Self Diagnosis Supported model

SERVICE MANUAL

FE-2 CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.	MODEL	COMMANDER	DEST	CHASSIS NO.
KV-28DX40U	RM-933	UK	SCC-Q52K-A	KV-32DX40U	RM-933	UK	SCC-Q52L-A

FD Trinitron

KV-28/32DX40

RM-933

TRINITRON ® COLOR TV

SONY ®

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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 ⚠ 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'LANODE, 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 CHÁSSIS SOUS TENTION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÈ LORS DE TOUT DÈPANNAGE LE CHÁSSIS DE CE RÈCEPTEUR EST DIRECTMENT RACCORDÈ Á L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS Á LA SECURITÈ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES SCHÈMAS DE PRINCIPE, LES VUES EXPLOSÈES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÈCURITÈ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPSANTS SONY DONT LE NUMÈRO DE PIÈCE EST INDIQUÈ DANS LE PRÈSENT MANUEL OU DANS DES SUPPLÈMENTS PUBLIÈS PAR SONY.

ITEM MODEL	Television System	Stereo System	Channel Coverage	Color System
U	I	NICAM Stereo	I UHF : E21-E69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)

Picture Tube	Flat Display FD Trinitron Approx 71 cm (28 inches) (Approx 66 cm picture measured diagonally) KV-28DX40U Approx 82 cm (32 inches) (Approx 76 cm picture measured diagonally) KV-32DX40U	**Sound output**	
		Right and Left speaker	2x14W (Music Power) 2x7W (RMS)
Input/Output Terminals [REAR]		**General Specifications**	
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	90 W (KV-28DX40) 88 W (KV-32DX40)
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 806x497x540mm (KV-28DX40) Approx 891x564x584mm (KV-32DX40)
		Weight	Approx 43kg (KV-28DX40) Approx 60.5kg (KV-32DX40)
Phono Jacks	Output Connectors variable for Audio Signals	Supplied Accessories	RM-933 Remote Commander (1) IEC designated R6 battery (2)
Digital	Modem Jack PCMCIA	Other Features	TV system Autodetection, Teletext Virtual Dolby
Input/Output Terminals [SIDE]			
Headphone jack	stereo mini jack	**Remote Control System : Infrared Control**	
Audio inputs	phono jacks	Power requirements	3V dc 2 batteries IEC designation R6 (size AA)
Video inputs	phono jacks		
S Video input	4 pin DIN		
Design and specifications are subject to change without notice.			

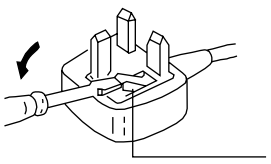
Model Name Item	KV-28DX40U	KV-32DX40U
Pal Comb	OFF	OFF
PIP	OFF	OFF
RGB Priority	ON	ON
Woofer Box	OFF	OFF
Scart 1	ON	ON
Scart 2	ON	ON
Front in (3)	ON	ON
Scart 4	OFF	OFF
Projector	OFF	OFF
Norm B/G	OFF	OFF
Norm I	ON	ON
Norm D/K	OFF	OFF
Norm AUS	OFF	OFF
Norm L	OFF	OFF
Norm SAT	OFF	OFF
Norm M	OFF	OFF
Teletext	ON	ON
Nicam Stereo	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 ASTA mark.

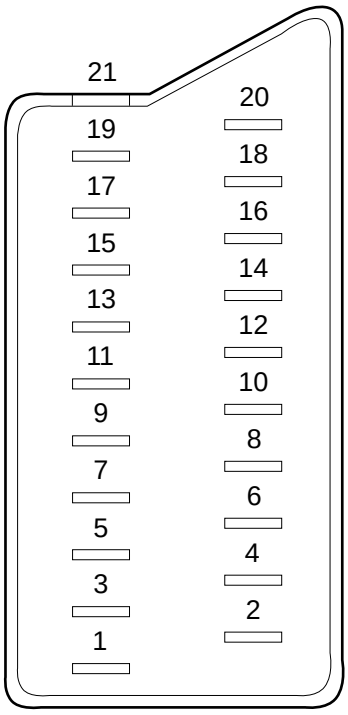
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR THE OUTLET SOCKETS IN YOUR HOME, IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET.

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.

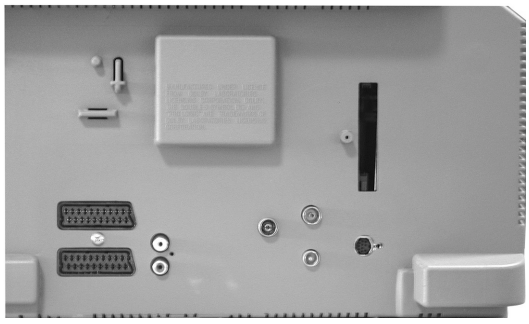
21 pin connector



Pin No	1	2	4	Signal	Signal level
1	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedence : Less than 1kohm*
2	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedence : More than 10kohm*
3	○	○	○	Audio output A (left)	Standard level : 0.5V rms Output impedence : Less than 1kohm*
4	○	○	○	Ground (audio)	
5	○	○	○	Ground (blue)	
6	○	○	○	Audio input A (left)	Standard level : 0.5V rms Output impedence : 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 impedence : 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 impedence : 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

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.

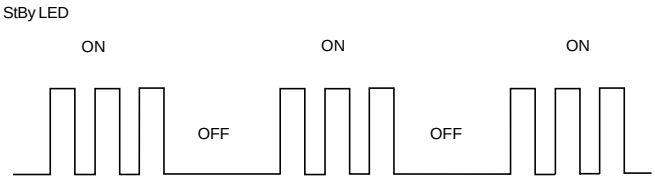
FE-2 SELF DIAGNOSTIC SOFTWARE

The identification of errors within the FE-2 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

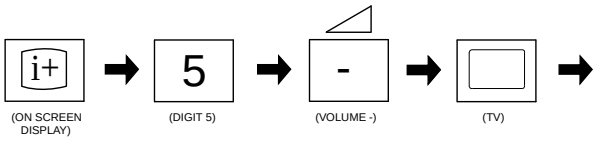
Error Message	LED Code
No error	00
Reserved	01
OCP (Over Current Protection)	02
Not Used	03
No Vertical Sync	04
IKR Error at power on	05
IIC bus clock and/or data lines low at power on	06
NVM no IIC bus acknowledge at power on	07
Not Used	08
Tuner no acknowledge at power on	09
Sound Processor Error	10
Jungle controller 8 volts error	11

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 and enter into the 'Stanby Mode'.
2. Press the following sequence of buttons on the Remote Commander.



3. The following table will be displayed indicating the error count.

Table 2

ERROR MENU			
E02	OCP	(0, 255)	0
E03	OVP N/A	(0, 255)	0
E04	VSYNC	(0, 255)	0
E05	IKR	(0, 255)	0
E06	IIC	(0, 255)	0
E07	NVM	(0, 255)	0
E08	JUNGLE	(0, 255)	0
E09	TUNER	(0, 255)	0
E10	SOUNDP	(0, 255)	0
E11	8V	(0, 255)	0
WORKING TIME			
HOURS			2
MINUTES			11

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.

5. Automatically tuning the TV

1. When you switch on the TV for the first time a menu appears on the screen asking you to check if the picture is slanted. (Sometimes the Earth's natural magnetism can cause the screen to look tilted.)

   a) If no correction is required, press the ▲ or ▼ buttons on the remote control to highlight 'Not necessary' and press the OK button.

   b) If some correction is required, press the ▲ or ▼ buttons on the remote control to highlight 'Adjust now', then press the OK button. Correct the slant by pressing the ▲ or ▼ buttons then press the OK button to store.

Checking the picture tilt.

2. The autotune prompt screen appears. Press the OK button to select 'Yes'. The autotune procedure begins.

   The Digital autotune display appears on screen and the search and store procedure begins. All the available Digital channels will now be captured and stored. As this may take some time, a message is included in the display to inform you of the tuning progress.

The autotune prompt screen.

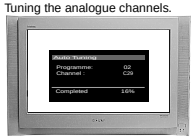
   When Digital tuning is complete, the analogue display appears automatically and the search and store procedure for the analogue channels begins.

Tuning the Digital channels.

   If no Digital and no analogue channels are found, a menu appears asking you to confirm your aerial is connected. After checking the aerial has been connected press OK to begin the autotune procedure again.

   Once all Digital and analogue channels have been captured and stored, the TV returns to normal operation and displays the Digital channel captured on channel number 1.

Tuning the analogue channels.



Note: If no Digital channels are captured, the analogue channel that is stored on channel number 1 is displayed.

3. To view programmes, press the PROG+/- buttons or the numbered buttons.

6. Finding the video channel

If you connected a VCR to your TV when following the 'Connecting an aerial and a VCR' instructions, you will now need to find your video channel. Ensure the TV is in analogue mode. If it is not, press the DIGITAL/▭ button on the remote control.

1. Press the PROG +/- buttons on the remote control until the picture from the pre-recorded tape appears on the TV screen.

Notes: If you wish to move your video channel to a different programme number, refer to 'The Set Up menu' section of this manual.

If you have connected your VCR using a scart lead, press the ⇄/⊕ button on the remote control until the picture from the pre-recorded tape appears on the TV screen. (Refer to 'Connecting additional equipment').

Selecting Digital or analogue mode

Press the DIGITAL/▭ button on the remote control to switch between Digital and analogue mode. To check if you are watching a Digital or analogue mode press the PROG +/- button. If you are watching a digital programme a banner will appear momentarily at the top of the screen.

The Programme Index table

The 'Programme Index table' is a quick and easy way to search for a channel you wish to view. The 'Programme Index table' is only available in analogue mode.

1. Press the OK button to display the 'Programme Index table' on screen.

2. Press the ▼ or ▲ button to scroll through the list until the channel you wish to view is highlighted.

3. Press the OK button to display your chosen channel on the TV screen.

The Channel Index menu

The 'Channel Index menu' provides you with a quick and easy way to:-

a) View a complete list of the programmes available for selection,
b) Obtain a preview of the programmes contained in the list,
c) Search for a programme quickly by selecting from different categories of programmes,
d) Store programmes into a list of favourites.

The 'Channel Index menu' is only available in Digital mode.

1. Press the OK button on the remote control to display the 'Channel Index menu' on the TV screen. The menu contains a list of all the available channels. The name of the programme currently being shown along with its start and finish times is shown for each of the available channels. The current channel is previewed in the top right corner of the screen with its channel name and number displayed below it.

2. Press the ▲ or ▼ buttons to move the coloured cursor up or down the list to select the desired programme. If you do not want to select a programme from the 6 channels listed, press the GREEN button to display the next 6 programmes or the RED button to display the preceding 6 channels.

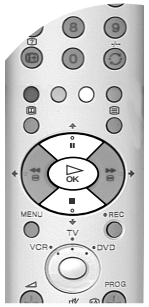
3. Press the OK button to display the highlighted programme in the preview window*.

4. Press the OK button to exit the 'Channel Index menu'. The programme that was being previewed will be displayed.

***Note:** If an age limit for viewing has been set and the programme selected exceeds that age limit, you will need to enter your PIN code before the preview is displayed. Refer to 'The Main Menu' for more information on the 'PIN Code' feature. Programmes that exceed the age limit you have set will be identified by a 🔒 symbol.

The Category pop-up list

The 'Category' pop-up list allows you to quickly search for a programme by choosing from different categories of programmes.



1. With the 'Channel Index menu' on screen, press the YELLOW button to display the 'Category' pop-up list.

2. Press the ↑ or ↓ buttons to highlight the required category. The category you choose will be displayed in a title bar at the top of the programme list along with the date and time.

3. Press the OK button. The 'Channel Index menu' will now contain only programmes of the type selected.

The following categories are available:

Favourite Choice	Contains all the programmes you have stored as a favourite (see below). The TV will create this list based on the type of programmes you watch the most.
Recent Prog.	Contains the last 5 programmes watched.
All Categories	Contains all available channels.
Sports	Contains all sport channels.
News	Contains all news channels.
Film	Contains all film channels.
Entertainment	Contains all entertainment channels.
Lifestyle	Contains all lifestyle channels.
Education	Contains all education channels.
Kids	Contains all kids channels.

Favourite programmes

This feature allows you to create a list of your favourite programmes.

To add a programme to the Favourite list

1. With the 'Channel Index menu' on screen, press the ↑ or ↓ buttons to highlight the programme you want as a favourite.

2. Press the BLUE button to store the programme in the favourite list.

To remove a programme from the Favourite list

1. With the 'Channel Index menu' on screen, press the YELLOW button to access the 'Category' pop-up list.

2. Highlight the 'Favourite' category. Press the OK button to display the 'Favourite list'.

3. Highlight the programme you wish to remove from the 'Favourite list'.

4. Press the BLUE button to remove the programme.

Viewing Digital Teletext

Many broadcasters now provide a Digital Teletext service in the form of a dedicated Teletext channel. This Digital service includes high quality text and graphics along with advanced navigation options.

The appearance, content and navigation methods of all Digital Text services are decided by the broadcaster. For example, Digital Text from the BBC may look different to Digital Text from ITV which may use different navigation methods. Most of the Digital Text services currently available use simple navigation methods based on the following buttons:

The ↑, ↓, ← and → buttons (to move around the screen),
The OK button (to select items on screen),
The ↺ button (to cancel),
The four coloured buttons (to access shortcuts).

Dedicated Digital Teletext channels

1. If the TV is not already in Digital mode, press the DIGITAL/▭ button on the remote control. Press the numbered buttons on the remote control to select a dedicated Teletext channel number. To find out the channel number of a dedicated Digital Teletext channel, use the 'Channel Index menu'. (Please refer to the 'Changing channels' section of this instruction manual.)

2. Once the Teletext channel is displayed, press the ↑, ↓, ← or → buttons as instructed on the screen to select your requirement, then press the OK button to display the chosen information.

Note: On some pages the TV programme is also displayed. Instructions on screen will tell you how to change the displayed programme.

3. If when viewing the Teletext pages, you are requested to select 'OK' or 'Cancel', press the OK button for 'OK' and the ↺ button for 'Cancel'.

4. When you have finished viewing Teletext, press the PROG +/- buttons to exit.

Selecting Teletext from other Digital channels

Normal Teletext services may also be available on other Digital channels. Sometimes this is indicated by a small symbol or text display on your TV screen, superimposed on the channel you are watching.

1. Press the ↑, ↓, ← or → buttons to select the symbol then press the OK button to display the chosen information.

2. Alternatively, you may be requested to use the numbered and coloured buttons on your remote control to display the various pages of text information. If when viewing the teletext pages, you are requested to select 'OK' or 'Cancel', press the OK button for 'OK' and the ↺ button for 'Cancel'.

3. Once the text information is displayed on screen, use the ↑, ↓, ← or → buttons, the coloured buttons and/or the numbered buttons to access the chosen information.

4. When you have finished viewing Teletext, press the ☰ button and then select an alternative Digital channel.

Teletext (Analogue)

Most analogue TV channels broadcast a Teletext service. The index page (usually page 100) provides information on how to use the service. Please ensure you are receiving a good signal, or some Teletext errors may occur.

Switching Teletext on and off

1. If the TV is not already in analogue mode, press the DIGITAL/▭ button on the remote control. Select the analogue TV channel which carries the Teletext service you want to view.

2. Press the ▤ button to enter Teletext mode, then using the numbered buttons on the remote control, enter the three digits of the page number you wish to view. Alternatively, press the ▲ or ▼ buttons to view the previous or next page. After a short time it will appear on screen.

3. Enter more 3 digit page numbers as required.

4. Press the DIGITAL/▭ button to exit Teletext.

How to use Teletext features

Feature		How to use
Hold	Some pages contain sub-pages which follow on automatically. This feature allows you hold the current page until you are ready to proceed.	Press the ⏎/⏸ button to hold the page currently being displayed. Press again to cancel.
Reveal	Some Teletext pages contain hidden information (e.g. for a quiz).	Press the ? button to reveal the hidden information. Press again to cancel.
Mix	This feature allows you to superimpose Teletext on to the TV screen.	In Teletext mode, press the ▤ button to superimpose Teletext on to the TV screen. Press the ▤ button again to exit Teletext.
Fastext	Fastext allows you to access pages quickly and easily. When Fastext is available, four coloured items appear at the bottom of the screen.	Press the corresponding coloured button on the remote control to access the required page.

The Digital EPG menu

The EPG menu (Electronic Programme Guide) provides you with a quick and easy way to:-

a) View a complete list of the programmes available.
b) Obtain a preview of the programmes currently being broadcast.
c) Reduce the size of the list by selecting a category of programme, e.g. Sports or Movies.
d) Record programmes.

1. The EPG menu is only available when watching Digital channels. If the TV is not already in Digital mode, press the DIGITAL/▭ button on the remote control. Press the ▥ button on the remote control to display the EPG menu screen. This screen consists of an information window, a preview window, a 2 hour timer bar (divided into 30 minute intervals) and a 5 channel programme list covering the 2 hour period.

2. Press the ↑ or ↓ buttons to move the coloured cursor bar up or down the programme list and the → or ← buttons to move left and right. If you press the → button once more after highlighting the last programme on the right, the programmes scheduled for the next 2 hour period are displayed.
As each programme is highlighted, a brief description of the programme appears in the event information box at the top left of the screen.
If you do not wish to select a programme from the 5 channels listed, press the GREEN button to display the next 5 channels or RED button to display the previous 5 channels.

3. If a programme you highlight is currently being broadcast, press the OK button to obtain a preview in the preview window. If you have previously set a viewing age limit in the 'Digital Setting' menu, and the programme exceeds that age limit, you will be asked to enter your PIN code before the preview is allowed.

4. When the programme in the preview screen is the one you wish to watch, press the OK button to exit the EPG menu and view the programme at full size.

The Category pop-up list

The 'Category' pop-up list allows you to quickly search for a programme by choosing from different categories of programmes. For example, select the 'News' option from the 'Category' pop-up list to display programme information only for News channels.

1. With the EPG menu on screen, press the YELLOW button to display the 'Category' pop-up list.

2. Press the ↑ or ↓ buttons to highlight the category you want, then press the OK button. The EPG programme list will now only contain programmes of the type selected.

For information on the types of Categories along with instructions on how to add and remove programmes from the Favourite list, please refer to 'The Channel Index menu' section of this instruction manual.

The Digital INFO display

This menu gives you information on the programmes currently being shown aswell as the those programmes which are on next. When first selected, the 'Digital INFO display' gives a brief description of the current programme being transmitted, its channel number and the start and end time. The title of the next programme and its start and end time is also shown.

1. The 'Digital INFO display' is only available when watching Digital channels. If the TV is not already in Digital mode, press the DIGITAL/ button on the remote control. Press the button on the remote control to display the 'Digital INFO display' screen.

2. Press the ➡ button to obtain a brief description of the next programme in the schedule. If the programme box is blank, there is no information currently available. To return to the starting point, press the ⬅ button repeatedly until the description for the current programme reappears.

3. Press the button on the remote control at any time to exit the 'Digital INFO display'.

Note: To change channels while the 'Digital INFO display' is on screen, press the relevant numbered buttons on the remote control.

Using other INFO menu features

Subtitles

This feature will place Digital subtitles on the screen (similar to selecting p.888 in analogue Teletext mode).

With the 'Digital INFO display' on the TV screen, press the RED button to access the 'Subtitles' pop-up menu. Press the ⬆ or ⬇ button to highlight the language required then press OK to select.

To remove subtitles from the TV screen, access the 'Subtitles' pop-up menu and select 'Off'.

Audio

This feature allows you to listen to the broadcast in different languages*.

With the 'Digital INFO display' on the TV screen, press the GREEN button to access the 'Audio' pop-up menu. Press the ⬆ or ⬇ button to highlight the language required then press OK to select.

REC

This feature allows you to automatically set your VCR to record the selected programme**, or have the TV switch to the correct channel automatically when the selected programme starts.

With the 'Digital INFO display' on the TV screen, press the YELLOW button to access the 'REC' pop-up menu. If your VCR does not have Smartlink a message is displayed reminding you to manually set your VCR. Press the RED button to continue or press the BLUE button to return to the INFO display.

Notes: Do not switch off theTV once a programme has been set to record. If you do not wish to view the programme being recorded, press the TV I/ button on the remote control to switch the TV into standby mode.

When a programme has been set to record and the TV is in standby mode the standby indicator on the front of the TV will flash green periodically to inform you that a programme has been set to record.

Do not change channels or switch the TV to analogue mode once a programme has started recording or the recording will be cancelled.

Set-up

With the 'Digital INFO display' on the TV screen, press the BLUE button to access the 'Main Menu'. The 'Main Menu' is explained on the following pages.

Notes: *Only when the programme is broadcast in multiple languages

Detail Set-up

The 'Detail Set-up' menu allows you to further customise your TV with the following features:

Manual Tuning

This feature allows you to select a channel number from the displayed list and change the digital services of that channel.

1. Press the button on the remote control to display the 'Digital INFO display'. Press the BLUE button to display the 'Main Menu'.
2. Press the ⬆ or ⬇ button to highlight 'Detail Set-up' then press the OK button to display the 'Detail Set-up' menu.
3. Press the ⬆ or ⬇ button to highlight 'Manual Tuning' then press the OK button to display the 'Manual Tuning' menu.

4. Press the ⬆ or ⬇ button to highlight the chosen channel number for your new channel. If you do not wish to select any of the programme numbers listed, press the RED or GREEN button to display the previous or next 5 programme numbers on the list.
5. With your channel number highlighted, press the OK button to display the 'Manual Programme Search' screen.
6. Press the ⬆ or ⬇ button if you wish to change the channel number, then press the ➡ button to make the select search box active.
7. Press the ⬆ or ⬇ button to begin the search process. The words 'Searching Down' or 'Searching Up' appear in the select search box to indicate that the TV is searching. If no Digital services are found on the channel you have chosen, the channel number changes up or down automatically and the search continues. When all services allocated to the selected channel have been found, the service selection screen is displayed.
8. Press the ⬆ or ⬇ button to find and highlight the service you wish to allocate to the channel number selected in Step 4, then press the OK button to display the channel selection screen.
9. Repeat Steps 4 to 8 if you wish to manually add more channels to your TV.
10. Press the BLUE button on the remote control three times to remove the 'Digital INFO display' from the TV screen.

PIN Code

This feature allows you to set a 4-digit PIN code.

1. Press the button on the remote control to display the 'Digital INFO display'. Press the BLUE button to display the 'Main Menu'.
2. Press the ⬆ or ⬇ button to highlight 'Detail Set-up' then press the OK button to display the 'Detail Set-up' menu.
3. Press the ⬆ or ⬇ button to highlight 'PIN Code' then press the OK button to display the 'PIN Code' menu.

4. Enter your PIN code using the numbered buttons on the remote control. If you enter a wrong number, press the RED button to clear and start again.
5. Once you have entered a 4-digit code a cursor will appear in the second PIN Code box. Enter your new PIN code once again as confirmation. Press the OK button to confirm.
6. When both PIN codes match, a message appears to inform you that your new PIN code has been accepted. This is the PIN code you must use in future.
7. Press the BLUE button on the remote control to remove the 'Digital INFO display' from the TV screen.

Software Download

Periodically Sony issues updates for the software that controls your TV. This feature allows you to automatically receive updates free through your existing aerial.

1. Press the ⓘ button on the remote control to display the 'Digital INFO display'. Press the BLUE button to display the 'Main Menu'.
2. Press the ↑ or ↓ button to highlight 'Detail Set-up' then press the OK button to display the 'Detail Set-up' menu.
3. Press the ↑ or ↓ button to highlight 'Software Download' then press the OK button to display the 'Software Download' menu.

4. Press the ↑ or ↓ button to change the 'Current Setting'. If you wish to receive downloads, the 'Current Setting' should be set to 'On'. If you do not wish to receive downloads, the 'Current Setting' should be set to 'Off'.
5. Press the OK button to confirm.
6. Press the BLUE button to return to the Main menu.
7. Press the BLUE button on the remote control to remove the 'Digital INFO display' from the TV screen.

System Information

This is an information screen only. It tells you the current version of the software in your TV together with the signal strength, as indicated by the red bar in the display.

1. Press the ⓘ button on the remote control to display the 'Digital INFO display'. Press the BLUE button to display the 'Main Menu'.
2. Press the ↑ or ↓ button to highlight 'Detail Set-up' then press the OK button to display the 'Detail Set-up' menu.
3. Press the ↑ or ↓ button to highlight 'System Information' then press the OK button to display the 'System Information' menu.

4. Press the BLUE button to return to the Main menu.
5. Press the BLUE button on the remote control to remove the 'Digital INFO display' from the TV screen.

The TV menu system

This TV contains a menu system which is based on a series of user friendly on-screen displays. These displays will help you to get the most from your TV, helping you to change the picture settings, sound settings and change the order of the TV channels.

The Picture Adjustment menu

1. Press the MENU button to display the main menu, then press the → button to enter the 'Picture Adjustment' menu.

2. 'Mode:' is highlighted. Press the ↓ or ↑ button to highlight one of the options, then after pressing the → button to activate the option press → and ← or ↓ and ↑ buttons to adjust the setting.

3. Press the OK button to store the new setting and repeat step 2 to adjust the other options.
   The Mode option has three settings for you to choose from:-

   Personal: This setting allows you to adjust the Brightness, Colour, Contrast and Sharpness levels to suit your personal preference.
   Live: This is a fixed setting and is recommended for live broadcasts.
   Movie: This is a fixed setting and is recommended for watching films.

4. Press the MENU button to return to normal TV operation.

Note: Highlight Reset and press OK only if you wish to return the picture to the factory preset levels.

The Sound Adjustment menu

1. Press the MENU button to display the main menu, then press the ↓ button to highlight the ♪ symbol. Now press the → button to enter the 'Sound Adjustment' menu.

2. 'Mode:' is highlighted. Press the ↓ or ↑ button to highlight one of the options, then after pressing the → button to activate the option press → and ← or ↓ and ↑ buttons to adjust the setting.

3. Press the OK button to store the new setting and repeat step 2 to adjust the other options.
   The Mode option has four settings for you to choose from:-

   Personal: This setting allows you to adjust all the available options in the 'Sound adjustment' menu to suit your personal preference.
   Rock: This is a fixed setting and is recommended for rock soundtracks.
   Pop: This is a fixed setting and is recommended for pop soundtracks.
   Jazz: This is a fixed setting and is recommended for jazz soundtracks.

Note: 'Treble' and 'Bass' settings can only be altered when the 'Mode' option is set to Personal.

4. When 'Detail Adjustment' is highlighted, press the → button to display the 'Detail Adjustment' sub menu. This menu gives you a further three options to choose from.

continued...

5. Highlight and activate one of the options using the ⬇ and ➡ buttons, then press the ⬇ or ⬆ buttons to set the option to On or Off. See the table below for an explanation of each option and their effects.

6. Press the OK button to store the new setting, then repeat step 5 to alter the other options.

7. Press MENU button to return to normal TV operation.

Dolby* Virtual	When set to 'On', the TV simulates the effects of Dolby Pro Logic Surround sound. **Note:** If you connect headphones to this TV or if you set the 'Auto Volume' option to 'On', 'Dolby Virtual' will automatically be set to Off.
Auto Volume	When set to 'On', the volume level will remain constant even if the broadcast level should change, i.e. during commercial breaks. **Note:** This option automatically sets itself to 'Off' when 'Dolby Virtual' is set to 'On'.
TV Speakers	Set to 'Off' if you wish to connect an external amplifier to the audio output sockets on the rear of the TV.

- **Notes on the Sound Adjustment menu**
- Highlight 'Reset' and press OK only if you wish to return the sound settings to their factory preset levels.
- When receiving a bilingual broadcast set the 'Dual Sound' option to 'A' for channel 1 sound, 'B' for channel 2 sound or 'Mono' if the mono channel is available for selection. When receiving a stereo broadcast the 'Dual Sound' option can be set to Stereo or Mono.

* This TV has been designed to create a Virtual Dolby Surround sound effect from a 'Dolby Pro Logic Surround' broadcast without the need for additional speakers. However, you can connect an external amplifier to this TV if desired (see 'Connecting additional equipment' section of this manual).

* Manufactured under licence from Dolby Laboratories. 'Dolby', 'Pro Logic' and the double-D symbol are trademarks of Dolby Laboratories.

The Timer menu

The 'Sleep Timer' allows you to select a period of time after which the TV automatically switches itself into standby mode.

1. Press the MENU button to display the main menu. Use the ⬇ or ⬆ button to highlight the ⏲ symbol. Press the ➡ button twice to highlight 'Off' in the 'SleepTimer' menu.

2. Press the ⬇ or ⬆ buttons to set the amount of time before the TV switches itself into standby. This can be in 15 minute intervals up to a maximum of 4 hours.

3. Press the OK button to store.

4. Press the MENU button to return to normal TV operation. One minute before the TV switches into standby, the time remaining is counted down on screen.

Note: In analogue mode you can check the time remaining until standby by pressing the ⓘ button. The time remaining is displayed in the bottom left corner of the TV screen.

The Set Up menu

The 'Set Up' menu contains many features that enable you to customise your TV. The following pages explain all of the features contained in the 'Set Up' menu.

Auto Tuning

The TV automatically tuned in all the available channels when you first installed the TV. Follow these instructions if you wish to re-install your TV at an alternative location or search for new channels that have been subsequently launched by broadcasters.

1. With the TV in analogue mode, press the MENU button to display the main menu. Press the ⬇ or ⬆ button to highlight the 🧰 symbol, then press the ➡ button to enter the 'Set Up' menu.

2. Press the ⬇ or ⬆ buttons to highlight 'Auto Tuning' then press the ➡ button to confirm. The autotune prompt display appears on screen.

3. Press the OK button to select 'Yes' and begin the autotune procedure.
   Whilst tuning is taking place, the search and store display appears on screen.
   When all available signals have been captured and stored, the display is removed and the TV returns to normal operation.

Notes: You can cancel the tuning at any time by pressing the MENU button.

Programme Sorting

You can use this feature to change the order in which the analogue channels are stored on your TV.

1. With the TV in analogue mode, press the MENU button to display the main menu. Press the ⬇ or ⬆ button to highlight the 🧰 symbol, then press the ➡ button to enter the 'Set Up' menu.

2. Press the ⬇ or ⬆ buttons to highlight 'Programme Sorting' then press the ➡ button to display the Programme Sorting menu on screen.

3. Press the ⬇ or ⬆ button to highlight the channel you wish to move to a new position, then press the OK button.

4. Press the ⬇ or ⬆ button to highlight the new channel number for your channel, then press the OK button.

5. Repeat steps 3 and 4 to move other channels if required, then press the MENU button to return to normal TV operation.

Remote control of connected equipment

This remote control can operate not only Sony DVDs and VCRs, but also those made by other manufacturers. The following instructions will guide you through the set up procedure.

1. Find the 3 digit code for your brand from the list below.
2. Press the Media Select button on the remote control until either the green VCR light is illuminated **OR** the green DVD light is illuminated.
3. Whilst the required green light is illuminated, press and hold down the YELLOW button for approximately 6 seconds, until the light starts to flash.
4. Use the numbered buttons to enter the 3 digit code for your DVD or VCR. Once a correct number has been entered, all three green lights will illuminate momentarily.
5. Turn on your DVD or VCR and check that the remote control operates the main functions. If not, repeat steps 2 - 4 and enter the next 3 digit code allocated to your brand of VCR or DVD.
6. When you wish to use the remote control to operate the TV again, press the Media Select button until the TV green light illuminates. Don't forget to select VCR or DVD using the Media Select button every time you wish to operate that equipment with this remote control.

Note: The brand codes you set may be lost if weak batteries are not replaced immediately. Should this happen, use the above procedure to re-enter the code. A small label has been attached to the inside of the battery cover for you to make a note of your brand codes. Not all brands and models of DVDs or VCRs are covered in this list, however, Sony will endeavour to update the software periodically. Please refer to the code table provided with your remote control.

VCR Brand List		DVD Brand List	
Brand	**Code**	**Brand**	**Code**
SONY (VHS)	301, 302, 303, 309	SONY	001
SONY (BETA)	303, 307, 310	AIWA	021
SONY (DVD)	304, 305, 306	DENON	018, 027, 020, 002
AIWA	325, 331, 351	GRUNDIG	009, 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	332, 338	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	11, 14
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

Troubleshooting

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

Problem	Cause
No picture, no sound.	• Power off. • TV in standby. • Aerial disconnected.
Poor or no picture (screen is dark), but good sound.	• Picture preset level adjustment.
No Digital channels after tuning.	• No digital transmissions in your area. • No digital transmissions from the transmitter you are currently using.
Some channels are blank.	• Weak signal. • Unsuitable aerial. • Scrambled/subscription-only channel. • Programme used only for data (no picture or sound). • Programme not being transmitted.
Standby indicator flashing.	• Digital mode Timer Record active (regular flash). • Fault (irregular flash).
Good Picture, no sound.	• Volume control. • TV speakers turned off. • Headphones are connected.
Poor picture quality.	• Wrong external mode selected on an RGB video source.
No colour on colour programmes.	• Colour level setting.
Remote control does not function.	• Batteries low. Media Selector set to wrong mode for the equipment in use.
Distorted picture when changing programmes or selecting Teletext.	• Inputs from external equipment not switched off.

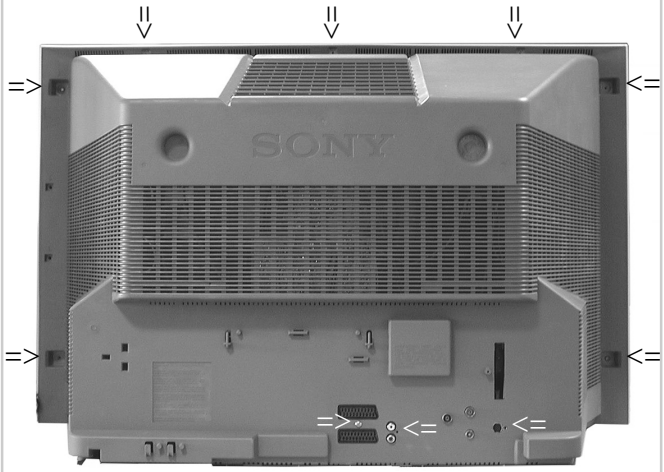
Cause	Solution
TV in standby.	• Plug in the TV. • Press the ⏻ button on the front of the TV. • If the ⏻ indicator is on press the I/⏻ button or a numbered button on the remote control.
Aerial disconnected.	• Check the aerial connection.
Picture level adjustment.	• Select ▣ on the TV menu system then adjust the brightness, picture and colour balance levels.
No Digital transmissions in your area.	• Contact a local installer to find out when digital transmissions begin in your area.
No Digital transmissions from the transmitter you are currently using.	• Contact a local installer to find out at which transmitter you should be pointing your aerial.
Unsuitable aerial.	• Change your aerial to cover the channels used by digital programmes. (Contact a local installer)
Weak signal.	• Ensure aerial is correctly aligned to transmitter. • Ensure aerial is plugged directly into the TV (not through other equipment). • Upgrade to a higher gain aerial.
Scrambled/subscription-only channel.	• Subscribe to pay-per-view broadcaster.
Programme information without picture or sound.	• See 'Skipping a programme' section of this manual. • See 'Programme Sorting' section of this manual.
Fault.	• Do not open the cabinet, refer to qualified personnel. • Contact your nearest Sony Service Centre.
Volume control.	• Press the ◿ + button on the remote control.
TV speakers turned off	• Refer to 'The Sound menu' section in this manual • If 🔇 is displayed on the screen, press the 🔇 button on the remote control.
Wrong external mode selected.	• Disconnect headphones. • Press the ⇦ button repeatedly until the RGB symbol ⇨▭ is displayed on screen.
Colour level setting.	• Select ▣ on the TV menu system then adjust the colour setting.

- **If you continue to have these problems, have your TV serviced by qualified personnel or you can contact the Sony UK Digital HelpLine on 0870 600 1717.**
- **NEVER open the casing yourself.**

-

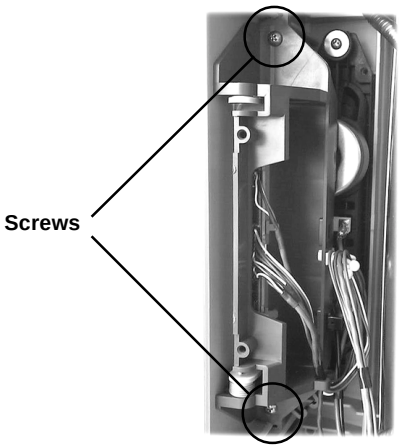
SECTION 2 DISASSEMBLY

2-1. Rear Cover Removal



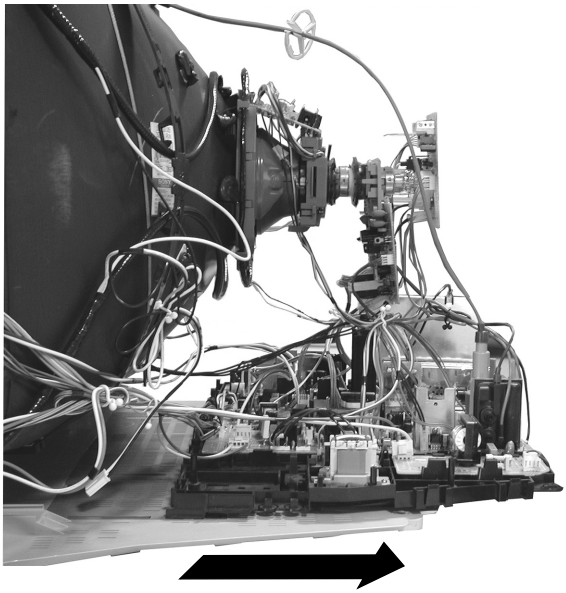
Remove the rear cover fixing screws indicated and withdraw the rear cover from the beznet.

2-2. Side Control Module Removal

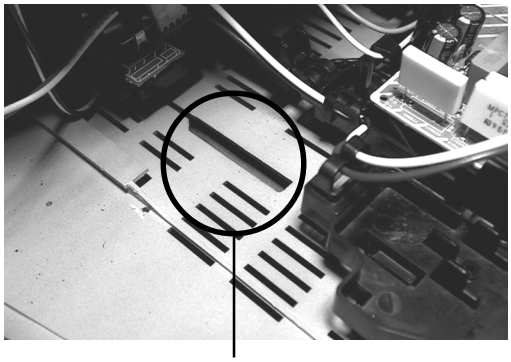


Remove the two screws fixing the user control module to the side of the set. The control module can then be removed by sliding it towards the rear of the set allowing access to the H2 Board.

2-3. Chassis Removal and Refitting

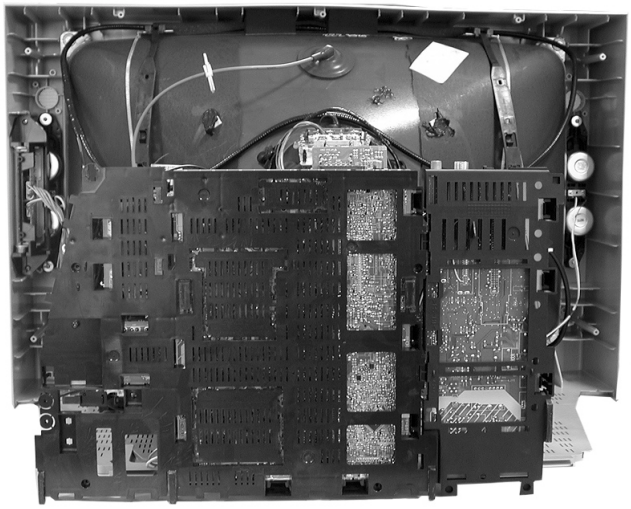


To remove lift the main bracket rear slightly and slide the chassis away from the beznet. Ensure that the interconnecting leads are released from their purse locks to prevent damage being caused.



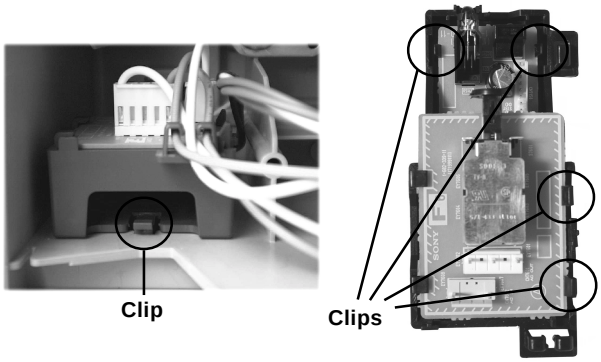
When refitting the chassis ensure that the main bracket is located in the beznet guide slots before sliding the chassis forwards. Refit the interconnecting leads in their respective purse locks.

2-4. Service Position



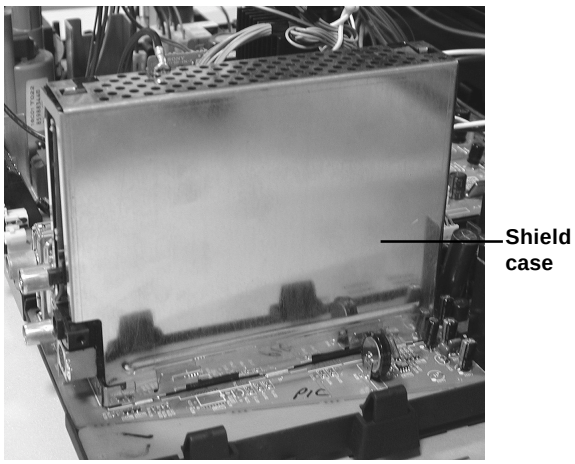
Position the chassis as indicated to access the solder side of the PWB's. To gain access to the A Board follow the instructions on page 16. [Removal and Replacement of the main bracket bottom plates].

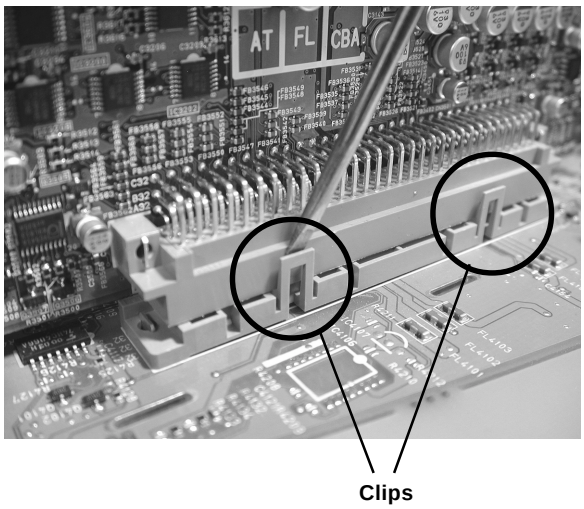
2-5. F6 and H8 Board Removal



Release the clip circled and pull the F6 bracket towards the rear of the set. The bracket can then be removed to allow access to the boards.
To remove the F6 and H8 Boards release the clips circled and ease the boards gently away from the support bracket.

2-6. N Board Removal



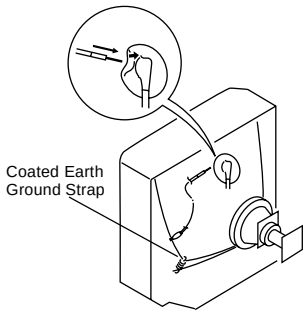


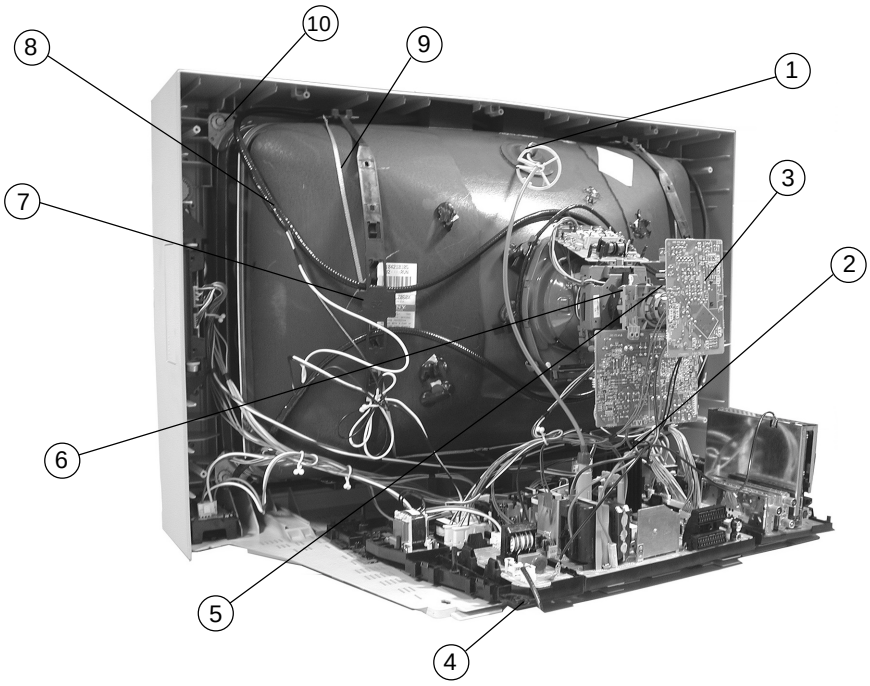
Remove the shield case by pulling vertically until it is clear of the N Board. Release the N board socket retaining clips, circled, by gently prising them with a screwdriver and carefully lift the N Board vertically.

2-7. 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.

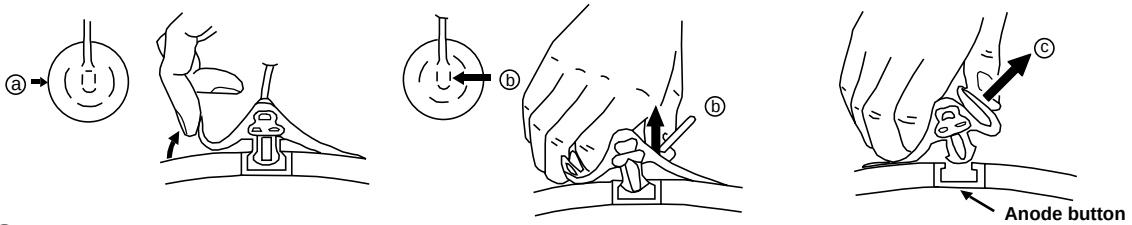




1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the Deflection yoke, neck assy, degaussing coils and CRT grounding strap.
3. Remove the C Board from the CRT.
4. Remove the chassis assembly.
5. Loosen the Neck assembly fixing screw and remove.
6. Loosen 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 tentioners.
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.**



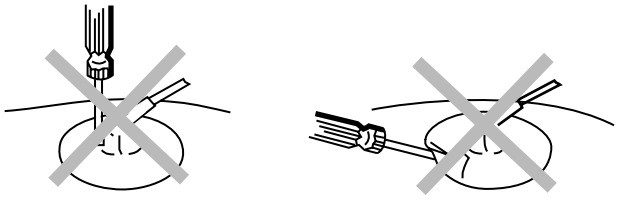
① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ

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

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

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.

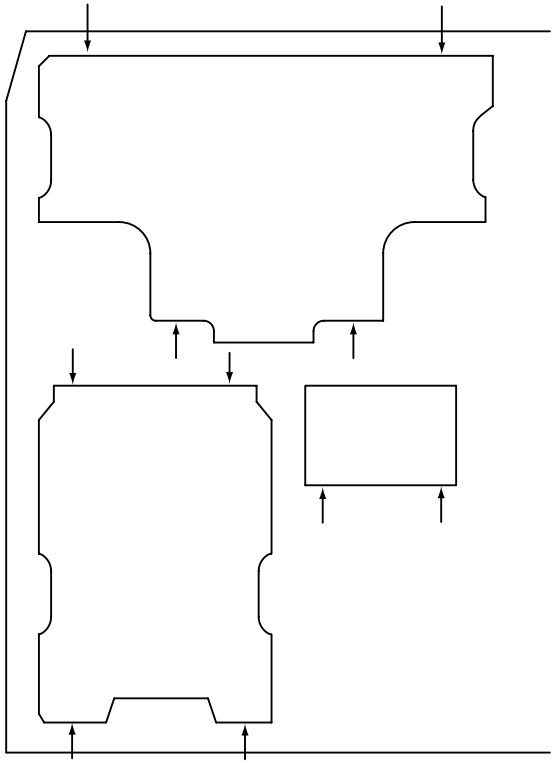


REMOVAL AND REPLACEMENT OF THE MAIN-BRACKET BOTTOM PLATES.

(1) REMOVING THE PLATES

In the event of servicing being required to the solder side of the D Board printed wiring board, 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 and secured by3 gates.
Only remove the necessary plate to gain access to the printed wiring board.

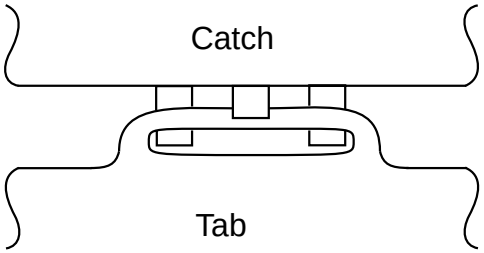


⚠ For safety reasons, on no account should the plates be removed and not refitted after servicing.

(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 ..... 80% [or remote control normal]

Brightness 50%

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.

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 set's power and degauss with the degausser.

3-1. Beam Landing

1. Input an all white signal from the pattern generator. Set the Contrast and Brightness to normal.
2. Set the pattern generator raster signal to Red.
3. Move the deflection yoke forward and adjust with the purity control so that the Red is at the centre and the Blue and Green take up equally sized areas on each side of the screen. [See Fig.3-1 - 3-3].
4. Move the deflection yoke backwards and adjust so that the entire screen becomes Red. [See Fig.3-1]
5. Switch the raster signal to Blue, then to Green and verify the condition.
6. When the position of the deflection yoke has been determined, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to correct it. [See Fig.3-4]

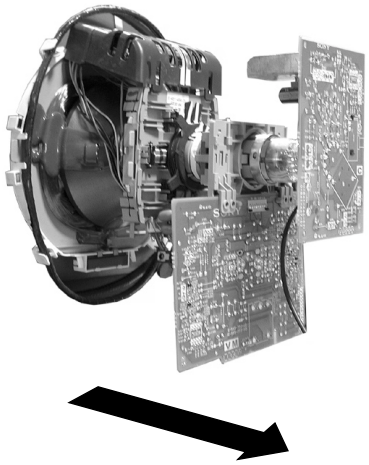


Fig. 3-1.

Caution :

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

Fig. 3-2.

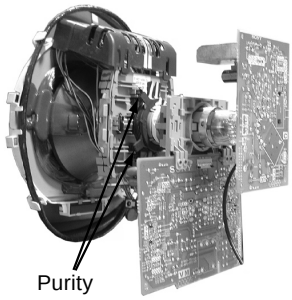
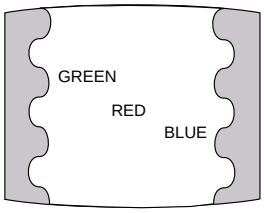


Fig. 3-3.



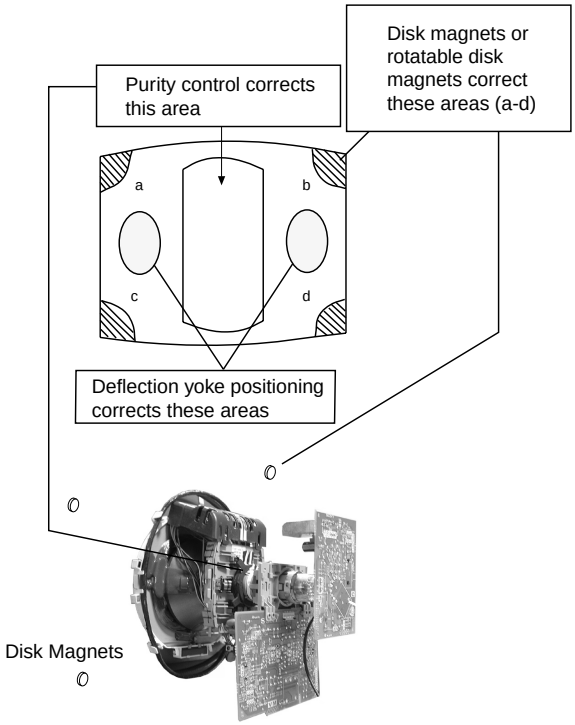


Fig.3-4

3-2. Convergence

Preparation:

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Minimize the Brightness setting.
- Input a dot pattern from the pattern generator.

Horizontal and Vertical Static Convergence

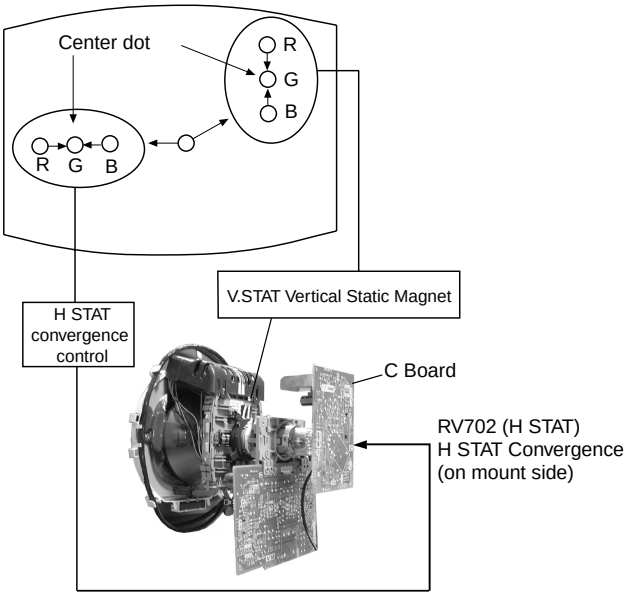
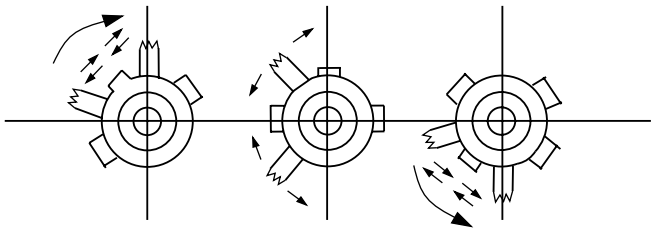


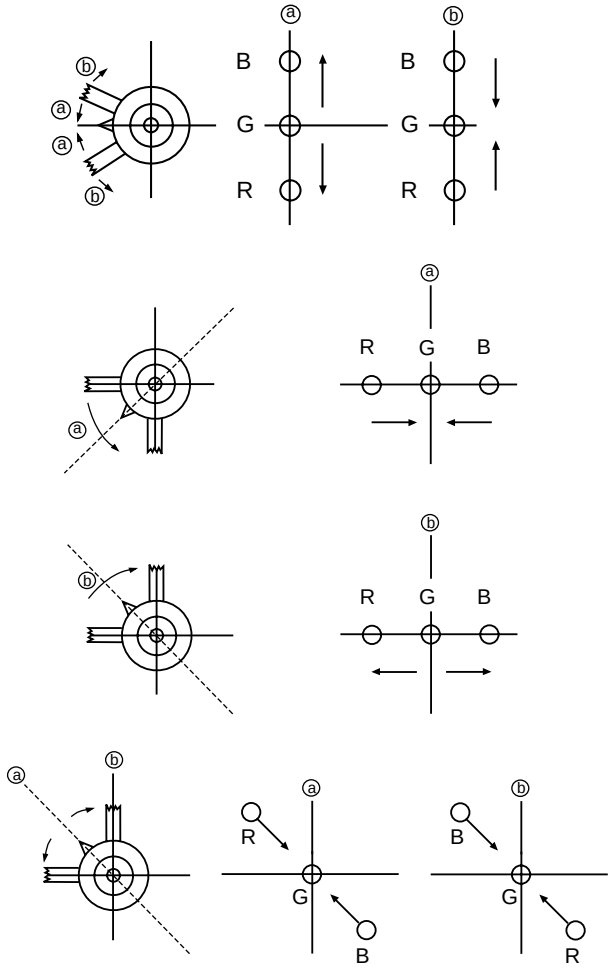
Fig.3-5

1. [Moving horizontally], adjust the H.STAT control so that the Red, Green and Blue points are on top of each other at the centre of the screen.
2. [Moving vertically], adjust the V.STAT magnet so that the Red, Green and Blue points are on top of each other at the centre of the screen.
3. If the H.STAT variable resistor is unable to bring the Red, Green and Blue points together at the centre of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner indicated below.
   [In this case, the H.STAT variable resistor and the V.STAT magnet influence each other].

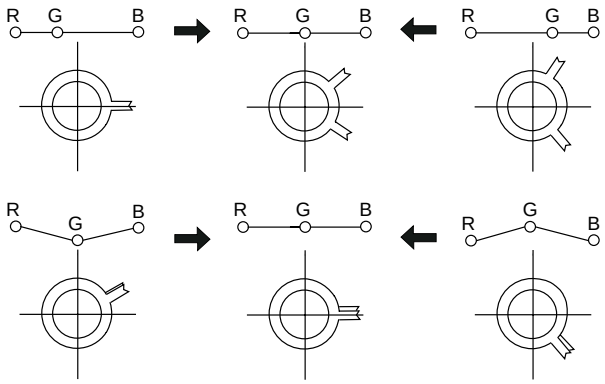
   - Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the Red, Green and Blue points move as indicated below.



Operation of the BMC (Hexapole) magnet.



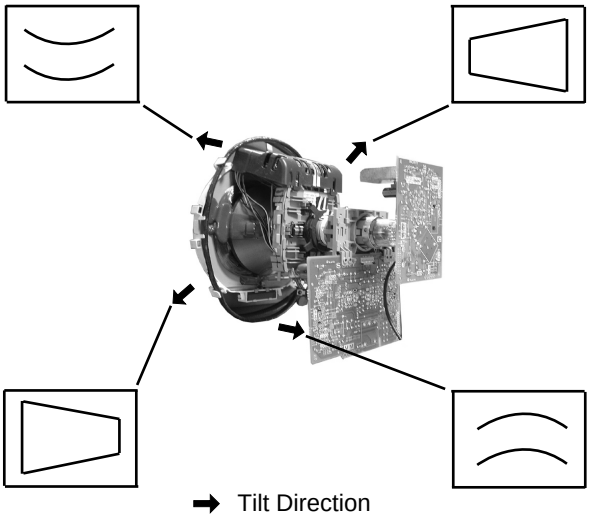
The movement of the magnets interact with each other and so the respective dot position should be monitored while carrying out this adjustment.
Use the H.STAT VR to adjust the Red, Green and Blue dots so that they coincide at the centre of the screen
(by moving the dots in the horizontal direction).

Geometry Adjustment.

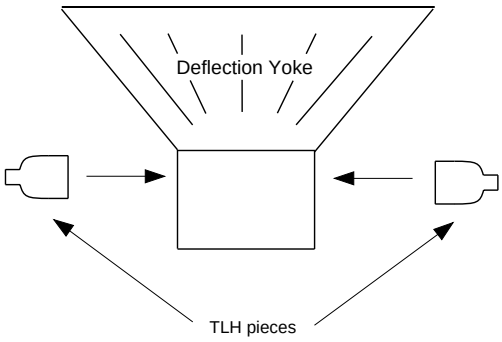
Preparation:

Before starting this adjustment, adjust the horizontal and vertical static convergence.

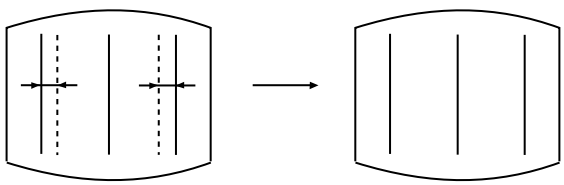
1. Remove the deflection yoke spacer.
2. Tilt the deflection yoke as indicated in the figure below and optimise the geometry.
   Tilting the DY Up and Down will balance the upper and lower pin adjustment.
   Tilting the DY Left and Right will balance the H-Trap adjustment.
3. Re-install the deflection yoke spacer.



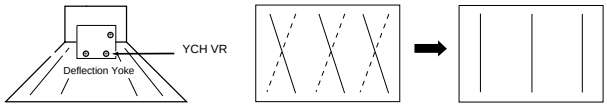
HTIL Adjustment



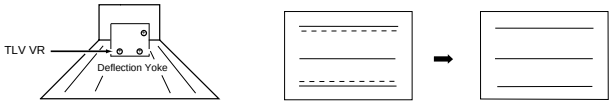
HTIL correction can be performed by adding a TLH correction assembly to the Deflection yoke.



YCH Adjustment

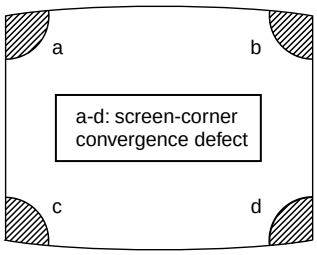


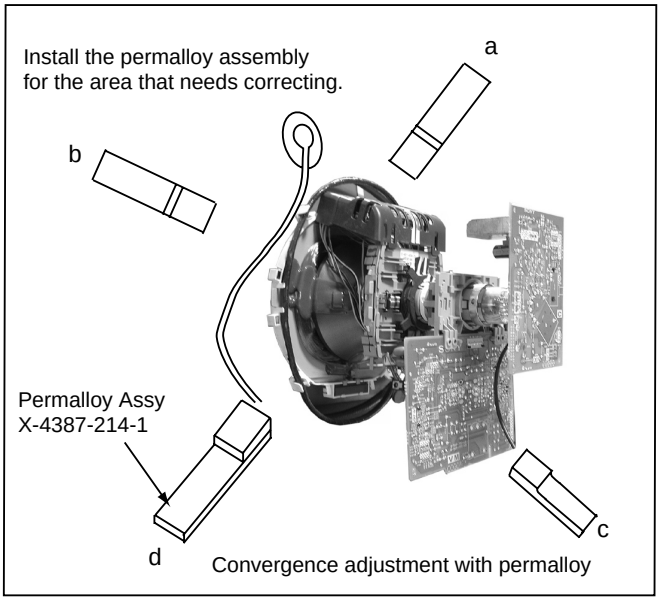
TLV Adjustment



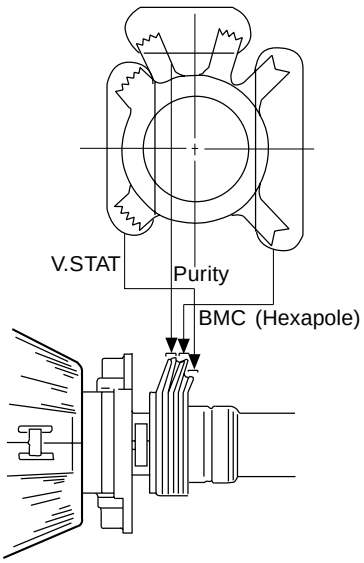
Screen Corner Convergence

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



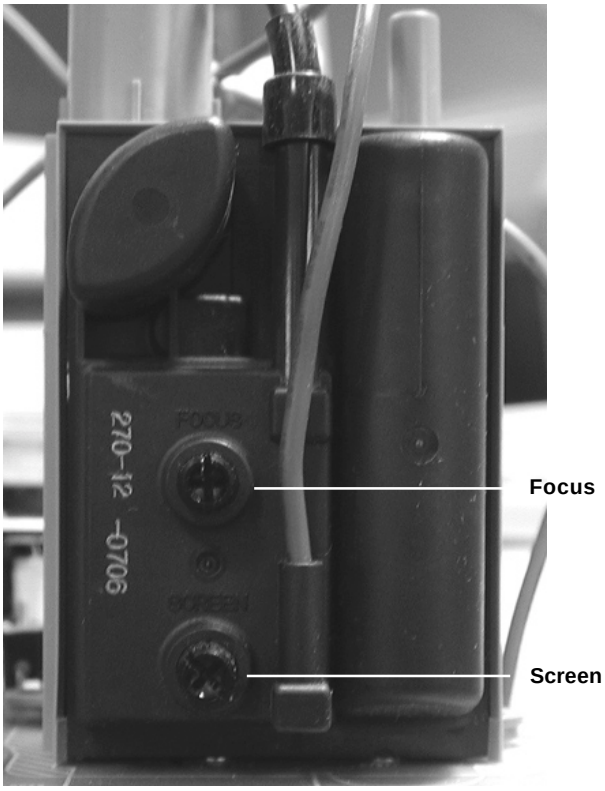


Layout of each control



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-ring 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. Enter the 'Service Mode' by pressing 'TEST', 'TEST' and '38' (TT-38) on the remote commander, to set up the G2 service adjustment mode.
3. Whilst watching the picture, adjust the G2 control [SCREEN] located on the Flyback Transformer to the point where the OSD menu indication shows "OK".

White balance adjustment for TV mode

1. Input an all-white signal from the pattern generator.
2. Enter into the 'Service Mode' by pressing 'TEST', 'TEST' and 'MENU' on the Service Commander.
3. Select 'Service' from the on screen menu display and press the right arrow button on the remote commander.
4. The 'Service' menu will appear on the screen.
   [See Page 21]
5. Set the 'Contrast' to MAX.
6. Set the 'R-Drive' to 25.
7. Adjust the 'G-Drive' and the 'B-Drive' so that the white balance becomes optimum.
8. Press the 'OK' button to write the data for each item.
9. Set the 'Contrast' to MIN.
10. Adjust the 'G-Cutoff', and the 'R-Cutoff' with the left and right buttons on the remote commander so that the white balance becomes optimum.
11. Press the 'OK' button to write the data for each item.

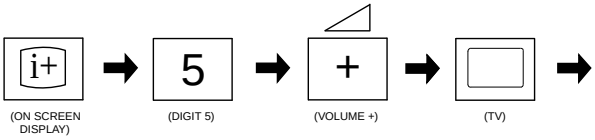
SECTION 4 CIRCUIT ADJUSTMENTS

4-1. Electrical Adjustments

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

How to enter into the Service Mode

1. Turn on the main power switch and enter into the stand-by mode.
2. Press the following sequence of buttons on the Remote Commander.



'TT—' will appear in the upper right corner of the screen. Other status information will also be displayed.

3. Press 'MENU' on the remote commander to obtain the following menu on the screen.

```
Geometry
Service
Design
Status
Sound
IF adjust
Error Menu

FE-2 Digital v0.03
Factory data    FFh   FFh
MSP Device : MSP3411G
```

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

Note :

- Before performing any adjustments ensure that the correct model has been selected in the 'Model Setting' menu.
- After carrying out the service adjustments, to prevent the customer accessing the 'Service Menu' switch the TV set OFF and then ON.

ERROR MENU

E02	OCP	(0, 255)	0
E03	OVP N/A	(0, 255)	0
E04	VSYNC	(0, 255)	0
E05	IKR	(0, 255)	0
E06	IIC	(0, 255)	0
E07	NVM	(0, 255)	0
E08	JUNGLE	(0, 255)	0
E09	TUNER	(0, 255)	0
E10	SOUNDP	(0, 255)	0
E11	8V	(0, 255)	0

WORKING TIME

HOURS	2
MINUTES	11

SERVICE

Offset-R	(0, 63)	Adj
Offset-G	(0, 63)	Adj
R-Drive	(0, 63)	31
G-Drive	(0, 63)	Adj
B-Drive	(0, 63)	Adj
Peak-Freq	(0, 3)	0
Luma-Delay	(0, 15)	8
SC0	(0, 3)	3
White-Peak	(0, 15)	15
Subcont	(0, 15)	8
Subright	(0, 63)	30
Subcol	(0, 63)	Adj
Subsharp	(0, 63)	25
Cutoff Br.	(0, 63)	31
Br OSD	(0, 15)	10
Br TXT	(0, 15)	7

GEOMETRY

V-Linearity	(0, 63)	Adj
V-Scroll	(0, 63)	32
Left-HBlk	(0, 15)	10
Right-HBlk	(0, 15)	7
V-Angle	(0, 63)	Adj
V-Bow	(0, 63)	Adj
H-Centre	(0, 63)	Adj
H-Size	(0, 63)	Adj
Pin-Amp	(0, 63)	Adj
U-Corner-Pin	(0, 63)	Adj
L-Corner-Pin	(0, 63)	Adj
Pin Phase	(0, 63)	Adj
V-Slope	(0, 63)	40
V-Size	(0, 63)	Adj
S-Correction	(0, 63)	Adj
V-Centre	(0, 63)	Adj
V-Zoom	(0, 63)	27
Magenta	(0, 63)	31

IF ADJUST

AGC Adjust	(-16, +15)	+0
Automute		1
Audio Gain		0
L Gating		0

Sub Brightness Adjustment

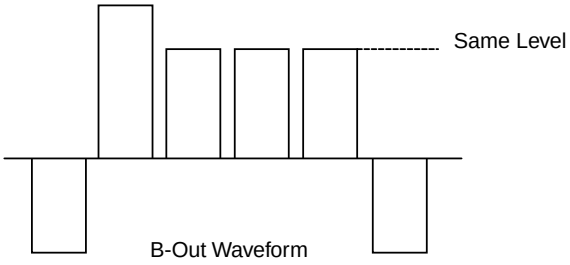
1. Input a Monoscope pattern.
2. Press 'TEST' 'TEST' 13 on the Remote Commander.
3. Adjust the 'Sub-Brightness' data so that there is barely a difference between the 0 IRE and 10 IRE signal levels.

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 J701 [C Board].
3. Adjust the Sub-Contrast ['TT11'] to obtain a voltage of 105 +/- 5V.

Sub Colour Adjustment

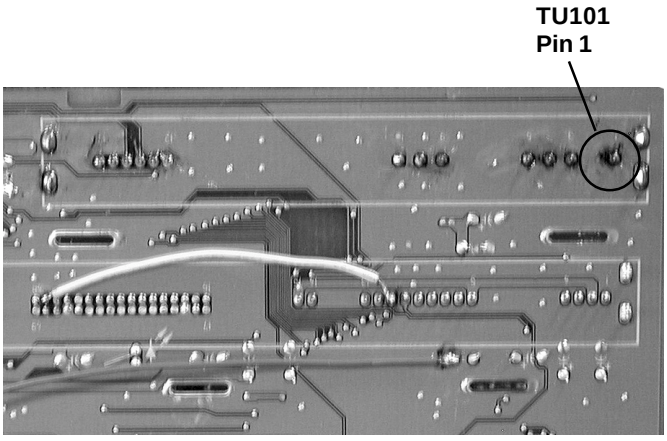
1. Receive a PAL colour bar signal.
2. Connect an oscilloscope to Pin 5 of CN003 [A Board].
3. Enter into the 'Service' service menu.
4. Adjust the 'Sub Colour' data so that the Cyan, Magenta and Blue colour bars are of equal levels as indicated below.



Tuner AGC Adjustment

Note:
There should be no need to adjust the AGC as this is pre-adjusted during manufacture of the FRONTEND. If the AGC does need adjustment then follow steps 1. to 4. below.

1. Receive a signal of 62dBuV / 75 ohm terminated via the tuner antenna socket.
2. Connect a voltmeter to pin1 of TU101 [print side of A1 Board] or to the AGC pin of CN301 [mount side of A Board].
3. Confirm that the AGC voltage is 3.5volts +/- 0.3volts.
4. If adjustment is required, then re-adjust the AGC variable resistor (located at the top rear of the FRONTEND) to obtain a voltage of 3.5V +/- 0.3V.

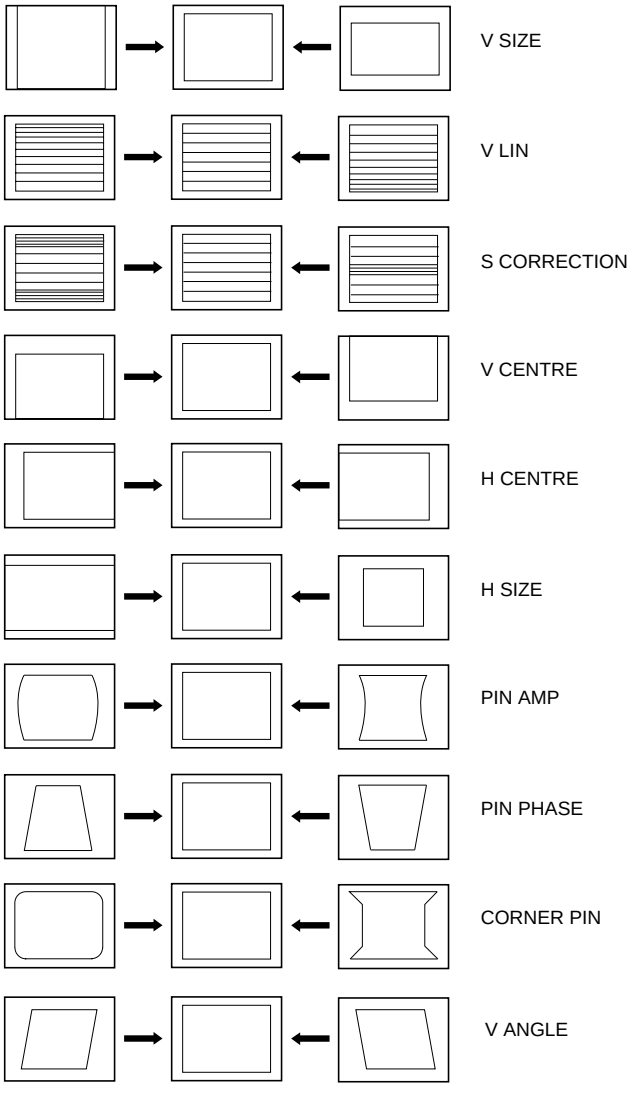


[Print side of A1 board]

Deflection System Adjustment

1. Enter into the 'Geometry' service menu.
2. Select and adjust each item in order to obtain the optimum image.

GEOMETRY		
V-Linearity	(0, 63)	Adj
V-Scroll	(0, 63)	32
Left-HBlk	(0, 15)	10
Right-HBlk	(0, 15)	7
V-Angle	(0, 63)	Adj
V-Bow	(0, 63)	Adj
H-Centre	(0, 63)	Adj
H-Size	(0, 63)	Adj
Pin-Amp	(0, 63)	Adj
U-Corner-Pin	(0, 63)	Adj
L-Corner-Pin	(0, 63)	Adj
Pin Phase	(0, 63)	Adj
V-Slope	(0, 63)	40
V-Size	(0, 63)	Adj
S-Correction	(0, 63)	Adj
V-Centre	(0, 63)	Adj
V-Zoom	(0, 63)	27
Magenta	(0, 63)	31



4-2. TEST MODE 1:

Test Mode 1 is available by pressing the 'TEST' button once, OSD 'T' appears. The functions described below are available by selecting the indicated keys. The 'T' is released automatically after each command is executed.

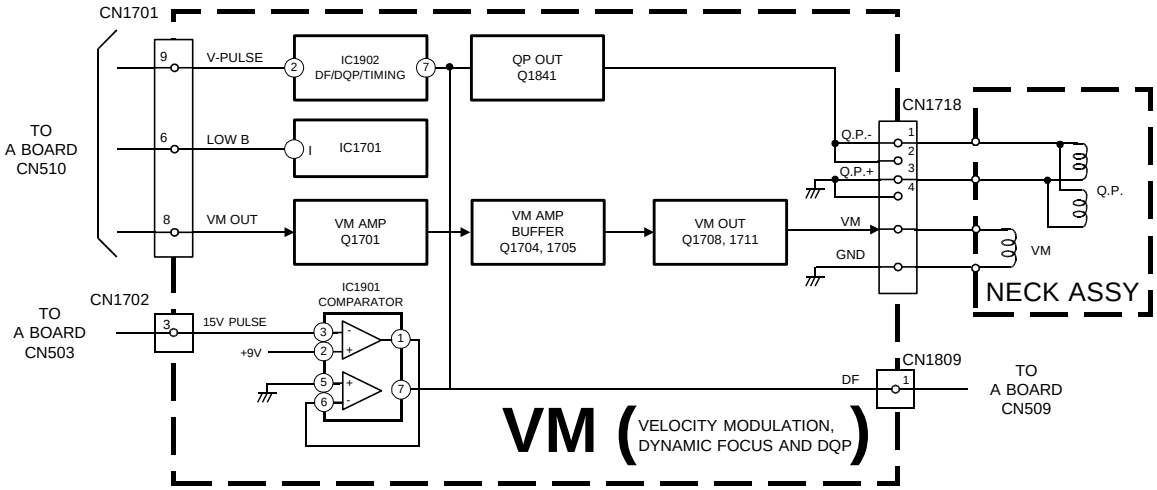
KEY	T-MODE FUNCTION
volume +	volume maximum
volume -	Picture minimum
picture +	Picture maximum
picture -	Picture minimum
colour up	colour maximum
colour down	colour minimum
brightness - bright	brightness maximum
brightness - dark	brightness minimum
hue - purplish	hue - purplish
hue - greenish	hue - greenish
sharpness - sharp	sharpness maximum
sharpness - soft	sharpness minimum
balance left	balance full left
balance right	balance full right
treble up	treble maximum
treble down	treble minimum
bass up	bass maximum
bass down	bass minimum

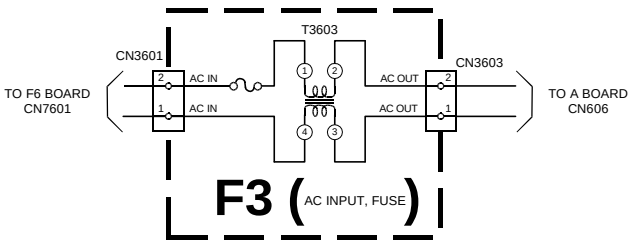
4-3. TEST MODE 2:

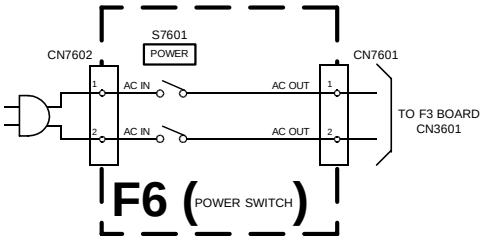
Test Mode 2 is available by pressing the 'TEST' button twice, OSD 'TT' appears. The functions described below are available by selecting the two numbers. To release the 'Test mode 2', press 00, 10, 20 ... twice or switch the TV set into Stand-by mode. In 'TT Menu' mode, it is possible to remove the Menu 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 !!.

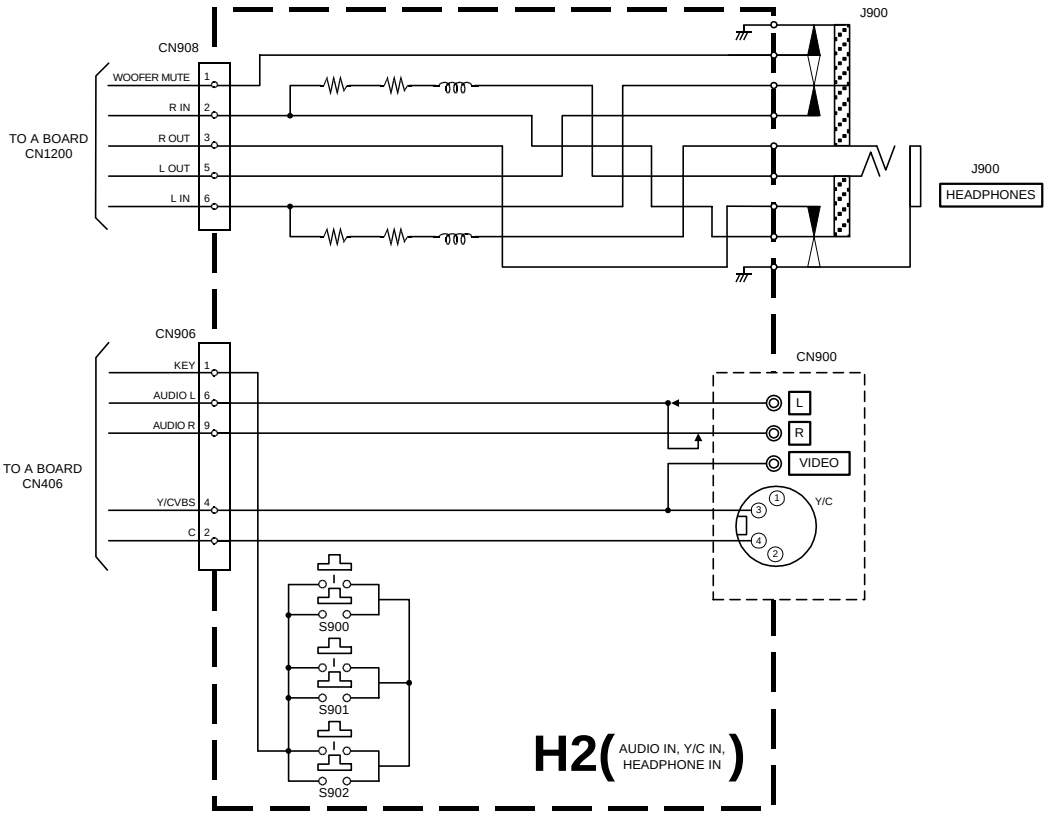
00	'TT' mode off
01	Picture maximum
02	Picture minimum
03	Set speaker/headphone Volume to 35%
04	Set speaker/headphone Volume to 50%
05	Set speaker/headphone Volume to 65%
06	Set speaker/headphone Volume to 80%
07	Ageing mode
08	Shipping Condition
11	Sub picture adjustment
12	Sub colour adjustment
13	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
33	Rotation ON/OFF
35	CRT 4:3 <> 16:9 ; Display TV status
36	Velocity Modulation (VM) OFF/ON test
38	G2 adjustment
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
51	Virtual Dolby on/off
52	Subwoofer / MPB (Bass enhancement) Enable
54	Dot structure C/M (chroma trap)ination ADEKR
55	Tuner selection (SONY/ALPS)
56	BBE enable/disable
57	BBE menu line enable/disable
61	Auto AGC Adjustment
62	AM from baseband enable/disable
63	Enable/Disable YC3 connector
64	Enable/Disable RGB priority
65	RGB auto-detect enable/disable
66	On timer enable/disable
67	Manual AGC Adjustment
68	Enable/Disable X26 countermeasure (N problem)
69	Enable/Disable ACI feature
71	Force PAL video
72	Un-force PAL (restore normal video condition)
73	Enable Zweiton D/K2 system (6.5/6.74)
74	Enable Zweiton D/K3 system (6.5/5.74)
78	Balance full left
79	Balance full right
87	Local keys test
89	Enable/Disable watchdog
91	Set 14:9 zoom mode
92	Set SMART zoom mode
93	Set 16:9 zoom mode
94	Set ZOOM mode
95	Set 4:3 zoom mode
99	Display Error and Working Time menu

5-1. BLOCK DIAGRAMS (1)

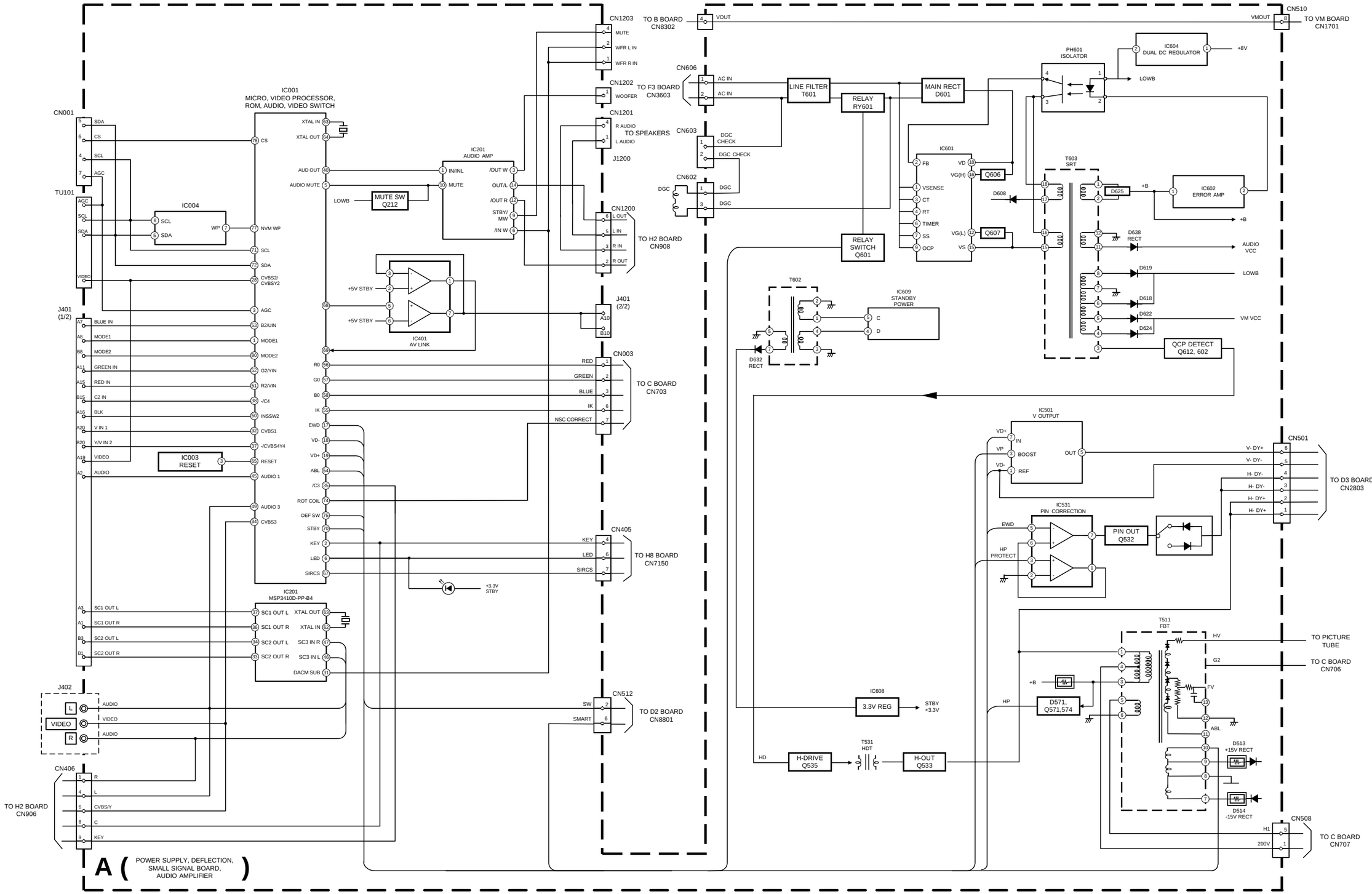




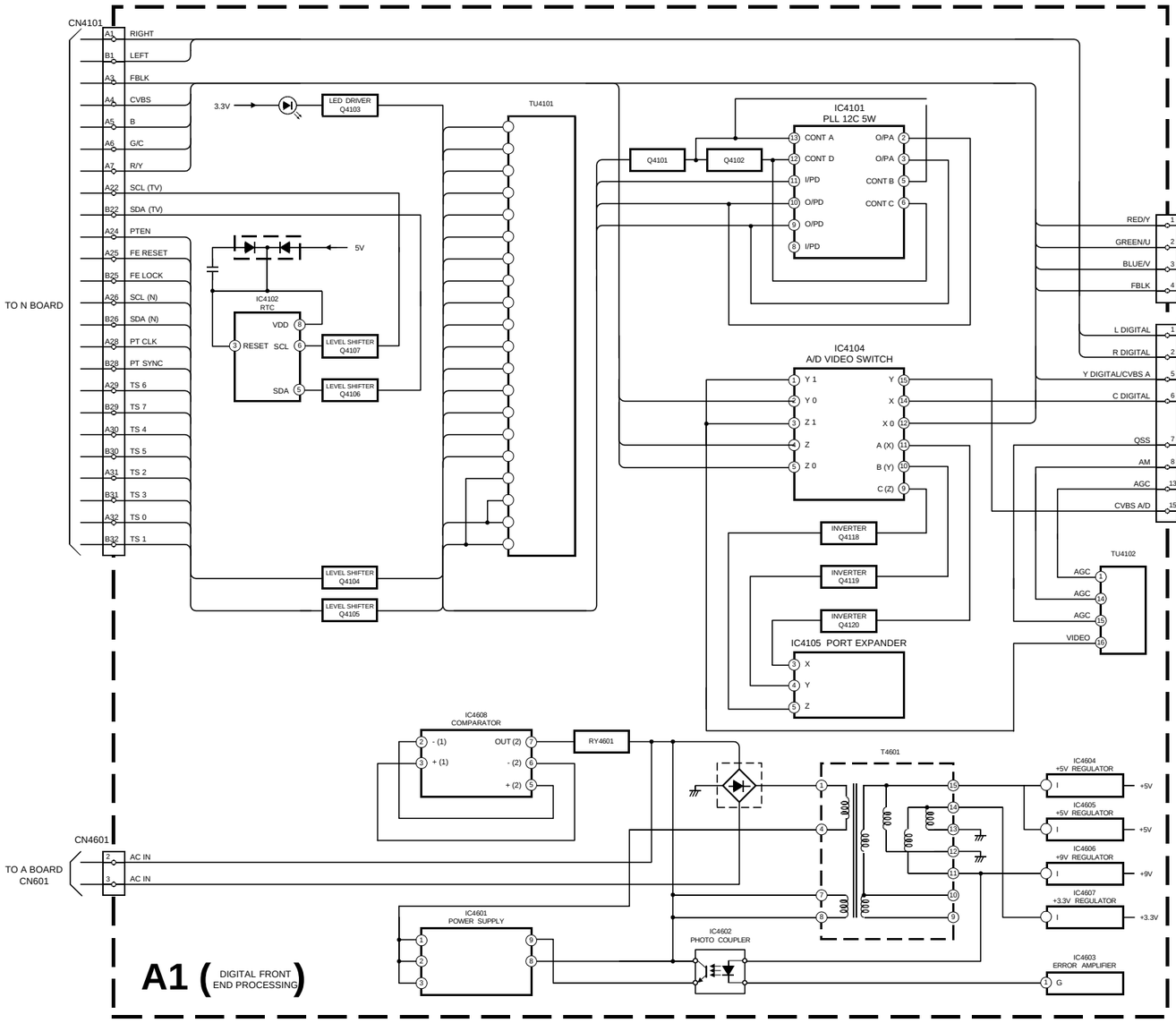


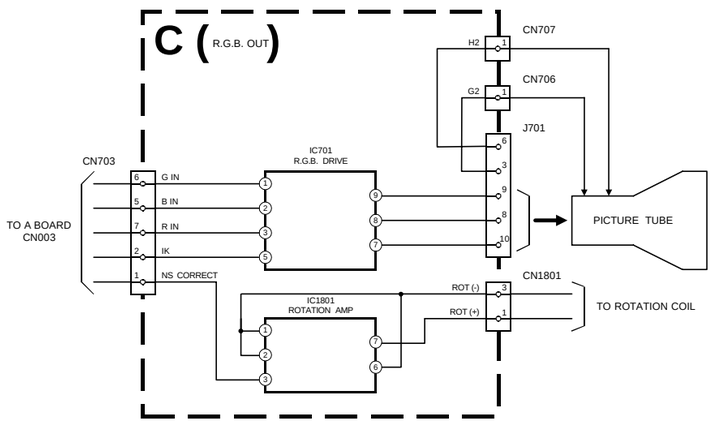


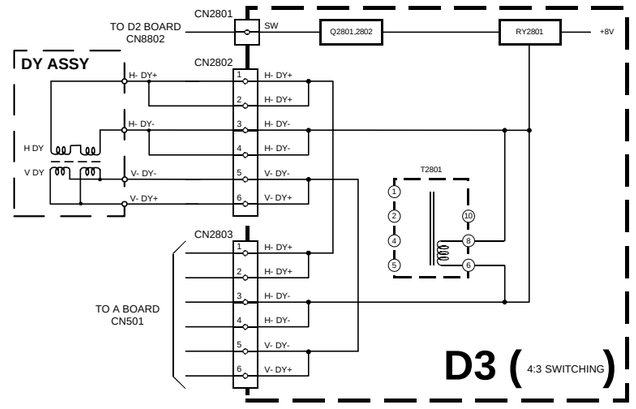
5-1. BLOCK DIAGRAMS (2)

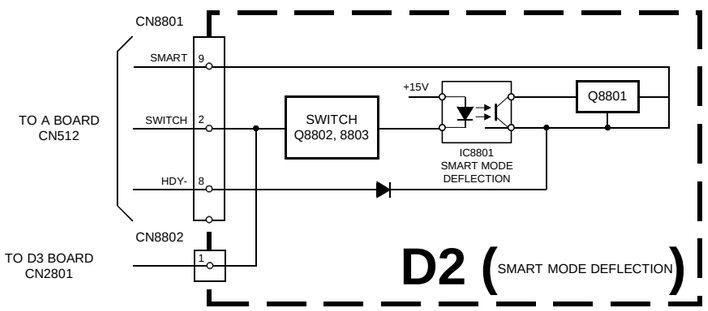


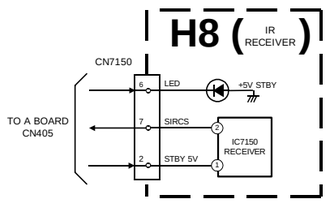
5-1. BLOCK DIAGRAMS (3)

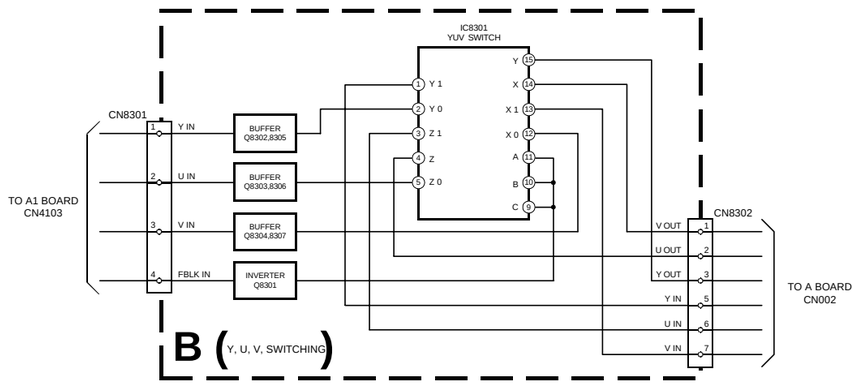




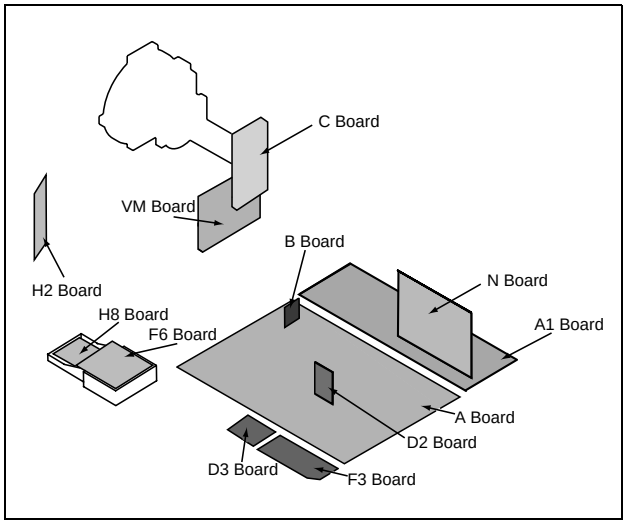








5-2. CIRCUIT BOARD LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in µF unless otherwise noted.
- pF : µµF 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 mutimeter.
- Readings are taken with a color bar input signal.
- Voltage variations may be noted due to normal production tolerences.
- : 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 ⚠ 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 ⚠ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié. specified.

~ A Board IC Voltage Table~

Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC001	1	0	IC001	67	4.8
	2	3.2		68	0.4
	3	2.9		69	0
	5	0		70	0
	6	2.0		71	0
	8	2.3		72	0
	9	8.0		73	7.1
	10	5.0		74	5.0
	12	0		75	8.1
	13	0		76	-3.5
	14	4.0		77	0
	16	1.4		78	3.2
	17	1.5		79	3.2
	18	0		80	0
	19	0	IC501	1	0.3
	20	3.8		3	-12.6
	21	3.8		5	0.2
	22	5.0		6	13.9
	26	0		7	0.3
	28	3.5	IC531	1	1.4
	29	3.6		2	2.3
	30	1.9		3	1.8
	31	0.3		5	2.4
	32	3.6		6	1.6
	34	1.9		7	6.4
	35	1.4	IC601	1	-80.4
	36	3.9		2	-80.5
	38	1.8		3	-80.2
	40	3.3		4	-80.2
	42	3.3		5	-81.5
	43	1.4		6	-81.6
	45	0		7	-77.8
	46	0		9	-81.8
	47	3.6		10	-76
	48	2.8		11	-81.9
	49	2.3		12	-79.4
	50	0.2		14	16.5
	51	2.5		15	11
	52	2.5		16	14.4
	53	2.5		18	86.4
	54	2.1	IC1201	1	11
	55	5.2		3	4.9
	56	3.0		5	0
	57	3.1		6	0
	58	3.1		7	11.3
	59	3.2		9	0.3
	62	0		10	0
	63	0		12	0
	64	0		14	11.35
	65	0			

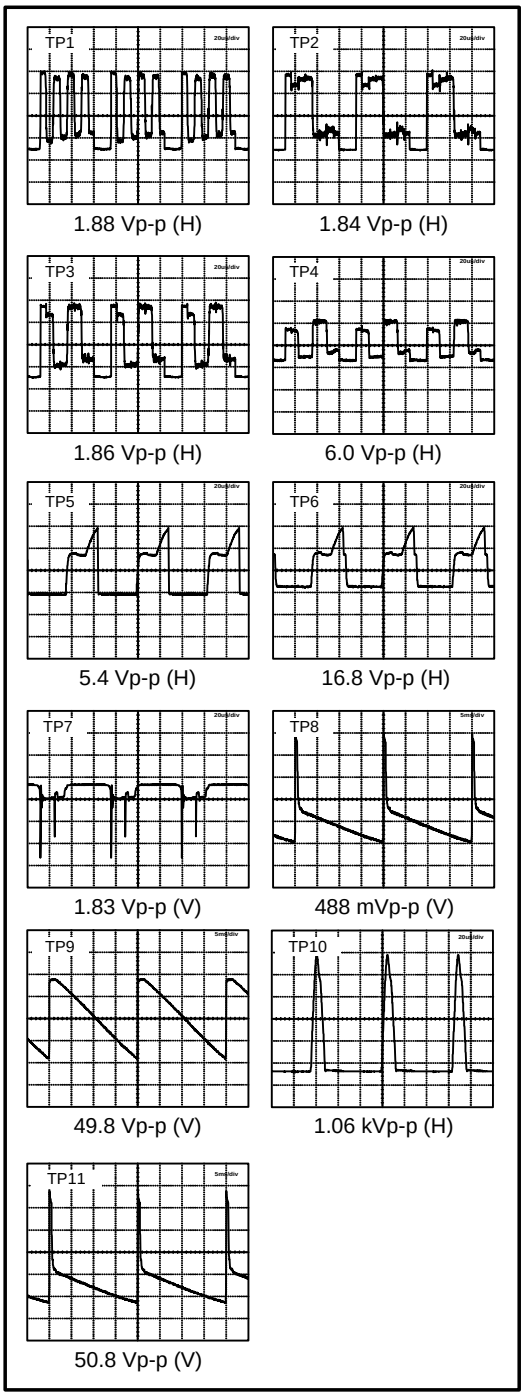
~ A Board Difference Table~

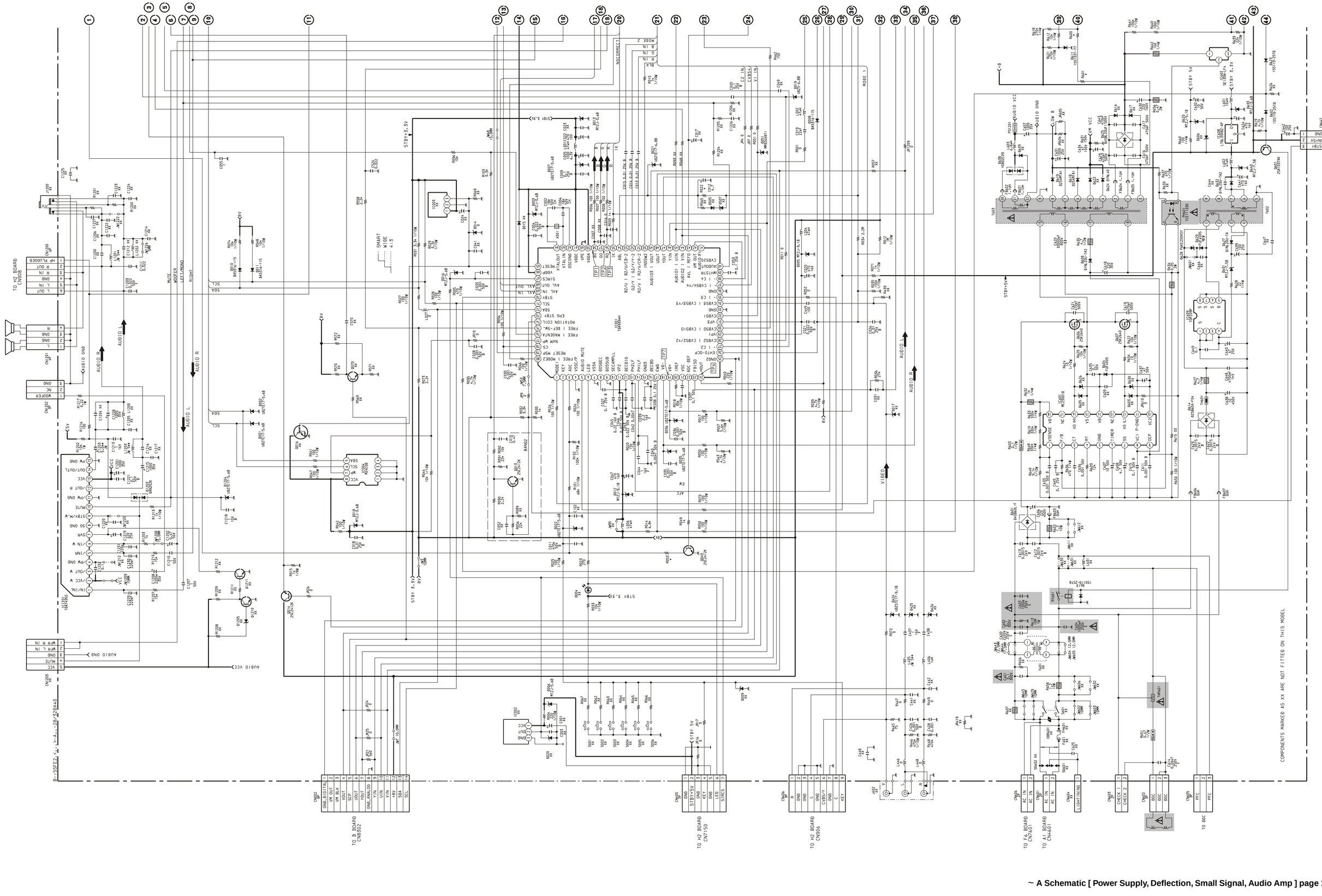
Ref	28DX40U	32DX40U
C522	0.27UF	-
C536	0.82UF	1UF
C539	1UF	2.2UF
C542	330PF	0.001UF
C547	0.82UF	0.68UF
C555	22000PF	19000PF
JR101	-	0
R022	47K	39K
R053	15K	82K
R455	0	4.7UH
R513	220K	-
R516	56K	47K
R517	18K	22K
R518	2.7K	6.8K
R521	220K	-
R534	100K	390K
R535	120K	220K
R540	33	47
R546	820	1K
R568	680	820
R583	10K	15K
R600	390	120
R601	470	680
T533	1-433-980-12 TRANSFORMER	1-429-306-11 TRANSFORMER

~ A Board Semiconductor Voltage Table ~

Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)
Q013	0	0.7	0	Q604	0	0	2.5
Q016	0	0	3.3	Q608	0	0	5.6
Q212	0	0.7	0	Q609	5.6	5.6	0
Q401	4.8	4.2	1.8				
Q411	1.1	1.7	4.2	**Ref**	**(s)**	**(g)**	**(d)**
Q601	5.6	4.8	5.3	Q606	10.9	14.5	86.7
Q602	14.2	5.1	8	Q607	-82.4	-79.9	10.9
Q603	8	8	0	Q535	0	2.5	95.2

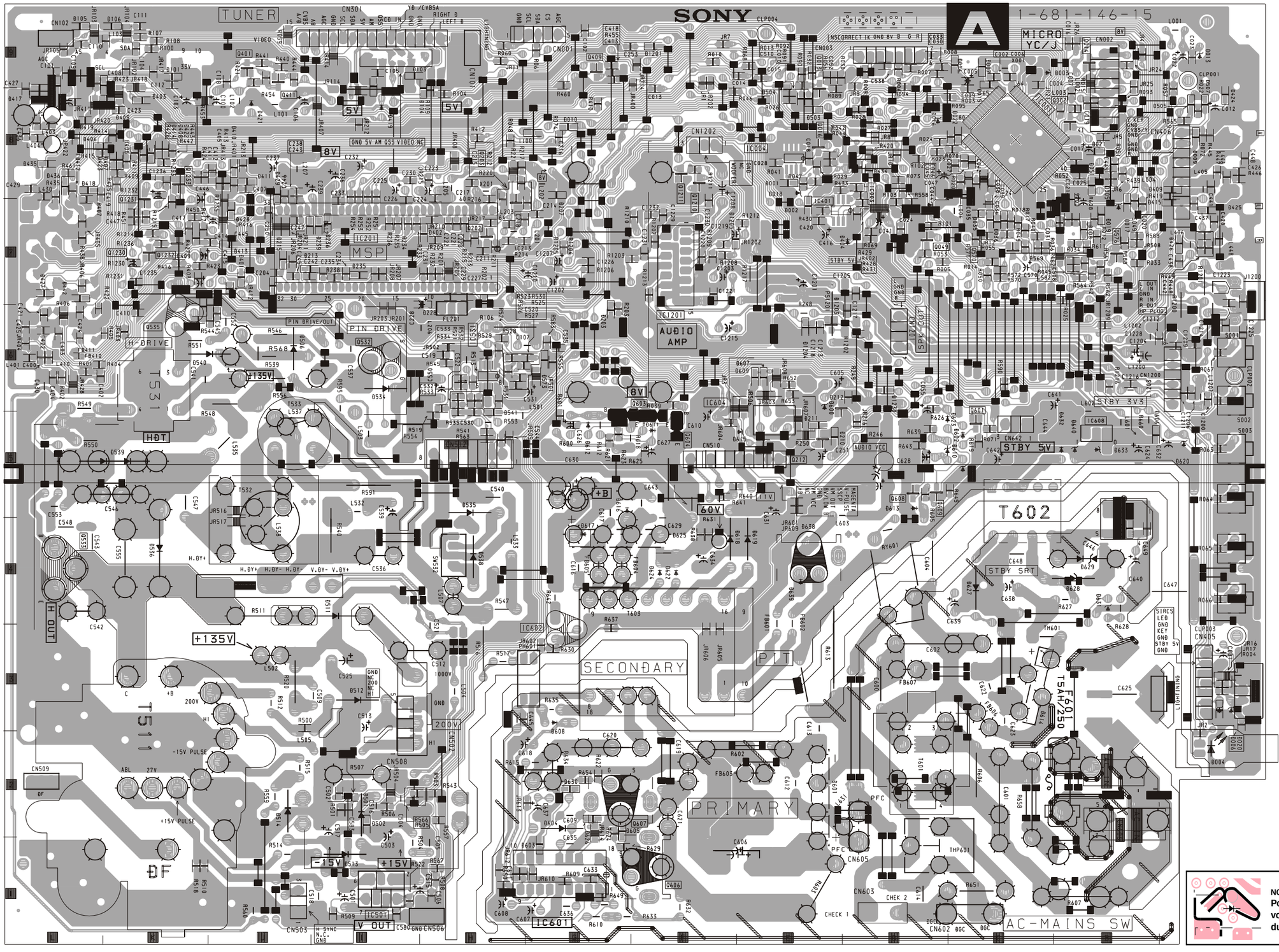
~ A Board Waveforms ~




TO H2 BOARD CN908
TO B BOARD CN8502
TO H2 BOARD CN7150
TO H2 BOARD CN906
TO F6 BOARD CN7601
TO A1 BOARD CN4601
TO DDC
AUDIO L
AUDIO R
VIDEO
STBY 5.5V
STBY 3.3V
AUDIO GND
AUDIO VCC
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL
B-SSFE2-<...>-A-...-28/32DX40

A

POWER SUPPLY, DEFLECTION,
SMALL SIGNAL BOARD, AUDIO AMP


SONY
1-681-146-15
A
MICRO
YC/J
TUNER
MSP
AUDIO AMP
H-DRIVE
PIN DRIVE
PIN DRIVE/OUT
H OUT
V OUT
HOT
SECONDARY
PRIMARY
PIT
PFC
AC-MAINS SW
T602
F601
T5AH/250
STBY 5V
STBY 3V3
STBY SRT
+135V
+15V
-15V
200V
60V
8V
5V
H.DY+
H.DY-
V.DY+
V.DY-
IC601
IC602
IC604
IC1201
IC201
IC401
IC501
IC1202
CN503
CN508
CN509
CN510
CN602
CN603
CN605
CN642
CN1202
CN1203
CN1204
CN1205
CN1206
CN1207
CN1208
CN1209
CN1210
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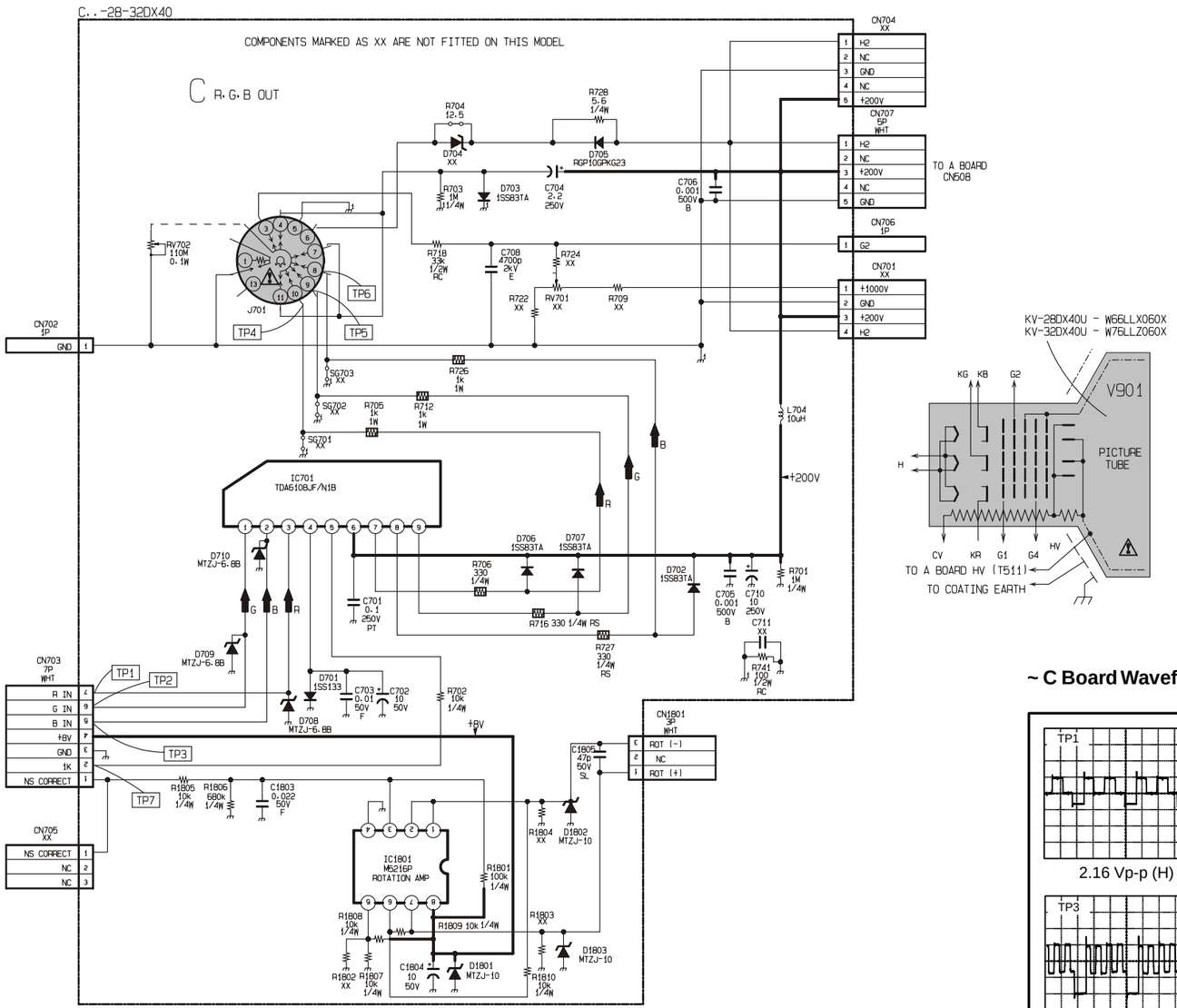
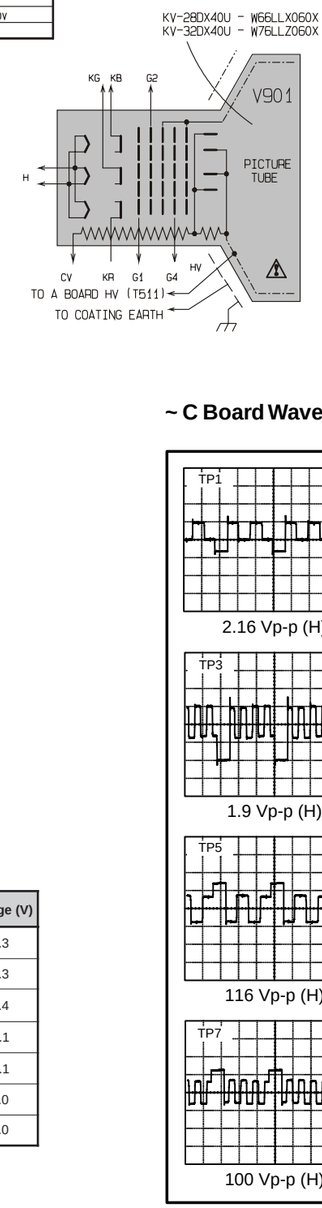
CN1234
CN1235
CN1236
CN1237
CN1238
CN1239
CN1240
CN1241

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





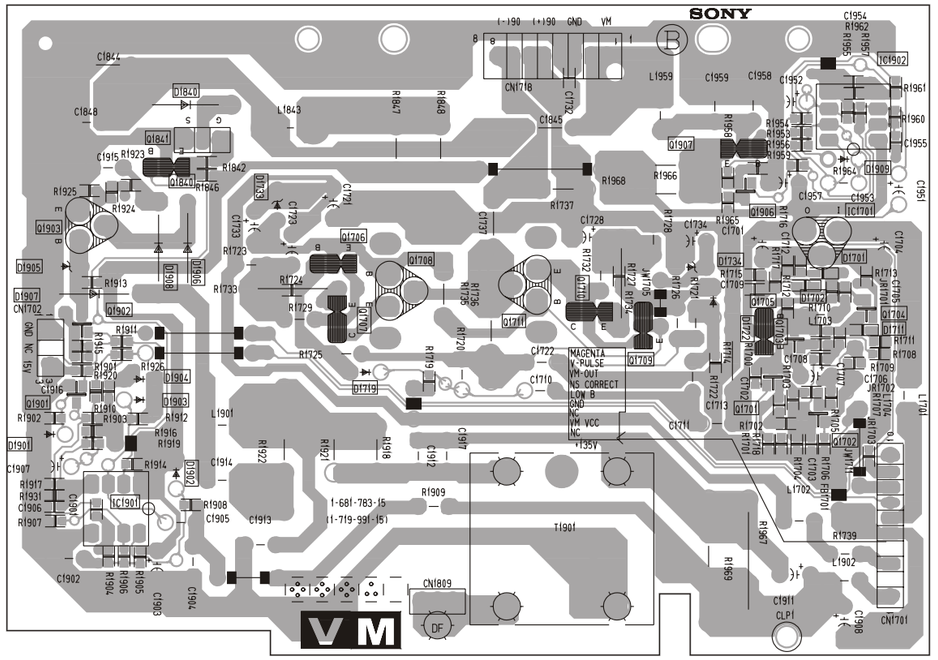
~ C Board Semiconductor Voltages ~

Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)
Q701	124.2	124.8	202	Q706	7.5	8.1	125.0	Q712	125.8	126.4	201.9
Q702	2.3	3.0	7.5	Q707	124.6	125.8	5.5	Q713	133.0	132.4	201.9
Q703	7.5	8.1	131.6	Q708	3.5	2.1	7.5	Q715	132.3	131.5	8.1
Q704	131	132.4	5.2	Q709	7.5	8.1	123.3	Q716	125.8	125.0	8.1
Q705	2.5	3.1	7.5	Q710	123.0	124.3	5.5	Q717	124.2	123.4	8.1

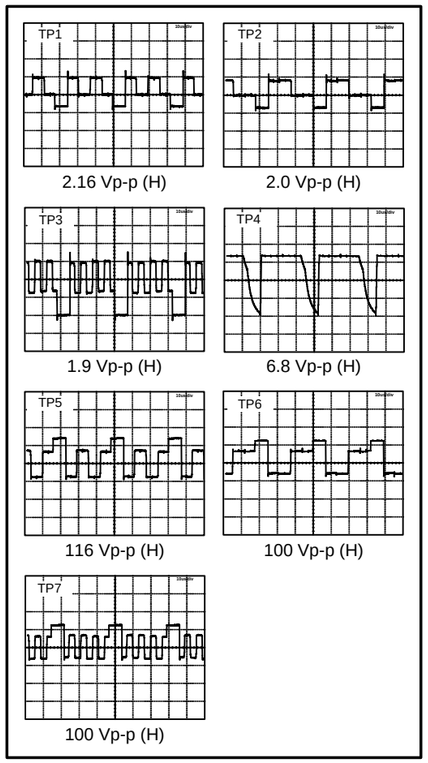
~ C Board IC Voltages ~

Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC1701	1	3.1	IC1801	1	1.3
	2	2.1		2	1.3
	3	3.0		3	1.4
	5	5.5		5	4.1
	7	131		6	4.1
	8	123		7	7.0
	9	124.6		8	8.0

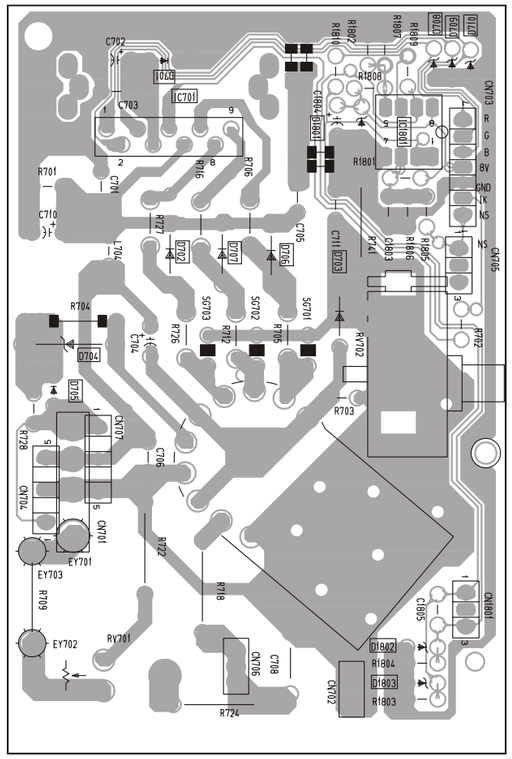
~ VM Printed Wiring Board ~



~ C Board Waveforms ~



~ C Printed Wiring Board ~



VM. -28-32DX40

VM VELOCITY MODULATION DYNAMIC FOCUS AND DQP

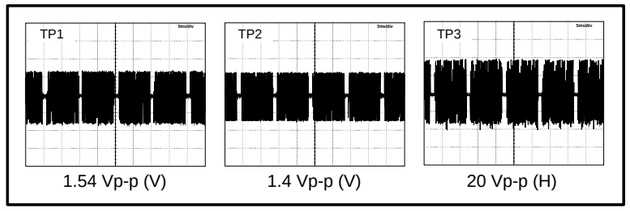
TO A BOARD CN510

TO A BOARD CN503

TO NECK ASSY

COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL

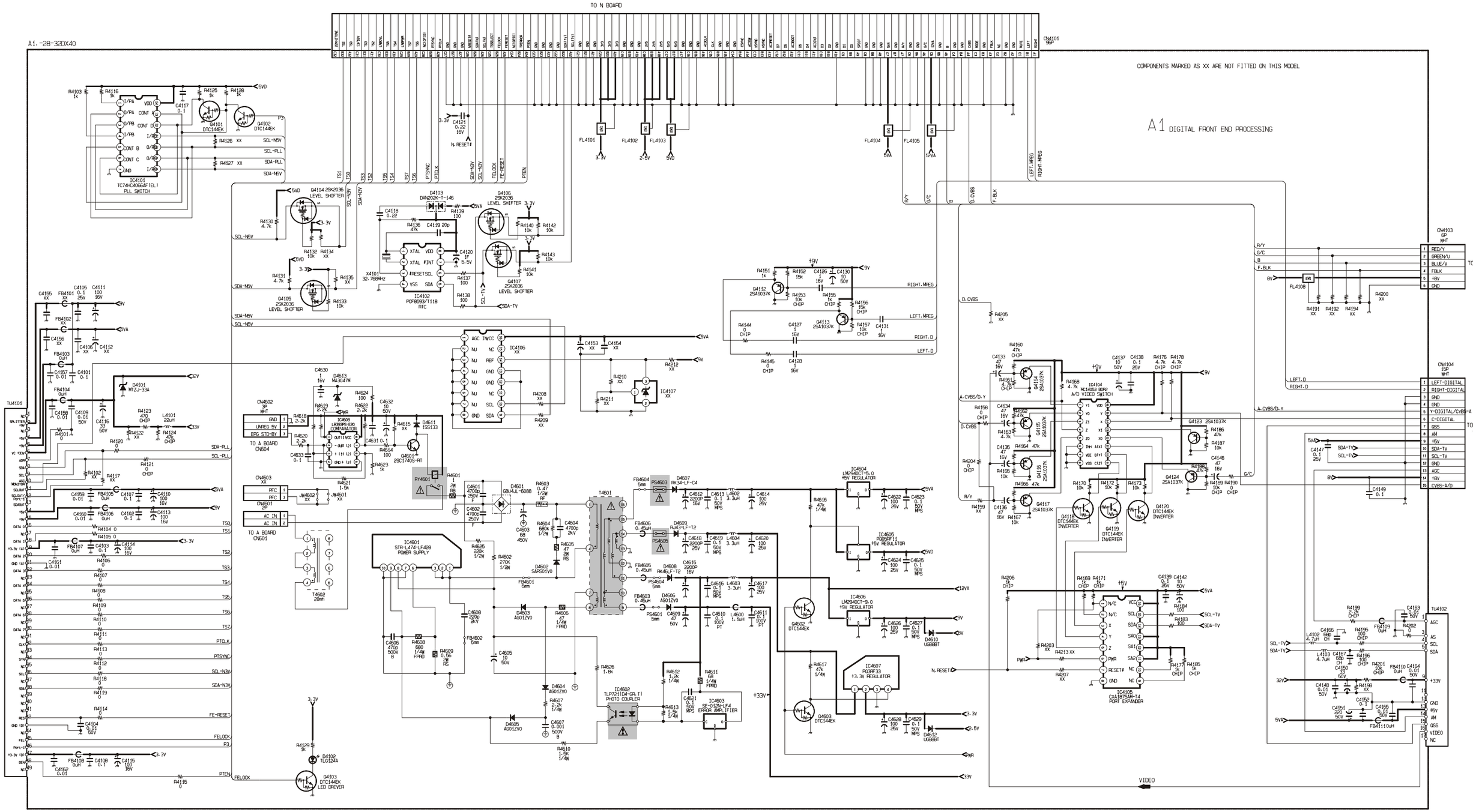
~ VM Board Waveforms ~



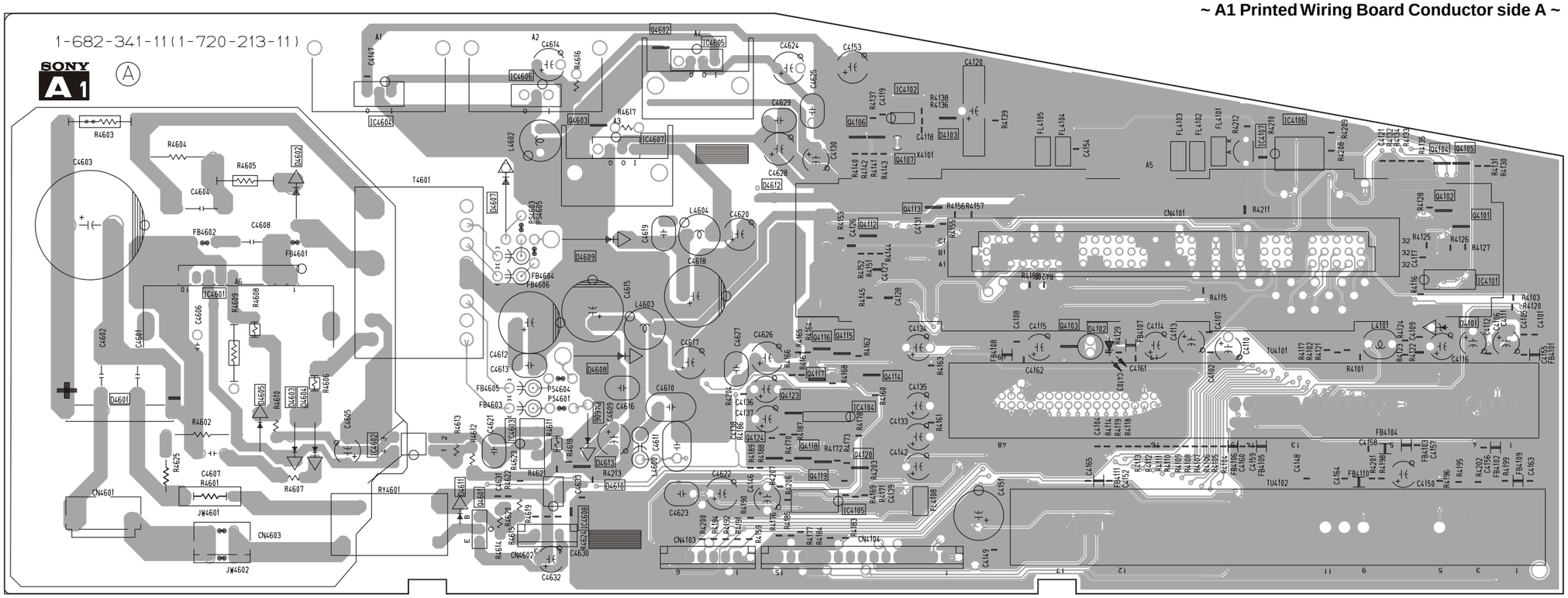
~ VM Board Semiconductor Voltages ~

Ref	(e)	(b)	(c)
Q1701	6.9	7.5	9.0
Q1704	6.0	6.6	8.7
Q1705	5.9	6.0	9.0
Q1706	45.4	44.5	68
Q1707	44.6	45.4	135.1
Q1708	135.1	134.6	68
Q1709	1.2	1.8	1.4
Q1710	0.5	1.2	0.8
Q1711	0.8	1.4	68

~ VM Schematic [Velocity Modulation] ~ [Dynamic Focus and DQP]


A1.-28-32DX40
TO N BOARD
CN4101 99P
COMPONENTS MARKED AS XX ARE NOT FITTED ON THIS MODEL
A1 DIGITAL FRONT END PROCESSING
IC4401 TC74HC4066AF(EL) PLL SWITCH
IC4102 PCF8593/T11B RTC
IC4601 STR-L474-L-F42B POWER SUPPLY
IC4602 LM2940CT-5.0 +5V REGULATOR
IC4605 PQ05RF11 +5V REGULATOR
IC4606 LM2940CT-3.0 +9V REGULATOR
IC4607 PQ3RF33 +3.3V REGULATOR
IC4105 CXA1875AM-T4 PORT EXPANDER
IC4404 MC14053 BDR2 A/D VIDEO SWITCH
IC4502 LK093PS-E20 COMPARATOR
IC4107 SE-012N-LF4 ERROR AMPLIFIER
IC4502 TLP721(D4-GR,TI) PHOTO COUPLER
IC4105 MTZJ-33A
IC4106 MA3047M
IC4107 25K2036 LEVEL SHIFTER
IC4103 DAN202K-T-146
IC4104 25K2036 LEVEL SHIFTER
IC4105 25K2036 LEVEL SHIFTER
IC4106 25K2036 LEVEL SHIFTER
IC4107 25K2036 LEVEL SHIFTER
IC4101 DTC144EK
IC4102 DTC144EK
IC4103 DTC144EK LED DRIVER
IC4104 DTC144EK
IC4105 DTC144EK
IC4106 DTC144EK
IC4107 DTC144EK
IC4108 DTC144EK INVERTER
IC4109 DTC144EK INVERTER
IC4120 DTC144EK INVERTER
IC4101 2SA1037K
IC4102 2SA1037K
IC4103 2SA1037K
IC4104 2SA1037K
IC4105 2SA1037K
IC4106 2SA1037K
IC4107 2SA1037K
IC4108 2SA1037K
IC4109 2SA1037K
IC4110 2SA1037K
IC4111 2SA1037K
IC4112 2SA1037K
IC4113 2SA1037K
IC4114 2SA1037K
IC4115 2SA1037K
IC4116 2SA1037K
IC4117 2SA1037K
IC4118 DTC144EK INVERTER
IC4119 DTC144EK INVERTER
IC4120 DTC144EK INVERTER
IC4121 2SA1037K
IC4122 2SA1037K
IC4123 2SA1037K
IC4124 2SA1037K
IC4125 2SA1037K
IC4126 2SA1037K
IC4127 2SA1037K
IC4128 2SA1037K
IC4129 2SA1037K
IC4130 2SA1037K
IC4131 2SA1037K
IC4132 2SA1037K
IC4133 2SA1037K
IC4134 2SA1037K
IC4135 2SA1037K
IC4136 2SA1037K
IC4137 2SA1037K
IC4138 2SA1037K
IC4139 2SA1037K
IC4140 2SA1037K

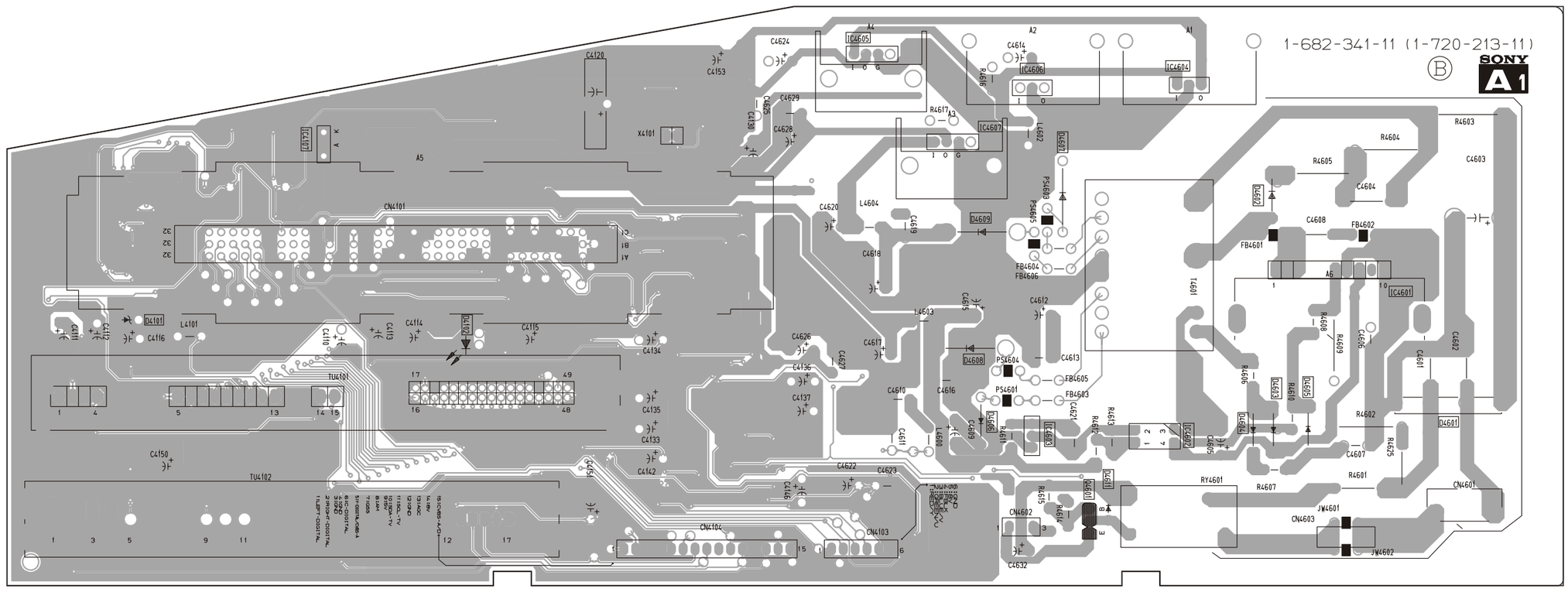
~ A1 Printed Wiring Board Conductor side A ~



~ A1 Board Semiconductor Location Table (side A) ~

DIODE		IC4605	G - 1
D4101	M - 3	IC4606	E - 1
D4102	J - 4	IC4607	F - 2
D4103	I - 2	IC4608	F - 5
D4601	B - 4	**TRANSISTOR**	
D4602	C - 2	Q4101	M - 2
D4603	C - 4	Q4102	M - 2
D4604	C - 4	Q4103	J - 3
D4605	C - 4	Q4104	M - 2
D4606	F - 4	Q4105	M - 2
D4607	E - 2	Q4106	H - 2
D4608	F - 4	Q4107	H - 2
D4609	F - 3	Q4112	H - 2
D4610	F - 5	Q4113	H - 2
D4611	D - 5	Q4114	H - 4
D4612	G - 2	Q4115	H - 3
D4613	F - 4	Q4116	H - 3
IC		Q4117	G - 4
IC4101	M - 3	Q4118	G - 4
IC4102	H - 2	Q4119	H - 4
IC4104	H - 4	D4120	H - 5
IC4105	H - 5	D4123	G - 4
IC4106	L - 5	D4124	G - 4
IC4601	B - 3	D4601	F - 5
IC4602	D - 4	D4602	F - 1
IC4603	E - 4	D4603	F - 2
IC4604	D - 1		

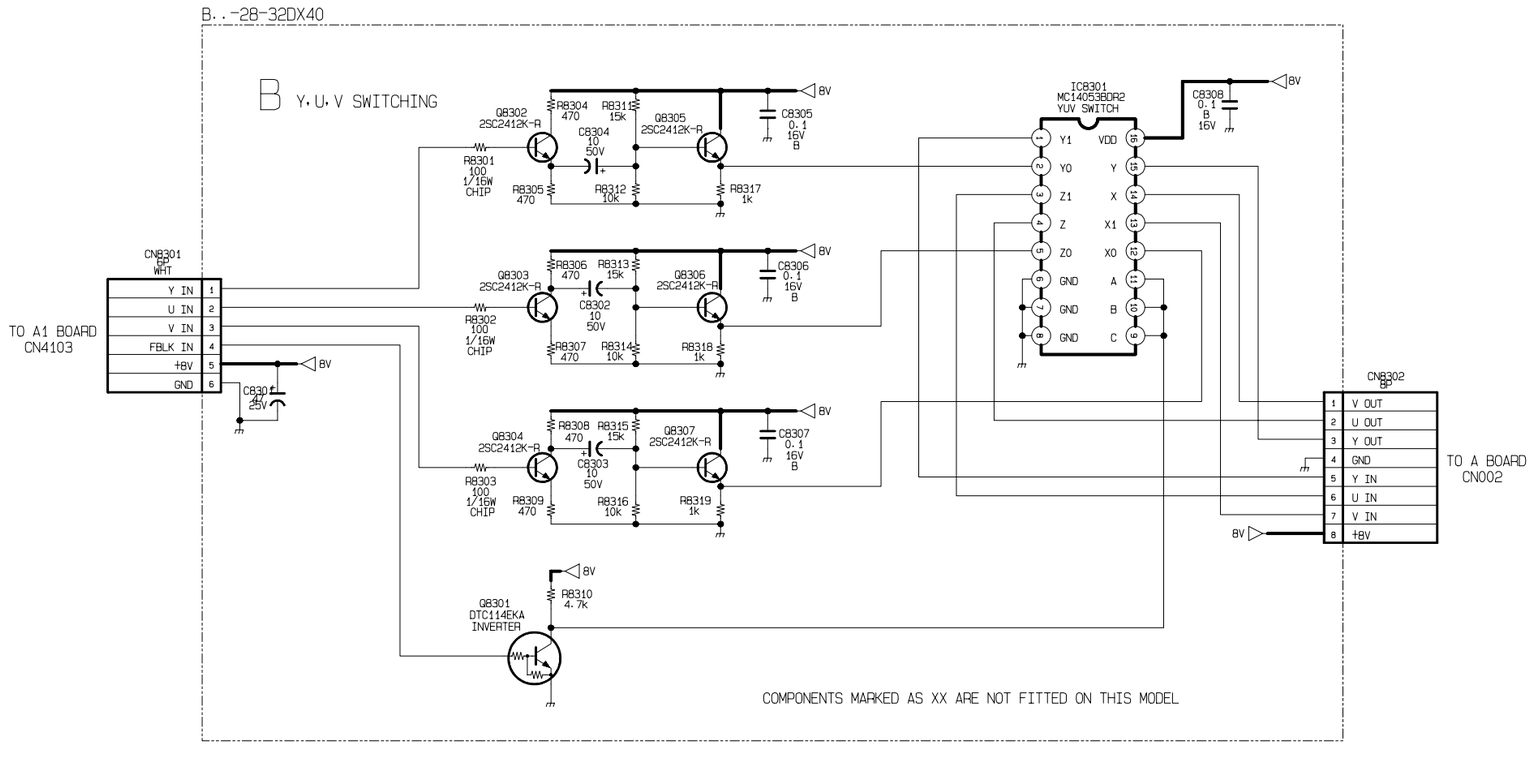
~ A1 Printed Wiring Board Conductor side B ~



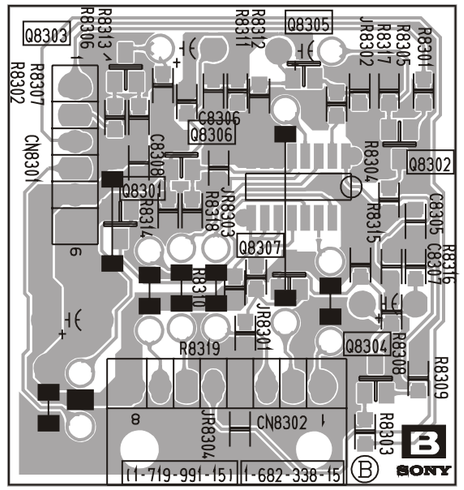
~ A1 Board Semiconductor Location Table (side B) ~

DIODE		D4611	J - 10
D4101	B - 9	**IC**	
D4102	D - 9	IC4107	C - 7
D4601	M - 10	IC4601	L - 8
D4602	K - 8	IC4602	J - 10
D4603	K - 10	IC4603	I - 10
D4604	K - 10	IC4604	K - 7
D4605	K - 10	IC4605	H - 7
D4606	I - 10	IC4606	I - 7
D4607	J - 8	**TRANSISTOR**	
D4608	I - 9	Q4601	J - 10
D4609	I - 8		

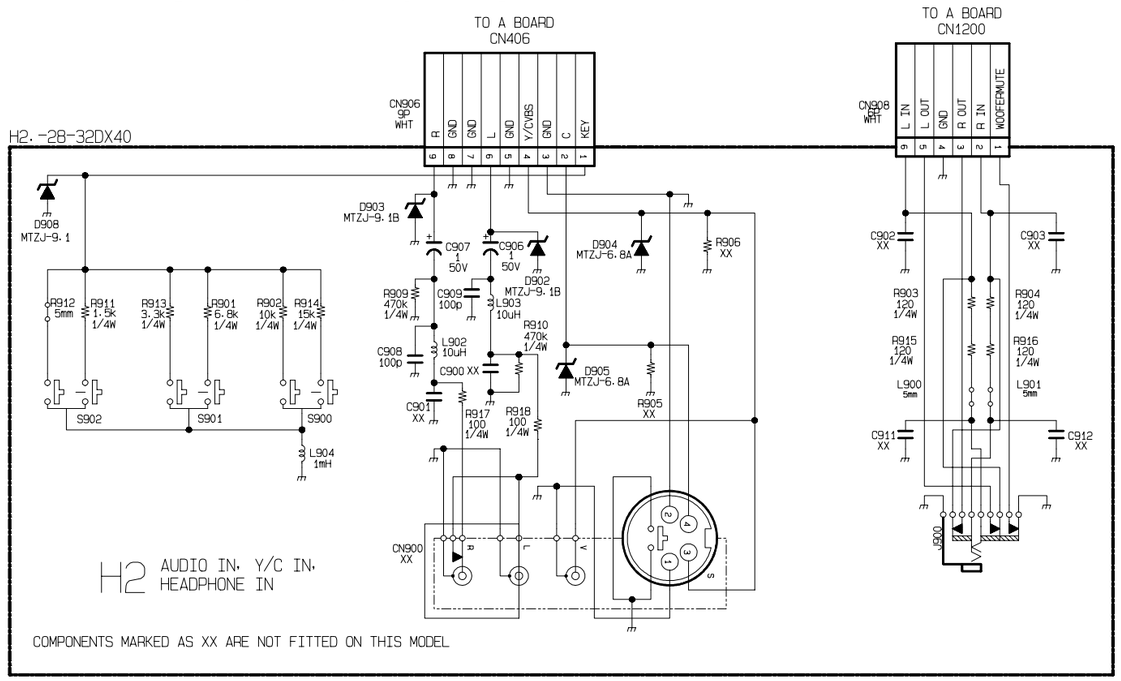
~ B Schematic [Y.U.V. Switching] ~



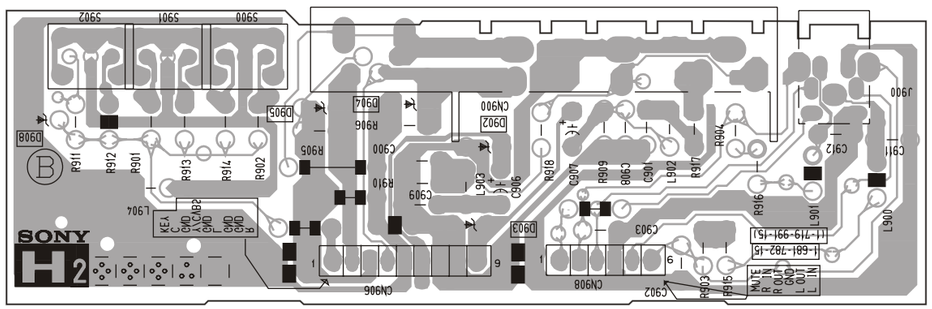
~ B Printed Wiring Board ~



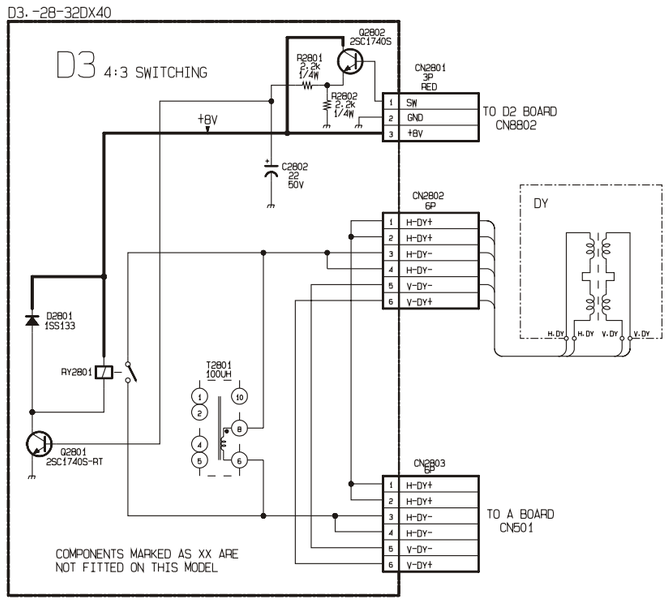
~ H2 Schematic [Y/C In, Audio In, Headphone In] ~



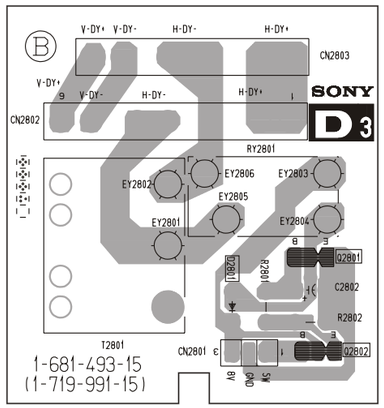
~ H2 Printed Wiring Board ~



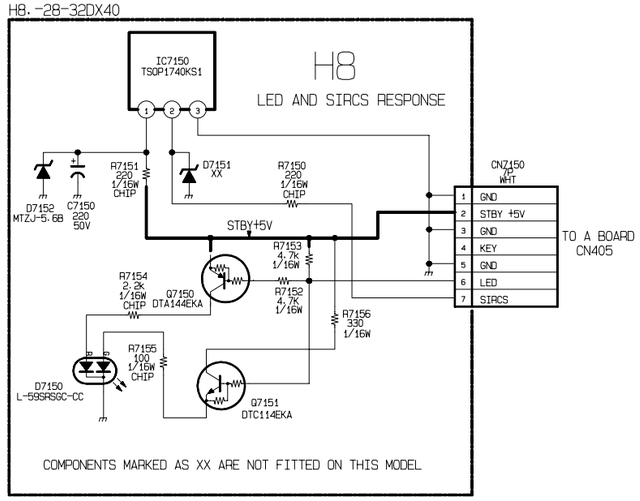
~ D3 Schematic [4:3 Switching] ~



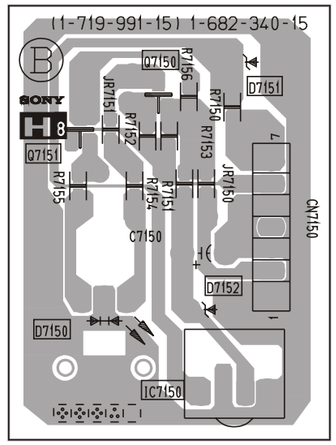
~ D3 Printed Wiring Board ~



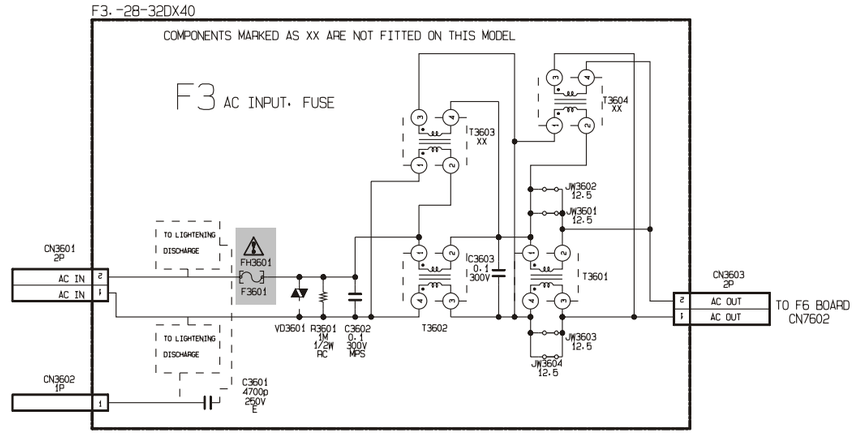
~ H8 Schematic [LED and SIRCS Response] ~



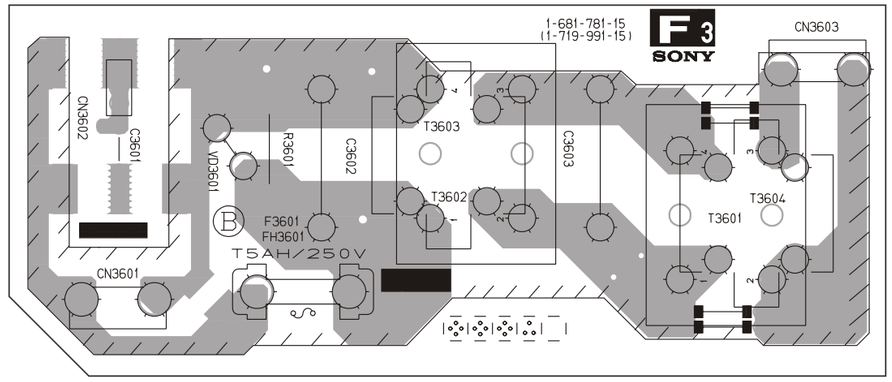
~ H8 Printed Wiring Board ~



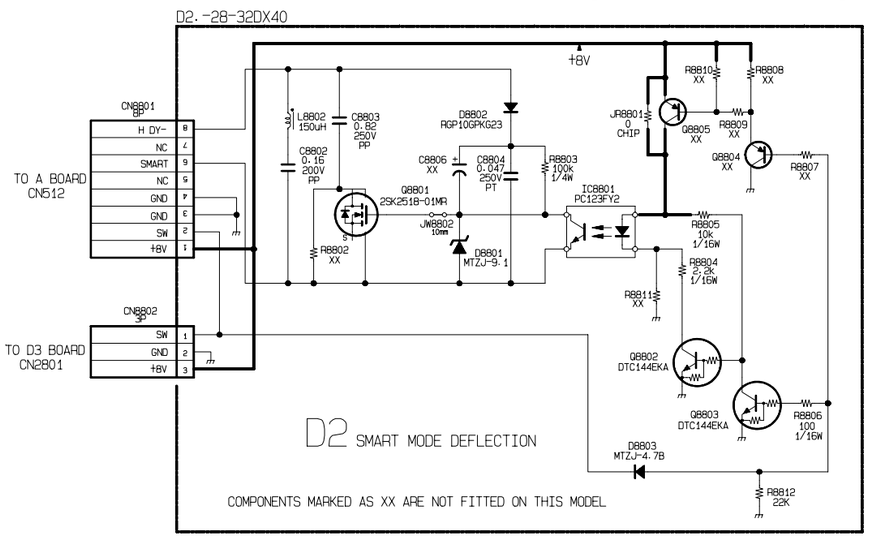
~ F3 Schematic [AC Input, Fuse] ~



~ F3 Printed Wiring Board ~



~ D2 Schematic [Smart Mode Deflection] ~



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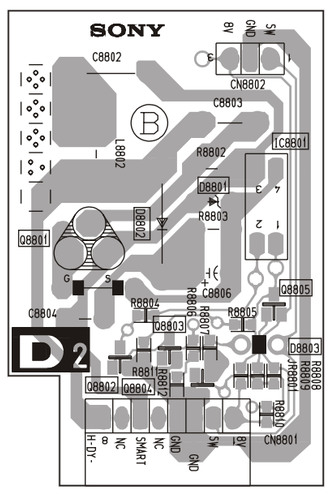
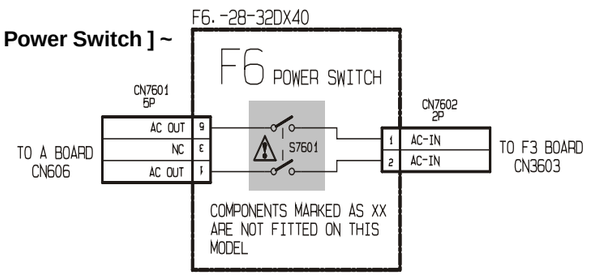
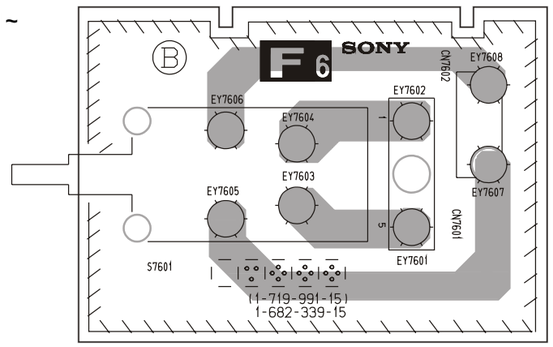


~ F6 Schematic [Power Switch] ~



~ F6 Printed Wiring Board ~



5-4. SEMICONDUCTORS

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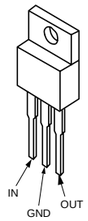
LM2940T-9.0
SE-012N-LF4
UPC2405AHF



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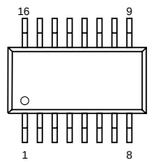
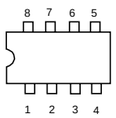


(TOP VIEW)

LM358N
LM393DT
LM393N
M5216P
M24C08-WMN6T
TOP209P



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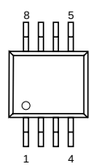
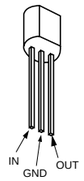


(TOP VIEW)

L78L33ABZ-AP



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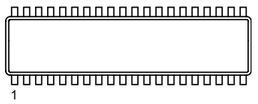

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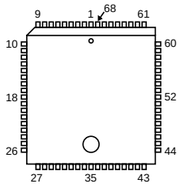
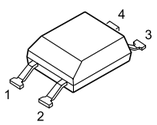


(TOP VIEW)

PC123F2



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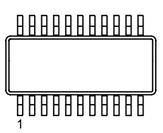
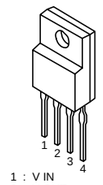
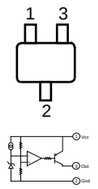


PQ3RF33
PQ05RF11

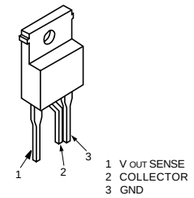


1 : V IN
2 : V OUT
3 : GND
4 : ON/OFF CONTROL

PST573IMT-T1

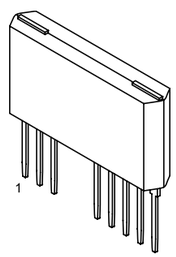


SE135N-LF4



1 V OUT SENSE
2 COLLECTOR
3 GND

STR-L474-LF428



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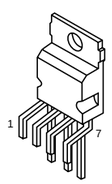

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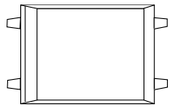

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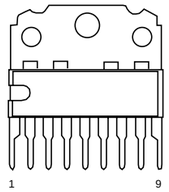

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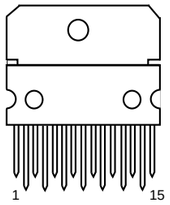

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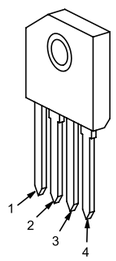

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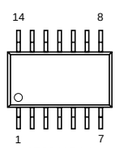
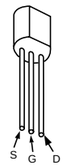


(TOP VIEW)

BC327-25



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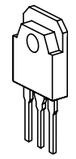

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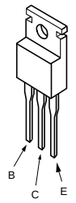

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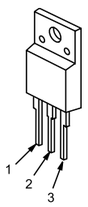
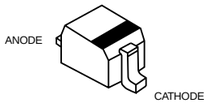
2SK2640-01MR



1 GATE
2 DRAIN
3 SOURCE

BAS316-115
SARS01V0
DTZ-TT11-6.8B
UDZS-TE17-33B
UDZSTE-175.6B
UDZSTE-176.8B
UDZSTE-179.1B
1SS355TE-17



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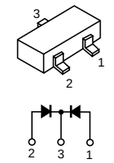

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DTA144EKA
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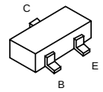
2SA1162-G
2SC1623-L5L6
2SC3840(3)



DTC144ESA
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KRC104M-AT
2SA1175-HFE
2SA933AS-QT
2SC2785-HFE

D1NL20U
D1NL20U-TA
D1NL40-TA2
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RU-3AM
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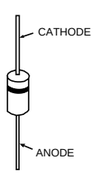

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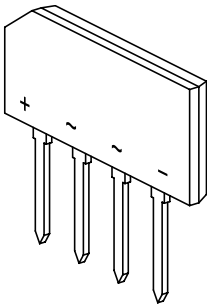

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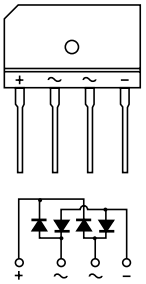

ERA38-06
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MTZJ-4.7C
MTZJ-7.5B
MTZ-33A
MTZJ-T-77-9.1A
RD10ESB2
RD15ES-B2
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RD5.1ESB2
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RD6.8ES-B2
UZ4.7BSC
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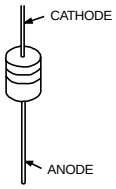

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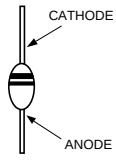

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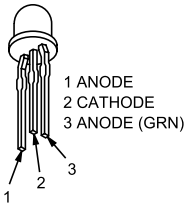

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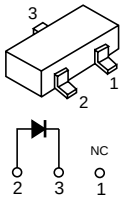

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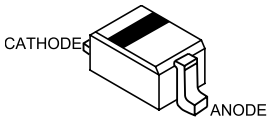

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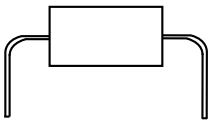

RK46LF-T2
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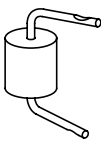

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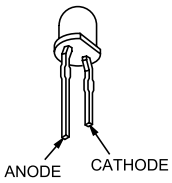

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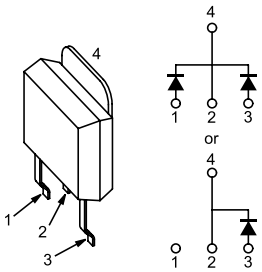

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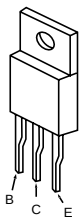

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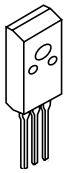
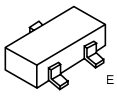
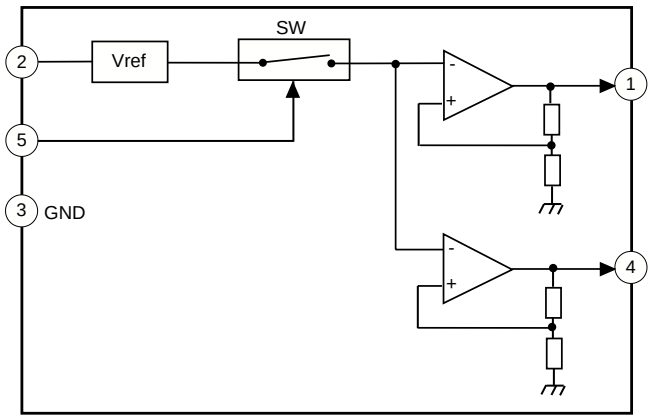


2SK2036(TE85L)

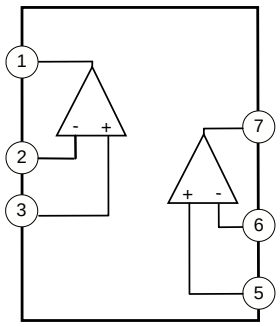


5-5 IC BLOCK DIAGRAMS

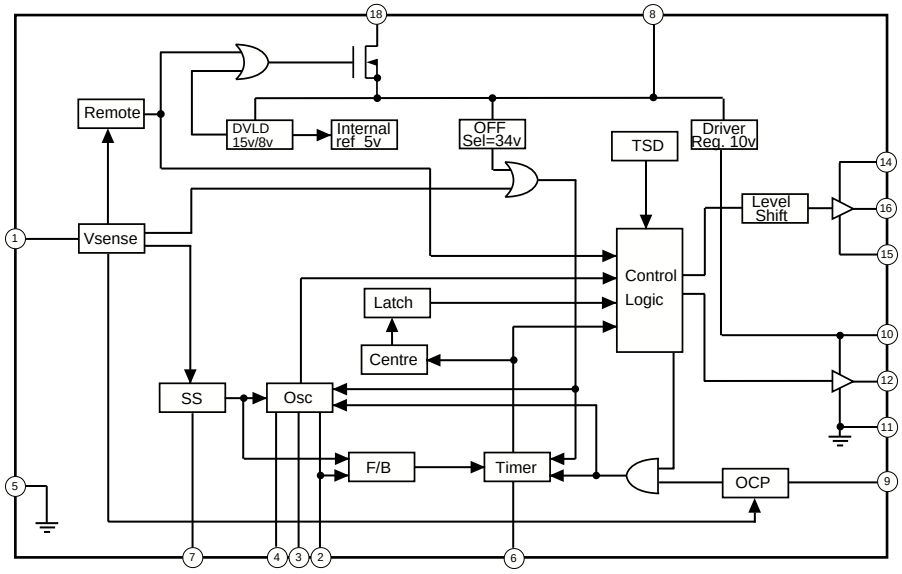
A BOARD IC604 BA41W12ST-V5



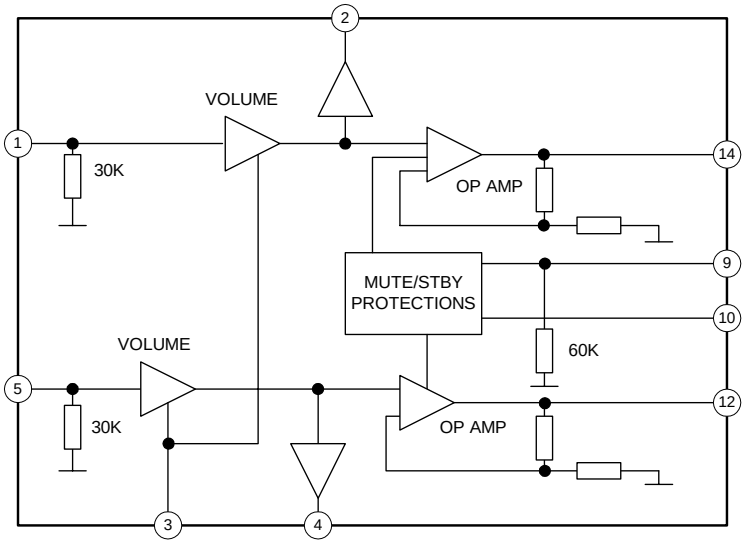
A BOARD IC401/IC531 LM393DT



A BOARD IC601 MCZ3001D



A BOARD IC1201 TDA7495S



SECTION 6
EXPLODED VIEWS

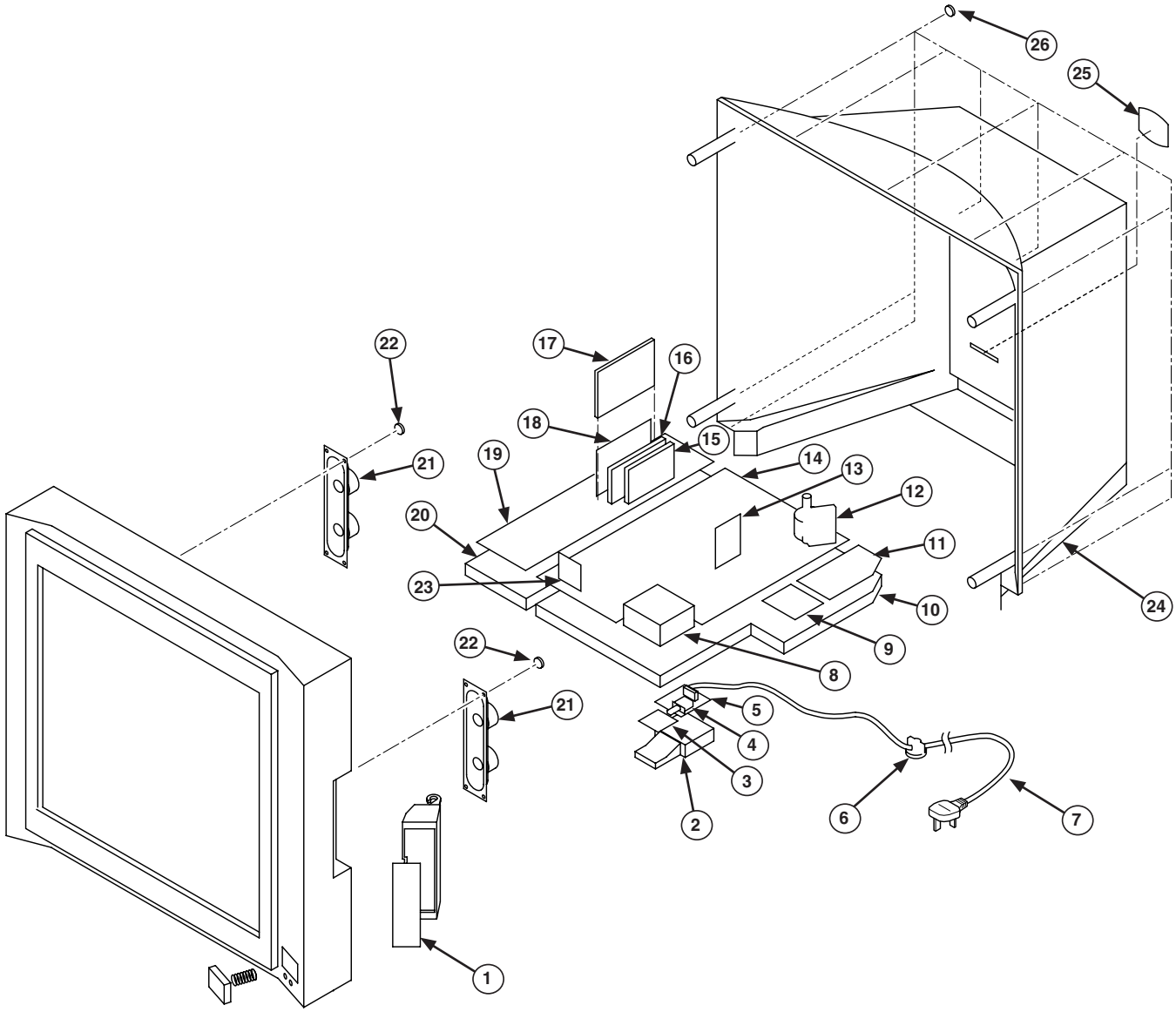
Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

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

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.

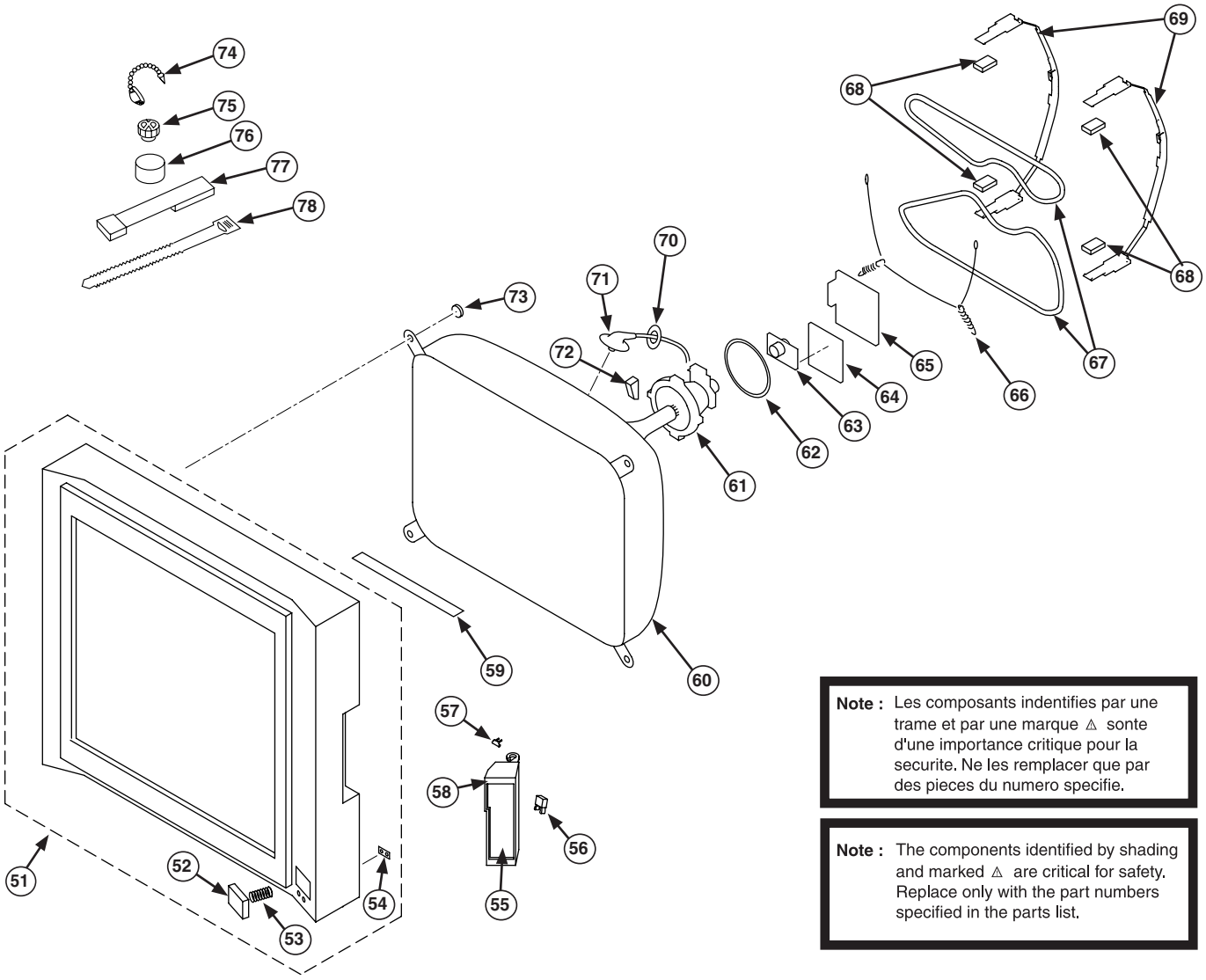
6-1. Chassis



REF.NO.		PART.NO	DESCRIPTION	REMARK
1		*A-1646-242-A	H2 BOARD, COMPLETE	
2		*4-205-697-01	H/F BRACKET	
3		*A-1646-245-A	H8 BOARD, COMPLETE	
4	⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
5		*A-1624-106-A	F6 BOARD, COMPLETE	
6		*4-202-531-01	AC CORD LOCK (SC)	
7	⚠	*1-776-204-12	CORD, POWER (FILTER)	
8		1-424-733-11	COIL, PFC CHOKE 65MMH	
9		*A-1640-431-A	D3 BOARD, COMPLETE	
10		*4-206-048-11	BRACKET, MAIN	
11		*A-1624-109-A	F3 BOARD, COMPLETE	
12	⚠	1-453-308-41	TRANSFORMER ASSY, FLYBACK (NX-4521//Z2B4)	
13		*A-1642-281-A	D2 BOARD, COMPLETE	
14		*A-1632-947-A	A BOARD, COMPLETE (KV-28DX40)	
		*A-1632-948-A	A BOARD, COMPLETE (KV-32DX40)	

REF.NO.	PART.NO	DESCRIPTION	REMARK
15	1-693-557-13	FRONTEND (TUNER + IF)	
16	8-598-585-00	FRONT END BTD-DU604	
17	*4-206-219-01	SHIELD	
18	*A-1654-053-A	N BOARD, COMPLETE	
19	*A-1631-157-A	A1 BOARD, COMPLETE	
20	*4-206-401-01	BRACKET, A1	
21	1-529-408-11	SPEAKER (4.2x24CM)	
22	4-384-096-01	SCREW (4x16), TAPPING, +P	
23	*A-1620-146-A	B BOARD, COMPLETE	
24	4-205-700-21	REAR COVER (KV-28DX40)	
	4-205-736-01	REAR COVER (KV-32DX40)	
25	4-206-295-01	PCMCIA PLATE	
26	4-039-358-01	SCREW (4x16), (+) BV TAPPING	

6-2. Picture Tube



Note : Les composants indentifies par une trame et par une marque ⚠ sonte d'une importance critique pour la securite. Ne les remplacer que par des pieces du numero specifie.

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

REF.NO.		PART.NO	DESCRIPTION	REMARK
51		X-4200-630-5	BEZNET ASSY	52-54
52		4-205-699-02	POWER BUTTON	
53		4-202-964-11	SPRING	
54		4-205-698-01	GUIDE, LIGHT	
55		4-205-696-21	DOOR	
56		4-047-464-01	CATCHER, PUSH	
57		4-205-743-01	SPRING, TORSION	
58		*4-205-695-01	DOOR BRACKET	
59		4-203-128-41	SHEET, BLOTTING (KV-28DX40)	
		4-203-128-31	SHEET, BLOTTING (KV-32DX40)	
60	⚠	8-737-786-05	PICTURE TUBE (W66LLX060X) (KV-28DX40)	
	⚠	8-735-079-05	PICTURE TUBE (W76LLZ060X) (KV-32DX40)	
61		8-451-521-11	DEFLECTION YOKE (Y28RVC3-B) (KV-28DX40)	
		8-451-520-11	DEFLECTION YOKE (Y32RVC3) (KV-32DX40)	
62		1-452-896-11	COIL, NA ROTATION (RT200)	
63		8-453-011-11	NECK ASSY, (NA299-M)	
64		*A-1645-050-A	VM BOARD, COMPLETE (KV-28DX40)	
		*A-1645-049-A	VM BOARD, COMPLETE (KV-32DX40)	

REF.NO.		PART.NO	DESCRIPTION	REMARK
65		*A-1638-156-A	C BOARD, COMPLETE	
66		4-200-433-01	SPRING, EXTENSION	
67	⚠	1-416-466-21	COIL, DEMAGNETIC (KV-28DX40)	
	⚠	1-416-769-11	COIL, DEMAGNETIC (KV-32DX40)	
68		*4-203-390-71	CUSHION, DGC	
69		*4-057-303-01	HOLDER, DGC (KV-28DX40)	
		*4-059-569-01	HOLDER, DGC (KV-32DX40)	
70		4-202-693-01	HOLDER, HV CABLE	
71	⚠	1-251-946-11	CAP ASSY, HIGH-VOLTAGE	
72		4-203-658-01	SPACER, DY	
73		4-036-188-01	SCREW, SELF TAPPING (KV-28DX40)	
		4-204-225-01	PT SCREW (KV-32DX40)	
74		4-308-870-00	CLIP, LEAD WIRE	
75		1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
76		1-452-032-00	MAGNET, DISK; 10MM Ø	
77		X-4387-214-1	PERMALLOY ASSY, CORRECTION	
78		3-701-007-00	BAND, BINDING	

SECTION 7
ELECTRICAL PARTS LIST

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Note: The N Board Schematic Diagram, Printed Wiring Board and Parts List are not indicated in this manual as the PWB is regarded as a non service item for exchange only.

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
***A-1631-157-A**	**A1 Board, Complete**		
	1-682-341-11	PWB, A1	
	1-720-213-11	PWB, A1 COMBI	
	4-202-373-01	SPRING, IC	
	4-206-218-01	SHIELD BASE	
	4-206-394-01	HEAT SINK REG	
	4-382-854-01	SCREW (M3X8), P, SW (+)	
	< CAPACITOR >		
C4101	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4102	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4103	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4104	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4105	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4107	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4108	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4109	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4110	1-126-933-11	ELECT 100UF	20.00% 16V
C4111	1-126-933-11	ELECT 100UF	20.00% 16V
C4113	1-126-933-11	ELECT 100UF	20.00% 16V
C4114	1-126-933-11	ELECT 100UF	20.00% 16V
C4115	1-126-933-11	ELECT 100UF	20.00% 16V
C4116	1-126-966-11	ELECT 33UF	20.00% 50V
C4117	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4118	1-127-715-91	CERAMIC CHIP 0.22UF	10% 16V
C4119	1-164-160-11	CERAMIC CHIP 20PF	5.00% 50V
C4120	1-110-489-11	CAPACITOR 1F	5.5V
C4121	1-127-715-91	CERAMIC CHIP 0.22UF	10% 16V
C4126	1-164-346-11	CERAMIC CHIP 1UF	16V
C4127	1-164-346-11	CERAMIC CHIP 1UF	16V
C4128	1-164-346-11	CERAMIC CHIP 1UF	16V
C4130	1-126-964-11	ELECT 10UF	20.00% 50V
C4131	1-164-346-11	CERAMIC CHIP 1UF	16V
C4133	1-126-947-11	ELECT 47UF	20.00% 16V
C4134	1-126-947-11	ELECT 47UF	20.00% 16V
C4135	1-126-947-11	ELECT 47UF	20.00% 16V
C4136	1-126-947-11	ELECT 47UF	20.00% 16V
C4137	1-126-964-11	ELECT 10UF	20.00% 50V
C4138	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4139	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4142	1-126-964-11	ELECT 10UF	20.00% 50V
C4146	1-126-947-11	ELECT 47UF	20.00% 16V
C4147	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4148	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4149	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4150	1-126-966-11	ELECT 33UF	20.00% 50V
C4151	1-126-969-11	ELECT 220UF	20.00% 50V
C4152	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4157	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4158	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4159	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4160	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4161	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4162	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4163	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4164	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4165	1-162-974-11	CERAMIC CHIP 0.01UF	50V
C4166	1-162-925-11	CERAMIC CHIP 68PF	5.00% 50V
C4167	1-162-925-11	CERAMIC CHIP 68PF	5.00% 50V
C4601	1-161-964-91	CERAMIC 0.0047UF	250V
C4602	1-161-964-91	CERAMIC 0.0047UF	250V
C4603	1-137-635-41	ELECT(BLOCK) 68UF	20% 450V
C4604	1-127-568-51	CERAMIC 4700PF	10% 2KV
C4605	1-126-964-11	ELECT 10UF	20.00% 50V
C4606	1-102-228-00	CERAMIC 470PF	10.00% 500V
C4607	1-162-318-11	CERAMIC 0.001UF	10.00% 500V
C4608	1-165-602-91	CERAMIC 220PF	10 2KV
C4609	1-126-967-11	ELECT 47UF	20.00% 50V
C4610	1-137-399-11	MYLAR 0.1UF	5.00% 100V
C4611	1-137-399-11	MYLAR 0.1UF	5.00% 100V
C4612	1-115-766-51	ELECT 0.0022F	20.00% 16V
C4613	1-136-165-00	FILM 0.1UF	5.00% 50V
C4614	1-104-665-11	ELECT 100UF	20.00% 25V
C4615	1-115-766-51	ELECT 0.0022F	20.00% 16V
C4616	1-136-165-00	FILM 0.1UF	5.00% 50V
C4617	1-104-665-11	ELECT 100UF	20.00% 25V
C4618	1-115-792-11	ELECT 0.0022F	20.00% 25V
C4619	1-136-165-00	FILM 0.1UF	5.00% 50V
C4620	1-104-665-11	ELECT 100UF	20.00% 25V
C4621	1-136-165-00	FILM 0.1UF	5.00% 50V
C4622	1-104-665-11	ELECT 100UF	20.00% 25V
C4623	1-136-165-00	FILM 0.1UF	5.00% 50V
C4624	1-104-665-11	ELECT 100UF	20.00% 25V
C4625	1-136-165-00	FILM 0.1UF	5.00% 50V
C4626	1-104-665-11	ELECT 100UF	20.00% 25V
C4627	1-136-165-00	FILM 0.1UF	5.00% 50V
C4628	1-104-665-11	ELECT 100UF	20.00% 25V
C4629	1-136-165-00	FILM 0.1UF	5.00% 50V
C4630	1-164-346-11	CERAMIC CHIP 1UF	16V
C4631	1-164-156-11	CERAMIC CHIP 0.1UF	25V
C4632	1-126-964-11	ELECT 10UF	20.00% 50V
C4633	1-164-156-11	CERAMIC CHIP 0.1UF	25V
	< CONNECTOR >		
CN4101	*1-794-730-11	SOCKET, PC CONNECTOR (PC BOARD	
CN4103	*1-564-509-11	PLUG, CONNECTOR 6P	
CN4104	*1-564-596-11	PLUG, CONNECTOR 15P	
CN4601	1-580-843-11	PIN, CONNECTOR (POWER)	
CN4602	*1-564-506-11	PLUG, CONNECTOR 3P	

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

A1

REF.NO.		PART.NO	DESCRIPTION	REMARK
			< DIODE >	
D4101		8-719-982-24	DIODE MTZJ-33A	
D4102		8-719-812-43	DIODE TLG124A	
D4103		8-719-914-43	DIODE DAN202K	
D4601		8-719-025-88	DIODE GBU4JL-6088	
D4602		8-719-080-26	DIODE SARS01V0	
D4603		8-719-075-11	DIODE AG01ZV0	
D4604		8-719-075-11	DIODE AG01ZV0	
D4605		8-719-075-11	DIODE AG01ZV0	
D4606		8-719-075-11	DIODE AG01ZV0	
D4607		6-500-081-01	DIODE RK34-LF-C4	
D4608		8-719-059-21	DIODE RK46LF-T2	
D4609		6-500-082-01	DIODE RJ43-LF-T2	
D4610		8-719-076-73	DIODE UGB8BT	
D4611		8-719-991-33	DIODE 1SS133T-77	
D4612		8-719-076-73	DIODE UGB8BT	
D4613		8-719-401-32	DIODE MA3047M-TX	
			< FERRITE BEAD >	
FB4103		1-469-869-21	FERRITE 0UH	
FB4104		1-469-869-21	FERRITE 0UH	
FB4105		1-469-869-21	FERRITE 0UH	
FB4106		1-469-869-21	FERRITE 0UH	
FB4107		1-469-869-21	FERRITE 0UH	
FB4108		1-469-869-21	FERRITE 0UH	
FB4109		1-469-869-21	FERRITE 0UH	
FB4110		1-469-869-21	FERRITE 0UH	
FB4111		1-469-869-21	FERRITE 0UH	
FB4601		1-535-465-11	LEAD, JUMPER (5.0MM)	
FB4602		1-535-465-11	LEAD, JUMPER (5.0MM)	
FB4603		1-410-396-41	FERRITE 0.45UH	
FB4604		1-535-465-11	LEAD, JUMPER (5.0MM)	
FB4605		1-410-396-41	FERRITE 0.45UH	
FB4606		1-410-396-41	FERRITE 0.45UH	
			< FILTER >	
FL4101		1-239-899-21	FILTER, CHIP EMI	
FL4102		1-239-899-21	FILTER, CHIP EMI	
FL4103		1-239-899-21	FILTER, CHIP EMI	
FL4104		1-239-899-21	FILTER, CHIP EMI	
FL4105		1-239-899-21	FILTER, CHIP EMI	
FL4108		1-239-899-21	FILTER, CHIP EMI	
			< IC >	
IC4101		8-759-239-25	IC TC74HC4066AF	
IC4102		8-759-478-44	IC PCF8593/T118	
IC4104		8-759-385-77	IC MC14053 BDR2	
IC4105		8-752-072-94	IC CXA1875AM-T4	
IC4601		6-700-292-01	IC STR-L474-LF428	
IC4602	⚠	8-749-013-21	IC TLP721(D4-G)	
IC4603		6-700-293-01	IC SE-012N-LF4	
IC4604		8-759-390-57	IC UPC2405AHF	
IC4605		8-759-069-28	IC PQ05RF11	
IC4606		8-759-267-25	IC LM2940T-9.0	
IC4607		8-759-473-67	IC PQ3RF33	
IC4608		8-759-988-13	IC LM393PS	
			< COIL >	
L4101		1-410-667-31	INDUCTOR 22UH	
L4102		1-412-002-31	INDUCTOR 4.7UH	
L4103		1-412-002-31	INDUCTOR 4.7UH	
L4600		1-410-397-21	FERRITE 1.1UH	
L4602		1-412-519-11	INDUCTOR 3.3UH	
L4603		1-412-519-11	INDUCTOR 3.3UH	
L4604		1-412-519-11	INDUCTOR 3.3UH	
			< IC LINK >	
PS4601		1-535-465-11	LEAD, JUMPER (5.0MM)	
PS4603	⚠	1-801-550-21	PROTECTOR, MODULE	
PS4604		1-535-465-11	LEAD, JUMPER (5.0MM)	
PS4605	⚠	1-801-549-21	PROTECTOR, MODULE	
			< TRANSISTOR >	
Q4101		1-801-806-11	TRANSISTOR DTC144EKA	
Q4102		1-801-806-11	TRANSISTOR DTC144EKA	
Q4103		1-801-806-11	TRANSISTOR DTC144EKA	
Q4104		8-729-028-28	TRANSISTOR 2SK2036(TE85L)	
Q4105		8-729-028-28	TRANSISTOR 2SK2036(TE85L)	
Q4106		8-729-028-28	TRANSISTOR 2SK2036(TE85L)	
Q4107		8-729-028-28	TRANSISTOR 2SK2036(TE85L)	
Q4112		8-729-216-22	TRANSISTOR 2SA1162-G	
Q4113		8-729-216-22	TRANSISTOR 2SA1162-G	
Q4114		8-729-216-22	TRANSISTOR 2SA1162-G	
Q4115		8-729-216-22	TRANSISTOR 2SA1162-G	
Q4116		8-729-216-22	TRANSISTOR 2SA1162-G	
Q4117		8-729-216-22	TRANSISTOR 2SA1162-G	
Q4118		1-801-806-11	TRANSISTOR DTC144EKA	
Q4119		1-801-806-11	TRANSISTOR DTC144EKA	
Q4120		1-801-806-11	TRANSISTOR DTC144EKA	
Q4123		8-729-216-22	TRANSISTOR 2SA1162-G	
Q4124		8-729-216-22	TRANSISTOR 2SA1162-G	
Q4601		8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q4602		1-801-806-11	TRANSISTOR DTC144EKA	
Q4603		1-801-806-11	TRANSISTOR DTC144EKA	
			< RESISTOR >	
R4101		1-216-864-11	SHORT 0	
R4103		1-216-821-11	RES-CHIP 1K 5% 1/16W	

REF.NO.	PART.NO	DESCRIPTION			REMARK
R4104	1-216-864-11	SHORT	0		
R4105	1-216-864-11	SHORT	0		
R4106	1-216-864-11	SHORT	0		
R4107	1-216-864-11	SHORT	0		
R4108	1-216-864-11	SHORT	0		
R4109	1-216-864-11	SHORT	0		
R4110	1-216-864-11	SHORT	0		
R4111	1-216-864-11	SHORT	0		
R4112	1-216-864-11	SHORT	0		
R4113	1-216-864-11	SHORT	0		
R4114	1-216-864-11	SHORT	0		
R4115	1-216-864-11	SHORT	0		
R4116	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4118	1-216-864-11	SHORT	0		
R4119	1-216-864-11	SHORT	0		
R4120	1-216-864-11	SHORT	0		
R4121	1-216-864-11	SHORT	0		
R4123	1-216-817-11	RES-CHIP	470	5%	1/16W
R4124	1-216-841-11	RES-CHIP	47K	5%	1/16W
R4125	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4128	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4129	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4130	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R4131	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R4132	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4133	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4136	1-216-841-11	RES-CHIP	47K	5%	1/16W
R4137	1-216-809-11	RES-CHIP	100	5%	1/16W
R4138	1-216-809-11	RES-CHIP	100	5%	1/16W
R4139	1-216-809-11	RES-CHIP	100	5%	1/16W
R4140	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4141	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4142	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4143	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4144	1-216-864-11	SHORT	0		
R4145	1-216-864-11	SHORT	0		
R4151	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4152	1-216-835-11	RES-CHIP	15K	5%	1/16W
R4153	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4155	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4156	1-216-835-11	RES-CHIP	15K	5%	1/16W
R4157	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4158	1-216-864-11	SHORT	0		
R4160	1-216-841-11	RES-CHIP	47K	5%	1/16W
R4161	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R4162	1-216-841-11	RES-CHIP	47K	5%	1/16W
R4163	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R4164	1-216-841-11	RES-CHIP	47K	5%	1/16W
R4165	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4166	1-216-841-11	RES-CHIP	47K	5%	1/16W
R4167	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4168	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R4169	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4170	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4171	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4172	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4173	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4176	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R4177	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4178	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R4183	1-216-809-11	RES-CHIP	100	5%	1/16W
R4184	1-216-809-11	RES-CHIP	100	5%	1/16W
R4185	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4186	1-216-841-11	RES-CHIP	47K	5%	1/16W
R4187	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4188	1-216-841-11	RES-CHIP	47K	5%	1/16W
R4189	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4190	1-216-864-11	SHORT	0		
R4195	1-216-809-11	RES-CHIP	100	5%	1/16W
R4196	1-216-809-11	RES-CHIP	100	5%	1/16W
R4199	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R4201	1-216-833-11	RES-CHIP	10K	5%	1/16W
R4202	1-216-864-11	SHORT	0		
R4204	1-216-864-11	SHORT	0		
R4206	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4601	1-217-155-00	METAL	1	10%	2W
R4602	1-260-128-91	CARBON	270K	5%	1/2W
R4603	1-217-418-00	FUSIBLE	0.47	10%	1/2W
R4604	1-260-133-11	CARBON	680K	5%	1/2W
R4605	1-215-884-11	METAL OXIDE	47	5%	2W
R4606	1-249-401-11	CARBON	47	5%	1/4W
R4607	1-249-421-11	CARBON	2.2K	5%	1/4W
R4608	1-249-415-11	CARBON	680	5%	1/4W
R4609	1-216-366-00	METAL OXIDE	0.56	5%	2W
R4610	1-247-835-91	CARBON	1.5K	5%	1/4W
R4611	1-249-403-11	CARBON	68	5%	1/4W
R4612	1-249-418-11	CARBON	1.2K	5%	1/4W
R4613	1-249-419-11	CARBON	1.5K	5%	1/4W
R4614	1-247-807-31	CARBON	100	5%	1/4W
R4616	1-249-437-11	CARBON	47K	5%	1/4W
R4617	1-249-437-11	CARBON	47K	5%	1/4W
R4618	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R4619	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R4620	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R4621	1-216-823-11	RES-CHIP	1.5K	5%	1/16W
R4622	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R4623	1-216-821-11	RES-CHIP	1K	5%	1/16W
R4624	1-216-809-11	RES-CHIP	100	5%	1/16W
R4625	1-260-127-11	CARBON	220K	5%	1/2W
R4626	1-247-837-91	CARBON	1.8K	5%	1/4W

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

REF.NO.		PART.NO	DESCRIPTION	REMARK
			< RELAY >	
RY4601	⚠	1-755-388-11	RELAY (AC POWER)	
			< TRANSFORMER >	
T4601	⚠	1-437-445-11	TRANSFORMER, CONVERTER (SRT)	
T4602		1-424-993-11	PFC CHOKE COIL 20MH	
			< TUNER >	
TU4101		8-598-585-00	FRONT END BTD-DU604	
TU4102		1-693-557-13	FRONTEND (TUNER+IF)	
			< CRYSTAL >	
X4101		1-760-105-11	VIBRATOR, CRYSTAL	

***A-1632-947-A A Board, Complete (KV-28DX40)**
***A-1632-948-A A Board, Complete (KV-32DX40)**

A Board Common Parts

		4-382-854-01	SCREW (M3X8), P, SW (+)	
		4-382-854-01	SCREW (M3X8), P, SW (+)	
			< CAPACITOR >	
C002		1-163-233-91	CERAMIC CHIP 18PF	5.00% 50V
C004		1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C005		1-126-916-11	ELECT 1000UF	20.00% 6.3V
C006		1-163-233-91	CERAMIC CHIP 18PF	5.00% 50V
C009		1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C010		1-164-005-11	CERAMIC CHIP 0.47UF	16V
C011		1-163-005-91	CERAMIC CHIP 470PF	10.00% 50V
C012		1-126-963-11	ELECT 4.7UF	20.00% 50V
C013		1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C014		1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C015		1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C016		1-216-295-91	SHORT 0	
C018		1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C019		1-162-919-11	CERAMIC CHIP 22PF	5.00% 50V
C020		1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C021		1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C022		1-126-935-11	ELECT 470UF	20.00% 10V
C025		1-126-935-11	ELECT 470UF	20.00% 16V
C026		1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C027		1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C028		1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C030		1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C033		1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C035		1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C036		1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C037		1-136-244-11	FILM 0.1UF	2.00% 50V

REF.NO.	PART.NO	DESCRIPTION	REMARK
C038	1-163-038-91	CERAMIC CHIP 0.1UF	25V
C039	1-164-505-11	CERAMIC CHIP 2.2UF	16V
C040	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C042	1-162-625-11	CERAMIC CHIP 0.0047UF	5.00% 50V
C043	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C044	1-164-346-11	CERAMIC CHIP 1UF	16V
C045	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V
C046	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C047	1-126-935-11	ELECT 470UF	20.00% 16V
C053	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C055	1-126-960-11	ELECT 1UF	20.00% 50V
C100	1-126-933-11	ELECT 100UF	20.00% 16V
C103	1-126-965-91	ELECT 22UF	20.00% 50V
C105	1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C106	1-126-933-11	ELECT 100UF	20.00% 16V
C112	1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C204	1-115-340-11	CERAMIC CHIP 0.22UF	10.00% 25V
C211	1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C213	1-163-249-11	CERAMIC CHIP 82PF	5.00% 50V
C214	1-163-139-00	CERAMIC CHIP 820PF	5.00% 50V
C215	1-163-084-00	CERAMIC CHIP 1.5PF	0.25PF 50V
C216	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V
C217	1-163-084-00	CERAMIC CHIP 1.5PF	0.25PF 50V
C218	1-163-249-11	CERAMIC CHIP 82PF	5.00% 50V
C221	1-163-109-00	CERAMIC CHIP 47PF	5.00% 50V
C222	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V
C223	1-126-965-91	ELECT 22UF	20.00% 50V
C224	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V
C225	1-126-157-11	ELECT 10UF	20.00% 16V
C226	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C227	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V
C228	1-126-965-91	ELECT 22UF	20.00% 50V
C229	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C230	1-164-336-11	CERAMIC CHIP 0.33UF	25V
C232	1-126-157-11	ELECT 10UF	20.00% 16V
C233	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C234	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V
C235	1-164-005-11	CERAMIC CHIP 0.47UF	25V
C236	1-126-157-11	ELECT 10UF	20.00% 16V
C237	1-126-965-91	ELECT 22UF	20.00% 50V
C238	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V
C239	1-126-157-11	ELECT 10UF	20.00% 16V
C242	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C245	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C401	1-126-964-11	ELECT 10UF	20.00% 50V
C404	1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C405	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C407	1-164-346-11	CERAMIC CHIP 1UF	16V
C408	1-127-715-91	CERAMIC CHIP 0.22UF	10% 16V
C409	1-126-964-11	ELECT 10UF	20.00% 50V

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

A

REF.NO.	PART.NO	DESCRIPTION	REMARK
C410	1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C411	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C412	1-164-346-11	CERAMIC CHIP 1UF	16V
C414	1-164-346-11	CERAMIC CHIP 1UF	16V
C415	1-164-346-11	CERAMIC CHIP 1UF	16V
C416	1-126-964-11	ELECT 10UF	20.00% 50V
C417	1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C418	1-164-346-11	CERAMIC CHIP 1UF	16V
C419	1-162-964-11	CERAMIC CHIP 0.001UF	10.00% 50V
C423	1-127-715-91	CERAMIC CHIP 0.22UF	10% 16V
C424	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C426	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C427	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C428	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C429	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C430	1-102-114-00	CERAMIC 470PF	10.00% 50V
C435	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C436	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V
C437	1-164-346-11	CERAMIC CHIP 1UF	16V
C438	1-164-346-11	CERAMIC CHIP 1UF	16V
C445	1-126-964-11	ELECT 10UF	20.00% 50V
C446	1-126-964-11	ELECT 10UF	20.00% 50V
C447	1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C449	1-216-025-11	RES-CHIP 100 5%	1/10W
C501	1-126-968-11	ELECT 100UF	20.00% 50V
C502	1-163-038-91	CERAMIC CHIP 0.1UF	25V
C503	1-115-832-11	ELECT 100UF	20.00% 50V
C504	1-106-220-00	MYLAR 0.1UF	10.00% 100V
C505	1-137-194-81	FILM 0.47UF	5.00% 50V
C506	1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C509	1-107-364-11	MYLAR 0.01UF	10.00% 400V
C510	1-163-005-91	CERAMIC CHIP 470PF	10.00% 50V
C513	1-107-662-11	ELECT 22UF	20.00% 250V
C515	1-104-666-11	ELECT 220UF	20.00% 25V
C517	1-115-781-11	ELECT 220UF	20.00% 25V
C518	1-106-375-12	MYLAR 0.022UF	10.00% 250V
C519	1-163-275-11	CERAMIC CHIP 0.001UF	5.00% 50V
C520	1-163-038-91	CERAMIC CHIP 0.1UF	25V
C524	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C525	1-123-024-21	ELECT 33UF	160V
C531	1-126-964-11	ELECT 10UF	20.00% 50V
C532	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C537	1-102-002-00	CERAMIC 680PF	10.00% 500V
C538	1-165-319-11	CERAMIC CHIP 0.1UF	50V
C540	1-136-206-11	MYLAR 0.033UF	10.00% 400V
C541	1-106-383-00	MYLAR 0.047UF	10.00% 200V
C543	1-162-134-11	CERAMIC 470PF	10.00% 2KV
C545	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C546	1-130-895-51	FILM 0.056UF	5.00% 400V
C548	1-162-134-11	CERAMIC 470PF	10.00% 2KV

REF.NO.		PART.NO	DESCRIPTION	REMARK
C550		1-107-638-11	ELECT 33UF	20.00% 160V
C552		1-102-212-00	CERAMIC 820PF	10.00% 500V
C553		1-137-417-11	MYLAR 0.0047UF	10.00% 200V
C580		1-162-970-91	CERAMIC CHIP 0.01UF	10.00% 25V
C582		1-163-259-91	CERAMIC CHIP 220PF	5.00% 50V
C583		1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C600		1-119-888-51	CERAMIC 2200PF	20.00% 250V
C601	⚠	1-136-516-12	FILM 0.1UF	20.00% 300V
C602	⚠	1-136-516-12	FILM 0.1UF	20.00% 300V
C603	⚠	1-119-889-51	CERAMIC 1000PF	10.00% 250V
C604	⚠	1-119-889-51	CERAMIC 1000PF	10.00% 250V
C605		1-115-785-11	ELECT 470UF	20.00% 16V
C606		1-117-751-11	ELECT(BLOCK) 220UF	20.00% 450V
C607		1-126-964-11	ELECT 10UF	20.00% 50V
C608		1-126-963-11	ELECT 4.7UF	20.00% 50V
C610		1-126-941-11	ELECT 470UF	20.00% 25V
C611		1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C612		1-104-571-91	CERAMIC 0.0015UF	10.00% 2KV
C613		1-104-571-91	CERAMIC 0.0015UF	10.00% 2KV
C614		1-161-964-51	CERAMIC 0.0047UF	250V
C615		1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C616		1-165-127-11	CERAMIC 470PF	10.00% 500V
C617		1-165-127-11	CERAMIC 470PF	10.00% 500V
C618		1-126-949-11	ELECT 220UF	20.00% 35V
C619		1-165-127-51	CERAMIC 470PF	10.00% 500V
C620		1-137-990-21	FILM 33000PF	3% 800V
C621		1-165-127-51	CERAMIC 470PF	10.00% 500V
C622		1-104-571-91	CERAMIC 0.0015UF	10.00% 2KV
C623		1-104-571-91	CERAMIC 0.0015UF	10.00% 2KV
C624		1-126-935-11	ELECT 470UF	20.00% 16V
C626		1-126-967-11	ELECT 47UF	20.00% 50V
C627		1-126-964-11	ELECT 10UF	20.00% 50V
C628		1-126-963-11	ELECT 4.7UF	20.00% 50V
C629		1-165-127-11	CERAMIC 470PF	10.00% 500V
C630		1-107-641-11	ELECT 220UF	20.00% 160V
C631		1-126-942-61	ELECT 1000UF	20.00% 25V
C632		1-126-964-11	ELECT 10UF	20.00% 50V
C633		1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C634		1-128-562-11	ELECT 47UF	20.00% 100V
C635		1-136-165-00	FILM 0.1UF	5.00% 50V
C636		1-136-479-11	FILM 0.001UF	2.00% 50V
C637		1-126-967-11	ELECT 47UF	20.00% 50V
C638		1-107-679-91	ELECT 10UF	20.00% 450V
C639		1-104-665-11	ELECT 100UF	20.00% 25V
C640		1-126-947-11	ELECT 47UF	20.00% 25V
C641		1-115-785-11	ELECT 470UF	20.00% 16V
C642		1-104-665-11	ELECT 100UF	20.00% 25V
C643		1-165-127-11	CERAMIC 470PF	10.00% 500V
C645		1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C648		1-125-782-91	CERAMIC 4700PF	10.00% 1KV

REF.NO.	PART.NO	DESCRIPTION	REMARK
C649	1-163-038-91	CERAMIC CHIP 0.1UF	25V
C657	1-126-952-11	ELECT 1000UF	20.00% 35V
C1201	1-216-952-91	ELECT 1000UF	20.00% 35V
C1202	1-126-959-11	ELECT 0.47UF	20.00% 50V
C1203	1-535-143-61	LEAD,JUMPER (5.00MM)	
C1207	1-126-960-11	ELECT 1UF	20.00% 50V
C1208	1-126-953-11	ELECT 2200UF	20.00% 35V
C1209	1-163-033-91	CERAMIC CHIP 0.022UF	50V
C1210	1-126-960-11	ELECT 1UF	20.00% 50V
C1211	1-163-033-91	CERAMIC CHIP 0.022UF	50V
C1213	1-164-346-11	CERAMIC CHIP 1UF	16V
C1215	1-126-952-11	ELECT 1000UF	20.00% 35V
C1218	1-109-982-11	CERAMIC CHIP 1UF	10.00% 10V
C1219	1-104-666-11	ELECT 220UF	20.00% 25V
C1221	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C1228	1-126-952-11	ELECT 1000UF	20.00% 35V
C1229	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V
C1230	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V
C1231	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V
C1232	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C1235	1-126-960-11	ELECT 1UF	20.00% 50V
C1236	1-126-960-11	ELECT 1UF	20.00% 50V
		< CONNECTOR >	
CN001	*1-564-508-11	PLUG, CONNECTOR 5P	
CN002	*1-770-723-11	CONNECTOR, BOARD TO BOARD 8P	
CN003	*1-564-510-11	PLUG, CONNECTOR 7P	
CN101	1-695-915-21	TAB (CONTACT)	
CN405	*1-564-510-11	PLUG, CONNECTOR 7P	
CN406	*1-564-512-11	PLUG, CONNECTOR 9P	
CN501	1-580-798-11	CONNECTOR PIN (DY)	
CN503	*1-564-506-11	PLUG, CONNECTOR 3P	
CN506	1-695-915-21	TAB (CONTACT)	
CN508	*1-564-508-11	PLUG, CONNECTOR 5P	
CN509	1-695-915-11	TAB (CONTACT)	
CN510	1-691-771-11	PLUG (MICRO CONNECTOR) 9P	
CN512	*1-770-723-11	CONNECTOR, BOARD TO BOARD 8P	
CN601	1-580-843-11	PIN, CONNECTOR (POWER)	
CN602	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
CN603	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
CN605	*1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P	
CN606	*1-695-292-11	PIN, CONNECTOR (POWER)	
CN1200	*1-564-509-11	PLUG, CONNECTOR 6P	
CN1201	*1-564-507-11	PLUG, CONNECTOR 4P	
CN1202	*1-564-506-11	PLUG, CONNECTOR 3P	
		< DIODE >	
D001	8-719-069-55	DIODE UDZSTE-175.6B	
D002	8-719-069-55	DIODE UDZSTE-175.6B	
D003	8-719-109-69	DIODE RD3.6ES-B2	
D005	8-719-929-15	DIODE HZS9.1NB2	
D006	8-719-109-89	DIODE RD5.6ESB2	
D007	8-719-069-55	DIODE UDZSTE-175.6B	
D008	8-719-074-43	DIODE BAS316-115	
D010	8-719-074-43	DIODE BAS316-115	
D011	8-719-074-43	DIODE BAS316-115	
D012	8-719-929-15	DIODE HZS9.1NB2	
D013	8-719-109-69	DIODE RD3.6ES-B2	
D014	1-216-295-91	SHORT 0	
D016	8-719-109-89	DIODE RD5.6ESB2	
D018	8-719-109-69	DIODE RD3.6ES-B2	
D019	8-719-978-33	DIODE DTZ-TT11-6.8B	
D021	8-719-978-33	DIODE DTZ-TT11-6.8B	
D022	8-719-069-55	DIODE UDZSTE-175.6B	
D035	8-719-069-55	DIODE UDZSTE-175.6B	
D036	8-719-069-55	DIODE UDZSTE-175.6B	
D051	8-719-081-98	DIODE MM3Z6V8T1	
D101	8-719-083-87	DIODE UDZS-TE17-33B	
D103	8-719-081-98	DIODE MM3Z6V8T1	
D104	8-719-069-55	DIODE UDZSTE-175.6B	
D105	8-719-069-55	DIODE UDZSTE-175.6B	
D106	8-719-069-55	DIODE UDZSTE-175.6B	
D107	8-719-069-55	DIODE UDZSTE-175.6B	
D203	8-719-069-55	DIODE UDZSTE-175.6B	
D207	8-719-069-60	DIODE UDZSTE-179.1B	
D210	8-719-069-55	DIODE UDZSTE-175.6B	
D211	8-719-069-60	DIODE UDZSTE-179.1B	
D212	8-719-914-43	DIODE DAN202K	
D228	8-719-069-55	DIODE UDZSTE-175.6B	
D235	8-719-069-55	DIODE UDZSTE-175.6B	
D236	8-719-069-60	DIODE UDZSTE-179.1B	
D401	8-719-978-33	DIODE DTZ-TT11-6.8B	
D402	8-719-081-98	DIODE MM3Z6V8T1	
D403	8-719-978-33	DIODE DTZ-TT11-6.8B	
D404	8-719-109-89	DIODE RD5.6ESB2	
D405	8-719-081-98	DIODE MM3Z6V8T1	
D406	8-719-081-98	DIODE MM3Z6V8T1	
D407	8-719-081-98	DIODE MM3Z6V8T1	
D408	8-719-978-33	DIODE DTZ-TT11-6.8B	
D410	8-719-978-33	DIODE DTZ-TT11-6.8B	
D411	8-719-978-33	DIODE DTZ-TT11-6.8B	
D412	8-719-081-98	DIODE MM3Z6V8T1	
D413	8-719-978-33	DIODE DTZ-TT11-6.8B	
D414	8-719-081-98	DIODE MM3Z6V8T1	
D418	8-719-069-60	DIODE UDZSTE-179.1B	
D419	8-719-084-66	DIODE BAT85 SB00018/D8	
D420	8-719-081-98	DIODE MM3Z6V8T1	
D421	8-719-084-66	DIODE BAT85 SB00018/D8	
D422	8-719-978-33	DIODE DTZ-TT11-6.8B	

REF.NO.	PART.NO	DESCRIPTION	REMARK
D423	8-719-081-98	DIODE MM3Z6V8T1	
D424	8-719-069-60	DIODE UDZSTE-179.1B	
D427	8-719-082-01	DIODE MM3Z12VT1	
D428	8-719-978-33	DIODE DTZ-TT11-6.8B	
D429	8-719-978-33	DIODE DTZ-TT11-6.8B	
D435	8-719-069-60	DIODE UDZSTE-179.1B	
D436	8-719-069-60	DIODE UDZSTE-179.1B	
D501	8-719-979-85	DIODE EGP20G	
D502	8-719-081-90	DIODE PDZ22B-115	
D503	8-719-069-55	DIODE UDZSTE-175.6B	
D504	8-719-074-43	DIODE BAS316-115	
D512	8-719-302-43	DIODE EL1Z	
D513	8-719-979-85	DIODE EGP20G	
D514	8-719-979-85	DIODE EGP20G	
D534	8-719-302-43	DIODE EL1Z	
D535	8-719-908-03	DIODE GP08D	
D536	8-719-945-80	DIODE ERC06-15S	
D537	8-719-070-62	DIODE PDZ9.1B-115	
D538	8-719-908-03	DIODE GP08D	
D539	8-719-312-10	DIODE RU4AM-T3	
D541	1-216-295-91	SHORT 0	
D573	8-719-082-00	DIODE MM3Z4V7T1	
D601	8-719-510-53	DIODE D4SB60L	
D602	8-719-911-19	DIODE 1SS119-25	
D604	8-719-083-94	DIODE FUF4005	
D608	8-719-063-70	DIODE D1NL20U	
D610	8-719-110-41	DIODE RD15ES-B2	
D611	8-719-991-33	DIODE 1SS133T-77	
D612	8-719-991-33	DIODE 1SS133T-77	
D613	8-719-911-19	DIODE 1SS119-25	
D614	8-719-077-76	DIODE D2SB60A-F04	
D615	8-719-929-15	DIODE HZS9.1NB2	
D618	8-719-022-97	DIODE D2S4MF	
D619	8-719-022-97	DIODE D2S4MF	
D620	8-719-109-85	DIODE RD5.1ESB2	
D621	8-719-109-89	DIODE RD5.6ESB2	
D623	8-719-911-19	DIODE 1SS119-25	
D624	8-719-052-90	DIODE D1NL40-TA2	
D625	8-719-062-39	DIODE D4SBL20UF1	
D627	8-719-063-71	DIODE D1NL20U-TA	
D628	8-719-083-49	DIODE P6KE200ASY	
D629	8-719-083-94	DIODE FUF4005	
D631	8-719-921-63	DIODE MTZJ-7.5B	
D632	8-719-063-70	DIODE D1NL20U	
D633	8-719-109-69	DIODE RD3.6ES-B2	
D638	8-719-083-92	DIODE YG802C09RF122	
D640	8-719-921-63	DIODE MTZJ-7.5B	
D1203	8-719-914-43	DIODE DAN202K	
D1204	8-719-069-55	DIODE UDZSTE-175.6B	
D1230	8-719-074-43	DIODE BAS316-115	

REF.NO.	PART.NO	DESCRIPTION	REMARK
		< FERRITE BEAD >	
FB601	1-410-397-21	FERRITE 1.1UH	
FB602	1-410-397-21	FERRITE 1.1UH	
FB603	1-412-911-11	FERRITE 0UH	
FB604	1-410-397-21	FERRITE 1.1UH	
FB605	1-410-397-21	FERRITE 1.1UH	
FB606	1-412-911-11	FERRITE 0UH	
FB607	1-412-911-11	FERRITE 0UH	
		< FILTER >	
FL201	1-239-803-11	FILTER, EMI	
		< IC >	
IC001	6-800-687-01	IC TDA9394H/N1/5/0423	
IC004	8-759-575-72	IC M24C08-WMN6T	
IC201	6-700-411-01	IC MSP3411G-PP-B8	
IC401	8-759-665-11	IC LM393DT	
IC501	8-759-192-71	IC STV9379	
IC531	8-759-665-11	IC LM393DT	
IC601	8-759-670-30	IC MCZ3001D	
IC602	8-749-016-19	IC SE135N-LF4	
IC604	8-759-668-87	IC BA41W12ST-V5	
IC608	8-759-591-02	IC L78L33ABZ-AP	
IC609	8-759-468-89	IC TOP209P	
IC1201	8-759-831-57	IC TDA7495S	
		< JACK >	
J401	1-766-296-21	CONNECTOR, DUAL SCART	
J404	1-784-632-11	JACK, PIN 2P	
		< COIL >	
L001	1-408-611-31	INDUCTOR 47UH	
L002	1-414-187-11	INDUCTOR 47UH	
L004	1-408-611-31	INDUCTOR 47UH	
L006	1-408-611-31	INDUCTOR 47UH	
L027	1-216-295-91	SHORT 0	
L101	1-412-534-31	INDUCTOR 56UH	
L102	1-408-611-31	INDUCTOR 47UH	
L103	1-412-002-31	INDUCTOR 4.7UH	
L104	1-412-002-31	INDUCTOR 4.7UH	
L201	1-408-602-31	INDUCTOR 8.2UH	
L202	1-408-591-11	INDUCTOR 1UH	
L203	1-408-602-31	INDUCTOR 8.2UH	
L205	1-408-591-11	INDUCTOR 1UH	
L206	1-535-143-61	LEAD, JUMPER (5.0MM)	
L207	1-408-591-11	INDUCTOR 1UH	
L401	1-410-993-42	INDUCTOR 1UH	
L403	1-410-993-42	INDUCTOR 1UH	

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

A

REF.NO.	PART.NO	DESCRIPTION	REMARK
L404	1-410-993-42	INDUCTOR 1UH	
L405	1-535-143-61	LEAD, JUMPER (5.0MM)	
L406	1-414-177-11	INDUCTOR 1UH	
L410	1-216-025-11	RES-CHIP 100 5%	1/10W
L430	1-412-002-31	INDUCTOR 4.7UH	
L446	1-216-295-91	SHORT 0	
L448	1-216-295-91	SHORT 0	
L501	1-414-187-11	INDUCTOR 47UH	
L502	1-412-529-11	INDUCTOR 22UH	
L503	1-412-521-31	INDUCTOR 4.7UH	
L504	1-535-143-61	LEAD, JUMPER (5.0MM)	
L505	1-412-542-41	INDUCTOR 270UH	
L507	1-412-533-21	INDUCTOR 47UH	
L532	1-412-553-41	INDUCTOR 3.3MMH	
L533	1-406-989-21	INDUCTOR 10MH	
L534	1-216-025-11	RES-CHIP 100 5%	1/10W
L535	1-459-111-00	INDUCTOR 10MH	
L601	1-408-603-31	INDUCTOR 10UH	
L602	1-408-611-31	INDUCTOR 47UH	
L603	1-412-523-41	INDUCTOR 6.8UH	
L1201	1-535-143-61	LEAD, JUMPER (5.0MM)	
L1203	1-535-143-61	LEAD, JUMPER (5.0MM)	
		< PHOTO COUPLER >	
PH601	⚠ 8-749-016-21	IC TCET1103G	
		< IC LINK >	
PS1201	1-533-597-31	LINK, IC 5A	
		< TRANSISTOR >	
Q002	8-729-900-53	TRANSISTOR DTC114EK	
Q013	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q014	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q049	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q202	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q203	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q212	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q401	8-729-026-49	TRANSISTOR 2SA1037AK-T146	
Q409	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q411	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q532	8-729-053-33	TRANSISTOR IRF614-037	
Q533	8-729-049-08	TRANSISTOR BU2515DX-127	
Q535	8-729-053-33	TRANSISTOR IRF614-037	
Q576	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
Q601	8-729-026-49	TRANSISTOR 2SA1037AK-T146	
Q602	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q603	8-729-037-17	TRANSISTOR KRA104M-AT	
Q604	8-729-036-60	TRANSISTOR KRC104M-AT	
Q606	8-729-053-36	TRANSISTOR 2SK2640-01MR	
Q607	8-729-053-36	TRANSISTOR 2SK2640-01MR	
Q608	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q609	8-729-026-49	TRANSISTOR 2SA1037AK-T146	
Q1230	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q1231	8-729-027-56	TRANSISTOR DTC143TKA-T146	
Q1232	8-729-026-49	TRANSISTOR 2SA1037AK-T146	
Q1233	8-729-026-49	TRANSISTOR 2SA1037AK-T146	
		< RESISTOR >	
JR3	1-216-296-11	SHORT 0	
JR4	1-216-295-91	SHORT 0	
JR5	1-216-295-91	SHORT 0	
JR5	1-216-295-91	SHORT 0	
JR7	1-216-295-91	SHORT 0	
JR9	1-216-295-91	SHORT 0	
JR10	1-216-295-91	SHORT 0	
JR16	1-216-296-11	SHORT 0	
JR17	1-216-295-91	SHORT 0	
JR21	1-216-818-11	RES-CHIP 560 5%	1/16W
JR24	1-216-295-91	SHORT 0	
JR25	1-216-295-91	SHORT 0	
JR26	1-216-295-91	SHORT 0	
JR105	1-216-295-91	SHORT 0	
JR204	1-216-296-11	SHORT 0	
JR206	1-216-295-91	SHORT 0	
JR208	1-216-295-91	SHORT 0	
JR209	1-216-295-91	SHORT 0	
JR210	1-216-295-91	SHORT 0	
JR211	1-216-296-11	SHORT 0	
JR213	1-216-295-91	SHORT 0	
JR401	1-216-295-91	SHORT 0	
JR418	1-216-296-11	SHORT 0	
JR423	1-216-296-11	SHORT 0	
JR505	1-216-295-91	SHORT 0	
JR506	1-216-296-11	SHORT 0	
JR601	1-216-295-91	SHORT 0	
JR609	1-216-295-91	SHORT 0	
JR610	1-216-295-91	SHORT 0	
JR1209	1-216-295-91	SHORT 0	
R001	1-216-295-91	SHORT 0	
R003	1-216-065-91	RES-CHIP 4.7K 5%	1/10W
R004	1-216-033-00	RES-CHIP 220 5%	1/10W
R005	1-216-041-00	RES-CHIP 470 5%	1/10W
R006	1-216-025-11	RES-CHIP 100 5%	1/10W
R007	1-216-025-11	RES-CHIP 100 5%	1/10W
R008	1-216-025-11	RES-CHIP 100 5%	1/10W
R009	1-216-049-11	RES-CHIP 1K 5%	1/10W
R010	1-216-049-11	RES-CHIP 1K 5%	1/10W
R011	1-216-295-91	SHORT 0	

REF.NO.	PART.NO	DESCRIPTION			REMARK
R012	1-216-121-91	RES-CHIP	1M	5%	1/10W
R014	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R015	1-216-198-91	RES-CHIP	1K	5%	1/8W
R017	1-216-025-11	RES-CHIP	100	5%	1/10W
R018	1-208-820-11	METAL CHIP	39K	0.5%	1/10W
R020	1-216-077-91	RES-CHIP	15K	5%	1/10W
R023	1-216-035-00	RES-CHIP	270	5%	1/10W
R024	1-216-025-11	RES-CHIP	100	5%	1/10W
R025	1-216-025-11	RES-CHIP	100	5%	1/10W
R026	1-216-025-11	RES-CHIP	100	5%	1/10W
R027	1-216-025-11	RES-CHIP	100	5%	1/10W
R028	1-216-025-11	RES-CHIP	100	5%	1/10W
R029	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R030	1-216-821-11	RES-CHIP	1K	5%	1/16W
R031	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R032	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R033	1-216-073-91	RES-CHIP	10K	5%	1/10W
R034	1-216-129-00	RES-CHIP	2.2M	5%	1/10W
R035	1-216-101-00	RES-CHIP	150K	5%	1/10W
R036	1-216-083-00	RES-CHIP	27K	5%	1/10W
R039	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R040	1-216-033-00	RES-CHIP	220	5%	1/10W
R041	1-216-025-11	RES-CHIP	100	5%	1/10W
R042	1-216-025-11	RES-CHIP	100	5%	1/10W
R044	1-216-073-91	RES-CHIP	10K	5%	1/10W
R045	1-216-129-00	RES-CHIP	2.2M	5%	1/10W
R046	1-216-025-11	RES-CHIP	100	5%	1/10W
R047	1-216-025-11	RES-CHIP	100	5%	1/10W
R048	1-216-073-91	RES-CHIP	10K	5%	1/10W
R049	1-216-049-11	RES-CHIP	1K	5%	1/10W
R050	1-216-025-11	RES-CHIP	100	5%	1/10W
R051	1-216-295-91	SHORT	0		
R052	1-216-295-91	SHORT	0		
R055	1-216-025-11	RES-CHIP	100	5%	1/10W
R056	1-216-081-00	RES-CHIP	22K	5%	1/10W
R060	1-216-025-11	RES-CHIP	100	5%	1/10W
R061	1-216-025-11	RES-CHIP	100	5%	1/10W
R070	1-216-025-11	RES-CHIP	100	5%	1/10W
R071	1-216-049-11	RES-CHIP	1K	5%	1/10W
R072	1-127-715-91	CERAMIC CHIP	0.22	10%	16V
R073	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R074	1-216-073-91	RES-CHIP	10K	5%	1/10W
R090	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R091	1-216-081-00	RES-CHIP	22K	5%	1/10W
R092	1-216-073-91	RES-CHIP	10K	5%	1/10W
R094	1-216-025-11	RES-CHIP	100	5%	1/10W
R095	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R096	1-216-073-91	RES-CHIP	10K	5%	1/10W
R101	1-216-093-91	RES-CHIP	68K	5%	1/10W
R102	1-216-097-11	RES-CHIP	100K	5%	1/10W

REF.NO.	PART.NO	DESCRIPTION			REMARK
R103	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R104	1-216-295-91	SHORT	0		
R105	1-414-813-11	FERRITE	0UH		
R106	1-215-900-11	METAL OXIDE	22K	5%	2W
R107	1-216-025-11	RES-CHIP	100	5%	1/10W
R108	1-216-025-11	RES-CHIP	100	5%	1/10W
R201	1-216-025-11	RES-CHIP	100	5%	1/10W
R202	1-216-073-91	RES-CHIP	10K	5%	1/10W
R203	1-216-025-11	RES-CHIP	100	5%	1/10W
R211	1-216-081-00	RES-CHIP	22K	5%	1/10W
R212	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R213	1-216-081-00	RES-CHIP	22K	5%	1/10W
R214	1-216-041-00	RES-CHIP	470	5%	1/10W
R215	1-216-037-00	RES-CHIP	330	5%	1/10W
R216	1-216-097-11	RES-CHIP	100K	5%	1/10W
R217	1-216-222-00	RES-CHIP	10K	5%	1/8W
R220	1-216-031-00	RES-CHIP	180	5%	1/10W
R221	1-216-190-00	RES-CHIP	470	5%	1/8W
R232	1-216-025-11	RES-CHIP	100	5%	1/10W
R233	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R234	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R235	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R236	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R238	1-216-025-11	RES-CHIP	100	5%	1/10W
R246	1-260-107-11	CARBON	4.7K	5%	1/2W
R248	1-249-429-11	CARBON	10K	5%	1/4W
R249	1-216-097-11	RES-CHIP	100K	5%	1/10W
R250	1-216-230-00	RES-CHIP	22K	5%	1/8W
R251	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R252	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R253	1-216-025-11	RES-CHIP	100	5%	1/10W
R254	1-216-025-11	RES-CHIP	100	5%	1/10W
R401	1-410-993-42	INDUCTOR	1UH		
R402	1-216-041-00	RES-CHIP	470	5%	1/10W
R403	1-216-113-00	RES-CHIP	470K	5%	1/10W
R404	1-216-113-00	RES-CHIP	470K	5%	1/10W
R405	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R406	1-216-296-11	SHORT	0		
R407	1-216-022-00	RES-CHIP	75	5%	1/10W
R408	1-216-022-00	RES-CHIP	75	5%	1/10W
R409	1-216-025-11	RES-CHIP	100	5%	1/10W
R410	1-216-025-11	RES-CHIP	100	5%	1/10W
R411	1-216-022-00	RES-CHIP	75	5%	1/10W
R412	1-216-025-11	RES-CHIP	100	5%	1/10W
R413	1-216-113-00	RES-CHIP	470K	5%	1/10W
R414	1-216-022-00	RES-CHIP	75	5%	1/10W
R415	1-216-022-00	RES-CHIP	75	5%	1/10W
R416	1-216-027-00	RES-CHIP	120	5%	1/10W
R417	1-216-113-00	RES-CHIP	470K	5%	1/10W
R418	1-216-113-00	RES-CHIP	470K	5%	1/10W

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

A

REF.NO.	PART.NO	DESCRIPTION			REMARK
R419	1-216-022-00	RES-CHIP	75	5%	1/10W
R420	1-216-073-91	RES-CHIP	10K	5%	1/10W
R421	1-216-049-11	RES-CHIP	1K	5%	1/10W
R422	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R423	1-216-113-00	RES-CHIP	470K	5%	1/10W
R424	1-216-113-00	RES-CHIP	470K	5%	1/10W
R425	1-216-085-91	RES-CHIP	33K	5%	1/10W
R426	1-216-073-91	RES-CHIP	10K	5%	1/10W
R427	1-216-113-00	RES-CHIP	470K	5%	1/10W
R428	1-216-073-91	RES-CHIP	10K	5%	1/10W
R429	1-216-089-91	RES-CHIP	47K	5%	1/10W
R430	1-216-073-91	RES-CHIP	10K	5%	1/10W
R431	1-216-073-91	RES-CHIP	10K	5%	1/10W
R433	1-216-073-91	RES-CHIP	10K	5%	1/10W
R434	1-216-073-91	RES-CHIP	10K	5%	1/10W
R435	1-216-295-91	SHORT	0		
R438	1-216-022-00	RES-CHIP	75	5%	1/10W
R440	1-216-049-11	RES-CHIP	1K	5%	1/10W
R441	1-216-051-00	RES-CHIP	1.2K	5%	1/10W
R442	1-216-085-91	RES-CHIP	33K	5%	1/10W
R443	1-216-073-91	RES-CHIP	10K	5%	1/10W
R444	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R445	1-216-022-00	RES-CHIP	75	5%	1/10W
R446	1-216-113-00	RES-CHIP	470K	5%	1/10W
R447	1-216-295-91	SHORT	0		
R448	1-216-113-00	RES-CHIP	470K	5%	1/10W
R449	1-216-295-91	SHORT	0		
R450	1-216-041-00	RES-CHIP	470	5%	1/10W
R451	1-216-041-00	RES-CHIP	470	5%	1/10W
R453	1-216-171-00	RES-CHIP	75	5%	1/8W
R454	1-216-001-00	RES-CHIP	10	5%	1/10W
R460	1-216-049-11	RES-CHIP	1K	5%	1/10W
R461	1-216-022-00	RES-CHIP	75	5%	1/10W
R462	1-216-178-00	RES-CHIP	150	5%	1/8W
R500	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R501	1-216-091-00	RES-CHIP	56K	5%	1/10W
R502	1-216-073-91	RES-CHIP	10K	5%	1/10W
R503	1-215-888-00	METAL OXIDE	220	5%	2W
R504	1-249-385-11	CARBON	2.2	5%	1/4W
R505	1-216-671-11	METAL CHIP	6.8K	0.5%	1/10W
R506	1-208-796-11	METAL CHIP	3.9K	0.5%	1/10W
R507	1-216-349-00	METAL OXIDE	1	5%	1W
R508	1-216-673-11	METAL CHIP	8.2K	0.5%	1/10W
R509	1-208-796-11	METAL CHIP	3.9K	0.5%	1/10W
R510	1-216-113-00	RES-CHIP	470K	5%	1/10W
R512	1-249-382-11	CARBON	1.2	5%	1/4W
R514	1-249-377-11	CARBON	0.47	5%	1/4W
R515	1-249-377-11	CARBON	0.47	5%	1/4W
R520	1-215-884-11	METAL OXIDE	47	5%	2W
R522	1-216-097-11	RES-CHIP	100K	5%	1/10W

REF.NO.	PART.NO	DESCRIPTION			REMARK
R523	1-216-121-11	RES-CHIP	1M	5%	1/10W
R524	1-216-075-00	RES-CHIP	12K	5%	1/10W
R525	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R526	1-216-089-91	RES-CHIP	47K	5%	1/10W
R527	1-216-077-91	RES-CHIP	15K	5%	1/10W
R528	1-216-097-11	RES-CHIP	100K	5%	1/10W
R529	1-216-073-91	RES-CHIP	10K	5%	1/10W
R530	1-216-085-91	RES-CHIP	33K	5%	1/10W
R531	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R532	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R533	1-216-077-91	RES-CHIP	15K	5%	1/10W
R538	1-535-143-71	LEAD, JUMPER (7.5MM)			
R539	1-535-143-41	LEAD, JUMPER (17.5MM)			
R543	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R544	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R547	1-535-143-71	LEAD, JUMPER (7.5MM)			
R548	1-249-387-11	CARBON	3.3	5%	1/4W
R549	1-535-143-71	LEAD, JUMPER (7.5MM)			
R551	1-215-873-00	METAL OXIDE	4.7K	5%	1W
R552	1-216-848-91	RES-CHIP	180K	5%	1/16W
R553	1-249-381-11	CARBON	1	5%	1/4W
R555	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R556	1-215-916-00	METAL OXIDE	680	5%	3W
R557	1-216-067-00	RES-CHIP	5.6K	5%	1/10W
R558	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R589	1-216-097-11	RES-CHIP	100K	5%	1/10W
R590	1-216-081-91	RES-CHIP	22K	5%	1/10W
R591	1-215-892-11	METAL OXIDE	1K	5%	2W
R595	1-249-377-91	CARBON	0.47	5%	1/4W
R602	1-202-968-11	CEMENTED	1.2	5%	10W
R603	1-202-933-61	FUSIBLE	0.1	10%	1/2W
R605	1-216-049-11	RES-CHIP	1K	5%	1/10W
R608	1-216-073-91	RES-CHIP	10K	5%	1/10W
R609	1-216-677-11	METAL CHIP	12K	0.5%	1/10W
R610	1-215-481-00	METAL	330K	1%	1/4W
R611	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R612	1-249-429-11	CARBON	10K	5%	1/4W
R613	⚠ 1-219-720-91	METAL	10M	5%	1W
R615	1-215-385-00	METAL	33	1%	1/4W
R618	1-247-889-00	CARBON	270K	5%	1/4W
R619	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R621	1-216-113-00	RES-CHIP	470K	5%	1/10W
R622	1-216-073-91	RES-CHIP	10K	5%	1/10W
R623	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R624	1-216-001-00	RES-CHIP	10	5%	1/10W
R625	1-216-073-91	RES-CHIP	10K	5%	1/10W
R627	1-249-389-11	CARBON	4.7	5%	1/4W
R628	1-247-791-91	CARBON	22	5%	1/4W
R629	1-216-073-91	RES-CHIP	10K	5%	1/10W
R631	1-216-101-00	RES-CHIP	150K	5%	1/10W

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

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REF.NO.		PART.NO	DESCRIPTION			REMARK
R632		1-249-417-11	CARBON	1K	5%	1/4W
R633		1-215-481-00	METAL	330K	1%	1/4W
R634		1-217-625-00	METAL	0.05	10%	2W
R635		1-260-300-11	CARBON	4.7	5%	1/2W
R636		1-249-413-11	CARBON	470	5%	1/4W
R637		1-216-041-00	RES-CHIP	470	5%	1/10W
R639		1-208-814-91	METAL CHIP	22K	0.5%	1/10W
R640		1-208-830-11	METAL CHIP	100K	0.5%	1/10W
R641		1-216-097-11	RES-CHIP	100K	5%	1/10W
R642		1-249-405-11	CARBON	100	5%	1/4W
R643		1-216-089-91	RES-CHIP	47K	5%	1/10W
R645		1-216-073-91	RES-CHIP	10K	5%	1/10W
R647		1-216-049-11	RES-CHIP	1K	5%	1/10W
R648		1-215-481-00	METAL	330K	1%	1/4W
R649		1-208-805-11	METAL CHIP	9.1K	0.5%	1/10W
R650		1-208-758-11	METAL CHIP	100	0.5%	1/10W
R651		1-220-926-11	FUSIBLE	0.47	10%	1/2W
R652		1-216-081-00	RES-CHIP	22K	5%	1/10W
R653		1-216-073-91	RES-CHIP	10K	5%	1/10W
R654		1-216-001-00	RES-CHIP	10	5%	1/10W
R656		1-216-365-00	METAL OXIDE	0.47	5%	2W
R658		1-202-968-11	CEMENTED	1.2	5%	10W
R660		1-247-807-31	CARBON	100	5%	1/4W
R1202		1-216-073-91	RES-CHIP	10K	5%	1/10W
R1203		1-216-049-11	RES-CHIP	1K	5%	1/10W
R1207		1-216-077-91	RES-CHIP	15K	5%	1/10W
R1210		1-216-077-91	RES-CHIP	15K	5%	1/10W
R1213		1-216-049-11	RES-CHIP	1K	5%	1/10W
R1214		1-216-049-11	RES-CHIP	1K	5%	1/10W
R1215		1-216-049-11	RES-CHIP	1K	5%	1/10W
R1216		1-216-025-11	RES-CHIP	100	5%	1/10W
R1217		1-216-341-11	METAL OXIDE	0.22	5%	1W
R1230		1-216-041-00	RES-CHIP	470	5%	1/10W
R1231		1-216-113-00	RES-CHIP	470K	5%	1/10W
R1232		1-216-041-00	RES-CHIP	470	5%	1/10W
R1233		1-216-113-00	RES-CHIP	470K	5%	1/10W
R1235		1-216-073-91	RES-CHIP	10K	5%	1/10W
R1236		1-216-073-91	RES-CHIP	10K	5%	1/10W
			< RELAY >			
RY601	⚠	1-755-388-11	RELAY (AC POWER)			
			< SWITCH >			
SW532		1-572-707-11	SWITCH, LEVER			
			< TRANSFORMER >			
T511	⚠	1-453-308-41	TRANSFORMER ASSY, FLYBACK (NX4521//Z2B4)			
T531		1-437-210-11	TRANSFORMER, HORIZONTAL DRIVE			
T532		1-426-981-91	TRANSFORMER, FERRITE (PMT)			
T602	⚠	1-431-732-31	TRANSFORMER, CONVERTER (SRT)			
T603	⚠	1-435-976-11	TRANSFORMER, CONVERTER (PIT)			
			< THERMISTOR >			
TH601		1-803-586-41	THERMISTOR			
THP601	⚠	1-803-951-11	THERMISTOR, PTC			
			< CRYSTAL >			
X001		1-578-774-71	VIBRATOR, CRYSTAL			
X201		1-760-628-11	VIBRATOR, CRYSTAL			

A Board Variant Parts KV-28DX40

			< CAPACITOR >			
C522		1-137-447-11	MYLAR	0.27UF	5.00%	50V
C536		1-115-521-11	FILM	0.82UF	5.00%	250V
C539		1-111-230-11	ELECT	1UF	20.00%	160V
C542		1-162-115-00	CERAMIC	330PF	10.00%	2KV
C547		1-115-521-11	FILM	0.82UF	5.00%	250V
C555		1-117-652-11	FILM	22000PF	3.00%	1.2KV
			< RESISTOR >			
R022		1-216-089-91	RES-CHIP	47K	5%	1/10W
R053		1-216-077-91	RES-CHIP	15K	5%	1/10W
R455		1-216-295-91	SHORT	0		
R513		1-216-105-91	RES-CHIP	220K	5%	1/10W
R516		1-214-907-00	METAL	56K	1%	1/2W
R517		1-215-451-00	METAL	18K	1%	1/4W
R518		1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R521		1-216-105-91	RES-CHIP	220K	5%	1/10W
R534		1-216-097-11	RES-CHIP	100K	5%	1/10W
R535		1-216-099-00	RES-CHIP	120K	5%	1/10W
R540		1-212-970-00	FUSIBLE	33	5%	1/2W
R546		1-216-480-11	METAL OXIDE	820	5%	3W
R568		1-215-916-00	METAL OXIDE	680	5%	3W
R583		1-216-073-91	RES-CHIP	10K	5%	1/10W
R600		1-216-641-11	METAL CHIP	390	0.5%	1/10W
R601		1-216-643-11	METAL CHIP	470	0.5%	1/10W
			< TRANSFORMER >			
T533		1-433-980-12	TRANSFORMER, HORIZONTAL LINEAR			

A Board Variant Parts KV-32DX40

			< CAPACITOR >			
C536		1-115-522-11	FILM	1UF	5.00%	250V
C539		1-107-667-11	ELECT	2.2UF	20.00%	160V
C542		1-161-754-00	CERAMIC	0.001UF	10.00%	2KV
C547		1-109-844-11	FILM	0.68UF	5.00%	250V

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

REF.NO.	PART.NO	DESCRIPTION	REMARK
C555	1-127-717-11	FILM 19000PF	3.00% 1.2KV
		< RESISTOR >	
JR101	1-216-295-91	SHORT 0	
R022	1-216-689-11	RES-CHIP 39K	5% 1/10W
R053	1-216-095-00	RES-CHIP 82K	5% 1/10W
R455	1-412-002-31	INDUCTOR 4.7UH	
R516	1-214-905-11	METAL 47K	1% 1/2W
R517	1-215-453-00	METAL 22K	1% 1/4W
R518	1-216-069-00	RES-CHIP 6.8K	5% 1/10W
R534	1-216-111-00	RES-CHIP 390K	5% 1/10W
R535	1-216-105-91	RES-CHIP 220K	5% 1/10W
R540	1-212-974-00	FUSIBLE 47	5% 1/2W
R546	1-215-917-11	METAL OXIDE 1K	5% 3W
R568	1-216-480-11	METAL OXIDE 820	5% 3W
R583	1-216-077-91	RES-CHIP 15K	5% 1/10W
R600	1-216-629-11	METAL CHIP 120	0.5% 1/10W
R601	1-216-647-11	METAL CHIP 680	0.5% 1/10W
		< TRANSFORMER >	
T533	1-429-306-11	TRANSFORMER, HORIZONTAL LINEAR	

*A-1620-146-A B Board, Complete

		< CAPACITOR >	
C8301	1-126-947-11	ELECT 47UF	20.00% 25V
C8302	1-126-964-11	ELECT 10UF	20.00% 50V
C8303	1-126-964-11	ELECT 10UF	20.00% 50V
C8304	1-126-964-11	ELECT 10UF	20.00% 50V
C8305	1-107-826-11	CERAMIC CHIP 0.1UF	10.00% 16V
C8306	1-107-826-11	CERAMIC CHIP 0.1UF	10.00% 16V
C8307	1-107-826-11	CERAMIC CHIP 0.1UF	10.00% 16V
C8308	1-107-826-11	CERAMIC CHIP 0.1UF	10.00% 16V
		< CONNECTOR >	
CN8301	1-564-521-11	PLUG, CONNECTOR 6P	
CN8302	*1-778-770-11	CONNECTOR,BOARD TO BOARD(PLUG)	
		< IC >	
IC8301	8-759-385-77	IC MC14053 BDR2	
		< TRANSISTOR >	
Q8301	8-729-900-53	TRANSISTOR DTC114EK	
Q8302	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q8303	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q8304	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q8305	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q8306	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q8307	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< RESISTOR >	
R8301	1-216-809-11	RES-CHIP 100	5% 1/16W
R8302	1-216-809-11	RES-CHIP 100	5% 1/16W
R8303	1-216-809-11	RES-CHIP 100	5% 1/16W
R8304	1-216-817-11	RES-CHIP 470	5% 1/16W
R8305	1-216-817-11	RES-CHIP 470	5% 1/16W
R8306	1-216-817-11	RES-CHIP 470	5% 1/16W
R8307	1-216-817-11	RES-CHIP 470	5% 1/16W
R8308	1-216-817-11	RES-CHIP 470	5% 1/16W
R8309	1-216-817-11	RES-CHIP 470	5% 1/16W
R8310	1-216-829-11	RES-CHIP 4.7K	5% 1/16W
R8311	1-216-835-11	RES-CHIP 15K	5% 1/16W
R8312	1-216-833-11	RES-CHIP 10K	5% 1/16W
R8313	1-216-835-11	RES-CHIP 15K	5% 1/16W
R8314	1-216-833-11	RES-CHIP 10K	5% 1/16W
R8315	1-216-835-11	RES-CHIP 15K	5% 1/16W
R8316	1-216-833-11	RES-CHIP 10K	5% 1/16W
R8317	1-216-821-11	RES-CHIP 1K	5% 1/16W
R8318	1-216-821-11	RES-CHIP 1K	5% 1/16W
R8319	1-216-821-11	RES-CHIP 1K	5% 1/16W

*A-1624-109-A F3 Board, Complete

	*4-374-846-01	COVER, CAPACITOR, CAP TYPE	
		< CAPACITOR >	
C3601	1-113-924-51	CERAMIC 0.0047UF	20.00% 250V
C3602	1-136-516-12	METAL 0.1UF	20.00% 300V
C3603	1-136-516-12	METAL 0.1UF	20.00% 300V
		< CONNECTOR >	
CN3601	1-580-843-11	PIN, CONNECTOR (POWER)	
CN3602	1-695-915-21	TAB (CONTACT)	
CN3603	1-580-843-11	PIN, CONNECTOR (POWER)	
		< FUSE >	
F3601	⚠ 1-576-232-21	FUSE (H.B.C.) 5A/250V	
	*1-533-725-11	HOLDER, FUSE (F3601)	
		< RESISTOR >	
R3601	1-202-719-91	SOLID 1M	10% 1/2W
		< TRANSFORMER >	
T3601	1-433-488-11	TRANSFORMER, LINE FILTER	
T3602	1-433-488-11	TRANSFORMER, LINE FILTER	

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

REF.NO.	PART.NO	DESCRIPTION	REMARK
		< VARISTOR >	
VD3601	1-803-830-11	VARISTOR (ERZ14D621)	

*A-1624-106-A F6 Board, Complete

	1-682-339-15	PWB, F6	
		< CONNECTOR >	
CN7601	*1-691-291-11	PIN, CONNECTOR (PC BOARD) 5P	
CN7602	1-580-843-11	PIN, CONNECTOR (POWER)	
		< SWITCH >	
S7601	⚠ 1-571-433-21	SWITCH, PUSH (AC POWER)	

*A-1638-156-A C Board, Complete

	*1-681-784-15	PWB, C			
	4-382-854-01	SCREW (M3X8), P, SW (+)			
		< CAPACITOR >			
C701	1-136-189-00	MYLAR	0.1UF	10.00%	250V
C702	1-126-964-11	ELECT	10UF	20.00%	50V
C703	1-101-004-00	CERAMIC	0.01UF		50V
C704	1-107-649-11	ELECT	2.2UF	20.00%	250V
C705	1-162-318-11	CERAMIC	0.001UF	10.00%	500V
C706	1-162-318-11	CERAMIC	0.001UF	10.00%	500V
C708	1-115-350-61	CERAMIC	0.0047UF		2KV
C710	1-107-652-11	ELECT	10UF	20.00%	250V
C1803	1-101-005-00	CERAMIC	0.022UF		50V
C1804	1-126-964-11	ELECT	10UF	20.00%	50V
C1805	1-101-880-00	CERAMIC	47PF	5.00%	50V
		< CONNECTOR >			
CN702	1-695-915-11	TAB (CONTACT)			
CN703	*1-564-510-11	PLUG, CONNECTOR 7P			
CN706	1-695-915-11	TAB (CONTACT)			
CN707	*1-564-508-11	PLUG, CONNECTOR 5P			
CN1801	*1-564-506-11	PLUG, CONNECTOR 3P			
		< DIODE >			
D701	8-719-991-33	DIODE 1SS133T-77			
D702	8-719-901-83	DIODE 1SS83			
D703	8-719-901-83	DIODE 1SS83			
D705	8-719-302-43	DIODE EL1Z			
D706	8-719-901-83	DIODE 1SS83			
D707	8-719-901-83	DIODE 1SS83			
D708	8-719-109-97	DIODE RD6.8ES-B2			
D709	8-719-109-97	DIODE RD6.8ES-B2			
D710	8-719-109-97	DIODE RD6.8ES-B2			
D1801	8-719-110-17	DIODE RD10ESB2			
D1802	8-719-110-17	DIODE RD10ESB2			
D1803	8-719-110-17	DIODE RD10ESB2			
		< IC >			
IC701	8-759-562-43	IC TDA6108JF/N1B			
IC1801	8-759-603-37	IC M5216P			
		< SOCKET >			
J701	⚠ 1-251-732-11	SOCKET, CRT			
		< COIL >			
L704	1-414-183-41	INDUCTOR	10UH		
		< RESISTOR >			
R701	1-247-903-00	CARBON	1M	5%	1/4W
R702	1-249-429-11	CARBON	10K	5%	1/4W
R703	1-247-903-00	CARBON	1M	5%	1/4W
R704	1-535-143-21	LEAD, JUMPER (12.5MM)			
R705	1-215-869-11	METAL OXIDE	1K	5%	1W
R706	1-249-411-11	CARBON	330	5%	1/4W
R712	1-215-869-11	METAL OXIDE	1K	5%	1W
R716	1-249-411-11	CARBON	330	5%	1/4W
R718	1-202-814-11	SOLID	33K	10%	1/2W
R726	1-215-869-11	METAL OXIDE	1K	5%	1W
R727	1-249-411-11	CARBON	330	5%	1/4W
R728	1-249-390-11	CARBON	5.6	5%	1/4W
R741	1-202-549-00	SOLID	100	20%	1/2W
R1801	1-249-441-11	CARBON	100K	5%	1/4W
R1805	1-249-429-11	CARBON	10K	5%	1/4W
R1806	1-247-899-11	CARBON	680K	5%	1/4W
R1807	1-249-429-11	CARBON	10K	5%	1/4W
R1808	1-249-429-11	CARBON	10K	5%	1/4W
R1809	1-249-429-11	CARBON	10K	5%	1/4W
R1810	1-249-429-11	CARBON	10K	5%	1/4W
		< VARIABLE RESISTOR >			
RV702	1-241-656-21	RES, ADJ, METAL FILM 110M			

*A-1640-431-A D3 Board, Complete

		< CAPACITOR >		
C2802	1-126-965-91	ELECT	22UF	20.00% 50V
		< CONNECTOR >		
CN2801	*1-564-506-11	PLUG, CONNECTOR 3P		
CN2802	*1-785-270-12	PIN, DY CONNECTOR (PC BOARD)		
CN2803	*1-580-798-11	CONNECTOR PIN (DY) 6P		

REF.NO.	PART.NO	DESCRIPTION	REMARK
		< DIODE >	
D2801	8-719-991-33	DIODE 1SS133T-77	
		< TRANSISTOR >	
Q2801	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q2802	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R2801	1-249-421-11	CARBON 2.2K 5% 1/4W	
R2802	1-249-421-11	CARBON 2.2K 5% 1/4W	
		< RELAY >	
RY2801	1-755-172-11	RELAY	
		< TRANSFORMER >	
T2801	1-419-090-11	COIL, CHOKE (100UH)	

*A-1642-281-A D2 Board, Complete

REF.NO.	PART.NO	DESCRIPTION	REMARK
		< CAPACITOR >	
C8802	1-136-104-00	FILM 0.16UF 5.00% 200V	
C8803	1-117-670-11	FILM 0.82UF 5.00% 250V	
C8804	1-136-207-11	MYLAR 0.047UF 10.00% 250V	
		< CONNECTOR >	
CN8801	*1-778-770-11	CONNECTOR, BOARD TO BOARD(PLUG)	
CN8802	*1-564-506-11	PLUG, CONNECTOR 3P	
		< DIODE >	
D8801	8-719-923-60	DIODE MTZJ-T-77-9.1A	
D8802	8-719-302-43	DIODE EL1Z	
D8803	8-719-010-34	DIODE MTZJ-4.7B	
		< IC >	
IC8801	8-749-010-64	PHOTO COUPLER PC123F2	
		< COIL >	
L8802	1-406-978-11	INDUCTOR 150UH	
		< TRANSISTOR >	
Q8801	8-729-034-09	TRANSISTOR 2SK2518-01MR	
Q8802	1-801-806-11	TRANSISTOR DTC144EKA	
Q8803	1-801-806-11	TRANSISTOR DTC144EKA	
		< RESISTOR >	
JR8801	1-216-864-11	SHORT 0	
R8803	1-249-441-11	CARBON 100K 5% 1/4W	
R8804	1-216-825-11	RES-CHIP 2.2K 5% 1/16W	
R8805	1-216-833-11	RES-CHIP 10K 5% 1/16W	
R8806	1-216-809-11	RES-CHIP 100 5% 1/16W	
R8812	1-218-879-11	METAL CHIP 22K 0.5% 1/16W	

*A-1645-050-A VM Board, Complete (KV-28DX40)
*A-1645-049-A VM Board, Complete (KV-32DX40)

VM Board Common Parts

REF.NO.	PART.NO	DESCRIPTION	REMARK
	4-352-844-01	PIN, LEAD, COATING	
		< CAPACITOR >	
C1701	1-104-665-11	ELECT 100UF 20.00% 25V	
C1702	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V	
C1703	1-162-955-91	CERAMIC CHIP 150PF 5.00% 50V	
C1704	1-104-665-11	ELECT 100UF 20.00% 25V	
C1705	1-162-919-11	CERAMIC CHIP 22PF 5.00% 50V	
C1710	1-106-375-12	MYLAR 0.022UF 10.00% 250V	
C1711	1-106-375-12	MYLAR 0.022UF 10.00% 250V	
C1713	1-106-375-12	MYLAR 0.022UF 10.00% 250V	
C1721	1-107-655-11	ELECT 47UF 20.00% 250V	
C1722	1-136-153-00	FILM 0.01UF 5.00% 50V	
C1723	1-126-935-11	ELECT 470UF 20.00% 10V	
C1728	1-126-935-11	ELECT 470UF 20.00% 10V	
C1732	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V	
C1733	1-126-947-11	ELECT 47UF 20.00% 25V	
C1734	1-126-947-11	ELECT 47UF 20.00% 25V	
C1737	1-104-999-11	MYLAR 0.1UF 5.00% 200V	
C1844	1-129-716-00	FILM 0.015UF 5.00% 630V	
C1845	1-129-725-00	FILM 0.082UF 5.00% 400V	
C1901	1-162-927-11	CERAMIC CHIP 100PF 5.00% 50V	
C1902	1-137-374-11	MYLAR 0.047UF 5.00% 50V	
C1903	1-126-964-11	ELECT 10UF 20.00% 50V	
C1904	1-137-366-11	MYLAR 0.0022UF 5.00% 50V	
C1905	1-137-374-11	MYLAR 0.047UF 5.00% 50V	
C1906	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V	
C1908	1-109-954-11	ELECT 0.47UF 20.00% 160V	
C1913	1-129-898-00	FILM 0.0022UF 5.00% 630V	
C1915	1-136-205-11	MYLAR 0.022UF 10.00% 250V	
C1917	1-102-228-00	CERAMIC 470PF 10.00% 500V	
C1951	1-126-964-11	ELECT 10UF 20.00% 50V	
C1952	1-126-964-11	ELECT 10UF 20.00% 50V	
C1953	1-137-367-11	MYLAR 0.0033UF 5.00% 50V	
C1954	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V	
C1957	1-126-964-11	ELECT 10UF 20.00% 50V	
C1958	1-136-169-00	FILM 0.22UF 5.00% 50V	

REF.NO.	PART.NO	DESCRIPTION	REMARK
C1959	1-136-169-00	FILM 0.22UF 5.00% 50V	
		< CONNECTOR >	
CN1701	1-691-771-11	PLUG (MICRO CONNECTOR) 9P	
CN1702	*1-564-506-11	PLUG, CONNECTOR 3P	
CN1718	*1-770-723-11	CONNECTOR, BOARD TO BOARD 8P	
CN1809	1-695-915-11	TAB (CONTACT)	
		< DIODE >	
D1711	8-719-988-61	DIODE 1SS355TE-17	
D1719	8-719-991-33	DIODE 1SS133T-77	
D1722	8-719-991-33	DIODE 1SS133T-77	
D1733	8-719-921-40	DIODE MTZJ-T-4.7C	
D1734	8-719-921-40	DIODE MTZJ-T-4.7C	
D1840	8-719-302-43	DIODE EL1Z	
D1901	8-719-991-33	DIODE 1SS133T-77	
D1902	8-719-991-33	DIODE 1SS133T-77	
D1903	8-719-991-33	DIODE 1SS133T-77	
D1904	8-719-991-33	DIODE 1SS133T-77	
D1905	8-719-110-41	DIODE RD15ESB2	
D1906	8-719-970-87	DIODE ERA38-06	
D1907	8-719-970-87	DIODE ERA38-06	
D1908	8-719-300-33	DIODE RU-3AM	
D1909	8-719-991-33	DIODE 1SS133T-77	
		< FERRITE BEAD >	
FB1701	1-535-143-61	LEAD, JUMPER (5.0MM)	
		< IC >	
IC1701	8-759-394-36	IC BA09T	
IC1901	8-759-450-95	IC LM393N	
IC1902	8-759-008-70	IC LM358N	
		< COIL >	
L1701	1-414-183-41	INDUCTOR 10UH	
L1702	1-412-525-31	INDUCTOR 10UH	
L1703	1-414-184-41	INDUCTOR 15UH	
L1843	1-406-989-21	INDUCTOR 10MH	
L1901	1-406-677-11	INDUCTOR 10MH	
L1902	1-414-177-11	INDUCTOR 1UH	
		< COIL >	
L8802	1-406-978-11	INDUCTOR 150UH	
		< TRANSISTOR >	
Q1701	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q1704	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q1705	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1706	8-729-026-39	TRANSISTOR 2SA933AS-QT	
Q1707	8-729-049-09	TRANSISTOR BC327-25	
Q1708	8-729-045-05	TRANSISTOR 2SA2005	
Q1709	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q1710	8-729-049-10	TRANSISTOR BC337-25	
Q1711	8-729-045-04	TRANSISTOR 2SC5511	
Q1840	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q1841	8-729-039-68	TRANSISTOR IRF620	
Q1901	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q1902	8-729-120-28	TRANSISTOR 2SC2412K-T-146-R	
Q1903	8-729-043-95	TRANSISTOR 2SC3840(3)	
Q1906	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q1907	8-729-140-97	TRANSISTOR 2SB734-34	
		< RESISTOR >	
JR1702	1-216-814-11	RES-CHIP 270 5% 1/16W	
R1701	1-216-814-11	RES-CHIP 270 5% 1/16W	
R1702	1-216-814-11	RES-CHIP 270 5% 1/16W	
R1709	1-216-825-11	RES-CHIP 2.2K 5% 1/16W	
R1710	1-216-839-11	RES-CHIP 33K 5% 1/16W	
R1711	1-216-823-11	RES-CHIP 1.5K 5% 1/16W	
R1712	1-216-824-11	RES-CHIP 1.8K 5% 1/16W	
R1713	1-216-809-11	RES-CHIP 100 5% 1/16W	
R1714	1-260-089-11	CARBON 150 5% 1/2W	
R1719	1-216-822-11	RES-CHIP 1.2K 5% 1/16W	
R1720	1-249-433-11	CARBON 22K 5% 1/4W	
R1721	1-249-433-11	CARBON 22K 5% 1/4W	
R1722	1-216-822-11	RES-CHIP 1.2K 5% 1/16W	
R1723	1-249-399-11	CARBON 33 5% 1/4W	
R1724	1-216-830-11	RES-CHIP 5.6K 5% 1/16W	
R1725	1-247-889-00	CARBON 270K 5% 1/4W	
R1726	1-247-889-00	CARBON 270K 5% 1/4W	
R1727	1-216-830-11	RES-CHIP 5.6K 5% 1/16W	
R1728	1-249-399-11	CARBON 33 5% 1/4W	
R1729	1-249-407-11	CARBON 150 5% 1/4W	
R1732	1-249-407-11	CARBON 150 5% 1/4W	
R1733	1-214-809-81	METAL 5.1 1% 1/2W	
R1734	1-214-809-81	METAL 5.1 1% 1/2W	
R1735	1-215-922-11	METAL OXIDE 6.8K 5% 3W	
R1736	1-215-892-11	METAL OXIDE 1K 5% 2W	
R1737	1-215-867-00	METAL OXIDE 470 5% 1W	
R1739	1-535-143-61	LEAD, JUMPER (5.0MM)	
R1842	1-216-809-11	RES-CHIP 100 5% 1/16W	
R1846	1-216-825-11	RES-CHIP 2.2K 5% 1/16W	
R1901	1-216-841-11	RES-CHIP 47K 5% 1/16W	
R1903	1-216-833-11	RES-CHIP 10K 5% 1/16W	
R1904	1-216-833-11	RES-CHIP 10K 5% 1/16W	
R1905	1-216-845-11	RES-CHIP 100K 5% 1/16W	
R1906	1-216-833-11	RES-CHIP 10K 5% 1/16W	
R1907	1-216-845-11	RES-CHIP 100K 5% 1/16W	

REF.NO.	PART.NO	DESCRIPTION			REMARK
R1908	1-216-813-11	RES-CHIP	220	5%	1/16W
R1909	1-215-489-00	METAL	680K	1%	1/4W
R1910	1-216-864-11	SHORT	0		
R1911	1-216-833-11	RES-CHIP	10K	5%	1/16W
R1912	1-216-857-11	RES-CHIP	1M	5%	1/16W
R1913	1-216-821-11	RES-CHIP	1K	5%	1/16W
R1914	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R1915	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R1917	1-216-842-11	RES-CHIP	56K	5%	1/16W
R1918	1-215-921-11	METAL OXIDE	4.7K	5%	3W
R1919	1-218-871-11	METAL CHIP	10K	0.5%	1/16W
R1920	1-216-864-11	SHORT	0		
R1923	1-216-845-11	RES-CHIP	100K	5%	1/16W
R1924	1-216-845-11	RES-CHIP	100K	5%	1/16W
R1925	1-216-845-11	RES-CHIP	100K	5%	1/16W
R1953	1-216-850-11	RES-CHIP	270K	5%	1/16W
R1954	1-216-851-11	RES-CHIP	330K	5%	1/16W
R1955	1-216-849-11	RES-CHIP	220K	5%	1/16W
R1956	1-218-463-11	RES-CHIP	8.2M	5%	1/10W
R1957	1-216-833-11	RES-CHIP	10K	5%	1/16W
R1958	1-216-809-11	RES-CHIP	100	5%	1/16W
R1959	1-216-828-11	RES-CHIP	3.9K	5%	1/16W
R1962	1-216-839-11	RES-CHIP	33K	5%	1/16W
R1964	1-216-809-11	RES-CHIP	100	5%	1/16W
R1965	1-216-817-11	RES-CHIP	470	5%	1/16W
R1967	1-216-483-11	METAL OXIDE	2.7K	5%	3W
R1968	1-215-886-11	METAL OXIDE	100	5%	2W
R1969	1-216-483-11	METAL OXIDE	2.7K	5%	3W
		< TRANSFORMER >			
T1901	1-424-584-11	TRANSFORMER, DYNAMIC FOCUS			

VM Board Variant Parts KV-28DX40

		< CAPACITOR >			
C1848	1-136-347-11	FILM	0.0047UF	5.00%	630V
C1912	1-162-117-00	CERAMIC	100PF	10.00%	500V
C1914	1-102-030-00	CERAMIC	330PF	10.00%	500V
C1916	1-127-573-11	CERAMIC CHIP	1UF	10.00%	16V
		< COIL >			
L1959	1-406-679-11	INDUCTOR	22MH		
		< RESISTOR >			
R1848	1-215-911-11	METAL OXIDE	100	5%	3W
R1916	1-216-669-11	METAL CHIP	5.6K	0.5%	1/10W
R1921	1-215-922-11	METAL OXIDE	6.8K	5%	3W
R1922	1-215-919-11	METAL OXIDE	2.2K	5%	3W
R1931	1-216-841-11	RES-CHIP	47K	5%	1/16W
R1960	1-216-833-11	RES-CHIP	10K	5%	1/16W
R1961	1-216-839-11	RES-CHIP	33K	5%	1/16W

VM Board Variant Parts KV-32DX40

		< CAPACITOR >			
C1848	1-136-601-11	FILM	0.01UF	5.00%	630V
C1914	1-102-244-00	CERAMIC	220PF	10.00%	500V
C1916	1-162-962-11	CERAMIC CHIP	470PF	10.00%	50V
		< COIL >			
L1959	1-406-677-11	INDUCTOR	10MH		
		< RESISTOR >			
R1847	1-216-474-11	METAL OXIDE	82	5%	3W
R1848	1-216-474-11	METAL OXIDE	82	5%	3W
R1916	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R1921	1-215-921-11	METAL OXIDE	4.7K	5%	3W
R1922	1-215-918-00	METAL OXIDE	1.5K	5%	3W
R1931	1-216-689-11	RES-CHIP	39K	5%	1/10W
R1960	1-216-831-11	RES-CHIP	6.8K	5%	1/16W
R1961	1-216-838-11	RES-CHIP	27K	5%	1/16W
R1966	1-215-886-11	METAL OXIDE	100	5%	2W

*A-1646-242-A H2 Board, Complete

		< CAPACITOR >			
C906	1-126-960-11	ELECT	1UF	20.00%	50V
C907	1-126-960-11	ELECT	1UF	20.00%	50V
C908	1-102-106-00	CERAMIC	100PF	10.00%	50V
C909	1-102-106-00	CERAMIC	100PF	10.00%	50V
		< CONNECTOR >			
CN906	*1-564-524-11	PLUG, CONNECTOR 9P			
CN908	1-564-521-11	PLUG, CONNECTOR 6P			
		< DIODE >			
D902	8-719-929-15	DIODE HZS9.1NB2			
D903	8-719-929-15	DIODE HZS9.1NB2			
D904	8-719-109-97	DIODE RD6.8ES-B2			
D905	8-719-109-97	DIODE RD6.8ES-B2			
D908	8-719-923-60	DIODE MTZJ-T-77-9.1A			
		< JACK >			
J900	1-750-264-11	JACK			
		< COIL >			
L900	1-535-143-61	LEAD, JUMPER (5.0MM)			
L901	1-535-143-61	LEAD, JUMPER (5.0MM)			
L902	1-408-603-31	INDUCTOR	10UH		

REF.NO.	PART.NO	DESCRIPTION			REMARK
L903	1-408-603-31	INDUCTOR	10UH		
L904	1-410-119-11	INDUCTOR	1MH		
		< RESISTOR >			
R901	1-249-427-11	CARBON	6.8K	5%	1/4W
R902	1-249-429-11	CARBON	10K	5%	1/4W
R903	1-249-406-11	CARBON	120	5%	1/4W
R904	1-249-406-11	CARBON	120	5%	1/4W
R909	1-247-895-91	CARBON	470K	5%	1/4W
R910	1-247-895-91	CARBON	470K	5%	1/4W
R911	1-249-419-11	CARBON	1.5K	5%	1/4W
R912	1-535-143-61	LEAD, JUMPER (5.0MM)			
R913	1-247-843-11	CARBON	3.3K	5%	1/4W
R914	1-249-431-11	CARBON	15K	5%	1/4W
R915	1-249-406-11	CARBON	120	5%	1/4W
R916	1-249-406-11	CARBON	120	5%	1/4W
R917	1-247-807-31	CARBON	100	5%	1/4W
R918	1-247-807-31	CARBON	100	5%	1/4W
		< SWITCH >			
S900	1-692-979-11	SWITCH, TACTILE			
S901	1-692-979-11	SWITCH, TACTILE			
S902	1-692-979-11	SWITCH, TACTILE			

*A-1646-245-A H8 Board, Complete

	1-682-340-15	PWB, H8			
	4-205-711-01	HOLDER, LED			
		< CAPACITOR >			
C7150	1-126-969-11	ELECT	220UF	20.00%	50V
		< CONNECTOR >			
CN7150	*1-564-510-11	PLUG, CONNECTOR 7P			
		< DIODE >			
D7150	8-719-081-56	DIODE L-59SRSGC-CC			
D7152	8-719-109-89	DIODE RD5.6ESB2			
		< IC >			
IC7150	8-749-014-59	IC TSOP1740KS1			
		< TRANSISTOR >			
Q7150	8-729-027-38	TRANSISTOR DTA144EKA-T146			
Q7151	8-729-900-53	TRANSISTOR DTC114EK			
		< RESISTOR >			
R7150	1-216-813-11	RES-CHIP	220	5%	1/16W
R7151	1-216-813-11	RES-CHIP	220	5%	1/16W
R7152	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R7153	1-216-829-11	RES-CHIP	4.7K	5%	1/16W
R7154	1-216-825-11	RES-CHIP	2.2K	5%	1/16W
R7155	1-216-809-11	RES-CHIP	100	5%	1/16W
R7156	1-216-815-11	RES-CHIP	330	5%	1/16W

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

REF.NO.	PART.NO	DESCRIPTION	REMARK

MISCELLANEOUS

⚠	1-571-433-21	SWITCH, PUSH (AC POWER)	
⚠	1-776-204-12	CORD, POWER (FILTER)	
	1-424-733-11	COIL, PFC CHOKE 65MMH	
⚠	1-453-308-41	TRANSFORMER ASSY, FLYBACK (NX-4521//Z2B4)	
	1-693-557-13	FRONT END (TUNER + IF)	
	8-598-585-00	FRONT END BTD-DU604	
	1-529-408-11	SPEAKER (4.2X24CM)	
⚠	8-737-786-05	PICTURE TUBE (W66LLX060X)	(KV-28DX40)
⚠	8-735-079-05	PICTURE TUBE (W76LLZ060X)	(KV-32DX40)
	8-451-521-11	DEFLECTION YOKE (Y28RVC3-B)	(KV-28DX40)
	8-451-520-11	DEFLECTION YOKE (Y32RVC3)	(KV-32DX40)
	1-452-896-11	COIL, NA ROTATION (RT-200)	
	8-453-011-11	NECK ASSY, (NA299-M)	
⚠	1-416-466-21	COIL, DEMAGNETIC (KV-28DX40)	
⚠	1-416-769-11	COIL, DEMAGNETIC (KV-32DX40)	
⚠	1-251-946-11	CAP ASSY, HIGH-VOLTAGE	
	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
	1-452-032-00	MAGNET, DISK; 10MM Ø	

ACCESSORIES AND PACKAGING MATERIALS

*4-395-957-01	BAG, PROTECTION	(KV-28DX40)
*4-209-168-01	BAG, PROTECTION	(KV-32DX40)
*4-205-504-02	CUSHION, UPPER	(KV-28DX40)
*4-205-531-02	CUSHION, UPPER	(KV-32DX40)
*4-205-505-03	CUSHION, LOWER	(KV-28DX40)
*4-205-532-02	CUSHION, LOWER	(KV-32DX40)
*4-205-503-01	INDIVIDUAL CARTON	(KV-28DX40)
*4-205-530-01	INDIVIDUAL CARTON	(KV-32DX40)
4-206-297-11	INSTRUCTION MANUAL	(ENGLISH)

REMOTE COMMANDER

1-476-697-11	COMMANDER, STANDARD	(RM-933)

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^2C 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.

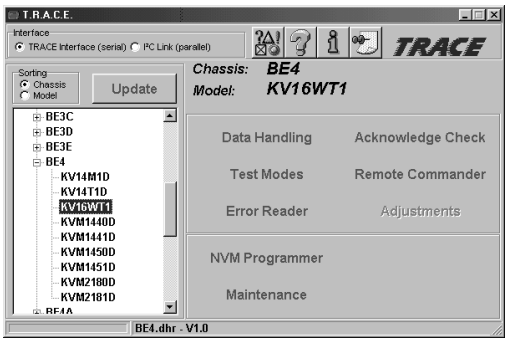
The TRACE software that is supplied with the interface allows you to:

- Read, restore and compare NVM contents via the I^2C bus
- Acknowledge check of all I^2C 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^2C 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^2C 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

9-927-411-01

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Sony UK
Service Promotions Dept.

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