

*Self Diagnosis*  
Supported model

# SERVICE MANUAL

# AE-6B CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.	MODEL	COMMANDER	DEST	CHASSIS NO.
<b>KV-28FX68B</b>	RM-932	FR	SCC-Q83Q-A	<b>KV-28FX68U</b>	RM-932	UK	SCC-Q84R-A
<b>KV-28FX68E</b>	RM-932	ESP	SCC-Q81S-A				

## FD Trinitron



KV-28FX68



RM-932

TRINITRON<sup>®</sup> COLOR TV  
**SONY<sup>®</sup>**

# TABLE OF CONTENTS

Section	Title	Page	Section	Title	Page
	Caution .....	3	<b>5. DIAGRAMS</b>		
	Specifications .....	4	5-1.	Block Diagrams (1) .....	25
	Connectors .....	6		Block Diagrams (2) .....	26
	Self Diagnostic Software .....	7		Block Diagrams (3) .....	27
<b>1. GENERAL</b>				Block Diagrams (4) .....	28
	Switching On the TV and Automatically Tuning .....	8	5-2.	Circuit Board Location .....	28
	Introducing and Using the Menu System .....	9	5-3.	Schematic Diagrams and Printed Wiring Boards .....	28
	Menu Guide .....	9		* A Board Schematic .....	29
	Teletext .....	10		* A Board PWB .....	35
	Fastext .....	10		* VM Board Schematic.....	39
	Remote Control Configuration for VCR/DVD .....	11		* VM Board PWB .....	40
	Lifting the TV Set .....	11		* H2 Board Schematic .....	39
	Specifications .....	12		* H2 Board PWB .....	40
	Troubleshooting .....	12		* F4 Board Schematic .....	39
<b>2. DISASSEMBLY</b>				* F4 Board PWB .....	40
	2-1. Rear Cover Removal .....	13		* H1 Board Schematic .....	39
	2-2. Speaker Connector Disconnection .....	13		* H1 Board PWB .....	40
	2-3. Chassis Removal and Refitting .....	13		* G Board Schematic .....	41
	2-4. Service Position .....	14		* G Board PWB .....	40
	2-5. G Board Removal .....	14		* C Board Schematic .....	42
	2-6. Side Control Module Removal .....	14		* C Board PWB .....	43
	2-7. H2 Board Removal .....	14		* M Board Schematic .....	44
	2-8. M Board Removal .....	15	5-4.	Semiconductors .....	47
	2-9. Service Connector for M Board .....	15	5-5.	IC Blocks .....	50
	2-10. Picture Tube Removal .....	16			
	Bottom Plates .....	17	<b>6. EXPLODED VIEWS</b>		
<b>3. SET-UP ADJUSTMENTS</b>				6-1. Chassis .....	52
	3-1. Beam Landing .....	18		6-2. Picture Tube .....	53
	3-2. Convergence .....	19	<b>7. ELECTRICAL PARTS LIST</b>		54
	3-3. Focus Adjustment .....	21			
	3-4. Screen (G2), White Balance .....	21			
<b>4. CIRCUIT ADJUSTMENTS</b>					
	4-1. Electrical Adjustments .....	22			
	4-2. Test Mode 2 .....	24			

### CAUTION

**SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR THE CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.**

### WARNING !!

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

### SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED  $\Delta$  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### ATTENTION

**APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.**

### ATTENTION !!

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

### ATTENTION AUX COMPOSANTS RELATIFS À LA SECURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE  $\Delta$  SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÈCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

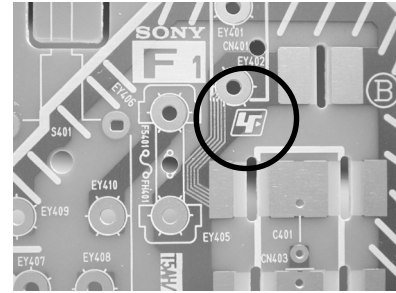
# CAUTION

## Lead Free Soldered Boards

The circuit boards listed below [Table 1] used in these models may have been processed using Lead Free Solder. The boards are identified by the LF logo located close to the board designation e.g. F1, H1 etc [ see examples ]. The servicing of these boards requires special precautions to be taken as outlined below.



example 1



example 2

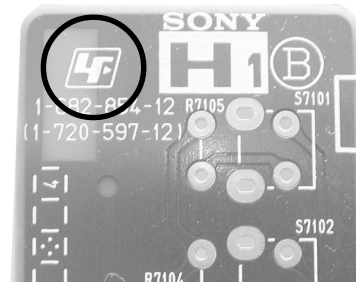


Table 1

Board	Function
C	R,G,B Out
F4	Power Switch & Fuse
H1	LED & IR Receiver
H2	Front AV and Headphone

It is strongly recommended to use Lead Free Solder material in order to guarantee optimal quality of new solder joints. Lead Free Solder is available under the following part numbers :

Partnumber	Diameter	Remarks
7-640-005-19	0.3mm	0.25Kg
7-640-005-20	0.4mm	0.50Kg
7-640-005-21	0.5mm	0.50Kg
7-640-005-22	0.6mm	0.25Kg
7-640-005-23	0.8mm	1.00Kg
7-640-005-24	1.0mm	1.00Kg
7-640-005-25	1.2mm	1.00Kg
7-640-005-26	1.6mm	1.00Kg

Due to the higher melting point of Lead Free Solder the soldering iron tip temperature needs to be set to 370 degrees centigrade. This requires soldering equipment capable of accurate temperature control coupled with a good heat recovery characteristics.


For more information on the use of Lead Free Solder, please refer to <http://www.sony-training.com>

ITEM MODEL	Television System	Stereo System	Channel Coverage	Color System
B	B/G/H, D/K, I, L	GERMAN/NICAM Stereo	VHF : E2-E12, R1-R12, S01-S03, F02-F10, B-Q UHF : E21-E69, F21-F69, B21-B69, R21-R69 CABLE TV : S01-S20 HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
E	B/G/H, D/K	GERMAN/NICAM Stereo	VHF : E2-E12, R1-R12, S01-S03 UHF : E21-E69, R21-R69 CABLE TV : S01-S20 HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
U	I	NICAM Stereo	UHF : B21-B69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)

Picture Tube	Flat Display FD Trinitron Approx 82 cm (28 inches) (Approx 76 cm picture measured diagonally)	<b>Sound output</b>	
		Right and Left speaker	2x20W (Music Power) 2x10W (RMS)
		Sub Woofer	1x30W (Music Power) 1x15W (RMS)
<b>Input/Output Terminals [REAR]</b>		<b>General Specifications</b>	
1: 21-pin Euro connector (CENELEC standard)	Inputs for Audio and Video signals. Inputs for RGB. Outputs of TV Video and Audio signals.	Power Requirements	220 - 240V
		Power Consumption	130W
2: 21-pin Euro connector	Inputs for Audio and Video signals. Inputs for S Video. Outputs of TV Video and Audio signals. (selectable)	Dimensions	Approx 883x567x562mm
		Weight	Approx 64kg
3: 21-pin Euro connector	Inputs for Audio and Video signals. Inputs for S Video. Outputs of TV Video and Audio signals. (Monitor Out)	Supplied Accessories	RM-932 Remote Commander (1) IEC designated R6 battery (2)
Phono Jacks	Output Connectors variable for Audio Signals	Other Features	100 Hz picture, DNR, Auto Noise Reduction, Teletext, Smartlink, BBE, Virtual Dolby
<b>Input/Output Terminals [SIDE]</b>		<b>Remote Control System : Infrared Control</b>	
Headphone jack	stereo mini jack	Power requirements	3V dc 2 batteries IEC designation R6 (size AA)
Audio inputs	phono jacks		
Video inputs	phono jacks		
S Video input	4 pin DIN		
<b>Design and specifications are subject to change without notice.</b>			

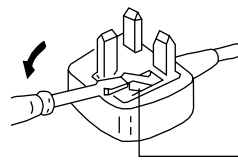
Model Name Item	KV-28FX68B	KV-28FX68E	KV-28FX68U
Pal Comb	OFF	OFF	OFF
PIP	OFF	OFF	OFF
RGB Priority	ON	ON	ON
Woofers Box	ON	ON	ON
Scart 1	ON	ON	ON
Scart 2	ON	ON	ON
Scart 3	ON	ON	ON
Side in (4)	ON	ON	ON
Projector	OFF	OFF	OFF
Norm B/G	ON	ON	OFF
Norm I	ON	OFF	ON
Norm D/K	ON	ON	OFF
Norm AUS	OFF	OFF	OFF
Norm L	ON	OFF	OFF
Norm SAT	OFF	OFF	OFF
Norm M	OFF	OFF	OFF
Teletext	ON	ON	ON
Nicam Stereo	ON	ON	ON

### WARNING (UK Models only)

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** rating. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by ASTA to **BS 1362**, ie one that carries the  mark.

IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR THE OUTLET SOCKETS IN YOUR HOME, IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET.

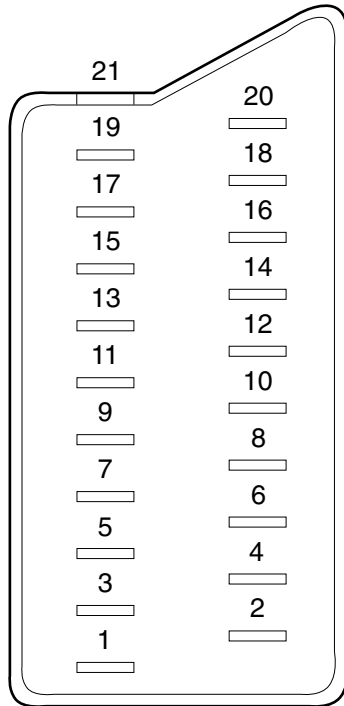
When an alternative type of plug is used, it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.  
Open the fuse compartment with a screwdriver blade and replace the fuse.

FUSE

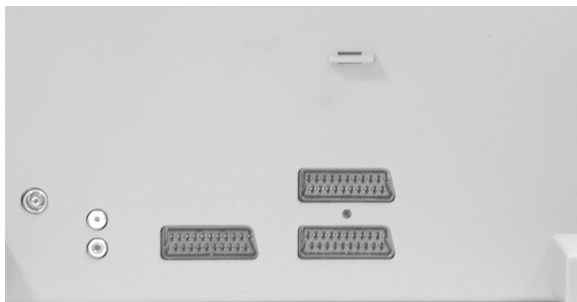
## 21 pin connector



Pin No	1	2	3	Signal	Signal level
1	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedance : Less than 1kohm*
2	○	○	○	Audio input B (right)	Standard level : 0.5V rms Output impedance : More than 10kohm*
3	○	○	○	Audio output A (left)	Standard level : 0.5V rms Output impedance : Less than 1kohm*
4	○	○	○	Ground (audio)	
5	○	○	○	Ground (blue)	
6	○	○	○	Audio input A (left)	Standard level : 0.5V rms Output impedance : More than 10kohm*
7	○	●	●	Blue input	0.7 +/- 3dB, 75 ohms positive
8	○	○	○	Function select (AV control)	High state (9.5-12V) : Part mode Low state (0-2V) : TV mode Input impedance : More than 10K ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (green)	
10	○	○	○	Open	
11	○	●	●	Green	Green signal : 0.7 +/- 3dB, 75 ohms, positive
12	○	○	○	Open	
13	○	○	○	Ground (red)	
14	○	○	○	Ground (blanking)	
15	○	-	-	Red input	0.7 +/- 3dB, 75 ohms, positive
	-	○	○	(S signal Chroma input)	0.3 +/- 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1-3V) Low state (0-0.4V) Input impedance : 75 ohms
17	○	○	○	Ground (video output)	
18	○	○	○	Ground (video input)	
19	○	○	○	Video output	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
20	○	-	-	Video input	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
	-	○	○	Video input Y (S signal)	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
21	○	○	○	Common ground (plug, shield)	

○ Connected      ● Not Connected (open) \* at 20Hz - 20kHz

## Rear Connection Panel



## Front Connection Panel



S Video socket pin configuration		
Pin No	Signal	Signal Level
1	Ground	-
2	Ground	-
3	Y (S signal) input	1V +/- 3dB 75ohm, positive Sync. 0.3V -3 +10dB
4	C (S signal) input	0.3V +/- 3dB 75ohm, positive Sync.

# AE-6B SELF DIAGNOSTIC SOFTWARE

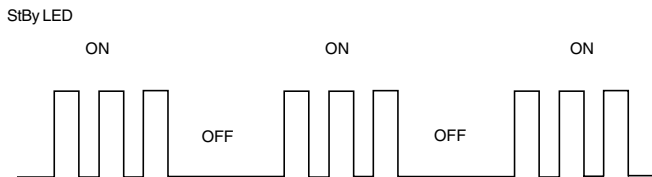
The identification of errors within the AE-6B chassis is triggered in one of two ways :- 1: Busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED (Series of flashes which must be counted) See table 1, non fatal errors are reported using this method.

Each time the software detects an error it is stored within the NVM. See Table 2.

**Table 1**

Error Message	LED Code
No error	00
Reserved	01
OCP ( Over Current Protection )	02
Over Voltage Protection	03
No Vertical Sync	04
IKR Error at power on	05
IIC bus clock and/or data lines low at power on	06
NVM no IIC bus acknowledge at power on	07
Horizontal Protection	08
Tuner no acknowledge at power on	09
Sound Processor Error	10
Reserved	11
Scanrate Error	12
DAC Error	13
Backend Error	14
Dynamic Convergence Error	15
PIP Error	16

**Flash Timing Example : e.g. error number 3**



**How to enter into Table 2**

1. Turn on the main power switch of the TV set.
2. Program Remote Commander for Operation in Service Mode. [See Page 22].
3. Press 'VIDEO' 'VIDEO' > 'MENU' on the Remote Commander.
4. Using the Remote Commander, Scroll to the 'Error Menu' item using the down arrow key, then press the right arrow key.
5. The following table will be displayed indicating the error count.

**Table 2**

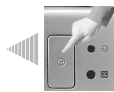
ERROR MENU			
E02	OCP	(0, 255)	0
E03	OVP	(0, 255)	0
E04	VSYNC	(0, 255)	0
E05	IKR	(0, 255)	0
E06	IIC	(0, 255)	0
E07	NVM	(0, 255)	0
E08	HPROT	(0, 255)	0
E09	TUNER	(0, 255)	0
E10	SOUNDP	(0, 255)	0
E11	-	(0, 255)	0
E12	SCANRATE	(0, 255)	0
E13	DAC	(0, 255)	0
E14	BACKEND	(0, 255)	0
E15	DYN CON	(0, 255)	0
E16	PIP	(0, 255)	0
<b>WORKING TIME</b>			
HOURS			14
MINUTES			7

**Note:** To clear the error count data press '80' on the Remote commander.

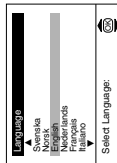
The operating instructions mentioned here are partial abstracts from the 'Operating Instruction Manual'. The page numbers of the 'Operating Instruction Manual' remain as in the manual.

## Switching On the TV and Automatically Tuning

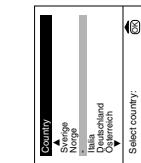
The first time you switch on your TV, a sequence of menu screens appear on the TV enabling you to: 1) choose the language of the menu screen, 2) adjust the picture slant, 3) search and store all available channels (TV Broadcast) and 4) change the order in which the channels (TV Broadcast) appear on the screen. However, if you need to change any of these settings at a later date, you can do that by selecting the appropriate option in the (Set Up menu) or by pressing the Auto Start Up Button on the TV set.



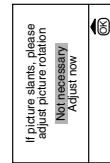
- 1 Connect the TV plug to the mains socket (220-240V AC, 50/60Hz). The first time that the TV set is connected, it is usually turned on. If the TV is off, press the on/off button on the TV set to turn on the TV. The first time you switch on the TV, a **Language** menu displays automatically on the TV screen.



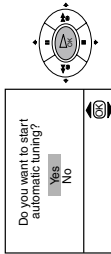
- 2 Press the or button on the remote control to select the language, then press the **OK** button to confirm your selection. From now on all the menus will appear in the selected language.



- 3 The **Country** menu appears automatically on the TV screen. Press the or button to select the country in which you will operate the TV set, then press the **OK** button to confirm your selection.
  - If the country in which you want to use the TV set does not appear in the list, select **''**, instead of a country.
  - In order to avoid wrong teletext characters for Cyrillic languages, we recommend to select Russia country in the case that your own country does not appear in the list.



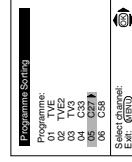
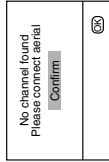
- 4 Because of the earth's magnetism, the picture might slant. The **Picture Rotation** menu allows you to correct the picture slant if it is necessary.
  - a) If it is not necessary, press or to select **Not necessary** and press **OK**.
  - b) If it is necessary, press or to select **Adjust now**, then press **OK** and correct any slant of the picture between -5 and +5 by pressing or . Finally press **OK** to store.



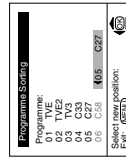
- 5 The Auto Tuning menu appears on the screen. Press the **OK** button to select **Yes**.



- 6 The TV starts to automatically search and store all available broadcast channels for you.
  - This procedure could take some minutes. Please be patient and do not press any buttons, otherwise the automatic tuning will not be completed.
  - In some countries the TV Broadcaster installs the channels automatically (ACI system). In this case, the TV Broadcaster sends a menu in which you can select your city by pressing the or button and **OK** to store the channels.
  - If no channels were found during the auto tuning process then a new menu appears automatically on the screen asking you to connect the aerial. Please connect the aerial (see page 6) and press **OK**. The auto tuning process will start again.



- 7 After all available channels are captured and stored, the **Programme Sorting** menu appears automatically on the screen enabling you to change the order in which the channels appear on the screen.
  - a) If you wish to keep the broadcast channels in the tuned order, go to step 8.
  - b) If you wish to store the channels in a different order:
    - 1 Press the or button to select the programme number with the channel (TV Broadcast) you wish to rearrange, then press the button.
    - 2 Press the or button to select the new programme number position for your selected channel (TV Broadcast), then press .
    - 3 Repeat steps b)1 and b)2 if you wish to change the order of the other channels.



- 8 Press the **MENU** button to remove the menu from the screen.

Your TV is now ready for use

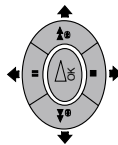


## Introducing and Using the Menu System

**1** Your TV uses an on-screen menu system to guide you through the operations. Use the following buttons on the remote control to operate the menu system:



**1** Press the MENU button to switch the first level menu on.



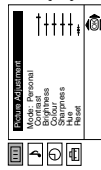
- 2**
- To highlight the desired menu or option, press **↑** or **↓**.
  - To enter to the selected menu or option, press **OK**.
  - To return to the last menu or option, press **←**.
  - To alter settings of your selected option, press **→** / **←** / **↑** or **↓**.
  - To confirm and store your selection, press **OK**.



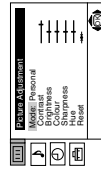
**3** Press the MENU button to remove the menu from the screen.

## Menu Guide

### Level 1



### Level 2



### Level 3 / Function

#### PICTURE ADJUSTMENT

The "Picture Adjustment" menu allows you to alter the picture settings.

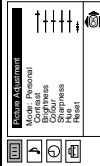
To do this: after selecting the item you want to alter press **→** then press repeatedly **→** / **←** or **↓** / **↑** to adjust it and finally press **OK** to store the new adjustment.

This menu also allows you to customise the picture mode based on the programme you are watching:

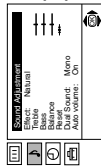
- **Live** (for live broadcast programmes, DVD and Digital Set Top Box receivers).
- **Personal** (for individual settings).
- **Movie** (for films).

- **Brightness, Colour and Sharpness** can only be altered if "Personal" mode is selected.
- **Hue** is only available for NTSC colour signal (e.g. USA video tapes).
- **Select Reset** and press **OK** to reset the picture to the factory preset levels.

### Level 1



### Level 2

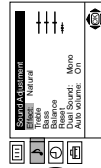


### Level 3 / Function

#### SOUND ADJUSTMENT

The "Sound Adjustment" menu allows you to alter the sound settings.

To do this: after selecting the item you want to alter, press **→**. Then press repeatedly **→** / **←** or **↓** / **↑** to adjust it and finally press **OK** to store the new adjustment.



#### Effect

- **Natural:** Enhances clarity, detail and presence of sound by using "BBE High Definition Sound system".\*\*
- **Dynamic:** "BBE High Definition Sound system".\*\* intensifies clarity and presence of sound for better intelligibility and musical realism.
- **Dolby:\*\*Virtual:** Simulates the sound effect of "Dolby Surround Pro Logic".
- **Off:** Flat response.

#### Treble Bass Balance Reset

- **Less** **↓** / **More** **↑**
  - **Less** **↓** / **More** **↑**
  - **Left** **←** / **Right** **→**
- Resets the sound to the factory preset levels.

#### Dual Sound

- For a stereo broadcast:
  - **Mono.**
  - **Stereo.**
- For a bilingual broadcast:
  - **Mono** (for mono channel if available).
  - **A** (for channel 1).
  - **B** (for channel 2).

#### Auto Volume

- **Off:** Volume level changes according to the broadcast signal.
- **On:** Volume level of the channels will stay the same, independent of the broadcast signal (e.g. in the case of advertisements).

• If you are listening to the TV through headphones, the "Effect" option will automatically be switched to "Off".

• If you select "Dolby Virtual" on the "Effect" option, the "Auto Volume" option will automatically be switched to "Off" and vice versa.



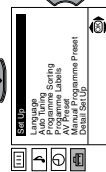
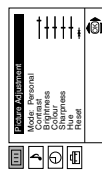
\* The "BBE High Definition Sound system" is manufactured by Sony Corporation under license from BBE Sound, Inc. It is covered by U.S. Patent No. 4,638,258 and No. 4,482,866. The word "BBE" and BBE Symbol are trademarks of BBE Sound, Inc.



\*\* This TV has been designed to create the "Dolby Surround" sound effect by simulating the sound of four speakers with two speakers, when the broadcast audio signal is Dolby Surround encoded. The sound effect can also be improved by connecting a suitable external amplifier (for details refer to "Connecting to external audio equipment" on page 18).

\*\* Manufactured under license from Dolby Laboratories. "Dolby", "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories.

## Level 1 Level 2 Level 3 / Function



### MANUAL PROGRAMME PRESET

The "Manual Programme Preset" option in the "Set Up" menu allows you to:

- Preset channels or the VCR channel one by one to the programme order of your choice. To do this:
  - After selecting the "Manual Programme Preset" option, press **↵** then with **Programme** option highlighted press **↵**. Press **↵** or **↵** to select on which programme number you want to preset the channel (for VCR, select programme number "0"). Then press **↵**.

- The following option is only available depending on the country you have selected in the "Language/Country" menu.
  - After selecting the **System** option, press **↵**. Then press **↵** or **↵** to select the TV Broadcast system (B/G for western European countries, L for France or I for United Kingdom). Then press **↵**.

- After selecting the **Channel** option, press **↵**. Then press **↵** or **↵** to select the channel tuning ("C" for terrestrial channel or "S" for cable channels). Next press **↵**. After that, press the number buttons to enter directly the channel number of the TV broadcast or the channel of the VCR signal. If you do not know the channel number, press **↵** or **↵** to search for it. When you tune the desired channel, press **OK** twice to store.
 

*Repeat all the above steps to tune and store more channels.*

- Label a channel using up to five characters.
 

To do this: Highlighting the **Programme** option, press the **PROG +/-** button to select the programme number with the channel you wish to name. When the programme you want to name appears on the screen, select the **Label** option and press **↵**. Next press **↵** or **↵** to select a letter, number or "." for a blank. Press **↵** to confirm this character. Select the other four characters in the same way. After selecting all the characters, press **OK** twice to store.

- Fine tune the broadcast reception. Normally the automatic fine tuning (AFT) will give the best possible picture, however you can manually fine tune the TV to obtain a better picture reception in case the picture is distorted.
 

To do this: while watching the channel (TV Broadcast) you wish to fine tune, select the **AFT** option and press **↵**. Next press **↵** or **↵** to adjust the fine tuning between -15 and +15. Finally press **OK** twice to store.

- Skip any unwanted programme numbers when they are selected with the **PROG +/-** buttons.
 

To do this: Highlighting the **Programme** option, press the **PROG +/-** button to select the programme number you want to skip. When the programme you want to skip appears on the screen, select the **Skip** option and press **↵**. Next press **↵** or **↵** to select **Yes**. Finally press **OK** twice to confirm and store.

*To cancel this function afterwards, select "No" instead of "Yes" in the step above.*

- View and record scrambled channels when using a decoder connected to Scart **↵** directly or through a VCR.
  - This option is only available depending on the country you have selected in the "Language/Country" menu.

*To do this: select the **Decoder** option and press **↵**. Next press **↵** or **↵** to select **On**. Finally press **OK** twice to confirm and store.*

*To cancel this function afterwards, select "Off" instead of "On" in the step above.*

## Teletext

**i** Teletext is an information service transmitted by most TV stations. The index page of the teletext service (usually page 100) gives you information on how to use the service. To operate teletext, use the remote control buttons as indicated below.

**A** Teletext errors may occur if you use a channel (TV Broadcast) with a weak signal.



**To switch on Teletext:**  
After selecting the TV channel which carries the teletext service you wish to view, press **⏏**.

**To select a Teletext page:**

- Input 3 digits for the page number, using the numbered buttons.
- If you make a mistake, retype the correct page number.
- If the counter on the screen continues searching, it is because the page is not available. If this is the case, input another page number.

**To access the next or preceding page:**

Press **PROG + (⏏)** or **PROG - (⏏)**.

**To superimpose teletext on to the TV:**

Whilst you are viewing teletext, press **⏏**. Press it again to cancel teletext mode.

**To freeze a teletext page:**

Press **⏏**. Press it again to cancel the freeze.

**To reveal concealed information (e.g. answer to a quiz):**

Press **⏏**. Press it again to conceal the information.

**To select a sub page:**

A teletext page may consist of several sub pages. In this case the page number that appears on the upper left corner will change from white to green and one or more arrows will appear next to the page number. Repeatedly press the **↵** or **↵** buttons on the remote control to watch the desired sub page.

**To Switch Off Teletext:**

Press **⏏**.

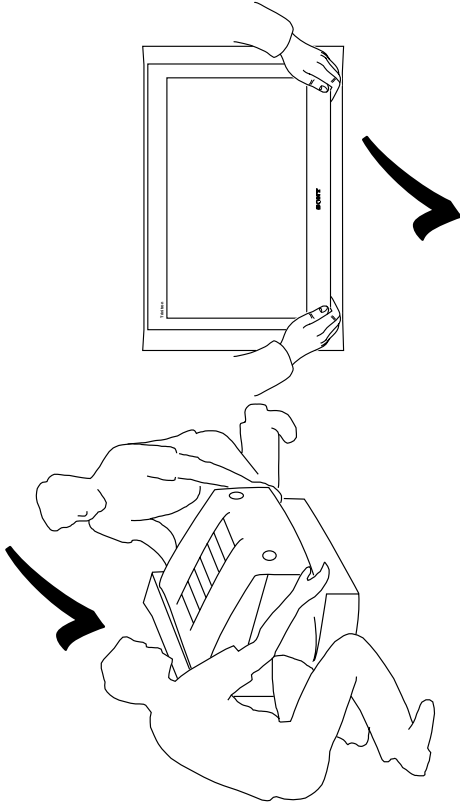
## Fastext

Fastext service lets you access Teletext pages with one button push.

**i** When you are in Teletext mode and Fastext is broadcast, a colour coded menu appears at the bottom of the teletext page. Press the appropriate coloured button (red, green, yellow or blue) to access the page corresponding to your menu choice.

## Lifting the TV Set

4-094-189-11

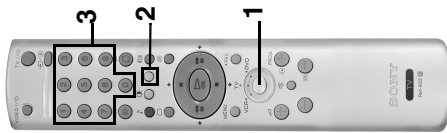


## Remote Control Configuration for VCR/DVD

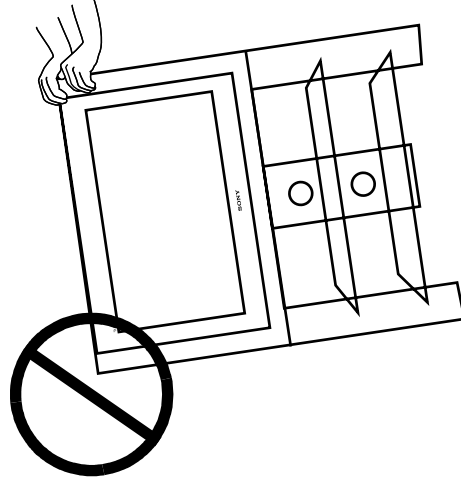
In its default condition this remote control will operate the basic functions of this Sony TV. Sony DVDs and most Sony VCRs. To control VCRs and DVDs of other manufacturers (and some Sony VCR models), please complete the following steps:

- Before you start, look up the 3 digit code for your brand of DVD or VCR from the list below. On those brands that have more than one code, enter the first code number.
- Sony will endeavour to update the software according to market changes. Therefore, please refer to the code table included with the remote control for the latest code set.

- 1 Press the Media Selector button on the remote control repeatedly until the required green light (VCR or DVD) is lit.
  - ⚠ If Media Selector is on TV position, code numbers will not be stored.
- 2 Before the green light goes out, press and hold the yellow button for approximately 6 seconds until the green light starts flashing.
- 3 Whilst the green light is flashing, enter all three digits of the code for your brand of VCR or DVD using the number buttons on the remote control.
  - ⓘ If your selected code is entered correctly, all three green lights will be lit momentarily.
- 4 Turn on your VCR or DVD and check that the main functions work.
  - ⚠ If your device is not working or some of the functions do not work please check that you entered the correct code set or try the next code listed against the brand.
  - Your brand codes may be lost if weak batteries are not replaced within a few minutes. To reset your brand of DVD or VCR please repeat the above steps. A small label is added inside the battery door to allow you to record your brand codes.
  - Not all brands are covered and not all models of every brand may be covered.



VCR Brand List		DVD Brand List	
Brand	Code	Brand	Code
SONY (VHS)	301, 302, 303, 308, 309	SONY	001
SONY (BETA)	303, 307, 310	AIWA	021
SONY (DV)	304, 305, 306	DENON	018, 027, 020, 002
AIWA	325, 331, 351	GRUNDIG	099, 028, 023, 024, 016, 003
AKAI	326, 329, 330	HITACHI	025, 026, 015, 004
DAEWOO	342, 343	JVC	006, 017
GRUNDIG	358, 355, 360, 361, 320, 351	KENWOOD	008
HITACHI	327, 333, 334	LG	015, 014
JVC	314, 315, 322, 344, 352, 353, 354, 348, 349	LOEWE	009, 028, 023, 024, 016, 003
LG	352, 358	MATSUI	013, 016
LOEWE	358, 355, 360, 361, 320, 351	ONKYO	022
MATSUI	356, 357	PANASONIC	018, 027, 020, 002
ORION	328	PHILIPS	009, 028, 023, 024, 016, 003
PANASONIC	321, 323	PIONEER	004
PHILIPS	311, 312, 313, 316, 317, 318, 358, 359	SAMSUNG	011, 014
SAMSUNG	339, 340, 341, 345	SANYO	007
SANYO	335, 336	SHARP	019, 027
SHARP	324	THOMSON	012
THOMSON	319, 350	TOSHIBA	003
TOSHIBA	337	YAMAHA	018, 027, 020, 002



<http://www.sony.net/>

Sony Corporation Printed in UK



Recyclable

## Specifications

### TV system:

1  
 4 S-Video input – 4 pin DIN  
 4 video input – phono jack  
 4 audio input – phono jacks  
 headphones jack

### Colour system:

PAL  
 SECAM, NTSC 3.58, 4.43 (only Video In)

### Channel Coverage:

I: UHF B21-B69

### Picture Tube:

Flat Display ED Trinitron WIDE:  
 •KV-32FX68U: 32" (approx. 82 cm, measured diagonally)  
 •KV-28FX68U: 28" (approx. 71 cm, measured diagonally)

### Rear Terminals

1/2 21-pin scart connector (CENELEC standard) including audio/video input, RGB input, TV audio/video output.

### 2

21-pin Scart connector (CENELEC standard) including audio / video input, RGB input, monitor audio/video output.

### 3

21-pin Scart connector (SMARTLINK) (CENELEC standard) including audio / video input, S video input, selectable audio / video output and Smartlink interface.

### 4

Audio outputs (Left/Right) - phono jacks

### Side Terminals

4 S-Video input – 4 pin DIN  
 4 video input – phono jack  
 4 audio input – phono jacks  
 headphones jack

### Sound Output:

2 x 20 W (music power)

### Woofer:

2 x 10 W (RMS)  
 30 W (music power)  
 15 W (RMS)

### Power Consumption:

KV-32FX68U: 130 W

KV-28FX68U: 125 W

### Standby Power Consumption:

0.3 W

### Dimensions (w x h x d):

KV-32FX68U: approx. 882 x 567 x 562 mm.

KV-28FX68U: approx. 797 x 519 x 523 mm.

### Weight:

KV-32FX68U: approx. 65 Kg.

KV-28FX68U: approx. 45 Kg.

### Accessories supplied:

1 Remote Control (RM-932)  
 2 Batteries (IEC designated)

### Other features:

- 100 Hz picture memory
- Teletext, Fastext, TOPtext (250 page TEXT)
- Sleep Timer
- Smartlink (direct link between your TV set and a compatible VCR. For more information on Smartlink, please refer to the Instruction Manual of your VCR).
- Dolby Virtual.
- BBG Digital
- Auto Format.
- ACI (Auto Channel Installation).

**Design and specifications are subject to change without notice.**

## Troubleshooting



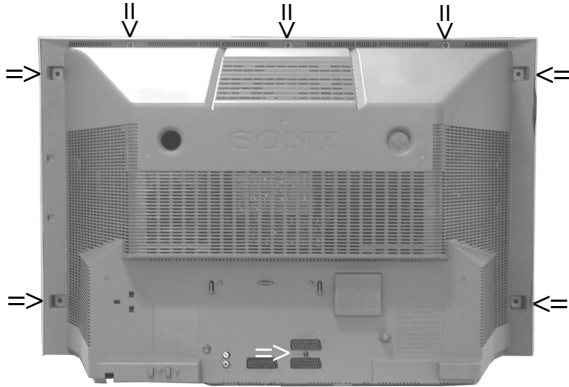
Here are some simple solutions to problems which may affect the picture and sound.

Problem	Solution
No picture (screen is dark) and no sound.	<ul style="list-style-type: none"> <li>• Check the aerial connection.</li> <li>• Plug the TV in and press the  button on the front of the TV.</li> <li>• If the standby indicator  is on, press <b>TV I/O</b> button on the remote control.</li> </ul>
Poor or no picture (screen is dark), but good sound.	<ul style="list-style-type: none"> <li>• Using the menu system, select the "Picture Adjustment" menu and select "Reset" to return to the factory settings.</li> </ul>
No picture or no menu information from equipment connected to the Scart connector.	<ul style="list-style-type: none"> <li>• Check that the optional equipment is on and press the  button repeatedly on the remote control until the correct input symbol is displayed on the screen.</li> </ul>
Good picture, no sound.	<ul style="list-style-type: none"> <li>• Press the  button on the remote control.</li> <li>• Check that "TV Speakers" is "On" in the "Detail Set Up" menu.</li> <li>• Check that headphones are not connected.</li> </ul>
No colour on colour programmes.	<ul style="list-style-type: none"> <li>• Using the menu system, select the "Picture Adjustment" menu and select "Reset" to return to factory settings.</li> </ul>
Distorted picture when changing programmes or selecting teletext.	<ul style="list-style-type: none"> <li>• Turn off any equipment connected to the Scart connector on the rear of the TV.</li> </ul>
Picture slanted	<ul style="list-style-type: none"> <li>• Using the menu system, select the "Picture Rotation" option in the "Detail Set Up" menu to correct the picture slant.</li> </ul>
Noisy picture when viewing a TV channel.	<ul style="list-style-type: none"> <li>• Using the menu system, select the "Manual Programme Preset" menu and adjust Fine Tuning (AFT) to obtain better picture reception.</li> <li>• Using the menu system, select the "Noise Reduction" option in the "Detail Set Up" menu and select "Auto" to reduce the noise in the picture.</li> </ul>
No unscrambling or unstable picture whilst viewing a scrambled channel with a decoder connected through the Scart connector ---.	<ul style="list-style-type: none"> <li>• Using the menu system, select the "Set Up" menu. Then enter to "Detail Set Up" option and set "AV3 Output" to "TV".</li> <li>• Check that the decoder is not connected on the scart --.</li> </ul>
Remote control does not function.	<ul style="list-style-type: none"> <li>• Check that the Media Selector on the remote control is set to the device you are using (VCR, TV or DVD).</li> <li>• If the remote control does not operate the VCR or DVD even when the Media Selector has been set correctly. Enter the necessary code set as explained on "Remote Control Configuration for VCR/DVD" chapter of this instruction manual.</li> <li>• Replace the batteries.</li> </ul>
The standby indicator  on the TV flashes.	<ul style="list-style-type: none"> <li>• Contact your nearest Sony service centre.</li> </ul>

If you continue to experience problems, have your TV serviced by qualified personnel. Never open the casing yourself.

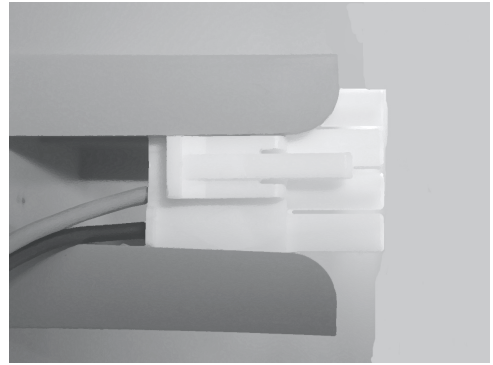
## SECTION 2 DISASSEMBLY

### 2-1. Rear Cover Removal



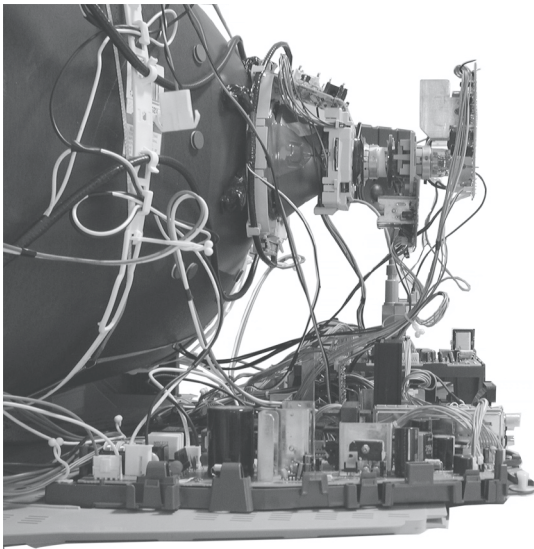
Remove the rear cover fixing screws indicated. Take care when removing the rear cover not to damage the speaker cables [Disconnect the speaker connector] as speakers are fitted inside the rear cover.

### 2-2. Speaker Connector Disconnection

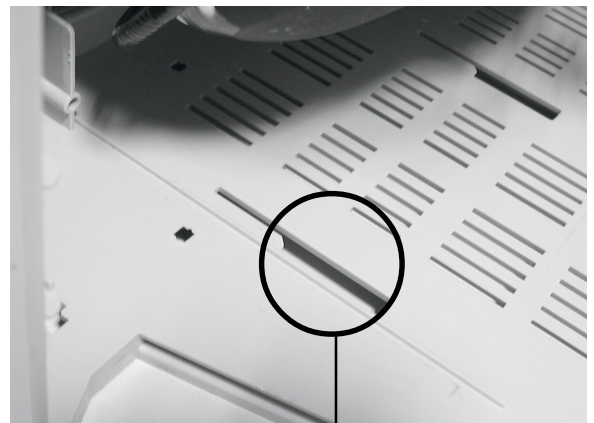


Before completely removing the rear cover disconnect the speaker connector which is located on the inside.

### 2-3. Chassis Removal and Refitting

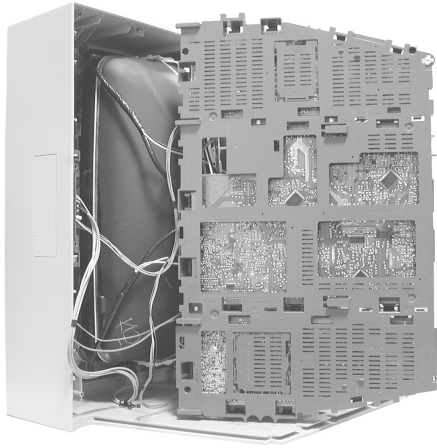


To remove lift the main bracket rear slightly and slide the chassis away from the beznet. Ensure that the interconnecting leads are released from their purse locks to prevent damage being caused.



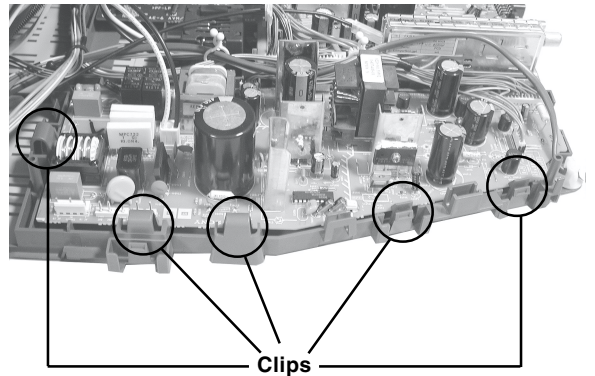
When refitting the chassis ensure that the main bracket is located in the beznet guide slots before sliding the chassis forwards. Refit the interconnecting leads in their respective purse locks.

#### 2-4. Service Position



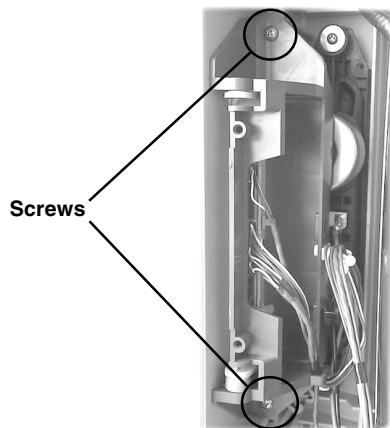
Position the chassis as indicated to access the solder side. To gain access to the underside of the boards follow the instructions on page 17. [Removal and Replacement of the main bracket bottom plates ].

#### 2-5. G Board Removal



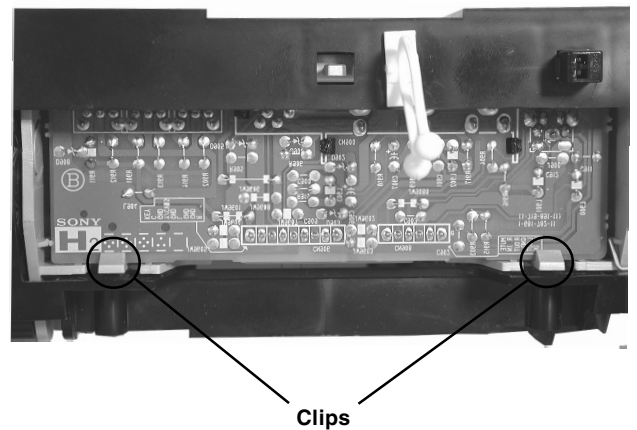
To remove the G Board release the clips circled and ease the board gently away from the support bracket. Removal of the D board follows the same procedure.

#### 2-6. Side Control Module Removal



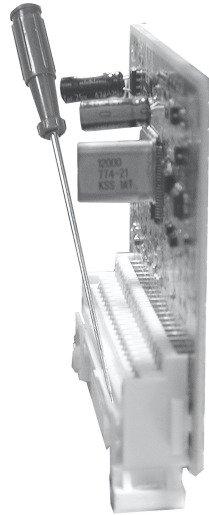
Remove the two screws fixing the user control module to the side of the set. The control module can then be removed by sliding it towards the rear of the set allowing access to the H2 Board.

#### 2-7. H2 Board Removal



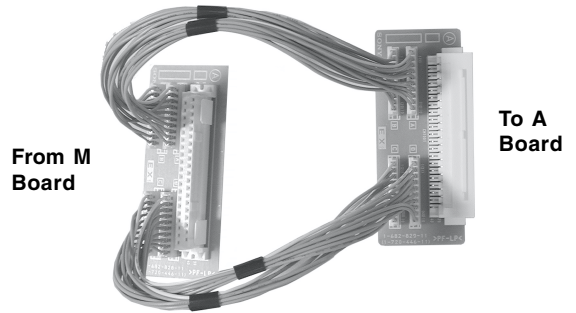
To remove the H2 Board release the two clips circled and ease the board gently away from the support bracket.

### 2-8. M Board Removal



To remove the M Board gently release the two clips with a screwdriver and remove the board from its socket vertically.

### 2-9. Service Connector for M Board



Extender Board Assembly A-1642-293-A

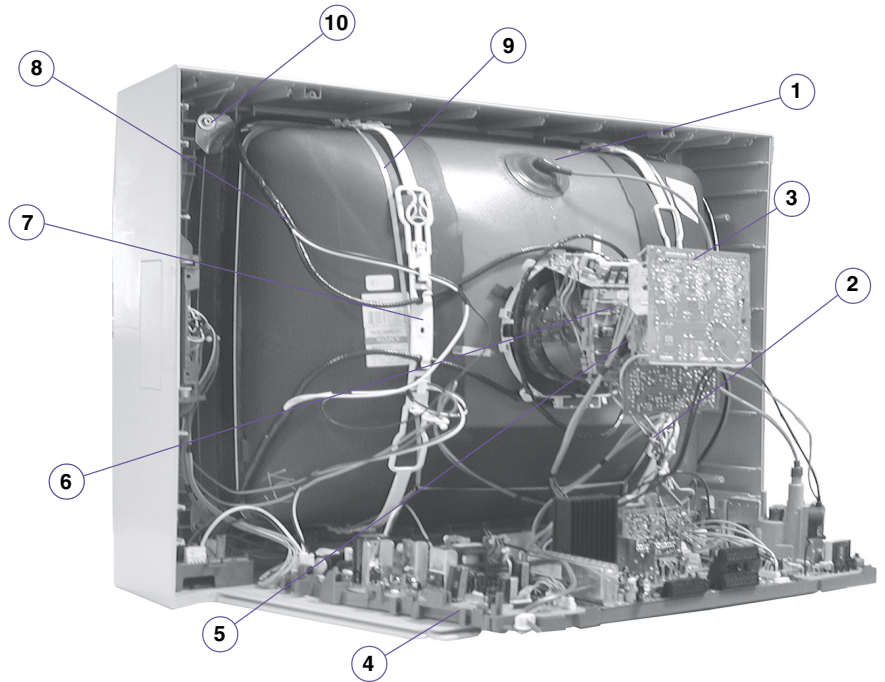
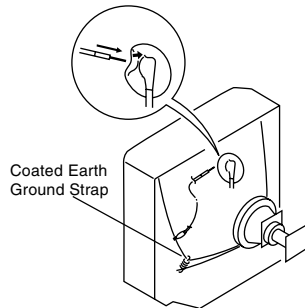
If the M Board needs to be removed for testing when the chassis is placed in its service position, it would be necessary to use an extender board and extension cable as indicated above.

The Extender board and extension cable are available as a service part by ordering the part number as indicated.

## 2-10. Picture Tube Removal

### WARNING: BEFORE REMOVING THE ANODE CAP

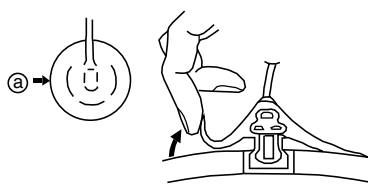
High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT *before* attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.



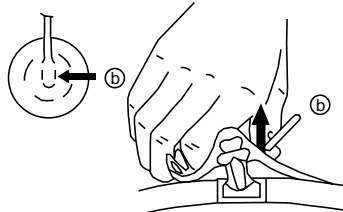
1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the Deflection yoke, neck assy, degaussing coils and CRT grounding strap.
3. Remove the C Board from the CRT.
4. Remove the chassis assembly.
5. Loosen the Neck assembly fixing screw and remove.
6. Loosen the Deflection yoke fixing screw and remove.
7. Place the set with the CRT face down on a cushion and remove the Degaussing Coil holders.
8. Remove the Degaussing Coils.
9. Remove the CRT grounding strap and spring tensioners.
10. Unscrew the four CRT fixing screws [ located on each CRT corner ] and remove the CRT.  
[Take care not to handle the CRT by the neck.]

### Removal of the Anode-Cap

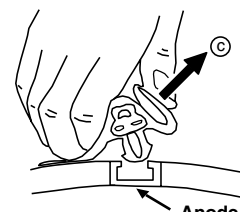
#### \* REMOVING PROCEDURES.



- ① Turn up one side of the rubber cap in the direction indicated by the arrow (a)



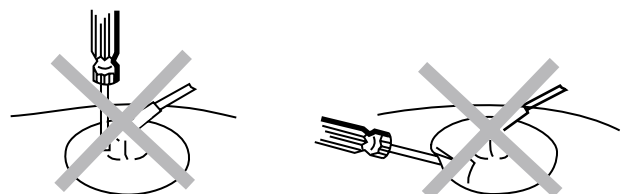
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)



- 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 it up in the direction of the arrow (c)

#### How to handle the Anode-Cap

1. To prevent damaging the surface of the anode-cap do not use sharp materials.
2. Do not apply too great a pressure on the rubber, as this may cause damage to the anode connector.
3. A metal fitting called a shatter hook terminal is fitted inside the rubber cap.
4. Do not turn the rubber foot over excessively, this may cause damage if the shatter hook sticks out.





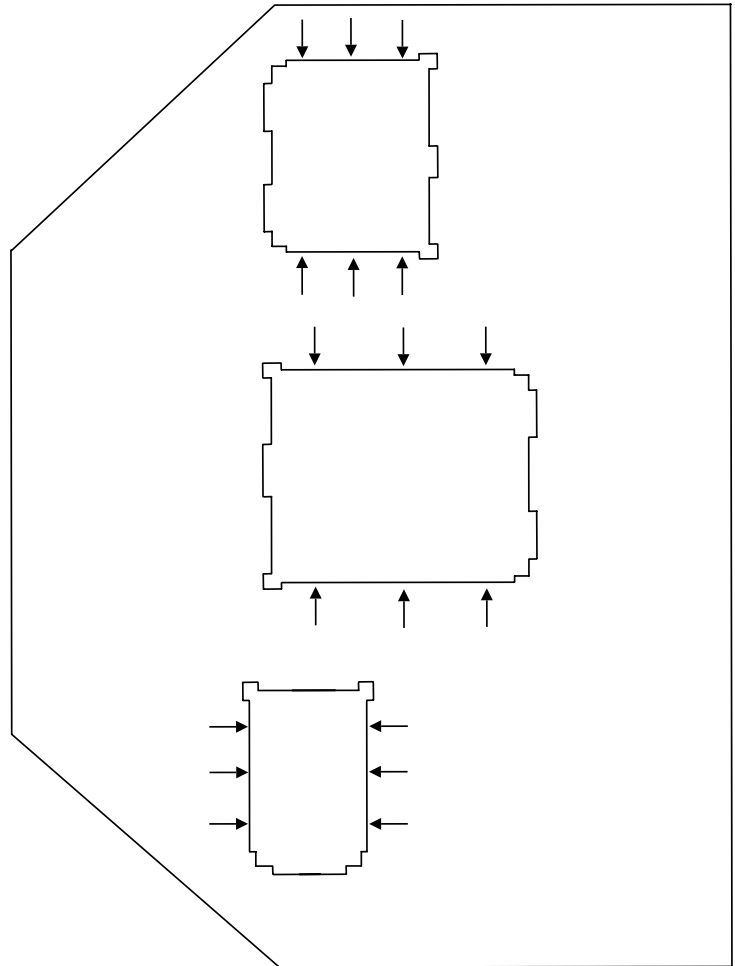
## REMOVAL AND REPLACEMENT OF THE MAIN-BRACKET BOTTOM PLATES.

### (1) REMOVING THE PLATES

In the event of servicing being required to the solder side of the printed wiring boards, the bottom plates fitted to the main chassis bracket require to be removed. This is performed by cutting the gates with a sharp wire cutter at the locations indicated by the arrows.

**Note :** There are 3 plates fitted to the main bracket.

Only remove the necessary plate to gain access to the printed wiring board.

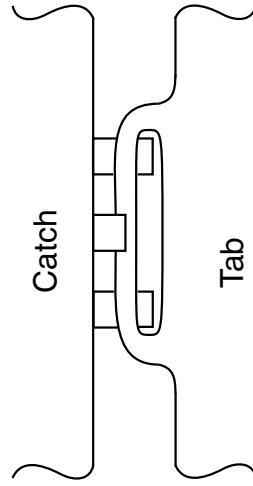


 For safety reasons, on no account should the plates be removed and not refitted after servicing.

### (2) REFITTING THE PLATES

Because the plates differ in size it is important that the correct plates are refitted in their original location.

Please note that the plates need to be rotated 180 degrees from their cut position to allow the tabs to be fitted into their catch positions.



## SECTION 3 SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to the following settings :

Contrast ..... normal

Brightness ..... normal

**Carry out the adjustments in the following order :**

- 3-1. Beam Landing.
- 3-2. Convergence.
- 3-3. Focus.
- 3-4. White Balance.

**Note :** Test equipment required.

1. Color bar/pattern generator.
2. Degausser.
3. Oscilloscope.
4. Digital multimeter.

### 3-1. Beam Landing

**Preparation :**

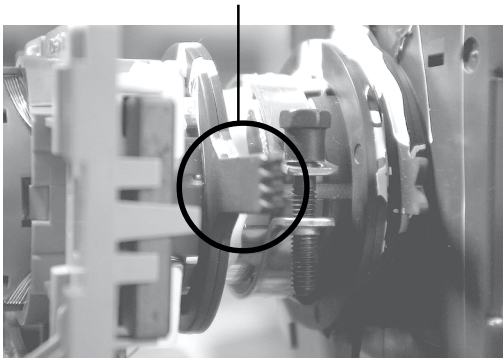
1. In order to reduce the influence of geomagnetism on the set's picture tube, face it in an easterly or westerly direction.
2. Switch on the TV set's power and degauss with a degausser.

#### (1) Adjustment of Correction Magnet for Y-Splitting Axis.

1. Input a crosshatch signal from the pattern generator.
2. Set the Picture control to minimum and confirm that the Brightness control is set to normal.
3. Position the neck assembly as indicated in Fig.3-2.
4. Loosen the deflection yoke fixing screw.
5. Move the deflection yoke as far forward as is possible.
6. Adjust the upper and lower pin symmetrically by opening or closing the Y-splitting axis correction magnets located on the neck assembly. [See Fig 3-3]
7. Return the deflection yoke to its original position and re-tighten its fixing screw.

**Fig.3-1**

**Y-splitting axis correction magnet**



**Caution :**

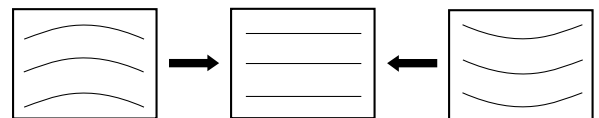
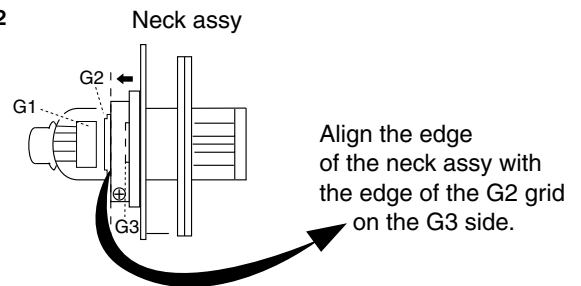
High voltages are present on the Deflection yoke terminals - take care when handling the Deflection yoke whilst carrying out adjustments.

#### (2) Landing

**Note :** Before carrying out the following adjustments adjust the magnets as indicated [See Fig.3-4].

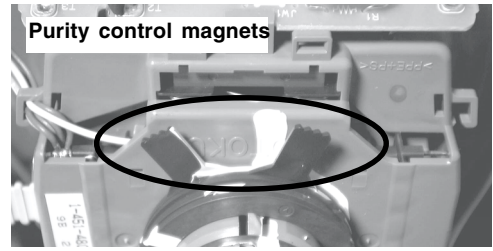
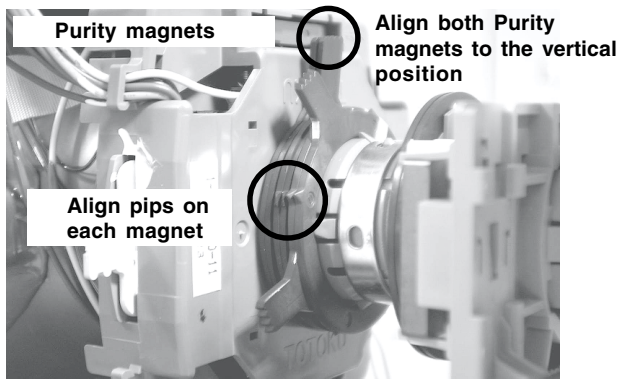
1. Input a crosshatch signal from the signal generator.
2. Rough-adjust the focus and horizontal convergence.
3. Switch from the crosshatch pattern to an all-red pattern.
4. Move the deflection yoke backwards and adjust with the purity magnet so that the red is at the centre and it aligns symmetrically [See Fig.3-5].
5. Move the deflection yoke forward to the point where the entire screen just becomes red [Mark its position].
6. Move the deflection yoke further forward until the screen just changes colour at the edges. [Mark its position]
7. Position the deflection yoke between the two marks indicated above.
8. Input a crosshatch pattern from the pattern generator and rotate the deflection yoke so that the horizontal lines are parallel with the top and bottom of the screen.
9. When the position of the deflection yoke has been determined, fasten it with its fixing screw.
10. Switch the pattern generator to green then blue and confirm the purity.
11. If the beam does not land correctly in all the corners of the screen, use disk magnets to correct it. [Confirm the corner landing for green and blue]

**Fig.3-2**



**Fig.3-3**

Fig.3-4



**3-2. Convergence**

**(1) Screen centre convergence [Static convergence]**

1. Input a dot pattern signal from the pattern generator.
2. Normalize the picture setting.
3. [Moving vertically], adjust the V.STAT magnet so that the vertical red, green and blue dots coincide at the centre of the screen.

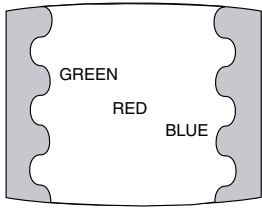
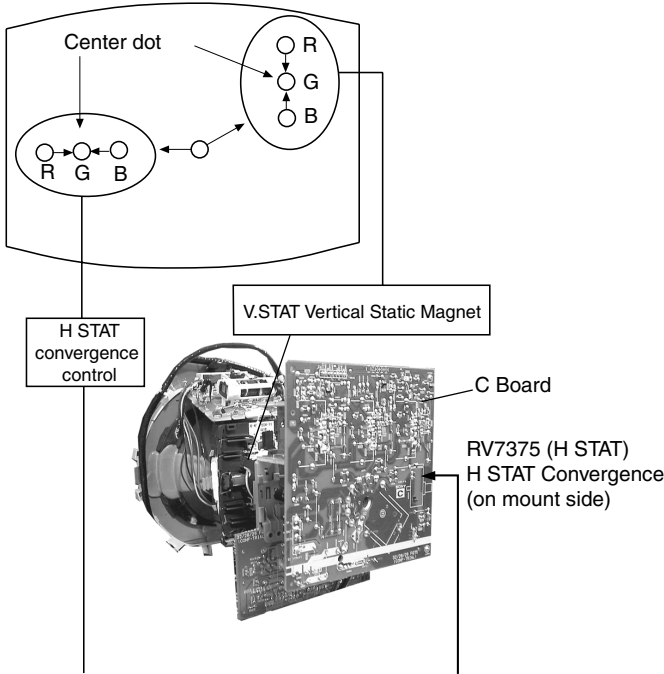
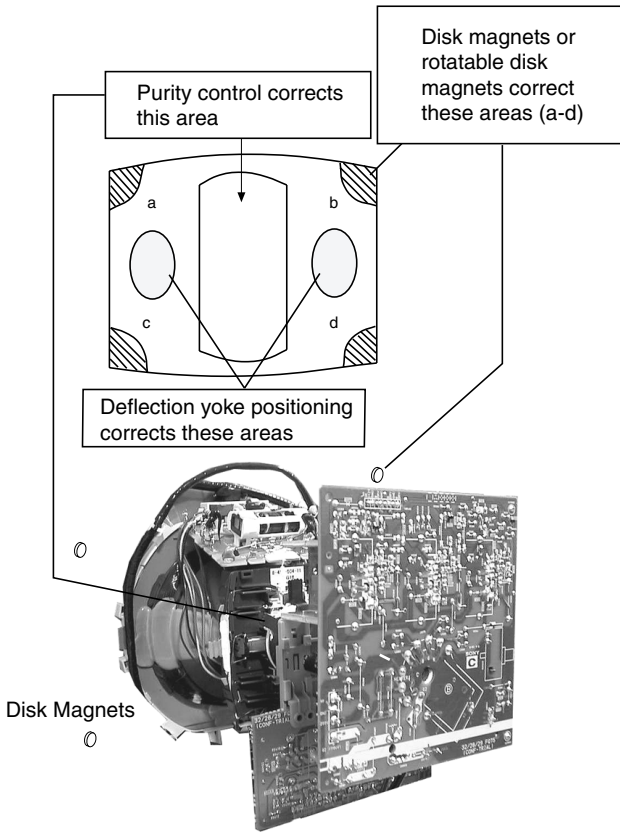
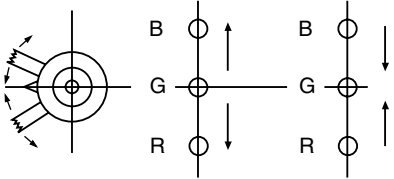


Fig.3-5



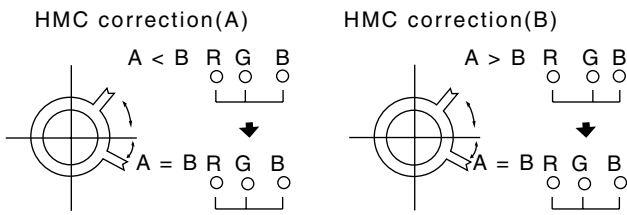
By opening or closing the V.STAT magnet, the red green and blue dots move in the direction indicated below.



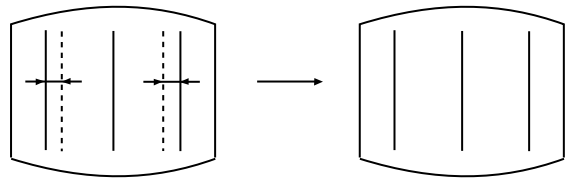
**Note:** Do not adjust the H.STAT by rotating the V.STAT magnets as this can affect the focus setting.

4. Correction for HMC [Horizontal mis-convergence] and VMC [Vertical mis-convergence] by using the BMC [Hexapole] magnet.

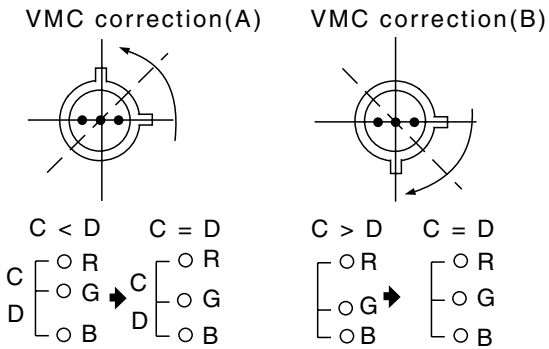
a). HMC correction by BMC [Hexapole] magnet and movement of the electron beam.



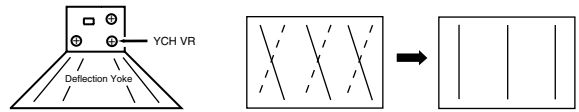
HTIL correction can be performed by adding a THL correction assembly to the Deflection yoke.



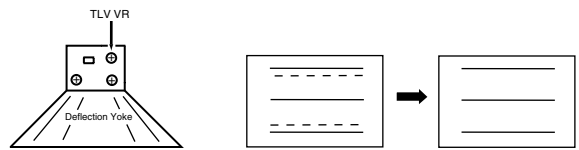
b). VMC correction by BMC [Hexapole] magnet and movement of the electron beam.



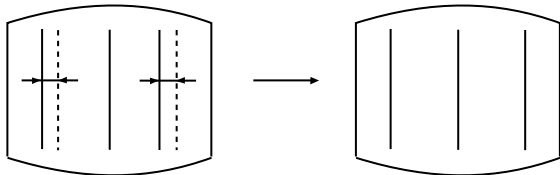
### YCH Adjustment



### TLV Adjustment

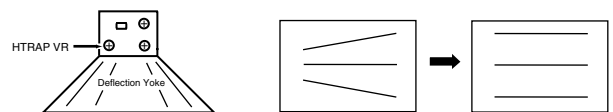


### HAMP Adjustment

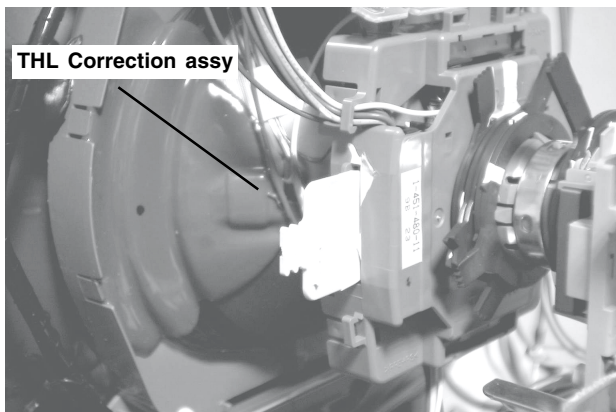


Adjust the HAMP using HAMPL and HAMPR registers in the Dynamic Convergence section of the service menu.

### H-TRAP Adjustment

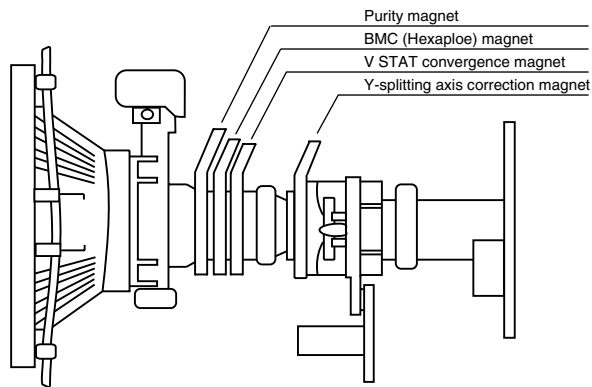


### HTIL Adjustment

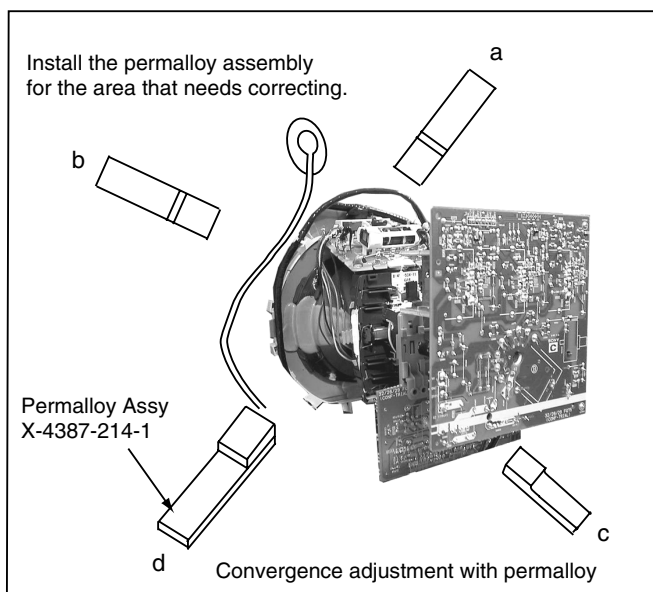
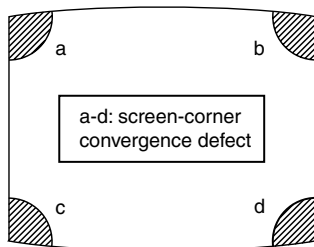


The H-TRAP should not be adjusted unless absolutely necessary as it affects the TLV settings.

## Layout of each control

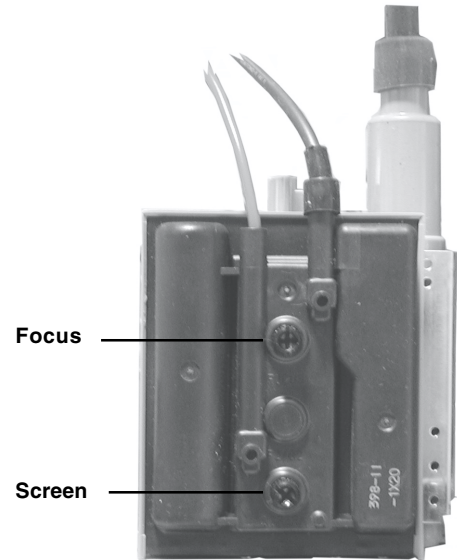


**Note :** If you are unable to adjust the corner convergence properly, this can be corrected with the use of permalloy magnets.



## 3-3. Focus Adjustment

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control located on the flyback transformer to obtain the best focus at the centre of the screen. Bring only the centre area of the screen into focus, the magenta-tinge appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



## 3-4. Screen (G2), White Balance

[Adjustment in the service mode using the remote commander]

### G2 adjustment

1. Input a dot signal from the pattern generator.
2. Set the Picture, Brightness and Colour to minimum.
3. Apply 165V DC from an external power supply to the R, G and B cathodes of the CRT.
4. Whilst watching the picture, adjust the G2 control [SCREEN] located on the flyback transformer to the point just before the flyback return lines disappear.

### White balance adjustment for TV mode

1. Input an all-white signal from the pattern generator.
2. Program the Remote Commander for operation in Service Mode. [ See Page 22 ].
3. Enter into the 'Service Mode' by pressing 'VIDEO' button twice and 'MENU' on the Service Commander.
4. Select 'Service' from the on screen menu display and press 'Right Arrow'.
5. The 'Service' menu will appear on the screen.[See Page 23]
6. Set the 'Contrast' to MAX.
7. Set the 'R-Drive' to 50.
8. Adjust the 'G-Drive' and the 'B-Drive' so that the white balance becomes optimum.
9. Press the 'OK' button to write the data for each item.
10. Set the 'Contrast' to MIN.
11. Set the 'R-Cutoff' to 29.
12. Adjust the 'G-Cutoff', and the 'B-Cutoff' with the left and right buttons on the remote commander so that the white balance becomes optimum.
13. Press the 'OK' button to write the data for each item.

## SECTION 4 CIRCUIT ADJUSTMENTS

### 4-1. Electrical Adjustments


Service adjustments to this model can be performed using the supplied remote Commander RM-932.

#### Programming the Remote Commander for Operation in Service Mode

1. Press the VCR/TV/DVD button until the TV LED lights.
2. Press and hold the yellow button for approx. 5 seconds until the TV LED flashes quickly.
3. Press 99999. All three LED's should light. The remote commander is now set to Service Mode.
4. To return the remote commander to normal operation mode repeat steps 1. and 2. then press 00000. All three LED's should light. The remote commander is now set to normal mode.



#### Setting the TV into Service Mode

1. Program the remote commander for operation in Service Mode as described above.
2. Turn on the TV main power switch.
3. Press the video standby button  on the remote commander twice. 'TT \_\_\_' will appear in the upper right corner of the screen. Other status information will also be displayed.
4. Press 'MENU' on the remote commander to obtain the following menu on the screen.

Geometry
Panorama
Service
Scanrate
DAC
<b>PIP</b>
Sound
IF adjust
Error Menu
AE6B Wide v2.21 (Jan 2002)
Factory data 02h 16h
MSP Device : MSP3411G

5. Move to the corresponding adjustment item using the up or down arrow buttons on the Remote Commander.
6. Press the right arrow button to enter into the required menu item.
7. Press the 'Menu' button on the Remote Commander to quit the Service Mode when all adjustments have been completed.

**Note :**

- After carrying out the service adjustments, to prevent the customer accessing the 'Service Menu' switch the TV set OFF and then ON.

#### GEOMETRY

ABL TH	(0, 3)	0
ABL MODE	(0, 3)	0
P ABL	(0, 15)	15
V SIZE	(0, 63)	35
V POSITION	(0, 63)	33
V COMP	(0, 3)	1
V LIN	(0, 15)	7
S CORRECTION	(0, 15)	7
H SIZE	(0, 63)	44
PIN AMP	(0, 63)	32
UP CORNERPIN	(0, 63)	29
M PIN	(0, 3)	2
LO CORNERPIN	(0, 63)	29
TRAPEZIUM	(0, 15)	2
H POSITION	(0, 63)	40
AFC BOW	(0, 15)	8
AFC ANGLE	(0, 15)	9
LEFT BLK	(0, 63)	34
RIGHT BLK	(0, 63)	17
V ASPECT	(0, 63)	47
AKBTIM1	(0, 3)	2
AKBTIM2	(0, 1)	0
IKR		1
HNG		0
VNG		0

#### PANORAMA

HORWIDTH H	(0, 7)	1
HORWIDTH L	(0, 255)	170
HORPOS H	(0, 7)	0
HORPOS L	(0, 255)	15
NAPPLIP H	(0, 7)	1
NAPPLIP L	(0, 127)	62
HSCPOSC H	(0, 15)	8
HSCPOSC L	(0, 255)	151
BLANDEL	(0, 255)	13
BLANLEN	(0, 255)	207
BLANPOL	(0, 1)	0
HSEG1 H	(0, 7)	0
HSEG1 L	(0, 255)	96
HSEG2 H	(0, 7)	0
HSEG2 L	(0, 255)	192
HSEG3 H	(0, 7)	0
HSEG3 L	(0, 255)	224
HSEG4 H	(0, 7)	1
HSEG4 L	(0, 255)	64
HINCO H	(0, 1)	0
HINCO L	(0, 255)	40
HINC1 H	(0, 1)	0
HINC1 L	(0, 255)	20
HINC2 H	(0, 1)	0
HINC2 L	(0, 255)	0
HINC3 H	(0, 1)	1
HINC3 L	(0, 255)	236
HINC4 H	(0, 1)	1
HINC4 L	(0, 255)	216

IF ADJUST		
Automute		1
Audio Gain		0
L Gating		0

SERVICE		
SUB COL	(0, 63)	Adj 31
SUB HUE	(0, 63)	30
SUB SHARP	(0, 63)	13
SUB BRIGHT	(0, 63)	12
SUB CONT	(0, 15)	50
R-DRIVE	(0, 63)	Adj
G-DRIVE	(0, 63)	Adj
B-DRIVE	(0, 63)	Adj
R CUTOFF	(0, 63)	28
G CUTOFF	(0, 63)	24
B CUTOFF	(0, 63)	46
Br TXT	(0, 15)	7
Br OSD	(0, 15)	10

DAC			
CONFIG		00000000	
MPIN CONT	(0, 255)		96
HLIN	(0, 255)		83
HTRAP	(0, 255)		127
ROT. COIL	(0, 255)		130
PHOCUS PH	(0, 255)		90

SOUND			
M-N	(0, 511)		200
M-D	(-128, -1)		-20
M-S	(+0, +127)		+20
S-M	(+0, +127)		+10
D-M	(-128, -1)		-10
N-M	(0, 1023)		496
BBE	(+0, +68)		+28
B1	(-96, +96)		+0
B2	(-96, +96)		+0
B3	(-96, +96)		+0
B4	(-96, +96)		+0
B5	(-96, +96)		+0
SW L	(-128, +0)		+0
SW F	(+5, +40)		+30
NICAM C AD		10001	
NICAM Error	(0, 2047)		0
Stereo	(-128, +127)		+0
Status		000000110	

ERROR MENU			
E02	OCP	(0, 255)	0
E03	OVP	(0, 255)	0
E04	VSUNC	(0, 255)	0
E05	IKR	(0, 255)	0
E06	IIC	(0, 255)	0
E07	NVM	(0, 255)	0
E08	HPROT	(0, 255)	0
E09	TUNER	(0, 255)	0
E10	SOUNDP	(0, 255)	0
E11	-	(0, 255)	0
E12	SCANRATE	(0, 255)	0
E13	DAC	(0, 255)	0
E14	BACKEND	(0, 255)	0
E15	DYN CON	(0, 255)	0
E16	PIP	(0, 255)	0
<b>WORKING TIME</b>			
HOURS			14
MINUTES			7

### Sub Brightness Adjustment

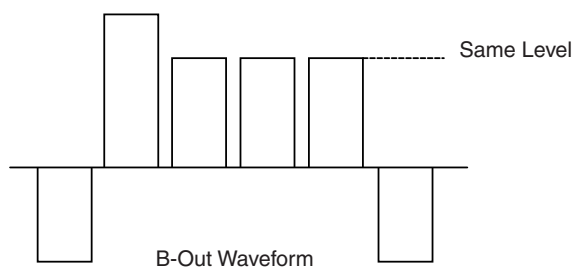
1. Input a Monoscope pattern.
2. Program the Remote Commander for operation in Service Mode. [ See Page 22 ].
3. Press 'VIDEO' 'VIDEO' 13 on the Remote Commander.
4. Adjust the 'Sub-Brightness' data so that there is barely a difference between the 0 IRE and 10 IRE signal levels.

### Sub Contrast Adjustment

1. Input a video signal that contains a small 100% white area on a black background.
2. Connect an digital voltmeter to Pin 10 of J7375 [C Board].
3. Program the Remote Commander for operation in Service Mode. [ See Page 22 ].
4. Adjust the Sub-Contrast [ Using 'VIDEO' 'VIDEO' '11' ] to obtain a voltage of 105 +/- 5V.

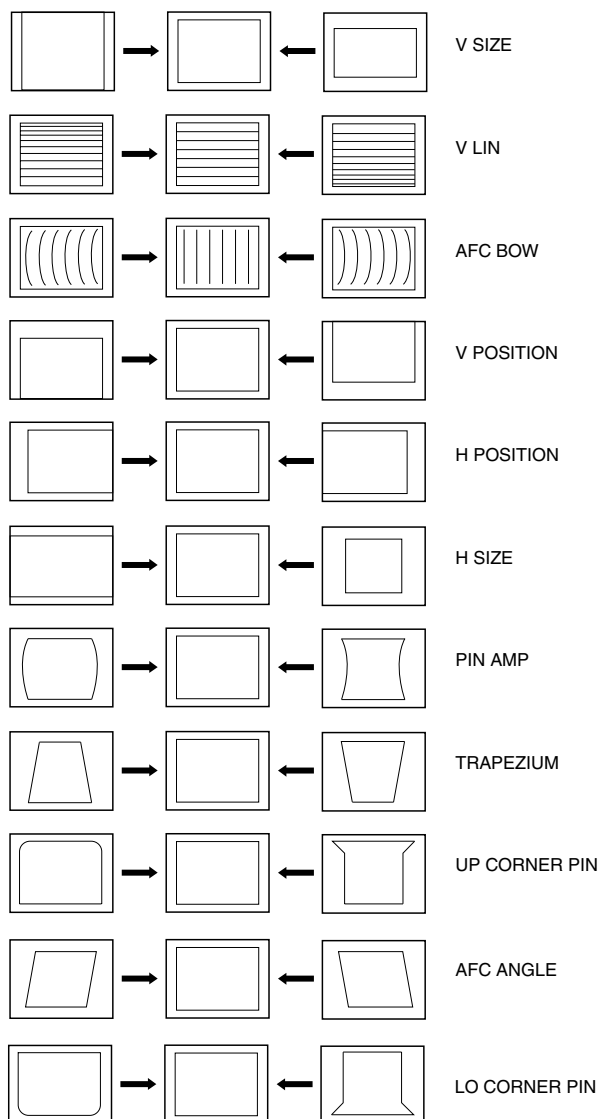
### Sub Colour Adjustment

1. Receive a PAL colour bar signal.
2. Connect an oscilloscope to Pin 6 of CN7001 [A Board].
3. Program the Remote Commander for operation in Service Mode. [ See Page 22 ].
4. Adjust the 'Sub Colour' [ Using 'VIDEO' 'VIDEO' '12' ] so that the Cyan, Magenta and Blue colour bars are of equal levels as indicated below.



## Deflection System Adjustment

1. Program the Remote Commander for operation in Service Mode. [ See Page 22 ] and enter into the 'Geometry' service menu.
2. Select and adjust each item in order to obtain the optimum image.



### GEOMETRY

ABL TH	(0, 3)	0
ABL MODE	(0, 3)	0
P ABL	(0, 15)	15
V SIZE	(0, 63)	35
V POSITION	(0, 63)	33
V COMP	(0, 3)	1
V LIN	(0, 15)	7
S CORRECTION	(0, 15)	7
H SIZE	(0, 63)	44
PIN AMP	(0, 63)	32
UP CORNERPIN	(0, 63)	29
M PIN	(0, 3)	2
LO CORNERPIN	(0, 63)	29
TRAPEZIUM	(0, 15)	2
H POSITION	(0, 63)	40
AFC BOW	(0, 15)	8
AFC ANGLE	(0, 15)	9
LEFT BLK	(0, 63)	34
RIGHT BLK	(0, 63)	17
V ASPECT	(0, 63)	47
AKBTIM1	(0, 3)	2
AKBTIM2	(0, 1)	0
IKR		1
HNG		0
VNG		0

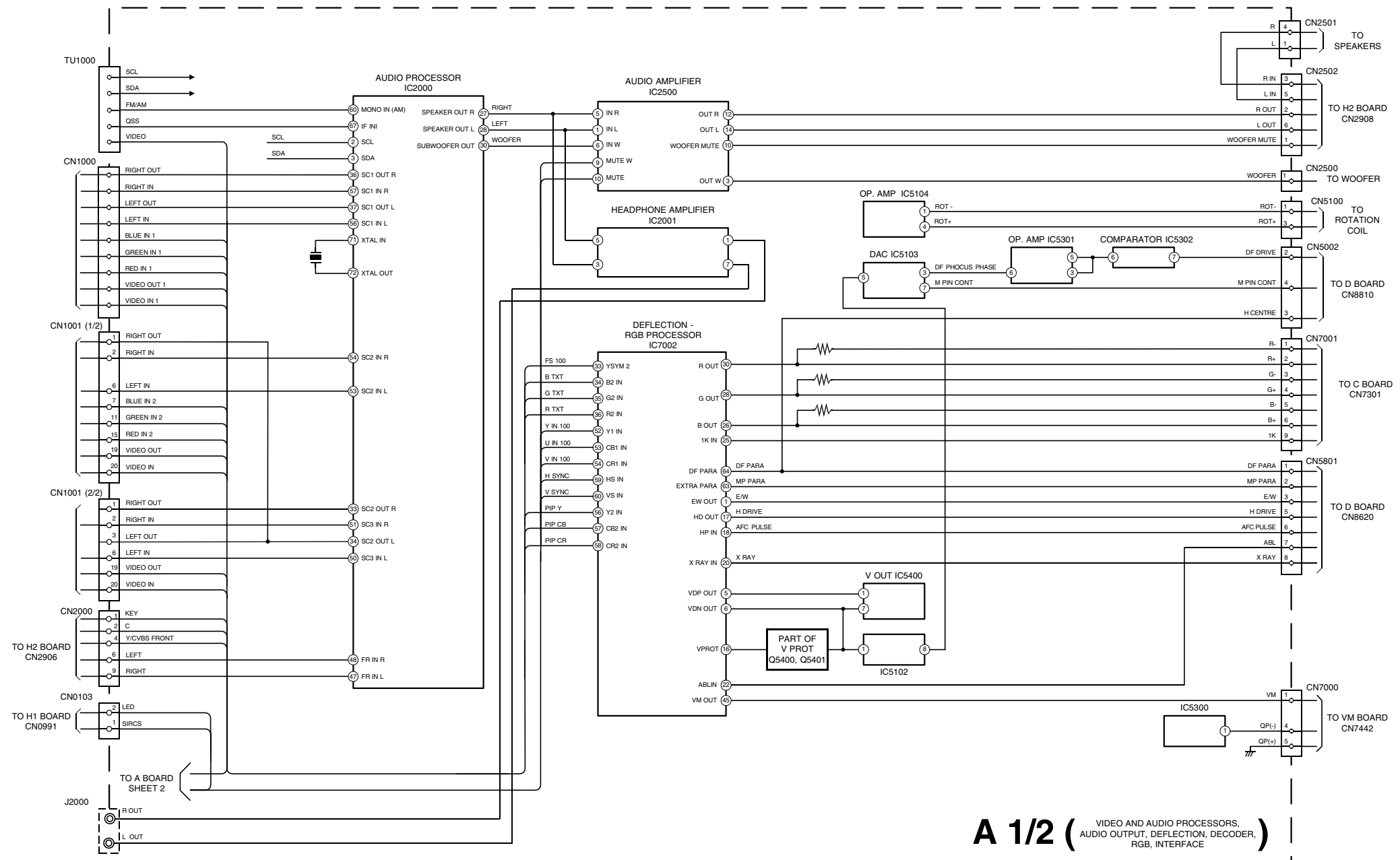
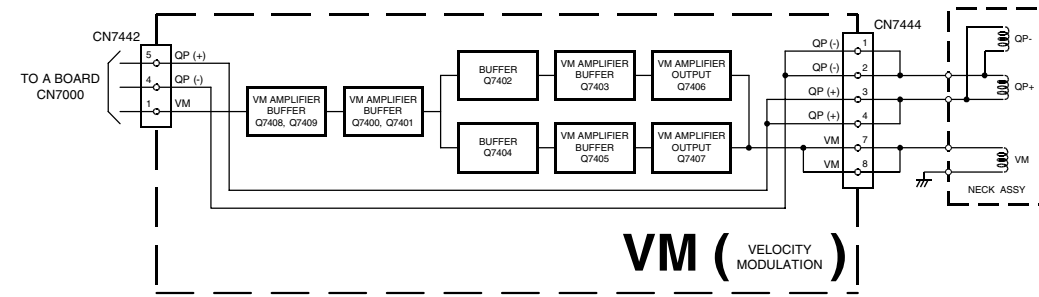
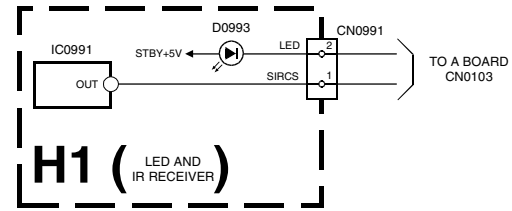
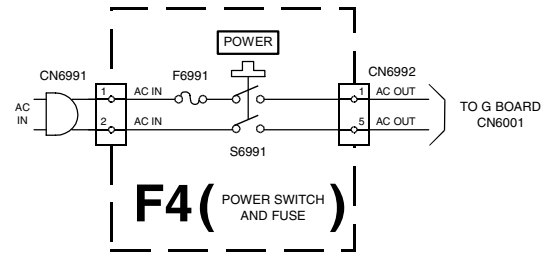
## 4-2. TEST MODE 2:

Test Mode 2 is available by programming the Remote Commander for operation in Service Mode [ As shown on Page 22 ] then pressing the 'VIDEO' button twice, OSD 'TT' appears. The functions described below are available by selecting the two numbers. To release the 'Test mode 2', press 00, 10, 20 ... twice or switch the TV set into Stand-by mode. In 'TT Menu' mode, it is possible to remove the Menu from the screen by pressing the Speaker Off button once. Pressing the Speaker OFF button a second time will cause the Menu to reappear. The function is kept even when the menu is not displayed on screen !!.

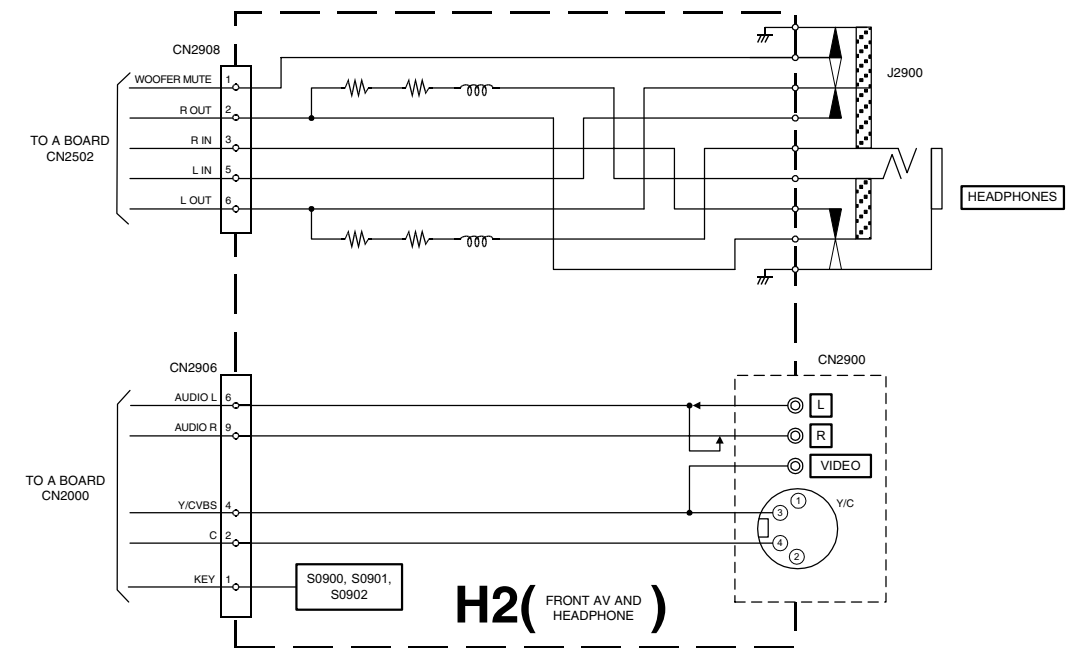
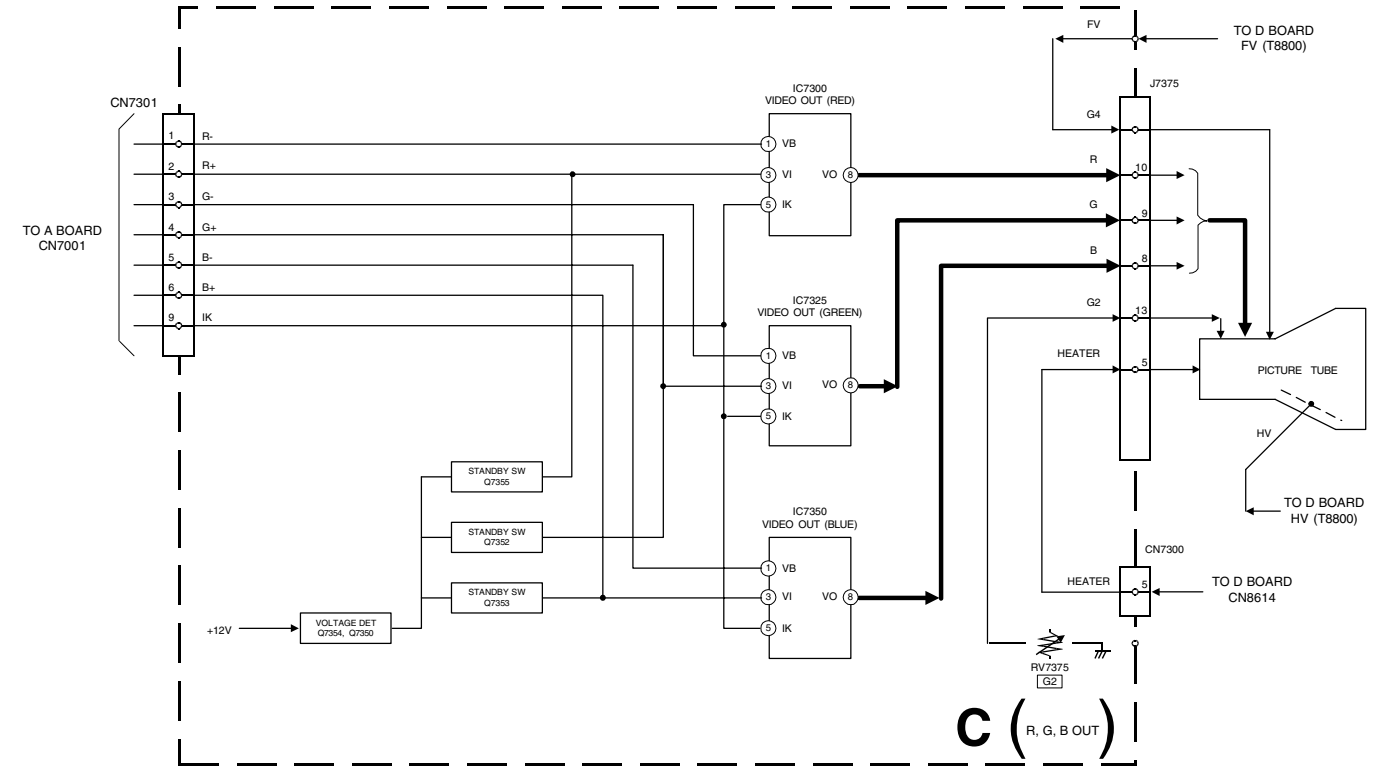
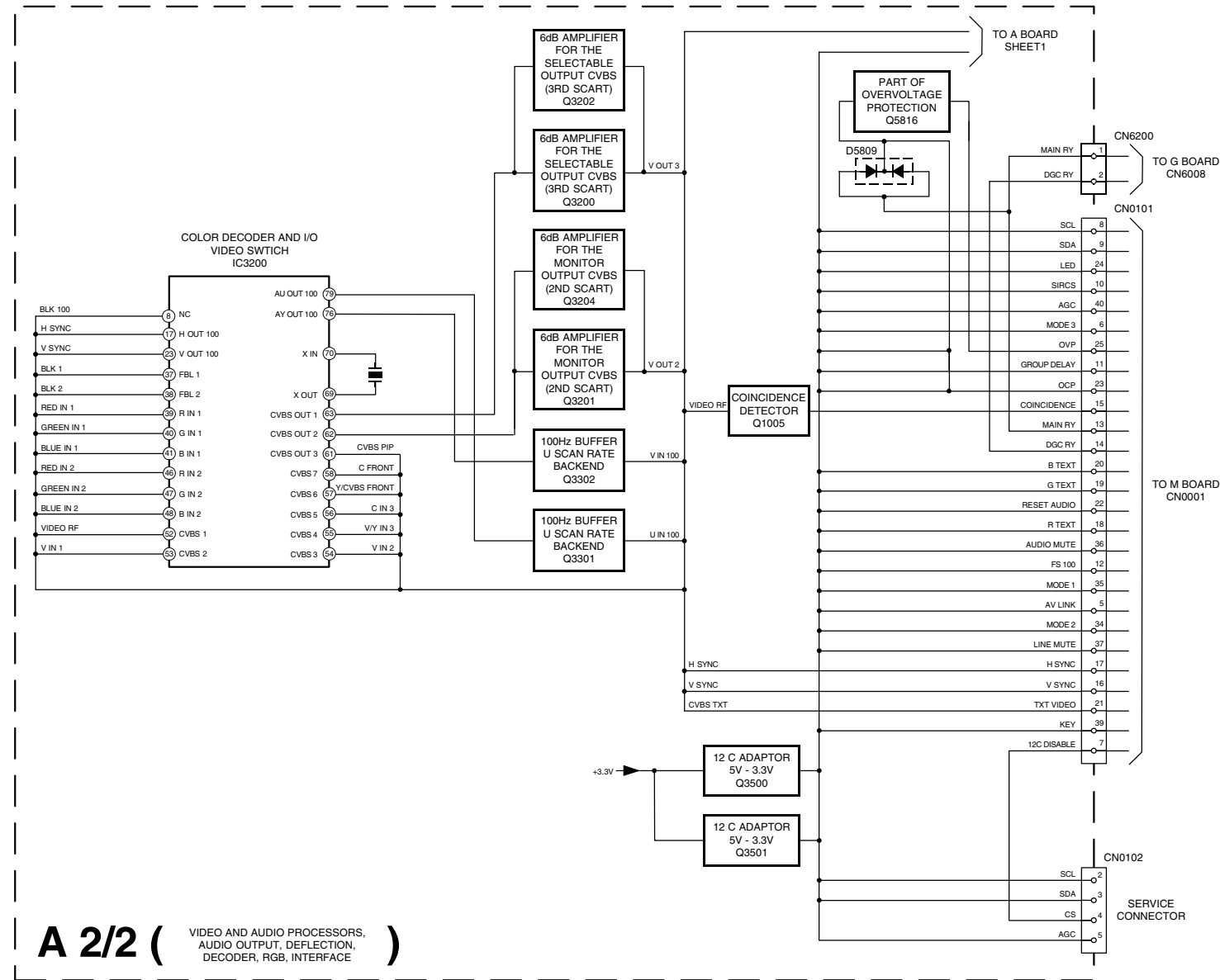
00	'TT' mode off
01	Picture maximum
02	Picture minimum
03	Set speaker/headphone Volume to 35%
04	Set speaker/headphone Volume to 50%
05	Set speaker/headphone Volume to 65%
06	Set speaker/headphone Volume to 80%
07	Ageing mode
08	Shipping Condition
11	Sub picture adjustment
12	Sub colour adjustment
13	Sub Brightness adjustment
14	Text H Position adjustment
15	Rotation Coil Test
16	Picture level 50%
19	Factory Mode Enable/Disable
21	Destination ADEKR
22	Destination BL
23	Destination ADEKR
24	Destination U
25	Destination ADEKR
26	Destination BL
27	Destination ADEKR
28	Destination ADEKR
31	Auto Shutoff Enable/Disable
36	Velocity Modulation (VM) OFF/ON test
41	Re-initialise NVM
43	Select Dual A sound
44	Select Dual B sound
45	Select Mono sound
46	Select Stereo sound
48	Set NVM as non virgin
49	Set NVM as virgin
53	FM Overmodulation Enable/Disable
55	Tuner selection (SONY/ALPS)
59	Select Model 3 Scarts + PIP or 2 Scarts
68	Enable/Disable X26 countermeasure (N problem)
73	Enable Zweiton D/K2 system (6.5/6.74)
74	Enable Zweiton D/K3 system (6.5/5.74)
78	Balance full right
79	Balance full left
87	Local keys test
99	Display Error and Working Time menu



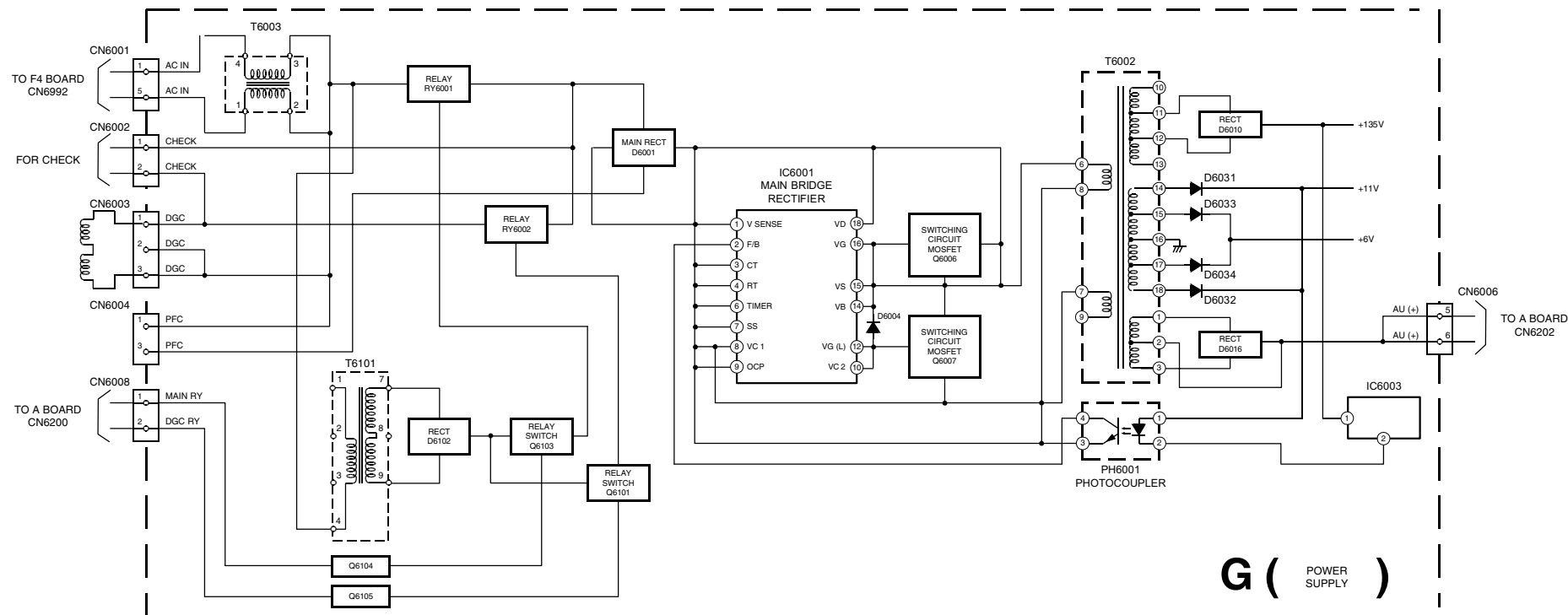
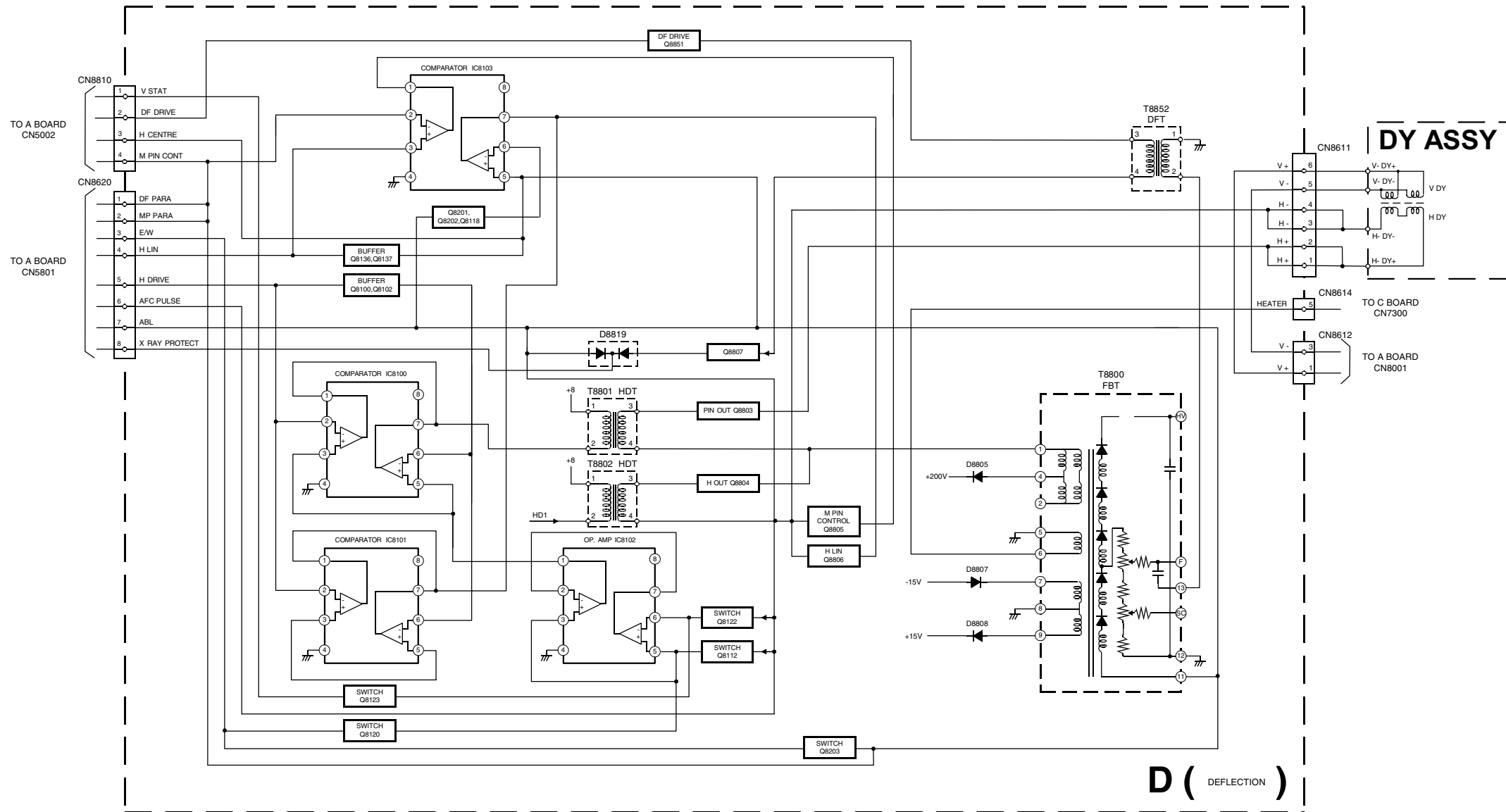
5-1. BLOCK DIAGRAMS (1)



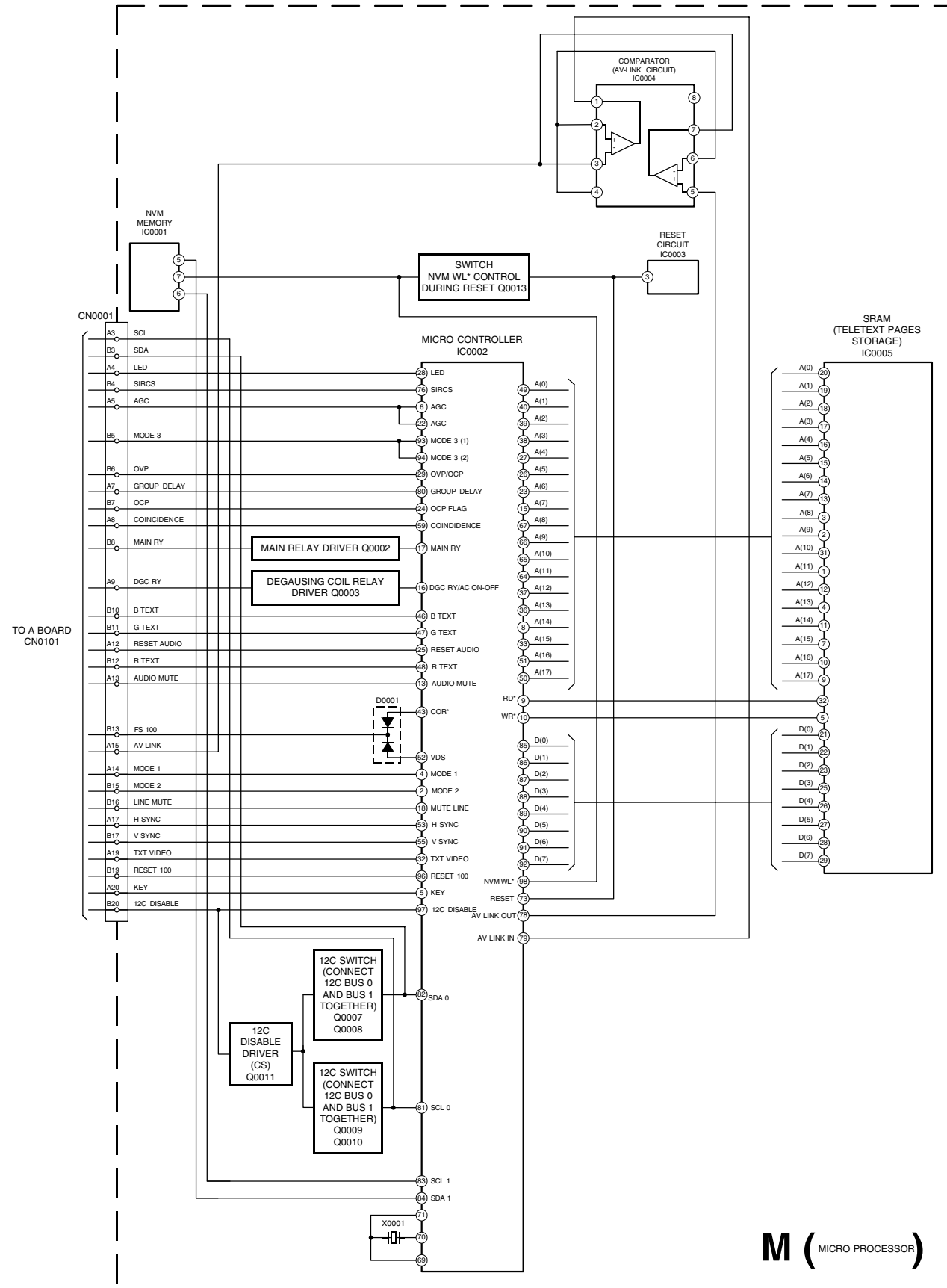
5-1. BLOCK DIAGRAMS (2)



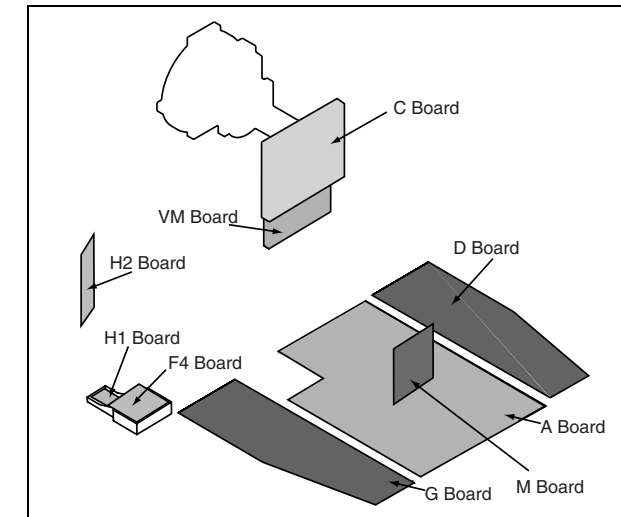
5-1. BLOCK DIAGRAMS (3)



## 5-1. BLOCK DIAGRAMS (4)



## 5-2. CIRCUIT BOARD LOCATION



## 5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

### Note :

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.
- $\text{pF}$  :  $\mu\text{F}$  50WV or less are not indicated except for electrolytic types.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5mm  
Electrical power rating : 1/4W

- Chip resistors are 1/10W
- All resistors are in ohms.  
 $k = 1000$  ohms,  $M = 1000,000$  ohms

- : nonflammable resistor.
- : fusible resistor.
- : internal component.
- : panel designation or adjustment for repair.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All voltages are in Volts.
- Readings are taken with a 10Mohm digital multimeter.
- Readings are taken with a color bar input signal.
- Voltage variations may be noted due to normal production tolerances.

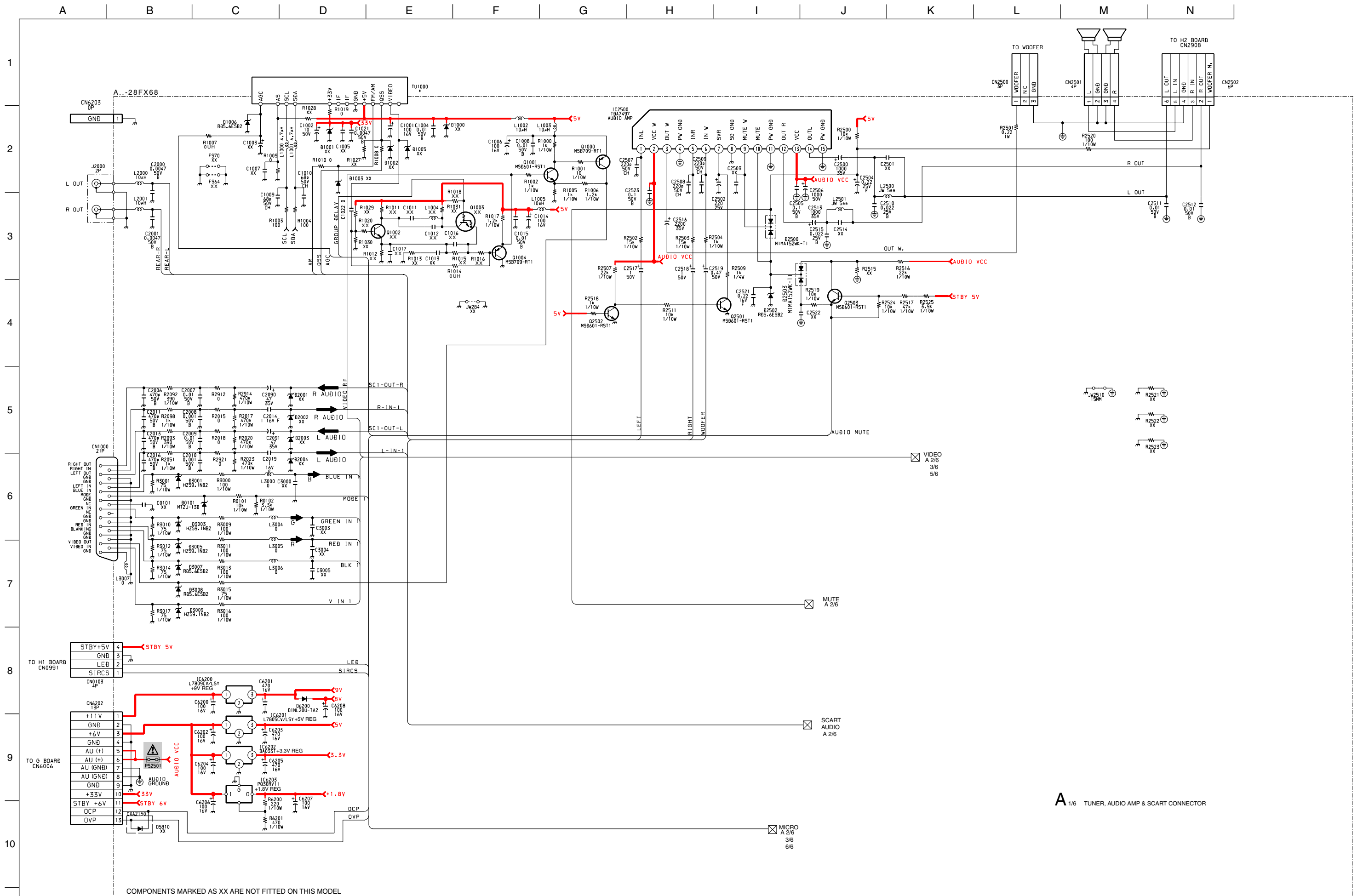
- : B + bus.
- : B - bus.
- : RF signal path.
- : earth - ground.
- : earth - chassis.

## Reference Information

RESISTOR	RN	: METAL FILM
	RC	: SOLID
	FPRD	: NON FLAMMABLE CARBON
	FUSE	: NON FLAMMABLE FUSIBLE
	RS	: NON FLAMMABLE METAL OXIDE
	RB	: NON FLAMMABLE CEMENT
	RW	: NON FLAMMABLE WIREWOUND
		: ADJUSTMENT RESISTOR
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

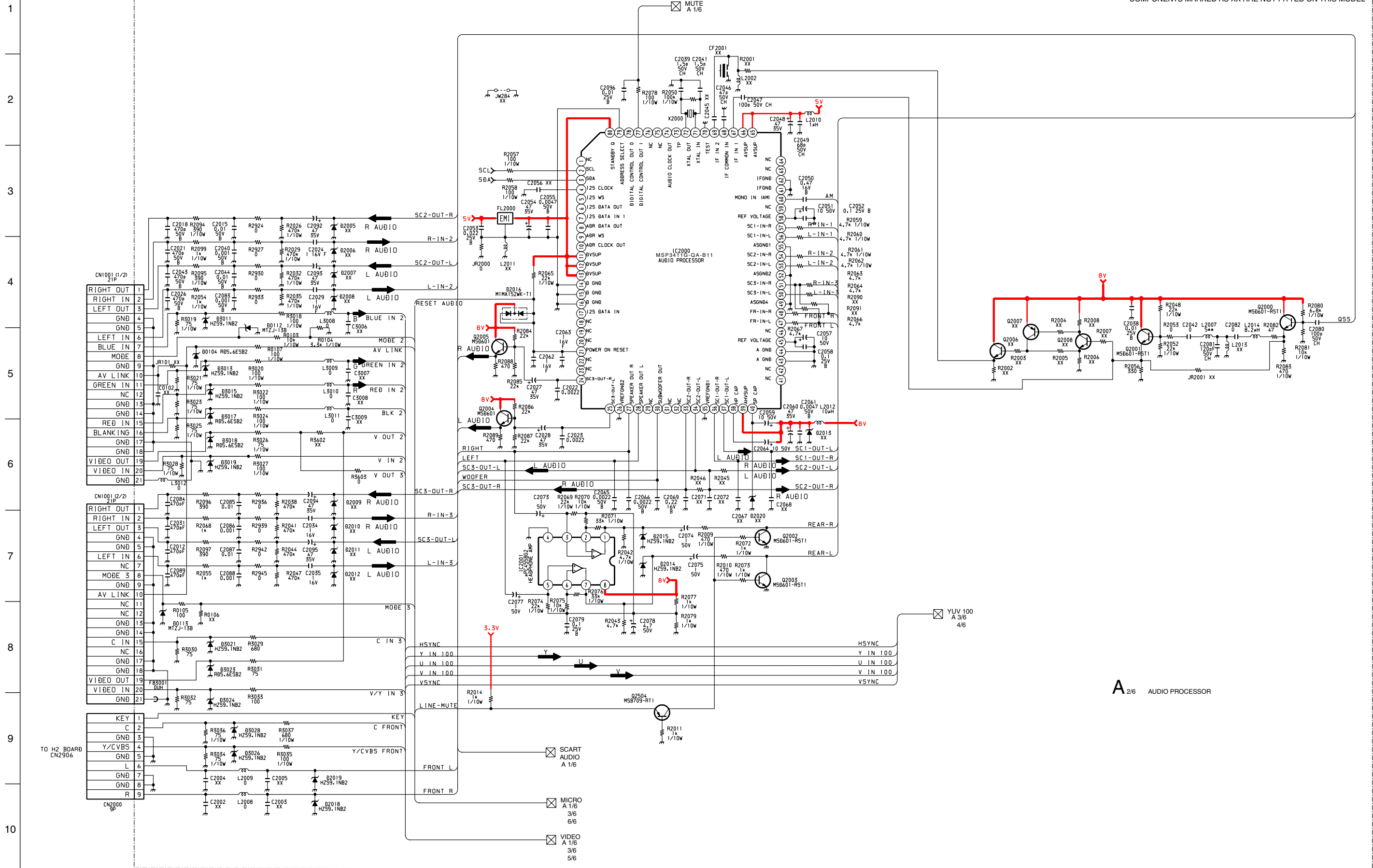
**Note :** The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part numbers specified in the parts list.

**Note :** Les composants identifiés par une trame et par une marque  $\Delta$  sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.



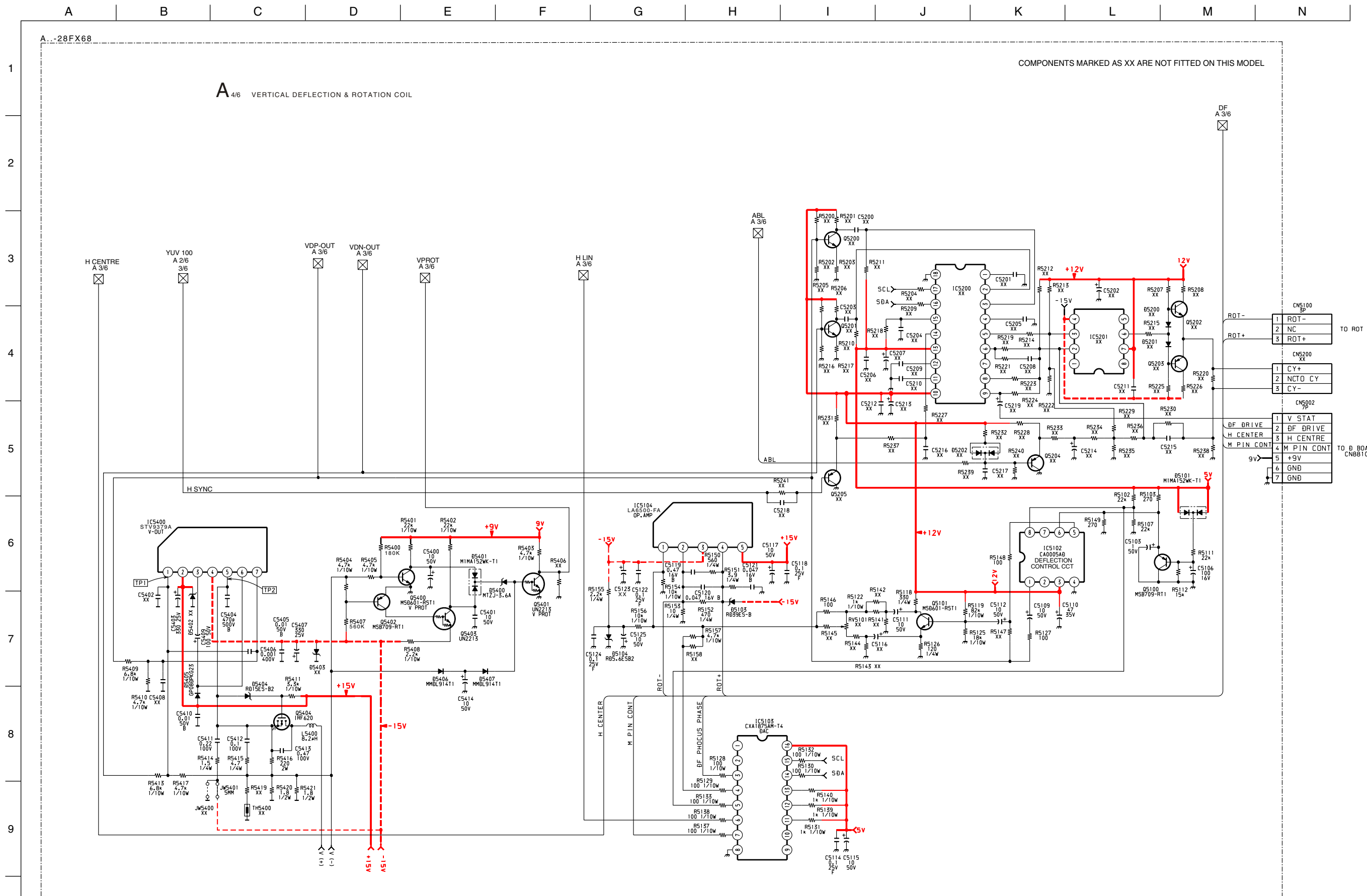
A 1/6 TUNER, AUDIO AMP & SCART CONNECTOR

COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL



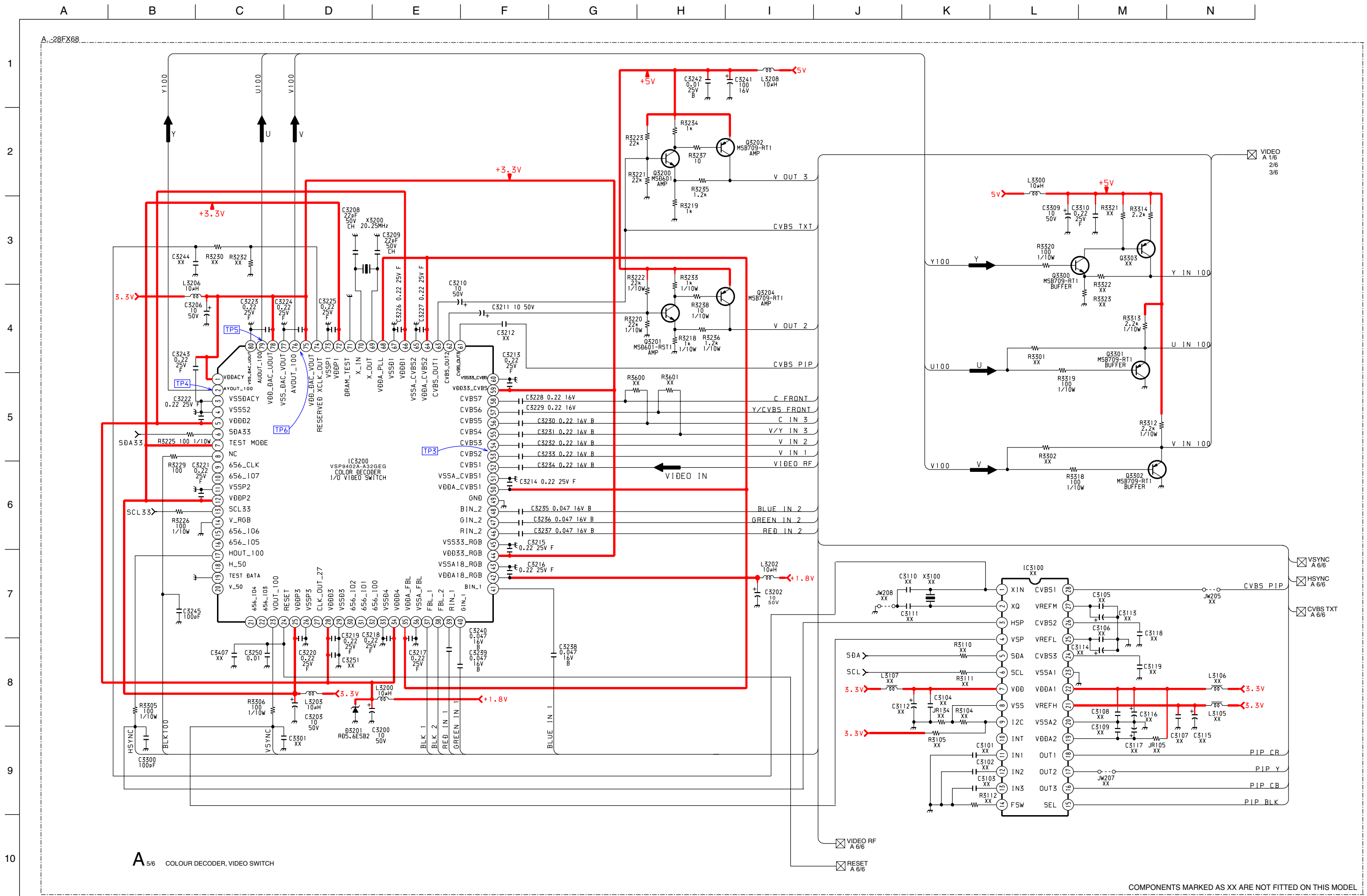
A<sub>2/6</sub> AUDIO PROCESSOR





~ A Board Schematic Diagram [ Vertical Deflection & Rotation Coil ] Page 4/6 ~





A<sub>5/6</sub> COLOUR DECODER, VIDEO SWITCH

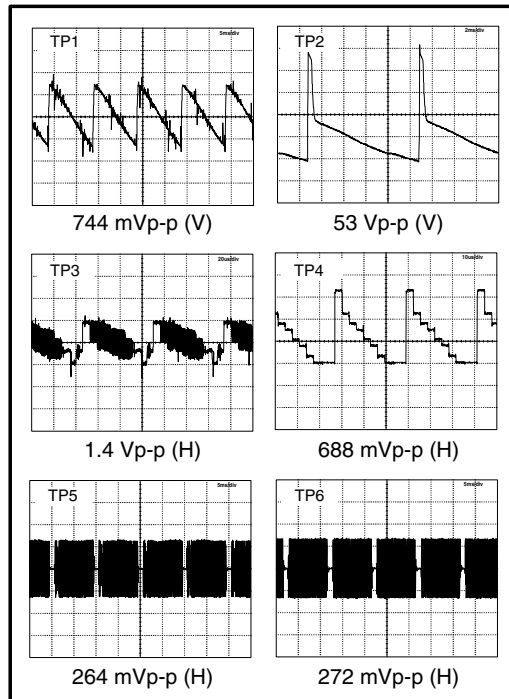
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL







~ A Board Waveforms ~



~ A Board Location Table (A Side) ~

DIODE	D1006	M - 10	D3003	M - 7	D3015	M - 4	D3026	M - 2	D5305	D - 6	D6200	J - 6	IC5301	D - 4	IC6206	H - 3	
D0101	M - 7	D2014	L - 9	D3005	M - 7	D3017	M - 4	D3028	M - 2	D5306	C - 5	D7004	F - 7	IC5302	B - 4	IC6207	H - 4
D0104	L - 5	D2015	K - 9	D3007	M - 7	D3018	N - 3	D3201	J - 2	D5307	D - 7	<b>IC</b>		IC5400	G - 4	<b>TRANSISTOR</b>	
D0110	I - 4	D2018	M - 2	D3008	M - 7	D3019	N - 3	D5103	D - 6	D5400	E - 4	IC5104	D - 6	IC6201	G - 9	Q5202	E - 2
D0111	H - 2	D2019	M - 2	D3009	N - 7	D3021	M - 4	D5104	E - 5	D5404	F - 4	IC5200	B - 3	IC6202	I - 6	Q5301	C - 5
D0112	M - 4	D2502	H - 9	D3011	M - 4	D3023	M - 4	D5200	D - 2	D5405	F - 3	IC5201	C - 4	IC6203	J - 6	Q5306	E - 4
D0113	M - 5	D3001	M - 7	D3013	M - 4	D3024	M - 4	D5201	E - 2	D5807	F - 7	IC5300	E - 4	IC6205	D - 5	Q5404	F - 4

~ A Board Location Table (B Side) ~

DIODE	D2503	G - 9	D3024	B - 3	D5309	J - 3	IC5103	L - 3	TRANSISTOR	Q3201	C - 2	Q5300	M - 4	Q7003	H - 6		
D0101	B - 7	D3001	B - 7	D3026	B - 2	D5400	K - 4	IC5104	K - 5	Q3202	C - 3	Q5301	L - 5	Q7009	I - 7		
D0104	C - 5	D3003	B - 7	D3028	C - 2	D5401	J - 4	IC5200	M - 3	Q3204	C - 3	Q5302	K - 7	Q7011	J - 6		
D0110	G - 4	D3005	B - 7	D3201	F - 2	D5404	J - 3	IC5201	L - 4	Q3300	F - 3	Q5303	M - 4	Q7012	J - 5		
D0111	G - 2	D3007	B - 6	D5103	L - 6	D5405	I - 3	IC5300	J - 3	Q3301	F - 3	Q5304	M - 5	Q7013	J - 6		
D0112	C - 5	D3008	B - 6	D5104	J - 5	D5809	K - 8	IC5301	K - 4	Q1006	B - 3	Q3302	F - 3	Q5305	K - 3	Q7014	J - 6
D0113	C - 5	D3009	B - 6	D5200	K - 2	D5811	L - 8	IC5302	M - 4	Q2000	C - 9	Q3500	F - 3	Q5306	K - 4	Q7015	I - 5
D1006	B - 10	D3011	C - 4	D5202	L - 4	D5812	L - 8	IC5400	I - 3	Q2002	D - 9	Q3501	F - 3	Q5400	J - 4	Q7016	I - 6
D2014	C - 9	D3013	C - 4	D5300	L - 5	D6200	E - 7	IC6200	I - 9	Q2003	D - 9	Q5101	M - 5	Q5401	J - 4	Q7017	I - 6
D2015	D - 9	D3015	C - 4	D5303	N - 4	<b>IC</b>		IC6201	I - 8	Q2004	E - 7	Q5200	M - 4	Q5402	J - 5	Q7018	I - 5
D2016	E - 8	D3017	B - 4	D5304	M - 4	IC2000	C - 8	IC6202	F - 6	Q2005	E - 7	Q5201	N - 4	Q5403	J - 4	Q7019	I - 6
D2018	B - 2	D3018	B - 3	D5305	L - 6	IC2001	D - 9	IC6203	E - 6	Q2501	G - 8	Q5202	K - 3	Q5404	J - 4		
D2019	B - 2	D3019	B - 3	D5306	L - 5	IC2500	F - 8	IC6205	K - 5	Q2502	G - 9	Q5203	J - 2	Q5813	J - 8		
D2500	G - 9	D3021	C - 4	D5307	L - 7	IC3100	E - 5	IC6206	G - 3	Q2503	G - 9	Q5204	L - 4	Q5815	L - 8		
D2502	G - 9	D3023	B - 3	D5308	M - 4	IC3200	E - 3	IC6207	G - 4	Q3200	C - 3	Q5205	M - 3	Q5816	L - 8		

~ A Board Semiconductor Voltage Table ~

Ref	(s)	(g)	(d)	Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)
Q3500	2.7	3.3	3.9	Q2002	0	0	4	Q3204	5	4.4	3.4	Q5205	1.9	1.2	0	Q5813	0	7.9	0	Q7015	11.6	10.9	8.8
Q3501	2.7	3.3	4	Q2003	0	0	4	Q3300	0.7	1.3	5	Q5300	0	0.4	2.2	Q5814	0	0	0	Q7016	6	6.6	10.9
Q5301	0	5.1	51.2	Q2004	3.3	3.9	8.3	Q3301	1.9	1.2	0	Q5301	5.1	0	51.2	Q5815	0	0	5	Q7017	2.7	2	0
Q5404	0	0	0.5	Q2005	3.3	3.9	8.3	Q3302	1.9	1.2	0	Q5302	8.9	5.7	0	Q5816	5	5	0	Q7018	11.6	10.9	8.6
Ref	(e)	(b)	(c)	Q2501	0	0	15.2	Q3500	3.3	2.7	3.9	Q5304	0	0.4	5.6	Q7003	5.6	6.2	8.8	Q7019	6	6.6	10.9
Q1001	3.2	3.9	8.3	Q2502	0	0.7	0	Q3501	3.3	2.7	4	Q3400	0	0	0.1	Q7009	3.2	7	0.1	Q7020	8.9	8.9	0
Q1004	1.9	1.3	0	Q2503	0.6	0.6	0.5	Q5101	0	0.4	6.4	Q5401	0	0	7.9	Q7011	2.5	1.9	0	Q7021	2.7	2.7	8.9
Q1005	0	0.5	5	Q3200	1.9	2.5	4.4	Q5201	2.8	3.4	7.9	Q5402	0	0	-11.3	Q7012	11.6	10.9	8.7				
Q1006	5	4.7	1	Q3201	1.9	2.5	4.4	Q5202	0.2	0.8	11.7	Q5403	-13.5	-11.2	-8.3	Q7013	6	6.6	10.9				
Q2000	4.2	4.8	8.3	Q3202	5	4.4	3.4	Q5203	0.2	0.8	11.7	Q5404	0	0	0.5	Q7014	2.5	1.8	0				

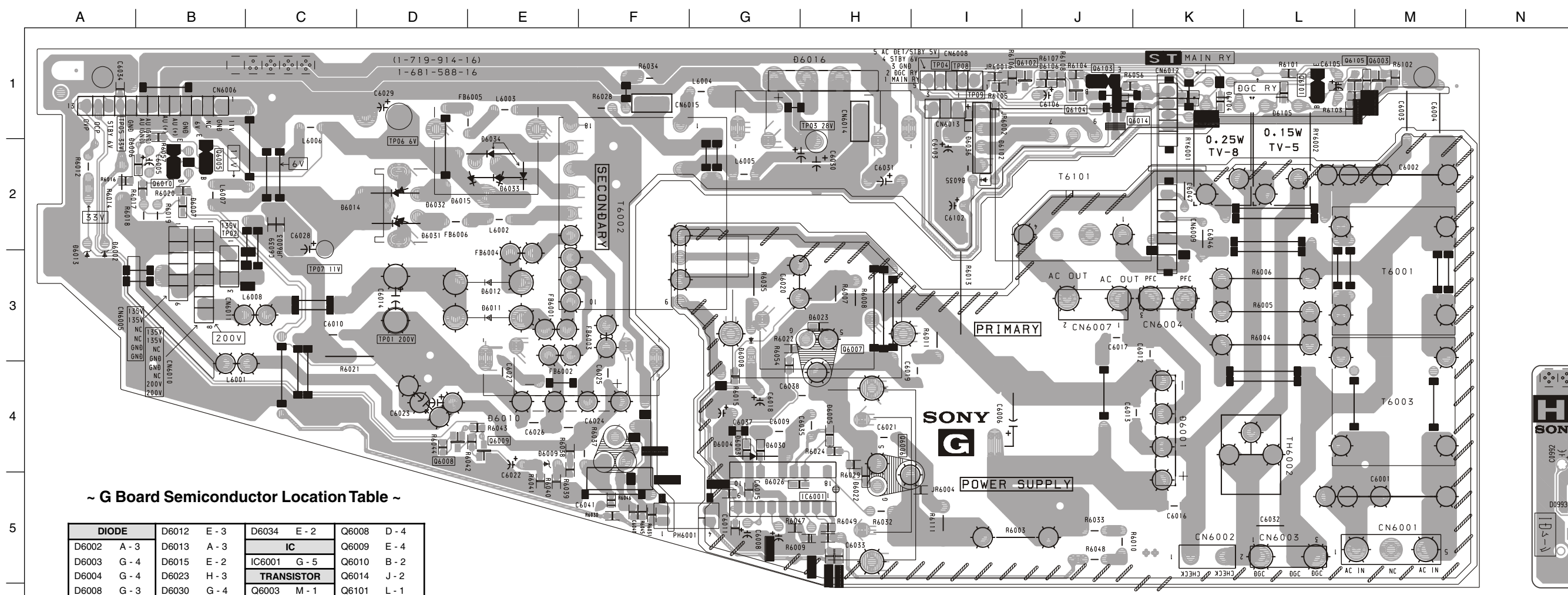
~ A Board IC Voltage Table ~

Ref No	Pin No	Volts (V)	Ref No	Pin No	Volts (V)	Ref No	Pin No	Volts (V)	Ref No	Pin No	Volts (V)
IC5103	1	3.3	IC5301	5	6.5	IC7002	10	0.4	IC7002	38	0
	2	3.3		6	7.1		11	1.9		39	4.8
	3	1.9		7	0.4		12	0.4		40	4.8
	4	2.6		8	12		13	0.9		41	4.8
	5	2.5	IC5302	1	0		14	5		42	0
	6	1.8		2	5.8		15	2.5		43	0
	7	2		3	6.3		16	0		44	0
	8	0		4	0		17	3		45	6.3
	9	3.1		5	6.6		18	2.7		46	8.9
	10	3		6	6.5		19	3.9		47	8.9
	11	5		7	0.4		20	0		48	6
	12	5		8	12		21	6.1		49	2.5
	13	5	IC5400	1	1.4		22	2.7		50	4.1
	14	0		2	13.2		23	8.8		51	0
	15	0		3	-12.5		24	0		52	6
	16	5		4	-15.4		25	4.3		53	5.8
IC5300	1	6		5	-0.4		26	3.2	54	5.8	
	2	6		6	13.7		27	5.2	55	0.4	
	3	6		7	1.4		28	0.3	56	5.8	
	4	0		IC7002	1		3.6	29	4.9	57	5.8
	5	6	2		0		30	3.4	58	5.8	
	6	6	3		4.4		31	5.6	59	0.3	
	7	6	4		4.8		32	8.9	60	0	
	8	12	5		3.5		33	0	61	0	
IC5301	1	1.7	6		3.4		34	4.7	62	2.9	
	2	8.5	7		7.6		35	4.7	63	3.7	
	3	6.5	8		0		36	4.7			
	4	0	9	0	37		8.9				

~ A Board Difference Table ~

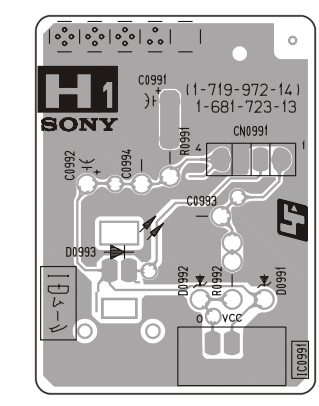
Ref	28FX68B	28FX68E	28FX68U
TU1000	8-598-535-20 BTF-EF411	8-598-533-10 BTF-EC411	8-598-529-10 BTF-EU611





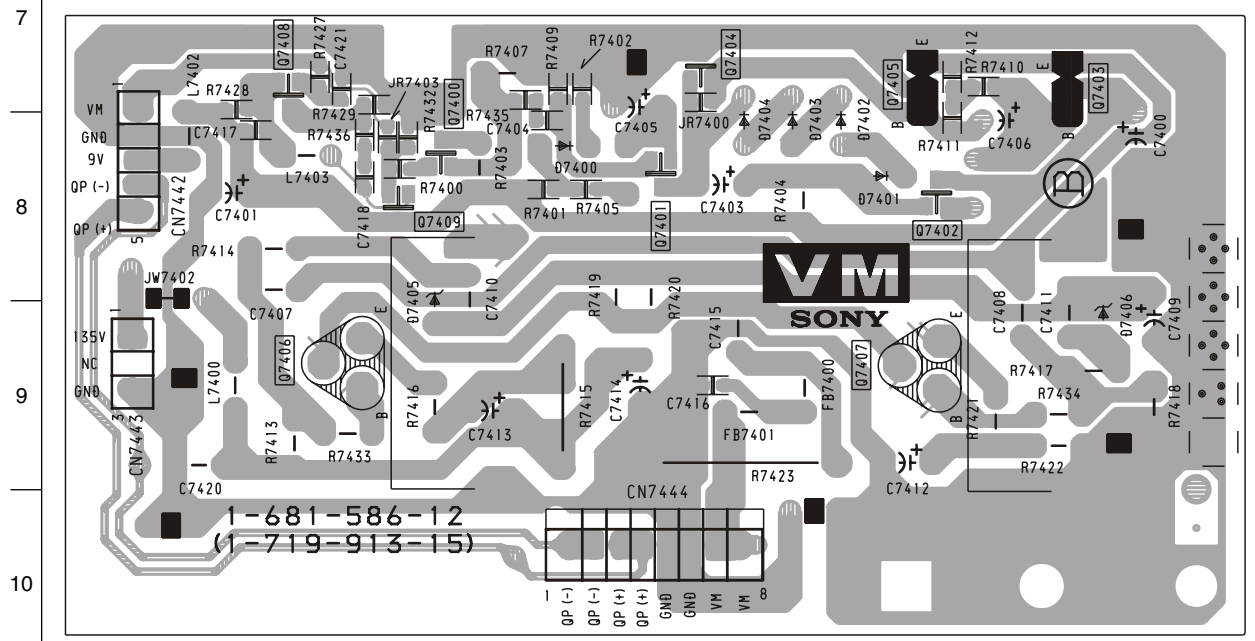
~ G Board Semiconductor Location Table ~

DIODE		D6012 E - 3	D6013 A - 3	D6034 E - 2	D6035 E - 2	Q6008 D - 4	Q6009 E - 4
D6002	A - 3	D6013	A - 3	<b>IC</b>		Q6010	B - 2
D6003	G - 4	D6015	E - 2	<b>TRANSISTOR</b>		Q6014	J - 2
D6004	G - 4	D6023	H - 3	Q6003	M - 1	Q6101	L - 1
D6008	G - 3	D6030	G - 4	Q6005	B - 2	Q6102	J - 1
D6009	E - 4	D6031	D - 2	Q6006	H - 4	Q6103	J - 1
D6010	E - 4	D6032	D - 2	Q6007	H - 3	Q6105	L - 1
D6011	E - 3	D6033	E - 2				

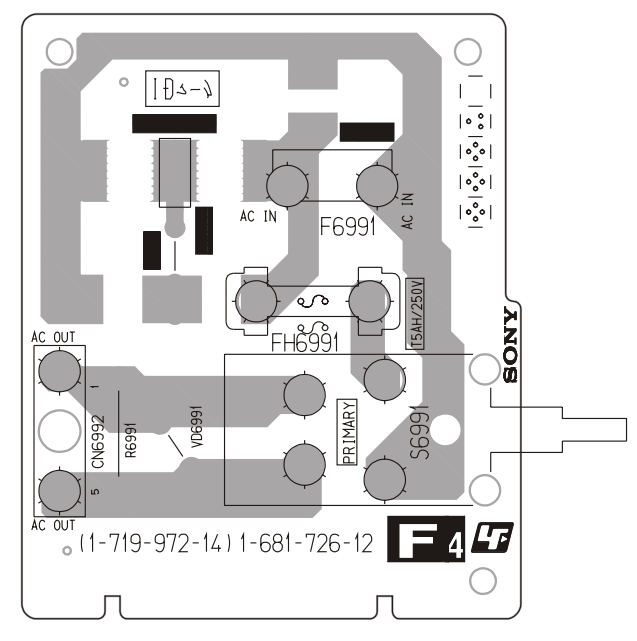


~ H1 Printed Wiring Board Conductor side ~

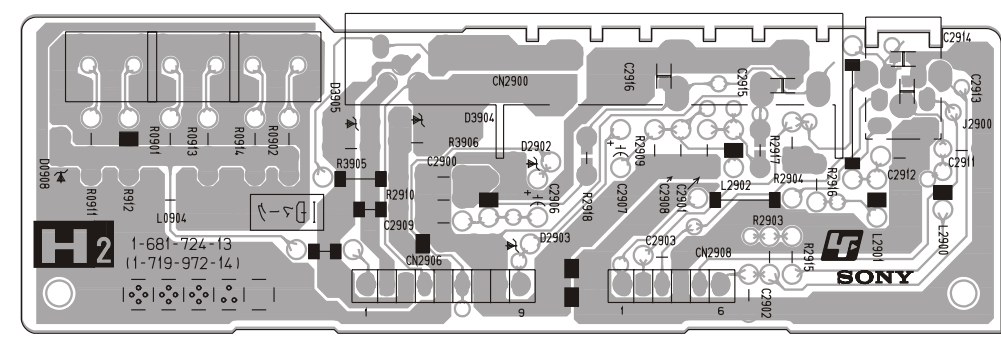
~ G Printed Wiring Board Conductor side ~



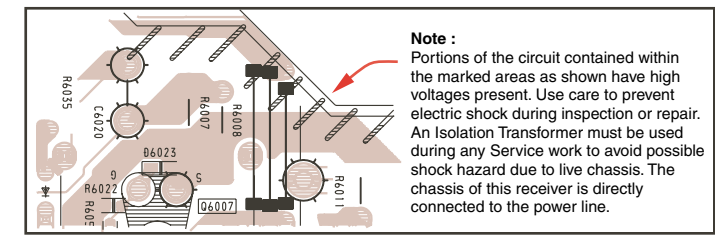
~ VM Printed Wiring Board Conductor side ~



~ F4 Printed Wiring Board Conductor side ~

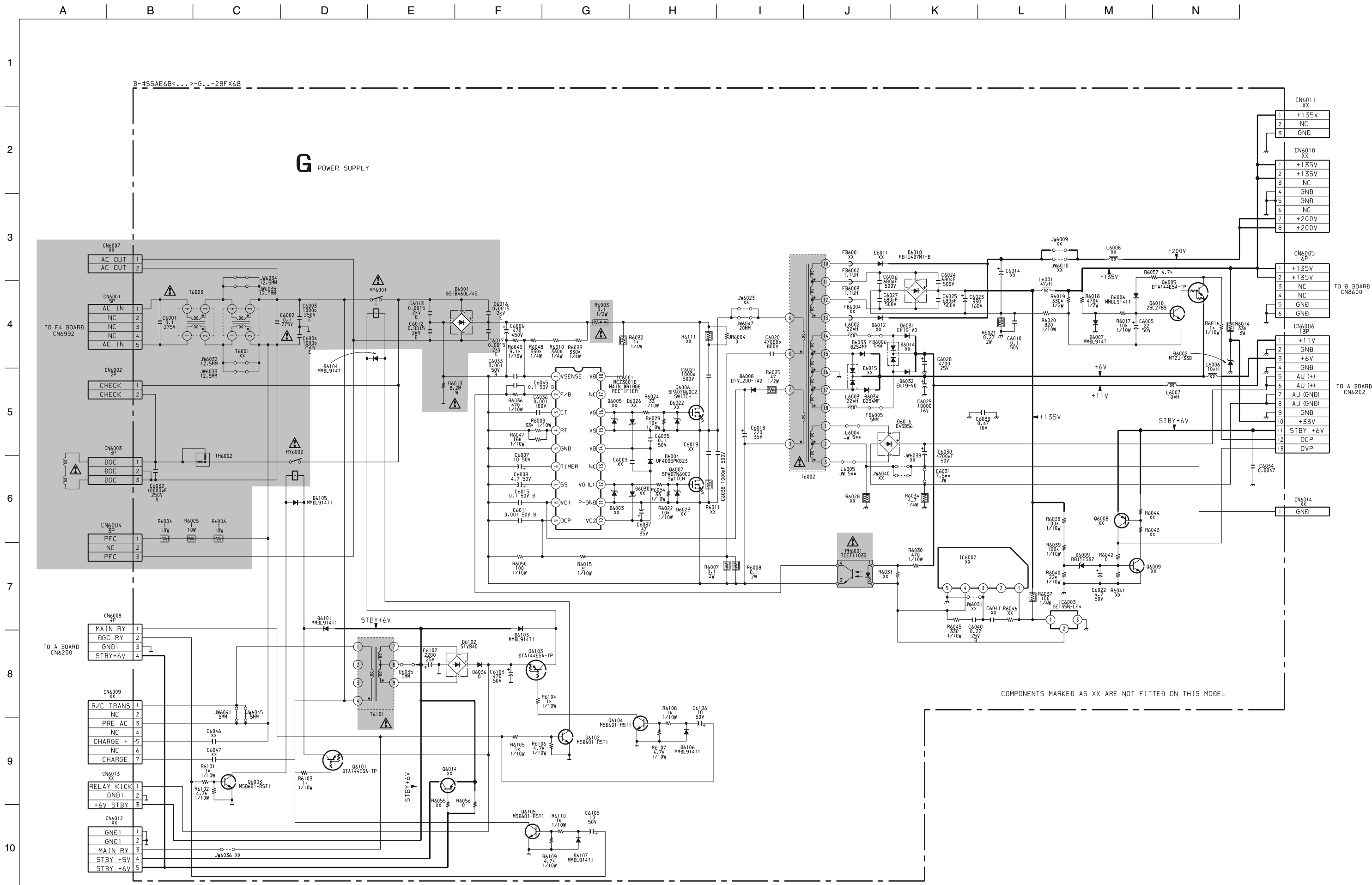


~ H2 Printed Wiring Board Conductor side ~



**Note :**  
 Portions of the circuit contained within the marked areas as shown have high voltages present. Use care to prevent electric shock during inspection or repair. An Isolation Transformer must be used during any Service work to avoid possible shock hazard due to live chassis. The chassis of this receiver is directly connected to the power line.

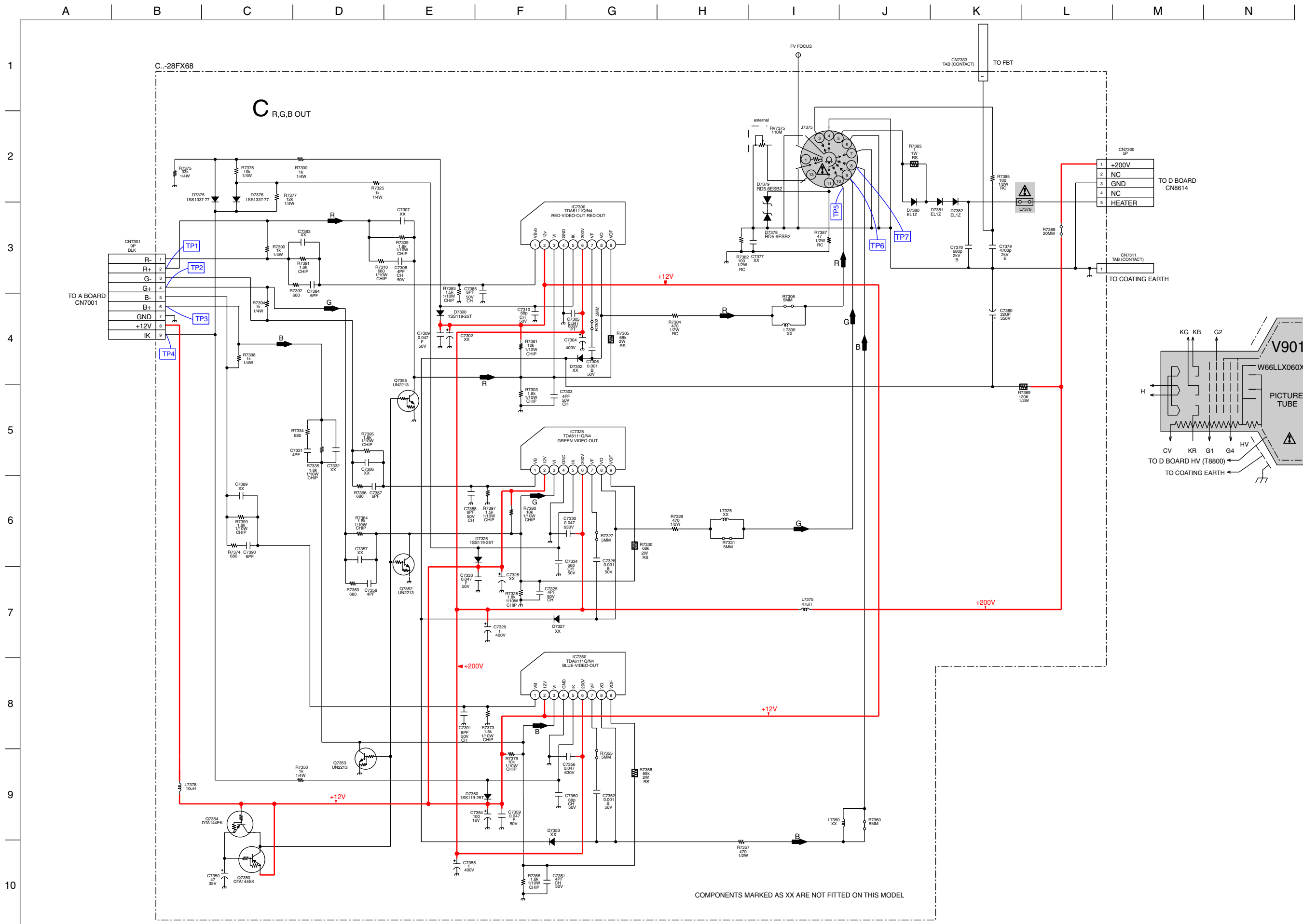




**G** POWER SUPPLY

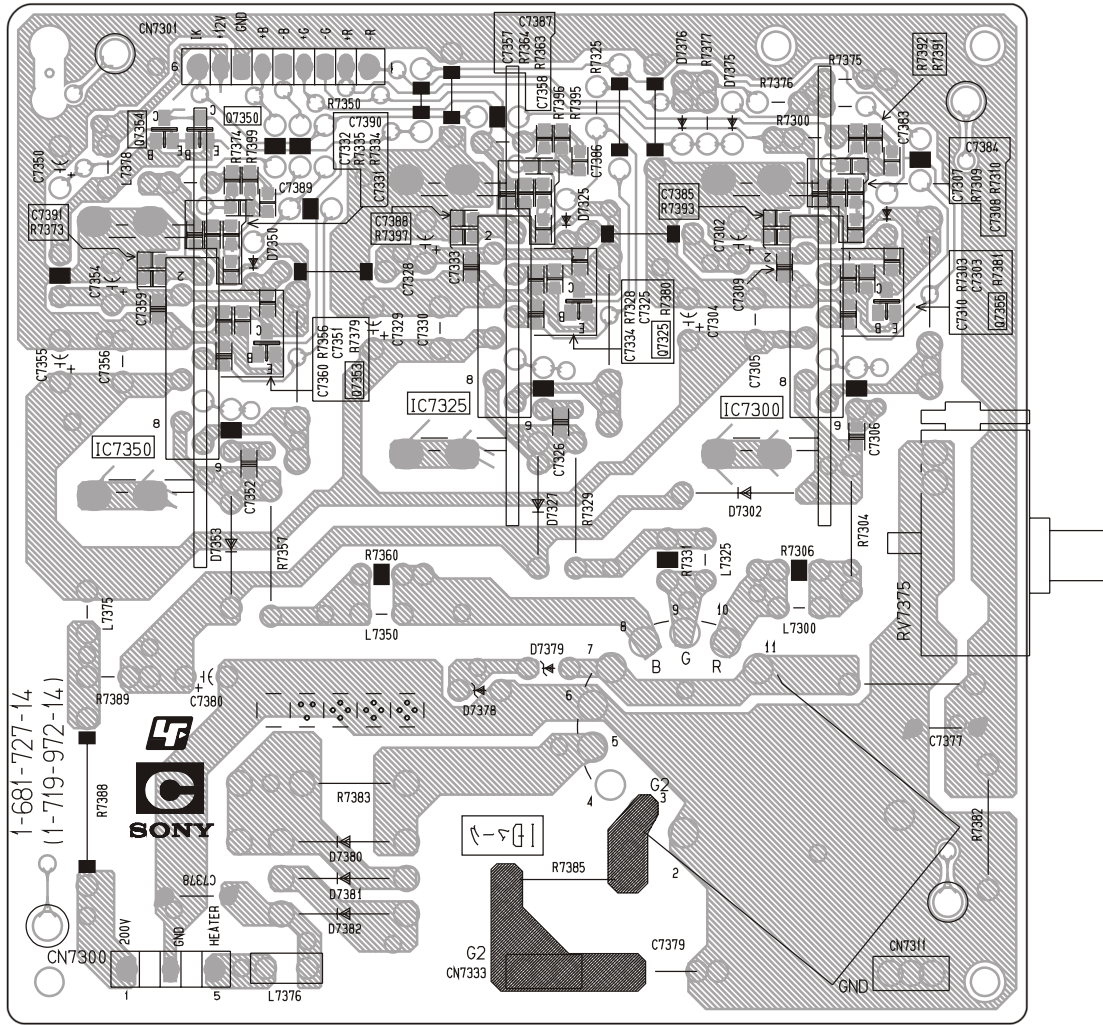
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

~ G Board Schematic Diagram [ Power Supply ] ~



~ C Board Schematic Diagram [ R-G-B Out ] ~

~ C Printed Wiring Board Conductor side ~



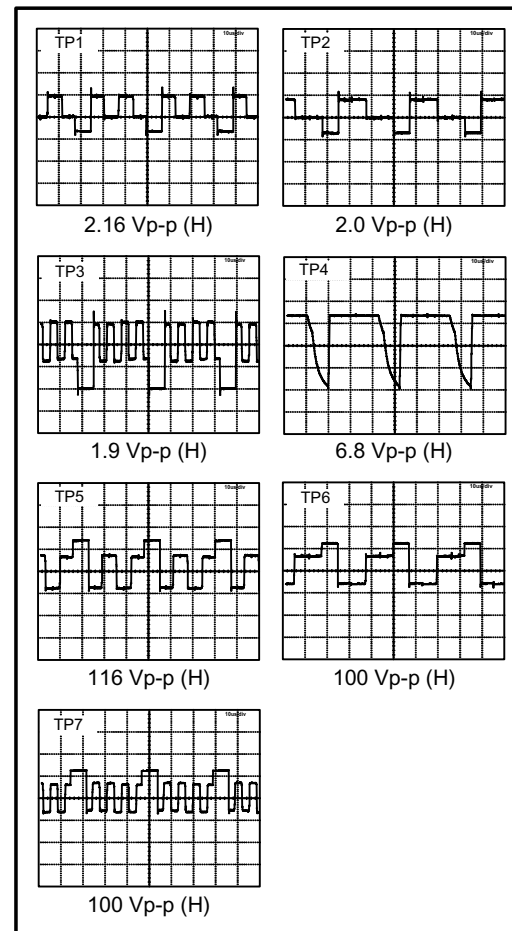
~ C Board Semiconductor Voltage Table ~

Ref	(e)	(b)	(c)
Q7350	12	11.98	0
Q7352	0	0	3.8
Q7353	0	0	3.8
Q7354	11.98	12	0
Q7355	0	0	3.8

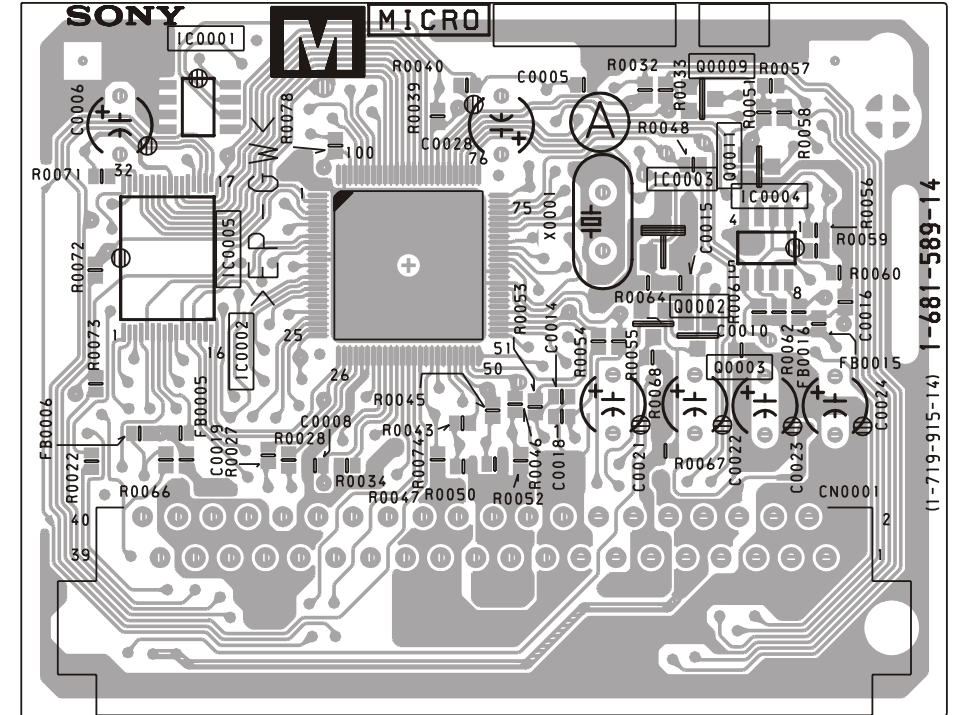
~ C Board IC Voltage Table ~

IC Voltage Table			
Ref No	Pin No	Voltage (V)	
IC7300	1	3.9	
	3	3.8	
	5	7.5	
	6	200	
	7	140	
	8	153	
	9	140	
	IC7325	1	3.9
		3	3.8
5		7.7	
6		200	
7		140	
IC7350	1	3.9	
	3	3.8	
	5	7.5	
	6	200	
	7	139	

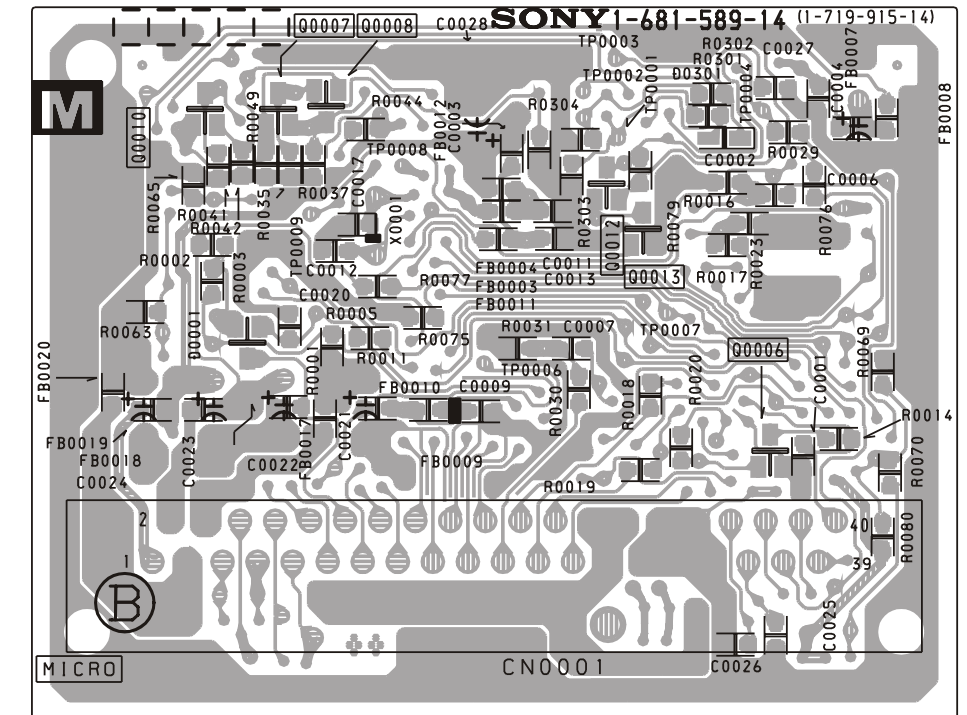
~ C Board Waveforms ~

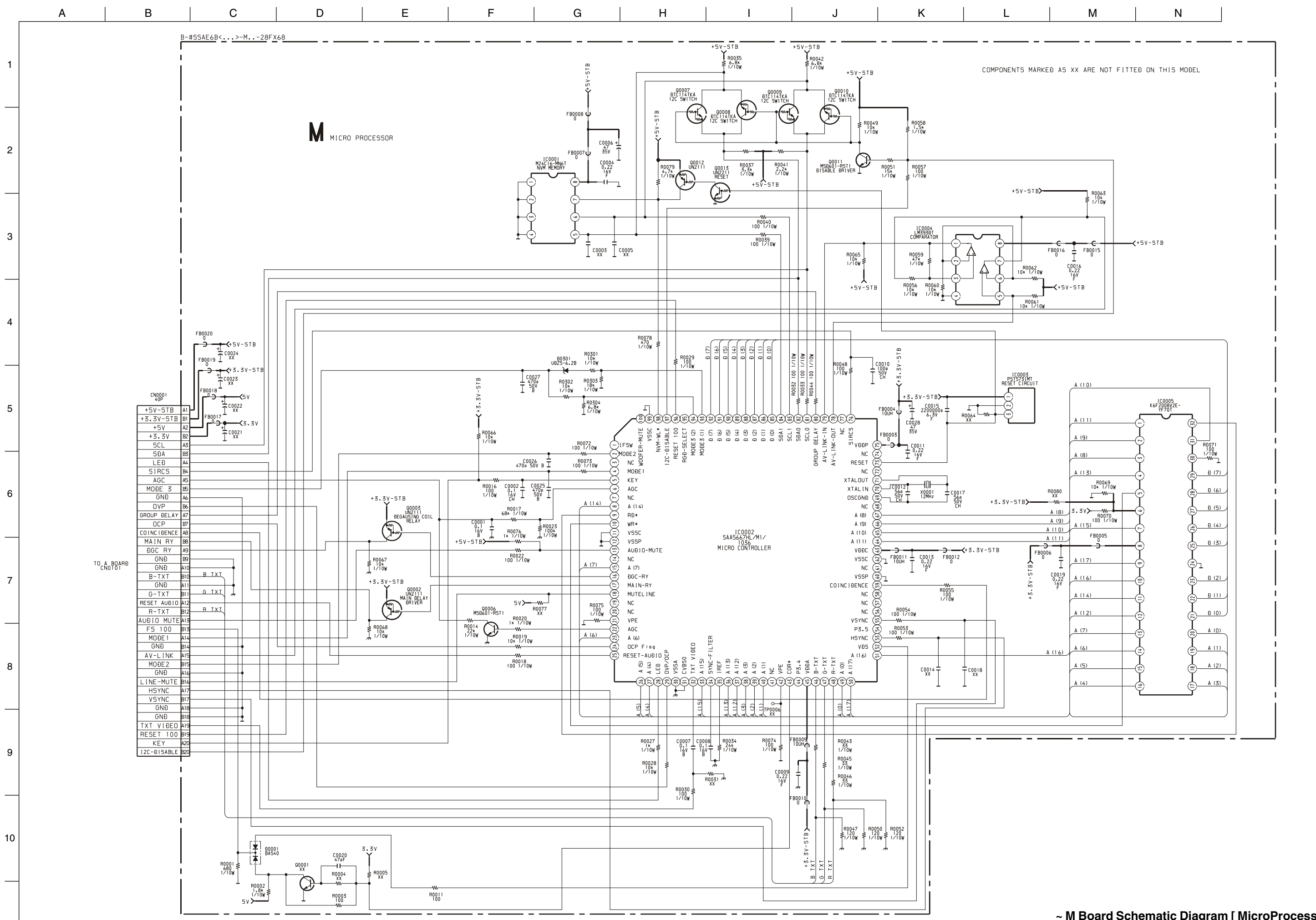


~ M Printed Wiring Board Conductor side A ~



~ M Printed Wiring Board Conductor side B ~

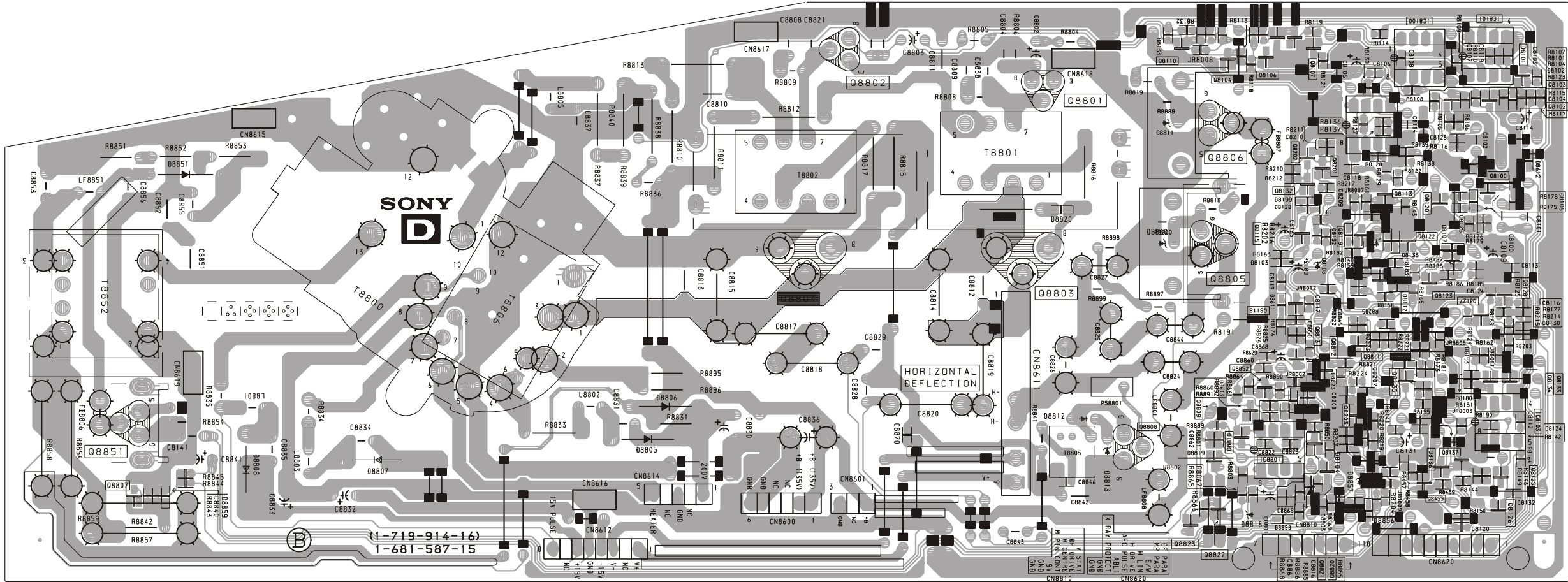




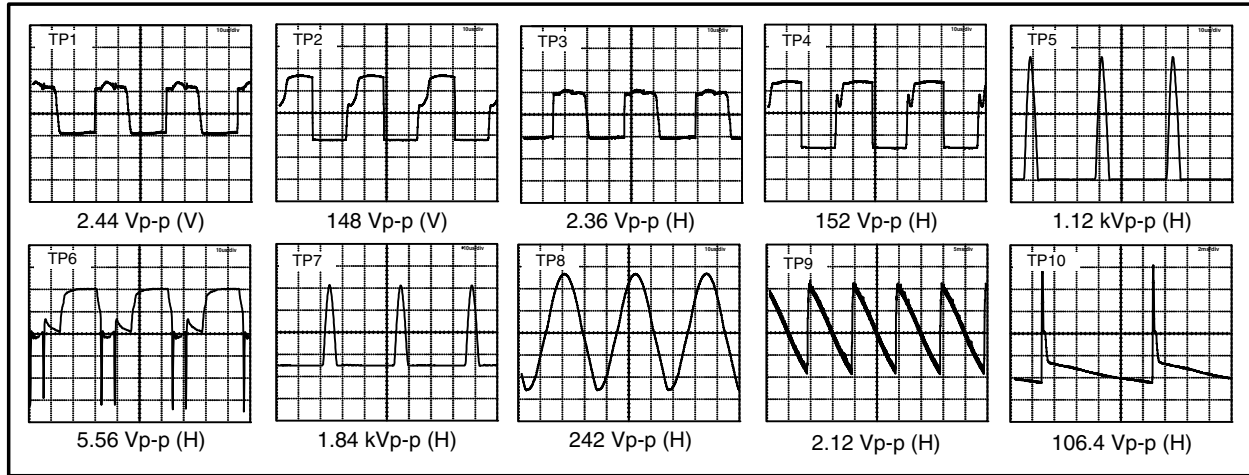
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

~ M Board Schematic Diagram [ MicroProcessor ] ~

~ D Printed Wiring Board Conductor side ~



~ D Board Waveforms ~

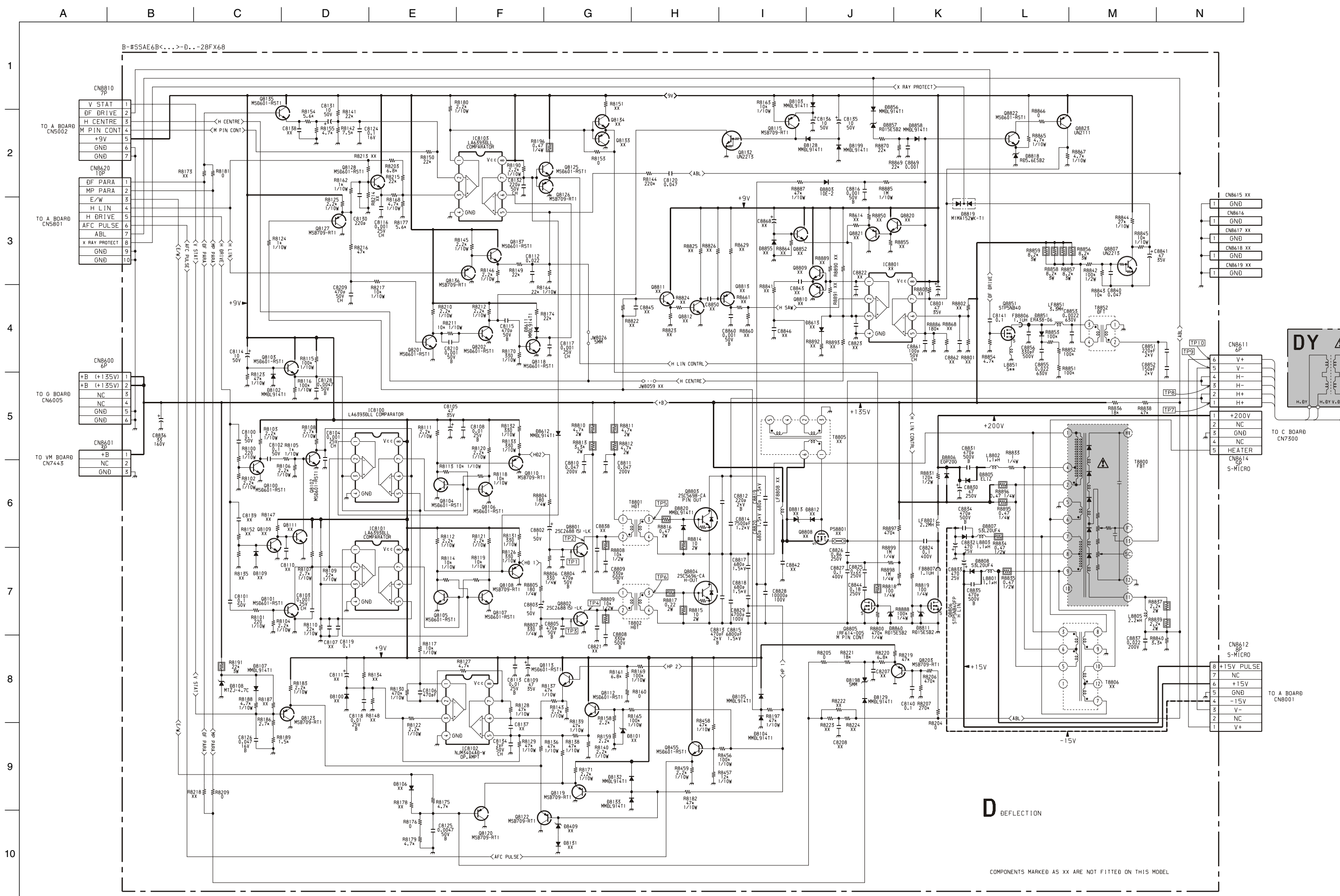


~ D Board IC Voltage Table ~

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC8100	1	0.3
	2	4.3
	3	4.1
	5	4.1
	6	3.0
	7	0.4
	IC8101	1
2		4.3
3		4.4
5		4.4
6		3.0
7		0.4
IC8102		1
	2	0.4
	3	0.4
	5	0.4
	6	0.4
	7	0.4
	IC8103	1
2		2.1
3		1.7
5		1.6
6		1.0
7		1.1

~ D Board Semiconductor Voltage Table ~

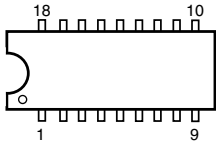
Ref	(e)(s)	(b)(g)	(c)(d)	Ref	(e)(s)	(b)(g)	(c)(d)	Ref	(e)(s)	(b)(g)	(c)(d)	Ref	(e)(s)	(b)(g)	(c)(d)
Q8100	0	0.6	3.6	Q8110	2.4	3.1	0	Q8128	3.4	1.5	8.9	Q8801	0	0.4	64.7
Q8101	0	0.6	4.3	Q8113	0.3	0.2	8.9	Q8132	0	0	3.4	Q8802	0	0.4	73.2
Q8102	0	0.3	4.3	Q8115	8.6	8.9	0	Q8135	2.6	3.2	8.9	Q8807	0	6.3	0
Q8103	4.0	0	8.9	Q8118	0	0	5.0	Q8136	2.5	1.8	0	Q8818	0	0	5.0
Q8104	0	0.4	3.1	Q8119	0.7	1.4	0	Q8137	1.8	2.5	8.9	Q8822	5.5	4.9	0
Q8105	0	0.4	3.2	Q8120	0.7	2.3	0	Q8201	0	0.6	3.9	Q8823	8.9	8.5	0
Q8106	0	0.3	4.3	Q8122	0.5	1.4	0	Q8202	0	0.8	3.4	Q8805	0	2.5	33
Q8107	0	0.3	4.2	Q8123	0.5	1.4	0	Q8203	1.4	0.9	0	Q8806	0	1.2	135
Q8108	2.4	3.2	0	Q8127	1.4	1.5	0	Q8455	1.1	1.7	8.9	Q8851	0	5.4	81.5



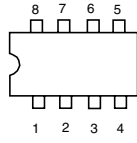
~ D Board Schematic Diagram [ Deflection ] ~

## 5-4. SEMICONDUCTORS

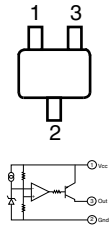
CXAB070AP  
MCZ3001D



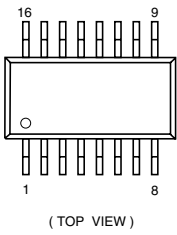
LM318P  
LM358N  
LM393DT  
LM393N  
M24C16-MN6T(A)



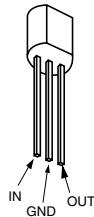
PST573IMT



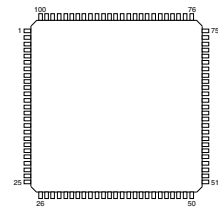
CXA1875AM-T4



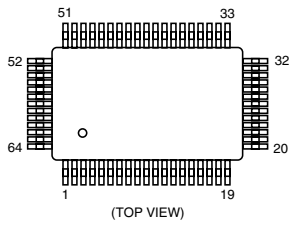
LM78L05ACZ



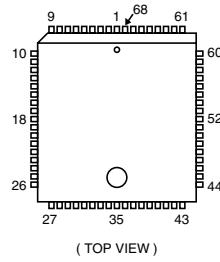
SAA5665HL/M1D/0358



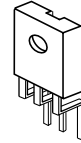
CXA2100AQ-TL



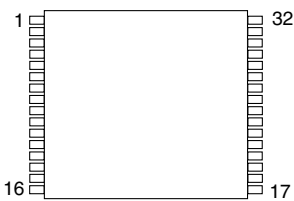
MSP3411G-QA-B11



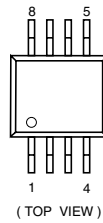
SBX3081-51(30)



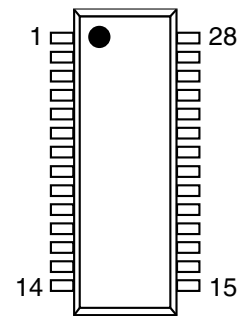
K6T2008V2E-YF70T



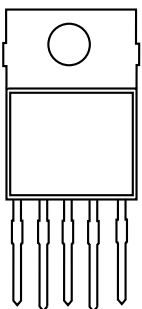
NJM3404AD-W  
UPC4558G2



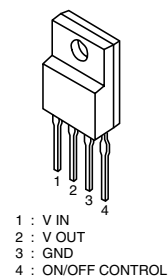
SDA9488X-B23GEG



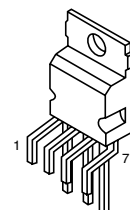
LA6500-FA



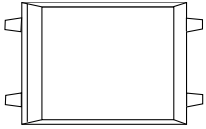
PQ30RV11



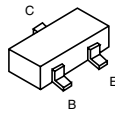
STV9379



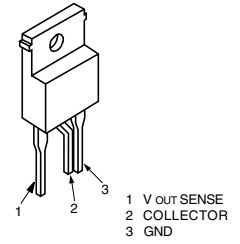
TCET1103G



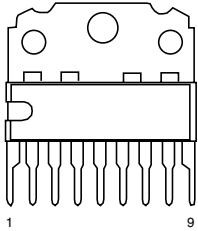
DTA144EK  
DTC144TKA-T146  
2SA1162-G



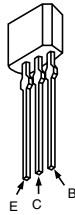
SE135N-LF4



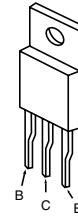
TDA6111Q/N4



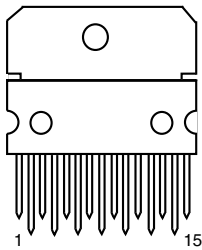
DTA144ESA  
2SA933AS-QT  
2SC2785-HFE



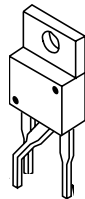
2SA1837(LBS2S0N)



TDA7497



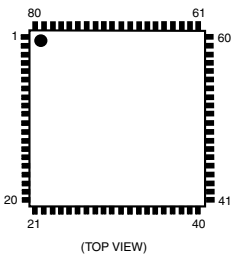
L7809CV/LSY  
STP5NB40FP  
STP5NB40(030Y)  
2SC5698-CA  
2S5696-SONY-CA



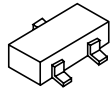
2SB734-34



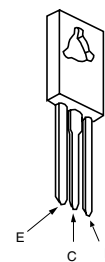
VPS9402-A32GEG



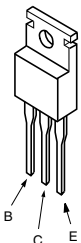
MSB709-RT1  
MSD601-RST1  
M1MA152WA-T1  
UN2111  
UN213  
2SK2036(TE85L)



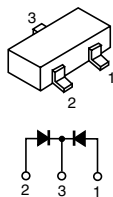
2SC2688(5)-LK



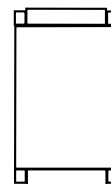
BA12T  
BAO33T  
IRF614-005  
IRF620  
SPA07N60C2  
2SA2005  
2SC5511



RB705D

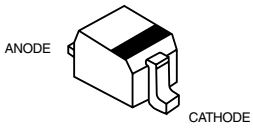


BAS216

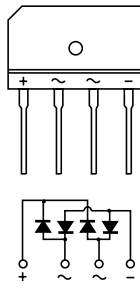




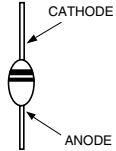
BAS316-115  
 MMDL914T1  
 UDZSTE-176.2B



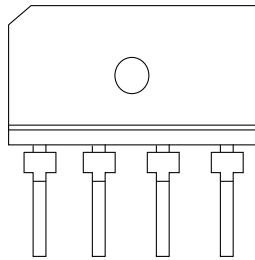
FBIU4D7MA-B  
 RBV-406B  
 S1VB40



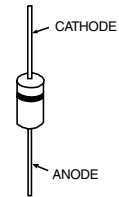
BYV98-200-RAS 15/12



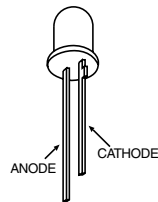
GS1B460/45



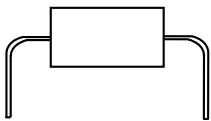
D1NL20U  
 EGP20G  
 EL1Z  
 GP08D  
 UF4005PKG23



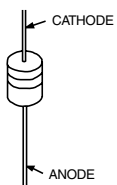
TLHK5190



D2S4MTA1

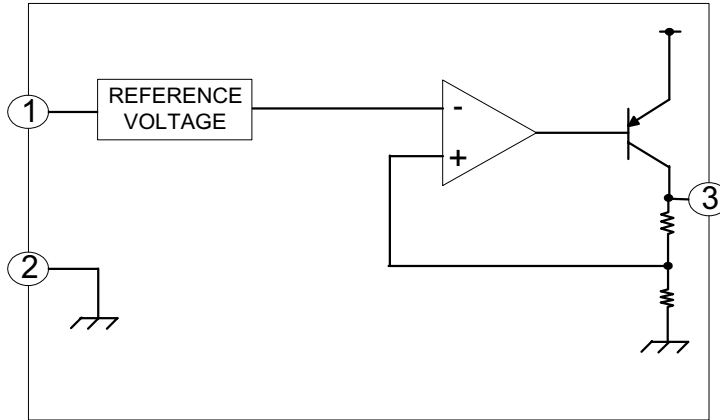


ERA38-06	MTZJ-T-77-22
ERA85-009	RD5.6ESB2
HZS9.1NB2	RD15ES-B2
MTZJ-13B	RD39ES-B2
MTZJ-33B	RD5.6ESB2
MTZJ-3.6A	1SS119-25
MTZJ-4.7C	1SS133T-77

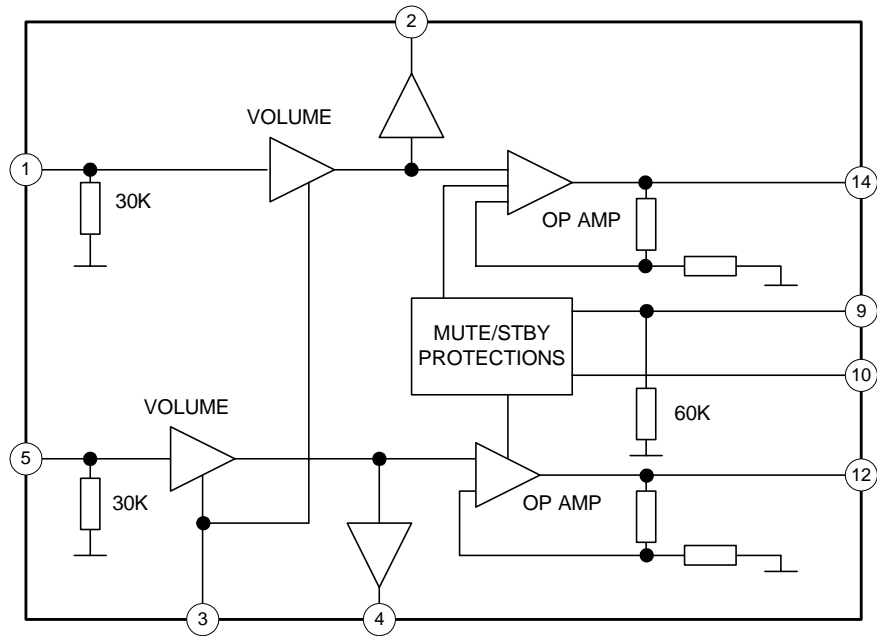


5-5 IC BLOCK DIAGRAMS

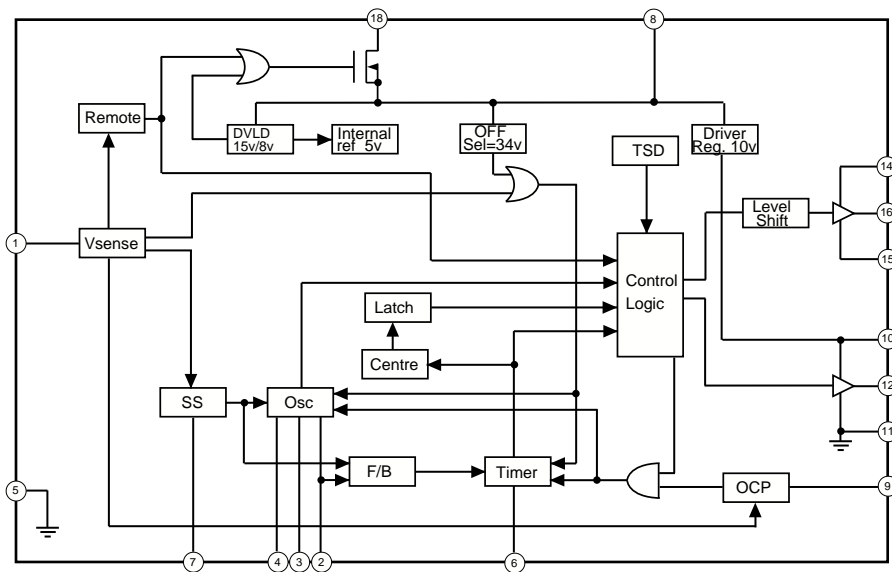
A BOARD IC6202/IC6205 BA033T/BA12T



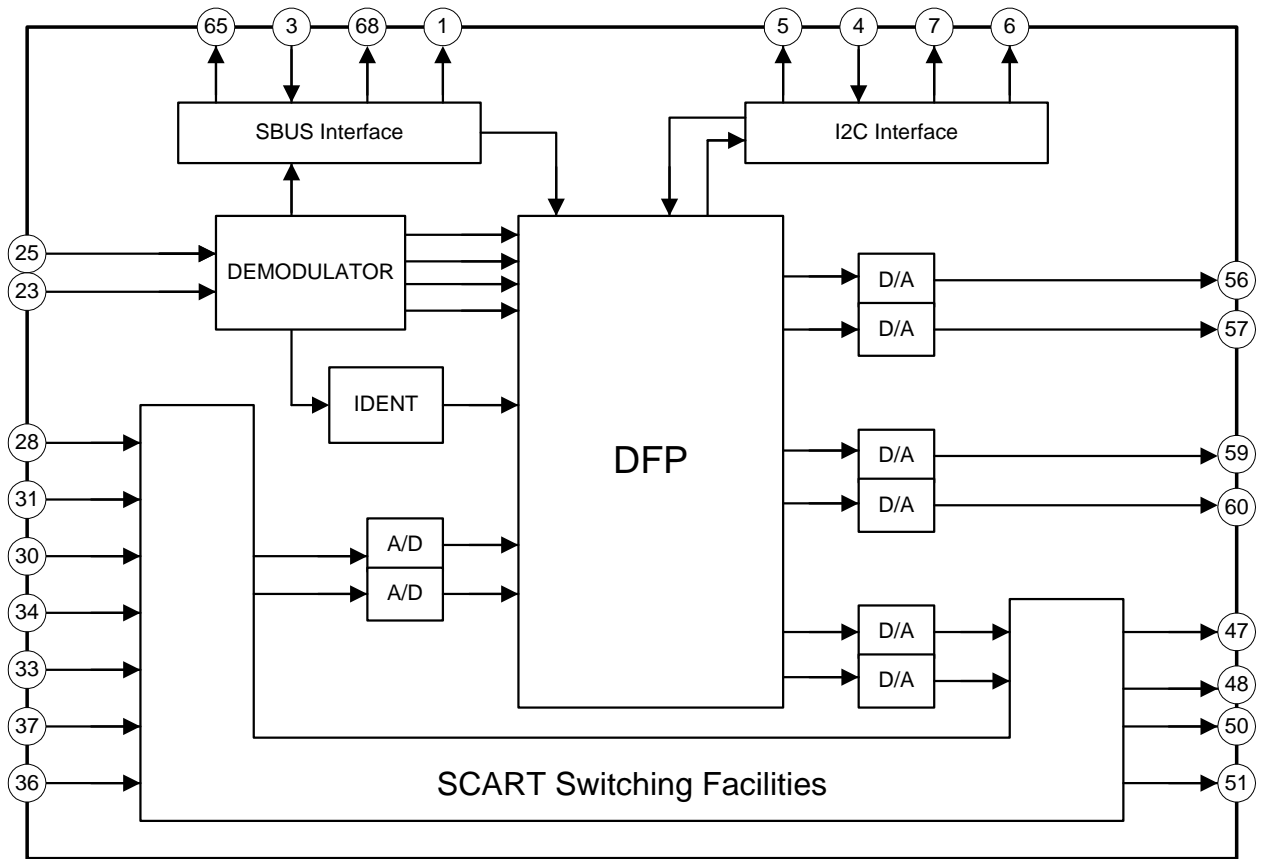
A BOARD IC2500 TDA7497



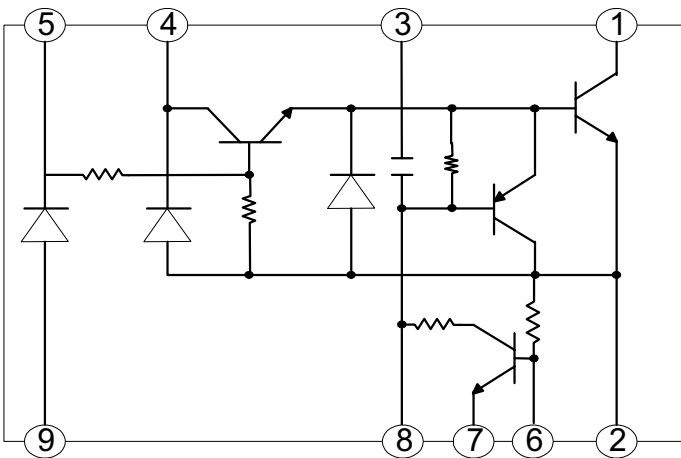
G BOARD IC6001 MCZ3001D



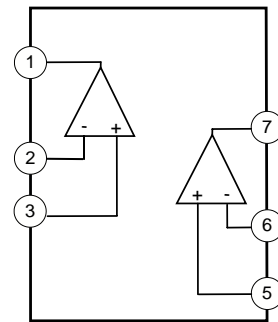
**A BOARD IC2000 MSP3411G**



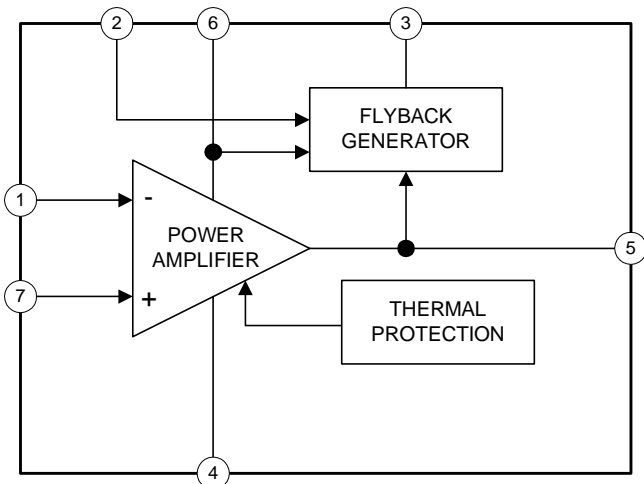
**G BOARD IC6003 SE135N-LF4**



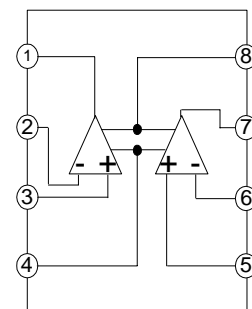
**A BOARD IC5301/IC5302 LA6393DLL**



**A BOARD IC5400 STV9379**



**A BOARD IC5300 LM358N**



## SECTION 6 EXPLODED VIEWS

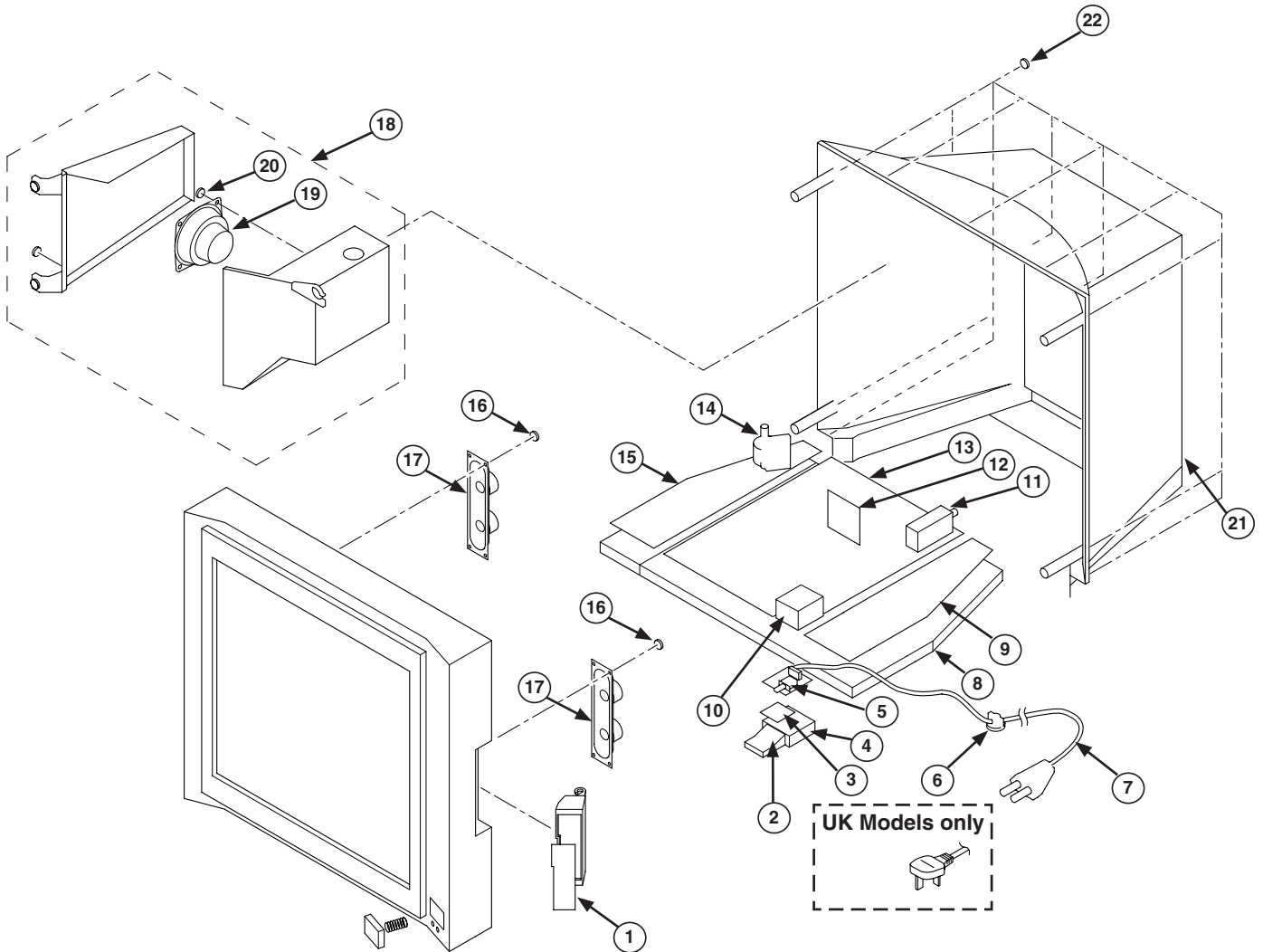
### NOTE :

- 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.

### 6-1. CHASSIS

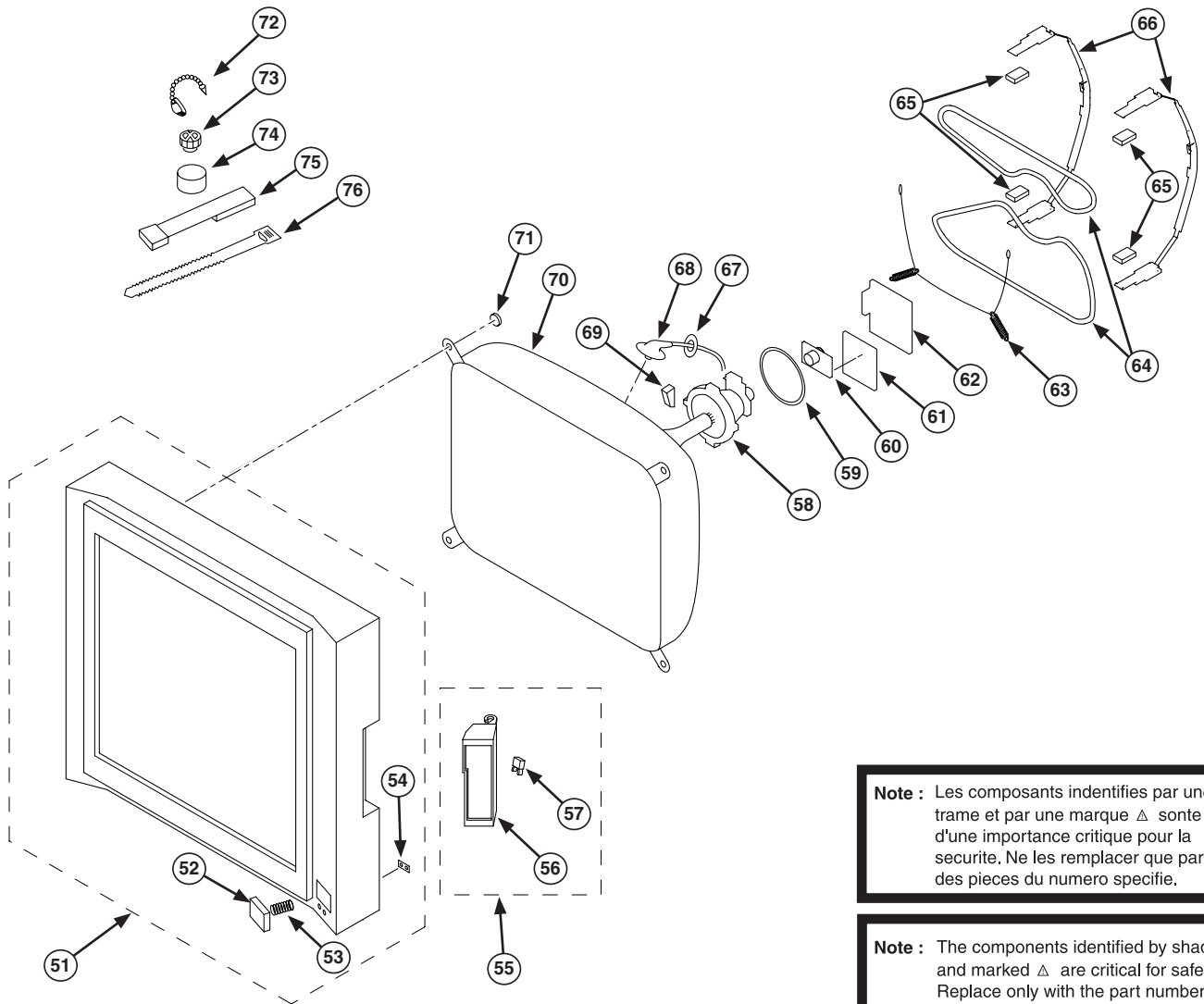
**Note :** Les composants identifiés par une trame et par une marque  $\Delta$  sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces du numéro spécifié.

**Note :** The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part numbers specified in the parts list.



REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
1	*A-1647-043-A	H2 BOARD, COMPLETE		12	*A-1300-287-A	M BOARD, COMPLETE	
2	*A-1646-243-A	H1 BOARD, COMPLETE		13	*A-1300-302-A	A BOARD, COMPLETE (KV-28FX68B)	
3	*A-1625-000-A	F4 BOARD, COMPLETE			*A-1300-175-A	A BOARD, COMPLETE (KV-28FX68E)	
4	*4-206-097-01	F4, HI BRACKET			*A-1300-301-A	A BOARD, COMPLETE (KV-28FX68U)	
5	£ 1-571-433-21	SWITCH, PUSH (AC POWER)		14	£ 1-453-383-11	TRANSFORMER ASSY FLYBACK (NX-4522//Z214)	
6	*4-202-531-01	AC CORD LOCK (SC)		15	*A-1300-176-A	D BOARD, COMPLETE	
7	£ 1-783-083-11	CORD, POWER (WITH FILTER)		16	4-039-358-01	SCREW (4X16), (+) BV TAPPING	
	£ 1-776-860-11	POWER CORD, FILTER (UK) (KV-28FX68U)		17	1-529-408-11	SPEAKER (4. 2X24CM)	
8	*4-206-106-05	BRACKET, MAIN		18	A-1678-192-E	WOOFER COMPLETE ASSY	19-20
9	*A-1300-179-A	G BOARD, COMPLETE		19	1-529-417-11	SPEAKER (8CM)	
10	1-424-855-11	COLL, CHDKE 29MMH		20	7-685-648-79	SCREW (3X12), TYPE2 IT-3	
11	8-598-535-20	FRONTEND BTF-EF411 (KV-28FX68B)		21	*4-205-700-32	REAR COVER	
	8-598-533-10	FRONTEND BTF-EC411 (KV-28FX68E)		22	7-685-663-71	SCREW +BVTP 4X16 TYPE2 IT-3	
	8-598-529-10	FRONTEND BTF-EU611 (KV-28FX68U)					

## 6-2. PICTURE TUBE



REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
51	*X-4041-374-1	BEZNET ASSY	52-54	64	$\Delta$ 1-424-886-11	COIL, DEGAUSSING	
52	4-205-699-04	POWER, BUTTON		65	*4-203-390-71	CUSHION, DGC	
53	4-202-964-11	SPRING		66	*4-057-303-01	HOLDER, DGC	
54	4-205-698-02	GUIDE LIGHT		67	4-202-693-01	HOLDER, HV CABLE	
55	X-4040-352-2	SIDE DOOR ASSY	56-57	68	$\Delta$ 1-251-317-63	CAP ASSY, HIGH VOLTAGE	
56	4-205-696-51	DOOR		69	4-203-658-01	SPACER, DY	
57	4-047-464-01	CATCHER, PUSH		70	$\Delta$ 8-735-099-05	PICTURE TUBE (W66LLX060X)	
58	$\Delta$ 8-451-521-31	DEFLECTION YOKE (Y28RVC3-L2)		71	4-036-188-01	SCREW, SELF TAPPING	
59	1-452-896-11	COIL, NA ROTATION (RT200)		72	4-308-870-00	CLIP, LEAD WIRE	
60	8-453-011-11	NECK ASSY NA299-M		73	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
61	*A-1300-626-A	VM BOARD, COMPLETE		74	1-425-032-00	MAGNET, DISK; 10MM Ø	
62	*A-1300-532-A	C BOARD, COMPLETE		75	X-4387-214-1	PERMALLOY ASSY, CORRECTION	
63	4-205-743-01	SPRING, EXTENSION		76	3-701-007-00	BAND BINDING	

# SECTION 7 ELECTRICAL PARTS LIST

## PARTS LISTING TABLE OF CONTENTS

	<u>Page</u>
<b>D BOARD COMPLETE Parts List :</b> .....	55
<b>G BOARD COMPLETE Parts List :</b> .....	58
<b>M BOARD COMPLETE Parts List :</b> .....	60
<b>A BOARD COMMON Parts List :</b> Parts common to all models in this manual .....	61
<b>A BOARD VARIANT Parts List :</b> Parts that belong only to the model specified	
<u>Model</u>	
(KV-28FX68B) : .....	70
(KV-28FX68E) : .....	70
(KV-28FX68U) : .....	70
<b>C BOARD COMPLETE Parts List :</b> .....	70
<b>F4 BOARD COMPLETE Parts List :</b> .....	71
<b>H1 BOARD COMPLETE Parts List :</b> .....	72
<b>H2 BOARD COMPLETE Parts List :</b> .....	72
<b>VM BOARD COMPLETE Parts List :</b> .....	72
<b>MISCELLANEOUS :</b> .....	74
<b>ACCESSORIES AND PACKAGING MATERIALS :</b> .....	74
<b>REMOTE COMMANDER :</b> .....	74

**Note :** Refer to the designated variant parts list when seeking a part indicated by an asterisk (\*)  
Parts indicated (XX) on the Schematic Diagram are not used in this model and therefore do not appear in the Parts List.

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
<b>* A-1300-176-A D Board, Complete</b>							
	4-382-854-01	SCREW (M3X8), P, SW (+)		C8816	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V
	< CAPACITOR >			C8817	1-125-893-11	FILM 680PF	3.00% 1.5KV
C8100	1-136-165-00	FILM 0.1UF	5.00% 50V	C8818	1-125-893-11	FILM 680PF	3.00% 1.5KV
C8101	1-136-165-00	FILM 0.1UF	5.00% 50V	C8819	1-125-893-11	FILM 680PF	3.00% 1.5KV
C8102	1-136-165-00	FILM 0.1UF	5.00% 50V	C8820	1-125-893-11	FILM 680PF	3.00% 1.5KV
C8103	1-115-416-11	CERAMIC CHIP 0.001UF	5.00% 25V	C8824	1-107-846-11	FILM 0.1UF	5.00% 400V
C8104	1-115-416-11	CERAMIC CHIP 0.001UF	5.00% 25V	C8825	1-117-663-11	FILM 0.22UF	5.00% 250V
C8105	1-126-947-11	ELECT 47UF	20.00% 35V	C8826	1-115-520-11	FILM 0.68UF	5.00% 250V
C8106	1-164-315-11	CERAMIC CHIP 470PF	5.00% 50V	C8827	1-107-846-11	FILM 0.1UF	5.00% 400V
C8108	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C8828	1-127-681-11	FILM 10000PF	2% 100V
C8109	1-126-947-11	ELECT 47UF	20.00% 35V	C8829	1-127-680-11	FILM 4700PF	2% 100V
C8112	1-164-227-11	CERAMIC CHIP 0.022UF	10.00% 25V	C8830	1-107-655-11	ELECT 47UF	20.00% 250V
C8113	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C8831	1-102-228-00	CERAMIC 470PF	10.00% 500V
C8114	1-126-964-11	ELECT 10UF	20.00% 50V	C8832	1-126-941-11	ELECT 470UF	20.00% 25V
C8115	1-162-962-11	CERAMIC CHIP 470PF	10.00% 50V	C8833	1-126-941-11	ELECT 470UF	20.00% 25V
C8116	1-115-416-11	CERAMIC CHIP 0.001UF	5.00% 25V	C8834	1-102-228-00	CERAMIC 470PF	10.00% 500V
C8117	1-115-416-11	CERAMIC CHIP 0.001UF	5.00% 25V	C8835	1-102-228-00	CERAMIC 470PF	10.00% 500V
C8118	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C8836	1-123-024-21	ELECT 33UF	160V
C8119	1-107-826-11	CERAMIC CHIP 0.1UF	10.00% 16V	C8837	1-106-375-12	MYLAR 0.022UF	5.00% 200V
C8120	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C8840	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V
C8124	1-107-826-11	CERAMIC CHIP 0.1UF	10.00% 16V	C8841	1-126-947-11	ELECT 47UF	20.00% 35V
C8125	1-162-968-11	CERAMIC CHIP 0.0047UF	10.00% 50V	C8844	1-115-513-21	FILM 0.18UF	5.00% 250V
C8126	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C8851	1-162-131-11	CERAMIC 220PF	10.00% 2KV
C8128	1-162-968-11	CERAMIC CHIP 0.0047UF	10.00% 50V	C8852	1-162-129-00	CERAMIC 150PF	10.00% 2KV
C8130	1-164-230-11	CERAMIC CHIP 220PF	5.00% 50V	C8853	1-129-898-00	FILM 0.0022UF	5.00% 630V
C8131	1-126-964-11	ELECT 10UF	20.00% 50V	C8855	1-136-205-11	MYLAR 0.022UF	5.00% 630V
C8132	1-164-230-11	CERAMIC CHIP 220PF	5.00% 50V	C8856	1-102-030-00	CERAMIC 330PF	10.00% 500V
C8134	1-102-935-00	CERAMIC 2PF	0.25PF 50V	C8860	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V
C8135	1-126-964-11	ELECT 10UF	20.00% 50V	C8861	1-162-927-11	CERAMIC CHIP 100PF	5.00% 50V
C8136	1-126-964-11	ELECT 10UF	20.00% 50V	C8869	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V
C8140	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	< CONNECTOR >			
C8141	1-136-165-00	FILM 0.1UF	5.00% 50V	CN8600	* 1-817-037-61	PLUG, CONNECTOR 6P	
C8209	1-164-315-11	CERAMIC CHIP 470PF	5.00% 50V	CN8601	* 1-816-980-71	PLUG, CONNECTOR 3P	
C8210	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V	CN8611	* 1-785-270-12	PIN, DY CONNECTOR (PC BOARD)	
C8801	1-126-947-11	ELECT 47UF	20.00% 35V	CN8612	* 1-816-979-51	PLUG, CONNECTOR 8P	
C8802	1-126-960-11	ELECT 1UF	20.00% 50V	CN8614	* 1-564-508-11	PLUG, CONNECTOR 5P	
C8803	1-126-960-11	ELECT 1UF	20.00% 50V	CN8616	1-695-915-11	TAB (CONTACT)	
C8804	1-102-114-00	CERAMIC 470PF	10.00% 50V	CN8620	1-764-333-11	PIN, CONNECTOR(PCB) (V TYPE) 10P	
C8805	1-102-114-00	CERAMIC 470PF	10.00% 50V	CN8810	* 1-564-510-11	PLUG, CONNECTOR 7P	
C8808	1-102-030-00	CERAMIC 330PF	10.00% 500V	< DIODE >			
C8809	1-102-030-00	CERAMIC 330PF	10.00% 500V	D8102	8-719-081-97	DIODE MMDL914T1	
C8810	1-107-368-11	MYLAR 0.047UF	10.00% 200V	D8103	8-719-081-97	DIODE MMDL914T1	
C8811	1-107-368-11	MYLAR 0.047UF	10.00% 200V	D8104	8-719-081-97	DIODE MMDL914T1	
C8812	1-162-131-11	CERAMIC 220PF	10.00% 2KV	D8105	8-719-081-97	DIODE MMDL914T1	
C8813	1-162-134-11	CERAMIC 470PF	10.00% 2KV	D8107	8-719-081-97	DIODE MMDL914T1	
C8814	1-117-641-11	FILM 7500PF	3.00% 1.2KV	D8108	8-719-921-40	DIODE MTZJ-4.7C	
C8815	1-117-836-11	FILM 6800PF	3.00% 1.5KV	D8128	8-719-081-97	DIODE MMDL914T1	
				D8129	8-719-081-97	DIODE MMDL914T1	

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
D8132	8-719-081-97	DIODE MMDL914T1		Q8107	8-729-010-29	TRANSISTOR MSD601-RST1	
D8133	8-719-081-97	DIODE MMDL914T1		Q8108	8-729-010-05	TRANSISTOR MSB709-RT1	
D8198	1-535-303-00	LEAD, JUMPER (5.0MM)		Q8110	8-729-010-05	TRANSISTOR MSB709-RT1	
D8199	8-719-081-97	DIODE MMDL914T1		Q8112	8-729-010-29	TRANSISTOR MSD601-RST1	
D8611	8-719-081-97	DIODE MMDL914T1		Q8113	8-729-010-29	TRANSISTOR MSD601-RST1	
D8612	8-719-081-97	DIODE MMDL914T1		Q8115	8-729-010-05	TRANSISTOR MSB709-RT1	
D8803	8-719-200-02	DIODE 10E-2		Q8118	8-729-010-29	TRANSISTOR MSD601-RST1	
D8805	8-719-302-43	DIODE EL1Z		Q8119	8-729-010-05	TRANSISTOR MSB709-RT1	
D8806	8-719-979-85	DIODE EGP20G		Q8120	8-729-010-05	TRANSISTOR MSB709-RT1	
D8807	8-719-510-73	DIODE S3L20UF4		Q8122	8-729-010-05	TRANSISTOR MSB709-RT1	
D8808	8-719-510-73	DIODE S3L20UF4		Q8123	8-729-010-05	TRANSISTOR MSB709-RT1	
D8811	8-719-110-41	DIODE RD15ESB2		Q8125	8-729-010-29	TRANSISTOR MSD601-RST1	
D8818	8-719-109-89	DIODE RD5.6ESB2		Q8126	8-729-010-05	TRANSISTOR MSB709-RT1	
D8819	8-719-050-38	DIODE M1MA152WK-T1		Q8127	8-729-010-05	TRANSISTOR MSB709-RT1	
D8820	8-719-081-97	DIODE MMDL914T1		Q8128	8-729-010-29	TRANSISTOR MSD601-RST1	
D8851	8-719-970-87	DIODE ERA38-06		Q8132	8-729-421-19	TRANSISTOR UN2213	
D8856	8-719-081-97	DIODE MMDL914T1		Q8135	8-729-010-29	TRANSISTOR MSD601-RST1	
D8857	8-719-110-41	DIODE RD15ESB2		Q8136	8-729-010-05	TRANSISTOR MSB709-RT1	
D8858	8-719-081-97	DIODE MMDL914T1		Q8137	8-729-010-29	TRANSISTOR MSD601-RST1	
D8860	8-719-110-41	DIODE RD15ESB2		Q8201	8-729-010-29	TRANSISTOR MSD601-RST1	
< FERRITE BEAD >				Q8202	8-729-010-29	TRANSISTOR MSD601-RST1	
FB8806	1-410-397-21	FERRITE	1.1UH	Q8203	8-729-010-05	TRANSISTOR MSB709-RT1	
FB8807	1-410-397-21	FERRITE	1.1UH	Q8455	8-729-010-29	TRANSISTOR MSD601-RST1	
< IC >				Q8801	8-729-048-47	TRANSISTOR 2SC2688 (5) -LK	
IC8100	8-759-659-67	IC LA6393DLL		Q8802	8-729-048-47	TRANSISTOR 2SC2688 (5) -LK	
IC8101	8-759-659-67	IC LA6393DLL		Q8803	8-729-056-16	TRANSISTOR 2SC5698-SONY-CA	
IC8102	8-759-638-79	IC NJM3404AD-W		Q8804	8-729-056-17	TRANSISTOR 2SC5696-SONY-CA	
IC8103	8-759-659-67	IC LA6393DLL		Q8805	8-729-050-48	TRANSISTOR IRF614-005	
< COIL >				Q8806	8-729-047-59	TRANSISTOR STP5NB40FP	
L8801	1-410-397-21	FERRITE	1.1UH	Q8807	8-729-421-19	TRANSISTOR UN2213	
L8802	1-410-397-21	FERRITE	1.1UH	Q8822	8-729-010-29	TRANSISTOR MSD601-RST1	
L8803	1-410-397-21	FERRITE	1.1UH	Q8823	8-729-424-08	TRANSISTOR UN2111	
L8805	1-408-947-00	INDUCTOR	2.2MH	Q8851	6-550-012-01	TRANSISTOR STP5NB40 (033Y)	
L8851	1-535-303-00	LEAD, JUMPER (5.0MM)		< RESISTOR >			
< INDUCTOR >				R8100	1-216-813-11	METAL CHIP	220 5% 1/10W
LF8801	1-406-985-11	INDUCTOR	2.2MH	R8101	1-216-813-11	METAL CHIP	220 5% 1/10W
LF8851	1-406-674-11	INDUCTOR	3.3MH	R8102	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
< TRANSISTOR >				R8103	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
Q8100	8-729-010-29	TRANSISTOR MSD601-RST1		R8104	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
Q8101	8-729-010-29	TRANSISTOR MSD601-RST1		R8105	1-216-821-11	METAL CHIP	1K 5% 1/10W
Q8102	8-729-010-29	TRANSISTOR MSD601-RST1		R8106	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
Q8103	8-729-010-29	TRANSISTOR MSD601-RST1		R8107	1-208-792-11	METAL CHIP	2.7K 0.5% 1/10W
Q8104	8-729-010-29	TRANSISTOR MSD601-RST1		R8108	1-208-792-11	METAL CHIP	2.7K 0.5% 1/10W
Q8105	8-729-010-29	TRANSISTOR MSD601-RST1		R8109	1-208-814-91	METAL CHIP	22K 0.5% 1/10W
Q8106	8-729-010-29	TRANSISTOR MSD601-RST1		R8110	1-208-814-91	METAL CHIP	22K 0.5% 1/10W
				R8111	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
				R8112	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
				R8113	1-216-833-11	METAL CHIP	10K 5% 1/10W
				R8114	1-216-833-11	METAL CHIP	10K 5% 1/10W



REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK		
R8115	1-216-845-11	METAL CHIP	100K	5%	1/10W	R8177	1-216-830-11	METAL CHIP	5.6K	5%	1/10W
R8116	1-216-845-11	METAL CHIP	100K	5%	1/10W	R8179	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R8117	1-216-833-11	METAL CHIP	10K	5%	1/10W	R8180	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R8118	1-216-833-11	METAL CHIP	10K	5%	1/10W	R8181	1-216-295-91	SHORT CHIP	0		
R8119	1-216-833-11	METAL CHIP	10K	5%	1/10W	R8182	1-216-841-11	METAL CHIP	47K	5%	1/10W
R8120	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R8183	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R8121	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R8186	1-216-826-11	METAL CHIP	2.7K	5%	1/10W
R8122	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R8188	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R8123	1-216-841-11	METAL CHIP	47K	5%	1/10W	R8189	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R8124	1-216-821-11	METAL CHIP	1K	5%	1/10W	R8190	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R8125	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R8191	1-215-925-11	METAL OXIDE	22K	5%	3W
R8126	1-216-815-11	METAL CHIP	330	5%	1/10W	R8196	1-249-377-11	CARBON	0.47	5%	1/4W
R8127	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W	R8197	1-216-841-11	METAL CHIP	47K	5%	1/10W
R8128	1-208-822-11	METAL CHIP	47K	0.5%	1/10W	R8203	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R8129	1-208-822-11	METAL CHIP	47K	0.5%	1/10W	R8204	1-216-295-91	SHORT CHIP	0		
R8130	1-208-846-11	METAL CHIP	470K	0.5%	1/10W	R8205	1-216-295-91	SHORT CHIP	0		
R8131	1-216-815-11	METAL CHIP	330	5%	1/10W	R8206	1-216-853-11	METAL CHIP	470K	5%	1/10W
R8132	1-216-815-11	METAL CHIP	330	5%	1/10W	R8207	1-216-850-11	METAL CHIP	270K	5%	1/10W
R8133	1-216-815-11	METAL CHIP	330	5%	1/10W	R8209	1-216-295-91	SHORT CHIP	0		
R8136	1-208-822-11	METAL CHIP	47K	0.5%	1/10W	R8210	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R8137	1-208-822-11	METAL CHIP	47K	0.5%	1/10W	R8211	1-216-833-11	METAL CHIP	10K	5%	1/10W
R8138	1-208-822-11	METAL CHIP	47K	0.5%	1/10W	R8212	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R8139	1-208-822-11	METAL CHIP	47K	0.5%	1/10W	R8215	1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R8140	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R8216	1-216-841-11	METAL CHIP	47K	5%	1/10W
R8141	1-208-814-91	METAL CHIP	22K	0.5%	1/10W	R8217	1-216-833-11	METAL CHIP	10K	5%	1/10W
R8142	1-208-803-11	METAL CHIP	7.5K	0.5%	1/10W	R8219	1-216-841-11	METAL CHIP	47K	5%	1/10W
R8143	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R8220	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R8144	1-216-849-11	METAL CHIP	220K	5%	1/10W	R8221	1-216-836-11	METAL CHIP	18K	5%	1/10W
R8145	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R8456	1-216-845-11	METAL CHIP	100K	5%	1/10W
R8146	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W	R8457	1-216-834-11	METAL CHIP	12K	5%	1/10W
R8149	1-216-837-11	METAL CHIP	22K	5%	1/10W	R8458	1-216-841-11	METAL CHIP	47K	5%	1/10W
R8150	1-216-837-11	METAL CHIP	22K	5%	1/10W	R8459	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R8153	1-216-295-91	SHORT CHIP	0			R8800	1-247-895-91	CARBON	470K	5%	1/4W
R8154	1-216-830-11	METAL CHIP	5.6K	5%	1/10W	R8804	1-249-408-11	CARBON	180	5%	1/4W
R8155	1-208-798-11	METAL CHIP	4.7K	0.5%	1/10W	R8805	1-249-408-11	CARBON	180	5%	1/4W
R8158	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W	R8806	1-249-411-11	CARBON	330	5%	1/4W
R8159	1-208-790-11	METAL CHIP	2.2K	0.5%	1/10W	R8807	1-249-411-11	CARBON	330	5%	1/4W
R8160	1-216-295-91	SHORT CHIP	0			R8808	1-260-340-11	CARBON	10K	5%	1/2W
R8161	1-208-802-11	METAL CHIP	6.8K	0.5%	1/10W	R8809	1-260-340-11	CARBON	10K	5%	1/2W
R8162	1-216-821-11	METAL CHIP	1K	5%	1/10W	R8810	1-215-896-00	METAL OXIDE	4.7K	5%	2W
R8163	1-216-833-11	METAL CHIP	10K	5%	1/10W	R8811	1-215-896-00	METAL OXIDE	4.7K	5%	2W
R8164	1-208-814-91	METAL CHIP	22K	0.5%	1/10W	R8812	1-215-896-00	METAL OXIDE	4.7K	5%	2W
R8165	1-208-830-11	METAL CHIP	100K	0.5%	1/10W	R8813	1-215-895-11	METAL OXIDE	3.3K	5%	2W
R8168	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R8814	1-215-880-00	METAL OXIDE	10	5%	2W
R8169	1-208-830-11	METAL CHIP	100K	0.5%	1/10W	R8815	1-215-880-00	METAL OXIDE	10	5%	2W
R8170	1-216-815-11	METAL CHIP	330	5%	1/10W	R8816	1-216-365-00	METAL OXIDE	0.47	5%	2W
R8171	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	R8817	1-216-361-00	METAL OXIDE	0.22	5%	2W
R8174	1-216-837-11	METAL CHIP	22K	5%	1/10W	R8818	1-249-405-11	CARBON	100	5%	1/4W
R8175	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R8819	1-247-807-31	CARBON	100	5%	1/4W
R8176	1-216-864-11	SHORT CHIP	0			R8831	1-260-124-11	CARBON	120K	5%	1/2W



**Note :** The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part numbers specified in the parts list.

**G**

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
< DIODE >				Q6005	8-729-029-56	TRANSISTOR DTA144ESA	
D6001	6-500-067-01	DIODE GSIB460L/45		Q6006	6-550-146-01	TRANSISTOR SPA07N60C2-E8152	
D6002	8-719-982-26	DIODE MTZJ-33B		Q6007	6-550-146-01	TRANSISTOR SPA07N60C2-E8152	
D6004	8-719-979-64	DIODE UF4005PKG23		Q6010	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D6006	8-719-081-97	DIODE MMDL914T1		Q6101	8-729-029-56	TRANSISTOR DTA144ESA	
D6007	8-719-081-97	DIODE MMDL914T1		Q6102	8-729-010-29	TRANSISTOR MSD601-RST1	
D6008	8-719-063-70	DIODE D1NL20U		Q6103	8-729-029-56	TRANSISTOR DTA144ESA	
D6009	8-719-110-41	DIODE RD15ESB2		Q6104	8-729-010-29	TRANSISTOR MSD601-RST1	
D6010	8-719-085-24	DIODE FBIU4D7M1-B		Q6105	8-729-010-29	TRANSISTOR MSD601-RST1	
D6016	8-719-060-88	DIODE D4SBS6		< RESISTOR >			
D6031	8-719-080-59	DIODE EK19-V0		JR6004	1-216-295-91	SHORT CHIP	0
D6032	8-719-080-59	DIODE EK19-V0		R6003 $\Delta$	1-202-933-61	FUSIBLE	0.1 10% 1/2W
D6033	8-719-022-97	DIODE D2S4MF		R6004 $\Delta$	1-205-998-11	CEMENTED	1 5% 10W
D6034	8-719-022-97	DIODE D2S4MF		R6005 $\Delta$	1-205-998-11	CEMENTED	1 5% 10W
D6035	1-535-303-00	LEAD JUMPER (5.0MM)		R6006 $\Delta$	1-205-998-11	CEMENTED	1 5% 10W
D6036	1-216-295-91	SHORT CHIP	0	R6007	1-243-979-21	METAL OXIDE	0.1 5% 2W
D6101	8-719-081-97	DIODE MMDL914T1		R6008	1-243-979-21	METAL OXIDE	0.1 5% 2W
D6102	8-719-511-40	DIODE S1VB40		R6009	1-216-687-11	METAL CHIP	33K 0.5% 1/10W
D6103	8-719-081-97	DIODE MMDL914T1		R6010	1-215-481-00	METAL	330K 1% 1/4W
D6104	8-719-081-97	DIODE MMDL914T1		R6013 $\Delta$	1-218-265-11	METAL	8.2M 5% 1W
D6105	8-719-081-97	DIODE MMDL914T1		R6014	1-215-926-00	METAL OXIDE	33K 5% 3W
D6106	8-719-081-97	DIODE MMDL914T1		R6015	1-208-757-11	METAL CHIP	91 0.5% 1/10W
D6107	8-719-081-97	DIODE MMDL914T1		R6016	1-216-821-11	METAL CHIP	1K 5% 1/10W
< FERRITE BEAD >				R6017	1-216-833-11	METAL CHIP	10K 5% 1/10W
FB6002	1-410-397-21	FERRITE	1.1UH	R6018	1-260-131-11	CARBON	470K 5% 1/2W
FB6003	1-410-397-21	FERRITE	1.1UH	R6019	1-260-129-11	CARBON	330K 5% 1/2W
FB6005	1-535-303-00	LEAD, JUMPER	(5.0MM)	R6020	1-216-820-11	METAL CHIP	820 5% 1/10W
FB6006	1-535-303-00	LEAD, JUMPER	(5.0MM)	R6021	1-216-362-11	METAL OXIDE	0.27 5% 2W
< IC >				R6022	1-216-833-11	METAL CHIP	10K 5% 1/10W
IC6001	8-759-670-30	IC MCZ3001D		R6024	1-216-615-11	METAL CHIP	33 0.5% 1/10W
IC6003	8-749-016-19	IC SE135N-LF4		R6029	1-216-833-11	METAL CHIP	10K 5% 1/10W
< COIL >				R6030	1-216-817-11	METAL CHIP	470 5% 1/10W
L6001	1-406-663-21	INDUCTOR	47UH	R6032	1-249-417-11	CARBON	1K 5% 1/4W
L6002	1-412-529-11	INDUCTOR	22UH	R6033	1-215-481-00	METAL	330K 1% 1/4W
L6003	1-412-529-11	INDUCTOR	22UH	R6034	1-249-389-11	CARBON	4.7 5% 1/4W
L6004	1-535-303-00	LEAD, JUMPER	(5.0MM)	R6035	1-260-083-11	CARBON	47 5% 1/2W
L6005	1-535-303-00	LEAD, JUMPER	(5.0MM)	R6036	1-216-817-11	METAL CHIP	470 5% 1/10W
L6006	1-406-659-11	INDUCTOR	10UH	R6037	1-249-405-11	CARBON	100 5% 1/4W
L6007	1-412-525-31	INDUCTOR	10UH	R6038	1-208-830-11	METAL CHIP	100K 0.5% 1/10W
< PHOTOCOUPLER >				R6039	1-208-830-11	METAL CHIP	100K 0.5% 1/10W
PH6001 $\Delta$	8-749-016-21	IC TCET1103G		R6040	1-208-814-91	METAL CHIP	22K 0.5% 1/10W
< TRANSISTOR >				R6042	1-216-295-91	SHORT CHIP	0
Q6003	8-729-010-29	TRANSISTOR MSD601-RST1		R6045	1-216-639-11	METAL CHIP	330 0.5% 1/10W
				R6047	1-216-681-11	METAL CHIP	18K 0.5% 1/10W
				R6048	1-215-481-00	METAL	330K 1% 1/4W
				R6049	1-208-805-11	METAL CHIP	9.1K 0.5% 1/10W
				R6050	1-208-758-11	METAL CHIP	100 0.5% 1/10W
				R6054	1-216-615-11	METAL CHIP	33 0.5% 1/10W

**Note :** The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part numbers specified in the parts list.

**G**

**M**

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
R6056	1-216-295-91	SHORT CHIP	0			< CONNECTOR >	
R6057	1-208-798-11	METAL CHIP	4.7K 0.5% 1/10W				
R6101	1-216-821-11	METAL CHIP	1K 5% 1/10W	CN0001	* 1-793-497-11	CONNECTOR, BOARD TO BOARD 40P	
R6102	1-216-829-11	METAL CHIP	4.7K 5% 1/10W			< DIODE >	
R6103	1-216-821-11	METAL CHIP	1K 5% 1/10W				
R6104	1-216-821-11	METAL CHIP	1K 5% 1/10W	D0001	6-500-079-01	DIODE BAS40-05E6327	
R6105	1-216-821-11	METAL CHIP	1K 5% 1/10W	D0301	8-719-069-56	DIODE UDWSTE-176.2B	
R6106	1-216-829-11	METAL CHIP	4.7K 5% 1/10W			< FERRITE BEAD >	
R6107	1-216-829-11	METAL CHIP	4.7K 5% 1/10W				
R6108	1-216-821-11	METAL CHIP	1K 5% 1/10W	FB0003	1-216-295-91	SHORT CHIP	0
R6109	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	FB0004	1-412-006-31	INDUCTOR	10UH
R6110	1-216-821-11	METAL CHIP	1K 5% 1/10W	FB0005	1-216-864-11	SHORT CHIP	0
		< RELAY >		FB0006	1-216-864-11	SHORT CHIP	0
RY6001 $\Delta$	1-755-395-11	RELAY (AC POWER)		FB0007	1-216-295-91	SHORT CHIP	0
RY6002 $\Delta$	1-755-389-11	RELAY (AC POWER)		FB0008	1-216-295-91	SHORT CHIP	0
		< TRANSFORMER >		FB0009	1-412-006-31	INDUCTOR	10UH
T6002 $\Delta$	1-437-443-11	TRANSFORMER, CONVERTER (PIT)		FB0010	1-216-295-91	SHORT CHIP	0
T6003 $\Delta$	1-424-896-11	TRANSFORMER, LINE FILTER		FB0011	1-412-006-31	INDUCTOR	10UH
T6101 $\Delta$	1-437-483-11	TRANSFORMER, STANDBY		FB0012	1-216-295-91	SHORT CHIP	0
		< THERMISTOR >		FB0015	1-216-864-11	SHORT CHIP	0
TH6002 $\Delta$	1-804-650-11	THERMISTOR, POSITIVE		FB0016	1-216-864-11	SHORT CHIP	0
		* A-1300-287-A M Board, Complete		FB0017	1-216-295-91	SHORT CHIP	0
		< CAPACITOR >		FB0018	1-216-295-91	SHORT CHIP	0
C0001	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	FB0019	1-216-295-91	SHORT CHIP	0
C0002	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	FB0020	1-216-295-91	SHORT CHIP	0
C0004	1-165-128-11	CERAMIC CHIP	0.22UF 16V			< IC >	
C0006	1-126-947-11	ELECT	47UF 20.00% 35V	IC0001	8-759-699-33	IC M24C16-MN6T(A)	
C0007	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	IC0002	6-702-496-02	IC SAA5667HL/M1/1036	
C0008	1-107-826-11	CERAMIC CHIP	0.1UF 10.00% 16V	IC0003	8-759-672-39	IC PST573IMT	
C0009	1-165-128-11	CERAMIC CHIP	0.22UF 16V	IC0004	8-759-665-11	IC LM393DT	
C0010	1-162-927-11	CERAMIC CHIP	100PF 5.00% 50V	IC0005	6-702-395-01	IC K6F2008V2E-YF70T	
C0011	1-165-128-11	CERAMIC CHIP	0.22UF 16V			< TRANSISTOR >	
C0012	1-162-924-11	CERAMIC CHIP	56PF 5.00% 50V	Q0002	8-729-424-08	TRANSISTOR UN2111	
C0013	1-165-128-11	CERAMIC CHIP	0.22UF 16V	Q0003	8-729-424-08	TRANSISTOR UN2111	
C0015	1-135-834-91	CERAMIC CHIP	2.2E+06PF 6.3V	Q0006	8-729-010-29	TRANSISTOR MSD601-RST1	
C0016	1-165-128-11	CERAMIC CHIP	0.22UF 16V	Q0007	8-729-027-44	TRANSISTOR DTC114TKA-T146	
C0017	1-162-924-11	CERAMIC CHIP	56PF 5.00% 50V	Q0008	8-729-027-44	TRANSISTOR DTC114TKA-T146	
C0019	1-165-128-11	CERAMIC CHIP	0.22UF 16V	Q0009	8-729-027-44	TRANSISTOR DTC114TKA-T146	
C0020	1-162-923-11	CERAMIC CHIP	47PF 5.00% 50V	Q0010	8-729-027-44	TRANSISTOR DTC114TKA-T146	
C0025	1-162-962-11	CERAMIC CHIP	470PF 10.00% 50V	Q0011	8-729-010-29	TRANSISTOR MSD601-RST1	
C0026	1-162-962-11	CERAMIC CHIP	470PF 10.00% 50V	Q0012	8-729-424-08	TRANSISTOR UN2111	
C0027	1-162-962-11	CERAMIC CHIP	470PF 10.00% 50V	Q0013	8-729-421-22	TRANSISTOR UN2211	
C0028	1-126-947-11	ELECT	47UF 20.00% 35V			< RESISTOR >	
				R0001	1-216-045-00	RES-CHIP	680 5% 1/10W
				R0002	1-216-055-00	RES-CHIP	1.8K 5% 1/10W
				R0003	1-216-025-11	RES-CHIP	100 5% 1/10W
				R0011	1-216-025-11	RES-CHIP	100 5% 1/10W

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
R0014	1-216-081-00	RES-CHIP	22K 5% 1/10W	R0073	1-216-809-11	METAL CHIP	100 5% 1/10W
R0016	1-216-025-11	RES-CHIP	100 5% 1/10W	R0074	1-216-809-11	METAL CHIP	100 5% 1/10W
R0017	1-216-093-91	RES-CHIP	68K 5% 1/10W	R0075	1-216-025-11	RES-CHIP	100 5% 1/10W
R0018	1-216-025-11	RES-CHIP	100 5% 1/10W	R0076	1-216-049-11	RES-CHIP	1K 5% 1/10W
R0019	1-216-073-91	RES-CHIP	10K 5% 1/10W	R0078	1-216-817-11	METAL CHIP	470 5% 1/10W
R0020	1-216-049-11	RES-CHIP	1K 5% 1/10W	R0079	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
R0022	1-216-809-11	METAL CHIP	100 5% 1/10W	R0301	1-216-073-91	RES-CHIP	10K 5% 1/10W
R0023	1-216-097-11	RES-CHIP	100K 5% 1/10W	R0302	1-216-073-91	RES-CHIP	10K 5% 1/10W
R0027	1-216-821-11	METAL CHIP	1K 5% 1/10W	R0303	1-216-836-11	METAL CHIP	18K 5% 1/10W
R0028	1-216-833-11	METAL CHIP	10K 5% 1/10W	R0304	1-218-867-11	METAL CHIP	6.8K 0.5% 1/10W
R0029	1-216-025-11	RES-CHIP	100 5% 1/10W			< CRYSTAL >	
R0030	1-216-025-11	RES-CHIP	100 5% 1/10W	X0001	1-578-774-71	VIBRATOR, CRYSTAL	
R0032	1-216-809-11	METAL CHIP	100 5% 1/10W			* A-1300-302-A A Board, Complete (KV-28FX68B)	
R0033	1-216-809-11	METAL CHIP	100 5% 1/10W			* A-1300-175-A A Board, Complete (KV-28FX68E)	
R0034	1-218-725-11	METAL CHIP	24K 0.5% 1/10W			* A-1300-301-A A Board, Complete (KV-28FX68U)	
R0035	1-216-069-00	RES-CHIP	6.8K 5% 1/10W			A Board, Common Parts	
R0037	1-216-061-91	RES-CHIP	3.3K 5% 1/10W			4-382-854-01 SCREW (M3X8) , P, SW (+)	
R0039	1-216-809-11	METAL CHIP	100 5% 1/10W			< CAPACITOR >	
R0040	1-216-809-11	METAL CHIP	100 5% 1/10W	C1001	1-126-933-11	ELECT	100UF 20.00% 16V
R0041	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	C1002	1-126-964-11	ELECT	10UF 20.00% 50V
R0042	1-216-069-00	RES-CHIP	6.8K 5% 1/10W	C1004	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V
R0043	1-216-803-11	METAL CHIP	33 5% 1/10W	C1006	1-126-933-11	ELECT	100UF 20.00% 16V
R0044	1-216-025-11	RES-CHIP	100 5% 1/10W	C1008	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V
R0045	1-216-803-11	METAL CHIP	33 5% 1/10W	C1009	1-162-925-11	CERAMIC CHIP	68PF 5.00% 50V
R0046	1-216-803-11	METAL CHIP	33 5% 1/10W	C1010	1-162-925-11	CERAMIC CHIP	68PF 5.00% 50V
R0047	1-216-810-11	METAL CHIP	120 5% 1/10W	C1014	1-126-933-11	ELECT	100UF 20.00% 16V
R0048	1-216-809-11	METAL CHIP	100 5% 1/10W	C1015	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V
R0049	1-216-073-91	RES-CHIP	10K 5% 1/10W	C1018	1-115-340-11	CERAMIC CHIP	0.22UF 10.00% 25V
R0050	1-216-810-11	METAL CHIP	120 5% 1/10W	C1020	1-164-004-11	CERAMIC CHIP	0.1UF 10.00% 25V
R0051	1-216-835-11	METAL CHIP	15K 5% 1/10W	C1021	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
R0052	1-216-810-11	METAL CHIP	120 5% 1/10W	C1022	1-216-295-91	SHORT CHIP	0
R0053	1-216-809-11	METAL CHIP	100 5% 1/10W	C2000	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
R0054	1-216-809-11	METAL CHIP	100 5% 1/10W	C2001	1-162-968-11	CERAMIC CHIP	0.0047UF 10.00% 50V
R0055	1-216-809-11	METAL CHIP	100 5% 1/10W	C2006	1-162-962-11	CERAMIC CHIP	470PF 10.00% 50V
R0056	1-216-833-11	METAL CHIP	10K 5% 1/10W	C2007	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V
R0057	1-216-809-11	METAL CHIP	100 5% 1/10W	C2008	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
R0058	1-216-823-11	METAL CHIP	1.5K 5% 1/10W	C2009	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V
R0059	1-216-841-11	METAL CHIP	47K 5% 1/10W	C2010	1-162-964-11	CERAMIC CHIP	0.001UF 10.00% 50V
R0060	1-216-833-11	METAL CHIP	10K 5% 1/10W	C2011	1-162-962-11	CERAMIC CHIP	470PF 10.00% 50V
R0061	1-216-833-11	METAL CHIP	10K 5% 1/10W	C2012	1-162-962-11	CERAMIC CHIP	470PF 10.00% 50V
R0062	1-216-833-11	METAL CHIP	10K 5% 1/10W	C2013	1-162-962-11	CERAMIC CHIP	470PF 10.00% 50V
R0063	1-216-073-91	RES-CHIP	10K 5% 1/10W	C2014	1-164-346-11	CERAMIC CHIP	1UF 16V
R0065	1-216-073-91	RES-CHIP	10K 5% 1/10W	C2015	1-163-021-91	CERAMIC CHIP	0.01UF 10.00% 50V
R0066	1-218-871-11	METAL CHIP	10K 0.5% 1/10W	C2016	1-162-962-11	CERAMIC CHIP	470PF 10.00% 50V
R0067	1-216-833-11	METAL CHIP	10K 5% 1/10W	C2018	1-162-962-11	CERAMIC CHIP	470PF 10.00% 50V
R0068	1-216-833-11	METAL CHIP	10K 5% 1/10W	C2019	1-164-346-11	CERAMIC CHIP	1UF 16V
R0069	1-216-073-91	RES-CHIP	10K 5% 1/10W				
R0070	1-216-025-11	RES-CHIP	100 5% 1/10W				
R0071	1-216-809-11	METAL CHIP	100 5% 1/10W				
R0072	1-216-809-11	METAL CHIP	100 5% 1/10W				

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C2021	1-162-962-11	CERAMIC CHIP 470PF	10.00% 50V	C2085	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C2022	1-162-966-11	CERAMIC CHIP 0.0022UF	10.00% 50V	C2086	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V
C2023	1-162-966-11	CERAMIC CHIP 0.0022UF	10.00% 50V	C2087	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C2024	1-164-346-11	CERAMIC CHIP 1UF	16V	C2088	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V
C2026	1-162-962-11	CERAMIC CHIP 470PF	10.00% 50V	C2089	1-162-962-11	CERAMIC CHIP 470PF	10.00% 50V
C2027	1-126-947-11	ELECT 47UF	20.00% 35V	C2090	1-126-947-11	ELECT 47UF	20.00% 35V
C2028	1-126-947-11	ELECT 47UF	20.00% 35V	C2091	1-126-947-11	ELECT 47UF	20.00% 35V
C2029	1-164-346-11	CERAMIC CHIP 1UF	16V	C2092	1-126-947-11	ELECT 47UF	20.00% 35V
C2031	1-162-962-11	CERAMIC CHIP 470PF	10.00% 50V	C2093	1-126-947-11	ELECT 47UF	20.00% 35V
C2034	1-164-346-11	CERAMIC CHIP 1UF	16V	C2094	1-126-947-11	ELECT 47UF	20.00% 35V
C2035	1-164-346-11	CERAMIC CHIP 1UF	16V	C2095	1-126-947-11	ELECT 47UF	20.00% 35V
C2038	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C2096	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C2039	1-162-906-11	CERAMIC CHIP 1.5PF	0.25PF 50V	C2500	1-126-952-11	ELECT 1000UF	20.00% 35V
C2040	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V	C2502	1-104-666-11	ELECT 220UF	20.00% 25V
C2041	1-162-906-11	CERAMIC CHIP 1.5PF	0.25PF 50V	C2504	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2042	1-216-864-11	SHORT CHIP 0		C2505	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C2043	1-162-962-11	CERAMIC CHIP 470PF	10.00% 50V	C2506	1-126-972-11	ELECT 1000UF	20.00% 50V
C2044	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V	C2507	1-164-230-11	CERAMIC CHIP 220PF	5.00% 50V
C2046	1-162-923-11	CERAMIC CHIP 47PF	5.00% 50V	C2508	1-164-230-11	CERAMIC CHIP 220PF	5.00% 50V
C2047	1-162-927-11	CERAMIC CHIP 100PF	5.00% 50V	C2509	1-164-230-11	CERAMIC CHIP 220PF	5.00% 50V
C2048	1-126-947-11	ELECT 47UF	20.00% 35V	C2510	1-164-227-11	CERAMIC CHIP 0.022UF	10.00% 25V
C2049	1-162-925-11	CERAMIC CHIP 68PF	5.00% 50V	C2511	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C2050	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V	C2512	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C2051	1-126-964-11	ELECT 10UF	20.00% 50V	C2513	1-126-952-11	ELECT 1000UF	20.00% 35V
C2052	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C2515	1-164-227-11	CERAMIC CHIP 0.022UF	10.00% 25V
C2053	1-164-227-11	CERAMIC CHIP 0.022UF	10.00% 25V	C2516	1-126-953-11	ELECT 2200UF	20.00% 35V
C2054	1-126-947-11	ELECT 47UF	20.00% 35V	C2517	1-126-960-11	ELECT 1UF	20.00% 50V
C2055	1-162-968-11	CERAMIC CHIP 0.0047UF	10.00% 50V	C2518	1-126-960-11	ELECT 1UF	20.00% 50V
C2057	1-126-964-11	ELECT 10UF	20.00% 50V	C2519	1-126-959-11	ELECT 0.47UF	20.00% 50V
C2058	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C2521	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V
C2059	1-126-964-11	ELECT 10UF	20.00% 50V	C2523	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C2060	1-126-947-11	ELECT 47UF	20.00% 35V	C3200	1-126-964-11	ELECT 10UF	20.00% 50V
C2061	1-162-968-11	CERAMIC CHIP 0.0047UF	10.00% 50V	C3202	1-126-964-11	ELECT 10UF	20.00% 50V
C2062	1-164-346-11	CERAMIC CHIP 1UF	16V	C3203	1-126-964-11	ELECT 10UF	20.00% 50V
C2063	1-164-346-11	CERAMIC CHIP 1UF	16V	C3206	1-126-964-11	ELECT 10UF	20.00% 50V
C2064	1-126-964-11	ELECT 10UF	20.00% 50V	C3208	1-163-235-11	CERAMIC CHIP 22PF	5.00% 50V
C2065	1-162-966-11	CERAMIC CHIP 0.0022UF	10.00% 50V	C3209	1-163-235-11	CERAMIC CHIP 22PF	5.00% 50V
C2066	1-162-966-11	CERAMIC CHIP 0.0022UF	10.00% 50V	C3210	1-126-964-11	ELECT 10UF	20.00% 50V
C2069	1-127-715-91	CERAMIC CHIP 0.22UF	10% 16V	C3211	1-126-964-11	ELECT 10UF	20.00% 50V
C2073	1-126-960-11	ELECT 1UF	20.00% 50V	C3213	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2074	1-126-960-11	ELECT 1UF	20.00% 50V	C3214	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2075	1-126-960-11	ELECT 1UF	20.00% 50V	C3215	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2077	1-126-960-11	ELECT 1UF	20.00% 50V	C3216	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2078	1-126-963-11	ELECT 4.7UF	20.00% 50V	C3217	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2079	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C3218	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2080	1-162-927-11	CERAMIC CHIP 100PF	5.00% 50V	C3219	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2081	1-162-928-11	CERAMIC CHIP 120PF	5.00% 50V	C3220	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2082	1-216-864-11	SHORT CHIP 0		C3221	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2083	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V	C3222	1-164-222-91	CERAMIC CHIP 0.22UF	25V
C2084	1-162-962-11	CERAMIC CHIP 470PF	10.00% 50V	C3223	1-164-222-91	CERAMIC CHIP 0.22UF	25V

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C3224	1-164-222-91	CERAMIC CHIP 0.22UF	25V	C5310	1-136-165-00	FILM 0.1UF	5.00% 50V
C3225	1-164-222-91	CERAMIC CHIP 0.22UF	25V	C5311	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C3226	1-164-222-91	CERAMIC CHIP 0.22UF	25V	C5312	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V
C3227	1-164-222-91	CERAMIC CHIP 0.22UF	25V	C5313	1-107-714-11	ELECT 10UF	20.00% 50V
C3228	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V	C5314	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C3229	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V	C5316	1-164-230-11	CERAMIC CHIP 220PF	5.00% 50V
C3230	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V	C5318	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C3231	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V	C5319	1-136-347-11	FILM 0.0047UF	5.00% 630V
C3232	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V	C5320	1-129-716-00	FILM 0.015UF	5.00% 630V
C3233	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V	C5321	1-136-347-11	FILM 0.0047UF	5.00% 630V
C3234	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V	C5322	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C3235	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C5323	1-136-159-00	FILM 0.033UF	5.00% 50V
C3236	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C5400	1-126-964-11	ELECT 10UF	20.00% 50V
C3237	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C5401	1-107-714-11	ELECT 10UF	20.00% 50V
C3238	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C5403	1-128-527-11	ELECT 330UF	20.00% 25V
C3239	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C5404	1-102-228-00	CERAMIC 470PF	10.00% 500V
C3240	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C5405	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C3241	1-126-933-11	ELECT 100UF	20.00% 16V	C5406	1-129-702-00	MYLAR 0.001UF	10.00% 400V
C3242	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C5407	1-128-527-11	ELECT 330UF	20.00% 25V
C3243	1-164-222-91	CERAMIC CHIP 0.22UF	25V	C5409	1-126-968-11	ELECT 100UF	20.00% 50V
C3245	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V	C5410	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
C3250	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V	C5411	1-137-401-11	MYLAR 0.22UF	5.00% 100V
C3300	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V	C5412	1-106-220-00	MYLAR 0.1UF	10.00% 100V
C3309	1-126-964-11	ELECT 10UF	20.00% 50V	C5413	1-130-785-11	MYLAR 0.47UF	5.00% 100V
C3310	1-164-222-91	CERAMIC CHIP 0.22UF	25V	C5414	1-126-964-11	ELECT 10UF	20.00% 50V
C5103	1-126-960-11	ELECT 1UF	20.00% 50V	C5801	1-126-963-11	ELECT 4.7UF	20.00% 50V
C5106	1-126-933-11	ELECT 100UF	20.00% 16V	C5850	1-126-963-11	ELECT 4.7UF	20.00% 50V
C5109	1-126-964-11	ELECT 10UF	20.00% 50V	C5851	1-107-826-11	CERAMIC CHIP 0.1UF	10.00% 16V
C5110	1-126-947-11	ELECT 47UF	20.00% 35V	C5853	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C5111	1-126-964-11	ELECT 10UF	20.00% 50V	C5854	1-107-826-11	CERAMIC CHIP 0.1UF	10.00% 16V
C5112	1-126-964-11	ELECT 10UF	20.00% 50V	C5858	1-107-826-11	CERAMIC CHIP 0.1UF	10.00% 16V
C5114	1-164-156-11	CERAMIC CHIP 0.1UF	25V	C5859	1-126-960-11	ELECT 1UF	20.00% 50V
C5115	1-126-964-11	ELECT 10UF	20.00% 50V	C5860	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V
C5117	1-126-964-11	ELECT 10UF	20.00% 50V	C5868	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C5118	1-164-156-11	CERAMIC CHIP 0.1UF	25V	C5872	1-164-346-11	CERAMIC CHIP 1UF	16V
C5119	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V	C5873	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
C5120	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C5888	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C5121	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C5889	1-126-964-11	ELECT 10UF	20.00% 50V
C5122	1-164-156-11	CERAMIC CHIP 0.1UF	25V	C5890	1-164-227-11	CERAMIC CHIP 0.022UF	10.00% 25V
C5124	1-164-156-11	CERAMIC CHIP 0.1UF	25V	C5891	1-137-581-11	FILM 0.1UF	5.00% 100V
C5125	1-126-964-11	ELECT 10UF	20.00% 50V	C5892	1-107-826-11	CERAMIC CHIP 0.1UF	10.00% 16V
C5300	1-126-933-11	ELECT 100UF	20.00% 16V	C5893	1-126-947-11	ELECT 47UF	20.00% 35V
C5301	1-126-947-11	ELECT 47UF	20.00% 35V	C5894	1-126-947-11	ELECT 47UF	20.00% 35V
C5302	1-164-222-91	CERAMIC CHIP 0.22UF	25V	C5895	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C5303	1-136-153-00	FILM 0.01UF	5.00% 50V	C5896	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V
C5304	1-164-182-11	CERAMIC CHIP 0.0033UF	10.00% 50V	C5897	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C5305	1-165-176-11	CERAMIC CHIP 0.047UF	10.00% 16V	C5898	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V
C5306	1-164-156-11	CERAMIC CHIP 0.1UF	25V	C5899	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V
C5307	1-164-156-11	CERAMIC CHIP 0.1UF	25V	C6200	1-126-933-11	ELECT 100UF	20.00% 16V
C5309	1-162-927-11	CERAMIC CHIP 100PF	5.00% 50V	C6201	1-126-935-11	ELECT 470UF	20.00% 16V

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C6202	1-126-933-11	ELECT	100UF	20.00%	16V		
C6203	1-126-935-11	ELECT	470UF	20.00%	16V		
C6204	1-126-933-11	ELECT	100UF	20.00%	16V		
C6205	1-126-935-11	ELECT	470UF	20.00%	16V		
C6206	1-126-933-11	ELECT	100UF	20.00%	16V		
C6207	1-126-933-11	ELECT	100UF	20.00%	16V		
C6208	1-126-933-11	ELECT	100UF	20.00%	16V		
C6209	1-126-933-11	ELECT	100UF	20.00%	16V		
C6210	1-126-935-11	ELECT	470UF	20.00%	16V		
C6211	1-126-947-11	ELECT	47UF	20.00%	35V		
C6212	1-126-933-11	ELECT	100UF	20.00%	16V		
C6213	1-126-933-11	ELECT	100UF	20.00%	16V		
C6214	1-126-933-11	ELECT	100UF	20.00%	16V		
C7002	1-126-947-11	ELECT	47UF	20.00%	35V		
C7004	1-164-222-91	CERAMIC CHIP	0.22UF		25V		
C7008	1-162-919-11	CERAMIC CHIP	22PF	5.00%	50V		
C7016	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V		
C7018	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7019	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7020	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7021	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7022	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7023	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7030	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7031	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7032	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7038	1-107-823-11	CERAMIC CHIP	0.47UF	10.00%	16V		
C7039	1-162-966-11	CERAMIC CHIP	0.0022UF	10.00%	50V		
C7050	1-162-927-11	CERAMIC CHIP	100PF	5.00%	50V		
C7051	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7052	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7053	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7054	1-126-963-11	ELECT	4.7UF	20.00%	50V		
C7055	1-164-222-91	CERAMIC CHIP	0.22UF		25V		
C7056	1-126-933-11	ELECT	100UF	20.00%	16V		
C7057	1-164-222-91	CERAMIC CHIP	0.22UF		25V		
C7058	1-126-933-11	ELECT	100UF	20.00%	16V		
C7059	1-126-933-11	ELECT	100UF	20.00%	16V		
C7060	1-164-222-91	CERAMIC CHIP	0.22UF		25V		
C7061	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7062	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7063	1-164-004-11	CERAMIC CHIP	0.1UF	10.00%	25V		
C7064	1-126-947-11	ELECT	47UF	20.00%	35V		
C7065	1-164-222-91	CERAMIC CHIP	0.22UF		25V		
C7067	1-126-947-11	ELECT	47UF	20.00%	35V		
C7068	1-164-222-91	CERAMIC CHIP	0.22UF		25V		
C7069	1-162-919-11	CERAMIC CHIP	22PF	5.00%	50V		
C7070	1-162-919-11	CERAMIC CHIP	22PF	5.00%	50V		
C7071	1-162-919-11	CERAMIC CHIP	22PF	5.00%	50V		
< CONNECTOR >							
CN0101	* 1-823-330-11	CONNECTOR, BOARD TO BOARD	40P				
CN0102	* 1-564-520-11	PLUG, CONNECTOR	5P				
CN0103	* 1-817-035-61	PLUG, CONNECTOR	4P				
CN1000	* 1-417-319-11	CONNECTOR (SQUARE TYPE)	21P				
CN1001	* 1-766-296-21	CONNECTOR, DUAL SCART					
CN2000	* 1-564-512-11	PLUG, CONNECTOR	9P				
CN2500	* 1-816-974-51	PLUG, CONNECTOR	3P				
CN2501	* 1-564-507-11	PLUG, CONNECTOR	4P				
CN2502	* 1-816-977-51	PLUG, CONNECTOR	6P				
CN5002	* 1-816-984-71	PLUG, CONNECTOR	7P				
CN5100	* 1-816-974-51	PLUG, CONNECTOR	3P				
CN5801	1-764-333-11	PIN, CONNECTOR(PCB) (V TYPE)	10P				
CN6200	* 1-564-507-11	PLUG, CONNECTOR	4P				
CN6202	* 1-564-516-11	PLUG, CONNECTOR	13P				
CN6203	1-695-915-11	TAB (CONTACT)					
CN7000	* 1-817-042-81	PLUG, CONNECTOR	5P				
CN7001	* 1-564-512-11	PLUG, CONNECTOR	9P				
CN8001	1-766-281-11	PIN, CONNECTOR (PC BOARD)	8P				
< DIODE >							
D0101	8-719-921-88	DIODE MTZJ-13B					
D0104	8-719-109-89	DIODE RD5.6ESB2					
D0110	8-719-109-89	DIODE RD5.6ESB2					
D0111	8-719-929-15	DIODE HZS9.1NB2					
D0112	8-719-921-88	DIODE MTZJ-13B					
D0113	8-719-921-88	DIODE MTZJ-13B					
D1006	8-719-109-89	DIODE RD5.6ESB2					
D2014	8-719-929-15	DIODE HZS9.1NB2					
D2015	8-719-929-15	DIODE HZS9.1NB2					
D2016	8-719-050-38	DIODE M1MA152WK-T1					
D2018	8-719-929-15	DIODE HZS9.1NB2					
D2019	8-719-929-15	DIODE HZS9.1NB2					
D2500	8-719-050-38	DIODE M1MA152WK-T1					
D2502	8-719-109-89	DIODE RD5.6ESB2					
D2503	8-719-050-38	DIODE M1MA152WK-T1					
D3001	8-719-929-15	DIODE HZS9.1NB2					
D3003	8-719-929-15	DIODE HZS9.1NB2					
D3005	8-719-929-15	DIODE HZS9.1NB2					
D3007	8-719-109-89	DIODE RD5.6ESB2					
D3008	8-719-109-89	DIODE RD5.6ESB2					
D3009	8-719-929-15	DIODE HZS9.1NB2					
D3011	8-719-929-15	DIODE HZS9.1NB2					
D3013	8-719-929-15	DIODE HZS9.1NB2					
D3015	8-719-929-15	DIODE HZS9.1NB2					
D3017	8-719-109-89	DIODE RD5.6ESB2					
D3018	8-719-109-89	DIODE RD5.6ESB2					
D3019	8-719-929-15	DIODE HZS9.1NB2					
D3021	8-719-929-15	DIODE HZS9.1NB2					



REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
D3023	8-719-109-89	DIODE RD5.6ESB2		IC5302	8-759-659-67	IC LA6393DLL	
D3024	8-719-929-15	DIODE HZS9.1NB2		IC5400	8-759-696-71	IC STV9379A	
D3026	8-719-929-15	DIODE HZS9.1NB2		IC6200	8-759-648-19	IC L7809CV/LSY	
D3028	8-719-929-15	DIODE HZS9.1NB2		IC6201	8-759-648-20	IC L7805CV/LSY	
D3201	8-719-109-89	DIODE RD5.6ESB2		IC6202	8-759-445-59	IC BA033T	
D5101	8-719-050-38	DIODE M1MA152WK-T1		IC6203	8-759-098-24	IC PQ30RV11	
D5103	8-719-110-86	DIODE RD39ESB		IC6204	8-759-591-02	IC L78L33ABZ-AP	
D5104	8-719-109-89	DIODE RD5.6ESB2		IC6205	8-759-394-35	IC BA12T	
D5300	8-719-081-97	DIODE MMDL914T1		IC6206	8-759-991-41	IC LM78L05ACZ	
D5303	8-719-081-97	DIODE MMDL914T1		IC7002	8-752-090-88	IC CXA2100AQ-TL	
D5304	8-719-081-97	DIODE MMDL914T1		< SOCKET >			
D5305	8-719-991-33	DIODE 1SS133T-77		J2000	1-784-632-11	JACK, PIN 2P	
D5306	8-719-302-43	DIODE EL1Z		< COIL >			
D5307	8-719-987-87	DIODE ERA85-009		L1000	1-412-987-31	INDUCTOR	4.7UH
D5309	8-719-081-97	DIODE MMDL914T1		L1001	1-412-987-31	INDUCTOR	4.7UH
D5310	8-719-081-97	DIODE MMDL914T1		L1002	1-414-934-21	INDUCTOR	10UH
D5400	8-719-982-03	DIODE MTZJ-3.6A		L1003	1-414-934-21	INDUCTOR	10UH
D5401	8-719-050-38	DIODE M1MA152WK-T1		L1005	1-414-934-21	INDUCTOR	10UH
D5404	8-719-110-41	DIODE RD15ESB2		L2000	1-414-934-21	INDUCTOR	10UH
D5405	8-719-908-03	DIODE GP08D		L2001	1-414-934-21	INDUCTOR	10UH
D5406	8-719-081-97	DIODE MMDL914T1		L2007	1-535-303-00	LEAD, JUMPER	(5.0MM)
D5407	8-719-081-97	DIODE MMDL914T1		L2008	1-216-295-91	SHORT CHIP	0
D5804	8-719-109-89	DIODE RD5.6ESB2		L2009	1-216-295-91	SHORT CHIP	0
D5807	8-719-929-15	DIODE HZS9.1NB2		L2010	1-414-928-21	INDUCTOR	1UH
D5809	8-719-050-38	DIODE M1MA152WK-T1		L2012	1-414-934-21	INDUCTOR	10UH
D5811	8-719-081-97	DIODE MMDL914T1		L2014	1-408-602-31	INDUCTOR	8.2UH
D5812	8-719-081-97	DIODE MMDL914T1		L2500	1-535-303-00	LEAD, JUMPER	(5.0MM)
D5813	8-719-081-97	DIODE MMDL914T1		L2501	1-535-303-00	LEAD, JUMPER	(5.0MM)
D5814	1-216-295-91	SHORT CHIP	0	L3000	1-216-295-91	SHORT CHIP	0
D6200	8-719-063-70	DIODE D1NL20U		L3004	1-216-295-91	SHORT CHIP	0
D7004	8-719-929-15	DIODE HZS9.1NB2		L3005	1-216-295-91	SHORT CHIP	0
D7006	1-216-809-11	METAL CHIP	100 5% 1/10W	L3006	1-216-295-91	SHORT CHIP	0
< FERRITE BEAD >							
FB3001	1-414-760-21	FERRITE	0UH	L3007	1-216-295-91	SHORT CHIP	0
< FILTER >							
FL2000	1-239-803-11	FILTER, EMI		L3008	1-216-295-91	SHORT CHIP	0
< IC >							
IC2000	6-701-031-11	IC MSP3411G-QA-B11		L3009	1-216-295-91	SHORT CHIP	0
IC2001	8-759-100-96	IC UPC4558G2		L3010	1-216-295-91	SHORT CHIP	0
IC2500	8-759-831-56	IC TDA7497		L3011	1-216-295-91	SHORT CHIP	0
IC3200	6-700-505-01	IC VSP9402A-A32GEG		L3012	1-216-295-91	SHORT CHIP	0
IC5102	8-759-325-48	IC CA0005AD		L3200	1-412-006-31	INDUCTOR	10UH
IC5103	8-752-072-94	IC CXA1875AM-T4		L3202	1-412-006-31	INDUCTOR	10UH
IC5104	8-759-803-42	IC LA6500-FA		L3203	1-412-006-31	INDUCTOR	10UH
IC5300	8-759-008-70	IC LM358N		L3206	1-412-006-31	INDUCTOR	10UH
IC5301	8-759-659-67	IC LA6393DLL		L3208	1-412-006-31	INDUCTOR	10UH
				L3300	1-412-006-31	INDUCTOR	10UH
				L5300	1-406-989-21	INDUCTOR	10MH
				L5301	1-406-989-21	INDUCTOR	10MH
				L5400	1-412-524-11	INDUCTOR	8.2UH
				L5896	1-216-864-11	SHORT CHIP	0

**Note :** The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part numbers specified in the parts list.

**A**

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
L5897	1-216-864-11	SHORT CHIP	0	Q5401	8-729-421-19	TRANSISTOR UN2213	
L5898	1-414-934-21	INDUCTOR	10UH	Q5402	8-729-010-05	TRANSISTOR MSB709-RT1	
L5899	1-414-934-21	INDUCTOR	10UH	Q5403	8-729-421-19	TRANSISTOR UN2213	
L7001	1-414-934-21	INDUCTOR	10UH	Q5404	8-729-926-76	TRANSISTOR IRF620	
L7009	1-414-934-21	INDUCTOR	10UH	Q5813	8-729-421-19	TRANSISTOR UN2213	
L7010	1-414-934-21	INDUCTOR	10UH	Q5814	8-729-010-05	TRANSISTOR MSB709-RT1	
L7011	1-414-934-21	INDUCTOR	10UH	Q5815	8-729-010-29	TRANSISTOR MSD601-RST1	
L7012	1-414-934-21	INDUCTOR	10UH	Q5816	8-729-010-05	TRANSISTOR MSB709-RT1	
< PROTECTOR MODULE >				Q6201	8-729-140-97	TRANSISTOR 2SB734-34	
PS2501 $\Delta$	1-533-597-31	IC LINK	5A	Q7003	8-729-010-29	TRANSISTOR MSD601-RST1	
< TRANSISTOR >				Q7009	8-729-010-05	TRANSISTOR MSB709-RT1	
Q1000	8-729-010-05	TRANSISTOR MSB709-RT1		Q7011	8-729-010-05	TRANSISTOR MSB709-RT1	
Q1001	8-729-010-29	TRANSISTOR MSD601-RST1		Q7012	8-729-010-05	TRANSISTOR MSB709-RT1	
Q1004	8-729-010-05	TRANSISTOR MSB709-RT1		Q7013	8-729-010-29	TRANSISTOR MSD601-RST1	
Q1005	8-729-421-19	TRANSISTOR UN2213		Q7014	8-729-010-05	TRANSISTOR MSB709-RT1	
Q1006	8-729-010-05	TRANSISTOR MSB709-RT1		Q7015	8-729-010-05	TRANSISTOR MSB709-RT1	
Q2000	8-729-010-29	TRANSISTOR MSD601-RST1		Q7016	8-729-010-29	TRANSISTOR MSD601-RST1	
Q2001	8-729-010-29	TRANSISTOR MSD601-RST1		Q7017	8-729-010-05	TRANSISTOR MSB709-RT1	
Q2002	8-729-010-29	TRANSISTOR MSD601-RST1		Q7018	8-729-010-05	TRANSISTOR MSB709-RT1	
Q2003	8-729-010-29	TRANSISTOR MSD601-RST1		Q7019	8-729-010-29	TRANSISTOR MSD601-RST1	
Q2004	8-729-010-29	TRANSISTOR MSD601-RST1		< RESISTOR >			
Q2005	8-729-010-29	TRANSISTOR MSD601-RST1		JR121	1-216-864-11	SHORT CHIP	0
Q2501	8-729-010-29	TRANSISTOR MSD601-RST1		JR123	1-216-864-11	SHORT CHIP	0
Q2502	8-729-010-29	TRANSISTOR MSD601-RST1		JR2000	1-216-295-91	SHORT CHIP	0
Q2503	8-729-010-29	TRANSISTOR MSD601-RST1		R0101	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q2504	8-729-010-05	TRANSISTOR MSB709-RT1		R0102	1-216-827-11	METAL CHIP	3.3K 5% 1/10W
Q3200	8-729-010-29	TRANSISTOR MSD601-RST1		R0103	1-216-073-91	RES-CHIP	10K 5% 1/10W
Q3201	8-729-010-29	TRANSISTOR MSD601-RST1		R0104	1-216-827-11	METAL CHIP	3.3K 5% 1/10W
Q3202	8-729-010-05	TRANSISTOR MSB709-RT1		R0105	1-216-025-11	RES-CHIP	100 5% 1/10W
Q3204	8-729-010-05	TRANSISTOR MSB709-RT1		R0107	1-216-025-11	RES-CHIP	100 5% 1/10W
Q3300	8-729-010-05	TRANSISTOR MSB709-RT1		R1000	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q3301	8-729-010-05	TRANSISTOR MSB709-RT1		R1001	1-216-001-00	RES-CHIP	10 5% 1/10W
Q3302	8-729-010-05	TRANSISTOR MSB709-RT1		R1002	1-216-821-11	METAL CHIP	1K 5% 1/10W
Q3500	8-729-028-28	TRANSISTOR 2SK2036(TE85L)		R1003	1-216-809-11	METAL CHIP	100 5% 1/10W
Q3501	8-729-028-28	TRANSISTOR 2SK2036(TE85L)		R1004	1-216-809-11	METAL CHIP	100 5% 1/10W
Q5100	8-729-010-05	TRANSISTOR MSB709-RT1		R1005	1-216-049-11	RES-CHIP	1K 5% 1/10W
Q5101	8-729-010-29	TRANSISTOR MSD601-RST1		R1006	1-216-051-00	RES-CHIP	1.2K 5% 1/10W
Q5300	8-729-010-29	TRANSISTOR MSD601-RST1		R1007	1-414-813-11	FERRITE	0UH
Q5301	8-729-053-33	TRANSISTOR IRF614-037		R1008	1-216-295-91	SHORT CHIP	0
Q5302	8-729-140-97	TRANSISTOR 2SB734-34		R1009	1-216-295-91	SHORT CHIP	0
Q5303	8-729-010-29	TRANSISTOR MSD601-RST1		R1010	1-216-295-91	SHORT CHIP	0
Q5304	8-729-010-29	TRANSISTOR MSD601-RST1		R1014	1-216-295-91	SHORT CHIP	0
Q5305	8-729-119-78	TRANSISTOR 2SC2785-HFE		R1017	1-216-822-11	METAL CHIP	1.2K 5% 1/10W
Q5306	8-729-140-97	TRANSISTOR 2SB734-34		R1019	1-216-295-91	SHORT CHIP	0
Q5307	8-729-010-05	TRANSISTOR MSB709-RT1		R1021	1-216-833-11	METAL CHIP	10K 5% 1/10W
Q5400	8-729-010-29	TRANSISTOR MSD601-RST1		R1022	1-216-839-11	METAL CHIP	33K 5% 1/10W
				R1023	1-216-849-11	METAL CHIP	220K 5% 1/10W
				R1024	1-216-839-11	METAL CHIP	33K 5% 1/10W
				R1025	1-216-837-11	METAL CHIP	22K 5% 1/10W

REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK		
R1026	1-216-817-11	METAL CHIP	470	5%	1/10W	R2079	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2009	1-216-817-11	METAL CHIP	470	5%	1/10W	R2080	1-218-867-11	METAL CHIP	6.8K	0.5%	1/10W
R2010	1-216-817-11	METAL CHIP	470	5%	1/10W	R2081	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2011	1-216-049-11	RES-CHIP	1K	5%	1/10W	R2082	1-216-805-11	METAL CHIP	47	5%	1/10W
R2014	1-216-049-11	RES-CHIP	1K	5%	1/10W	R2083	1-216-817-11	METAL CHIP	470	5%	1/10W
R2015	1-216-295-91	SHORT CHIP	0			R2084	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2017	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2085	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2018	1-216-295-91	SHORT CHIP	0			R2086	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2020	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2087	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2023	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2088	1-216-041-00	RES-CHIP	470	5%	1/10W
R2026	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2089	1-216-041-00	RES-CHIP	470	5%	1/10W
R2029	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2092	1-216-039-00	RES-CHIP	390	5%	1/10W
R2032	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2093	1-216-039-00	RES-CHIP	390	5%	1/10W
R2035	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2094	1-216-039-00	RES-CHIP	390	5%	1/10W
R2038	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2095	1-216-039-00	RES-CHIP	390	5%	1/10W
R2041	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2096	1-216-039-00	RES-CHIP	390	5%	1/10W
R2042	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R2097	1-216-039-00	RES-CHIP	390	5%	1/10W
R2043	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R2098	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2044	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2099	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2047	1-216-853-11	METAL CHIP	470K	5%	1/10W	R2500	1-216-073-91	RES-CHIP	10K	5%	1/10W
R2048	1-216-837-11	METAL CHIP	22K	5%	1/10W	R2501	1-216-341-11	METAL OXIDE	0.22	5%	1W
R2050	1-216-845-11	METAL CHIP	100K	5%	1/10W	R2502	1-208-810-11	METAL CHIP	15K	0.5%	1/10W
R2051	1-216-049-11	RES-CHIP	1K	5%	1/10W	R2503	1-208-810-11	METAL CHIP	15K	0.5%	1/10W
R2052	1-216-837-11	METAL CHIP	22K	5%	1/10W	R2504	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2053	1-216-864-11	SHORT CHIP	0			R2507	1-216-837-11	METAL CHIP	22K	5%	1/10W
R2054	1-216-049-11	RES-CHIP	1K	5%	1/10W	R2509	1-249-417-11	CARBON	1K	5%	1/4W
R2055	1-216-049-11	RES-CHIP	1K	5%	1/10W	R2511	1-216-073-91	RES-CHIP	10K	5%	1/10W
R2056	1-216-037-00	RES-CHIP	330	5%	1/10W	R2516	1-216-081-00	RES-CHIP	22K	5%	1/10W
R2057	1-216-025-11	RES-CHIP	100	5%	1/10W	R2517	1-216-841-11	METAL CHIP	47K	5%	1/10W
R2058	1-216-025-11	RES-CHIP	100	5%	1/10W	R2518	1-216-049-11	RES-CHIP	1K	5%	1/10W
R2059	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R2519	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2060	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R2520	1-216-025-11	RES-CHIP	100	5%	1/10W
R2061	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R2524	1-216-833-11	METAL CHIP	10K	5%	1/10W
R2062	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R2525	1-216-828-11	METAL CHIP	3.9K	5%	1/10W
R2063	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R2912	1-216-295-91	SHORT CHIP	0		
R2064	1-249-425-11	CARBON	4.7K	5%	1/4W	R2914	1-216-853-11	METAL CHIP	470K	5%	1/10W
R2065	1-216-837-11	METAL CHIP	22K	5%	1/10W	R2921	1-216-295-91	SHORT CHIP	0		
R2066	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R2924	1-216-295-91	SHORT CHIP	0		
R2067	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R2927	1-216-295-91	SHORT CHIP	0		
R2068	1-216-049-11	RES-CHIP	1K	5%	1/10W	R2930	1-216-295-91	SHORT CHIP	0		
R2069	1-216-837-11	METAL CHIP	22K	5%	1/10W	R2933	1-216-295-91	SHORT CHIP	0		
R2070	1-216-833-11	METAL CHIP	10K	5%	1/10W	R2936	1-216-295-91	SHORT CHIP	0		
R2071	1-216-839-11	METAL CHIP	33K	5%	1/10W	R2939	1-216-295-91	SHORT CHIP	0		
R2072	1-216-049-11	RES-CHIP	1K	5%	1/10W	R2942	1-216-295-91	SHORT CHIP	0		
R2073	1-216-049-11	RES-CHIP	1K	5%	1/10W	R2945	1-216-295-91	SHORT CHIP	0		
R2074	1-216-837-11	METAL CHIP	22K	5%	1/10W	R3000	1-216-025-11	RES-CHIP	100	5%	1/10W
R2075	1-216-833-11	METAL CHIP	10K	5%	1/10W	R3001	1-216-022-00	RES-CHIP	75	5%	1/10W
R2076	1-216-839-11	METAL CHIP	33K	5%	1/10W	R3009	1-216-025-11	RES-CHIP	100	5%	1/10W
R2077	1-216-049-11	RES-CHIP	1K	5%	1/10W	R3010	1-216-022-00	RES-CHIP	75	5%	1/10W
R2078	1-216-025-11	RES-CHIP	100	5%	1/10W	R3011	1-216-025-11	RES-CHIP	100	5%	1/10W

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
R3012	1-216-022-00	RES-CHIP	75 5% 1/10W	R3500	1-216-834-11	METAL CHIP	12K 5% 1/10W
R3013	1-216-025-11	RES-CHIP	100 5% 1/10W	R3501	1-216-834-11	METAL CHIP	12K 5% 1/10W
R3014	1-216-022-00	RES-CHIP	75 5% 1/10W	R3504	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R3015	1-216-022-00	RES-CHIP	75 5% 1/10W	R3505	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R3016	1-216-025-11	RES-CHIP	100 5% 1/10W	R3603	1-216-295-91	SHORT CHIP	0
R3017	1-216-022-00	RES-CHIP	75 5% 1/10W	R5102	1-208-814-91	METAL CHIP	22K 0.5% 1/10W
R3018	1-216-025-11	RES-CHIP	100 5% 1/10W	R5103	1-218-833-11	METAL CHIP	270 0.5% 1/10W
R3019	1-216-022-00	RES-CHIP	75 5% 1/10W	R5107	1-208-814-91	METAL CHIP	22K 0.5% 1/10W
R3020	1-216-025-11	RES-CHIP	100 5% 1/10W	R5111	1-208-814-91	METAL CHIP	22K 0.5% 1/10W
R3021	1-216-022-00	RES-CHIP	75 5% 1/10W	R5112	1-218-875-11	METAL CHIP	15K 0.5% 1/10W
R3022	1-216-025-11	RES-CHIP	100 5% 1/10W	R5118	1-249-411-11	CARBON	330 5% 1/4W
R3023	1-216-022-00	RES-CHIP	75 5% 1/10W	R5119	1-216-844-11	METAL CHIP	82K 5% 1/10W
R3024	1-216-025-11	RES-CHIP	100 5% 1/10W	R5122	1-216-821-11	METAL CHIP	1K 5% 1/10W
R3025	1-216-022-00	RES-CHIP	75 5% 1/10W	R5125	1-216-836-11	METAL CHIP	18K 5% 1/10W
R3026	1-216-022-00	RES-CHIP	75 5% 1/10W	R5126	1-249-406-11	CARBON	120 5% 1/4W
R3027	1-216-025-11	RES-CHIP	100 5% 1/10W	R5127	1-216-025-11	RES-CHIP	100 5% 1/10W
R3028	1-216-022-00	RES-CHIP	75 5% 1/10W	R5128	1-216-809-11	METAL CHIP	100 5% 1/10W
R3029	1-216-045-00	RES-CHIP	680 5% 1/10W	R5129	1-216-809-11	METAL CHIP	100 5% 1/10W
R3030	1-216-022-00	RES-CHIP	75 5% 1/10W	R5130	1-216-809-11	METAL CHIP	100 5% 1/10W
R3031	1-216-022-00	RES-CHIP	75 5% 1/10W	R5131	1-216-821-11	METAL CHIP	1K 5% 1/10W
R3032	1-216-022-00	RES-CHIP	75 5% 1/10W	R5132	1-216-809-11	METAL CHIP	100 5% 1/10W
R3033	1-216-025-11	RES-CHIP	100 5% 1/10W	R5133	1-216-809-11	METAL CHIP	100 5% 1/10W
R3034	1-216-022-00	RES-CHIP	75 5% 1/10W	R5137	1-216-809-11	METAL CHIP	100 5% 1/10W
R3035	1-216-025-11	RES-CHIP	100 5% 1/10W	R5138	1-216-809-11	METAL CHIP	100 5% 1/10W
R3036	1-216-022-00	RES-CHIP	75 5% 1/10W	R5139	1-216-821-11	METAL CHIP	1K 5% 1/10W
R3037	1-216-045-00	RES-CHIP	680 5% 1/10W	R5140	1-216-821-11	METAL CHIP	1K 5% 1/10W
R3218	1-216-821-11	METAL CHIP	1K 5% 1/10W	R5146	1-216-025-11	RES-CHIP	100 5% 1/10W
R3219	1-216-821-11	METAL CHIP	1K 5% 1/10W	R5148	1-216-809-11	METAL CHIP	100 5% 1/10W
R3220	1-216-837-11	METAL CHIP	22K 5% 1/10W	R5149	1-218-833-11	METAL CHIP	270 0.5% 1/10W
R3221	1-216-837-11	METAL CHIP	22K 5% 1/10W	R5150	1-249-414-11	CARBON	560 5% 1/4W
R3222	1-216-837-11	METAL CHIP	22K 5% 1/10W	R5151	1-249-454-11	CARBON	3.9 5% 1/4W
R3223	1-216-837-11	METAL CHIP	22K 5% 1/10W	R5152	1-249-413-11	CARBON	470 5% 1/4W
R3225	1-216-025-11	RES-CHIP	100 5% 1/10W	R5153	1-249-393-11	CARBON	10 5% 1/4W
R3226	1-216-025-11	RES-CHIP	100 5% 1/10W	R5154	1-216-833-11	METAL CHIP	10K 5% 1/10W
R3229	1-216-025-11	RES-CHIP	100 5% 1/10W	R5155	1-249-421-11	CARBON	2.2K 5% 1/4W
R3233	1-216-821-11	METAL CHIP	1K 5% 1/10W	R5156	1-216-833-11	METAL CHIP	10K 5% 1/10W
R3234	1-216-821-11	METAL CHIP	1K 5% 1/10W	R5157	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R3235	1-216-822-11	METAL CHIP	1.2K 5% 1/10W	R5300	1-208-806-11	METAL CHIP	10K 0.5% 1/10W
R3236	1-216-822-11	METAL CHIP	1.2K 5% 1/10W	R5301	1-216-829-11	METAL CHIP	4.7K 5% 1/10W
R3237	1-216-797-11	METAL CHIP	10 5% 1/10W	R5302	1-208-806-11	METAL CHIP	10K 0.5% 1/10W
R3238	1-216-797-11	METAL CHIP	10 5% 1/10W	R5303	1-208-824-11	METAL CHIP	56K 0.5% 1/10W
R3305	1-216-025-11	RES-CHIP	100 5% 1/10W	R5304	1-208-806-11	METAL CHIP	10K 0.5% 1/10W
R3306	1-216-025-11	RES-CHIP	100 5% 1/10W	R5305	1-208-852-11	METAL CHIP	820K 0.5% 1/10W
R3312	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R5306	1-208-802-11	METAL CHIP	6.8K 0.5% 1/10W
R3313	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R5307	1-216-041-00	RES-CHIP	470 5% 1/10W
R3314	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R5308	1-216-295-91	SHORT CHIP	0
R3318	1-216-025-11	RES-CHIP	100 5% 1/10W	R5309	1-208-824-11	METAL CHIP	56K 0.5% 1/10W
R3319	1-216-025-11	RES-CHIP	100 5% 1/10W	R5310	1-208-830-11	METAL CHIP	100K 0.5% 1/10W
R3320	1-216-025-11	RES-CHIP	100 5% 1/10W	R5311	1-216-045-00	RES-CHIP	680 5% 1/10W
R3403	1-216-821-11	METAL CHIP	1K 5% 1/10W	R5312	1-208-832-11	METAL CHIP	120K 0.5% 1/10W

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
R5314	1-208-840-11	METAL CHIP	270K 0.5% 1/10W	R5420	1-214-798-21	METAL	1.8 1% 1/2W
R5315	1-216-043-91	RES-CHIP	560 5% 1/10W	R5421	1-214-798-21	METAL	1.8 1% 1/2W
R5316	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	R5803	1-216-861-11	METAL CHIP	2.2M 5% 1/10W
R5317	1-216-845-11	METAL CHIP	100K 5% 1/10W	R5804	1-216-049-11	RES-CHIP	1K 5% 1/10W
R5318	1-208-806-11	METAL CHIP	10K 0.5% 1/10W	R5805	1-216-049-11	RES-CHIP	1K 5% 1/10W
R5319	1-208-840-11	METAL CHIP	270K 0.5% 1/10W	R5806	1-216-089-91	RES-CHIP	47K 5% 1/10W
R5320	1-216-833-11	METAL CHIP	10K 5% 1/10W	R5807	1-216-049-11	RES-CHIP	1K 5% 1/10W
R5321	1-216-837-11	METAL CHIP	22K 5% 1/10W	R5808	1-216-049-11	RES-CHIP	1K 5% 1/10W
R5322	1-216-820-11	METAL CHIP	820 5% 1/10W	R5809	1-216-073-91	RES-CHIP	10K 5% 1/10W
R5324	1-208-810-11	METAL CHIP	15K 0.5% 1/10W	R5865	1-216-841-11	METAL CHIP	47K 5% 1/10W
R5325	1-208-812-11	METAL CHIP	18K 0.5% 1/10W	R5869	1-216-817-11	METAL CHIP	470 5% 1/10W
R5326	1-216-845-11	METAL CHIP	100K 5% 1/10W	R5871	1-216-850-11	METAL CHIP	270K 5% 1/10W
R5327	1-216-472-00	METAL OXIDE	39 5% 3W	R5872	1-216-073-91	RES-CHIP	10K 5% 1/10W
R5328	1-216-033-00	RES-CHIP	220 5% 1/10W	R5873	1-216-073-91	RES-CHIP	10K 5% 1/10W
R5331	1-216-033-00	RES-CHIP	220 5% 1/10W	R5875	1-216-825-11	METAL CHIP	2.2K 5% 1/10W
R5332	1-208-806-11	METAL CHIP	10K 0.5% 1/10W	R5877	1-216-821-11	METAL CHIP	1K 5% 1/10W
R5333	1-208-820-11	METAL CHIP	39K 0.5% 1/10W	R5878	1-216-820-11	METAL CHIP	820 5% 1/10W
R5334	1-208-834-11	METAL CHIP	150K 0.5% 1/10W	R5879	1-216-809-11	METAL CHIP	100 5% 1/10W
R5335	1-208-818-11	METAL CHIP	33K 0.5% 1/10W	R5880	1-216-809-11	METAL CHIP	100 5% 1/10W
R5336	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	R5881	1-216-833-11	METAL CHIP	10K 5% 1/10W
R5337	1-218-867-11	METAL CHIP	6.8K 0.5% 1/10W	R5882	1-216-833-11	METAL CHIP	10K 5% 1/10W
R5338	1-249-413-11	CARBON	470 5% 1/4W	R5883	1-216-861-11	METAL CHIP	2.2M 5% 1/10W
R5340	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	R5884	1-216-841-11	METAL CHIP	47K 5% 1/10W
R5341	1-216-089-91	RES-CHIP	47K 5% 1/10W	R5885	1-216-809-11	METAL CHIP	100 5% 1/10W
R5342	1-208-818-11	METAL CHIP	33K 0.5% 1/10W	R5887	1-216-809-11	METAL CHIP	100 5% 1/10W
R5343	1-208-808-11	METAL CHIP	12K 0.5% 1/10W	R5888	1-216-809-11	METAL CHIP	100 5% 1/10W
R5344	1-208-820-11	METAL CHIP	39K 0.5% 1/10W	R5889	1-208-806-11	METAL CHIP	10K 0.5% 1/10W
R5345	1-208-832-11	METAL CHIP	120K 0.5% 1/10W	R5892	1-216-833-11	METAL CHIP	10K 5% 1/10W
R5346	1-216-849-11	METAL CHIP	220K 5% 1/10W	R5895	1-216-833-11	METAL CHIP	10K 5% 1/10W
R5347	1-216-833-11	METAL CHIP	10K 5% 1/10W	R5898	1-216-832-11	METAL CHIP	8.2K 5% 1/10W
R5349	1-216-043-91	RES-CHIP	560 5% 1/10W	R5899	1-216-863-11	METAL CHIP	3.3M 5% 1/10W
R5350	1-216-041-00	RES-CHIP	470 5% 1/10W	R6200	1-218-831-11	METAL CHIP	220 0.5% 1/10W
R5351	1-216-809-11	METAL CHIP	100 5% 1/10W	R6201	1-218-839-11	METAL CHIP	470 0.5% 1/10W
R5352	1-216-821-11	METAL CHIP	1K 5% 1/10W	R6202	1-249-395-11	CARBON	15 5% 1/4W
R5400	1-216-848-11	METAL CHIP	180K 5% 1/10W	R7007	1-216-049-11	RES-CHIP	1K 5% 1/10W
R5401	1-216-837-11	METAL CHIP	22K 5% 1/10W	R7018	1-216-025-11	RES-CHIP	100 5% 1/10W
R5402	1-216-081-00	RES-CHIP	22K 5% 1/10W	R7023	1-216-834-11	METAL CHIP	12K 5% 1/10W
R5403	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R7034	1-216-025-11	RES-CHIP	100 5% 1/10W
R5404	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R7035	1-216-025-11	RES-CHIP	100 5% 1/10W
R5405	1-216-829-11	METAL CHIP	4.7K 5% 1/10W	R7048	1-216-025-11	RES-CHIP	100 5% 1/10W
R5407	1-216-854-11	METAL CHIP	560K 5% 1/10W	R7050	1-216-833-11	METAL CHIP	10K 5% 1/10W
R5408	1-216-825-11	METAL CHIP	2.2K 5% 1/10W	R7051	1-216-025-11	RES-CHIP	100 5% 1/10W
R5409	1-208-802-11	METAL CHIP	6.8K 0.5% 1/10W	R7052	1-216-025-11	RES-CHIP	100 5% 1/10W
R5410	1-208-798-11	METAL CHIP	4.7K 0.5% 1/10W	R7053	1-216-049-11	RES-CHIP	1K 5% 1/10W
R5411	1-216-061-91	RES-CHIP	3.3K 5% 1/10W	R7054	1-216-847-11	METAL CHIP	150K 5% 1/10W
R5413	1-208-802-11	METAL CHIP	6.8K 0.5% 1/10W	R7056	1-218-867-11	METAL CHIP	6.8K 0.5% 1/10W
R5414	1-249-383-11	CARBON	1.5 5% 1/4W	R7057	1-216-842-11	METAL CHIP	56K 5% 1/10W
R5415	1-249-389-11	CARBON	4.7 5% 1/4W	R7058	1-216-049-11	RES-CHIP	1K 5% 1/10W
R5416	1-215-888-00	METAL OXIDE	220 5% 2W	R7065	1-216-821-11	METAL CHIP	1K 5% 1/10W
R5417	1-208-798-11	METAL CHIP	4.7K 0.5% 1/10W	R7066	1-216-809-11	METAL CHIP	100 5% 1/10W

REF.NO.	PART.NO	DESCRIPTION	REMARK
R7068	1-218-877-11	METAL CHIP 18K 0.5%	1/10W
R7070	1-216-817-11	METAL CHIP 470 5%	1/10W
R7071	1-216-817-11	METAL CHIP 470 5%	1/10W
R7072	1-216-817-11	METAL CHIP 470 5%	1/10W
R7073	1-216-041-00	RES-CHIP 470 5%	1/10W
R7074	1-216-043-91	RES-CHIP 560 5%	1/10W
R7075	1-216-817-11	METAL CHIP 470 5%	1/10W
R7076	1-216-041-00	RES-CHIP 470 5%	1/10W
R7077	1-216-043-91	RES-CHIP 560 5%	1/10W
R7078	1-216-817-11	METAL CHIP 470 5%	1/10W
R7079	1-216-041-00	RES-CHIP 470 5%	1/10W
R7080	1-216-043-91	RES-CHIP 560 5%	1/10W
R7081	1-216-817-11	METAL CHIP 470 5%	1/10W
R7082	1-208-782-11	METAL CHIP 1K 0.5%	1/10W
R7088	1-208-783-11	METAL CHIP 1.1K 0.5%	1/10W
R7089	1-216-819-11	METAL CHIP 680 5%	1/10W
R7090	1-216-819-11	METAL CHIP 680 5%	1/10W
R7091	1-216-819-11	METAL CHIP 680 5%	1/10W
R7092	1-216-295-91	SHORT CHIP 0	
R7093	1-216-295-91	SHORT CHIP 0	
R7094	1-216-295-91	SHORT CHIP 0	
R7095	1-216-295-91	SHORT CHIP 0	
R7096	1-216-803-11	METAL CHIP 33 5%	1/10W
R7097	1-216-803-11	METAL CHIP 33 5%	1/10W
R7098	1-216-803-11	METAL CHIP 33 5%	1/10W

< CRYSTAL >

X2000	1-760-628-11	VIBRATOR, CRYSTAL	
X3200	1-781-946-21	VIBRATOR, CRYSTAL	
X5800	1-767-127-11	VIBRATOR, CERAMIC	

**A Board Variant Parts KV-28FX68B**

< TUNER >

TU1000	8-598-535-20	FRONTEND BTF-EF411	
--------	--------------	--------------------	--

**A Board Variant Parts KV-28FX68E**

< TUNER >

TU1000	8-598-533-10	FRONTEND BTF-EC411	
--------	--------------	--------------------	--

**A Board Variant Parts KV-28FX68U**

< TUNER >

TU1000	8-598-529-10	FRONTEND BTF-EU611	
--------	--------------	--------------------	--

**\* A-1300-532-A C Board, Complete**

4-382-854-01 SCREW (M3X8) , P, SW (+)

< CAPACITOR >

C7303	1-162-909-11	CERAMIC CHIP 4PF	0.25PF 50V
C7304	1-107-967-11	ELECT 1UF	20.00% 400V
C7305	1-136-207-11	MYLAR 0.047UF	5.00% 630V
C7306	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C7308	1-162-909-11	CERAMIC CHIP 4PF	0.25PF 50V
C7309	1-163-035-00	CERAMIC CHIP 0.047UF	50V
C7310	1-163-247-91	CERAMIC CHIP 68PF	5.00% 50V
C7325	1-162-909-11	CERAMIC CHIP 4PF	0.25PF 50V
C7326	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C7329	1-107-967-11	ELECT 1UF	20.00% 400V
C7330	1-136-207-11	MYLAR 0.047UF	5.00% 630V
C7331	1-162-909-11	CERAMIC CHIP 4PF	0.25PF 50V
C7333	1-163-035-00	CERAMIC CHIP 0.047UF	50V
C7334	1-163-247-91	CERAMIC CHIP 68PF	5.00% 50V
C7350	1-126-947-11	ELECT 47UF	20.00% 35V
C7351	1-162-909-11	CERAMIC CHIP 4PF	0.25PF 50V
C7352	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C7354	1-126-933-11	ELECT 100UF	20.00% 16V
C7355	1-107-967-11	ELECT 1UF	20.00% 400V
C7356	1-136-207-11	MYLAR 0.047UF	5.00% 630V
C7358	1-162-909-11	CERAMIC CHIP 4PF	0.25PF 50V
C7359	1-163-035-00	CERAMIC CHIP 0.047UF	50V
C7360	1-163-247-91	CERAMIC CHIP 68PF	5.00% 50V
C7378	1-162-116-00	CERAMIC 680PF	10.00% 2KV
C7379	1-162-114-00	CERAMIC 0.0047UF	2KV

C7380	1-107-662-11	ELECT 22UF	20.00% 350V
C7384	1-162-911-11	CERAMIC CHIP 6PF	0.50PF 50V
C7385	1-162-913-11	CERAMIC CHIP 8PF	0.50PF 50V
C7387	1-162-911-11	CERAMIC CHIP 6PF	0.50PF 50V
C7388	1-162-913-11	CERAMIC CHIP 8PF	0.50PF 50V

C7390	1-162-911-11	CERAMIC CHIP 6PF	0.50PF 50V
C7391	1-162-913-11	CERAMIC CHIP 8PF	0.50PF 50V

< CONNECTOR >

CN7300	* 1-564-508-11	PLUG, CONNECTOR 5P	
CN7301	* 1-564-512-11	PLUG, CONNECTOR 9P	
CN7311	1-695-915-11	TAB (CONTACT)	
CN7333	1-695-915-11	TAB (CONTACT)	

< DIODE >

D7300	8-719-911-19	DIODE 1SS119-25	
D7325	8-719-911-19	DIODE 1SS119-25	
D7350	8-719-911-19	DIODE 1SS119-25	
D7375	8-719-991-33	DIODE 1SS133T-77	
D7376	8-719-991-33	DIODE 1SS133T-77	

**Note :** The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part numbers specified in the parts list.

**C**

**F4**

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
D7378	8-719-109-89	DIODE RD5.6ESB2		R7364	1-216-824-11	METAL CHIP 1.8K 5%	1/10W
D7379	8-719-109-89	DIODE RD5.6ESB2		R7373	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
D7380	8-719-302-43	DIODE EL1Z		R7374	1-216-819-11	METAL CHIP 680 5%	1/10W
D7381	8-719-302-43	DIODE EL1Z		R7375	1-249-435-11	CARBON 33K 5%	1/4W
D7382	8-719-302-43	DIODE EL1Z		R7376	1-249-429-11	CARBON 10K 5%	1/4W
< IC >				R7377	1-249-430-11	CARBON 12K 5%	1/4W
IC7300	8-759-360-83	IC TDA6111Q/N4		R7379	1-216-833-11	METAL CHIP 10K 5%	1/10W
IC7325	8-759-360-83	IC TDA6111Q/N4		R7380	1-216-833-11	METAL CHIP 10K 5%	1/10W
IC7350	8-759-360-83	IC TDA6111Q/N4		R7381	1-216-833-11	METAL CHIP 10K 5%	1/10W
< SOCKET >				R7382	1-202-549-00	SOLID 100 20%	1/2W
J7375 $\Delta$	1-251-732-11	SOCKET, CRT		R7383	1-216-349-00	METAL OXIDE 1 5%	1W
< COIL >				R7385	1-202-549-00	SOLID 100 20%	1/2W
L7375	1-410-671-31	INDUCTOR 47UH		R7387	1-247-735-11	CARBON 47 5%	1/2W
L7376 $\Delta$	1-532-637-00	IC LINK 1A/50V		R7388	1-535-143-51	LEAD, JUMPER (20.0MM)	
L7378	1-414-934-21	INDUCTOR 10UH		R7389	1-247-881-00	CARBON 120K 5%	1/4W
< TRANSISTOR >				R7390	1-249-417-11	CARBON 1K 5%	1/4W
Q7350	8-729-901-06	TRANSISTOR DTA144EK		R7391	1-216-824-11	METAL CHIP 1.8K 5%	1/10W
Q7352	8-729-421-19	TRANSISTOR UN2213		R7392	1-216-819-11	METAL CHIP 680 5%	1/10W
Q7353	8-729-421-19	TRANSISTOR UN2213		R7393	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
Q7354	8-729-901-06	TRANSISTOR DTA144EK		R7394	1-249-417-11	CARBON 1K 5%	1/4W
Q7355	8-729-421-19	TRANSISTOR UN2213		R7395	1-216-824-11	METAL CHIP 1.8K 5%	1/10W
< RESISTOR >				R7396	1-216-819-11	METAL CHIP 680 5%	1/10W
R7300	1-249-417-11	CARBON 1K 5%	1/4W	R7397	1-216-823-11	METAL CHIP 1.5K 5%	1/10W
R7302	1-535-303-00	LEAD, JUMPER (5.0MM)		R7398	1-249-417-11	CARBON 1K 5%	1/4W
R7303	1-216-824-11	METAL CHIP 1.8K 5%	1/10W	R7399	1-216-824-11	METAL CHIP 1.8K 5%	1/10W
R7304	1-260-095-11	CARBON 470 5%	1/2W	< RESISTOR VARIABLE >			
R7305	1-215-903-11	METAL OXIDE 68K 5%	2W	RV7375	1-241-656-11	RES, ADJ, METAL FILM 110M	
R7306	1-535-303-00	LEAD, JUMPER (5.0MM)		<b>* A-1625-000-A F4 Board, Complete</b>			
R7309	1-216-824-11	METAL CHIP 1.8K 5%	1/10W	* 4-374-846-01 COVER, CAPACITOR, CAP TYPE			
R7310	1-216-819-11	METAL CHIP 680 5%	1/10W	< CAPACITOR >			
R7325	1-249-417-11	CARBON 1K 5%	1/4W	C6991	1-113-924-11	CERAMIC 0.0047UF	20.00% 250V
R7327	1-535-303-00	LEAD, JUMPER (5.0MM)		< CONNECTOR >			
R7328	1-216-824-11	METAL CHIP 1.8K 5%	1/10W	CN6991 $\Delta$ *	1-580-843-11	PIN, CONNECTOR (POWER)	
R7329	1-260-095-11	CARBON 470 5%	1/2W	CN6992 $\Delta$ *	1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P	
R7330	1-215-903-11	METAL OXIDE 68K 5%	2W	CN6993	1-695-915-11	TAB (CONTACT)	
R7331	1-535-303-00	LEAD, JUMPER (5.0MM)		< FUSE >			
R7334	1-216-819-11	METAL CHIP 680 5%	1/10W	F6991 $\Delta$	1-576-232-11	FUSE (H.B.C.) 5A/250V	
R7335	1-216-824-11	METAL CHIP 1.8K 5%	1/10W	$\Delta$	1-533-725-11	FUSE HOLDER (F6991)	
R7350	1-249-417-11	CARBON 1K 5%	1/4W	< RESISTOR >			
R7355	1-535-303-00	LEAD, JUMPER (5.0MM)		R6991 $\Delta$	1-202-719-00	SOLID 1M 10%	1/2W
R7356	1-216-824-11	METAL CHIP 1.8K 5%	1/10W				
R7357	1-260-095-11	CARBON 470 5%	1/2W				
R7358	1-215-903-11	METAL OXIDE 68K 5%	2W				
R7360	1-535-303-00	LEAD, JUMPER (5.0MM)					
R7363	1-216-819-11	METAL CHIP 680 5%	1/10W				

**Note :** The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part numbers specified in the parts list.

**F4 H1 H2 VM**

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
		< SWITCH >		L2902	1-535-303-00	LEAD, JUMPER (5.0MM)	
S6991	$\Delta$ 1-571-433-21	SWITCH, PUSH (AC POWER)		L2903	1-535-303-00	LEAD, JUMPER (5.0MM)	
		< VARISTOR >				< RESISTOR >	
VD6991	$\Delta$ 1-803-830-11	VARISTOR (ERZV14D621)		R912	1-535-303-00	LEAD, JUMPER (5.0MM)	
<b>* A-1646-243-A H1 Board, Complete</b>				R0901	1-249-427-11	CARBON 6.8K 5%	1/4W
	4-206-220-01	HOLDER, LED		R0902	1-215-445-00	METAL 10K 1%	1/4W
		< CAPACITOR >		R0911	1-249-419-11	CARBON 1.5K 5%	1/4W
C0992	1-104-665-11	ELECT 100UF	20.00% 25V	R0913	1-247-843-11	CARBON 3.3K 5%	1/4W
C0993	1-102-114-00	CERAMIC 470PF	10.00% 50V				
C0994	1-102-129-00	CERAMIC 0.01UF	10.00% 50V	R0914	1-249-431-11	CARBON 15K 5%	1/4W
		< CONNECTOR >		R2903	1-249-406-11	CARBON 120 5%	1/4W
CN0991	* 1-564-507-11	PLUG, CONNECTOR 4P		R2904	1-249-406-11	CARBON 120 5%	1/4W
		< DIODE >		R2909	1-247-895-91	CARBON 470K 5%	1/4W
D0991	8-719-109-89	DIODE RD5.6ESB2		R2910	1-247-895-91	CARBON 470K 5%	1/4W
D0993	8-719-082-12	DIODE TLHK5190					
		< IC >		R2915	1-249-406-11	CARBON 120 5%	1/4W
IC0991	8-742-180-30	HYB IC SBX3081-51(30)		R2916	1-249-406-11	CARBON 120 5%	1/4W
		< RESISTOR >		R2917	1-249-412-11	CARBON 390 5%	1/4W
R0992	1-247-807-31	CARBON 100 5%	1/4W	R2918	1-249-412-11	CARBON 390 5%	1/4W
<b>* A-1647-043-A H2 Board, Complete</b>						< SWITCH >	
		< CAPACITOR >		S0900	1-692-979-11	SWITCH, TACTILE	
C2906	1-126-960-11	ELECT 1UF	20.00% 50V	S0901	1-692-979-11	SWITCH, TACTILE	
C2907	1-126-960-11	ELECT 1UF	20.00% 50V	S0902	1-692-979-11	SWITCH, TACTILE	
C2913	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V	<b>* A-1300-626-A VM Board, Complete</b>			
C2914	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V		4-382-854-01	SCREW (M3X8), P, SW (+)	
		< CONNECTOR >				< CAPACITOR >	
CN2900	1-779-947-11	TERMINAL BLOCK, S		C7401	1-126-935-11	ELECT 470UF	20.00% 16V
CN2906	* 1-564-524-11	PLUG, CONNECTOR 9P		C7403	1-126-935-11	ELECT 470UF	20.00% 16V
CN2908	* 1-564-521-11	PLUG, CONNECTOR 6P		C7404	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
		< SOCKET >		C7405	1-126-933-11	ELECT 100UF	20.00% 16V
J2900	1-750-264-11	JACK		C7406	1-126-935-11	ELECT 470UF	20.00% 16V
		< COIL >					
L0904	1-535-303-00	LEAD, JUMPER (5.0MM)		C7407	1-107-364-11	MYLAR 0.01UF	10.00% 200V
L2900	1-535-303-00	LEAD, JUMPER (5.0MM)		C7408	1-107-364-11	MYLAR 0.01UF	10.00% 200V
L2901	1-535-303-00	LEAD, JUMPER (5.0MM)		C7409	1-107-649-11	ELECT 2.2UF	20.00% 250V
				C7410	1-130-471-00	MYLAR 0.001UF	5.00% 50V
				C7411	1-130-471-00	MYLAR 0.001UF	5.00% 50V
				C7412	1-126-935-11	ELECT 470UF	20.00% 16V
				C7413	1-126-935-11	ELECT 470UF	20.00% 16V
				C7414	1-107-652-11	ELECT 10UF	20.00% 250V
				C7415	1-107-363-91	MYLAR 0.0068UF	10.00% 200V
				C7418	1-163-021-91	CERAMIC CHIP 0.01UF	10.00% 50V
				C7421	1-163-251-11	CERAMIC CHIP 100PF	5.00% 50V
						< CONNECTOR >	
				CN7442	* 1-564-508-11	PLUG, CONNECTOR 5P	
				CN7443	* 1-564-506-11	PLUG, CONNECTOR 3P	
				CN7444	* 1-770-723-11	CONNECTOR, BOARD TO BOARD 8P	



REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
< DIODE >				R7420	1-249-421-11	CARBON 2.2K 5%	1/4W
D7400	8-719-991-33	DIODE 1SS133T-77		R7421	1-249-389-11	CARBON 4.7 5%	1/4W
D7401	8-719-991-33	DIODE 1SS133T-77		R7422	1-249-405-11	CARBON 100 5%	1/4W
D7402	1-535-303-00	LEAD, JUMPER (5.0MM)		R7423	1-215-915-11	METAL OXIDE 470 5%	3W
D7403	8-719-991-33	DIODE 1SS133T-77		R7427	1-216-025-11	RES-CHIP 100 5%	1/10W
D7404	8-719-991-33	DIODE 1SS133T-77		R7428	1-216-033-00	RES-CHIP 220 5%	1/10W
D7405	8-719-924-11	DIODE MTZJ-T-77-22		R7429	1-216-033-00	RES-CHIP 220 5%	1/10W
D7406	8-719-924-11	DIODE MTZJ-T-77-22		R7432	1-216-065-91	RES-CHIP 4.7K 5%	1/10W
< FERRITE BEAD >				R7433	1-249-395-11	CARBON 15 5%	1/4W
FB7400	1-535-303-00	LEAD, JUMPER (5.0MM)		R7434	1-249-395-11	CARBON 15 5%	1/4W
FB7401	1-535-303-00	LEAD, JUMPER (5.0MM)		R7435	1-216-033-00	RES-CHIP 220 5%	1/10W
< COIL >				R7436	1-216-049-11	RES-CHIP 1K 5%	1/10W
L7400	1-414-934-21	INDUCTOR 10UH					
L7402	1-414-934-21	INDUCTOR 10UH					
L7403	1-414-934-21	INDUCTOR 10UH					
< TRANSISTOR >							
Q7400	8-729-010-29	TRANSISTOR MSD601-RST1					
Q7401	8-729-010-29	TRANSISTOR MSD601-RST1					
Q7402	8-729-010-29	TRANSISTOR MSD601-RST1					
Q7403	8-729-119-78	TRANSISTOR 2SC2785-HFE					
Q7404	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R					
Q7405	8-729-026-39	TRANSISTOR 2SA933AS-QT					
Q7406	8-729-045-05	TRANSISTOR 2SA2005					
Q7407	8-729-045-04	TRANSISTOR 2SC5511					
Q7408	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R					
Q7409	8-729-010-29	TRANSISTOR MSD601-RST1					
< RESISTOR >							
R7400	1-216-017-91	RES-CHIP 47 5%	1/10W				
R7401	1-216-061-91	RES-CHIP 3.3K 5%	1/10W				
R7402	1-216-041-00	RES-CHIP 470 5%	1/10W				
R7403	1-249-393-11	CARBON 10 5%	1/4W				
R7404	1-249-413-11	CARBON 470 5%	1/4W				
R7405	1-216-065-91	RES-CHIP 4.7K 5%	1/10W				
R7407	1-249-411-11	CARBON 330 5%	1/4W				
R7409	1-216-029-00	RES-CHIP 150 5%	1/10W				
R7410	1-216-017-91	RES-CHIP 47 5%	1/10W				
R7411	1-216-017-91	RES-CHIP 47 5%	1/10W				
R7412	1-216-017-91	RES-CHIP 47 5%	1/10W				
R7413	1-249-414-11	CARBON 560 5%	1/4W				
R7414	1-249-432-11	CARBON 18K 5%	1/4W				
R7415	1-247-739-11	CARBON 100 5%	1/2W				
R7416	1-249-389-11	CARBON 4.7 5%	1/4W				
R7417	1-249-432-11	CARBON 18K 5%	1/4W				
R7418	1-249-414-11	CARBON 560 5%	1/4W				
R7419	1-249-421-11	CARBON 2.2K 5%	1/4W				

**Note :** The components identified by shading and marked  $\Delta$  are critical for safety. Replace only with the part numbers specified in the parts list.

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
<b>MISCELLANEOUS</b>							
	$\Delta$ 1-571-433-21	SWITCH, PUSH (AC POWER)					
	$\Delta$ 1-783-083-11	CORD, POWER (WITH FILTER) (KV-28FX68B/28FX68E)					
	$\Delta$ 1-776-860-11	POWER CORD, FILTER (UK) (KV-28FX68U)					
	1-424-855-11	COIL, CHOKE 29MMH					
	8-598-535-20	FRONTEND BTF-EF411 (KV-28FX68B)					
	8-598-533-10	FRONTEND BTF-EC411 (KV-28FX68E)					
	8-598-529-10	FRONTEND BTF-EU611 (KV-28FX68U)					
	$\Delta$ 1-453-383-11	TRANSFORMER ASSY, FLYBACK (NX4522//Z214)					
	1-529-408-11	SPEAKER (4.2X24CM)					
	1-529-417-11	SPEAKER (8CM)					
	$\Delta$ 8-451-521-31	DEFLECTION YOKE (Y28RVC3-L2)					
	$\Delta$ 1-424-886-11	COIL, DEGAUSSING					
	$\Delta$ 1-251-317-63	CAP ASSY, HIGH VOLTAGE					
	$\Delta$ 8-735-099-05	PICTURE TUBE (W66LLX060X)					
	1-452-896-11	COIL, NA ROTATION (RT200)					
	8-453-011-11	NECK ASSY NA299-M					
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM $\emptyset$					
	1-425-032-00	MAGNET, DISK; 10MM $\emptyset$					
<b>ACCESSORIES AND PACKAGING MATERIALS</b>							
	*4-395-957-01	BAG, PROTECTION					
	*4-205-505-03	CUSHION (LOWER) (ASSY)					
	*4-205-512-01	INDIVIDUAL CARTON					
	4-094-189-21	MANUAL, INSTRUCTION (KV-28FX68B) (GERMAN/ITALIAN/FRENCH/DUTCH)					
	4-094-189-31	MANUAL, INSTRUCTION (KV-28FX68E) (GERMAN/TURKISH/GREEK)					
	4-094-189-11	MANUAL, INSTRUCTION (KV-2FX68U) (ENGLISH)					
<b>REMOTE COMMANDER</b>							
	1-476-702-12	REMOTE COMMANDER (RM-932)					

# TRACE

A new TV Repair Assistance Tool that combines ease of use and powerful PC software tools to allow you to save valuable time during many TV repairs.



The TRACE interface connects to the PC's serial port. It provides connection to the TV's I<sup>2</sup>C bus and can be provided with an InfraRed transmitter (optional).

The interface is powered by a standard 9 V PP3 battery for portable use, and can also be powered by an external 9V/25mA DC power supply.

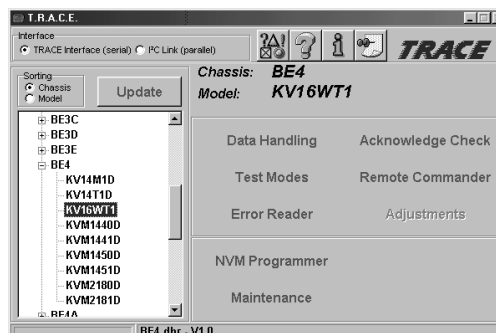
The TRACE software that is supplied with the interface allows you to:

- Read, restore and compare NVM contents via the I<sup>2</sup>C bus
- Acknowledge check of all I<sup>2</sup>C devices in the TV set
- Read Error Codes (emulation of the Error Reader tool)

With the optional IR Add-on kit, the following features can be added:

- Remote Commander emulation
- User programmable Functional Check through Infrared
- Fast and documented Test Mode setting of all Sony TV chassis

Additional features such as Adjustments and Troubleshooting are available in chassis-dependent software modules. Please contact your local Sony Service organisation for the latest information.



*Note: For workshops already using the existing I<sup>2</sup>C Link parallel port interface (9-948-320-30), this software can be used as well, replacing the TV Data Handling software (9-948-340-50), but Error Reader and IR functions can only be accessed with the TRACE interface.*

Partnumbers: TRACE Starter Kit (TRACE interface + software): 9-948-320-70  
TRACE Software (for users of the I<sup>2</sup>C Link interface): 9-948-340-80  
TRACE IR Add-on (IR interface + Remote Commander software): 9-948-320-80

PC requirements: IBM-compatible PC with operating system Windows95, Windows98, or WindowsNT\*.

\* WindowsNT only supported with TRACE interface

**Sony Corporation**  
Sony UK  
Service Promotions Dept.

**English**  
03EP7100-1  
Printed in U.K.  
© 2003.05