚠	8-736-376-05	PICTURE TUBE (20MP1) (20E1E)	
303 ⚠	8-736-377-05	PICTURE TUBE (Y20MPDM) (20E1U)	
303 ⚠	8-736-374-05	PICTURE TUBE (20MT1) (20F1E: NORTH)	
303 ⚠	8-736-384-05	PICTURE TUBE (20MT1) (S) (20E1U: SOUTH)	
304 ⚠	8-451-470-11	DY Y20MPDM	
305 ⚠	8-453-003-11	NA30I2(M)	
306	4-040-897-01	SPACER, DY	
307	* 4-047-349-01	HOLDER, HV CABLE	
308	* A-1331-457-A	MOUNTED PCB, C (20F1E/20F1U)	
308	* A-1331-520-A	MOUNTED PCB, C (20E1U)	
309	* 4-303-774-XX	SPRING	
310 ⚠	1-411-659-11	COIL, DEMAGNETIC	
311	* 4-395-824-02	HOLDER, DEGAUSSING COIL	
312 ⚠	1-411-657-11	COIL, LANDING CORRECTION	
313	4-847-802-11	SCREW (OS), CASE, CLAW	
314	* A-1195-097-A	COMPLETE PCB, PA (20F1E/20F1U)	

REF NO.	PART NO.	DESCRIPTION	REMARK
314	* A-1195-104-A	COMPLETE PCB, PA (20E1E/20E1U)	
315	* 3-703-141-11	HOLDER, PCB	
316	* 4-353-620-11	HINGE, PC BOARD	
317	* X-4033-114-1	CHASSIS ASSY, LEFT	
318	* X-4033-115-1	CHASSIS ASSY, RIGHT	
320 ⚠	1-223-417-12	RESISTOR ASSY (HIGH-VOLTAGE)	
321	* A-1190-229-A	MOUNTED PCB, PC	
322 ⚠	X-4033-492-1	FBT ASSY, NX-4201//J1E4	
323	* X-4033-113-1	PLATE ASSY, BOTTOM	
324	X-4033-117-1	FOOT ASSY	325 to 326
325	X-4836-202-9	FOOT	
326	* 3-668-845-01	CUSHION, LEG	
327	1-900-214-33	LEAD ASSY, FOCUS	
328	* X-4033-336-3	SHILD ASSY, DY	
329	4-308-870-00	CLIP, LEAD WIRE	
330	1-452-032-11	MAGNET, DISK; 10MM Ø	
331	1-452-094-00	MAGNET, ROTA TABLE DISK; 15MM Ø	
332	X-4309-608-7	PERMALLOY ASSY, CONVERGENC	

6-7. CONTROL (BKM-10R)

● : 7-685-648-71 +BVTP 3x12
□ : 7-682-561-04 +B 4x8
▽ : 7-682-665-09 +PS 4x16
◇ : 7-682-947-01 +PSW 3x6



REF NO.	PART NO.	DESCRIPTION	REMARK
401	4-050-851-01	KNOB, CONTROL	
402	X-4033-118-1	PANEL ASSY, CONTROL	
403	* A-1372-134-A	MOUNTED PCB, HB	
404	* A-1372-133-A	MOUNTED PCB, HA	
405	* A-1375-149-A	COMPLETE PCB, HC	
406	* A-1372-136-A	MOUNTED PCB, HD	

REF NO.	PART NO.	DESCRIPTION	REMARK
407	4-050-852-01	HOLDER, FOOT	
408	4-050-858-01	COVER (TOP)	
409	4-050-857-01	COVER (BOTTOM)	
410	X-4033-117-1	FOOT ASSY	411, 412
411	4-306-405-01	FOOT	
412	* 3-668-845-01	CUSHION, LEG	

SECTION 7
ELECTRICAL PARTS LIST

BC

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifiés par une tramé et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- PF : μμF

When indicating parts by reference number, please include the board name.

- The components identified by ▣ in this manual have been carefully factory-selected for each set in order ot satisfy regulations regarding X-rey rediation.
  Should replacement be required, replace only with the value originally used.
- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF NO.	PART NO.	DESCRIPTION			REMARK
	*A-1135-825-B	COMPLETE PCB, BC			
		**********			
		BATTERY, LITHIUM (BAT 1), (CR2025)			
	*X-4033-106-1	PANEL (BC) ASSY, CONNECTOR			
	1-550-104-11	HOLDER, BATTERY			
	*4-050-795-01	SPACER, REAR PANEL			
	*4-050-804-01	SCREW, PANEL STOPPER			
	*4-050-814-01	SHIELD, PCB			
	*4-403-012-01	SPRING, STOPPER			
	7-432-114-11	SCREW LOCK			
	7-623-422-07	LW 3, TYPE B			
	7-685-871-01	SCREW +BVTT 3X6 (S)			
	7-682-548-09	SCREW +BVTT 3X8 (S)			
		< CAPACITOR >			
C1	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C2	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C3	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C4	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C5	1-126-396-11	ELECT CHIP	47μ F	20%	16V
C7	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C8	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C9	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C10	1-163-275-11	CERAMIC CHIP	0.001μ F	5%	50V
C11	1-163-275-11	CERAMIC CHIP	0.001μ F	5%	50V
C12	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C13	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C14	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C15	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C16	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C17	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C18	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C19	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C20	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C31	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C32	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C33	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C34	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C35	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C36	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C37	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C39	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C41	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C42	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C43	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C44	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C45	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C46	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C47	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C101	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C102	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C104	1-164-222-11	CERAMIC CHIP	22pF		25V
C105	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C106	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C107	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C108	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C109	1-163-038-91	CERAMIC CHIP	0.1μ F		25V
C110	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C111	1-164-505-11	CERAMIC CHIP	2.2μ F		16V
C112	1-164-505-11	CERAMIC CHIP	2.2μ F		16V
C113	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C114	1-163-031-11	CERAMIC CHIP	0.01μ F		50V
C115	1-163-235-11	CERAMIC CHIP	22pF	5%	50V
C116	1-163-235-11	CERAMIC CHIP	22pF	5%	16V
C117	1-163-031-11	CERAMIC CHIP	0.01μ F		16V
C118	1-163-029-11	CERAMIC CHIP	0.0047μ F		50V
C151	1-126-396-11	ELECT CHIP	47μ F	20%	16V
C154	1-164-004-11	CERAMIC CHIP	0.1μ F	10%	25V
C155	1-164-182-11	CERAMIC CHIP	0.0033μ F	10%	50V
C156	1-164-344-11	CERAMIC CHIP	0.068μ F	10%	25V
C161	1-126-404-11	ELECT CHIP	4.7μ F	20%	50V
C162	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C163	1-162-638-11	CERAMIC CHIP	1μ F		16
C164	1-163-141-00	CERAMIC CHIP	0.001μ F	5%	50V
C165	1-162-637-11	CERAMIC CHIP	0.47μ F		16V
C166	1-164-695-11	CERAMIC CHIP	0.0022μ F	5%	50V
C167	1-164-506-11	CERAMIC CHIP	4.7μ F		16V
C168	1-164-506-11	CERAMIC CHIP	4.7μ F		16V
C169	1-163-141-00	CERAMIC CHIP	0.001μ F	5%	50V
C170	1-162-638-11	CERAMIC CHIP	1μ F		16V
C171	1-162-638-11	CERAMIC CHIP	1μ F		16V
C181	1-126-401-11	ELECT CHIP	1μ F	20%	50V
C183	1-126-401-11	ELECT CHIP	1μ F	20%	50V
C184	1-164-489-11	CERAMIC CHIP	0.22μ F	10%	16V
C185	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C201	1-126-392-11	ELECT CHIP	100μ F	20%	6.3V
C202	1-126-392-11	ELECT CHIP	100μ F	20%	6.3V
C203	1-126-392-11	ELECT CHIP	100μ F	20%	6.3V
C204	1-126-392-11	ELECT CHIP	100μ F	20%	6.3V
C205	1-126-392-11	ELECT CHIP	100μ F	20%	6.3V

BC

REF NO.	PART NO.	DESCRIPTION			REMARK
C206	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C207	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C208	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C209	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C210	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C211	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C212	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C213	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C214	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C215	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C216	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C217	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C218	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C219	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C220	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C231	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C232	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C233	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C234	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C235	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C236	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C237	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C241	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C242	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C243	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C244	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C245	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C246	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C247	1-126-397-11	ELECT CHIP	33µ F	20%	25V
C251	1-126-397-11	ELECT CHIP	33µ F	20%	25V
C252	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C271	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C281	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C291	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C301	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C302	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C303	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C304	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C305	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C306	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C307	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C308	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C309	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C310	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C311	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C312	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C313	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C314	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C315	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C316	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C317	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C318	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C319	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C320	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C321	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C322	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C323	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C324	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C325	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C326	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C327	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C328	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C329	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C330	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C331	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C332	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C333	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C334	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C335	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C336	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C337	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C338	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C339	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C340	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C341	1-135-216-11	TANTAL. CHIP	10µ F	20%	10V
C342	1-135-216-11	TANTAL. CHIP	10µ F	20%	10V
C343	1-135-216-11	TANTAL. CHIP	10µ F	20%	10V
C344	1-135-216-11	TANTAL. CHIP	10µ F	20%	10V
C351	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C352	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C357	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C358	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C359	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C360	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C362	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C363	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C364	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C365	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C366	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C367	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C368	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C369	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C370	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C371	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C372	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C373	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C374	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C375	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C376	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C377	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C391	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C392	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C401	1-163-251-11	CERAMIC	100pF	5%	50V
C402	1-163-251-11	CERAMIC	100pF	5%	50V

< CONNECTOR >

CN1	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P	
CN2	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P	
CN3	1-565-269-11	SOCKET, CONNECTOR (D-DUB.L) 9P	(REMOTE 1 IN)

BC

REF NO.	PART NO.	DESCRIPTION	REMARK
CN4	1-565-269-11	SOCKET, CONNECTOR (D-DUB.L) 9P (REMOTE1 OUT)	
CN5	1-565-269-11	SOCKET, CONNECTOR (D-DUB.L) 9P (REMOTE2)	
CN6	1-565-269-11	SOCKET, CONNECTOR (D-DUB.L) 9P (ISR)	
		< DIODE >	
D1	8-719-158-15	DIODE RD5.6S-B	
D2	8-719-158-15	DIODE RD5.6S-B	
D3	8-719-158-15	DIODE RD5.6S-B	
D4	8-719-158-15	DIODE RD5.6S-B	
D5	8-719-158-15	DIODE RD5.6S-B	
D12	8-719-109-92	DIODE RD6.2ES-B1	
D13	8-719-404-46	DIODE MA110	
D29	8-719-158-19	DIODE RD6.2SB	
D30	8-719-158-19	DIODE RD6.2SB	
D31	8-719-158-19	DIODE RD6.2SB	
D32	8-719-158-19	DIODE RD6.2SB	
D33	8-719-158-19	DIODE RD6.2SB	
D34	8-719-158-19	DIODE RD6.2SB	
D35	8-719-158-19	DIODE RD6.2SB	
D36	8-719-158-19	DIODE RD6.2SB	
D37	8-719-158-19	DIODE RD6.2SB	
D38	8-719-158-19	DIODE RD6.2SB	
D39	8-719-158-19	DIODE RD6.2SB	
D40	8-719-158-19	DIODE RD6.2SB	
D41	8-719-158-19	DIODE RD6.2SB	
D103	8-719-404-46	DIODE MA110	
D104	8-719-404-46	DIODE MA110	
D105	8-719-404-46	DIODE MA110	
D106	8-719-404-46	DIODE MA110	
D107	8-719-404-46	DIODE MA110	
D108	8-719-404-46	DIODE MA110	
D109	8-719-404-46	DIODE MA110	
D111	8-719-404-46	DIODE MA110	
D112	8-719-404-46	DIODE MA110	
D113	8-719-404-46	DIODE MA110	
		< FILTER >	
FL1	1-236-741-21	FILTER, EMI	
FL2	1-236-741-21	FILTER, EMI	
FL3	1-236-741-21	FILTER, EMI	
FL5	1-236-741-21	FILTER, EMI	
FL6	1-236-071-11	ENCAPSULATED COMPONENT	
		< IC >	
IC1	8-759-333-47	IC HD6475368CP-10	
IC2	8-759-346-07	IC MM1026BFB	
IC3	8-759-395-43	IC CAT28F020P	
IC4	8-752-337-47	IC CXK58257AP-10LL	
IC5	8-759-938-68	IC CXD1095Q	
IC6	8-759-938-68	IC CXD1095Q	
IC7	8-759-054-57	IC μ PD6453GT-101	
IC8	8-759-925-75	IC SN74HC05ANS	
IC9	8-759-082-59	IC TC7W32FU	
IC10	8-759-926-11	IC SN74HC138ANS	
IC11	8-759-981-48	IC TL082M	
IC12	8-759-232-44	IC TC74HC125AF	
IC13	8-759-926-11	IC SN74HC138ANS	
IC14	8-759-061-67	IC MC34051M	
IC15	8-759-925-74	IC SN74HC04ANS	
IC16	8-759-239-55	IC TC74HC123AF	
IC17	8-759-925-73	IC SN74HC03NS	
IC19	8-759-236-19	IC TC74HC151AF(EL)	
IC20	8-759-236-19	IC TC74HC151AF(EL)	
IC21	8-759-236-19	IC TC74HC151AF(EL)	
IC22	8-759-346-05	IC μ PD71051GU-10-E2	
IC23	8-759-346-05	IC μ PD71051GU-10-E2	
IC24	8-759-346-05	IC μ PD71051GU-10-E2	
IC25	8-759-289-45	IC LTC485CS8	
IC26	8-759-289-45	IC LTC485CS8	
IC27	8-759-252-59	IC MAX202CSE	
IC28	8-759-252-59	IC MAX202CSE	
IC30	8-759-926-98	IC SN74HC4040ANS	
IC31	8-759-925-74	IC SN74HC04ANS	
IC32	8-759-925-75	IC SN74HC05ANS	
IC33	8-759-925-75	IC SN74HC05ANS	
IC34	8-759-007-56	IC MC74HC30F	
IC35	8-759-296-77	IC MC74HC541AFEL	
IC36	8-759-252-59	IC MAX202CSE	
IC37	8-759-182-91	IC PQ12TZ5U	
IC51	8-759-700-65	IC NJM79L05A	
IC52	8-759-144-82	IC μ PC2405HF	
IC101	8-759-514-57	IC BA7046F	
IC102	8-752-064-20	IC CXA1727Q	
IC103	8-752-353-22	IC CXD2122Q	
IC104	8-759-926-98	IC SN74HC4040ANS	
IC105	8-752-357-15	IC CXD2343S	
IC106	8-759-037-80	IC MC74HC163AF-T1	
IC109	8-752-334-64	IC CXD1171M	
IC110	8-759-232-80	IC TC74HC166AF	
IC111	8-759-011-65	IC MC74HC4053F	
IC113	8-759-032-23	IC MC74HC74AF	
IC114	8-759-295-09	IC TLC2932IPW	
IC115	8-759-925-78	IC SN74HC10ANS	
IC116	8-759-011-65	IC MC74HC4053F	
IC117	8-759-032-01	IC MC74HC00AF	
IC118	8-759-100-93	IC μ PC393G2	
IC119	8-759-011-65	IC MC74HC4053F	
IC120	8-752-321-16	IC CXD1030M	
IC121	8-759-925-74	IC SN74HC04ANS	
IC122	8-759-032-11	IC MC74HC04AF	
IC123	8-759-032-23	IC MC74HC74AF	
IC124	8-759-328-12	IC Z8622812PSC	
IC125	8-759-925-75	IC SN74HC05ANS	
IC126	8-759-944-79	IC CXD1132Q	
		< IC SOCKET >	
ICS1	1-540-222-11	SOCKET, IC (PCC PACKAGE) 84P	

BC

Les composants identifiés par une tramé et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

REF NO.	PART NO.	DESCRIPTION	REMARK
ICS3	*1-526-660-21	SOCKET, IC (DP) 32P	
ICS4	*1-526-659-00	SOCKET, IC (DP) 28P	
ICS107	*1-526-659-00	SOCKET, IC (DP) 28P	
ICS108	*1-526-659-00	SOCKET, IC (DP) 28P	
		< CHIP CONDUCTOR >	
JR3	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR5	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR6	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR9	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR10	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR12	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR14	1-216-296-91	CONDUCTOR, CHIP (3216)	
JR101	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR102	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR103	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR104	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR105	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR109	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR110	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR112	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR114	1-216-296-91	CONDUCTOR, CHIP (3216)	
JR115	1-216-296-91	CONDUCTOR, CHIP (3216)	
JR116	1-216-296-91	CONDUCTOR, CHIP (3216)	
JR117	1-216-296-91	CONDUCTOR, CHIP (3216)	
JR118	1-216-296-91	CONDUCTOR, CHIP 3216)	
JR119	1-216-296-91	CONDUCTOR, CHIP (3216)	
JR120	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR121	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR122	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR123	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR124	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR125	1-216-295-91	CONDUCTOR, CHIP (2012)	
		< COIL >	
L1	1-410-202-51	INDUCTOR CHIP 6.8µ H	
L201	1-412-537-31	INDUCTOR 100µ H	
		< FILTER >	
LPF101	1-239-289-11	FILTER, LOW PASS	
		< IC LINK >	
PS1	⚠ 1-532-675-21	LINK, IC 1.5A/150V	
PS2	⚠ 1-532-675-21	LINK, IC 1.5A/150V	
		< TRANSISTOR >	
Q1	8-729-901-01	TRANSISTOR DTC144EK	
Q2	8-729-901-06	TRANSISTOR DTA144EK	
Q3	8-729-901-06	TRANSISTOR DTA144EK	
Q4	8-729-901-01	TRANSISTOR DTC144EK	
Q5	8-729-901-01	TRANSISTOR DTC144EK	
Q6	8-729-122-13	TRANSISTOR 2SA1221-K	
Q7	8-729-122-13	TRANSISTOR 2SA1221-K	
Q8	8-729-901-01	TRANSISTOR DTC144EK	
Q9	8-729-921-12	TRANSISTOR 2SD1834	
Q101	8-729-901-06	TRANSISTOR DTA144EK	
Q102	8-729-901-06	TRANSISTOR DTA144EK	
Q103	8-729-901-06	TRANSISTOR DTA144EK	
Q104	8-729-901-06	TRANSISTOR DTA144EK	
Q106	8-729-216-22	TRANSISTOR 2SA1162-G	
Q107	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q108	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q109	8-729-216-22	TRANSISTOR 2SA1162-G	
Q110	8-729-901-06	TRANSISTOR DTA144EK	
Q111	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q112	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q113	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q114	8-729-901-06	TRANSISTOR DTA144EK	
Q115	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q116	8-729-901-01	TRANSISTOR DTC144EK	
Q151	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q152	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q153	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q154	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q155	8-729-216-22	TRANSISTOR 2SA1162-G	
		< RESISTOR >	
R1	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R2	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R3	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R4	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R5	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R6	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R7	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R10	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R11	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R12	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R13	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R14	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R15	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R16	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R17	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R18	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R19	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R20	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R21	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R22	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R23	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R24	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R25	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R26	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R27	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R28	1-216-049-91	METAL GLAZE 1K 5% 1/10W	
R29	1-216-295-91	CONDUCTOR, CHIP (2012)	
R31	1-216-121-91	METAL GLAZE 1M 5% 1/10W	
R32	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R33	1-216-097-91	METAL GLAZE 100K 5% 1/10W	
R34	1-216-097-91	METAL GLAZE 100K 5% 1/10W	

BC

REF NO.	PART NO.	DESCRIPTION			REMARK
R35	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R36	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R37	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R38	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R39	1-216-628-11	METAL CHIP	110	0.50%	1/10W
R40	1-216-628-11	METAL CHIP	110	0.50%	1/10W
R41	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R42	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R43	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R44	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R45	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R46	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R47	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R48	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R51	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R52	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R53	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R54	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R55	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R56	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R57	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R58	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R59	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R60	1-216-045-00	METAL GLAZE	680	5%	1/10W
R61	1-216-047-91	METAL GLAZE	820	5%	1/10W
R62	1-216-053-00	METAL GLAZE	1.5k	5%	1/10W
R63	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R64	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R65	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R66	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R67	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R68	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R69	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R70	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R71	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R72	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R73	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R74	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R75	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R76	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R77	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R84	1-216-033-00	METAL GLAZE	220	5%	1/10W
R85	1-216-033-00	METAL GLAZE	220	5%	1/10W
R86	1-216-033-00	METAL GLAZE	220	5%	1/10W
R87	1-216-033-00	METAL GLAZE	220	5%	1/10W
R88	1-216-033-00	METAL GLAZE	220	5%	1/10W
R89	1-216-033-00	METAL GLAZE	220	5%	1/10W
R101	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R102	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R103	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R104	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R105	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R109	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R110	1-216-079-00	METAL GLAZE	18K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R111	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R112	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R113	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R114	1-216-033-00	METAL GLAZE	220	5%	1/10W
R115	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R116	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R117	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R118	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R119	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R120	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R121	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R122	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R123	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R124	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R125	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R126	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R127	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R128	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R129	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R130	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R131	1-216-025-91	METAL GLAZE	100	5%	1/10W
R132	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R133	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R134	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R135	1-216-025-91	METAL GLAZE	100	5%	1/10W
R136	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R137	1-216-025-91	METAL GLAZE	100	5%	1/10W
R138	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R139	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R140	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R141	1-216-025-91	METAL GLAZE	100	5%	1/10W
R151	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R152	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R153	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R154	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R155	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R156	1-164-004-11	CERAMIC CHIP	0.1	10%	2V
R157	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R159	1-216-133-00	METAL GLAZE	3.3M		1/10W
R161	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R162	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R163	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R164	1-216-025-91	METAL GLAZE	100	5%	1/10W
R165	1-216-045-00	METAL GLAZE	680	5%	1/10W
R166	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R167	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R169	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R170	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R171	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R172	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R181	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R182	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R183	1-216-113-00	METAL GLAZE	470K	5%	1/10W
R184	1-216-099-00	METAL GLAZE	120K	5%	1/10W
R185	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W

BC **BK**

REF NO.	PART NO.	DESCRIPTION			REMARK
R186	1-216-295-91	CONDUCTOR, CHIP (2012)			
R187	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R189	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R190	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R191	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R192	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R193	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R194	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R195	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R196	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R197	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R198	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R199	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R201	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R202	1-216-041-00	METAL GLAZE	470	5%	1/10W
		< VARIABLE RESISTOR >			
RV101	1-238-092-11	RES, ADJ CERMET 47K			
		< SWITCH >			
S1	1-554-123-00	SWITCH, SLIDE (TERMINATE)			
		< TEST PIN >			
TP1	1-537-864-11	PIN, POST			
TP3	1-537-864-11	PIN, POST			
TP5	1-537-864-11	PIN, POST			
TP6	1-537-864-11	PIN, POST			
TP7	1-537-864-11	PIN, POST			
TP8	1-537-864-11	PIN, POST			
TP9	1-537-864-11	PIN, POST			
TP10	1-537-864-11	PIN, POST			
		< CRYSTAL >			
X1	1-577-121-11	VIBRATOR, CRYSTAL (20MHz)			
	3-741-396-01	INSULATOR (X1)			
X2	1-567-879-11	VIBRATOR, CRYSTAL (4.9152MHz)			
	3-741-396-01	INSULATOR (X2)			
X101	1-567-893-11	VIBRATOR, CRYSTAL (14.1875MHz)			
	3-741-396-01	INSULATOR (X101)			
X102	1-577-663-11	VIBRATOR, CRYSTAL (14.3181MHz)			
	3-741-396-01	INSULATOR (X102)			
X103	1-567-867-11	VIBRATOR, CRYSTAL (14.5MHz)			
	3-741-396-01	INSULATOR (X103)			
******	**********	**********	**********	**********	**********
	*A-1135-826-A	COMPLETE PCB, BK (20E1E/20E1U/20F1E/20F1U)			
		**********			
	*A-1135-861-B	COMPLETE PCB, BK (14E1E/14E1U/14E5E/14E5U /14F1E/14F1U/14F5E/14F5U)			
		**********			
	X-4033-103-1	HEATSINK ASSY (BK)			
	X-4033-103-1	HEATSINK ASSY (BK)			
	*X-4033-105-1	PANEL (BK) ASSY, CONNECTOR			
	*3-648-057-00	NUT (IS04), U			

REF NO.	PART NO.	DESCRIPTION			REMARK
	*4-050-795-01	SPACER, REAR PANEL			
	*4-050-805-01	SPRING, IC			
	*4-050-814-01	SHIELD, PCB			
	4-051-217-01	SHEET, RADIATION			
	4-051-217-01	SHEET, RADIATION			
	4-051-217-01	SHEET, RADIATION			
	*4-053-411-01	SHIELD (BK), PCB (14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
	4-382-854-01	SCREW (M3X8), P, SW (+)			
	4-382-854-01	SCREW (M3X8), P, SW (+) (14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
	*4-403-012-01	SPRING, STOPPER			
	4-623-699-01	SCREW (3X5)			
	*4-625-464-01	SUPPORT, FITTING, MB (14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
	7-682-566-04	SCREW +B 4X20			
	7-685-871-01	SCREW +BVTT 3X6 (S)			
	7-682-548-09	SCREW +BVTT 3X8 (S)			
		< CAPACITOR >			
C1	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C3	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C5	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C7	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C8	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C9	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C11	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C12	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C13	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C14	1-126-397-11	ELECT CHIP	33µ F	20%	25V
C15	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C100	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C101	1-163-229-11	CERAMIC CHIP	12PpF	5%	50V
C102	1-115-155-11	ELECT CHIP	22µ F	20%	16V
C103	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C104	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C122	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C128	1-104-752-11	TANTAL, CHIP	33µ F	20%	6.3V
C129	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C130	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C140	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C141	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C142	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C143	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C144	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C145	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C146	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C147	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C154	1-126-390-11	ELECT CHIP	22µ F	20%	6.3V
C160	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C161	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C162	1-163-249-11	CERAMIC CHIP	82pF	5%	50V
C163	1-163-089-00	CERAMIC CHIP	6pF	0.5pF	50V
C164	1-163-031-11	CERAMIC CHIP	0.01µ F		50V

BK

REF NO.	PART NO.	DESCRIPTION			REMARK
C165	1-164-222-11	CERAMIC CHIP	0.22µ F		25V
C166	1-164-700-11	CERAMIC CHIP	0.68µ F		16V
C167	1-164-505-11	CERAMIC CHIP	2.2µ F		50V
C168	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C169	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C170	1-164-336-11	CERAMIC CHIP	0.33µ F		25V
C171	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C172	1-104-823-11	TANTAL. CHIP	47µ F	20%	16V
C173	1-164-005-11	CERAMIC CHIP	0.47µ F		25V
C174	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C175	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C176	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C177	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C178	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C179	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C180	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C181	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C182	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C183	1-163-033-91	CERAMIC CHIP	0.022µ F		50V
C187	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C188	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C189	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C190	1-164-222-11	CERAMIC CHIP	0.22µ F		25V
C191	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C192	1-164-232-11	CERAMIC CHIP	0.01µ F	10%	50V
C193	1-163-035-00	CERAMIC CHIP	2.2µ F		50V
C194	1-106-367-00	MYLAR	0.01µ F	10%	200V
C195	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C196	1-107-943-11	ELECT	10µ F	20%	160V
C197	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C198	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C199	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C200	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C201	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C202	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C203	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C204	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C220	1-163-127-00	CERAMIC CHIP	270pF	5%	50V
C230	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C231	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C232	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C240	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C300	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C301	1-163-229-11	CERAMIC CHIP	12pF	5%	50V
C302	1-115-155-21	ELECT CHIP	22µ F	20%	16V
C303	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C304	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C305	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C307	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C308	1-164-700-11	CERAMIC CHIP	0.68µ F		16V
C309	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C310	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C311	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C322	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C323	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C324	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C326	1-164-222-11	CERAMIC CHIP	0.22µ F		25V
C327	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C328	1-104-752-11	TANTAL. CHIP	33µ F	20%	6.3V
C329	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C330	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C350	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C351	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C352	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C353	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C354	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C355	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C356	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C357	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C360	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C361	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C362	1-163-249-11	CERAMIC CHIP	82pF	5%	50V
C363	1-163-089-00	CERAMIC CHIP	6pF	0.5pF	50V
C374	1-164-222-11	CERAMIC CHIP	0.22µ F		25V
C375	1-164-700-11	CERAMIC CHIP	0.68µ F		16V
C376	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C377	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C378	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C379	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C380	1-164-336-11	CERAMIC CHIP	0.33µ F		25V
C381	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C382	1-104-823-11	TANTAL. CHIP	47µ F	20%	16V
C383	1-164-005-11	CERAMIC CHIP	0.47µ F		25V
C384	1-163-505-11	CERAMIC CHIP	2.2µ F		16V
C385	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C386	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C387	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C388	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C389	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C390	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C391	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C392	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C393	1-163-033-91	CERAMIC CHIP	0.022µ F		50V
C397	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C398	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C399	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C400	1-164-222-11	CERAMIC CHIP	0.22µ F		25V
C401	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C402	1-164-232-11	CERAMIC CHIP	0.01µ F	10%	50V
C403	1-163-035-00	CERAMIC CHIP	0.047µ F		50V
C404	1-106-367-00	MYLAR	0.01µ F	10%	200V
C405	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C406	1-107-943-11	ELECT	10µ F	20%	160V
C407	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C409	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C410	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C411	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C412	1-163-031-11	CERAMIC CHIP	0.01µ F		50V

BK

REF NO.	PART NO.	DESCRIPTION			REMARK
C420	1-163-127-00	CERAMIC CHIP	270pF	5%	50V
C421	1-126-390-11	ELECT CHIP	22µ F	20%	6.3V
C430	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C431	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C432	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C440	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C500	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C501	1-163-229-11	CERAMIC CHIP	12pF	5%	50V
C502	1-115-155-21	ELECT CHIP	22µ F	20%	16V
C503	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C504	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C505	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C507	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C508	1-164-505-11	CERAMIC CHIP	22µ F		16V
C509	1-164-700-11	CERAMIC CHIP	0.68µ F		16V
C510	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C520	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C523	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C524	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C526	1-164-222-11	CERAMIC CHIP	0.22µ F		25V
C527	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C528	1-104-752-11	TANTAL. CHIP	33µ F	20%	6.3V
C529	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C530	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C540	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C541	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C542	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C543	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C544	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C545	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C546	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C547	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C548	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C549	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C560	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C561	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C562	1-163-249-11	CERAMIC CHIP	82pF	5%	50V
C563	1-163-089-00	CERAMIC CHIP	6pF	0.5pF	50V
C567	1-164-222-11	CERAMIC CHIP	0.22µ F		25V
C568	1-164-700-11	CERAMIC CHIP	0.68µ F		16V
C569	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C570	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C571	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C572	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C573	1-164-336-11	CERAMIC CHIP	0.33µ F		25V
C574	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C575	1-104-823-11	TANTAL. CHIP	47µ F	20%	16V
C576	1-164-005-11	CERAMIC CHIP	0.47µ F		25V
C577	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C578	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C579	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C580	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C581	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C582	1-163-031-11	CERAMIC CHIP	0.01µ F		50V

REF NO.	PART NO.	DESCRIPTION			REMARK
C583	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C584	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C585	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C586	1-163-033-91	CERAMIC CHIP	0.022µ F		50V
C590	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C591	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C592	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C593	1-164-222-11	CERAMIC CHIP	0.22µ F		25V
C594	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C595	1-164-232-11	CERAMIC CHIP	0.01µ F	10%	50V
C596	1-163-035-00	CERAMIC CHIP	0.047µ F		50V
C597	1-106-367-00	MYLAR	0.01µ F	10%	200V
C598	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C599	1-107-943-11	ELECT	10µ F	20%	160V
C600	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C601	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C602	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C603	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C604	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C605	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C620	1-163-127-00	CERAMIC CHIP	270pF	5%	50V
C621	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C630	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C631	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C632	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C640	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C700	1-104-539-11	FILM CHIP	0.001µ F	5%	50V
C701	1-104-539-11	FILM CHIP	0.001µ F	5%	50V
C702	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C703	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C704	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C705	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C706	1-107-905-11	ELECT	4.7µ F	20%	50V
C707	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C708	1-115-153-11	ELECT CHIP	4.7µ F	20%	16V
C709	1-107-960-11	ELECT	4.7µ F	20%	160V
C710	1-106-367-00	MYLAR	0.01µ F	10%	200V
C711	1-107-943-11	ELECT	10µ F	20%	160V
C712	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C713	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C728	1-163-009-11	CERAMIC CHIP	0.001µ F	10%	50V
C729	1-104-563-11	FILM CHIP	0.1µ F	5%	16V
C734	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C751	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C770	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C782	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C783	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C800	1-163-229-11	CERAMIC CHIP	12pF	5%	50V
C801	1-163-229-11	CERAMIC CHIP	12pF	5%	50V
C802	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C803	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C804	1-115-155-11	ELECT CHIP	22µ F	20%	16V
C805	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C806	1-163-031-11	CERAMIC CHIP	0.01µ F		50V

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REF NO.	PART NO.	DESCRIPTION			REMARK
C807	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C808	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C809	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C810	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C812	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C813	1-126-394-11	ELECT CHIP	10µ F	20%	16V
C814	1-163-117-00	CERAMIC CHIP	100pF	5%	50V
C815	1-163-257-11	CERAMIC CHIP	180pF	5%	50V
C816	1-163-117-00	CERAMIC CHIP	100pF	5%	50V
C817	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C818	1-126-390-11	ELECT CHIP	22µ F	20%	6.3V
C819	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C820	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C821	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C822	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C823	1-128-235-11	ELECT CHIP	0.47µ F	20%	50V
C824	1-164-346-11	CERAMIC CHIP	1µ F		16V
C825	1-163-121-00	CERAMIC CHIP	150pF	5%	50V
C826	1-163-113-00	CERAMIC CHIP	68pF	5%	50V
C827	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C828	1-163-133-00	CERAMIC CHIP	470pF	5%	50V
C829	1-163-017-00	CERAMIC CHIP	0.0047µ F	10%	50V
C830	1-163-133-00	CERAMIC CHIP	470pF	5%	50V
C831	1-163-017-00	CERAMIC CHIP	0.0047µ F	10%	50V
C832	1-163-133-00	CERAMIC CHIP	470pF	5%	50V
C833	1-163-133-00	CERAMIC CHIP	470pF	5%	50V
C834	1-163-133-00	CERAMIC CHIP	470pF	5%	50V
C835	1-163-117-00	CERAMIC CHIP	100pF	5%	50V
C836	1-163-133-00	CERAMIC CHIP	470pF	5%	50V
C837	1-164-222-11	CERAMIC CHIP	0.22µ F		25V
C838	1-164-222-11	CERAMIC CHIP	0.22µ F		25V
C847	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C850	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C851	1-126-168-11	ELECT	1000µ F	20%	6.3V
C852	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C853	1-126-168-11	ELECT	1000µ F	20%	6.3V
C863	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C900	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C901	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C902	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C903	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C904	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C905	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C907	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C908	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C909	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C910	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C911	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C914	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C915	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C917	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C918	1-164-161-11	CERAMIC CHIP	0.0022µ F	10%	50V
C921	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C924	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C925	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C926	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C927	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C928	1-164-346-11	CERAMIC CHIP	1µ F		16V
C929	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C930	1-126-390-11	ELECT CHIP	22µ F	20%	6.3V
C931	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C1000	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1001	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C1002	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1003	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1004	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C1005	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1006	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1007	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1008	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1009	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1010	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1011	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C1012	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1013	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1014	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C1015	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1016	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1017	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C1019	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1020	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C1021	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1022	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1023	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C1024	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1025	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1026	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1027	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C1028	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1029	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1030	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1031	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1032	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1033	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1034	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1035	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1036	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1037	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C1038	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1039	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1200	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1201	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
C1208	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C1209	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C1210	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1211	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1213	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C1215	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1216	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C1217	1-163-031-11	CERAMIC CHIP	0.01µ F		50V

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REF NO.	PART NO.	DESCRIPTION	REMARK
C1218	1-164-505-11	CERAMIC CHIP 2.2µ F	16V
C1222	1-164-505-11	CERAMIC CHIP 2.2µ F	16V
C1223	1-164-505-11	CERAMIC CHIP 2.2µ F	16V
C1224	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1225	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1227	1-164-505-11	CERAMIC CHIP 2.2µ F	16V
C1229	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1230	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1231	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1235	1-164-505-11	CERAMIC CHIP 2.2µ F	16V
C1236	1-164-505-11	CERAMIC CHIP 2.2µ F	16V
C1237	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1238	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1240	1-164-505-11	CERAMIC CHIP 2.2µ F	16V
C1242	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1243	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1244	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1245	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1246	1-163-031-11	CERAMIC CHIP 0.01µ F	50V
C1247	1-126-396-11	ELECT CHIP 47µ F 20%	16V
C1248	1-163-031-11	CERAMIC CHIP 0.01µ F	
		< CONNECTOR >	
CN1	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P	
CN2	*1-564-507-11	PLUG, CONNECTOR 4P	
CN3	*1-564-507-11	PLUG, CONNECTOR 4P	
CN4	*1-564-507-11	PLUG, CONNECTOR 4P	
CN5	*1-564-506-11	PLUG, CONNECTOR 3P	
		< TRIMMER >	
CV100	1-141-422-11	CAP, ADJ	
CV300	1-141-422-11	CAP, ADJ	
CV500	1-141-422-11	CAP, ADJ	
		< DIODE >	
D102	8-719-016-74	DIODE 1SS352	
D103	8-719-016-74	DIODE 1SS352	
D164	8-719-016-74	DIODE 1SS352	
D165	8-719-016-74	DIODE 1SS352	
D166	8-719-157-72	DIODE RD22M-B	
D167	8-719-901-83	DIODE 1SS83	
D168	8-719-901-83	DIODE 1SS83	
D200	8-719-016-74	DIODE 1SS352	
D201	8-719-106-16	DIODE RD6.8M-B1	
D302	8-719-016-74	DIODE 1SS352	
D303	8-719-016-74	DIODE 1SS352	
D374	8-719-016-74	DIODE 1SS352	
D375	8-719-016-74	DIODE 1SS352	
D376	8-719-157-72	DIODE RD22M-B	
D377	8-719-901-83	DIODE 1SS83	
D378	8-719-901-83	DIODE 1SS83	
D400	8-719-016-74	DIODE 1SS352	
D401	8-719-106-16	DIODE RD6.8M-B1	
D502	8-719-016-74	DIODE 1SS352	
D503	8-719-016-74	DIODE 1SS352	

REF NO.	PART NO.	DESCRIPTION	REMARK
D567	8-719-016-74	DIODE 1SS352	
D568	8-719-016-74	DIODE 1SS352	
D569	8-719-157-72	DIODE RD22M-B	
D570	8-719-901-83	DIODE 1SS83	
D571	8-719-901-83	DIODE 1SS83	
D600	8-719-016-74	DIODE 1SS352	
D601	8-719-106-16	DIODE RD6.8M-B1	
D802	8-719-016-74	DIODE 1SS352	
D803	8-719-016-74	DIODE 1SS352	
D804	8-719-016-74	DIODE 1SS352	
D805	8-719-016-74	DIODE 1SS352	
D900	8-719-158-15	DIODE RD5.6S-B	
D901	8-719-016-74	DIODE 1SS352	
D902	8-719-016-74	DIODE 1SS352	
D903	8-719-016-74	DIODE 1SS352	
D904	8-719-016-74	DIODE 1SS352	
D905	8-719-016-74	DIODE 1SS352	
		< FILTER >	
FL900	1-239-480-11	FILTER, EMI	
FL901	1-239-480-11	FILTER, EMI	
FL902	1-239-183-11	FILTER, EMI	
		< IC >	
IC1	8-759-144-82	IC µ PC2405HF	
IC2	8-759-247-67	IC LM2990T-5.0	
IC3	8-759-701-88	IC NJM7912FA	
IC101	8-759-011-65	IC MC74HC4053F	
IC102	8-759-981-48	IC TL082M	
IC104	8-759-011-65	IC MC74HC4053F	
IC106	8-759-981-48	IC TL082M	
IC107	8-759-082-61	IC TC4W53FU	
IC110	8-759-011-65	IC MC74HC4053F	
IC111	8-759-981-48	IC TL082M	
IC112	8-752-054-80	IC CXA1521M	
IC113	8-759-011-65	IC MC74HC4053F	
IC114	8-759-981-48	IC TL082M	
IC115	8-759-700-95	IC NJM1496M	
IC116	8-759-011-63	IC MC74HC4051F	
IC117	8-759-011-65	IC MC74HC4053F	
IC118	8-759-981-48	IC TL082M	
IC119	8-759-073-90	IC TDA6111Q	
IC121	8-759-981-48	IC TL082M	
IC122	8-759-981-48	IC TL082M	
IC123	8-759-981-48	IC TL082M	
IC124	8-759-011-65	IC MC74HC4053F	
IC126	8-759-011-65	IC MC74HC4053F	
IC127	8-759-981-48	IC TL082M	
IC128	8-759-981-48	IC TL082M	
IC129	8-759-988-13	IC LM393PS	
IC130	8-759-082-61	IC TC4W53FU	
IC131	8-759-058-64	IC TC7S32FU(TE85R)	
IC300	8-759-981-48	IC TL082M	
IC301	8-759-011-65	IC MC74HC4053F	

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REF NO.	PART NO.	DESCRIPTION	REMARK
IC302	8-759-981-48	IC TL082M	
IC303	8-752-054-80	IC CXA1521M	
IC304	8-759-011-65	IC MC74HC4053F	
IC305	8-752-053-21	IC CXA1211M	
IC306	8-759-981-48	IC TL082M	
IC307	8-759-082-61	IC TC4W53FU	
IC310	8-759-011-65	IC MC74HC4053F	
IC311	8-759-981-48	IC TL082M	
IC312	8-752-054-80	IC CXA1521M	
IC313	8-759-011-65	IC MC74HC4053F	
IC314	8-759-981-48	IC TL082M	
IC315	8-759-700-95	IC NJM1496M	
IC316	8-759-011-63	IC MC74HC4051F	
IC317	8-759-011-65	IC MC74HC4053F	
IC318	8-759-981-48	IC TL082M	
IC319	8-759-073-90	IC TDA6111Q	
IC320	8-759-981-48	IC TL082M	
IC321	8-759-981-48	IC TL082M	
IC322	8-759-981-48	IC TL082M	
IC323	8-759-981-48	IC TL082M	
IC324	8-759-011-65	IC MC74HC4053F	
IC325	8-759-082-61	IC TC4W53FU	
IC326	8-759-011-65	IC MC74HC4053F	
IC327	8-759-981-48	IC TL082M	
IC328	8-759-981-48	IC TL082M	
IC329	8-759-988-13	IC LM393PS	
IC330	8-759-082-61	IC TC4W53FU	
IC331	8-759-058-64	IC TC7S32FU(TE85R)	
IC500	8-759-011-65	IC MC74HC4053F	
IC501	8-759-011-65	IC MC74HC4053F	
IC502	8-759-981-48	IC TL082M	
IC503	8-752-054-80	IC CXA1521M	
IC504	8-759-011-65	IC MC74HC4053F	
IC506	8-759-981-48	IC TL082M	
IC507	8-759-082-61	IC TC4W53FU	
IC508	8-759-082-61	IC TC4W53FU	
IC509	8-759-058-54	IC TC7S00FU(TE85R)	
IC510	8-759-011-65	IC MC74HC4053F	
IC511	8-759-981-48	IC TL082M	
IC512	8-752-054-80	IC CXA1521M	
IC513	8-759-011-65	IC MC74HC4053F	
IC514	8-759-981-48	IC TL082M	
IC515	8-759-700-95	IC NJM1496M	
IC516	8-759-011-63	IC MC74HC4051F	
IC517	8-759-011-65	IC MC74HC4053F	
IC518	8-759-981-48	IC TL082M	
IC519	8-759-073-90	IC TDA6111Q	
IC520	8-759-981-48	IC TL082M	
IC521	8-759-981-48	IC TL082M	
IC522	8-759-981-48	IC TL082M	
IC523	8-759-981-48	IC TL082M	
IC524	8-759-011-65	IC MC74HC4053F	
IC525	8-759-082-61	IC TC4W53FU	
IC526	8-759-011-65	IC MC74HC4053F	
IC527	8-759-981-48	IC TL082M	
IC528	8-759-981-48	IC TL082M	
IC529	8-759-988-13	IC LM393PS	
IC530	8-759-082-61	IC TC4W53FU	
IC531	8-759-058-64	IC TC7S32FU(TE85R)	
IC700	8-759-988-13	IC LM393PS	
IC701	8-759-011-65	IC MC74HC4053F	
IC702	8-759-011-64	IC MC74HC4052F	
IC703	8-759-988-13	IC LM393PS	
IC704	8-759-981-48	IC TL082M	
IC705	8-759-981-48	IC TL082M	
IC706	8-759-346-42	IC TDA6101Q/N3	
IC728	8-759-032-01	IC MC74HC00AF	
IC730	8-759-925-72	IC SN74HC02ANS	
IC731	8-759-925-80	IC SN74HC14ANS	
IC732	8-759-007-80	IC MC74HC175F	
IC734	8-759-007-50	IC MC74HC11F	
IC735	8-759-925-72	IC SN74HC02ANS	
IC736	8-759-925-72	IC SN74HC02ANS	
IC800	8-759-011-65	IC MC74HC4053F	
IC801	8-759-008-45	IC MC74HC4538F	
IC802	8-759-100-96	IC μ PC4558G2	
IC803	8-759-008-45	IC MC74HC4538F	
IC804	8-759-008-45	IC MC74HC4538F	
IC805	8-759-058-55	IC TC7S02FU-TE85L	
IC900	8-759-032-26	IC MC74HC125AF	
IC901	8-759-981-48	IC TL082M	
IC902	8-759-346-47	IC MB89613R-236	
IC903	8-759-156-54	IC X25040SI	
IC904	8-759-988-13	IC LM393PS	
IC905	8-759-032-53	IC MC74HC244AF	
IC906	8-759-059-50	IC MB88351PFV	
IC907	8-759-059-50	IC MB88351PFV	
IC908	8-759-064-36	IC MB88346BPFV	
IC909	8-759-059-50	IC MB88351PFV	
IC910	8-759-064-36	IC MB88346BPFV	
IC911	8-759-059-50	IC MB88351PFV	
IC912	8-759-082-59	IC TC7W32FU	
IC913	8-759-011-65	IC MC74HC4053F	
		< CHIP CONDUCTOR CHIP >	
JR101	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR301	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR501	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR901	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR902	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR903	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR904	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR905	1-216-295-91	CONDUCTOR, CHIP (2012)	
JR906	1-216-295-91	CONDUCTOR, CHIP (2012)	
		< COIL >	
L728	1-410-686-11	INDUCTOR 1mH	
L900	1-412-002-31	INDUCTOR CHIP 4.7μ H	

BK

REF NO.	PART NO.	DESCRIPTION	REMARK
		< TRANSISTOR >	
Q100	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q101	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q102	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q103	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q104	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q105	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q106	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q107	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q108	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q140	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q141	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q142	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q143	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q144	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q164	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q165	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q166	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q167	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q168	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q169	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q170	8-729-920-59	TRANSISTOR IMX2	
Q171	8-729-920-59	TRANSISTOR IMX2	
Q172	8-729-920-59	TRANSISTOR IMX2	
Q173	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q174	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q175	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q176	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q177	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q178	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q179	8-729-103-53	TRANSISTOR 2SC1654-N7	
Q190	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q200	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q300	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q301	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q302	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q303	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q304	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q305	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q306	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q307	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q308	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q309	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q310	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q350	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q351	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q352	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q353	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q354	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q374	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q375	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q376	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q377	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q378	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q379	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q380	8-729-920-59	TRANSISTOR IMX2	
Q381	8-729-920-59	TRANSISTOR IMX2	
Q382	8-729-920-59	TRANSISTOR IMX2	
Q383	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q384	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q385	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q386	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q387	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q388	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q389	8-729-103-53	TRANSISTOR 2SC1654-N7	
Q390	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q400	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q500	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q501	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q502	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q503	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q504	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q505	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q506	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q507	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q510	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q540	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q541	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q542	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q543	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q544	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q567	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q568	8-729-920-59	TRANSISTOR IMX2	
Q569	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q570	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q571	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q572	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q573	8-729-920-59	TRANSISTOR IMX2	
Q574	8-729-920-59	TRANSISTOR IMX2	
Q575	8-729-920-59	TRANSISTOR IMX2	
Q576	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q577	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q578	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q579	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q580	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q581	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q582	8-729-103-53	TRANSISTOR 2SC1654-N7	
Q590	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q600	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q700	8-729-216-22	TRANSISTOR 2SA1162-G	
Q701	8-729-216-22	TRANSISTOR 2SA1162-G	
Q702	8-729-216-22	TRANSISTOR 2SA1162-G	
Q728	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q729	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q800	8-729-216-22	TRANSISTOR 2SA1162-G	
Q801	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q802	8-729-216-22	TRANSISTOR 2SA1162-G	
Q803	8-729-920-59	TRANSISTOR IMX2	

BK

REF NO.	PART NO.	DESCRIPTION	REMARK
Q804	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q805	8-729-920-59	TRANSISTOR IMX2	
Q806	8-729-216-22	TRANSISTOR 2SA1162-G	
Q807	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q808	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q809	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q810	8-729-925-42	TRANSISTOR IMT2	
Q811	8-729-925-42	TRANSISTOR IMT2	
Q812	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q813	8-729-216-22	TRANSISTOR 2SA1162-G	
Q814	8-729-216-22	TRANSISTOR 2SA1162-G	
Q815	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q816	8-729-216-22	TRANSISTOR 2SA1162-G	
Q817	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q818	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q819	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q820	8-729-216-22	TRANSISTOR 2SA1162-G	
Q821	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q822	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q823	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q824	8-729-216-22	TRANSISTOR 2SA1162-G	
Q825	8-729-216-22	TRANSISTOR 2SA1162-G	
Q826	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q827	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q900	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q901	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q902	8-729-027-38	TRANSISTOR DTA144EKA-T146	

< RESISTOR >

R10	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R11	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R12	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R13	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R14	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R15	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R16	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R17	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R20	1-249-400-11	CARBON	39	5%	1/4W	F
R100	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R101	1-216-119-00	METAL GLAZE	820K	5%	1/10W	
R102	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R103	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R104	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R105	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R106	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R107	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R108	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R109	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R110	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R111	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W	
R112	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R113	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R114	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R115	1-216-033-00	METAL GLAZE	220	5%	1/10W	

REF NO.	PART NO.	DESCRIPTION			REMARK
R116	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R117	1-216-045-00	METAL GLAZE	680	5%	1/10W
R118	1-216-009-00	METAL GLAZE	22	5%	1/10W
R119	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R121	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R122	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R123	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R124	1-216-025-91	METAL GLAZE	100	5%	1/10W
R140	1-216-638-11	METAL CHIP	300	0.50%	1/10W
R141	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W
R142	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R143	1-216-047-91	METAL GLAZE	820	5%	1/10W
R144	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R147	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R148	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R149	1-216-025-91	METAL GLAZE	100	5%	1/10W
R150	1-218-760-11	METAL CHIP	220K	0.50%	1/10W
R151	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R152	1-208-854-11	METAL CHIP	1M	0.50%	1/10W
R153	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R155	1-216-650-11	METAL CHIP	910	0.50%	1/10W
R156	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R157	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R158	1-208-824-11	METAL CHIP	56K	0.50%	1/10W
R159	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R160	1-216-025-91	METAL GLAZE	100	5%	1/10W
R162	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R163	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R164	1-216-633-11	METAL CHIP	180	0.50%	1/10W
R165	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R166	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R167	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R168	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R169	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R170	1-208-785-11	METAL CHIP	1.3K	0.50%	1/10W
R171	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R172	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R173	1-216-025-91	METAL GLAZE	100	5%	1/10W
R174	1-216-033-00	METAL GLAZE	220	5%	1/10W
R175	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R176	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R177	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R178	1-216-662-11	METAL CHIP	3K	0.50%	1/10W
R179	1-216-025-91	METAL GLAZE	100	5%	1/10W
R180	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R181	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R182	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R183	1-216-025-91	METAL GLAZE	100	5%	1/10W
R184	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R185	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R186	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R187	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R188	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R189	1-216-025-91	METAL GLAZE	100	5%	1/10W
R190	1-208-806-11	METAL CHIP	10K	0.50%	1/10W

BK

REF NO.	PART NO.	DESCRIPTION			REMARK
R191	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R192	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R193	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R194	1-216-025-91	METAL GLAZE	100	5%	1/10W
R195	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R196	1-216-025-91	METAL GLAZE	100	5%	1/10W
R197	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R198	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R199	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R201	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R202	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R203	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R204	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R205	1-216-025-91	METAL GLAZE	100	5%	1/10W
R206	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R207	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R208	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R210	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R211	1-216-025-91	METAL GLAZE	100	5%	1/10W
R212	1-216-025-91	METAL GLAZE	100	5%	1/10W
R213	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R214	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R215	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R216	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W
R217	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R218	1-216-025-91	METAL GLAZE	100	5%	1/10W
R219	1-216-033-00	METAL GLAZE	220	5%	1/10W
R220	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R221	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R222	1-216-025-91	METAL GLAZE	100	5%	1/10W
R223	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R224	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R225	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R226	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R227	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R228	1-216-025-91	METAL GLAZE	100	5%	1/10W
R229	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R230	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R232	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R236	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R237	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R238	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R239	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R240	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R241	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R242	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R243	1-208-803-11	METAL CHIP	7.5K	0.50%	1/10W
R244	1-216-111-91	METAL GLAZE	390K	5%	1/10W
R245	1-216-033-00	METAL GLAZE	220	5%	1/10W
R246	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R247	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R248	1-214-903-31	METAL	39K	1%	1/2W
R249	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R250	1-216-033-00	METAL GLAZE	220	5%	1/10W
R251	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R252	1-216-689-11	METAL GLAZE	39K	5%	1/10W
R253	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R254	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R255	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R256	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R257	1-202-549-00	SOLID	100	20%	1/2W
R258	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R259	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R272	1-216-025-91	METAL GLAZE	100	5%	1/10W
R273	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R287	1-216-033-00	METAL GLAZE	220	5%	1/10W
R288	1-216-033-00	METAL GLAZE	220	5%	1/10W
R300	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R301	1-216-119-00	METAL GLAZE	820K	5%	1/10W
R302	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R303	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R305	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R306	1-216-025-91	METAL GLAZE	100	5%	1/10W
R307	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R308	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R309	1-216-009-00	METAL GLAZE	22	5%	1/10W
R310	1-216-009-00	METAL GLAZE	22	5%	1/10W
R311	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R312	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R313	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R314	1-216-009-00	METAL CHIP	22	5%	1/10W
R315	1-216-676-11	METAL CHIP	11K	0.50%	1/10W
R316	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R317	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R318	1-216-033-00	METAL GLAZE	220	5%	1/10W
R319	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R320	1-216-045-00	METAL GLAZE	680	5%	1/10W
R321	1-216-009-00	METAL GLAZE	22	5%	1/10W
R322	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R324	1-216-025-91	METAL GLAZE	100	5%	1/10W
R327	1-216-025-91	METAL GLAZE	100	5%	1/10W
R328	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R329	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R330	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R331	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R332	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R333	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R334	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R335	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R336	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R337	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R338	1-216-650-11	METAL CHIP	910	0.50%	1/10W
R340	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R342	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R343	1-216-025-91	METAL GLAZE	100	5%	1/10W
R344	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W
R345	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R346	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R350	1-216-638-11	METAL CHIP	300	0.50%	1/10W
R351	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W

BK

REF NO.	PART NO.	DESCRIPTION			REMARK
R352	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R353	1-216-047-91	METAL GLAZE	820	5%	1/10W
R354	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R357	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R358	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R359	1-216-025-91	METAL GLAZE	100	5%	1/10W
R360	1-218-760-11	METAL CHIP	220K	0.50%	1/10W
R361	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R362	1-208-854-11	METAL CHIP	1M	0.50%	1/10W
R363	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R365	1-216-650-11	METAL CHIP	910	0.50%	1/10W
R366	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R367	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R368	1-208-824-11	METAL CHIP	56K	0.50%	1/10W
R369	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R370	1-216-025-91	METAL GLAZE	100	5%	1/10W
R372	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R373	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R374	1-216-633-11	METAL CHIP	180	0.50%	1/10W
R375	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R376	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R377	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R378	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R379	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R380	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R381	1-216-025-91	METAL GLAZE	100	5%	1/10W
R383	1-216-065-11	METAL GLAZE	4.7K	5%	1/10W
R384	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R385	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R386	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R387	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R388	1-216-662-11	METAL CHIP	3K	0.50%	1/10W
R389	1-216-025-91	METAL GLAZE	100	5%	1/10W
R390	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R391	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R392	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R393	1-216-025-91	METAL GLAZE	100	5%	1/10W
R394	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R395	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R396	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R397	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R398	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R399	1-216-025-91	METAL GLAZE	100	5%	1/10W
R400	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R401	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R402	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R403	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R404	1-216-025-91	METAL GLAZE	100	5%	1/10W
R405	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R406	1-216-025-91	METAL GLAZE	100	5%	1/10W
R407	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R408	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R409	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R411	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R412	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R413	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R414	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R415	1-216-025-91	METAL GLAZE	100	5%	1/10W
R416	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R417	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R418	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R420	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R421	1-216-025-91	METAL GLAZE	100	5%	1/10W
R422	1-216-025-91	METAL GLAZE	100	5%	1/10W
R423	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R424	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R425	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R426	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W
R427	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R428	1-216-025-91	METAL GLAZE	100	5%	1/10W
R429	1-216-033-00	METAL GLAZE	220	5%	1/10W
R430	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R431	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R432	1-216-025-91	METAL GLAZE	100	5%	1/10W
R433	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R434	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R435	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R436	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R437	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R438	1-216-025-91	METAL GLAZE	100	5%	1/10W
R439	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R440	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R442	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R446	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R447	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R448	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R449	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R450	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R451	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R452	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R453	1-208-803-11	METAL CHIP	7.5K	0.50%	1/10W
R454	1-216-111-91	METAL GLAZE	390K	5%	1/10W
R455	1-216-033-00	METAL GLAZE	220	5%	1/10W
R456	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R457	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R458	1-214-903-31	METAL	39K	1%	1/2W
R459	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R460	1-216-033-00	METAL GLAZE	220	5%	1/10W
R461	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R462	1-216-689-11	METAL GLAZE	39K	5%	1/10W
R463	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R464	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R465	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R466	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R467	1-202-549-00	SOLID	100	20%	1/2W
R468	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R469	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R472	1-216-025-91	METAL GLAZE	100	5%	1/10W
R473	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R474	1-216-033-00	METAL GLAZE	220	5%	1/10W

BK

REF NO.	PART NO.	DESCRIPTION			REMARK
R480	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R481	1-208-854-11	METAL CHIP	1M	0.50%	1/10W
R482	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R483	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R485	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R486	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R487	1-216-033-00	METAL GLAZE	220	5%	1/10W
R488	1-216-033-00	METAL GLAZE	220	5%	1/10W
R500	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R501	1-216-119-00	METAL GLAZE	820K	5%	1/10W
R502	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R503	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R505	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R506	1-216-025-91	METAL GLAZE	100	5%	1/10W
R507	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R508	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R509	1-216-009-00	METAL GLAZE	22	5%	1/10W
R510	1-216-009-00	METAL GLAZE	22	5%	1/10W
R511	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R512	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R513	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R514	1-216-009-00	METAL GLAZE	22	5%	1/10W
R515	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W
R516	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R517	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R518	1-216-033-00	METAL GLAZE	220	5%	1/10W
R519	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R520	1-216-045-00	METAL GLAZE	680	5%	1/10W
R521	1-216-009-00	METAL GLAZE	22	5%	1/10W
R522	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R524	1-216-025-91	METAL GLAZE	100	5%	1/10W
R527	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R528	1-216-690-11	METAL CHIP	43K	0.50%	1/10W
R529	1-216-025-91	METAL GLAZE	100	5%	1/10W
R530	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R531	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R532	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R540	1-216-637-11	METAL CHIP	270	0.50%	1/10W
R541	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W
R542	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R543	1-216-047-91	METAL GLAZE	820	5%	1/10W
R544	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R547	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R548	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R549	1-216-025-91	METAL GLAZE	100	5%	1/10W
R550	1-218-760-11	METAL CHIP	220K	0.50%	1/10W
R551	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R552	1-208-854-11	METAL CHIP	1M	0.50%	1/10W
R553	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R555	1-216-650-11	METAL CHIP	910	0.50%	1/10W
R556	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R557	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R558	1-208-824-11	METAL CHIP	56K	0.50%	1/10W
R559	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R560	1-216-025-91	METAL GLAZE	100	5%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R562	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R563	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R564	1-216-025-91	METAL GLAZE	100	5%	1/10W
R565	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R566	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R567	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R568	1-216-633-11	METAL CHIP	180	0.50%	1/10W
R569	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R570	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R571	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R572	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R573	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R574	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R575	1-216-025-91	METAL GLAZE	100	5%	1/10W
R576	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R577	1-216-065-11	METAL GLAZE	4.7K	5%	1/10W
R578	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R579	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R580	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R581	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R582	1-216-662-11	METAL CHIP	3K	0.50%	1/10W
R583	1-216-025-91	METAL GLAZE	100	5%	1/10W
R584	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R585	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R586	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R587	1-216-025-91	METAL GLAZE	100	5%	1/10W
R588	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R589	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R590	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R591	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R592	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R593	1-216-025-91	METAL GLAZE	100	5%	1/10W
R594	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R595	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R596	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R597	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R598	1-216-025-91	METAL GLAZE	100	5%	1/10W
R599	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R600	1-216-025-91	METAL GLAZE	100	5%	1/10W
R601	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R602	1-208-789-11	METAL CHIP	2K	0.50%	1/10W
R603	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R605	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R606	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R607	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R608	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R609	1-216-025-91	METAL GLAZE	100	5%	1/10W
R610	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R611	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R612	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R614	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R615	1-216-025-91	METAL GLAZE	100	5%	1/10W
R616	1-216-025-91	METAL GLAZE	100	5%	1/10W
R617	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R618	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W

BK

REF NO.	PART NO.	DESCRIPTION			REMARK
R619	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R620	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W
R621	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R622	1-216-025-91	METAL GLAZE	100	5%	1/10W
R623	1-216-033-00	METAL GLAZE	220	5%	1/10W
R624	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R625	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R626	1-216-025-91	METAL GLAZE	100	5%	1/10W
R627	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R628	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R629	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R630	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R631	1-208-784-11	METAL CHIP	1.2K	0.50%	1/10W
R632	1-216-025-91	METAL GLAZE	100	5%	1/10W
R633	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R634	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R636	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R640	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R641	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R642	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R643	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R644	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R645	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R646	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R647	1-208-803-11	METAL CHIP	7.5K	0.50%	1/10W
R648	1-216-111-91	METAL GLAZE	390K	5%	1/10W
R649	1-216-033-00	METAL GLAZE	220	5%	1/10W
R650	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R651	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R652	1-214-903-31	METAL	39K	1%	1/2W
R653	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R654	1-216-033-00	METAL GLAZE	220	5%	1/10W
R655	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R656	1-216-689-11	METAL GLAZE	39K	5%	1/10W
R657	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R658	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R659	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R660	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R661	1-202-549-00	SOLID	100	20%	1/2W
R662	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R663	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R672	1-216-025-91	METAL GLAZE	100	5%	1/10W
R673	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R674	1-216-033-00	METAL GLAZE	220	5%	1/10W
R680	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R681	1-208-854-11	METAL CHIP	1M	0.50%	1/10W
R682	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R683	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R685	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R686	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R687	1-216-033-00	METAL GLAZE	220	5%	1/10W
R688	1-216-033-00	METAL GLAZE	220	5%	1/10W
R700	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R701	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R702	1-208-806-11	METAL CHIP	10K	0.50%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R703	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R704	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R705	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R706	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R707	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R708	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R709	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R710	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R711	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R712	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R713	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R714	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R715	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R716	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R717	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R718	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R719	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R720	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R721	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R723	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R724	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R725	1-214-903-31	METAL	39K	1%	1/2W
R726	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R727	1-202-549-00	SOLID	100	20%	1/2W
R728	1-216-025-91	METAL GLAZE	100	5%	1/10W
R729	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R730	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R731	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R732	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R733	1-216-295-91	CONTUCTOR, CHIP (2012)			
R734	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R735	1-216-033-00	METAL GLAZE	220	5%	1/10W
R736	1-216-033-00	METAL GLAZE	220	5%	1/10W
R800	1-216-025-91	METAL GLAZE	100	5%	1/10W
R801	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R802	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R803	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R804	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R805	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R806	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R807	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R808	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R809	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R810	1-216-045-00	METAL GLAZE	680	5%	1/10W
R811	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R812	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R813	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R814	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R815	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R816	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R817	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R818	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R819	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R820	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R821	1-216-049-91	METAL GLAZE	1K	5%	1/10W

BK

REF NO.	PART NO.	DESCRIPTION			REMARK
R822	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R823	1-216-037-00	METAL GLAZE	330	5%	1/10W
R824	1-216-041-00	METAL GLAZE	470	5%	1/10W
R825	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R826	1-216-694-11	METAL CHIP	62K	0.50%	1/10W
R827	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R828	1-216-037-00	METAL GLAZE	330	5%	1/10W
R829	1-218-766-11	METAL CHIP	390K	0.50%	1/10W
R830	1-218-755-11	METAL CHIP	130K	0.50%	1/10W
R831	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R832	1-216-637-11	METAL CHIP	270	0.50%	1/10W
R833	1-216-637-11	METAL CHIP	270	0.50%	1/10W
R834	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R835	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R836	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R837	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R838	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R839	1-216-676-11	METAL CHIP	11K	0.50%	1/10W
R840	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R841	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R842	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R843	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R844	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R845	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R846	1-208-810-11	METAL CHIP	15K	0.50%	1/10W
R847	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R848	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R849	1-216-037-00	METAL GLAZE	330	5%	1/10W
R850	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R851	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R852	1-216-094-00	METAL GLAZE	75K	5%	1/10W
R853	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R854	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R855	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R856	1-216-064-00	METAL GLAZE	4.3K	5%	1/10W
R857	1-216-064-00	METAL GLAZE	4.3K	5%	1/10W
R858	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R859	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R860	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R861	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R862	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R863	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W
R864	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R865	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R866	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R867	1-216-025-91	METAL GLAZE	100	5%	1/10W
R868	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R869	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R870	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R871	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R872	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R873	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R874	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R875	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R876	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R900	1-216-025-91	METAL GLAZE	100	5%	1/10W
R901	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R902	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R903	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R904	1-216-025-91	METAL GLAZE	100	5%	1/10W
R905	1-216-025-91	METAL GLAZE	100	5%	1/10W
R906	1-216-025-91	METAL GLAZE	100	5%	1/10W
R907	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R908	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R909	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R910	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R911	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R912	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R913	1-208-812-11	METAL CHIP	18K	0.50%	1/10W
R914	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R915	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R916	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R917	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R918	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R919	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R920	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R921	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R922	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R923	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R924	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R925	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R926	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R927	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R928	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R929	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R930	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R931	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R932	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R933	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R934	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R935	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R936	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R937	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R938	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R939	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R940	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R947	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R948	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R949	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R950	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R951	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R952	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R953	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R955	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R956	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R957	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R960	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R970	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R980	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifiés par une tramé et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

BK **PC** **PA**

REF NO.	PART NO.	DESCRIPTION			REMARK
		< TERMINAL BOARD >			
TB1	1-537-959-11	TERMINAL BOARD ASSY, I/O			
		< THERMISTOR >			
TH300	1-807-796-11	THERMISTOR			
		< CRYSTAL >			
X900	1-578-689-21	VIBRATOR			
**********					
	*A-1190-229-A	MOUNTED PCB. PC (20E1E/20E1U/20F1E/20F1U) **********			
	*A-1190-238-A	MOUNTED PCB. PC (14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U) **********			
		< CAPACITOR >			
C1	1-106-367-00	MYLAR	0.01µ F	10%	100V
C2	1-106-367-00	MYLAR	0.01µ F	10%	100V
		< CONNECTOR >			
CN1	*1-573-986-11	PIN, CONNECTOR (PC BOARD) 5P			
CN2	*1-564-514-11	PLUG, CONNECTOR 11P			
CN3	*1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P			
		< RESISTOR >			
R1	1-215-437-00	METAL	4.7K	1%	1/4W
R2	1-215-437-00	METAL	4.7K	1%	1/4W
R3	1-215-428-00	METAL	2K	1%	1/4W
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
R3	1-215-426-00	METAL	1.6K	1%	1/4W
		(20E1E/20E1U/20F1E/20F1U)			
R4	1-215-437-00	METAL	4.7K	1%	1/4W
R5	1-215-437-00	METAL	4.7K	1%	1/4W
R6	1-215-427-00	METAL	1.8K	1%	1/4W
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
R6	1-215-425-00	METAL	1.5K	1%	1/4W
		(20E1E/20E1U/20F1E/20F1U)			
R7	1-216-393-00	METAL OXIDE	2.2	5%	3W F
		(20E1E/20E1U/20F1E/20F1U)			
R7	1-216-389-11	METAL OXIDE	1	5%	3W F
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
		< TRANSFORMER >			
T1 ⚠	X-4033-491-1	FBT ASSY, NX-4201//1E4 (14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
T1 ⚠	X-4033-492-1	FBT ASSY, NX-4201//1E4 (20E1E/20E1U/20F1E/20F1U)			
**********					
	*A-1195-097-A	COMPLETE PCB. PA (20F1E/20F1U) **********			
	*A-1195-098-B	COMPLETE PCB. PA (14F1E/14F1U/14F5E/14F5U) **********			
	*A-1195-104-B	COMPLETE PCB. PA (20E1E/20E1U) **********			
	*A-1195-111-A	COMPLETE PCB. PA (14E1E/14E1U/14E5E/14E5U) **********			
		< CAPACITOR >			
C101	1-126-934-11	ELECT	220µ F	20%	16V
C102	1-123-024-21	ELECT	33µ F		160V
C103	1-106-359-00	MYLAR	0.0047µ F	10%	200V
C104	1-136-111-00	FILM	1µ F	5%	200V
C105	1-106-355-12	MYLAR	0.0033µ F	10%	200V
C106	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C107	1-162-134-11	CERAMIC	470pF	10%	2KV
C108	1-136-080-00	FILM	0.011µ F	3%	2KV
C109	1-107-912-11	ELECT	330µ F	20%	50V
C110	1-107-912-11	ELECT	330µ F	20%	50V
C201	1-126-934-11	ELECT	220µ F	20%	16V
C202	1-164-232-11	CERAMIC CHIP	0.01µ F	10%	50V
C203	1-162-114-00	CERAMIC	0.0047µ F		2KV
C301	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C302	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C303	1-163-093-00	CERAMIC CHIP	10pF	5%	50V
C304	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C305	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C501	1-124-242-00	ELECT	33µ F	20%	25V
C502	1-163-117-00	CERAMIC CHIP	100pF	5%	50V
C503	1-126-160-11	ELECT	1µ F	20%	50V
C504	1-164-161-11	CERAMIC CHIP	0.0022µ F	10%	50V
C505	1-124-234-00	ELECT	22µ F	20%	16V
C506	1-163-009-11	CERAMIC CHIP	0.001µ F	10%	50V
C507	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C508	1-163-125-00	CERAMIC CHIP	220pF	5%	50V
C509	1-126-157-11	ELECT	10µ F	20%	16V
C510	1-124-242-00	ELECT	33µ F	20%	25V
C511	1-164-346-11	CERAMIC CHIP	1µ F		16V
C512	1-164-232-11	CERAMIC CHIP	0.01µ F	10%	50V
C513	1-164-346-11	CERAMIC CHIP	1µ F		16V
C514	1-164-346-11	CERAMIC CHIP	1µ F		16V
C515	1-164-232-11	CERAMIC CHIP	0.01µ F	10%	50V
C516	1-164-346-11	CERAMIC CHIP	1µ F		16V
C517	1-126-964-11	ELECT	10µ F	20%	50V
C518	1-107-701-11	ELECT	47µ F	20%	16V
C521	1-164-346-11	CERAMIC CHIP	1µ F		16V
C522	1-126-163-11	ELECT	4.7µ F	20%	16V
C801	1-126-160-11	ELECT	1µ F	20%	50V
C802	1-130-481-00	MYLAR	0.0068µ F	5%	50V
C811	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C901	1-128-526-11	ELECT	100µ F	20%	25V
C902	1-128-526-11	ELECT	100µ F	20%	25V
C903	1-164-232-11	CERAMIC CHIP	0.01µ F	10%	50V
C904	1-164-232-11	CERAMIC CHIP	0.01µ F	10%	50V
C907	1-107-639-11	ELECT	47µ F	20%	160V
C911	1-104-664-11	ELECT	47µ F	20%	25V
C912	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V

PA

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Replace only with the part number specified.

REF NO.	PART NO.	DESCRIPTION	REMARK
C921	1-128-526-11	ELECT 100µ F 20% 25V	
C923	1-164-232-11	CERAMIC CHIP 0.01µ F 10% 50V	
		< CONNECTOR >	
CN901	1-774-536-11	CONNECTOR PIN (PC BOARD) 34P	
CN902	1-766-243-11	PIN, CONNECTOR (PC BOARD) 5P	
CN903	1-766-241-11	PIN, CONNECTOR (PC BOARD) 3P	
CN904	*1-564-514-11	PLUG, CONNECTOR 11P	
CN905	1-766-240-11	PIN, CONNECTOR (PC BOARD) 2P	
CN906	*1-564-507-11	PLUG, CONNECTOR 4P	
		< DIODE >	
D101	8-719-404-46	DIODE MA110	
D102	8-719-106-71	DIODE RD12M-B2	
D103	8-719-920-67	DIODE ERC91-02	
D104	8-719-404-46	DIODE MA110	
D105	8-719-939-07	DIODE ERD38-06	
D106	8-719-939-07	DIODE ERD38-06	
D107	8-719-941-74	DIODE ERB91-02	
D201	8-719-901-19	DIODE V11N	
D203	8-719-404-46	DIODE MA110	
D204	8-719-404-46	DIODE MA110	
D205	8-719-404-46	DIODE MA110	
D301	8-719-404-46	DIODE MA110	
D321	8-719-404-46	DIODE MA110	
D322	8-719-404-46	DIODE MA110	
D401	8-719-404-46	DIODE MA110	
D501	8-719-404-46	DIODE MA110	
D502	8-719-404-46	DIODE MA110	
D505	8-719-404-46	DIODE MA110	
D511	8-719-404-46	DIODE MA110	
D512	8-719-404-46	DIODE MA110	
D513	8-719-105-38	DIODE RD3.0M-B1	
D514	8-719-404-46	DIODE MA110	
D516	8-719-404-46	DIODE MA110	
D517	8-719-105-38	DIODE RD3.0M-B1	
D518	8-719-404-46	DIODE MA110	
D519	8-719-404-46	DIODE MA110	
D521	8-719-404-46	DIODE MA110	
D801	8-719-106-71	DIODE RD12M-B2	
D802	8-719-404-46	DIODE MA110	
D901	⚠ 8-759-300-59	DIODE HZT33-02TA	
D902	⚠ 8-759-300-59	DIODE HZT33-02TA	
		< IC >	
IC401	8-759-983-69	IC LM358PS	
IC501	8-759-346-56	IC FA5301N-TE1	
IC502	8-759-988-13	IC LM393PS	
IC801	8-759-981-48	IC TL082M	
IC901	8-759-231-58	IC TA7812S	
		< CHIP CONDUCTOR >	
JR100	1-216-295-91	CONDUCTOR, CHIP (2012) (14F1E/14F1U/14F5E/14F5U/20F1E/20F1U)	
JR900	1-216-295-91	CONDUCTOR, CHIP (2012) (14E1E/14E1U/14E5E/14E5U/20E1E/20E1U)	
		< COIL >	
L101	1-429-284-11	TRANSFORMER, FERRITE (LOT)	
L102	1-406-659-11	COIL, CHOKE 10µ H	
		< TRANSISTOR >	
Q101	8-729-019-57	TRANSISTOR 2SA1208S-TP	
Q102	8-729-015-28	TRANSISTOR IRFI9630GS	
	4-382-854-11	SCREW (M3X10), P. SW (+) (Q102)	
Q103	8-729-216-22	TRANSISTOR 2SA1162-G	
Q104	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q105	8-729-266-82	TRANSISTOR 2SC2668-O	
Q107	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q108	8-729-216-22	TRANSISTOR 2SA1162-G	
Q109	8-729-020-64	TRANSISTOR IRFPG50LF	
	4-047-285-01	SHEET, INSULATING (Q109)	
	4-382-854-11	SCREW (M3X10), P. SW (+) (Q109)	
Q111	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q112	8-729-216-22	TRANSISTOR 2SA1162-G	
Q113	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q201	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)	
Q202	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)	
Q301	8-729-216-22	TRANSISTOR 2SA1162-G	
Q302	8-729-216-22	TRANSISTOR 2SA1162-G	
Q303	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q304	8-729-140-96	TRANSISTOR 2SD774-34	
Q305	8-729-140-97	TRANSISTOR 2SB734-34	
Q321	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)	
Q322	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)	
Q401	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)	
		< RESISTOR >	
R101	1-216-347-11	METAL OXIDE 0.68 5% W F	
R102	1-216-635-11	METAL CHIP 220 0.50% 1/10W	
R103	1-218-762-11	METAL CHIP 270K 0.50% 1/10W	
R104	1-216-105-91	METAL GLAZE 220K 5% 1/10W	
R105	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R106	1-216-635-11	METAL CHIP 220 0.50% 1/10W	
R107	1-218-762-11	METAL CHIP 270K 0.50% 1/10W	
R108	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R109	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R110	1-249-397-11	CARBON 22 5% 1/4W F	
R111	1-215-911-11	METAL OXIDE 100 5% 1W F	
R112	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R113	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R114	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R115	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R116	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R117	1-216-001-00	METAL GLAZE 10 5% 1/10W	
R118	1-216-349-00	METAL OXIDE 1 5% 1W F	
R119	1-216-349-00	METAL OXIDE 1 5% 1W F	
R201	1-216-089-91	METAL GLAZE 47K 5% 1/10W	

- The components identified by ⊠ in this manual have been carefully factory-selected for each set in order ot satisfy regulations regarding X-rey rediation. Should replacement be required, replace only with the value originally used.

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PA **G**

REF NO.	PART NO.	DESCRIPTION			REMARK
R202	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R203	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R204	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R205	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R206	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R207	1-208-612-11	METAL OXIDE	10M	5%	1W
R208	1-208-612-11	METAL OXIDE	10M	5%	1W
R209	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R211	1-202-719-00	SOLID	1M	20%	1/2W
R212 ⚠	1-212-998-00	FUSIBLE	470	5%	1/2W F
R301	1-216-025-91	METAL GLAZE	100	5%	1/10W
R302	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R303	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R304	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R305	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R306	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R307	1-208-610-11	METAL OXIDE	2M	5%	1W
R308	1-216-035-00	METAL GLAZE	270	5%	1/10W
R309	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R310	1-249-397-11	CARBON	22	5%	1/4W F
R311	1-249-397-11	CARBON	22	5%	1/4W F
R312	1-249-401-11	CARBON	47	5%	1/4W F
R321	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R322	1-208-610-11	METAL OXIDE	2M	5%	1W
R323	1-208-612-11	METAL OXIDE	10M	5%	1W
R324	1-202-830-00	SOLID	10K	20%	1/2W
R401	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R402	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R403	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R404	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R405	1-216-103-91	METAL GLAZE	180K	5%	1/10W
R406	1-202-719-00	SOLID	1M	20%	1/2W
R501	1-216-045-00	METAL GLAZE	680	5%	1/10W
R502	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R503	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R504	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R505	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R506	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R507	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R508	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R509	1-216-667-11	METAL GLAZE	4.7K	0.50%	1/10W
R510	1-216-667-11	METAL GLAZE	4.7K	0.50%	1/10W
R511	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R512	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R513	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R514	1-218-754-11	METAL CHIP	120K	0.50%	1/10W
R515	1-218-769-11	METAL CHIP	510K	0.50%	1/10W
R516	1-218-770-11	METAL CHIP	560K	0.50%	1/10W
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
R516	1-218-768-11	METAL CHIP	470K	0.50%	1/10W
		(20E1E/20E1U/20F1E/20F1U)			
R517	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
R517	1-216-696-11	METAL CHIP	75K	0.50%	1/10W
		(20E1E/20E1U/20F1E/20F1U)			
R519	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R524	1-208-823-11	METAL CHIP	51K	0.50%	1/10W
R525	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R526	1-216-694-11	METAL CHIP	62K	0.50%	1/10W
R527	1-208-812-11	METAL CHIP	18K	0.50%	1/10W
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
R527	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
		(20E1E/20E1U/20F1E/20F1U)			
R529	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R530	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R532	1-208-823-11	METAL CHIP	51K	0.50%	1/10W
R801	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R802	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
		(20E1E/20E1U/20F1E/20F1U)			
R802	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
R804	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R808	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R811	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R812	1-216-025-91	METAL GLAZE	100K	5%	1/10W
R813	1-216-025-91	METAL GLAZE	100K	5%	1/10W
R901	1-215-902-11	METAL OXIDE	47K	5%	2W F
R902	1-215-902-11	METAL OXIDE	47K	5%	2W F
		< VARIABLE RESISTOR >			
⊠ RV501 ⚠	1-228-991-11	RES, ADJ, METAL GLAZE 22K			
	3-710-578-01	COVER, VOLUME, 6 MOLD (RV501)			
⊠ RV502 ⚠	1-228-996-11	RES, ADJ, METAL GLAZE 47K			
	3-710-578-01	COVER, VOLUME, 6 MOLD (RV502)			
⊠ RV503 ⚠	1-228-993-11	RES, ADJ, METAL GLAZE 4.7K			
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)			
⊠ RV503 ⚠	1-228-994-11	RES, ADJ, METAL GLAZE 10K			
		(20E1E/20E1U/20F1E/20F1U)			
	3-710-578-01	COVER, VOLUME, 6 MOLD (RV503)			
		< TRANSFORMER >			
T301	1-424-555-11	TRANSFORMER, FERRITE (DFT)			
		**********			
	*A-1316-258-A	COMPLETE PCB, G (include GA, GB, GC mounted)			
		**********			
	*X-4033-116-1	FRAME ASSY, POWER			
⚠	1-251-263-11	INLET, AC			
	1-900-214-49	CONNECTOR ASSY, VH 7P			
	1-900-214-50	CONNECTOR ASSY, FASTEN TAB			
	2-990-241-02	HOLDER(A), PLUG			
	3-648-057-00	NUT (ISO-4), U			
	3-648-057-00	NUT (ISO-4), U			
	*4-050-794-01	INSULATOR			
	*4-050-795-01	SPACER, REAR PANEL			
	*4-050-798-01	PLATE, NUT, AC INLET			
	*4-050-801-01	PLETE (LARGE), NUT			
	*4-050-814-01	SHIELD, PCB			

G

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Replace only with the part number specified.

REF NO.	PART NO.	DESCRIPTION				REMARK
	*4-050-818-01	PANEL, POWER UNIT				
	*4-050-824-01	INSULATOR, POWER UNIT				
	*4-050-850-01	COVER, POWER UNIT				
	4-309-378-00	SPACER				
	4-382-854-01	SCREW (M3X8), P. SW (+)				
	*4-403-012-01	SPRING, STOPPER				
	*4-403-012-01	SPRING, STOPPER				
	*7-682-149-15	SCREW +P 3X10				
	*7-682-149-15	SCREW +P 3X10				
	7-682-566-04	SCREW +B 4X20				
	7-682-566-04	SCREW +B 4X20				
	7-682-661-01	SCREW +PS 4X8				
	7-682-950-09	SCREW +PSW 3X12				
	7-685-871-01	SCREW +BVTT 3X6 (S)				
	7-682-548-09	SCREW +BVTT 3X8 (S)				
		< CAPACITOR >				
C1 ⚠	1-104-708-11	FILM	0.47µ F	20%	250V	
C2 ⚠	1-113-912-51	ELECT	0.0047µ F	20%	250V	
	*4-374-846-01	COVER, CAPACITOR, CAP TYPE (C2)				
C3 ⚠	1-113-912-51	ELECT	0.0047µ F	20%	250V	
	*4-374-846-01	COVER, CAPACITOR, CAP TYPE (C3)				
C4 ⚠	1-113-912-51	ELECT	0.0047µ F	20%	250V	
	*4-374-846-01	COVER, CAPACITOR, CAP TYPE (C4)				
C5 ⚠	1-113-912-51	ELECT	0.0047µ F	20%	250V	
	*4-374-846-01	COVER, CAPACITOR, CAP TYPE (C5)				
C6 ⚠	1-104-708-11	FILM	0.47µ F	20%	250V	
C9 ⚠	1-113-924-91	ELECT	0.0047µ F	20%	250V	
C10 ⚠	1-113-924-91	ELECT	0.0047µ F	20%	250V	
C11 ⚠	1-113-924-91	ELECT	0.0047µ F	20%	250V	
C12 ⚠	1-113-924-91	ELECT	0.0047µ F	20%	250V	
C13	1-137-484-11	FILM	0.47µ F	10%	630V	
C14	1-104-664-11	ELECT	47µ F	20%	25V	
C15	1-128-526-11	ELECT	100µ F	20%	16V	
C16	1-104-664-11	ELECT	47µ F	20%	25V	
C17	1-107-896-11	ELECT	470µ F	20%	35V	
C18	1-101-001-00	CERAMIC	0.001µ F		50V	
C19	1-102-527-11	CERAMIC	82pF	5%	50V	
C20	1-130-471-00	FILM	0.001µ F	5%	50V	
C21	1-136-177-00	FILM	1µ F	5%	50V	
C22	1-136-177-00	FILM	1µ F	5%	50V	
C23	1-136-165-00	FILM	0.1µ F	5%	50V	
C24	1-136-169-00	FILM	0.22µ F	5%	50V	
C25	1-130-471-00	FILM	0.001µ F	5%	50V	
C26	1-101-004-00	CERAMIC	0.01µ F		50V	
C27	1-126-804-11	ELECT	100µ F	20%	35V	
C28	1-113-707-11	ELECT	220µ F	20%	450V	
C29	1-126-325-51	ELECT	3.3µ F	20%	250V	
C30	1-126-325-51	ELECT	3.3µ F	20%	250V	
C31	1-102-038-00	CERAMIC	0.001µ F		500V	
C32	1-102-038-00	CERAMIC	0.001µ F		500V	
C33	1-128-526-11	ELECT	100µ F	20%	16V	
C34	1-104-664-11	ELECT	47µ F	20%	25V	
C35	1-107-889-11	ELECT	220µ F	20%	10V	
C37	1-129-898-00	FILM	0.0022µ F	5%	630V	
C38	1-136-165-00	FILM	0.1µ F	5%	50V	
C40	1-136-165-00	FILM	0.1µ F	5%	50V	
C42	1-107-929-11	ELECT	10µ F	20%	50V	
C43	1-107-929-11	ELECT	10µ F	20%	50V	
C44	1-113-912-11	ELECT	0.0047µ F	20%	250V	
C45	1-113-912-11	ELECT	0.0047µ F	20%	250V	
C101	1-102-038-00	CERAMIC	0.001µ F		500V	
C102	1-102-038-00	CERAMIC	0.001µ F		500V	
C103	1-102-228-00	CERAMIC	470pF	10%	500V	
C104	1-102-228-00	CERAMIC	470pF	10%	500V	
C105	1-102-228-00	CERAMIC	470pF	10%	500V	
C106	1-102-228-00	CERAMIC	470pF	10%	500V	
C107	1-107-877-11	ELECT	1000µ F	20%	10V	
C108	1-107-877-11	ELECT	1000µ F	20%	10V	
C109	1-107-877-11	ELECT	1000µ F	20%	10V	
C110	1-107-877-11	ELECT	1000µ F	20%	10V	
C111	1-102-038-00	CERAMIC	0.001µ F		500V	
C112	1-102-038-00	CERAMIC	0.001µ F		500V	
C113	1-102-228-00	CERAMIC	470pF	10%	500V	
C114	1-102-228-00	CERAMIC	470pF	10%	500V	
C115	1-102-228-00	CERAMIC	470pF	10%	500V	
C116	1-102-228-00	CERAMIC	470pF	10%	500V	
C117	1-128-528-11	ELECT	470µ F	20%	25V	
C118	1-126-105-11	ELECT	1000µ F	20%	25V	
C119	1-128-528-11	ELECT	470µ F	20%	25V	
C120	1-126-105-11	ELECT	1000µ F	20%	25V	
C121	1-102-228-00	CERAMIC	470pF	10%	50V	
C122	1-102-228-00	CERAMIC	470pF	10%	50V	
C123	1-107-877-11	ELECT	1000µ F	20%	10V	
C124	1-126-771-11	ELECT	100µ F	20%	16V	
C125	1-126-771-11	ELECT	100µ F	20%	16V	
C126	1-136-165-00	FILM	0.1µ F	5%	50V	
C127	1-106-383-00	MYLAR	0.047µ F	10%	200V	
C128	1-107-880-11	ELECT	4700µ F	20%	10V	
C129	1-107-880-11	ELECT	4700µ F	20%	10V	
C130	1-107-880-11	ELECT	4700µ F	20%	10V	
C131	1-107-880-11	ELECT	4700µ F	20%	10V	
C132	1-128-339-11	ELECT	2200µ F	20%	10V	
C133	1-128-339-11	ELECT	2200µ F	20%	10V	
C134	1-128-528-11	ELECT	470µ F	20%	25V	
C135	1-104-664-11	ELECT	47µ F	20%	25V	
C136	1-128-528-11	ELECT	470µ F	20%	25V	
C137	1-104-664-11	ELECT	47µ F	20%	25V	
C138	1-107-929-11	ELECT	10µ F	20%	50V	
C139	1-107-929-11	ELECT	10µ F	20%	50V	
C140	1-136-175-00	FILM	0.68µ F	5%	50V	
C141	1-107-929-11	ELECT	10µ F	20%	50V	
C142	1-104-664-11	ELECT	47µ F	20%	25V	
C143	1-136-175-00	FILM	0.68µ F	5%	50V	
C144	1-107-924-11	ELECT	0.47µ F	20%	50V	
		< CONNECTOR >				
CN1	1-564-321-00	PIN, CONNECTOR 2P				

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

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REF NO.	PART NO.	DESCRIPTION	REMARK
CN2	1-568-106-11	PIN, CONNECTOR 4P	
CN3	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P	
CN4	1-774-530-11	CONNECTOR, BOARD TO BOARD 5P	
CN5	1-774-531-11	CONNECTOR, BOARD TO BOARD 10P	
CN6	1-774-532-11	CONNECTOR, BOARD TO BOARD 15P	
CN7	1-774-532-11	CONNECTOR, BOARD TO BOARD 15P	
		< DIODE >	
D1 ⚠	8-719-505-60	DIODE S5VB60	
	*4-873-829-02	HEAT SINK (D1)	
	7-682-951-01	SCREW +PSW 3X14 (D1)	
D2 ⚠	8-719-921-20	DIODE 1SS119-25TD	
D3	8-719-911-19	DIODE 1SS119-25	
D7	8-719-110-03	DIODE RD7.5ESB2	
D8	8-719-510-02	DIODE D1NS4	
D9	8-719-510-02	DIODE D1NS4	
D10	8-719-029-04	DIODE D5L60	
	*4-381-905-01	SPRING (D) (D10)	
D11	8-719-510-02	DIODE D1NS4	
D12	8-719-510-02	DIODE D1NS4	
D13	8-719-110-49	DIODE RD18ESB2	
D14	8-719-979-58	DIODE EGP10D	
D16	8-719-992-24	DIODE SLR-305VC3F	
D17	8-719-979-58	DIODE EGP10D	
D18	8-719-510-02	DIODE D1NS4	
D19	8-719-110-30	DIODE RD12ESB1	
D20	8-719-992-24	DIODE SLR-305VC3F	
D21	8-719-911-19	DIODE 1SS119-25	
D101	8-719-988-31	DIODE D10SC6MR	
D102	8-719-510-09	DIODE D10SC6M	
D103	8-719-500-42	DIODE D8LCA20R	
D104	8-719-500-41	DIODE D8LCA20	
D105	8-719-980-00	DIODE ESAC39M-06N	
D106	8-719-971-08	DIODE ESAC39M-06C	
D107	8-719-510-09	DIODE D10SC6M	
	*4-050-800-01	PLETE (SMALL), NUT (D107)	
D108	8-719-979-58	DIODE EGP10D	
D109	8-719-110-42	DIODE RD15ESB3	
D110	8-719-979-58	DIODE EGP10D	
D111	8-719-110-42	DIODE RD15ESB3	
D112	8-719-992-30	DIODE SLR-305MC3F	
D113	8-719-911-19	DIODE 1SS119-25	
D114	8-719-911-19	DIODE 1SS119-25	
D115 ⚠	8-719-921-20	DIODE 1SS119-25TD	
D116	8-719-109-72	DIODE RD3.9ESB2	
D117	8-719-109-93	DIODE RD6.2ESB2	
D118	8-719-110-17	DIODE RD10ESB2	
		< FUSE >	
F1 ⚠	1-532-746-11	FUSE GLASS, TUBE (4A/125V) (14E1U/14E5U/14F1U/14F5U/20E1U/20F1U)	
F1 ⚠	1-576-230-11	FUSE (H.B.C) (T3.15A/250V) (14E1E/14E5E/14F1E/14F5E/20E1E/20F1E)	
	*1-533-701-11	HOLDER, FUSE (F1)	

REF NO.	PART NO.	DESCRIPTION	REMARK
		< FERRITE BEAD >	
FB1	1-410-396-41	FERRITE BEAD INDUCTOR	
FB2	1-410-396-41	FERRITE BEAD INDUCTOR	
FB3	1-410-396-41	FERRITE BEAD INDUCTOR	
FB4	1-410-396-41	FERRITE BEAD INDUCTOR	
FB5	1-410-396-41	FERRITE BEAD INDUCTOR	
FB6	1-410-396-41	FERRITE BEAD INDUCTOR	
		< IC >	
IC1	8-759-191-54	IC UC3854N	
IC2	8-759-103-93	IC μ PC393C	
IC3	8-759-231-59	IC TA7815S	
IC4	8-759-979-49	IC MA2820	
	*4-050-802-01	HEAT SINK (IC4)	
	*4-386-664-01	SPRING (IC4)	
IC101	8-759-908-15	IC TL431CLP	
IC102	8-759-346-48	IC SE005N	
IC103	8-759-908-15	IC TL431CLP	
IC104	8-759-231-58	IC TA7812S	
IC105	8-759-929-65	IC LM7912CT	
IC106	8-759-103-93	IC μ PC393C	
		< CHIP CONDUCTOR >	
JR101	1-216-295-91	CONDUCTOR, CHIP (2012)	
		< COIL >	
L101	1-411-517-11	COIL, CHOKE 180μ H	
L102	1-406-661-11	COIL, CHOKE 22μ H	
L103	1-411-517-11	COIL, CHOKE 180μ H	
L104	1-406-661-11	COIL, CHOKE 22μ H	
L105	1-411-516-11	COIL, CHOKE 400μ H	
L106	1-406-661-11	COIL, CHOKE 22μ H	
L107	1-411-516-11	COIL, CHOKE 400μ H	
L108	1-406-661-11	COIL, CHOKE 22μ H	
L109	1-411-515-11	COIL, CHOKE 300mH	
L110	1-406-661-11	COIL, CHOKE 22μ H	
L111	1-406-659-11	COIL, CHOKE 10μ H	
		< PHOTO COUPLER >	
PC1 ⚠	8-749-923-50	PHOTO COUPLER PC111YS	
PC2 ⚠	8-749-923-50	PHOTO COUPLER PC111YS	
PC3 ⚠	8-749-923-50	PHOTO COUPLER PC111YS	
PC4 ⚠	8-749-923-50	PHOTO COUPLER PC111YS	
		< TRANSISTOR >	
Q1	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2	8-729-030-03	TRANSISTOR DTC144ESA-TP	
Q3	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q5	8-729-024-29	TRANSISTOR IRFP450LF	
Q6	8-729-024-29	TRANSISTOR IRFP450LF	
Q7	8-729-024-29	TRANSISTOR IRFP450LF	
Q8	8-729-034-17	TRANSISTOR 2SC3632-L	

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Replace only with the part number specified.

REF NO.		PART NO.	DESCRIPTION			REMARK
Q9		8-729-118-44	TRANSISTOR 2SA1413-K			
Q10		8-729-030-03	TRANSISTOR DTC144ESA-TP			
Q11		8-729-029-56	TRANSISTOR DTA144ESA			
Q12		8-729-030-03	TRANSISTOR DTC144ESA-TP			
Q13		8-729-030-03	TRANSISTOR DTC144ESA-TP			
Q14		8-729-030-03	TRANSISTOR DTC144ESA-TP			
Q15		8-729-029-56	TRANSISTOR DTA144ESA			
Q16		8-729-030-03	TRANSISTOR DTC144ESA-TP			
Q17		8-729-029-56	TRANSISTOR DTA144ESA			
Q101		8-729-030-03	TRANSISTOR DTC144ESA-TP			
Q103		8-729-030-03	TRANSISTOR DTC144ESA-TP			
Q104		8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q105		8-729-030-03	TRANSISTOR DTC144ESA-TP			
Q107		8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q108		8-729-029-56	TRANSISTOR DTA144ESA			
Q109		8-729-030-03	TRANSISTOR DTC144ESA-TP			
			< RESISTOR >			
R1	⚠	**1-202-884-91**	**SOLID**	**820K**	**20%**	**1/2W**
R2	⚠	**1-202-962-11**	**WIREWOUND**	**3.3**	**5%**	**10W**
R3		1-247-737-11	CARBON	68	5%	1/2W
R4		1-249-437-11	CARBON	47K	5%	1/4W
R5		1-247-863-91	CARBON	22K	5%	1/4W
R7		1-247-863-91	CARBON	22K	5%	1/4W
R8		1-249-417-11	CARBON	1K	5%	1/4W
R9		1-249-441-11	CARBON	100K	5%	1/4W
R10		1-249-429-11	CARBON	10K	5%	1/4W
R11		1-249-429-11	CARBON	10K	5%	1/4W
R12		1-247-863-91	CARBON	22K	5%	1/4W
R13		1-249-425-11	CARBON	4.7K	5%	1/4W
R14		1-215-449-51	METAL	15K	1%	1/4W
R15		1-215-445-00	METAL	10K	1%	1/4W
R16		1-215-445-00	METAL	10K	1%	1/4W
R18		1-215-423-00	METAL	1.2K	1%	1/4W
R19		1-215-442-00	METAL	7.5K	1%	1/4W
R20		1-247-863-91	CARBON	22K	5%	1/4W
R21		1-215-435-00	METAL	3.9K	1%	1/4W
R22		1-215-435-00	METAL	3.9K	1%	1/4W
R23		1-247-887-00	CARBON	220K	5%	1/4W
R24		1-247-895-91	CARBON	470K	5%	1/4W
R25		1-247-895-91	CARBON	470K	5%	1/4W
R26		1-247-895-91	CARBON	470K	5%	1/4W
R27		1-247-895-91	CARBON	470K	5%	1/4W
R28		1-247-887-00	CARBON	220K	5%	1/4W
R29		1-247-863-91	CARBON	22K	5%	1/4W
R30		1-247-863-91	CARBON	22K	5%	1/4W
R31		1-247-887-00	CARBON	220K	5%	1/4W
R32		1-215-447-00	METAL	12K	1%	1/4W
R33		1-249-393-11	CARBON	10	5%	1/4W
R34		1-249-429-11	CARBON	10K	5%	1/4W
R39		1-215-481-00	METAL	330K	1%	1/4W
R40		1-215-481-00	METAL	330K	1%	1/4W
R42		1-219-440-11	WIREWOUND	0.47	10%	5W
R43		1-219-440-11	WIREWOUND	0.47	10%	5W

REF NO.		PART NO.	DESCRIPTION			REMARK
R45		1-249-393-11	CARBON	10	5%	1/4W
R46		1-249-429-11	CARBON	10K	5%	1/4W
R47		1-249-393-11	CARBON	10	5%	1/4W
R48		1-249-429-11	CARBON	10K	5%	1/4W
R49		1-219-728-11	WIREWOUND	0.22	10%	5W
R50		1-249-417-11	CARBON	1K	5%	1/4W
R51		1-249-441-11	CARBON	100K	5%	1/4W
R52		1-215-911-11	METAL OXIDE	100	5%	3W F
R53		1-215-911-11	METAL OXIDE	100	5%	3W F
R59		1-202-719-00	SOLID	1M	20%	1/2W
R61		1-215-904-11	METAL OXIDE	100K	5%	2W F
R62		1-249-409-11	CARBON	220	5%	1/4W F
R63		1-216-426-11	METAL OXIDE	82	5%	1W F
R64		1-216-426-11	METAL OXIDE	82	5%	1W F
R65	⚠	**1-202-725-51**	**METAL**	**3.3M**	**5%**	**1W**
R66		1-247-895-91	CARBON	220K	5%	1/4W
R67		1-247-895-91	CARBON	220K	5%	1/4W
R68		1-249-429-11	CARBON	10K	5%	1/4W
R69		1-249-429-11	CARBON	10K	5%	1/4W
R70		1-247-887-00	CARBON	220K	5%	1/4W
R71		1-247-887-00	CARBON	220K	5%	1/4W
R72		1-247-895-91	CARBON	470K	5%	1/4W
R73		1-247-895-91	CARBON	470K	5%	1/4W
R74		1-247-863-91	CARBON	22K	5%	1/4W
R75		1-249-417-11	CARBON	1K	5%	1/4W
R76	⚠	**1-202-725-51**	**METAL**	**3.3M**	**10%**	**1/2W**
R77		1-215-431-00	METAL OXIDE	2.7K	0.5%	1/4W
R79		1-215-481-00	METAL	330K	0.5%	1/4W
R101		1-215-884-11	METAL OXIDE	47	5%	2W F
R102		1-216-341-11	METAL OXIDE	0.22	5%	1W F
R103		1-216-341-11	METAL OXIDE	0.22	5%	1W F
R104		1-216-341-11	METAL OXIDE	0.22	5%	1W F
R105		1-216-341-11	METAL OXIDE	0.22	5%	1W F
R106		1-216-341-11	METAL OXIDE	0.22	5%	1W F
R107		1-216-341-11	METAL OXIDE	0.22	5%	1W F
R108		1-215-884-11	METAL OXIDE	47	5%	2W F
R109		1-216-341-11	METAL OXIDE	0.22	5%	1W F
R110		1-216-341-11	METAL OXIDE	0.22	5%	1W F
R111		1-216-341-11	METAL OXIDE	0.22	5%	1W F
R112		1-216-341-11	METAL OXIDE	0.22	5%	1W F
R113		1-216-736-11	METAL	270	1%	10W
		*4-050-800-01	PLETE (SMALL), NUT (R113)			
R114		1-219-728-11	WIREWOUND	0.22	10%	5W
R115		1-215-901-00	METAL OXIDE	33K	5%	2W F
R116		1-249-429-11	CARBON	10K	5%	1/4W
R117		1-249-409-11	CARBON	220	5%	1/4W F
R118		1-249-413-11	CARBON	470	5%	1/4W F
R119		1-214-905-00	METAL	47K	1%	1/3W
R120		1-214-905-00	METAL	47K	1%	1/3W
R121		1-215-427-00	METAL	1.8K	1%	1/4W
R122		1-215-397-00	METAL	100	1%	1/4W
R123		1-214-921-00	METAL	220K	1%	1/3W
R125		1-249-417-11	CARBON	1K	5%	1/4W
R129		1-249-413-11	CARBON	470	5%	1/4W

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

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Ne les remplacer que par une piéce portant le numéro spécifié.

• The components identified by ⊠ in this manual have been carefully factory-selected for each set in order ot satisfy regulations regarding X-rey rediation. Should replacement be required, replace only with the value originally used.

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REF NO.	PART NO.	DESCRIPTION			REMARK
R130	1-215-431-00	METAL	2.7K	1%	1/4W
R131	1-215-429-00	METAL	2.2K	1%	1/4W
R132	1-247-815-91	CARBON	220	5%	1/4W
R135	1-249-417-11	CARBON	1K	5%	1/4W
R136	1-247-863-91	CARBON	22K	5%	1/4W
R137	1-249-437-11	CARBON	47K	5%	1/4W
R138	1-249-427-11	CARBON	6.8K	5%	1/4W
R139	1-249-425-11	CARBON	4.7K	5%	1/4W
R141	1-249-429-11	CARBON	10K	5%	1/4W
R142	1-249-417-11	CARBON	1K	5%	1/4W
R143	1-247-895-91	CARBON	470K	5%	1/4W
R144	1-249-429-11	CARBON	10K	5%	1/4W
R145	1-249-429-11	CARBON	10K	5%	1/4W
R146	1-249-429-11	CARBON	10K	5%	1/4W
R147	1-249-393-11	CARBON	10	5%	1/4W
R148	1-249-393-11	CARBON	10	5%	1/4W
		< VARIABLE RESISTOR >			
⊠RV101 ⚠	1-241-759-21	RES, ADJ, CERMET	220		
		< RELAY >			
RY1 ⚠	1-515-738-11	RELAY			
RY2 ⚠	1-515-738-11	RELAY			
		< SWITCH >			
S901 ⚠	1-762-300-11	SWITCH, AC POWER SEESAW			
		< TRANSFORMER >			
T1 ⚠	1-423-333-11	TRANSFORMER, LINE FILTER			
T2 ⚠	1-423-333-11	TRANSFORMER, LINE FILTER			
T3	1-429-283-11	TRANSFORMER, CONVERTER (PFT)			
T4 ⚠	1-429-347-11	TRANSFORMER, CONVERTER (SRT)			
T5	1-429-351-11	TRANSFORMER, CONVERTER (SRT)			
		< THERMISTOR >			
THP1 ⚠	1-808-059-31	THERMISTOR, POSITIVE			
		< TEST PIN >			
TP2	1-537-864-11	PIN, POST			
TP3	1-537-864-11	PIN, POST			
TP105	1-537-864-11	PIN, POST			
TP106	1-537-864-11	PIN, POST			
TP107	1-537-864-11	PIN, POST			
TP108	1-537-864-11	PIN, POST			
TP109	1-537-864-11	PIN, POST			
		< VARISTOR >			
VDR1 ⚠	1-809-581-11	VARISTOR			
	*4-374-846-01	COVER, CAPACITOR, CAP TYPE (VDR1)			
VDR2 ⚠	1-810-622-11	VARISTOR			

REF NO.	PART NO.	DESCRIPTION			REMARK
	*A-1311-432-A	MOUNTED PCB, GA			
		< CAPACITOR >			
C101	1-164-004-11	CERAMIC CHIP	0.1μ F	10% 25V	
C102	1-164-004-11	CERAMIC CHIP	0.1μ F	10% 25V	
C104	1-164-004-11	CERAMIC CHIP	0.1μ F	10% 25V	
C105	1-164-004-11	CERAMIC CHIP	0.1μ F	10% 25V	
C106	1-164-004-11	CERAMIC CHIP	0.1μ F	10% 25V	
C107	1-104-539-11	FILM CHIP	0.001μ F	5% 50V	
C108	1-126-400-11	ELECT CHIP	22μ F	20% 35V	
C110	1-126-400-11	ELECT CHIP	22μ F	20% 35V	
C111	1-164-004-11	CERAMIC CHIP	0.1μ F	10% 25V	
C113	1-126-400-11	ELECT CHIP	22μ F	20% 35V	
		< CONNECTOR >			
CN101	1-774-551-11	CONNECTOR, BOARD TO BOARD 5P			
CN102	1-774-552-11	CONNECTOR, BOARD TO BOARD 10P			
		< DIODE >			
D101	8-719-404-46	DIODE MA110			
D102	8-719-989-21	DIODE SC311-6-TE12RA			
D103	8-719-989-21	DIODE SC311-6-TE12RA			
D104	8-719-107-15	DIODE RD18M-B2			
D105	8-719-404-46	DIODE MA110			
D106	8-719-404-46	DIODE MA110			
D107	8-719-404-46	DIODE MA110			
D108	8-719-404-46	DIODE MA110			
		< IC >			
IC101	8-759-185-47	IC IR2112			
IC102	8-759-914-04	IC TL494CNS			
		< TRANSISTOR >			
Q101	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q102	8-729-216-22	TRANSISTOR 2SA1162-G			
		< RESISTOR >			
R103	1-216-049-91	METAL GLAZE	1K	5% 1/10W	
R104	1-216-043-91	METAL GLAZE	560	5% 1/10W	
R105	1-216-043-91	METAL GLAZE	560	5% 1/10W	
R106	1-208-806-11	METAL CHIP	10K	0.50% 1/10W	
R107	1-216-637-11	METAL CHIP	270	0.50% 1/10W	
R108	1-216-041-00	METAL GLAZE	470	5% 1/10W	
R109	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R110	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R111	1-216-057-00	METAL GLAZE	2.2K	5% 1/10W	
R112	1-216-655-11	METAL CHIP	1.5K	0.50% 1/10W	
R113	1-216-677-11	METAL CHIP	12K	0.50% 1/10W	
R114	1-208-814-11	METAL CHIP	22K	0.50% 1/10W	
R115	1-216-081-00	METAL GLAZE	22K	5% 1/10W	
R116	1-216-085-00	METAL GLAZE	33K	5% 1/10W	
R119	1-216-097-91	METAL GLAZE	100K	5% 1/10W	
R120	1-216-001-00	METAL GLAZE	10	5% 1/10W	

GA **GB**

REF NO.	PART NO.	DESCRIPTION			REMARK
R121	1-216-001-00	METAL GLAZE	10	5%	1/10W
**********					
	*A-1311-433-A	MOUNTED PCB, GB			
		**********			
		< CAPACITOR >			
C201	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C202	1-124-779-00	ELECT	10µ F	20%	16V
C203	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C204	1-124-779-00	ELECT	10µ F	20%	16V
C205	1-164-232-11	CERAMIC CHIP	0.01µ F	10%	50V
C206	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C207	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C208	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C209	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C210	1-126-935-11	ELECT	470µ F	20%	6.3V
C301	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C302	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C303	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C304	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C305	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C306	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C307	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C308	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C309	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C310	1-128-007-11	ELECT CHIP	2.2µ F	20%	35V
C311	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C312	1-126-964-51	ELECT	10µ F	20%	50V
		< CONNECTOR >			
CN301	1-774-553-11	CONNECTOR, BOARD TO BOARD 15P			
CN302	1-774-553-11	CONNECTOR, BOARD TO BOARD 15P			
		< DIODE >			
D201	8-719-105-91	DIODE RD5.6M-B2			
D202	8-719-404-46	DIODE MA110			
D203	8-719-404-46	DIODE MA110			
D204	8-719-404-46	DIODE MA110			
D205	8-719-404-46	DIODE MA110			
D206	8-719-105-91	DIODE RD5.6M-B2			
D301	8-719-404-46	DIODE MA110			
D302	8-719-404-46	DIODE MA110			
D303	8-719-404-46	DIODE MA110			
D304	8-719-404-46	DIODE MA110			
D305	8-719-404-46	DIODE MA110			
D306	8-719-404-46	DIODE MA110			
D307	8-719-404-46	DIODE MA110			
D308	8-719-404-46	DIODE MA110			
D309	8-719-404-46	DIODE MA110			
D310	8-719-404-46	DIODE MA110			

REF NO.	PART NO.	DESCRIPTION			REMARK
		< IC >			
IC201	8-759-908-15	IC TL431CLP			
IC202	8-759-988-13	IC LM393PS			
IC203	8-759-085-67	IC LM339NS			
IC204	8-759-085-67	IC LM339NS			
IC301	8-759-926-14	IC SN74HC148NS			
IC302	8-759-926-14	IC SN74HC148NS			
IC303	8-759-032-14	IC MC74HC08AF			
		< TRANSISTOR >			
Q301	8-729-907-46	TRANSISTOR IMZ1			
Q302	8-729-907-46	TRANSISTOR IMZ1			
Q303	8-729-907-46	TRANSISTOR IMZ1			
Q304	8-729-907-46	TRANSISTOR IMZ1			
Q305	8-729-907-46	TRANSISTOR IMZ1			
Q306	8-729-907-46	TRANSISTOR IMZ1			
Q307	8-729-907-46	TRANSISTOR IMZ1			
Q308	8-729-907-46	TRANSISTOR IMZ1			
Q309	8-729-907-46	TRANSISTOR IMZ1			
Q310	8-729-907-46	TRANSISTOR IMZ1			
Q311	8-729-216-22	TRANSISTOR 2SA1162-G			
Q312	8-729-027-38	TRANSISTOR DTA144EKA-T146			
Q313	8-729-027-38	TRANSISTOR DTA144EKA-T146			
		< RESISTOR >			
R201	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R202	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R203	1-216-639-11	METAL CHIP	330	0.50%	1/10W
R204	1-216-037-00	METAL GLAZE	330	5%	1/10W
R205	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R207	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W
R208	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R209	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R210	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R211	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R212	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R213	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R214	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R215	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R216	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R217	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R218	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R219	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R220	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R221	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R222	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R223	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R224	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R225	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R226	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R227	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R228	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R229	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R230	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W

GB GC

REF NO.	PART NO.	DESCRIPTION			REMARK
R231	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R232	1-216-637-11	METAL CHIP	270	0.50%	1/10W
R233	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R234	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R235	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R236	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R237	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R238	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R239	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R240	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R241	1-216-637-11	METAL CHIP	270	0.50%	1/10W
R242	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W
R243	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R244	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R245	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R246	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R247	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R248	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R249	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R250	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R301	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R302	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R303	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R304	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R305	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R306	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R307	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R308	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R309	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R310	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R311	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R312	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R313	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R314	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R315	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R316	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R317	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R318	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R319	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R320	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R321	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R322	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R323	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R324	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R325	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R326	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R327	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R328	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R329	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R330	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R331	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R332	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R333	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R334	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R335	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R336	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R337	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R338	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R339	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R340	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R342	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R343	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R344	1-216-025-91	METAL GLAZE	100	5%	1/10W
R345	1-216-025-91	METAL GLAZE	100	5%	1/10W
R346	1-216-025-91	METAL GLAZE	100	5%	1/10W
R347	1-216-025-91	METAL GLAZE	100	5%	1/10W
	*A-1311-467-A	MOUNTED PCB, GC			
		**********			
		< CAPACITOR >			
C1	1-124-288-00	ELECT	22μ F	20%	10V
C2	1-128-551-11	ELECT	22μ F	20%	35V
		< CONNECTOR >			
CN2	1-770-374-11	PIN, CONNECTOR BOARD TO BOARD 3P			
		< IC >			
IC1	8-759-135-80	IC μ PC358C			
		< TRANSISTOR >			
Q1	8-729-030-03	TRANSISTOR DTC144ESA-TP			
		< RESISTOR >			
R1	1-249-441-11	CARBON	100K	5%	1/4W
R2	1-249-437-11	CARBON	47K	5%	1/4W
R3	1-215-477-00	METAL	220K	1%	1/4W
R4	1-215-477-00	METAL	220K	1%	1/4W
R5	1-215-477-00	METAL	220K	1%	1/4W
R6	1-215-447-00	METAL	12K	1%	1/4W
R7	1-215-417-00	METAL	680	1%	1/4W
R8	1-215-439-00	METAL	5.6K	1%	1/4W
R9	1-215-477-00	METAL	220K	1%	1/4W
R10	1-215-477-00	METAL	220K	1%	1/4W
R11	1-215-477-00	METAL	220K	1%	1/4W
R12	1-215-442-00	METAL	7.5K	1%	1/4W
R13	1-247-807-31	CARBON	100	5%	1/4W

C D

Les composants identifiés par une tramé et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

REF NO.	PART NO.	DESCRIPTION			REMARK
	*A-1331-457-A	MOUNTED PCB, C (14F1E/14F1U/14F5E/14F5U/20F1E/20F1U)			
		**********			
	*A-1331-520-A	MOUNTED PCB, C (14E1E/14E1U/14E5E/14E5U/20E1E/20E1U)			
		**********			
		< CAPACITOR >			
C1	1-102-316-00	CERAMIC	15pF	5%	500V
C2	1-102-316-00	CERAMIC	15pF	5%	500V
C3	1-102-316-00	CERAMIC	15pF	5%	500V
C4	1-162-114-00	CERAMIC	0.0047µ F		2KV
C5	1-162-114-00	CERAMIC	0.0047µ F		2KV
C6	1-162-114-00	CERAMIC	0.0047µ F		2KV
C7	1-124-907-11	ELECT	10µ F	20%	50V
C8	1-124-907-11	ELECT	10µ F	20%	50V
		< CONNECTOR >			
CN1	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P			
CN2	1-508-784-00	PIN, CONNECTOR (5MM PITCH) 1P			
CN3	*1-766-241-11	PIN, CONNECTOR (PC BOARD) 3P			
CN4	*1-564-507-11	PLUG, CONNECTOR 4P			
CN5	*1-564-507-11	PLUG, CONNECTOR 4P			
CN6	*1-564-507-11	PLUG, CONNECTOR 4P			
CN7	*1-564-506-11	PLUG, CONNECTOR 3P			
CN8	*1-564-507-11	PLUG, CONNECTOR 4P			
		< DIODE >			
D1	8-719-979-58	DIODE EGP10D			
D2	8-719-110-63	DIODE RD24ESB3 (14F1E/14F1U/14F5E/14F5U/20F1E/20F1U)			
		< SOCKET >			
J1 ⚠	1-251-116-12	SOCKET, CRT			
		< COIL >			
L1	1-408-401-00	INDUCTOR 2.2µ H			
L2	1-408-401-00	INDUCTOR 2.2µ H			
L3	1-408-401-00	INDUCTOR 2.2µ H			
		< TRANSISTOR >			
Q1	8-729-140-97	TRANSISTOR 2SB734-34			
		< RESISTOR >			
R1	1-202-561-00	SOLID	330	20%	1/2W
R2	1-202-561-00	SOLID	330	20%	1/2W
R3	1-202-561-00	SOLID	330	20%	1/2W
R4	1-202-820-11	SOLID	1.5K	20%	1/2W
R5	1-202-820-11	SOLID	1.5K	20%	1/2W
R6	1-202-820-11	SOLID	1.5K	20%	1/2W
R7	1-219-696-11	METAL OXIDE	30M	5%	1W
R8	1-202-838-00	SOLID	100K	20%	1/2W
R9	1-202-719-00	SOLID	1M	10%	1/2W
R10	1-202-537-00	SOLID	33	20%	1/2W
R11	1-202-537-00	SOLID	33	20%	1/2W
R12	1-202-537-00	SOLID	33	20%	1/2W
R13	1-202-559-00	SOLID	270	20%	1/2W
R14	1-202-559-00	SOLID	270	20%	1/2W
R15	1-202-559-00	SOLID	270	20%	1/2W
R16	1-202-842-11	SOLID	220K	20%	1/2W
R17	1-249-430-11	CARBON (14F1E/14F1U/14F5E/14F5U/20F1E/20F1U)	12K	5%	1/4W
R18	1-249-426-11	CARBON (14F1E/14F1U/14F5E/14F5U/20F1E/20F1U)	5.6K	5%	1/4W
		< VARIABLE RESISTOR >			
RV1	1-223-410-11	RES, ADJ, METAL FILM 110M (H STAT)			
		< SPARK GAP >			
SG1	1-519-422-11	GAP, SPARK			
SG2	1-519-421-11	GAP, DISCHARGE			
SG3	1-519-421-11	GAP, DISCHARGE			
SG4	1-519-421-11	GAP, DISCHARGE			
SG5	1-519-421-11	GAP, DISCHARGE			
SG6	1-519-421-11	GAP, DISCHARGE			
SG7	1-519-421-11	GAP, DISCHARGE			
SG8	1-519-422-11	GAP, SPARK			
	*A-1341-958-B	MOUNTED PCB, D			
		**********			
		< CAPACITOR >			
C103	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C104	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C109	1-126-401-11	ELECT CHIP	1µ F	20%	50V
C114	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C115	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C116	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C118	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C121	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C122	1-104-555-11	FILM CHIP	0.022µ F	5%	16V
C123	1-107-561-11	FILM CHIP	0.01µ F	5%	50V
C124	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C126	1-104-563-11	FILM CHIP	0.1µ F	5%	16V
C127	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C128	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C131	1-107-682-11	CERAMIC CHIP	1µ F	10%	16V
C132	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C133	1-107-682-11	CERAMIC CHIP	1µ F	10%	16V
C134	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C135	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C136	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C137	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C138	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C139	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C140	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C143	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C145	1-163-031-11	CERAMIC CHIP	0.01µ F		50V

D

REF NO.	PART NO.	DESCRIPTION			REMARK
C149	1-163-059-91	CERAMIC CHIP	0.01µ F	10%	50V
C150	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C151	1-163-009-11	CERAMIC CHIP	0.001µ F	10%	50V
C155	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C156	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C157	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C158	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C159	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C160	1-163-009-11	CERAMIC CHIP	0.001µ F	10%	50V
C161	1-163-009-11	CERAMIC CHIP	0.001µ F	10%	50V
C162	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C163	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C164	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C167	1-163-059-91	CERAMIC CHIP	0.01µ F	10%	50V
C168	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C169	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C175	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C177	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C178	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C179	1-104-559-11	FILM CHIP	0.047µ F	5%	16V
C180	1-163-059-91	CERAMIC CHIP	0.01µ F	10%	50V
C181	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C201	1-104-555-11	FILM CHIP	0.022µ F	5%	16V
C501	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C502	1-163-009-11	CERAMIC CHIP	0.001µ F	10%	50V
C602	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C603	1-163-059-91	CERAMIC CHIP	0.01µ F	10%	50V
C612	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C613	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C614	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C615	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C616	1-163-222-11	CERAMIC CHIP	5pF	0.25pF	50V
C622	1-163-275-11	CERAMIC CHIP	0.001µ F	5%	50V
C623	1-126-391-11	ELECT CHIP	47µ F	20%	6.3V
C624	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C625	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C721	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C722	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C724	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C725	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C801	1-163-009-11	CERAMIC CHIP	0.001µ F	10%	50V
C802	1-163-038-91	CERAMIC CHIP	0.1µ F		25V
C803	1-163-009-11	CERAMIC CHIP	0.001µ F	10%	50V
C821	1-163-222-11	CERAMIC CHIP	5pF	0.25pF	50V
C822	1-162-638-11	CERAMIC CHIP	1µ F		16V
C861	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C862	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
		< CONNECTOR >			
CN101	1-774-415-11	CONNECTOR, BOARD TO BOARD 20P			
CN102	1-774-415-11	CONNECTOR, BOARD TO BOARD 20P			
		< IC >			
IC101	8-759-981-48	IC TL082M			

REF NO.	PART NO.	DESCRIPTION			REMARK
IC102	8-759-100-96	IC µ PC4558G2			
IC103	8-759-100-96	IC µ PC4558G2			
IC105	8-752-065-79	IC CXA1470AM-T6			
IC106	8-759-988-13	IC LM393PS			
IC108	8-752-066-34	IC CXA1726M-T6			
IC111	8-759-100-96	IC µ PC4558G2			
IC112	8-759-158-86	IC CXA8021M-T6			
IC113	8-759-988-13	IC LM393PS			
IC114	8-759-100-96	IC µ PC4558G2			
IC115	8-759-158-86	IC CXA8021M-T6			
IC118	8-759-326-65	IC MP7670AS-TE2			
IC119	8-759-981-48	IC TL082M			
IC120	8-759-929-26	IC TL431CPS			
IC203	8-759-100-96	IC µ PC4558G2			
IC301	8-752-066-34	IC CXA1726M-T6			
		< TRANSISTOR >			
Q101	8-729-216-22	TRANSISTOR 2SA1162-G			
Q102	8-729-216-22	TRANSISTOR 2SA1162-G			
Q601	8-729-216-22	TRANSISTOR 2SA1162-G			
Q602	8-729-216-22	TRANSISTOR 2SA1162-G			
Q603	8-729-216-22	TRANSISTOR 2SA1162-G			
Q604	8-729-116-05	TRANSISTOR 2SK160-K5			
		< RESISTOR >			
R101	1-216-025-91	METAL GLAZE	100	5%	1/10W
R102	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R103	1-216-025-91	METAL GLAZE	100	5%	1/10W
R104	1-216-025-91	METAL GLAZE	100	5%	1/10W
R105	1-216-025-91	METAL GLAZE	100	5%	1/10W
R106	1-216-025-91	METAL GLAZE	100	5%	1/10W
R107	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R108	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R109	1-216-025-91	METAL GLAZE	100	5%	1/10W
R110	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R111	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R112	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R113	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R114	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R115	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R116	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R117	1-216-025-91	METAL GLAZE	100	5%	1/10W
R118	1-216-025-91	METAL GLAZE	100	5%	1/10W
R119	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R120	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R123	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R124	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R127	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R129	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R130	1-208-812-11	METAL CHIP	18K	0.50%	1/10W
R132	1-208-823-11	METAL CHIP	51K	0.50%	1/10W
R133	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R134	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R136	1-208-812-11	METAL CHIP	18K	0.50%	1/10W

D E

REF NO.	PART NO.	DESCRIPTION			REMARK
R141	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R151	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W
R152	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R153	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R154	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R158	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R159	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R160	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R163	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R166	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R167	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R170	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R171	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R172	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R173	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R174	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R175	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R176	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R177	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R196	1-216-025-91	METAL GLAZE	100	5%	1/10W
R197	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R198	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R201	1-208-799-11	METAL CHIP	5.1K	0.50%	1/10W
R202	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R205	1-216-025-91	METAL GLAZE	100	5%	1/10W
R206	1-216-025-91	METAL GLAZE	100	5%	1/10W
R207	1-216-025-91	METAL GLAZE	100	5%	1/10W
R208	1-216-025-91	METAL GLAZE	100	5%	1/10W
R209	1-216-025-91	METAL GLAZE	100	5%	1/10W
R210	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R211	1-216-025-91	METAL GLAZE	100	5%	1/10W
R213	1-216-025-91	METAL GLAZE	100	5%	1/10W
R501	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R615	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R616	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R617	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R618	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R619	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R620	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R621	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R622	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R623	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R624	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R625	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R626	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R628	1-216-025-91	METAL GLAZE	100	5%	1/10W
R629	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R630	1-216-033-00	METAL GLAZE	220	5%	1/10W
R631	1-216-025-91	METAL GLAZE	100	5%	1/10W
R632	1-216-025-91	METAL GLAZE	100	5%	1/10W
R633	1-216-025-91	METAL GLAZE	100	5%	1/10W
R634	1-216-025-91	METAL GLAZE	100	5%	1/10W
R635	1-216-025-91	METAL GLAZE	100	5%	1/10W
R636	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R637	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R638	1-216-689-11	METAL CHIP	39K	0.50%	1/10W
R639	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R801	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R802	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R803	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R804	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R805	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R806	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R807	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R808	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R821	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R822	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R823	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R824	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R825	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R826	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R827	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R828	1-216-025-91	METAL GLAZE	100	5%	1/10W
R829	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R830	1-208-814-11	METAL CHIP	22K	0.50%	1/10W
R831	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R832	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R833	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R834	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R835	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R861	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R862	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R863	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R864	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R865	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R866	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R867	1-208-824-11	METAL CHIP	56K	0.50%	1/10W
R868	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R869	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R870	1-216-049-91	METAL GLAZE	1K	5%	1/10W

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*A-1346-357-B	COMPLETE PCB, E (include D mounted) (14E1E/14E1U/14E5E/14E5U/ 14F1E/14F1U/14F5E/14F5U)	
	**********	
*A-1346-356-A	COMPLETE PCB, E (include D mounted) (20E1E/20E1U/20F1E/20F1U)	
	**********	
*X-4033-108-1	HEATSINK (DEFLECTION) ASSY	
*3-648-057-00	NUT (ISO-4), u	
*4-050-794-01	INSULATOR	
*4-050-814-01	SHIELD, PCB	
4-051-217-01	SHEET, RADIATION	
*4-053-101-01	SPACER, DY CONNECTOR	
*4-381-905-01	SPRING (D)	
*4-381-905-01	SPRING (D) (20E1E/20E1U/20F1E/20F1U)	
4-382-854-01	SCREW (M3X8), P, SW (+)	
4-382-854-01	SCREW (M3X8), P, SW (+)	

E

REF NO.	PART NO.	DESCRIPTION				REMARK
	4-382-854-01	SCREW (M3X8). P. SW (+)				
	4-382-854-01	SCREW (M3X8). P. SW (+)				
	4-382-854-01	SCREW (M3X8). P. SW (+)				
	4-382-854-01	SCREW (M3X8). P. SW (+)				
	*4-403-012-01	SPRING. STOPPER				
	7-322-065-19	RUBBER. SILCON RIV (KE490W)				
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
	7-682-566-04	SCREW +B 4X20				
	7-685-871-01	SCREW +BVTT 3X6 (S)				
		< CAPACITOR >				
C25	1-162-115-00	CERAMIC	330pF	10%	2KV	
C26	1-137-350-11	FILM	0.015µ F	5%	100V	
C27	1-163-614-11	CERAMIC CHIP	220pF	5%	50V	
C43	1-109-915-11	FILM	2.2µ F	3%	200V	
			(20E1E/20E1U/20F1E/20F1U)			
C43	1-104-494-11	FILM	3.9µ F	3%	200V	
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
C44	1-109-915-11	FILM	2.2µ F	3%	200V	
			(20E1E/20E1U/20F1E/20F1U)			
C44	1-104-496-11	FILM	3.3µ F	3%	200V	
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
C45	1-109-921-11	CERAMIC	0.0015µ F	10%	500V	
			(20E1E/20E1U/20F1E/20F1U)			
C45	1-102-002-00	CERAMIC	680p F	10%	500V	
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
C64	1-104-664-11	ELECT	47µ F	20%	25V	
C65	1-110-641-51	ELECT	33µ F	20%	200V	
C66	1-126-600-11	ELECT	100µ F	20%	160V	
C001	1-136-165-00	FILM	0.1µ F	5%	50V	
C002	1-163-117-00	CERAMIC CHIP	100pF	5%	50V	
C003	1-102-030-00	CERAMIC	330pF	10%	500V	
C004	1-107-943-11	ELECT	10µ F	20%	160V	
C008	1-161-753-00	CERAMIC	470pF	10%	3KV	
C101	1-128-526-11	ELECT	100µ F	20%	25V	
C102	1-128-526-11	ELECT	100µ F	20%	25V	
C103	1-101-004-00	CERAMIC	0.01µ F		50V	
C104	1-101-004-00	CERAMIC	0.01µ F		50V	
C151	1-163-141-00	CERAMIC CHIP	0.001µ F	5%	50V	
C152	1-101-880-00	CERAMIC	47pF	5%	50V	
C155	1-163-133-00	CERAMIC CHIP	470pF	5%	50V	
C156	1-102-074-00	CERAMIC	0.001µ F	10%	50V	
C159	1-163-031-11	CERAMIC CHIP	0.01µ F	50V		
C160	1-136-165-00	FILM	0.1µ F	5%	50V	
C301	1-163-141-00	CERAMIC CHIP	100pF	5%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C302	1-163-129-00	CERAMIC CHIP	330pF	5%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C303	1-104-664-11	ELECT	47µ F	20%	25V	
			(20E1E/20E1U/20F1E/20F1U)			
C304	1-107-909-11	ELECT	47µ F	20%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C305	1-107-909-11	ELECT	47µ F	20%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C306	1-107-909-11	ELECT	47µ F	20%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C307	1-107-909-11	ELECT	47µ F	20%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C308	1-102-114-00	CERAMIC	470pF	10%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C309	1-128-526-11	ELECT	100µ F	20%	16V	
			(20E1E/20E1U/20F1E/20F1U)			
C310	1-102-114-00	CERAMIC	470pF	10%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C311	1-128-526-11	ELECT	100µ F	20%	16V	
			(20E1E/20E1U/20F1E/20F1U)			
C312	1-164-161-11	CERAMIC CHIP	0.0022µ F	10%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C401	1-136-165-00	FILM	0.1µ F	5%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C402	1-137-370-11	FILM	0.01µ F	5%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C403	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25	
			(20E1E/20E1U/20F1E/20F1U)			
C405	1-128-526-11	ELECT	100µ F	20%	25V	
			(20E1E/20E1U/20F1E/20F1U)			
C408	1-137-370-11	FILM	0.01µ F	5%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C409	1-136-165-00	FILM	0.1µ F	5%	50V	
			(20E1E/20E1U/20F1E/20F1U)			
C410	1-128-526-11	ELECT	100µ F	20%	25V	
			(20E1E/20E1U/20F1E/20F1U)			
C503	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C505	1-126-401-11	ELECT CHIP	1µ F	20%	50V	
C506	1-164-346-11	CERAMIC CHIP	1µ F		16V	
C507	1-126-398-11	ELECT CHIP	4.7µ F	20%	35V	
C530	1-106-367-00	MYLAR	0.01µ F	10%	100V	
C531	1-136-153-00	FILM	0.01µ F	5%	50V	
C601	1-136-157-00	FILM	0.022µ F	5%	50V	
C602	1-128-526-11	ELECT	100µ F	20%	25V	
C603	1-107-910-11	ELECT	100µ F	20%	35V	
C604	1-128-526-11	ELECT	100µ F	20%	50V	
C605	1-106-228-00	MYLAR	0.22µ F	10%	100V	
C701	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C702	1-126-396-11	ELECT CHIP	47µ F	20%	16V	
C703	1-137-502-11	FILM CHIP	0.1µ F	5%	25V	
C705	1-126-394-11	ELECT CHIP	10µ F	20%	16V	
C706	1-163-117-00	CERAMIC CHIP	100pF	5%	50V	
C707	1-126-401-11	ELECT CHIP	1µ F	20%	50V	
C708	1-164-695-11	CERAMIC	0.0022µ F	5%	50V	
C709	1-126-405-11	ELECT CHIP	10µ F	20%	50V	
C710	1-126-396-11	ELECT CHIP	47µ F	20%	16V	
C711	1-163-038-91	CERAMIC CHIP	0.1µ F		25V	
C801	1-136-165-00	FILM	0.1µ F	5%	50V	
C802	1-128-526-11	ELECT	100µ F	20%	16V	
C803	1-128-526-11	ELECT	100µ F	20%	16V	
C804	1-136-165-00	FILM	0.1µ F	5%	50V	
C805	1-137-370-11	FILM	0.01µ F	5%	50V	
C806	1-137-370-11	FILM	0.01µ F	5%	50V	
C807	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V	
C1001	1-128-527-11	ELECT	330µ F	20%	25V	

E

REF NO.	PART NO.	DESCRIPTION			REMARK
C1002	1-128-528-11	ELECT	470µ F	20%	16V
C1003	1-128-527-11	ELECT	330µ F	20%	25V
C1004	1-128-528-11	ELECT	470µ F	20%	16V
C1005	1-104-652-11	ELECT	470µ F	20%	10V
C1006	1-104-652-11	ELECT	470µ F	20%	10V
C1007	1-104-652-11	ELECT	470µ F	20%	10V
C1008	1-104-652-11	ELECT	470µ F	20%	10V
C1009	1-107-492-11	ELECT	47µ F	20%	160V
C2001	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2002	1-163-037-11	CERAMIC CHIP	0.022µ F	10%	25V
C2003	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2004	1-164-505-11	CERAMIC CHIP	2.2µ F		16V
C2006	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2007	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2008	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2013	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2015	1-128-526-11	ELECT	100µ F	20%	16V
C2016	1-164-756-11	CERAMIC	0.0033µ F	5%	50V
C2017	1-107-890-11	ELECT	2200µ F	20%	25V
C2018	1-104-664-11	ELECT	47µ F	20%	25V
C2019	1-104-553-11	FILM CHIP	0.015µ F	5%	16V
C2023	1-163-125-00	CERAMIC CHIP	220pF	5%	50V
C2025	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2027	1-136-173-00	FILM	0.47µ F	5%	50V
C2028	1-136-157-00	FILM	0.022µ F	5%	50V
C2029	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2030	1-163-023-00	CERAMIC CHIP	0.015µ F	10%	50V
C2031	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2033	1-104-664-11	ELECT	47µ F	20%	25V
C2039	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2041	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C2042	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2043	1-104-551-11	FILM CHIP	0.01µ F	5%	16V
C2044	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2048	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2049	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2050	1-104-539-11	FILM CHIP	0.001µ F	5%	50V
C2051	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2052	1-163-275-11	CERAMIC CHIP	0.001µ F	5%	50V
C2054	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C2056	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C2057	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C2059	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C2060	1-164-004-11	CERAMIC CHIP	0.1µ F	10%	25V
C2061	1-163-275-11	CERAMIC CHIP	0.001µ F	5%	50V
C2062	1-163-275-11	CERAMIC CHIP	0.001µ F	5%	50V
C2063	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2065	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2066	1-163-125-00	CERAMIC CHIP	220pF	5%	50V
C2067	1-163-145-00	CERAMIC	1500pF	5%	50V
C2068	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C2081	1-164-346-11	CERAMIC CHIP	1µ F		16V
C5000	1-126-396-11	ELECT CHIP	47µ F	20%	16V
C5005	1-106-383-00	MYLAR	0.047µ F	10%	200V
C5102	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C5103	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C5104	1-128-526-11	ELECT	100µ F	20%	25V
C5105	1-128-526-11	ELECT	100µ F	20%	25V
C5201	1-136-081-00	FILM	0.012µ F	3%	2KV
C7001	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C7002	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C7003	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C7004	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C7005	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C7006	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C7007	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C7008	1-126-392-11	ELECT CHIP	100µ F	20%	6.3V
		< CONNECTOR >			
CN007	*1-580-798-11	CONNECTOR PIN (DY) 6P			
CN101	1-774-414-11	CONNECTOR, BOARD TO BOARD 20P			
CN102	1-774-414-11	CONNECTOR, BOARD TO BOARD 20P			
CN5000	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P			
CN5003	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P			
		< DIODE >			
D1	8-719-971-20	DIODE ERC38-06			
D2	8-719-300-76	DIODE RH-1A			
D25	8-719-404-46	DIODE MA110			
D55	8-719-500-42	DIODE D8LCA20R			
D61	8-719-901-95	DIODE V19CSS			
D101	8-719-971-20	DIODE ERC38-06			
D102	8-719-971-20	DIODE ERC38-06			
D154	8-719-911-19	DIODE 1SS119-25			
D155	8-719-911-19	DIODE 1SS119-25			
D301	8-719-971-20	DIODE ERC38-06 (20E1E/20E1U/20F1E/20F1U)			
D302	8-719-971-20	DIODE ERC38-06 (20E1E/20E1U/20F1E/20F1U)			
D401	8-719-911-19	DIODE 1SS119-25 (20E1E/20E1U/20F1E/20F1U)			
D402	8-719-911-19	DIODE 1SS119-25 (20E1E/20E1U/20F1E/20F1U)			
D502	8-719-404-46	DIODE MA110			
D503	8-719-404-46	DIODE MA110			
D505	8-719-404-46	DIODE MA110			
D531	8-719-901-83	DIODE 1SS83			
D532	8-719-911-19	DIODE 1SS119-25			
D551	8-719-106-70	DIODE RD12M-B1			
D606	8-719-979-85	DIODE EGP20G			
D607	8-719-979-85	DIODE EGP20G			
D701	8-719-404-46	DIODE MA110			
D702	8-719-105-45	DIODE RD3.3M-B1			
D2002	8-719-404-46	DIODE MA110			
D5001	8-719-404-46	DIODE MA110			
D5002	8-719-110-13	DIODE RD9.1ESB2			
D7001	8-719-105-91	DIODE RD5.6M-B2			
D7002	8-719-404-46	DIODE MA110			
		< FERRITE BEAD >			
FB2	1-410-396-41	FERRITE BEAD INDUCTOR 0.45µ H			

E

REF NO.	PART NO.	DESCRIPTION	REMARK
		< FILTER >	
FL1002	1-239-183-11	FILTER, EMI	
FL1006	1-236-164-11	ENCAPSULATED COMPONENT	
FL1007	1-236-164-11	ENCAPSULATED COMPONENT	
		< IC >	
IC101	8-759-100-96	IC μ PC4558G2	
IC301	8-749-924-04	IC STK390-120 (20E1E/20E1U/20F1E/20F1U)	
IC401	8-759-822-38	IC LA6510 (20E1E/20E1U/20F1E/20F1U)	
IC501	8-759-988-13	IC LM393PS	
IC601	8-759-280-35	IC LA7845	
IC701	8-759-346-56	IC FA5301N-TE1	
IC801	8-759-822-38	IC LA6510	
IC1001	8-759-929-65	IC LM7912CT	
IC1002	8-759-231-58	IC TA7812S	
IC1003	8-759-144-82	IC μ PC2405HF	
IC1004	8-759-247-67	IC LM2990T-5.0	
IC2001	8-759-925-80	IC SN74HC14ANS	
IC2002	8-759-008-48	IC MC74HC86F	
IC2003	8-759-032-01	IC MC74HC00AF	
IC2007	8-759-191-50	IC TDA9102C	
IC2011	8-759-988-13	IC LM393PS	
IC2012	8-759-008-45	IC MC74HC4538F	
IC2015	8-759-100-96	IC μ PC4558G2	
IC2016	8-759-008-45	IC MC74HC4538F	
IC2017	8-759-008-45	IC MC74HC4538F	
IC2019	8-759-032-23	IC MC74HC74AF	
IC2701	8-759-926-37	IC SN74HC193ANS	
IC2702	8-759-926-37	IC SN74HC193ANS	
IC2703	8-759-926-37	IC SN74HC193ANS	
IC2704	8-759-926-98	IC SN74HC4040ANS	
IC2705	8-759-013-92	IC MC74HC164F	
IC7001	8-759-346-47	IC MB89613R-236	
IC7002	8-759-032-26	IC MC74HC125AF	
IC7003	8-759-032-53	IC MC74HC244AF	
IC7004	8-759-156-54	IC X25040SI	
IC7005	8-759-064-36	IC MB88346BPFV	
		< COIL >	
L41	1-411-667-11	COIL, HORIZONTAL LINEARITY (20E1E/20E1U/20F1E/20F1U)	
L41	1-411-668-11	COIL, HORIZONTAL LINEARITY (14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)	
L50	1-459-433-00	COIL (WITH CORE)	
L55	1-411-515-11	COIL, CHOKE 300mH	
L101	1-459-148-00	COIL	
		< TRANSISTOR >	
Q1	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q2	8-729-016-32	TRANSISTOR 2SC4927-01	
Q25	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q26	8-729-216-22	TRANSISTOR 2SA1162-G	
Q27	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q28	8-729-141-30	TRANSISTOR 2SC3623A-LK	
Q51	8-729-015-28	TRANSISTOR IRFI9630GS	
Q52	8-729-019-57	TRANSISTOR 2SA1208S-TP	
Q54	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q55	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q56	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q57	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q58	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q101	8-729-017-06	TRANSISTOR 2SC4793	
Q102	8-729-385-82	TRANSISTOR 2SB858-C	
Q103	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q104	8-729-800-32	TRANSISTOR 2SC2362K-G	
Q105	8-729-800-32	TRANSISTOR 2SC2362K-G	
Q151	8-729-309-36	TRANSISTOR 2SA893A	
Q152	8-729-309-36	TRANSISTOR 2SA893A	
Q155	8-729-140-96	TRANSISTOR 2SD774-34	
Q156	8-729-255-12	TRANSISTOR 2SC2551-O	
Q157	8-729-309-36	TRANSISTOR 2SA893A-EV	
Q158	8-729-017-06	TRANSISTOR 2SC4793	
	4-393-406-01	SHEET (R), RADIATION (Q158)	
Q159	8-729-017-06	TRANSISTOR 2SC4793	
	4-393-406-01	SHEET (R), RADIATION (Q159)	
Q501	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q502	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q505	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q507	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q701	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q702	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2001	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q2002	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q2003	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q5000	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q7001	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q7002	8-729-027-59	TRANSISTOR DTC144EKA-T146	
Q7003	8-729-027-59	TRANSISTOR DTC144EKA-T146	
		< RESISTOR >	

R10	1-215-916-00	METAL OXIDE	680	5%	3W	F
R11	1-215-916-00	METAL OXIDE	680	5%	3W	F
R25	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R26	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R27	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R28	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R29	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R30	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R31	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R45	1-215-913-11	METAL OXIDE	220	5%	3W	F
					(20E1E/20E1U/20F1E/20F1U)	
R45	1-215-911-11	METAL OXIDE	100	5%	3W	F
					(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)	
R51	1-216-393-00	METAL OXIDE	2.2	5%	2W	F
R62	1-215-455-00	METAL	27K	1%	1/4W	
R63	1-215-447-00	METAL	12K	1%	1/4W	
R67	1-249-425-11	CARBON	4.7K	5%	1/4W	
R68	1-247-883-00	CARBON	150K	5%	1/4W	

E

REF NO.	PART NO.	DESCRIPTION				REMARK
R69	1-247-863-91	CARBON	22K	5%	1/4W	
R70	1-216-369-00	METAL OXIDE	1	5%	2W	F
R71	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R72	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R73	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R001	1-216-017-91	METAL GLAZE	47	5%	1/10W	
R002	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R003	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R004	1-249-389-11	CARBON	4.7	5%	1/4W	
R005	1-249-423-11	CARBON	3.3K	5%	1/4W	
R006	1-215-916-00	METAL OXIDE	680	5%	3W	F
R007	1-216-385-11	METAL OXIDE	0.47	5%	3W	F
R008	1-249-401-11	CARBON	47	5%	1/4W	
R101	1-215-889-00	METAL OXIDE	330	5%	2W	F
R102	1-249-474-11	CARBON	1	5%	1/2W	F
R103	1-249-474-11	CARBON	1	5%	1/2W	F
R104	1-215-437-00	CARBON	4.7K	5%	1/4W	
R105	1-215-421-00	CARBON	1K	5%	1/4W	
R106	1-215-429-00	METAL	2.2K	1%	1/4W	
R107	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R108	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R109	1-215-429-00	METAL	2.2K	1%	1/4W	
R110	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
R111	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R112	1-249-381-11	CARBON	1	5%	1/4W	F
R113	1-249-381-11	CARBON	1	5%	1/4W	F
R151	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	
R152	1-216-295-91	CONDUCTOR, CHIP (2012)				
R153	1-249-418-11	CARBON	1.2K	5%	1/4W	
R154	1-249-421-11	CARBON	2.2K	5%	1/4W	
R157	1-249-422-11	CARBON	2.7K	5%	1/4W	
R158	1-215-431-00	METAL	2.7K	1%	1/4W	
R160	1-249-414-11	CARBON	560	5%	1/4W	
R161	1-215-453-00	METAL	22K	1%	1/4W	
R162	1-216-365-00	METAL OXIDE	0.47	5%	2W	F
R163	1-216-365-00	METAL OXIDE	0.47	5%	2W	F
R165	1-216-385-11	METAL OXIDE	0.47	5%	3W	F
R301	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R302	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R303	1-216-025-91	METAL GLAZE	100	5%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R304	1-208-806-11	METAL CHIP	4.7K	0.50%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R305	1-215-863-11	METAL OXIDE	100	5%	1W	F (20E1E/20E1U/20F1E/20F1U)
R306	1-215-863-11	METAL OXIDE	100	5%	1W	F (20E1E/20E1U/20F1E/20F1U)
R307	1-216-426-11	METAL OXIDE	82	5%	1W	F (20E1E/20E1U/20F1E/20F1U)
R308	1-216-349-00	METAL OXIDE	1	5%	1W	F (20E1E/20E1U/20F1E/20F1U)
R309	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R401	1-249-414-11	CARBON	560	5%	1/4W	F (20E1E/20E1U/20F1E/20F1U)
R402	1-249-393-11	CARBON	10	5%	1/4W	F (20E1E/20E1U/20F1E/20F1U)
R403	1-249-377-11	CARBON	0.47	5%	1/4W	F (20E1E/20E1U/20F1E/20F1U)
R404	1-249-385-11	CARBON	2.2	5%	1/4W	(20E1E/20E1U/20F1E/20F1U)
R405	1-216-079-00	METAL GLAZE	18K	5%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R406	1-216-085-00	METAL GLAZE	33K	5%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R407	1-216-101-00	METAL GLAZE	150K	5%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R408	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R409	1-216-049-91	METAL GLAZE	1K	5%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R411	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R412	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R413	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R416	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W	(20E1E/20E1U/20F1E/20F1U)
R417	1-249-385-11	CARBON	2.2	5%	1/4W	(20E1E/20E1U/20F1E/20F1U)
R418	1-249-377-11	CARBON	0.47	5%	1/4W	F (20E1E/20E1U/20F1E/20F1U)
R419	1-249-407-11	CARBON	150	5%	1/4W	F (20E1E/20E1U/20F1E/20F1U)
R420	1-249-392-11	CARBON	8.2	5%	1/4W	F (20E1E/20E1U/20F1E/20F1U)
R421	1-249-393-11	CARBON	10	5%	1/4W	(20E1E/20E1U/20F1E/20F1U)
R422	1-249-393-11	CARBON	10	5%	1/4W	(20E1E/20E1U/20F1E/20F1U)
R505	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R506	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R507	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R508	1-216-121-91	METAL GLAZE	1M	5%	1/10W	
R512	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R513	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R514	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R515	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R516	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R518	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R519	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R520	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R521	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R530	1-249-417-11	CARBON	1K	5%	1/4W	
R532	1-247-883-00	CARBON	150K	5%	1/4W	
R533	1-216-105-91	METAL GLAZE	220K	5%	1/10W	
R551	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	

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REF NO.	PART NO.	DESCRIPTION				REMARK
R552	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	
R553	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W	
R601	1-216-676-11	METAL CHIP	11K	0.50%	1/10W	
		(20E1E/20E1U/20F1E/20F1U)				
R601	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W	
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R602	1-215-431-00	METAL	2.7K	1%	1/4W	
R603	1-249-411-11	CARBON	330	5%	1/4W	F
		(20E1E/20E1U/20F1E/20F1U)				
R603	1-216-432-00	METAL OXIDE	820	5%	1W	F
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R605	1-249-377-11	CARBON	0.47	5%	1/4W	F
R606	1-214-799-11	METAL OXIDE	2	5%	1W	F
		(20E1E/20E1U/20F1E/20F1U)				
R606	1-214-807-55	METAL OXIDE	4.3	1%	1/2W	
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R608	1-249-383-11	CARBON	1.5	5%	1/4W	F
R610	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R611	1-249-377-11	CARBON	0.47	5%	1/4W	F
R612	1-249-377-11	CARBON	0.47	5%	1/4W	F
R613	1-214-799-11	METAL	2	1%	1/2W	
		(20E1E/20E1U/20F1E/20F1U)				
R613	1-214-807-55	METAL	4.3	1%	1/2W	F
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R700	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R701	1-208-806-11	METAL CHIP	22K	0.50%	1/10W	
R702	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
		(20E1E/20E1U/20F1E/20F1U)				
R702	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W	
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R703	1-208-800-11	METAL CHIP	5.6K	0.50%	1/10W	
R704	1-216-093-11	METAL GLAZE	68K	5%	1/10W	
R705	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R706	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W	
R707	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R708	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R709	1-216-685-11	METAL CHIP	27K	0.5%	1/10W	
R710	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R711	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R712	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R713	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R802	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
		(20E1E/20E1U/20F1E/20F1U)				
R802	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W	
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R803	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	
R804	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W	
		(20E1E/20E1U/20F1E/20F1U)				
R804	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R805	1-249-377-11	CARBON	0.47	5%	1/4W	F
R806	1-249-433-11	CARBON	22K	5%	1/4W	F
		(20E1E/20E1U/20F1E/20F1U)				
R806	1-249-424-11	CARBON	3.9K	5%	1/4W	F
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				

REF NO.	PART NO.	DESCRIPTION				REMARK
R807	1-249-401-11	CARBON	47	5%	1/4W	F
		(20E1E/20E1U/20F1E/20F1U)				
R807	1-249-392-11	CARBON	8.2	5%	1/4W	F
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R808	1-249-393-11	CARBON	10	5%	1/4W	
R809	1-249-377-11	CARBON	0.47	5%	1/4W	F
R810	1-249-425-11	CARBON	4.7K	5%	1/4W	F
		(20E1E/20E1U/20F1E/20F1U)				
R810	1-249-418-11	CARBON	1.2K	5%	1/4W	F
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R811	1-249-392-11	CARBON	8.2	5%	1/4W	F
		(20E1E/20E1U/20F1E/20F1U)				
R811	1-249-385-11	CARBON	2.2	5%	1/4W	F
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R812	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
		(20E1E/20E1U/20F1E/20F1U)				
R812	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R813	1-249-385-11	CARBON	2.2	5%	1/4W	
R814	1-249-393-11	CARBON	10	5%	1/4W	
R815	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R816	1-249-385-11	CARBON	2.2	5%	1/4W	
R817	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R818	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
		(20E1E/20E1U/20F1E/20F1U)				
R818	1-216-047-91	METAL GLAZE	820	5%	1/10W	
		(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)				
R819	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R2001	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R2010	1-216-695-11	METAL CHIP	68K	0.50%	1/10W	
R2011	1-208-801-11	METAL CHIP	6.2K	0.50%	1/10W	
R2012	1-208-822-11	METAL CHIP	47K	0.50%	1/10W	
R2013	1-216-641-11	METAL CHIP	390	0.50%	1/10W	
R2014	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R2015	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R2016	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R2017	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R2018	1-216-689-11	METAL CHIP	39K	0.50%	1/10W	
R2019	1-216-697-91	METAL CHIP	82K	0.50%	1/10W	
R2020	1-216-045-91	METAL GLAZE	1K	5%	1/10W	
R2021	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	
R2022	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	
R2023	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	
R2024	1-208-806-11	METAL CHIP	10K	0.50%	1/10W	
R2025	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R2026	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R2027	1-216-699-91	METAL CHIP	100K	0.50%	1/10W	
R2028	1-218-766-11	METAL CHIP	390K	0.50%	1/10W	
R2029	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R2030	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R2032	1-216-695-11	METAL CHIP	68K	0.50%	1/10W	
R2033	1-218-754-11	METAL CHIP	120K	0.50%	1/10W	
R2035	1-216-687-11	METAL CHIP	33K	0.50%	1/10W	
R2036	1-216-025-91	METAL GLAZE	100	5%	1/10W	
R2037	1-216-073-00	METAL GLAZE	10K	5%	1/10W	

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REF NO.	PART NO.	DESCRIPTION			REMARK
R2038	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R2039	1-208-824-11	METAL CHIP	56K	0.50%	1/10W
R2040	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R2041	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R2043	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R2044	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R2045	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R2046	1-216-684-91	METAL CHIP	24K	0.50%	1/10W
R2047	1-208-822-11	METAL CHIP	47K	0.50%	1/10W
R2048	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R2049	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R2050	1-218-754-11	METAL CHIP	120K	0.50%	1/10W
R2052	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R2055	1-216-678-11	METAL CHIP	13K	0.50%	1/10W
R2062	1-208-806-11	METAL CHIP	10K	0.50%	1/10W
R2063	1-216-682-11	METAL CHIP	20K	0.50%	1/10W
R2064	1-216-690-11	METAL CHIP	43K	0.50%	1/10W
R2065	1-216-690-11	METAL CHIP	43K	0.50%	1/10W
R2066	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R2067	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R2070	1-216-123-11	METAL GLAZE	1.2M	5%	1/10W
R2963	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R5002	1-249-397-11	CARBON	22	5%	1/4W F
R5003	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R5006	1-247-863-91	CARBON	22K	5%	1/4W
R6001	1-208-774-11	METAL GLAZE	470	5%	1/10W
R6003	1-216-041-00	METAL GLAZE	470	5%	1/10W
R6004	1-216-041-00	METAL GLAZE	470	5%	1/10W
R6006	1-216-041-00	METAL GLAZE	470	5%	1/10W
R6011	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R6551	1-216-041-00	METAL GLAZE	470	5%	1/10W
R6552	1-216-041-00	METAL GLAZE	470	5%	1/10W
R6553	1-216-041-00	METAL GLAZE	470	5%	1/10W
R6554	1-216-041-00	METAL GLAZE	470	5%	1/10W
R6555	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6556	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6557	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R6558	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6559	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6560	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6561	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6562	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6564	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6565	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6566	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6567	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6568	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6569	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6570	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6571	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6572	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6574	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6575	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6576	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6577	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6578	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6579	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6580	1-216-025-91	METAL GLAZE	100	5%	1/10W
R6581	1-216-025-91	METAL GLAZE	100	5%	1/10W
R7001	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7002	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7003	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7004	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7005	1-216-025-91	METAL GLAZE	100	5%	1/10W
R7006	1-216-025-91	METAL GLAZE	100	5%	1/10W
R7007	1-216-025-91	METAL GLAZE	100	5%	1/10W
R7008	1-216-025-91	METAL GLAZE	100	5%	1/10W
R7009	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7010	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7011	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7012	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7013	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R7014	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7015	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7016	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7017	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7018	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7019	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7020	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7021	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7022	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7023	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7024	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7025	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7026	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R7030	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R7031	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R7032	1-216-041-00	METAL GLAZE	470	5%	1/10W
R7037	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W

< TRANSFORMER >

T5000	1-426-668-11	TRANSFORMER, FERRITE (HDT)
T5001	1-429-350-11	TRANSFORMER, FERRITE (HMT)
T5002	1-429-349-11	TRANSFORMER, FERRITE (HOT)

< TEST PIN >

TP7	1-537-864-11	PIN, POST
TP8	1-537-864-11	PIN, POST
TP2011	1-537-864-11	PIN, POST
TP2012	1-537-864-11	PIN, POST (20E1E/20E1U/20F1E/20F1U)
TP2013	1-537-864-11	PIN, POST
TP2014	1-537-864-11	PIN, POST
TP2015	1-537-864-11	PIN, POST (20E1E/20E1U/20F1E/20F1U)
TP2018	1-537-864-11	PIN, POST
TP2024	1-537-864-11	PIN, POST

< CRYSTAL >

X7001	1-578-689-21	VIBRATOR

REF NO.	PART NO.	DESCRIPTION				REMARK
	*A-1372-133-A	MOUNTED PCB. HA (14E5E/14E5U/14F5E/14F5U/BKM-10R)				
		**********				
		< CAPACITOR >				
C201	1-126-206-11	ELECT	100µ F	20%	6.3V	
C202	1-126-206-11	ELECT	100µ F	20%	6.3V	
C203	1-126-206-11	ELECT	100µ F	20%	6.3V	
C204	1-126-206-11	ELECT	100µ F	20%	6.3V	
C205	1-126-206-11	ELECT	100µ F	20%	6.3V	
C206	1-126-206-11	ELECT	100µ F	20%	6.3V	
C207	1-126-206-11	ELECT	100µ F	20%	6.3V	
C211	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C212	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C213	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C214	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C215	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C216	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C217	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C301	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C302	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C303	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C304	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C305	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C306	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C307	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
C308	1-163-031-11	CERAMIC CHIP	0.01µ F		50V	
		< CONNECTOR >				
CN201	*1-564-005-11	PIN, CONNECTOR 6P				
CN202	*1-564-009-11	PIN, CONNECTOR 10P				
		< DIODE >				
D201	8-719-404-46	DIODE MA110				
D202	8-719-404-46	DIODE MA110				
D203	8-719-404-46	DIODE MA110				
D204	8-719-404-46	DIODE MA110				
D205	8-719-404-46	DIODE MA110				
D206	8-719-404-46	DIODE MA110				
D207	8-719-404-46	DIODE MA110				
D208	8-719-404-46	DIODE MA110				
D209	8-719-404-46	DIODE MA110				
D210	8-719-404-46	DIODE MA110				
D211	8-719-404-46	DIODE MA110				
D212	8-719-404-46	DIODE MA110				
D213	8-719-404-46	DIODE MA110				
D214	8-719-404-46	DIODE MA110				
D215	8-719-404-46	DIODE MA110				
D216	8-719-404-46	DIODE MA110				
D217	8-719-404-46	DIODE MA110				
D218	8-719-404-46	DIODE MA110				
D219	8-719-404-46	DIODE MA110				
D220	8-719-404-46	DIODE MA110				
D221	8-719-404-46	DIODE MA110				
D222	8-719-404-46	DIODE MA110				
D223	8-719-987-45	DIODE CL-155Y/PG-CD (CONTRAST)				
D224	8-719-987-45	DIODE CL-155Y/PG-CD (BRIGHT)				
D225	8-719-987-45	DIODE CL-155Y/PG-CD (CHROMA)				
D226	8-719-987-45	DIODE CL-155Y/PG-CD (PHASE)				
		< IC >				
IC201	8-752-842-86	IC CXP2003M				
IC202	8-752-842-86	IC CXP2003M				
		< TRANSISTOR >				
Q201	8-729-901-01	TRANSISTOR DTC144EK				
Q202	8-729-921-12	TRANSISTOR 2SD1834				
Q203	8-729-921-12	TRANSISTOR 2SD1834				
		< RESISTOR >				
R201	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R202	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R203	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R204	1-216-043-91	METAL GLAZE	560	5%	1/10W	
R205	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R206	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R207	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R208	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R209	1-216-049-91	METAL GLAZE	1K	5%	1/10W	
R210	1-216-097-91	METAL GLAZE	100K	5%	1/10W	
R211	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R212	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R213	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R214	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R215	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R216	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R217	1-216-089-91	METAL GLAZE	47K	5%	1/10W	
R301	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R302	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R303	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R304	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R305	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R306	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R307	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R308	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
		< SWITCH >				
S201	1-692-037-31	SWITCH, KEY BOARD (POWER)				
S202	1-692-037-31	SWITCH, KEY BOARD (DEGAUSS)				
S203	1-692-037-31	SWITCH, KEY BOARD (1)				
S204	1-692-037-31	SWITCH, KEY BOARD (2)				
S205	1-692-037-31	SWITCH, KEY BOARD (3)				
S206	1-692-037-31	SWITCH, KEY BOARD (Del)				
S207	1-692-037-31	SWITCH, KEY BOARD (4)				
S208	1-692-037-31	SWITCH, KEY BOARD (5)				
S209	1-692-037-31	SWITCH, KEY BOARD (6)				
S210	1-692-037-31	SWITCH, KEY BOARD (0)				
S211	1-692-037-31	SWITCH, KEY BOARD (7)				
S212	1-692-037-31	SWITCH, KEY BOARD (8)				
S213	1-692-037-31	SWITCH, KEY BOARD (9)				

HA **HB** **HC**

REF NO.	PART NO.	DESCRIPTION	REMARK
S214	1-692-037-31	SWITCH, KEY BOARD (Ent)	
S215	1-692-037-31	SWITCH, KEY BOARD (MANUAL CONTRAST)	
S216	1-692-037-31	SWITCH, KEY BOARD (MANUAL BRIGHT)	
S217	1-692-037-31	SWITCH, KEY BOARD (MANUAL CHROMA)	
S218	1-692-037-31	SWITCH, KEY BOARD (MANUAL PHASE)	
S219	1-692-037-31	SWITCH, KEY BOARD (MENU)	
S220	1-692-037-31	SWITCH, KEY BOARD (ENTER)	
S221	1-692-037-31	SWITCH, KEY BOARD (UP)	
S222	1-692-037-31	SWITCH, KEY BOARD (DOWN)	
S231	1-473-469-11	ENCODER, ROTARY (CONTRAST)	
S232	1-473-469-11	ENCODER, ROTARY (BRIGHT)	
S233	1-473-469-11	ENCODER, ROTARY (CHROMA)	
S234	1-473-469-11	ENCODER, ROTARY (PHASE)	
**********			
	*A-1372-134-A	MOUNTED PCB, HB (14E5E/14E5U/14F5E/14F5U/BKM-10R)	
		**********	
		< CAPACITOR >	
C101	1-126-391-11	ELECT CHIP 47µ F 20% 6.3V	
C102	1-126-391-11	ELECT CHIP 47µ F 20% 6.3V	
C111	1-163-031-11	CERAMIC CHIP 0.01µ F 50V	
C112	1-163-031-11	CERAMIC CHIP 0.01µ F 50V	
C113	1-163-031-11	CERAMIC CHIP 0.01µ F 50V	
		< CONNECTOR >	
CN101	1-506-471-11	PIN, CONNECTOR 6P	
		< DIODE >	
D101	8-719-404-46	DIODE MA110	
D102	8-719-404-46	DIODE MA110	
D103	8-719-404-46	DIODE MA110	
D104	8-719-404-46	DIODE MA110	
D105	8-719-404-46	DIODE MA110	
D106	8-719-404-46	DIODE MA110	
D107	8-719-404-46	DIODE MA110	
D108	8-719-404-46	DIODE MA110	
D109	8-719-404-46	DIODE MA110	
D110	8-719-404-46	DIODE MA110	
D121	8-719-987-45	DIODE CL-155Y/PG-CD	
D122	8-719-987-45	DIODE CL-155Y/PG-CD	
D123	8-719-987-45	DIODE CL-155Y/PG-CD	
D124	8-719-987-45	DIODE CL-155Y/PG-CD	
D125	8-719-987-45	DIODE CL-155Y/PG-CD	
D126	8-719-987-45	DIODE CL-155Y/PG-CD	
D127	8-719-987-45	DIODE CL-155Y/PG-CD	
D128	8-719-987-45	DIODE CL-155Y/PG-CD	
D129	8-719-987-45	DIODE CL-155Y/PG-CD	
D130	8-719-987-45	DIODE CL-155Y/PG-CD	
		< IC >	
IC101	8-752-842-86	IC CXP2003M	
IC102	8-752-842-86	IC CXP2003M	

REF NO.	PART NO.	DESCRIPTION			REMARK
		< TRANSISTOR >			
Q101	8-729-921-12	TRANSISTOR 2SD1834			
Q102	8-729-921-12	TRANSISTOR 2SD1834			
Q103	8-729-901-01	TRANSISTOR DTC144EK			
		< RESISTOR >			
R101	1-216-043-91	METAL GLAZE	560	5%	1/10W
R102	1-216-043-91	METAL GLAZE	560	5%	1/10W
R103	1-216-043-91	METAL GLAZE	560	5%	1/10W
R104	1-216-043-91	METAL GLAZE	560	5%	1/10W
R105	1-216-043-91	METAL GLAZE	560	5%	1/10W
R106	1-216-043-91	METAL GLAZE	560	5%	1/10W
R107	1-216-043-91	METAL GLAZE	560	5%	1/10W
R108	1-216-043-91	METAL GLAZE	560	5%	1/10W
R109	1-216-043-91	METAL GLAZE	560	5%	1/10W
R110	1-216-043-91	METAL GLAZE	560	5%	1/10W
R112	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R113	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R114	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R115	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R116	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R117	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R121	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R122	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R123	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R124	1-216-095-00	METAL GLAZE	82K	5%	1/10W
R125	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R126	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R127	1-216-089-91	METAL GLAZE	47K	5%	1/10W
		< SWITCH >			
S101	1-692-037-31	SWITCH, KEY BOARD ((SHIFT))			
S102	1-692-037-31	SWITCH, KEY BOARD ((16:9))			
S103	1-692-037-31	SWITCH, KEY BOARD ((SYNC))			
S104	1-692-037-31	SWITCH, KEY BOARD ((BLUE ONLY))			
S105	1-692-037-31	SWITCH, KEY BOARD (COMB(R))			
S106	1-692-037-31	SWITCH, KEY BOARD (APT(G))			
S107	1-692-037-31	SWITCH, KEY BOARD (MONO(B))			
S108	1-692-037-31	SWITCH, KEY BOARD (F1(F3))			
S109	1-692-037-31	SWITCH, KEY BOARD (F2(F4))			
S110	1-692-037-31	SWITCH, KEY BOARD (REMOTE(SAFE AREA))			
**********					
	*A-1375-149-A	COMPLETE PCB, HC (14E5E/14E5U/14F5E/14F5U/BKM-10R)			
		**********			
	3-741-396-01	INSULATOR			
	7-628-253-35	SCREW +PS 2X8			
	7-688-001-01	W 2, SMALL			
		< CAPACITOR >			
C1	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C2	1-163-227-11	CERAMIC CHIP	10pF	0.5pF	50V
C4	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C7	1-163-031-11	CERAMIC CHIP	0.01µ F		50V

HC

REF NO.	PART NO.	DESCRIPTION			REMARK
C8	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C50	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C51	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C52	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C53	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C54	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C55	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C56	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C57	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C58	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C59	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C60	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C61	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C62	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C63	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C64	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C65	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C66	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C67	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C68	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C71	1-163-031-11	CERAMIC CHIP	0.01µ F		50V
C81	1-126-206-11	ELECT	100µ F	20% 6.3V	
C82	1-126-206-11	ELECT	100µ F	20% 6.3V	
C83	1-126-206-11	ELECT	100µ F	20% 6.3V	
C84	1-126-206-11	ELECT	100µ F	20% 6.3V	
C85	1-126-206-11	ELECT	100µ F	20% 6.3V	
C86	1-126-206-11	ELECT	100µ F	20% 6.3V	
C87	1-126-206-11	ELECT	100µ F	20% 6.3V	
C88	1-126-206-11	ELECT	100µ F	20% 6.3V	
C89	1-126-206-11	ELECT	100µ F	20% 6.3V	
C90	1-126-206-11	ELECT	100µ F	20% 6.3V	
C91	1-126-396-11	ELECT CHIP	47µ F	20% 16V	
C92	1-126-396-11	ELECT CHIP	47µ F	20% 16V	
C93	1-126-396-11	ELECT CHIP	47µ F	20% 16V	
		< CONNECTOR >			
CN1	1-774-534-11	CONNECTOR, IC CARD			
CN2	1-506-474-11	PIN, CONNECTOR 9P			
CN3	*1-564-009-11	PIN, CONNECTOR 10P			
CN4	*1-564-005-11	PIN, CONNECTOR 6P			
CN5	1-506-471-11	PIN, CONNECTOR 6P			
		< DIODE >			
D1	8-719-037-00	DIODE RD6.2SB2-T1			
D2	8-719-037-00	DIODE RD6.2SB2-T1			
D3	8-719-037-00	DIODE RD6.2SB2-T1			
D4	8-719-037-00	DIODE RD6.2SB2-T1			
D5	8-719-037-00	DIODE RD6.2SB2-T1			
D6	8-719-037-00	DIODE RD6.2SB2-T1			
D7	8-719-037-00	DIODE RD6.2SB2-T1			
D8	8-719-037-00	DIODE RD6.2SB2-T1			
D10	8-719-210-39	DIODE EC10QS-04			

REF NO.	PART NO.	DESCRIPTION			REMARK
		< IC >			
IC1	8-759-387-33	IC HD6473258P10-EG1.0			
IC2	8-759-991-19	IC PST529CMT			
IC3	8-759-236-11	IC TC74HC138AF (EL)			
IC4	8-759-236-83	IC TC74HC245AF (EL)			
IC5	8-759-237-59	IC TC74HC541AF (EL)			
IC6	8-759-237-59	IC TC74HC541AF (EL)			
IC7	8-759-237-75	IC TC74HC574AF (EL)			
IC8	8-759-236-83	IC TC74HC245AF (EL)			
IC9	8-759-235-31	IC TC74HC14AF (EL)			
IC10	8-759-235-31	IC TC74HC14AF (EL)			
IC11	8-759-237-75	IC TC74HC574AF (EL)			
IC12	8-759-236-79	IC TC74HC244AF (EL)			
IC13	8-759-061-67	IC MC34051M			
IC14	8-759-925-72	IC SN74HC02ANS			
IC16	1-810-899-11	IC MAX877CSA			
IC21	8-759-032-26	IC MC74HC125AF			
		< IC SOCKET >			
ICS1	1-540-044-11	SOCKET, IC			
		< CHIP CONDUCTOR >			
JR1	1-216-296-91	CONDUCTOR, CHIP (3216)			
		< COIL >			
L1	1-412-539-11	INDUCTOR 150µ H			
L2	1-412-537-31	INDUCTOR 100µ H			
L3	1-412-531-31	INDUCTOR 33µ H			
		< TRANSISTOR >			
Q1	8-729-901-01	TRANSISTOR DTC144EK			
Q2	8-729-901-01	TRANSISTOR DTC144EK			
Q3	8-729-122-13	TRANSISTOR 2SA1221-K			
Q4	8-729-122-13	TRANSISTOR 2SA1221-K			
Q5	8-729-901-01	TRANSISTOR DTC144EK			
Q6	8-729-901-01	TRANSISTOR DTC144EK			
		< RESISTOR >			
R1	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R2	1-216-295-91	CONDUCTOR, CHIP (2012)			
R3	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R4	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R5	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R6	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R8	1-216-065-00	METAL GLAZE	4.7K	5% 1/10W	
R9	1-216-077-00	METAL GLAZE	15K	5% 1/10W	
R10	1-216-057-00	METAL GLAZE	2.2K	5% 1/10W	
R11	1-216-069-00	METAL GLAZE	6.8K	5% 1/10W	
R12	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R13	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R14	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R15	1-216-073-00	METAL GLAZE	10K	5% 1/10W	
R16	1-216-073-00	METAL GLAZE	10K	5% 1/10W	

HC **HD** **YA**

REF NO.	PART NO.	DESCRIPTION			REMARK
R17	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R18	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R19	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R20	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R21	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R22	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R23	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R24	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R25	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R26	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R27	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R28	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R31	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R32	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R33	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R34	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R35	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R36	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R37	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R38	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R39	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R40	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R41	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R42	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R43	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R44	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R45	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R48	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R49	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R51	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R52	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R53	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R54	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R55	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R56	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R57	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R58	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R60	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R61	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R62	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R63	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R64	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R65	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R66	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R67	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R68	1-316-097-91	METAL GLAZE	100K	5%	1/10W
R69	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R71	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R72	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R73	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R74	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R75	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R76	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R77	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R78	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R79	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R80	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R81	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R82	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R83	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R84	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R85	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R86	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R87	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R88	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R89	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R90	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R91	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R92	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R93	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R94	1-216-097-91	METAL GLAZE	100K	5%	1/10W
		< CRYSTAL >			
X1	1-577-121-11	VIBRATOR, CRYSTAL (20MHz)			
**********					
	*A-1372-136-A	MOUNTED PCB, HD 14E1E/14E1U/14F1E/14F1U 20E1E/20E1U/20F1E/20F1U/ BKM-10R)			
		**********			
		< CONNECTOR >			
CN101	1-565-269-11	SOCKET, CONNECTOR (D-DUB.L) 9P			
CN102	1-506-474-11	PIN, CONNECTOR 9P			
		< DIODE >			
D101	8-719-037-00	DIODE RD6.2SB2-T1			
D102	8-719-037-00	DIODE RD6.2SB2-T1			
D103	8-719-037-00	DIODE RD6.2SB2-T1			
D104	8-719-037-00	DIODE RD6.2SB2-T1			
D105	8-719-037-00	DIODE RD6.2SB2-T1			
**********					
	*A-1373-542-A	MOUNTED PCB, YA (14E1E/14E1U/14E5E/14E5U/ 14F1E/14F1U/14F5E/14F5U)			
		**********			
	*A-1373-523-A	MOUNTED PCB, YA (20E1E/20E1U/20F1E/20F1U)			
		**********			
		< DIODE >			
D101	8-719-055-74	DIODE SEL6910D-D			
D102	8-719-055-74	DIODE SEL6910D-D			
D103	8-719-055-74	DIODE SEL6910D-D			
D104	8-719-055-74	DIODE SEL6910D-D			
D105	8-719-055-74	DIODE SEL6910D-D			
D106	8-719-055-74	DIODE SEL6910D-D			
**********					

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifiés par une tramé et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

YB **YC** **TA** **TB**

REF NO.	PART NO.	DESCRIPTION	REMARK
	*A-1373-543-A	MOUNTED PCB, YB (14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)	
		**********	
	*A-1373-524-A	MOUNTED PCB, YB (20E1E/20E1U/20F1E/20F1U)	
		**********	
		< DIODE >	
D201	8-719-055-74	DIODE SEL6910D-D	
D202	8-719-055-70	DIODE SEL6210S-D	
D203	8-719-055-72	DIODE SEL6410E-D	
**********			
	*A-1373-525-A	MOUNTED PCB, YC	
		**********	
		< DIODE >	
CN301	1-506-487-11	PIN, CONNECTOR 8P	
CN302	1-774-533-11	SOCKET, SMALL TYPE DIN (8P)	
**********			
	*A-1390-532-A	MOUNTED PCB, TA (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
		**********	
	*A-1390-530-A	MOUNTED PCB, TA (14E1E/14E1U/14F1E/14F1U)	
		**********	
		< CONNECTOR >	
CN11	1-774-525-11	SOCKET, CONNECTOR 64P (14E1E/14E1U/14F1E/14F1U)	
CN12	1-774-525-11	SOCKET, CONNECTOR 64P (14E1E/14E1U/14F1E/14F1U)	
CN13	1-774-525-11	SOCKET, CONNECTOR 64P (14E1E/14E1U/14F1E/14F1U)	
CN14	1-774-537-11	CONNECTOR PIN (PC BOARD) 50P (14E1E/14E1U/14F1E/14F1U)	
CN15	1-774-525-11	SOCKET, CONNECTOR 64P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN15	1-774-536-11	CONNECTOR PIN (PC BOARD) 34P (14E1E/14E1U/14F1E/14F1U)	
CN16	1-774-525-11	SOCKET, CONNECTOR 64P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN16	*1-564-507-11	PLUG, CONNECTOR 4P (14E1E/14E1U/14F1E/14F1U)	
CN17	1-774-525-11	SOCKET, CONNECTOR 64P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN17	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P (14E1E/14E1U/14F1E/14F1U)	
CN18	1-774-525-11	SOCKET, CONNECTOR 64P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN18	1-564-505-11	PLUG, CONNECTOR 2P (14E1E/14E1U/14F1E/14F1U)	
CN19	1-774-537-11	CONNECTOR PIN (PC BOARD) 50P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN19	1-564-506-11	PLUG, CONNECTOR 3P (14E1E/14E1U/14F1E/14F1U)	
CN20	1-774-536-11	CONNECTOR PIN (PC BOARD) 34P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN21	*1-564-507-11	PLUG, CONNECTOR 4P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN22	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN23	1-564-505-11	PLUG, CONNECTOR 2P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN24	1-564-506-11	PLUG, CONNECTOR 3P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
**********			
	*A-1390-531-A	MOUNTED PCB, TB (14E1E/14E1U/14F1E/14F1U)	
		**********	
	*A-1390-533-A	MOUNTED PCB, TB (20E1E/20E1U)	
		**********	
	*A-1390-606-A	MOUNTED PCB, TB (14E5E/14E5U/14F5E/14F5U)	
		**********	
		< CONNECTOR >	
CN1	1-774-525-11	SOCKET, CONNECTOR 64P	
CN2	1-774-525-11	SOCKET, CONNECTOR 64P	
CN3	1-774-525-11	SOCKET, CONNECTOR 64P	
CN4	1-774-525-11	SOCKET, CONNECTOR 64P	
CN5	1-774-525-11	SOCKET, CONNECTOR 64P	
CN6	1-774-525-11	SOCKET, CONNECTOR 64P	
CN7	1-774-525-11	SOCKET, CONNECTOR 64P	
CN8	1-774-525-11	SOCKET, CONNECTOR 64P	
CN9	1-774-525-11	SOCKET, CONNECTOR 64P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN9	1-774-537-11	CONNECTOR PIN (PC BOARD) 50P (14E1E/14E1U/14F1E/14F1U)	
CN10	1-774-525-11	SOCKET, CONNECTOR 64P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN10	1-774-535-11	CONNECTOR PIN (PC BOARD) 26P (14E1E/14E1U/14F1E/14F1U)	
CN11	1-774-525-11	SOCKET, CONNECTOR 64P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN12	1-774-525-11	SOCKET, CONNECTOR 64P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN13	1-774-537-11	CONNECTOR PIN (PC BOARD) 50P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
CN14	1-774-535-11	CONNECTOR PIN (PC BOARD) 26P (14E5E/14E5U/14F5E/14F5U/20E1E/20E1U/20F1E/20F1U)	
**********			
		MISCELLANEOUS (EXCEPT BKM-10R)	
		**********	
	⚠ 8-451-470-11	DYY20MPDM (20E1E/20E1U/20F1E/20F1U)	
	⚠ 8-451-473-11	DYY14MPDT (14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)	
	⚠ 8-453-003-11	NA3012(M) (20E1E/20E1U/20F1E/20F1U)	
	⚠ 1-452-436-41	NECKASSY, CRT (NA292) (14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)	
	⚠ 1-223-417-12	RESISTOR ASSY (HIGH-VOLTAGE)	

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Ne les remplacer que par une piéce portant le numéro spécifié.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

REF NO.	PART NO.	DESCRIPTION	REMARK
	⚠ 1-411-657-11	COIL, LANDING CORRECTION	(20E1E/20E1U/20F1E/20F1U)
	⚠ 1-411-658-11	COIL, LANDING CORRECTION	(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)
	⚠ 1-411-659-11	COIL, DEMAGNETIC	(20E1E/20E1U/20F1E/20F1U)
	⚠ 1-411-660-11	COIL, DEMAGNETIC	(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)
	1-900-214-33	LEADASSY, FOCUS (20E1E/20E1U/20F1E/20F1U)	
	1-900-214-62	LEADASSY, FOCUS	(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)
	1-452-032-11	MAGNET, DISK; 10MM Ø	
	1-452-094-00	MAGNET, ROTA TABLE DISK; 15MM Ø	
	X-4308-815-8	PERMALLOY ASSY, CONVERGENCE	(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)
	X-4309-608-7	PERMALLOY ASSY, CONVERGENCE	(20E1E/20E1U/20F1E/20F1U)
F1	⚠ 1-532-746-11	FUSE, GLASS TUBE 4A/125V	(14E1U/14E5U/14F1U/14F5U/20E1F/20F1U
F1	⚠ 1-576-230-31	FUSE (H.B.C) T3.15A/250V	(14E1E/14E5E/14F1E/14F5E/20E1E/20F1E)
	1-533-702-11	HOLDER, FUSE (F1)	
S901	⚠ 1-762-300-11	SWITCH, AC POWER SEESAW	
V901	⚠ 8-736-374-05	PICTURE TUBE (20MT1) (20F1E: NORTH)	
V901	⚠ 8-736-375-05	PICTURE TUBE (20MT3) (20F1U)	
V901	⚠ 8-736-376-05	PICTURE TUBE (20MP1) (20E1E)	
V901	⚠ 8-736-384-05	PICTURE TUBE (20MT1 (S)) (20F1E: SOUTH)	
V901	⚠ 8-738-334-05	PICTURE TUBE (14MT3) (BVM)(14F1U/14F5U)	
V901	⚠ 8-738-332-05	PICTURE TUBE (14MT1) (BVM) (14F1E/14F5E)	
V901	⚠ 8-738-337-05	PICTURE TUBE (14MP1) (14E1E/14E5E)	
V901	⚠ 8-738-338-05	PICTURE TUBE (14MP3) (14E1U/14E5U)	
V901	⚠ 8-736-377-05	PICTURE TUBE (Y20MPDM) (20E1U)	

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ACCESSORIES AND PACKING MATERIALS
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	⚠ 1-532-746-11	FUSE, GLASS TUBE (4A/125V)	
	⚠ 1-543-653-21	CORE ASSY, BEAD (DIVISION TYPE)	
	⚠ 1-551-812-11	CORD, POWER (7A/125V)	(14E1U/14E5U/14F1U/14F5U/20E1F/20F1U)
	⚠ 1-576-230-31	FUSE (H.B.C) (T3.15A/250V)	
	⚠ 1-590-151-11	CORD SET, POWER	(14E1E/14E5E/14F1E/14F5E/20E1E/20F1E)
	3-170-078-01	HOLDR (B), PLUG	
	*3-704-334-01	SHEET (STANDARD), PROTECTION (BKM-10R)	
	3-800-958-02	MANUAL, OPERATION	(14E1E/14E1U/14F1E/14F1U/20E1E/20E1E/20F1E/20F1E)
	3-800-959-02	MANUAL, OPERATION (BKM-10R)	(JAPANESE/ENGLISH)
	3-800-993-12	MANUAL, OPERATION	(14E5E/14E5U/14F5E/14F5U)
	*4-051-298-02	CUSHION (UPPER) (ASSY)	(20E1E/20E1U/20F1E/20F1U)
	*4-051-299-02	CUSHION (LOWER) (ASSY)	(20E1E/20E1U/20F1E/20F1U)
	*4-051-300-01	INDIVIDUAL CARTON (BKM-10R)	
	*4-051-321-03	INDIVIDUAL CARTON (20F1U)	
	*4-051-322-02	TRAY (20E1E/20E1U/20F1E/20F1U)	
	4-051-484-01	LABEL, TALLY (20E1E/20E1U/20F1E/20F1U)	
	*4-051-574-01	CUSHION (UPPER) (ASSY)	(14E1E/14E1U/14F1E/14F1U)
	*4-051-575-01	CUSHION (LOWER) (ASSY)	(14E1E/14E1U/14F1E/14F1U)
	*4-051-580-01	CUSHION (UPPER) (ASSY)	(14E5E/14E5U/14F5E/14F5U)
	*4-051-581-01	CUSHION (LOWER) (ASSY)	(14E5E/14E5U/14F5E/14F5U)
	*4-051-603-03	INDIVIDUAL CARTON (20F1E)	
	*4-051-705-01	INDIVIDUAL CARTON (14F1U)	
*	4-051-706-01	INDIVIDUAL CARTON (14F1E)	
*	4-051-708-01	INDIVIDUAL CARTON (14F5U)	
*	4-051-709-01	INDIVIDUAL CARTON (14F5E)	
	4-051-743-01	PLATE, TALLY	(14E1E/14E1U/14E5E/14E5U/14F1E/14F1U/14F5E/14F5U)
	*4-051-772-01	BAG, PROTECTION (14E1E/14E1U/14F1E/14F1U)	
	*4-051-773-01	BAG, PROTECTION (14E5E/14E5U/14F5E/14F5U)	
	*4-052-544-02	INDIVIDUAL CARTON (20E1U)	
	*4-054-304-01	INDIVIDUAL CARTON (14E1U)	
	*4-054-305-01	INDIVIDUAL CARTON (14E1E)	
	*4-054-307-01	INDIVIDUAL CARTON (14E5U)	
	*4-054-308-01	INDIVIDUAL CARTON (14E5E)	
	*4-054-360-01	INDIVIDUAL CARTON (20E1E)	
	*4-381-155-01	BAG, PROTECTION (20E1E/20E1U/20F1E/20F1U)	
	*4-396-077-01	JOINT (20E1E/20E1U/20F1E/20F1U)	
	7-682-564-04	SCREW +B 4X14 (BKM-10R)	