

SERVICE MANUAL

BE-3D CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.	MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-28WF1A	RM-839	Italian	SCC-K05Q-A	KV-28WF1K	RM-839	OIRT	SCC-K20H-A
KV-28WF1B	RM-839	French	SCC-K01S-A	KV-28WF1R	RM-839	OIRT	SCC-K20G-A
KV-28WF1D	RM-839	AEP	SCC-K07T-A	KV-28WF1U	RM-839	UK	SCC-K04N-A
KV-28WF1E	RM-839	Spanish	SCC-K06S-A				



TRINITRON® COLOR TV
SONY®

KV-28WF1

ITEM	MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H	VHF: E2-E12, S1-S20, A-H, H1,H2 UHF: E21-E69		PAL NTSC3.58/4.43 (video input only)
French	B/G/H, D/K, L, I	L SECAM VHF: F2-F10 UHF: F21-F69 TV CABLE TV (1) VHF: B-Q UHF: S21-S44 PAL B/G/H VHF: E2-E12 UHF: E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 PAL I UHF: B21-B69 D/K VHF: R01-R20 UHF: B21-B69		PAL, SECAM NTSC3.58/4.43 (video input only)
AEP	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: S1-S20 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R20 UHF: B21-B69		PAL, SECAM NTSC3.58/4.43 (video input only)
Spanish	B/G/H, D/K	PAL B/G/H VHF: E2-E12 UHF: E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R20 UHF: B21-B69		PAL, SECAM NTSC3.58/4.43 (video input only)
OIRT	B/G/H, D/K	B/G/H VHF: E2-E12 UHF: E21-E69 CABLE TV (1) : S1-S41 CABLE TV (2) : S01-S05, M1-M10, U1-U10 ITALIA VHF: A-H, H1, H2 D/K VHF: R01-R12 UHF: R21-R69		PAL, SECAM NTSC3.58/4.43 (video input only)
UK	I	UHF: U21-U69		PAL NTSC3.58/4.43 (video input only)

MODEL	28WF1A	28WF1B	28WF1D	28WF1E	28WF1K	28WF1R	28WF1U
Power Consumption	84W	95W	95W	95W	95W	95W	146W

SPECIFICATIONS

Picture Tube Super Trinitron
Approx. 71 cm (28 inches)
(Approx. 66 cm picture measured diagonally)
110° -deflection

Rear/Front Terminals

[REAR]

- 1 21-pin Euro connector (CENELEC standard)
 - Inputs for audio / video signals
 - Inputs for RGB
 - Outputs for TV audio and video signals
- 2/- 2, 21-pin Euro connector (CENELEC standard)
 - Inputs for audio / video signals
 - Inputs for S video
 - Outputs for TV audio and video signals (selectable)
- Audio outputs - phono jacks

[FRONT]

- 3 , Video input - phono jack
- 3 , Audio inputs - phono jacks
- 3 , S video input - 4 pin DIN
- Stereo minijack - headphone jack

Sound output

Left/Right 2x10W (RMS)
2x20W (music power)
Dimensions 690x535x534 mm approx.
Weight Approx. 38.1 kg

Supplied accessories

RM-839 Remote Commander (1)
Batteries R6 (2)

Other features NICAM (KV-28WF1B/28WF1E/28WF1U only)

[RM-839]

Remote control system	Infrared control
Power requirements	3V dc (2 batteries) R6 (size AA)
Dimensions	Approx. 210x45x24 mm (w/h/d)
Weight	Approx. 90g (Not including battery)

Design and specifications are subject to change without notice.

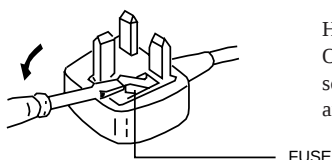
Model name Item	KV-28WF1A	KV-28WF1B	KV-28WF1D	KV-28WF1E	KV-28WF1K	KV-28WF1R	KV-28WF1U
PIP	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MPIP	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Rotation Coil	ON	ON	ON	ON	ON	ON	ON
VM Set	OFF	OFF	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON	ON	ON	ON
TXT	ON	ON	ON	ON	ON	ON	ON
FLOT	ON	ON	ON	ON	ON	ON	ON
TOP	ON	ON	ON	ON	ON	ON	ON
AKB in 16:9 mode	ON	ON	ON	ON	ON	ON	ON
Norm B/G/H	ON	ON	ON	ON	ON	ON	OFF
Norm I	OFF	ON	OFF	OFF	OFF	OFF	ON
Norm D/K	OFF	ON	ON	ON	ON	ON	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF	OFF
Language Preset	Italian	French	German	Spanish	OIRT	OIRT	English

WARNING (KV-28WF1U only)

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

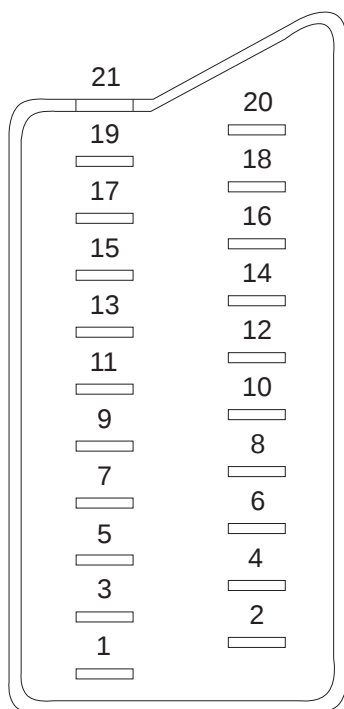
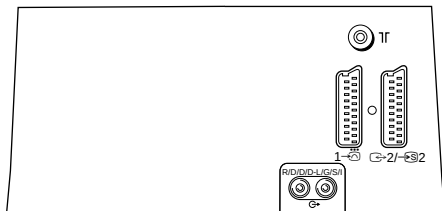
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME. IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.

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 the screwdriver blade and replace the fuse.

21 pin connector (1, 2 / 2)



Pin No.	1	2	4	Signal	Signal Level
1				Audio output B (Right)	Standard level : 0.5V rms Output impedance : Less than 1k ohms*
2				Audio input B (Right)	Standard level : 0.5V rms Output impedance : More than 10k ohms*
3				Audio output A (Left)	Standard level : 0.5V rms Output impedance : Less than 1k ohm*
4				Ground (Audio)	
5				Ground (Blue)	
6				Audio input A (Left)	Standard level : 0.5V rms Output impedance : Less than 10k ohm*
7				Blue input	0.7 ± 3dB, 75 ohms, positive
8				Function select (AV control)	High state (9.5 - 12V) : Part mode Low state (0 - 2V) : TV mode Input impedance : More10k ohms Input capacitance : Less than 2nF
9				Ground (Green)	
10				Open	
11				Green	
12				Open	
13				Ground (Red)	
14				Ground (Blanking)	
15				Red input	0.7 ± 3dB, 75 ohms, positive
				(S signal) croma input	0.7 ± 3dB, 75 ohms, positive
16				Blanking input (Y's signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance : 75 ohms
17				Ground (Video output)	
18				Ground (Video input)	
19				Video output	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
20				Video input	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
				Video input Y (S signal)	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
21				Common ground (plug, shield)	

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

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

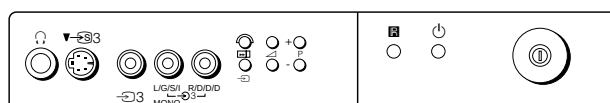


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CAUTION

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

WARNING !!

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

SAFETY-RELATED COMPONENT WARNING!!
COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION

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

ATTENTION !!

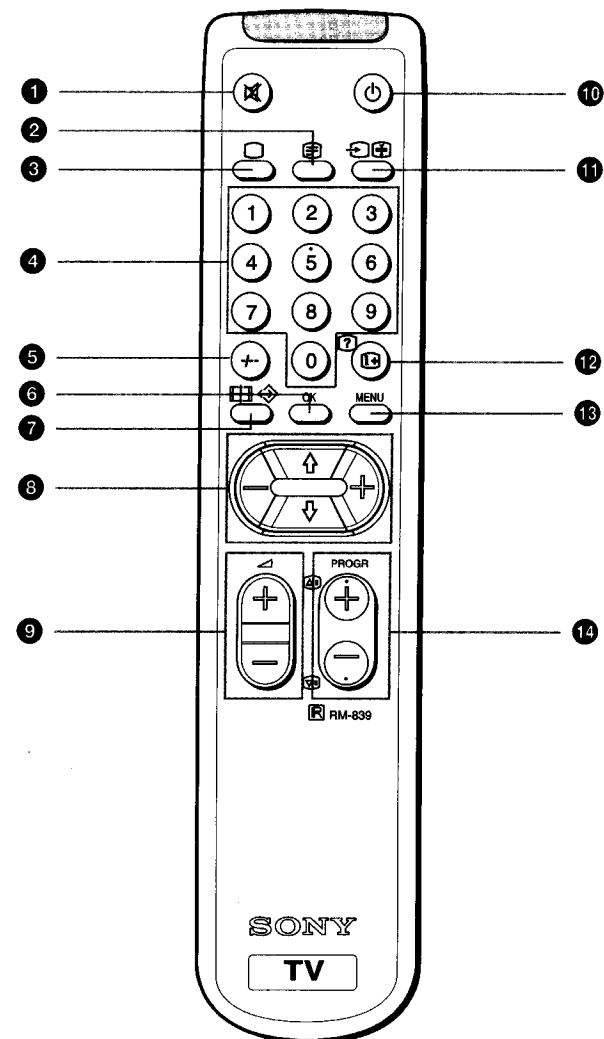
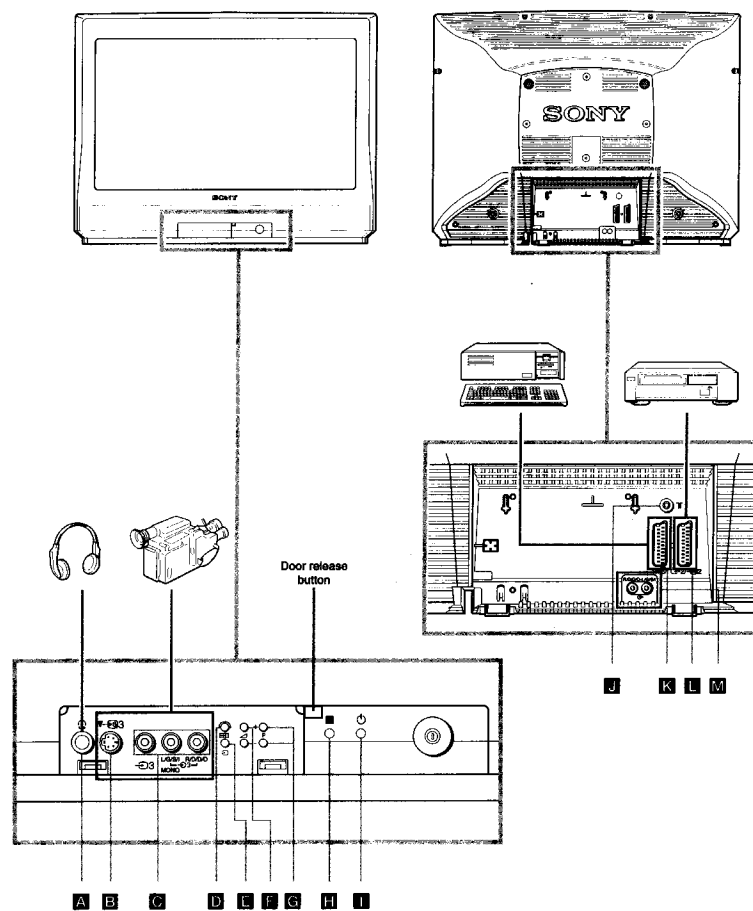
AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

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

SECTION 1 GENERAL

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



Overview

Overview

This section briefly describes the controls and the buttons on the TV set and on the Remote Commander. Please open the flap at the front of the instruction manual for illustrations of the TV set and the Remote Commander. Letters in boxes refer to the buttons on the TV set, numbers in circles to the buttons on the Remote Commander. For more information, refer to the page numbers given next to each description.

TV buttons and Terminals

Reference and Symbol	Name	Refer to Page
Front of the set		
A 	Headphones jack	29
B 	S video input jack	29
C 	Audio/video input jacks	29
D 	Automatic Preset button	11
E 	Input mode button	12
F 	Volume control	12
G 	Programme button	12
H 	Standby mode indicator	12
I 	Main power switch	12
Rear of the set		
J 	Aerial socket	10
K 	21 pin Euro connector	29
L 	21 pin Euro connector	29
M 	Audio phono jacks	29

Overview

Remote Commander Operation

Reference and Symbol	Name	Refer to Page
1 	Muting on/off button	12
2 	Teletext button	13
3 	TV power on/TV mode button	12, 13
4 1, 2, ..., 9, 0	Number buttons	12
5 - / - -	Double digit entering button	12
6 OK	OK (Confirmation) button	14
7  	Screen format button Teletext: Favourite pages button	13 28
8 	Menu control	14
9 	Volume control button	12
10 	Standby button	12
11  	Input mode button Teletext: Freezing the subpage	12 27
12  	On-screen display button Teletext: reveal button	12 27
13 MENU	Menu on/off button	14
14 PROGR +/- 	Programme buttons Teletext: Page up/page down buttons	12 13

Getting Started

Step 1

Connecting the Aerial

(If you connect a VCR, skip to step 2)

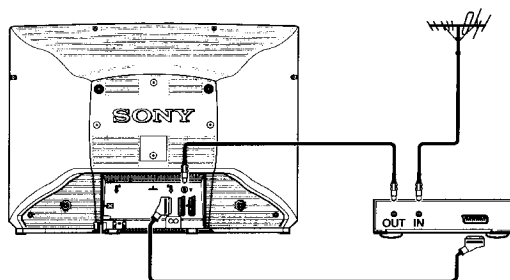
Insert the aerial plug tightly into the aerial socket **U**. Use a good-quality aerial cable (not supplied), corresponding to the relevant regulations.

Step 2

Connecting a VCR

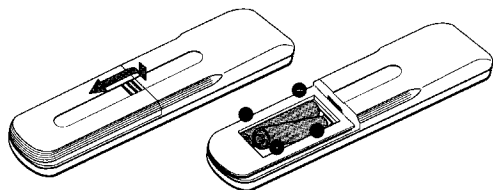
We recommend that you tune in the VCR signal to programme number "0". For details, see "Presetting Channels Manually" on page 16.

See "Connecting Optional Equipment" on page 29 for more information.



Step 3

Inserting the Batteries Into the Remote Commander



Respect your environment! Dispose of used batteries in an environmentally friendly way.

Step 4

Presetting Channels Automatically

With this function, the TV can automatically search and store up to 100 different channel numbers.

If you prefer manual presetting, refer to "Presetting Channels Manually" on page 16.

- 1 Plug into mains.
Press the power switch **Ⓢ** **I** on the TV set.
- 2 Press and hold the button **⏮** **D** on the TV set until the automatic menu is displayed and the search starts.

After all available channels are stored, the normal TV picture is shown.

Note: Channels are automatically stored as follows:

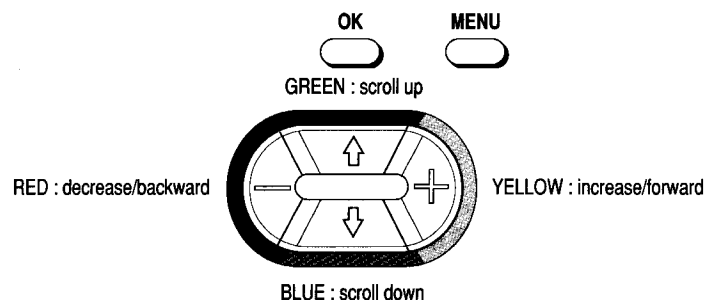
- Programme 1 BBC1
- Programme 2 BBC2
- Programme 3 ITV
- Programme 4 CH4 or S4C
- Programme 5 (If available in your area)

Advanced Operations

Adjusting and Setting the TV Using the Menu

You can adjust and set various functions on the TV using the following remote commander buttons:

- 1 Press MENU **13** to switch menu on/off.
- 2 Use the menu control buttons **8** and OK button **6** (confirm) as follows:

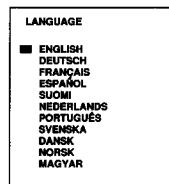


Choosing the Menu Language

This function enables you to change the language of the menu screens.

- 1 Press power switch **1** **11** on the TV. If the standby indicator **1** **11** on the TV is lit, press **1** **3** or a number button **4** on the Remote Commander.

- 2 Press the MENU button **13** on the remote commander.



- 3 Press blue or green **8** to select the language you want then press yellow **8**.

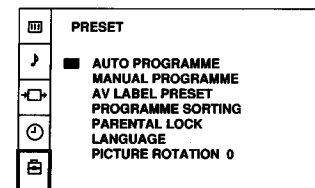
- 4 Press the MENU button **13** to restore the normal TV picture.

Presetting Channels Automatically

You may have already preset the channels automatically by using the method shown on page 11. You can also preset channels automatically by using the remote commander as follows:

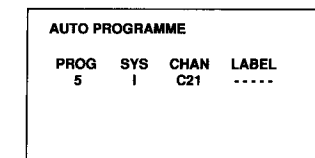
- 1 Press the MENU button **13**.

- 2 Press blue or green **8** to select the symbol **13** on the menu screen then press yellow **8**.



- 3 Press blue or green **8** to select 'AUTO PROGRAMME'.

- 4 Press and hold yellow **8** until the automatic menu is displayed and the search starts.



After all available channels have been preset, the normal TV picture is shown.

Note: Channels are automatically stored as follows:

- Programme 1 BBC1
- Programme 2 BBC2
- Programme 3 ITV
- Programme 4 CH4 or S4C
- Programme 5 (If available in your area)

TV Operation

This section explains functions used whilst watching TV. Most operations are carried out using the remote commander (numbers in circles). All basic functions are also available on the TV set (letters in boxes). Open the flap at the front of the Instruction Manual to see the illustrations of the Remote Commander and the TV set.

TV Operation

To	Press
Switch on	① I on TV
Switch off temporarily	⏻ ⑩ TV is now in standby mode and ⏻ H indicator on TV lights up.
Switch on from standby mode	□ ③, PROGR +/- ⑭ G or any number button ④.
Switch off completely	① I on TV To save energy, switch off your TV completely when TV is not in use.
Select programmes	PROGR +/- ⑭ G or number buttons ④ For double digit number, press -/- ⑤ then the number e.g. For 23, press -/- ⑤ then 2 and 3.
Display on screen indications	ⓘ ⑫. Press again to make the indications disappear.
Adjust the volume	△ + or - ⑨ F
Mute the sound	⊘ ①. Press again to restore the sound.
View video input picture (see page 30 for detailed information)	↔ ⑪ E repeatedly until the desired video input appears. Press □ ③ to restore the TV picture.

TV Operation (continued)

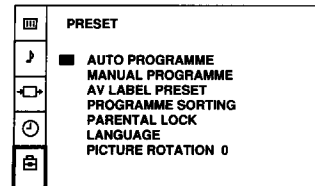
To	Press
Operate Screen Mode (see page 18 for detailed information)	⏻ ⑦. 4:3 → Smart → Zoom → Wide When using Zoom mode select 'Scroll' to see the cut-off part of the screen.
View teletext (see page 27 for detailed information)	
Switch on	☰ ②
Select a page	three number buttons ④ or ⏻ ⑭ (for next page) or ⏻ ⑭ (for previous page).
Use fastext	Blue, Green, Red or Yellow ⑧.
Switch off	□ ③

Presetting Channels Manually

This function enables you to preset channels one by one to different programme numbers. This is also convenient for allocating programme numbers to various video input sources.

1 Press the MENU button **19**.

2 Press blue or green **8** to select the symbol **19** on the menu screen then press yellow **8**.



3 Press blue or green **8** to select 'MANUAL PROGRAMME' then press yellow **8**.

MANUAL PROGRAMME PRESET					
PROG	SYS	CHAN	LABEL	AFT	
0	I	C29	----	ON	
1	I	C31	----	ON	
2	I	C32	----	ON	
3	I	C36	----	ON	
4	I	C37	----	ON	
5	I	C40	----	ON	
6	I	C41	----	ON	
7	I	C44	----	ON	
8	I	C49	----	ON	
9	I	C52	----	ON	

4 Press blue or green **8** to select on which programme number you want to preset a channel then press yellow **8**.

5 Press blue or green **8** to select the TV broadcast system 'I' or a video input source (AV1, AV2 ...) then press yellow **8**.

6 Press yellow **8**.

7 Select the first number digit of 'CHAN' (channel) then the second number digit of 'CHAN' with the number buttons **4** on the remote commander
or
Press blue or green **8** to search for the next available channel.

8 If you want to store the channel, go to step 9. If not, select a new channel using the number buttons **4** on the remote commander or press blue or green **8** to resume the search.

9 Press OK **6**.

10 Repeat steps 4 to 9 to preset other channels.

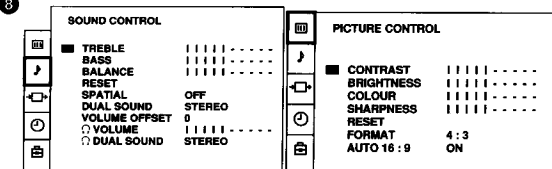
11 Press the MENU button **19** to restore the normal TV picture.

Adjusting the Picture and Sound

Although the picture and sound are adjusted at the factory, you can adjust them to suit your own taste.

1 Press the MENU button **19**.

2 Press blue or green **8** to select **19** for picture control or **19** for sound control then press yellow **8**.



3 Press blue or green **8** to select the desired item then press yellow **8**.

4 Press red or yellow **8** to alter the item then press OK **6**.
For the effect of each control, see the following tables.

5 Repeat steps 3 and 4 to adjust the other items.

6 Press the MENU button **19** to restore the normal TV picture.

Adjusting the Picture and Sound (continued)

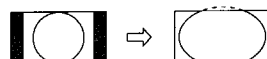
PICTURE CONTROL Effect

Contrast	• Lower — — Higher
Brightness	• Darker — — Brighter
Colour	• Less — — More
Sharpness	• Softer — — Sharper
Hue	• Greenish — — Reddish (NTSC signals only)
Reset	• Resets picture to the factory preset levels.
Format	• 4:3 → Smart → Zoom → Wide

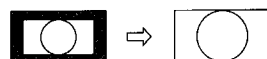
↑
4:3 for normal ratio 4:3



Smart for imitation of wide screen effect (16:9) for 4:3 broadcasts



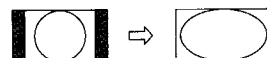
Zoom for imitation of wide screen effect (16:9) for movies broadcast in cinemascopic format



When 'Zoom' is selected, you can scroll the screen to see the cut-off part (e.g. subtitles) as follows:

- 1 Press blue **8** to select 'Scroll' then press yellow.
- 2 Press red or yellow **8** to scroll the picture upwards or downwards (-5 to +5) then press OK **6**.

Wide for 16:9 broadcasts



Auto 16:9

- Automatically selects 16:9 picture mode when receiving a 16:9 broadcast (set to 'Off' if signal reception is weak)

Adjusting the Picture and Sound (continued)

SOUND CONTROL Effect

Treble	• Less — — More
Bass	• Less — — More
Balance	• Left — — Right
Reset	• Resets sound to the factory preset levels.
Spatial	• Acoustic sound effect.
Dual Sound	• A: Left channel → B: Right channel → stereo → mono
Volume Offset	• Presets the volume level for individual programmes. -12 — 0 — +12
Volume	• Adjusts the headphone volume.
Dual Sound	• Selects the headphone channels. A: Left channel → B: Right channel → stereo → mono

Manual Fine-Tuning

Normally, the automatic fine-tuning (AFT) function is operating.

If the picture is distorted however, you can manually fine-tune the TV to obtain a better picture reception.

1 Press the MENU button **19**.

2 Press blue or green **8** to select the symbol  on the menu screen then press yellow **8**.

3 Press blue or green **8** to select 'MANUAL PROGRAMME' then press yellow **8**.

MANUAL PROGRAMME PRESET				
PROG	SYS	CHAN	LABEL	AFT
0	I	C29	----	ON
1	I	C31	----	ON
2	I	C32	----	ON
3	I	C36	----	ON
4	I	C37	----	ON
5	I	C40	----	ON
6	I	C41	----	ON
7	I	C44	----	ON
8	I	C49	----	ON
9	I	C52	----	ON

4 Press blue or green **8** to select the programme number which corresponds to the channel you want to manually fine-tune.

5 Press yellow **8** repeatedly until the AFT position changes colour.

6 Press blue or green **8** to fine-tune the channel frequency (-15 to +15).

7 Press OK **6**.

8 Repeat steps 4 to 7 to fine-tune other channels.

9 Press the MENU button **19** to restore the normal TV picture.

Sorting Programme Positions

This function enables you to exchange the programme positions.

1 Press the MENU button **19**.

2 Press blue or green **8** to select the symbol  on the menu screen then press yellow **8**.

3 Press blue or green **8** to select 'PROGRAMME SORTING' then press yellow **8**.

PRESET	
	AUTO PROGRAMME
	MANUAL PROGRAMME
	AV LABEL PRESET
	PROGRAMME SORTING
	PARENTAL LOCK
	LANGUAGE
	PICTURE ROTATION 0

4 Press blue or green **8** to select the channel you want to exchange then press yellow **8**.

PROGRAMME SORTING			
PROG	SYS	CHAN	LABEL
0	I	C28	BBC-W
1	I	C29	VHS-2
2	I	C36	CHN-
3	I	C38	----
4	I	C40	MY-CH
5	I	C42	VHS-1
6	I	C55	----
7	I	C56	MM
8	I	C57	----
9	I	C58	----

5 Press blue or green **8** to select the programme number you wish the channel chosen in step 4 to appear on, then press yellow **8**.

6 Repeat steps 4 to 5 if you wish to exchange other programme positions.

7 Press the MENU button **19** to restore the normal TV picture.

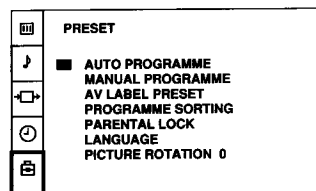
Using Parental Lock

This function enables you to prevent undesirable broadcasts from appearing on the screen. We suggest you use this function to prevent children from watching programmes which you consider unsuitable.

1 Press the MENU button **13**.

2 Press blue or green **8** to select the symbol  on the menu screen then press yellow **8**.

3 Press blue or green **8** to select 'PARENTAL LOCK' then press yellow **8**.



4 Press blue or green **8** to select the channel you want to block then press yellow **8**.
A symbol  appears before the programme number to indicate that this channel is now blocked.

PARENTAL LOCK			
PROG	SYS	CHAN	LABEL
0		C28	BBC-W
1		C29	VHS-2
2		C35	CNN..
3		C38	----
4		C40	MV-CH
5		C42	VHS-1
6		C56	----
7		C56	8MM
8		C57	----
9		C58	----

5 Repeat step 4 if you wish to block other channels.

6 Press the MENU button **13** to restore the normal TV picture.

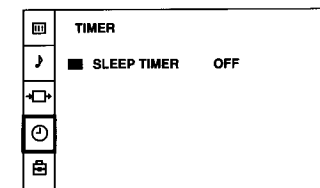
Note: To unblock, press yellow **8** after selecting the channel to unblock in the 'PARENTAL LOCK' menu.

Using the Sleep Timer

This function enables you to select a time period after which the TV automatically switches into standby mode.

1 Press the MENU button **13**.

2 Press blue or green **8** to select the symbol  on the menu screen then press yellow **8**.



3 Press yellow **8**.

4 Press red or yellow **8** to set time delay and press OK **6**.

OFF 0:30 1:00 1:30 3:30 4:00

One minute before the TV switches into standby mode, a message is displayed on the screen.

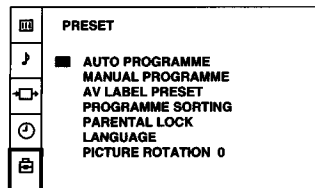
5 Press the MENU button **13** to restore the normal TV picture.

Adjusting the Picture Rotation

If, due to the earth magnetism, the picture slants, you can use the function 'Picture Rotation' to readjust the picture.

1 Press the MENU button **19**.

2 Press blue or green **8** to select the symbol **19** on the menu screen then press yellow **8**.



3 Press blue or green **8** to select 'PICTURE ROTATION' then press yellow **8**.

4 Press red or yellow **8** to adjust the picture rotation then press OK **6**. The adjusting range is -5 to +5.

5 Press the MENU button **19** to restore the normal TV picture.

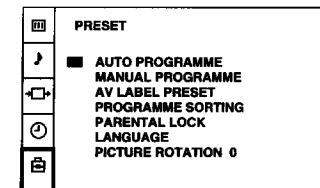
Skiping Programme Positions

This function enables you to skip unused programme positions when selecting them with the PROGR+/- buttons. However, you can still watch the channel of the skipped programme position by using the number buttons.

1 Press the MENU button **19**.

2 Press blue or green **8** to select the symbol **19** on the menu screen then press yellow **8**.

3 Press blue or green **8** to select 'MANUAL PROGRAMME' then press yellow **8**.



4 Press blue or green **8** to select the programme position you want to skip then press yellow **8**.

5 Press blue or green **8** until '---' appears in the 'SYS' position.

MANUAL PROGRAMME PRESET					
PROG	SYS	CHAN	LABEL	AFT	
0		C29	----	ON	
1		C31	----	ON	
2		C32	----	ON	
3		C36	----	ON	
4		C37	----	ON	
5		C40	----	ON	
6		C41	----	ON	
7		C44	----	ON	
8		C49	----	ON	
9		C52	----	ON	

6 Press OK **6**.

7 Repeat steps 4 to 6 to skip other programme positions.

8 Press the MENU button **19** to restore the normal TV picture.

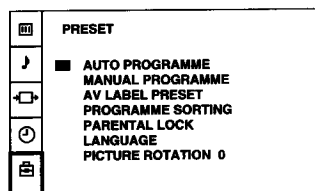
Captioning a Station Name

Names for channels are usually automatically taken from teletext if available. You can however name a channel or an input video source using up to five characters (letters or numbers).

1 Press the MENU button **Ⓜ**.

2 Press blue or green **Ⓢ** to select the symbol **Ⓢ** on the menu screen then press yellow **Ⓢ**.

3 Press blue or green **Ⓢ** to select 'MANUAL PROGRAMME' then press yellow **Ⓢ**.



4 Press blue or green **Ⓢ** to select the channel you wish to caption then press yellow **Ⓢ** repeatedly until the first element of the 'LABEL' position is highlighted.

5 Press **Ⓢ** blue or green to select a letter or number and press yellow **Ⓢ** (select '-' for a blank). Select the other four characters in the same way.

MANUAL PROGRAMME PRESET					
PROG	SYS	CHAN	LABEL	AFT	
0	I	C29	----	ON	
1	I	C31	----	ON	
2	I	C32	----	ON	
3	I	C36	----	ON	
4	I	C37	----	ON	
5	I	C40	----	ON	
6	I	C41	----	ON	
7	I	C44	----	ON	
8	I	C49	----	ON	
9	I	C52	----	ON	

6 After selecting all the characters, press OK **Ⓢ**.

7 Repeat steps 4 to 6 to caption names for other channels.

8 Press the MENU button **Ⓜ** to restore the normal TV screen.

Teletext

Teletext

Most TV channels broadcast information via teletext. The index page of the broadcaster (usually page 100) gives you information on how to use the service.

Make sure you use a TV channel with a strong signal, otherwise teletext errors may occur.

Switching Teletext On and Off

1 Select the channel which carries the teletext service you wish to view.

2 Press **Ⓢ** **Ⓢ** to display teletext.
If no teletext signal is broadcast, the indication P100 is displayed on a black screen.

3 Input three digits for the page number using the number buttons **Ⓢ**.
The page counter searches for the page and after some seconds the page is displayed.

4 Press **Ⓢ** **Ⓢ** to return to the normal TV picture.

Using Other Teletext Functions

To	Press
Access the next or preceding teletext page	Ⓢ Ⓢ for the next page or Ⓢ Ⓢ for the preceding page
Mix the mode	Ⓢ Ⓢ when in teletext mode. Now the teletext page is superimposed on the TV programme. Press again to return to the normal teletext display.
Freeze a teletext subpage	Ⓢ Ⓢ . Press once again to cancel.
Reveal hidden information (eg: answers to a quiz)	Ⓢ Ⓢ . Press once again to cancel.

Favourite page system

You can store up to four of your favourite teletext pages per Teletext service. In this way you have quick access to the pages you frequently use.

Storing pages

- 1 Use the number buttons **1** to select the page you would like to store.
- 2 Press **↔** **7** twice.
The colour prompts at the bottom of the screen flash.
- 3 Press red, green, blue or yellow **8** to store the selected page.
The page is now stored on this colour.

Repeat steps 1 to 3 for the other 3 pages.

Displaying the Favourite Pages

- 1 Press **↔** **7**.
- 2 Press red, green, blue or yellow **8** to select the desired page.

Make sure you press **↔** **7**, otherwise the normal Fastext facility operates.

Using Fastext

(only available, if the TV station broadcasts Fastext signals)

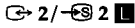
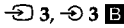
With Fastext you can access pages with one key stroke. When Fastext is broadcast, a colour-coded menu appears at the bottom of the screen. The colours of this menu correspond to the red, green, yellow and blue colours on the Remote Commander.

Press the colour button **8** that corresponds to the colour-coded menu. The selected page is displayed after some seconds.

Optional Equipment

Connecting Optional Equipment

There is a wide range of optional equipment you can connect to your TV. Refer to the illustrations on the front flap page of this manual.

Symbol	Acceptable input signals	Available output signals
 1 K	Normal audio/ video and RGB	Audio/ video from TV tuner
 2 L	Normal audio/ video and S video	Audio/ video from selected source
 3 B  3 C	Normal audio/ video and S video	No output
 M	No inputs	Audio from selected source

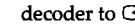
Connecting Headphones

Plug in the headphones to the  socket **A** on the front of the TV.

About S video input

Video signals may be separated into Y (luminance) and C (chrominance) signals. Separating the two signals prevents interference and thus improves the picture quality.

Notes on connections:

- If the picture or sound is distorted, move the VCR away from the TV.
- When connecting a monaural VCR, connect only the white jack to both the TV and VCR.
- Select 'TV' for output in the 'VIDEO CONNECTION' menu if you connect a decoder to  **2 L** (see page 30).

Selecting Input and Output Signals

This section explains how to select the output signal from **2/2** and how to select and view the input. You can use direct access buttons **1** to select the input or the menu system to select input and output.

Selecting Input Signals With Direct Access Buttons

Press **1** repeatedly.

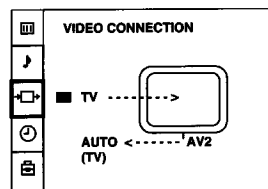
Press **0** to restore the normal TV picture.

Symbol on the screen	Input Signal
1	Audio/video through Euro AV connector K
1	RGB through Euro AV connector K
2	Audio/video through Euro AV connector L
2	S video through Euro AV connector L
3	Audio/video through the phono jacks C
3	S video through the 4 pin DIN B

Selecting With the Video Connection Menu

1 Press the MENU button **10**.

2 Press blue or green **8** to select **TV** for "VIDEO CONNECTION" then press yellow **8**.



3 Press blue or green **8** to select input (for the TV screen) or output (for **2/2**) then press yellow **8**.

4 Press red or yellow **8** repeatedly to select the desired input or output source then press OK **6**.

5 Press the MENU button **10** to restore the normal TV picture.

Note: If you select 'AUTO' for output, the output source automatically becomes the same as the desired input source.

Using AV Label Preset

This function enables you to label the input sources using up to five characters (letters or numbers).

1 Press the MENU button **10**.

2 Press blue or green **8** to select the symbol **AV** on the screen then press yellow **8**.

3 Press blue or green **8** to select 'AV LABEL PRESET' then press yellow **8**.

AV LABEL PRESET	
INPUT	LABEL
AV1	
RGB	
AV2	
YC2	
AV3	
YC3	

4 Press blue or green **8** to select the desired input source then press yellow **8**.

5 Press blue or green **8** to select a letter or number then press yellow **8** (select '-' for a blank).
Select the other four characters in the same way.

6 After selecting all the characters, press OK **6**.

7 Repeat steps 4 to 6 to label other input sources.

8 Press the MENU button **10** to restore the normal TV screen.

For Your Information

Troubleshooting

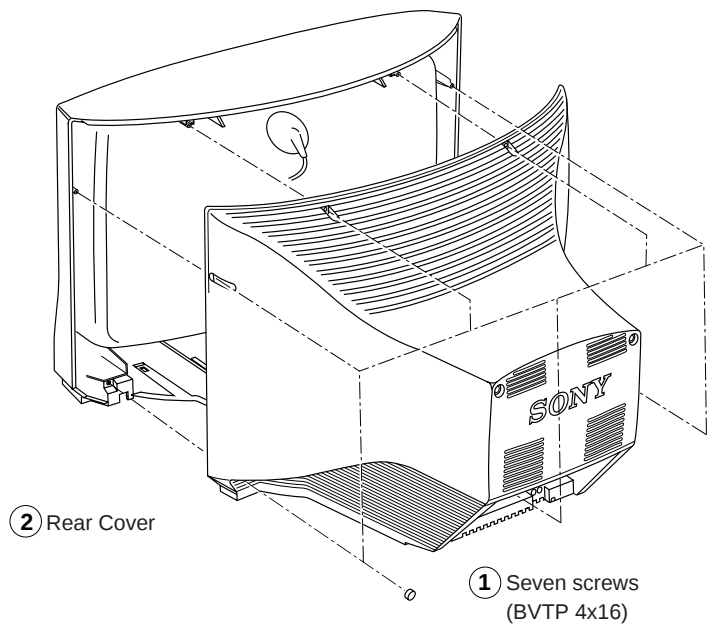
Here are some simple solutions to the problems which affect the picture and sound.

Problem	Solution
No picture (screen is dark), no sound	• Plug the TV in. • Press ① II on the TV. (If II indicator H is on, press □ ③ or a programme number ④ on the Remote Commander.) • Check the aerial connection. • Check if the selected video source is on. • Turn the TV off for 3 or 4 seconds then turn it on again using ① II.
Poor or no picture (screen is dark), but good sound	• Press MENU ⑬ to enter the 'PICTURE CONTROL' menu and adjust 'Contrast', 'Brightness' and 'Colour'.
Poor picture quality when watching an RGB video source.	• Press ↶ ⑪ E repeatedly to select ↶.
Good picture but no sound	• Press △ + ⑨ F. • If ⦿ is displayed on the screen, press ⦿ ①.
No colour for colour programmes	• Press MENU ⑬ to enter the 'PICTURE CONTROL' menu, select 'Reset' then press OK ⑥.
Remote Commander does not function.	• Replace the batteries.

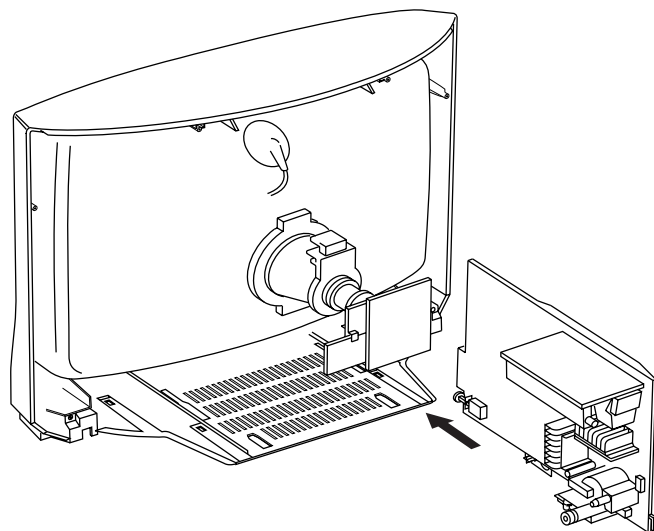
If you continue to have problems, have your TV serviced by qualified personnel.
Never open the casing yourself.

SECTION 2 DISASSEMBLY

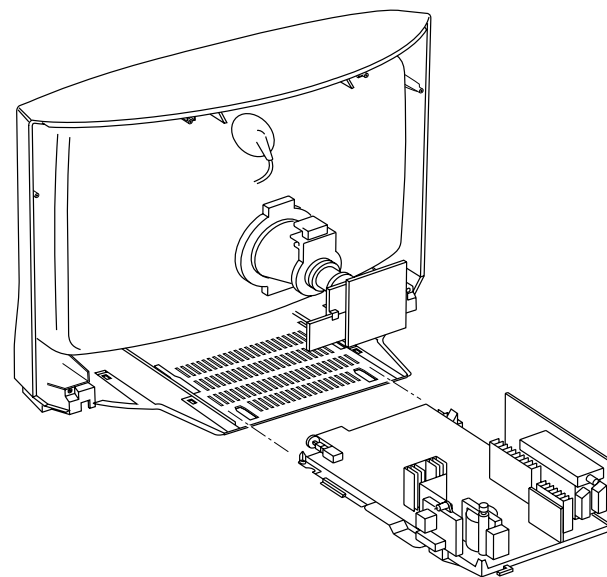
2-1. REAR COVER REMOVAL



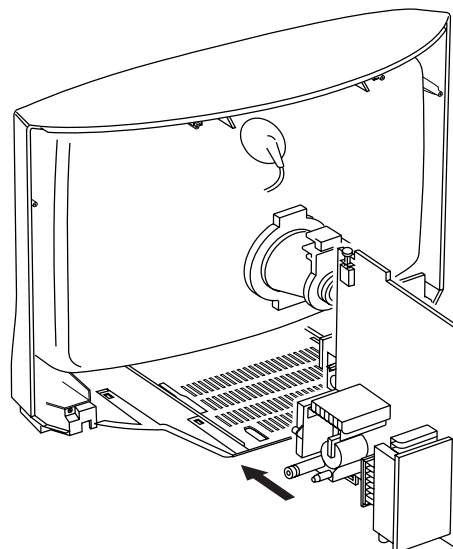
2-3-1. SERVICE POSITION (1)



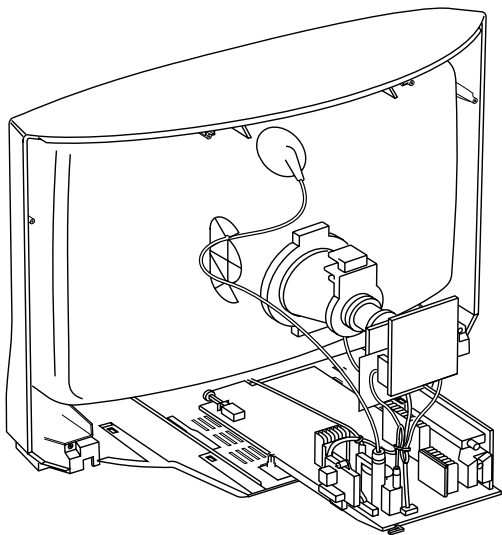
2-2. CHASSIS ASSY REMOVAL



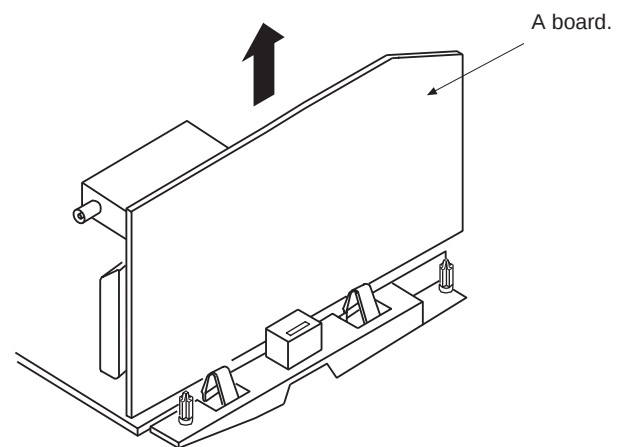
2-3-2. SERVICE POSITION (2)



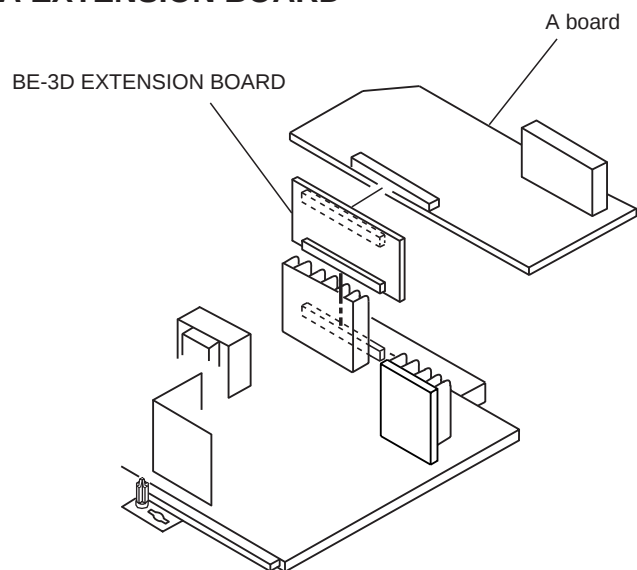
2-4. WIRE DRESSING



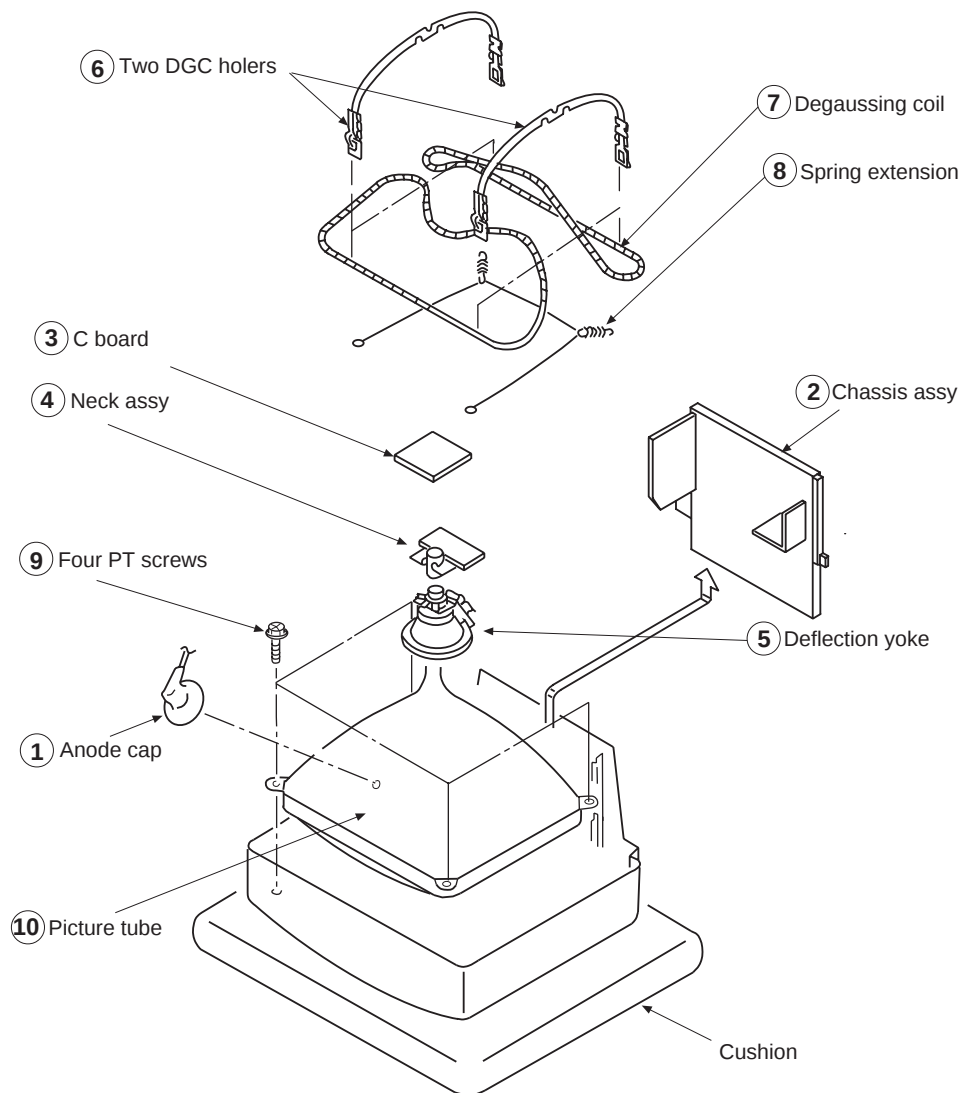
2-5. A BOARD REMOVAL



2-6. A EXTENSION BOARD



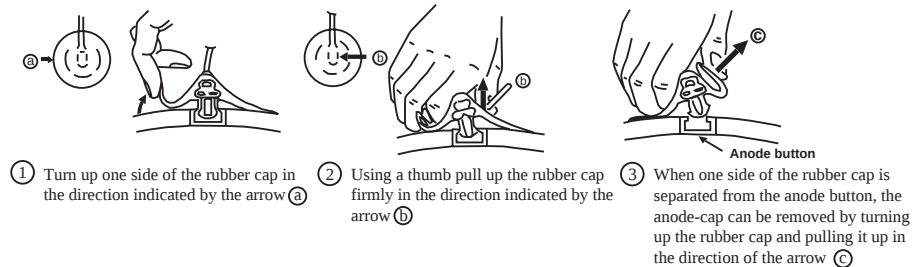
2-7. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

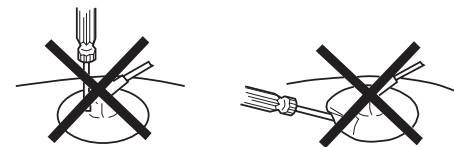
Note: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

* REMOVING PROCEDURES.



• HOW TO HANDLE AN ANODE-CAP

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



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 circuit, 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 shown and indicated by arrows.

Note : There are 5 plates fitted to the main bracket and secured by 4 or 6 gates. Only remove the necessary plate to gain access to the circuit board.

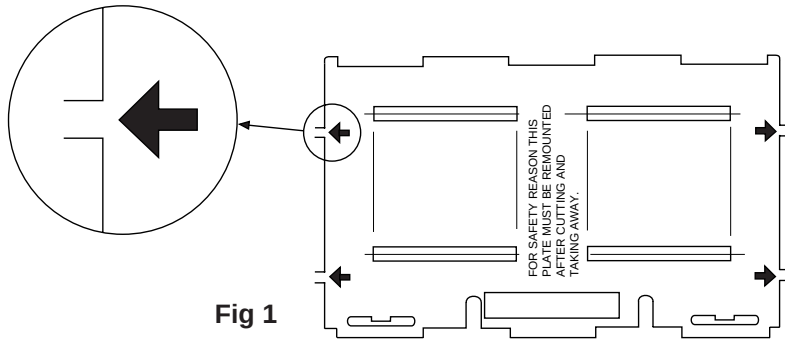


Fig 1



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.

The plates are identified by markings A-B-C-D-E on their top side.

1. Identify the plate by locating its marking.
2. Turn the plate over noting where the marking is located.
3. Locate the corresponding marking indicated on the main chassis bracket. See Fig 2.
4. Refit the plate as indicated in Fig 3 with the markings located next to each other.

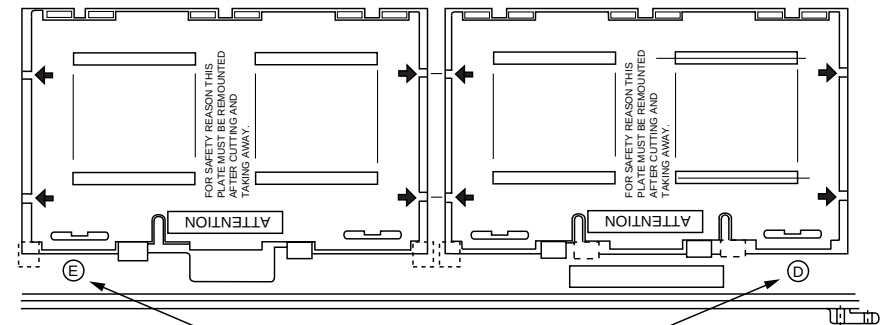


Fig 2

INDEX MARKING
AT BRACKET FRAME

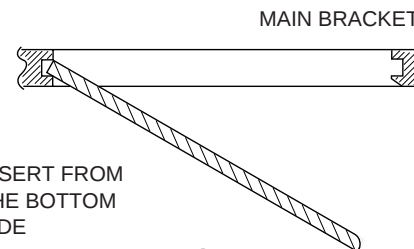


Fig 3

In the event of the plates requiring to be removed at a later stage, this can be achieved by inserting a screwdriver in the snap-recess indicated as in Fig 4 and lifting out.

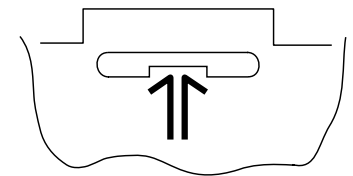


Fig 4

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 these settings :

● Contrast 80% (or remote control normal)
 ☼ Brightness 50%

- Carry out the following adjustments in this order :

1. Beam landing
2. Convergence
3. Focus
4. White balance

Note: Testing equipment required.

1. Color bar/pattern generator
2. Degausser
3. DC power supply
4. Digital multimeter
5. Oscilloscope

Preparation:

- In order to reduce the influence of geomagnetism on the set's picture tube, face it east or west.
- Switch on the set's power and degauss with the degausser.

3-1. BEAM LANDING

- Input the white signal with the pattern generator.
 CONTRAST } normal
 BRIGHTNESS }
- Set the pattern generator raster signal to red.
- Move the deflection yoke forward and adjust with the purity control so that the red is at the centre and the blue and the green take up equally sized areas on each side. (See Fig. 3-1 - 3-3)
- Move the deflection yoke forward and adjust so that the entire screen becomes red. (See Fig. 3-1)
- Switch the raster signal to blue, then to green and verify the condition.
- When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
- If the beam does not land correctly in all the corners, use a magnet to adjust it. (See Fig. 3-4)

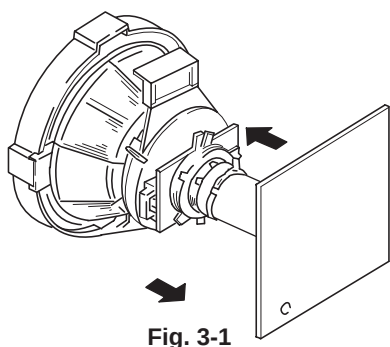


Fig. 3-1

Fig. 3-2

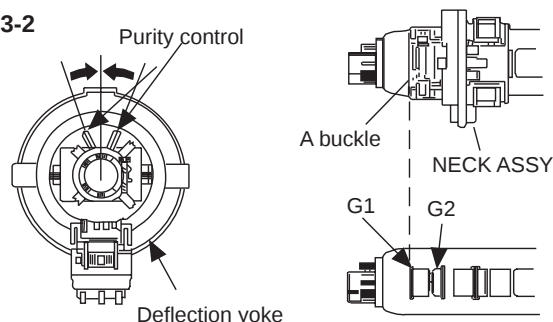


Fig. 3-3

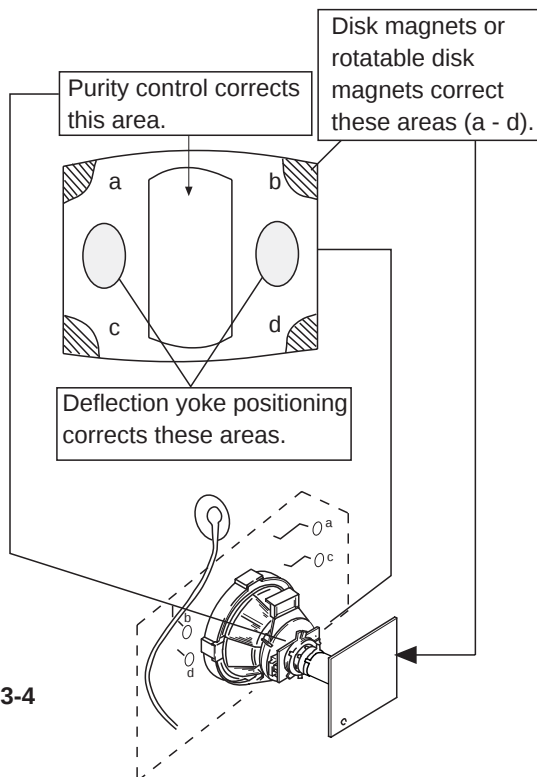
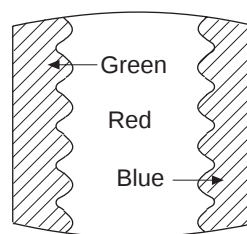


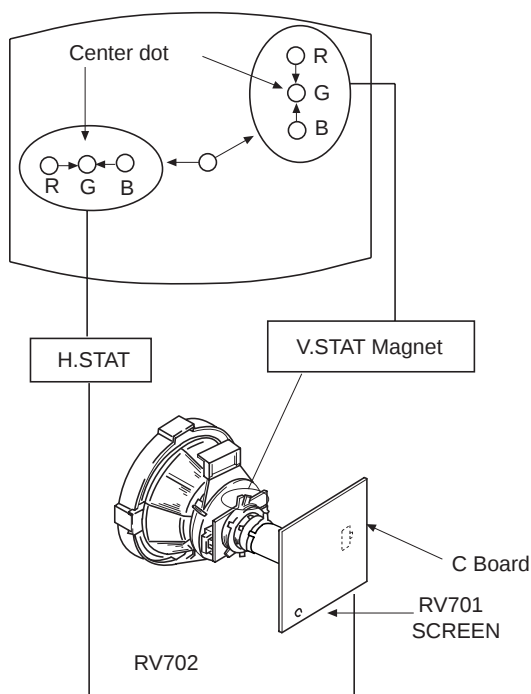
Fig. 3-4

3-2. CONVERGENCE

Preparation:

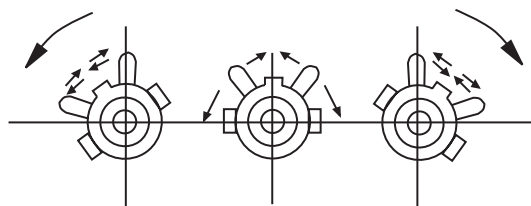
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide a dot pattern.

(1) Horizontal and vertical static convergence

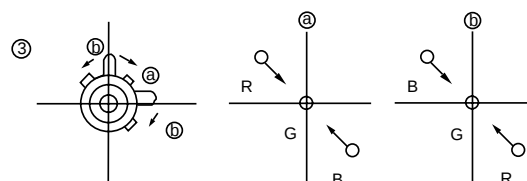
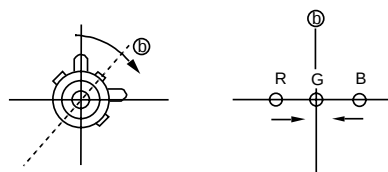
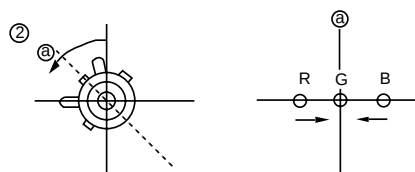
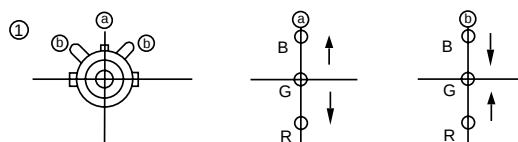


1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the centre of the screen.
2. (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the centre of the screen.
3. If the H.STAT variable resistor cannot 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 given below.
(In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

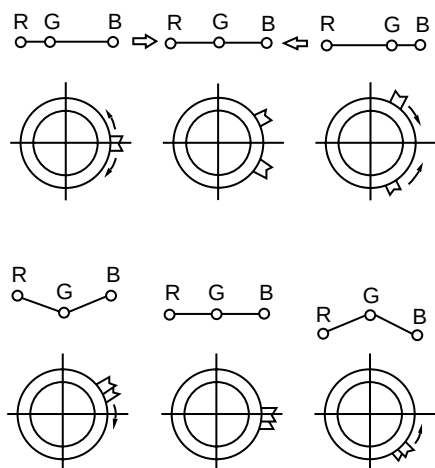
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



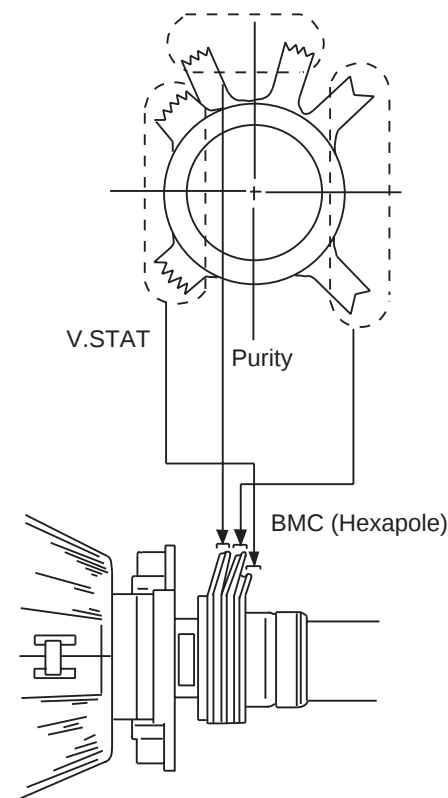
4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the red, green, and blue points move as shown below.



- Operation of BMC (Hexapole) Magnet



- The respective dot position resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the centre of the screen (by moving the dots in the horizontal direction).

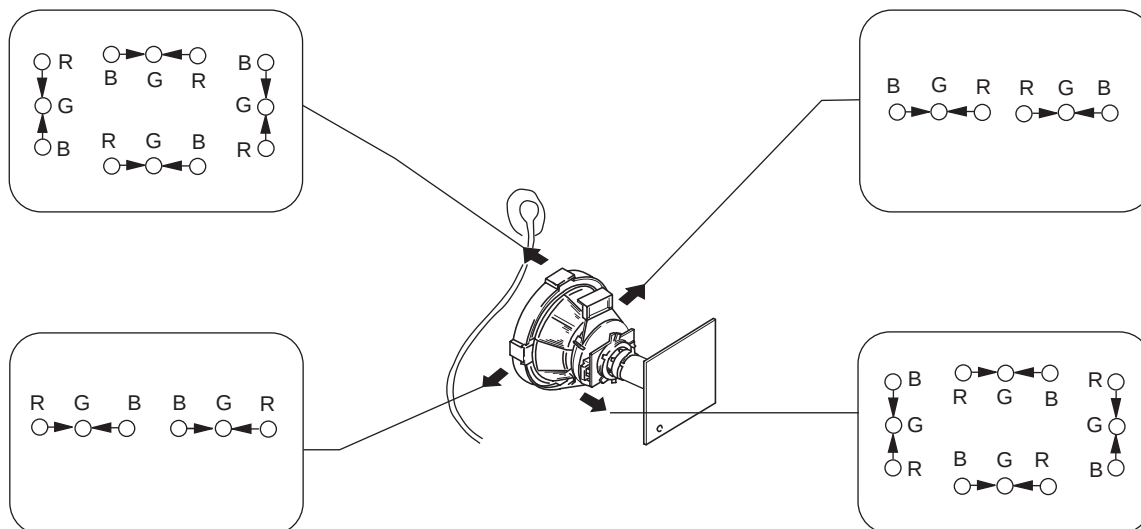


(2) Dynamic convergence adjustment.

Preparation:

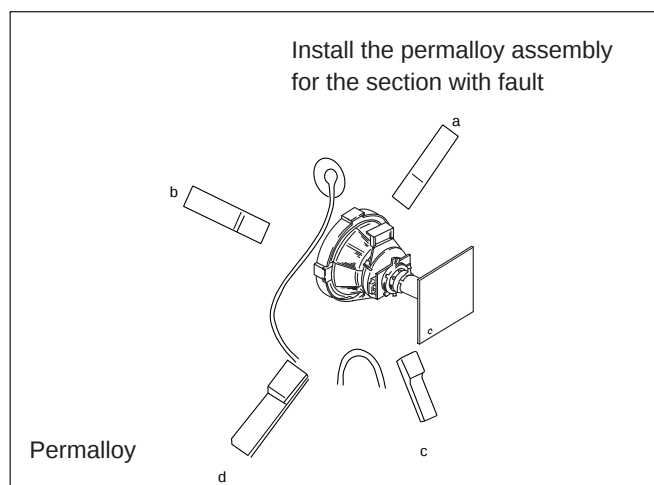
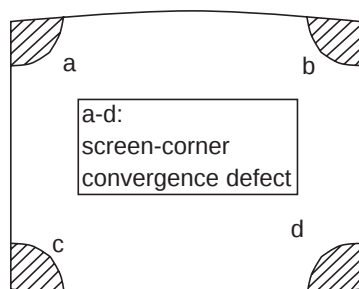
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.
- Slightly loosen the deflection yoke screws.

- Remove the deflection yoke spacer.
- Move the deflection yoke as shown in the figure below and optimize the convergence.
- Tighten the deflection yoke screws.
- Re-install the deflection yoke spacer.



(3) Screen corner convergence.

If you are unable to adjust the corner convergence properly, correct them with the use of permalloy assemblies.

**3-3. WHITE BALANCE****G2 Setting**

1. Switch the set into AV mode (apply no signal to the AV connectors).
2. Connect a Volt Meter to Test Point 1 on the A board.
3. Adjust RV01 to obtain a voltage of $3.0V \pm 0.3V$.

White balance adjustment

1. Input an all white signal from the pattern generator.
2. Enter into the service mode.
3. Enter into Picture Adjustment service menu.
4. Select sub-contrast and adjust to 7.
5. Select the Green Drive and adjust so that the white balance becomes optimum.
6. Select the Blue Drive and adjust so that the white balance becomes optimum.
7. Press the TV button to return to TV operation.

PICTURE ADJUSTMENT

AFC mode	1
REF position	2
SCP BGR	1
SCP BGF	1
Trap Fo	0
Sub contrast	Adj
Sub colour	Adj
Sub brightness	Adj
Sub hue	Adj
Green drive	Adj
Blue drive	Adj
Green cutoff	Adj
Blue cutoff	Adj
Gamma	0
Pre / overshoot	0
Y delay	3

SECTION 4

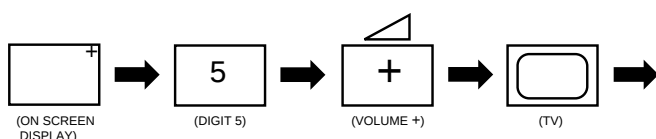
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied remote commander RM-862.

HOW TO ENTER INTO SERVICE MODE

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



"TT--" will appear in the top right corner of the screen. Other status information will also be displayed.

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

TEST MENU

> Picture adjustment
 Geometry
 Wide
 MSP
 IC status
 Current TV status

4. Move to the corresponding adjustment using the  button on the commander.
5. Move the button to the right  to enter the selected adjustment.
6. Turn off the power to quit the service mode when adjustments are completed.

PICTURE ADJUSTMENT

AFC mode	1
REF position	2
SCP BGR	1
SCP BGF	1
Trap Fo	0
Sub contrast	Adj
Sub colour	Adj
Sub brightness	Adj
Sub hue	Adj
Green drive	Adj
Blue drive	Adj
Green cutoff	Adj
Blue cutoff	Adj
Gamma	0
Pre / overshoot	0
Y delay	3

GEOMETRY ADJUSTMENT

V Size	Adj
V Position	Adj
S Correction	Adj
V Linearity	Adj
H Size	Adj
H Position	Adj
Pin Amp	Adj
Pin Phase	Adj
AFC Bow	Adj
AFC Angle	Adj
EHT V	Adj
EHT H	Adj
Corner Pin	Adj

WIDE

V Aspect	47
V Scroll	31
Upper V Lin	0
Lower V Lin	0
Left Blanking	1
Right Blanking	11

MSP

AGC ON/OFF	ON
Constant gain CDB	0
FM prescale FMP	36
Zwei mono-st WHI	36
Zwei st-mono WLO	18
Zwei mono-bi WMH	36
Zwei bi-mono WLO	18
Time zwei WML	41
Fawct limit	10
Fawct soll init FAW	12
Fawer tol	2
Nicam Err Max CCT	10
Nicam Err Min	0
Nicam Prescale NIP	97
Time Nicam	31
Carrier mute CRM	OFF
Audio clock ACO	HIZ
Scart prescale	25
Scart volume	64

IC STATUS (CXA2000 / CXA2040)**CXA2000**

H lock	1
IKR	1
VNG	0
X-RAY	0
Colour system	3
CV1 Sync	1

CXA2040

Sync sep	1
S1 mode pin	01
S2 mode pin	01

TUNER

Tuner status	01101011
--------------	----------

TV STATUS

Text system	C TEXT/TV TEXT
Dolby	NO/YES
Text language set	WEST/EAST/RUSSIAN
Menu language set	WEST/EAST/RUSSIAN
Destination	B/D/U/K/L/E/A/R
Scart 16:9	OFF/ON
RGB priority	OFF/ON
Ageing	OFF/ON
Size	29/25
Colour trap sw	SECAM/ALL
Velocity mod	ON/OFF
AFT STATUS	WINDOW/HIGH/LOW

SUB BRIGHTNESS ADJUSTMENT

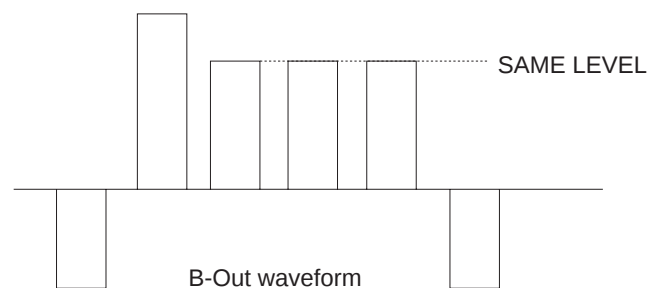
1. Input a Phillips pattern.
2. Set the picture control to minimum.
3. Enter into the Picture Adjustment Service Menu.
4. Adjust the Sub-Brightness data so that there is barely a difference between the 0 IRE and 10 IRE signal.

SUB CONTRAST ADJUSTMENT

1. Input a video that contains a small 100% area on a black background.
2. Set the picture control to maximum.
3. Connect an oscilloscope to pin 3 of CN301 (A board).
4. Enter into the Picture Adjustment Service Menu.
5. Adjust the Sub-contrast data to obtain a black to white amplitude of 2.50 volts.

SUB COLOUR ADJUSTMENT

1. Receive a PAL Colour Bar video signal.
2. Connect an oscilloscope to pin 3 of CN301 (A board).
3. Enter into the Picture Adjustment Service Menu.
4. Adjust the sub colour data so that cyan, magenta and blue colour bars are of equal height.



NOTE: The data shown in the TV STATUS table is dependant on destination, screen size and country.

SYSTEM B/G, D/K, I & L I.F ADJUSTMENT

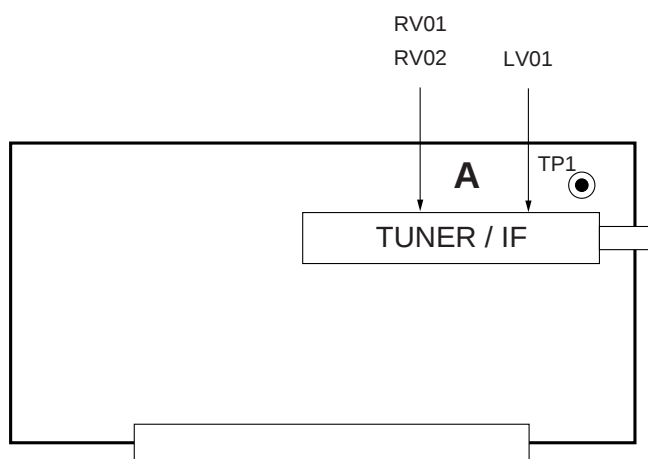
1. Input an off air signal of between 60-100dBuV / 75 ohm terminated, via the tuner socket.
2. Enter into the I.F adjustment service mode (i.e. " TT 59 ") to fix the I.F frequency to 38.9 MHz.
3. Enter into the service mode and select "Current TVStatus".
4. Adjust the I.F coil (LV01) until the "AFT Status" indicates a " Window " condition.

SYSTEM L BAND 1 I.F ADJUSTMENT

1. Input an off air signal of between 60-100dBuV / 75 ohm terminated, via the tuner socket.
2. Enter into the I.F adjustment service mode (i.e. " TT 59 ") to fix the I.F frequency to 34.2 MHz.
3. Enter into the service mode and select "Current TVStatus".
4. Adjust the RV02 until the "AFT Status" indicates a " Window " condition.

TUNER AGC ADJUSTMENT

1. Receive a signal of 63dBuV / 75 ohm terminated via the tuner socket.
2. Measure the voltage at test point 1 (A board).
3. Adjust RV01 to obtain a voltage of $3.0V \pm 0.3V$.



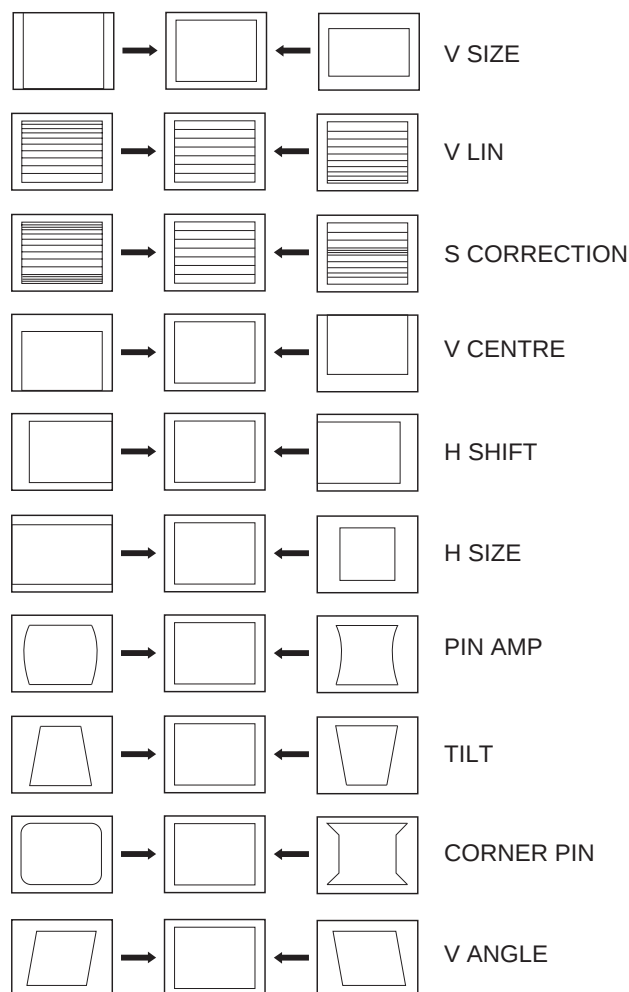
- A Board component side -

DEFLECTION SYSTEM ADJUSTMENT

1. Enter into the Geometry Adjustment Service Menu.
2. Select and adjust each item in order to obtain the optimum image.

GEOMETRY ADJUSTMENT

V Size	Adj
V Position	Adj
S Correction	Adj
V Linearity	Adj
H Size	Adj
H Position	Adj
Pin Amp	Adj
Pin Phase	Adj
AFC Bow	Adj
AFC Angle	Adj
EHT V	Adj
EHT H	Adj
Corner Pin	Adj



4-2. TEST MODE 2:

Is available by pressing Test button twice, OSD " TT " appears. The functions described below are available by pressing the two numbers. To release the Test mode 2, press 0 twice, or switch the TV into stand-by mode.

Note:

TT modes 40-49 require the TV to be in programme 59 before the command is accepted.

00	Cancel Test mode
01	Picture maximum
02	Picture minimum
03	Volume 30%
04	Volume 50%
05	Volume 65%
06	Volume 80%
07	Ageing mode
08	Set shipping conditions
09	Reset language select menu on power up
10	No function
11	Clear & Disable OSD
12	Enable OSD
13	Scart 16:9 Enable/Disable
14	Display TV status
15	Picture reset
16	Set 32" chassis (Wide models only)
17	Set all AV labels to default
18	RGB Priority Enable/Disable
19	Set all programme labels to default
20	No function
21	Sub Picture Adjustment (use red/yellow)
22	Sub Colour Adjustment (use red/yellow)
23	Sub Brightness Adjustment (use red/yellow)
24	Destination U
25	Destination D
26	Destination B
27	Destination K
28	Destination L
29	Destination E
30	No function
31	Destination A
32	Destination R

33	Sub Woofer Enable
34	Sub Woofer Disable
35	Set up trap switch
36	Rotation test
37	Set 25" (24" Wide models)
38	Set 29" (28" Wide models)
39	D/K Nicam Enable
40	No function
41	Re-initialise the NVM
42	Default Programme info in NVM with Pencoed factory channel setup
43	Default Geometry settings
44	Default favourite pages to 100,101,102 & 103
45	Switch off all Channel Locks
46	Dealer commander mode (pending)
47	Default MSP settings
48	Restore NVM test byte Undo TT49
49	Delete NVM test byte Sets virgin NVM
50	No function
51	Text interlace odd (NON INTERLACE MODE = 3)
52	Text interlace even (NON INTERLACE MODE = 2)
53	Auto picture ON
54	Auto picture OFF
55	Auto cut off ENABLE
56	Auto cut off DISABLE
57	AV3 ENABLE
58	AV3 DISABLE (if TV Text) otherwise AV3 ENABLE
59	Auto IF Display
60	No function
61	Dolby Pro-logic ON
62	Noise Left
63	Noise Right
64	Noise Centre
65	Noise Surround

66	DSP Bypass
67	D/K Nicam Disable
68	Diagnostics OFF
69	Diagnostics ON
70	No function
71	Lumisponder Curve 1
72	Lumisponder Curve 2
73	Jungle Select (CXA2000 or CXA2076)
74	Text H Position adjust
75	Picture reset
76	MSP BG filter enabled (h/w required)
77	Sound reset
78	MSP BG filter disabled (h/w required)
79	Wide set-up (Wide screen models only)
80	No function
81	Velocity Mod ON
82	Velocity Mod OFF
83	Picture Rise step 40ms
84	Picture Rise step 80ms
85	Picture Rise step 160ms
86	Picture Rise OFF
87	Select Shop mode
88	Compact Text Acquisition Disable
89	Compact Text Acquisition Enable
90	No function
91	Sound Centre mode NORMAL
92	Sound Centre mode WIDE
93	Sound Centre mode PHANTOM
94	Toggle Compact Text Acquisition Delay Bit 0
95	Toggle Compact Text Acquisition Delay Bit 1
96	Toggle Compact Text Acquisition Delay Bit 2
97	Toggle Compact Text Acquisition Delay Bit 3
98	Toggle Compact Text Acquisition Delay Bit 4
99	Set test menu



These test modes can set the delay byte to any value 0-31 which creates a (value x 20) mS delay.

4-3. BE-3D SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-3D chassis is triggered in 1 of 2 ways :- 1: Bus 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 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 with this method.

Table 1

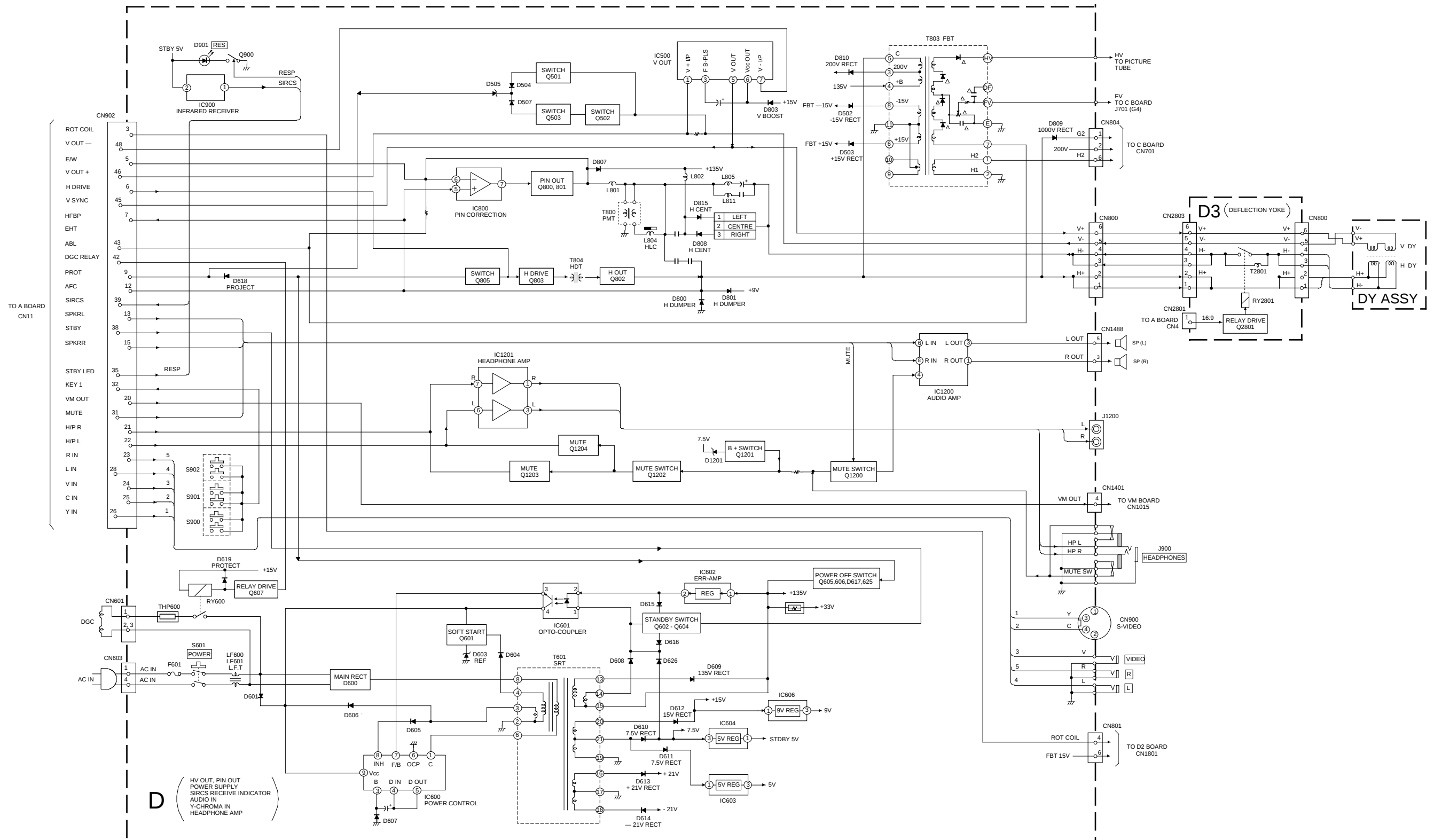
ERROR	LED ERROR COUNT
No error	00
Not allowed (may be confused with Sircs response flash!)	01
Protection circuit trip < ANY TIME >	02
IIC SCL LOW < POWER UP ONLY >	03
IIC SDA LOW < POWER UP ONLY >	04
IIC SDA & SCL LOW < POWER UP ONLY >	05
Jungle/Chroma controller no acknowledge < POWER UP ONLY >	06
Video Switch no acknowledge < POWER UP ONLY >	07
Tuner no acknowledge	08
MSP no acknowledge	09
NVM no acknowledge	10
M3L TXD Low < POWER UP ONLY >	11
M3L RXD Low < POWER UP ONLY >	12
M3L ENABLE Low < POWER UP ONLY >	13
M3L TXD & RXD Low < POWER UP ONLY >	14
Compact Text test fail < POWER UP ONLY >	15
A V switch cannot power on reset < Chassis Initialisation >	16
Cannot initialise jungle (after initial power on checked out OK) - < Chassis Initialisation >	17
NVM acknowledge fail after initialisation (STBY +5V- same as micro!)	18
Multiple devices with no acknowledge < POWER UP ONLY >	19
Compact text run-time failure < MAY NOT BE FATAL-DISPLAY ON ERROR READER >	20
A V SWITCH response failure after power up check (+9V test)	21
JUNGLE/CHROMA controller response failure after power up check (-9V test)	22
Compact text does not respond (-5V test)	23
MSP run-time failure < MAY NOT BE FATAL-DISPLAY ON ERROR READER >	24

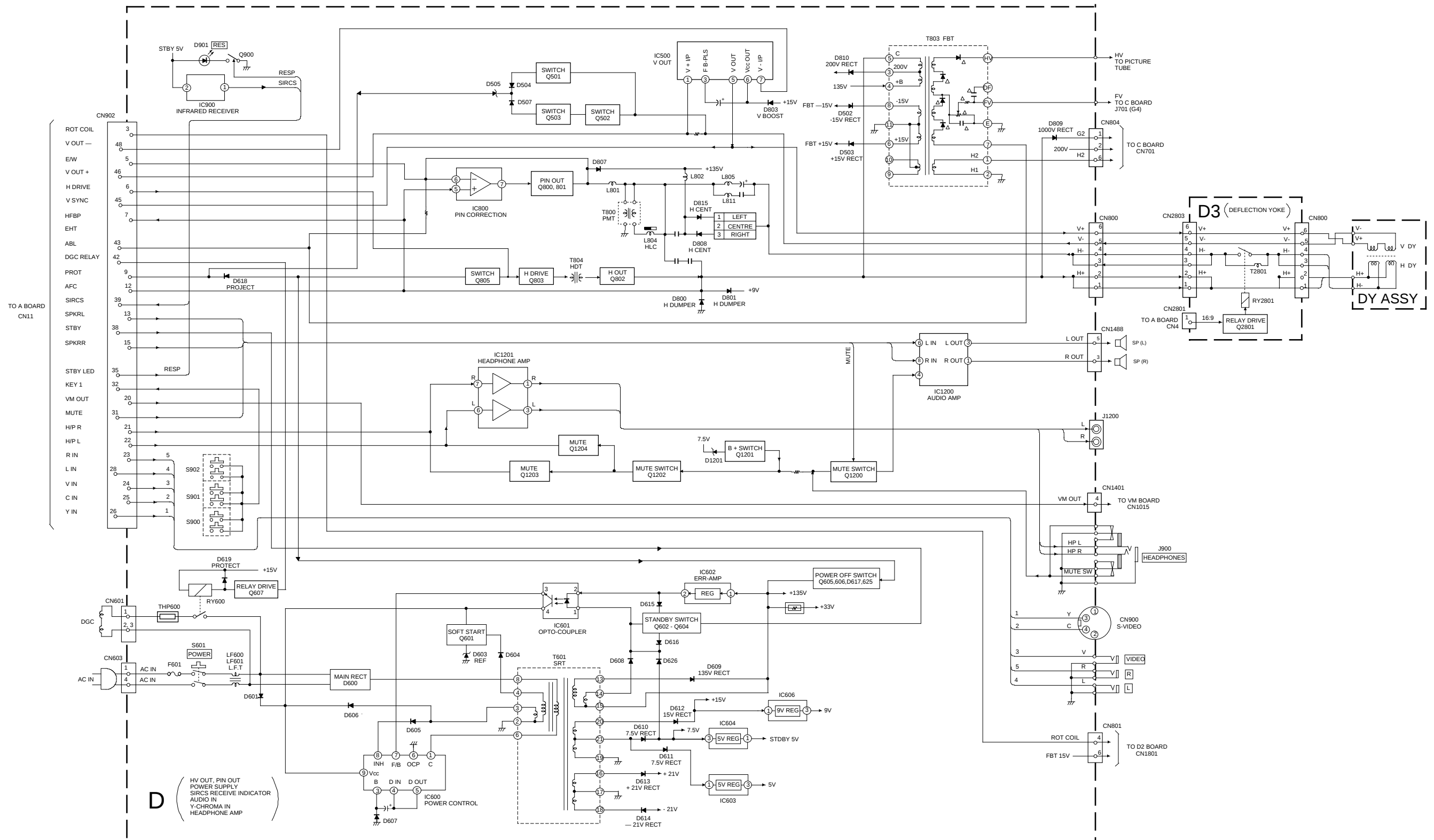
M3L bus Clock low time out after data send (run-time failure)	25
M3L bus Clock low time out after data send (at power up check)	26
M3L bus Clock low time out after data send (at initialisation)	27
DSP run-time failure < MAY NOT BE FATAL-DISPLAY ON ERROR READER >	28

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

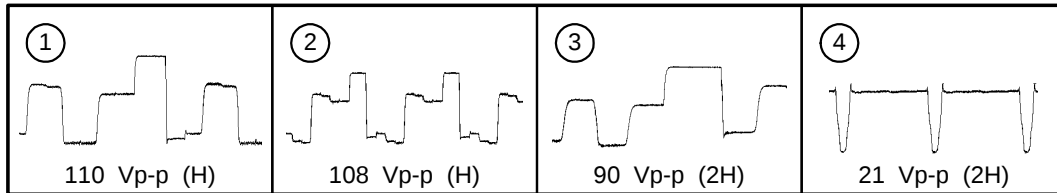
Stby LED



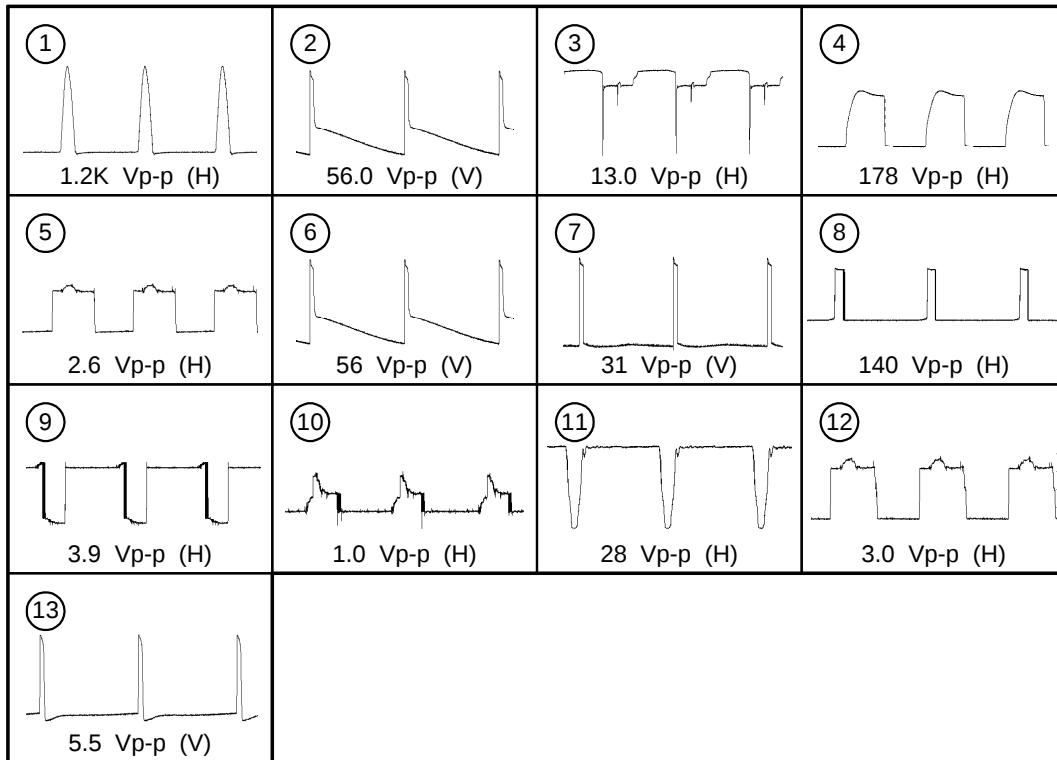




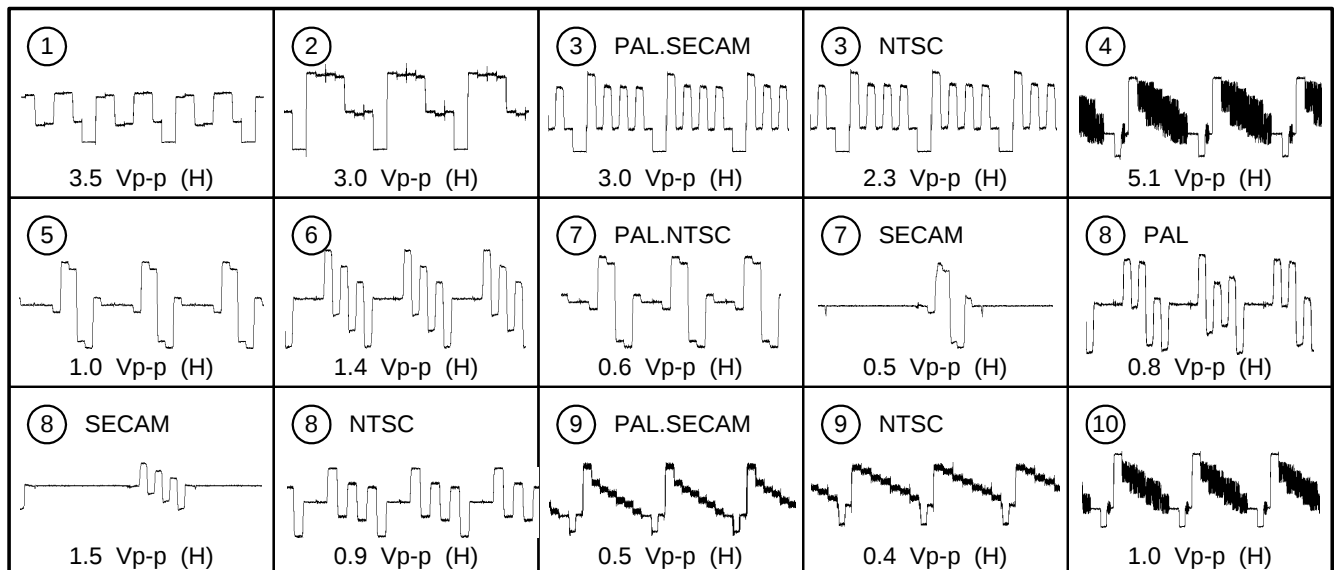
WAVEFORMS C BOARD



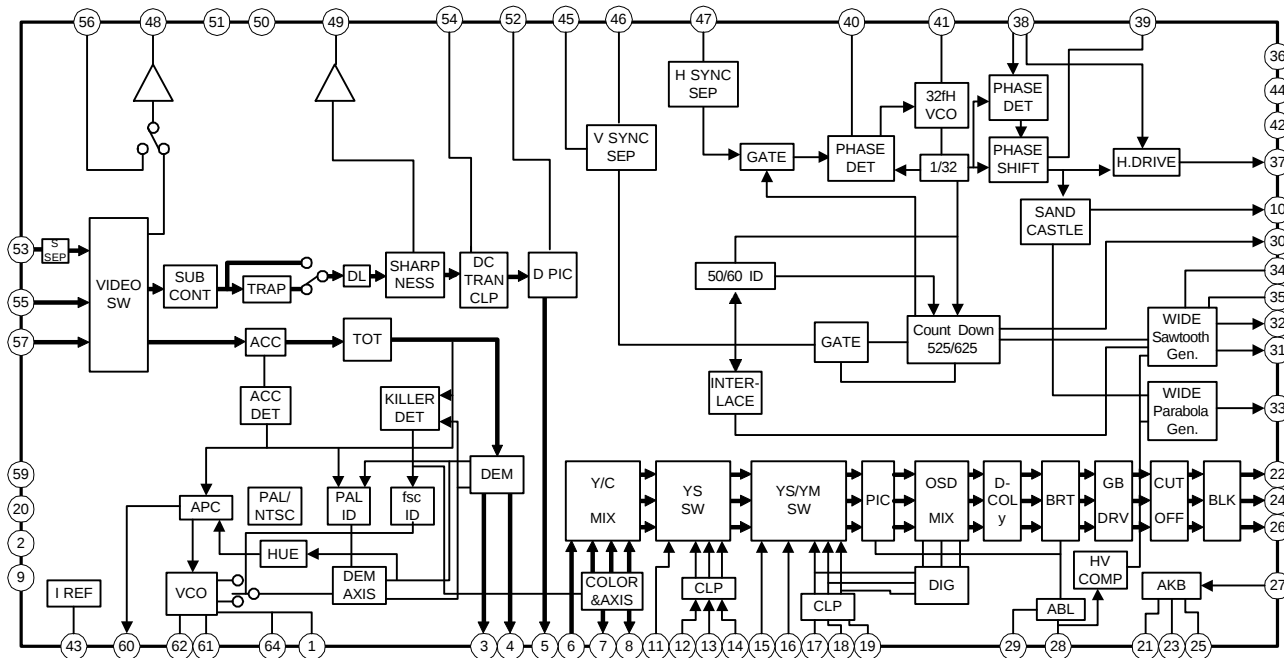
WAVEFORMS D BOARD



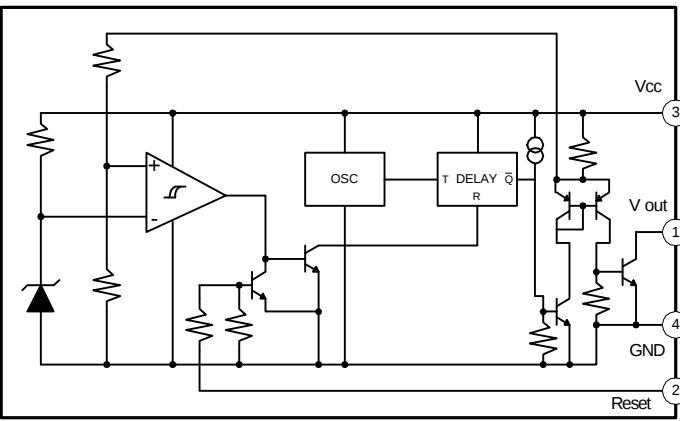
WAVEFORMS A BOARD



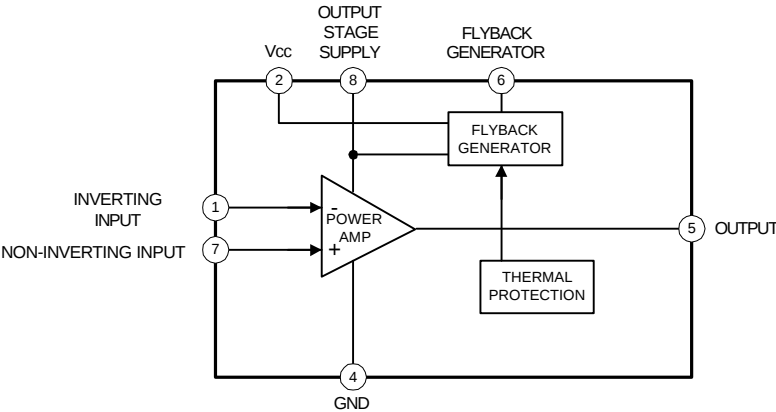
A BOARD IC301 CXA2000Q-TL



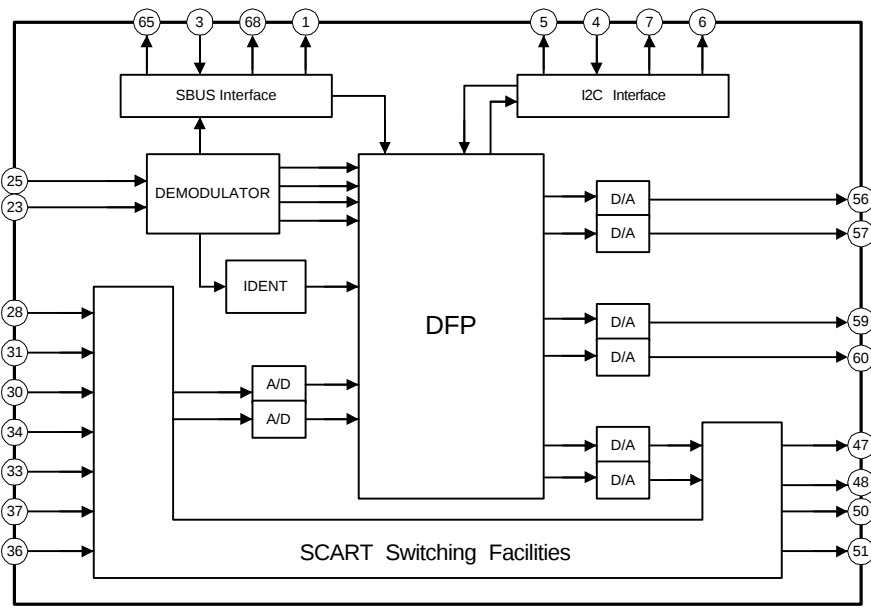
A BOARD IC4 PST593C



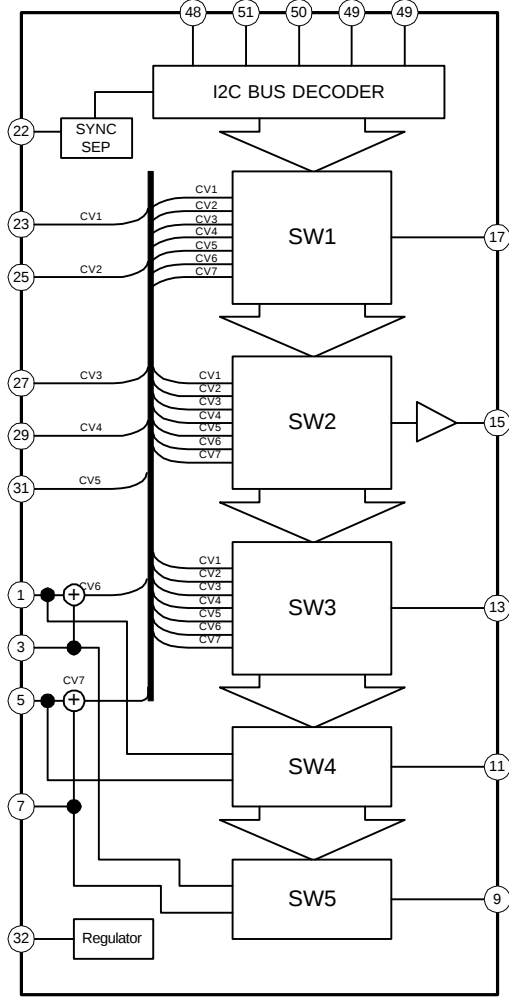
D BOARD IC500 STV9379



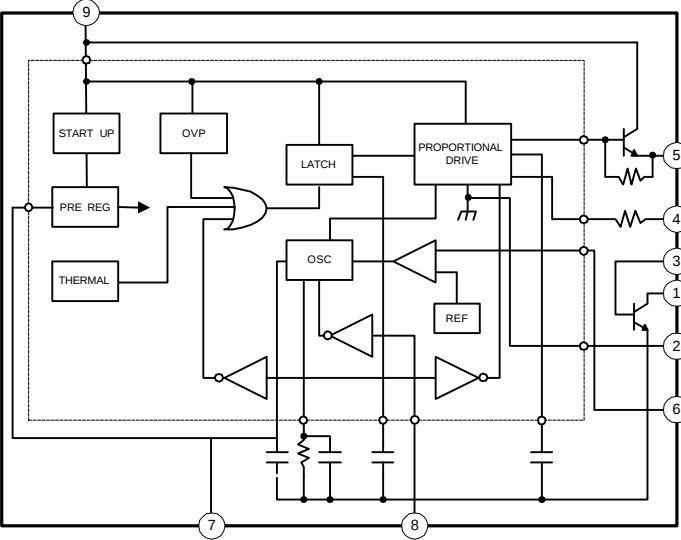
A BOARD IC202 MSP3410/MSP3400



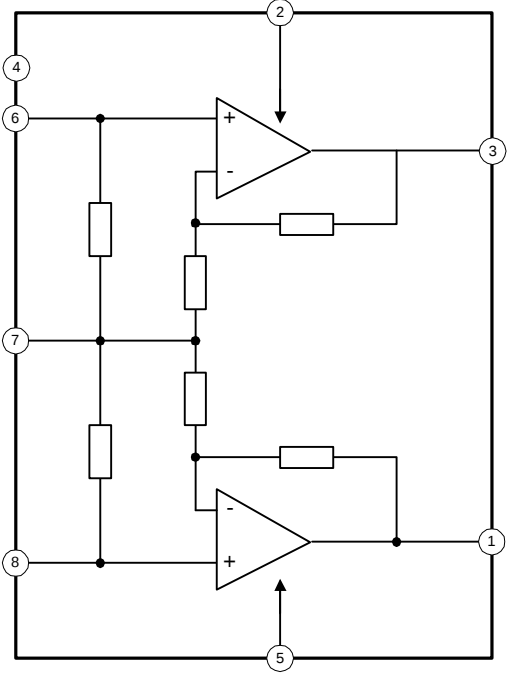
A BOARD IC201 CXA2040Q



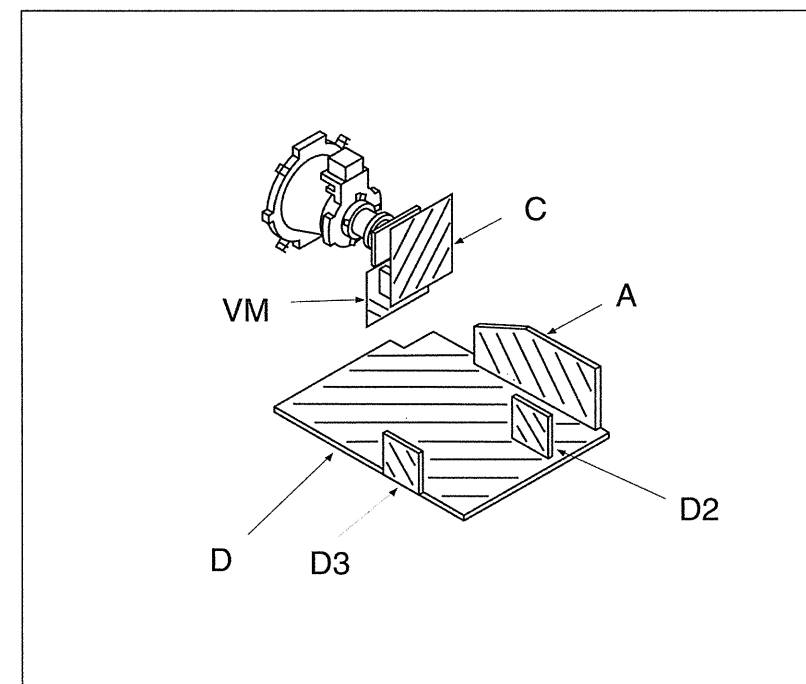
D BOARD IC600 STR-S6708



D BOARD IC1200 TDA7264



5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in μF unless otherwise noted. pF : μpF 50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
 $k = 1000$, $M = 1000K$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch : 5 mm
Rating electrical power $\frac{1}{4}$ W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- $\perp$: earth - ground.
- $\text{---}\text{---}$: earth - chassis.
- $\text{---}\text{---}$: no mounted.

Note : The components identified by shading and marked $\text{---}\text{---}$ are critical for safety. Replace only with the part number specified.

Note : Les composants identifiés par une trame et une marque $\text{---}\text{---}$ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Reference information

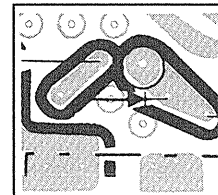
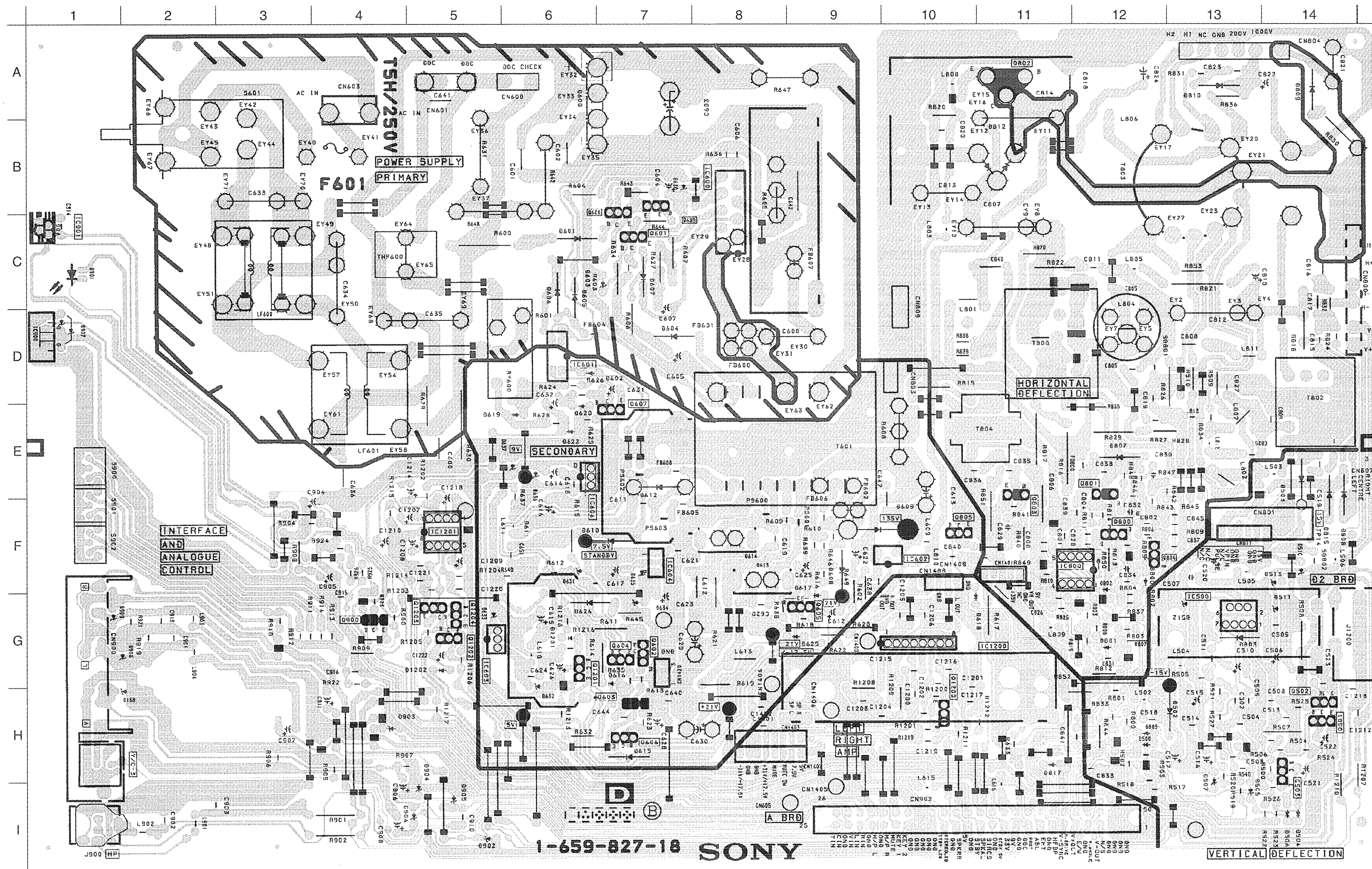
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: $\times$	ADJUSTABLE RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

- Readings are taken with a colour-bar signal input.
- Readings are taken with 10M Ω digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- $\text{---}\text{---}$: B+ bus.
- $\text{---}\text{---}$: signal path. (RF)

D Board

D

HV OUT, PIN OUT, POWER SUPPLY, CONTROL SW, AUDIO IN
Y-CHROMA IN, HEADPHONE IN, SIRCS RECEIVE, INDICATION



Note:

The Circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing

D BOARD

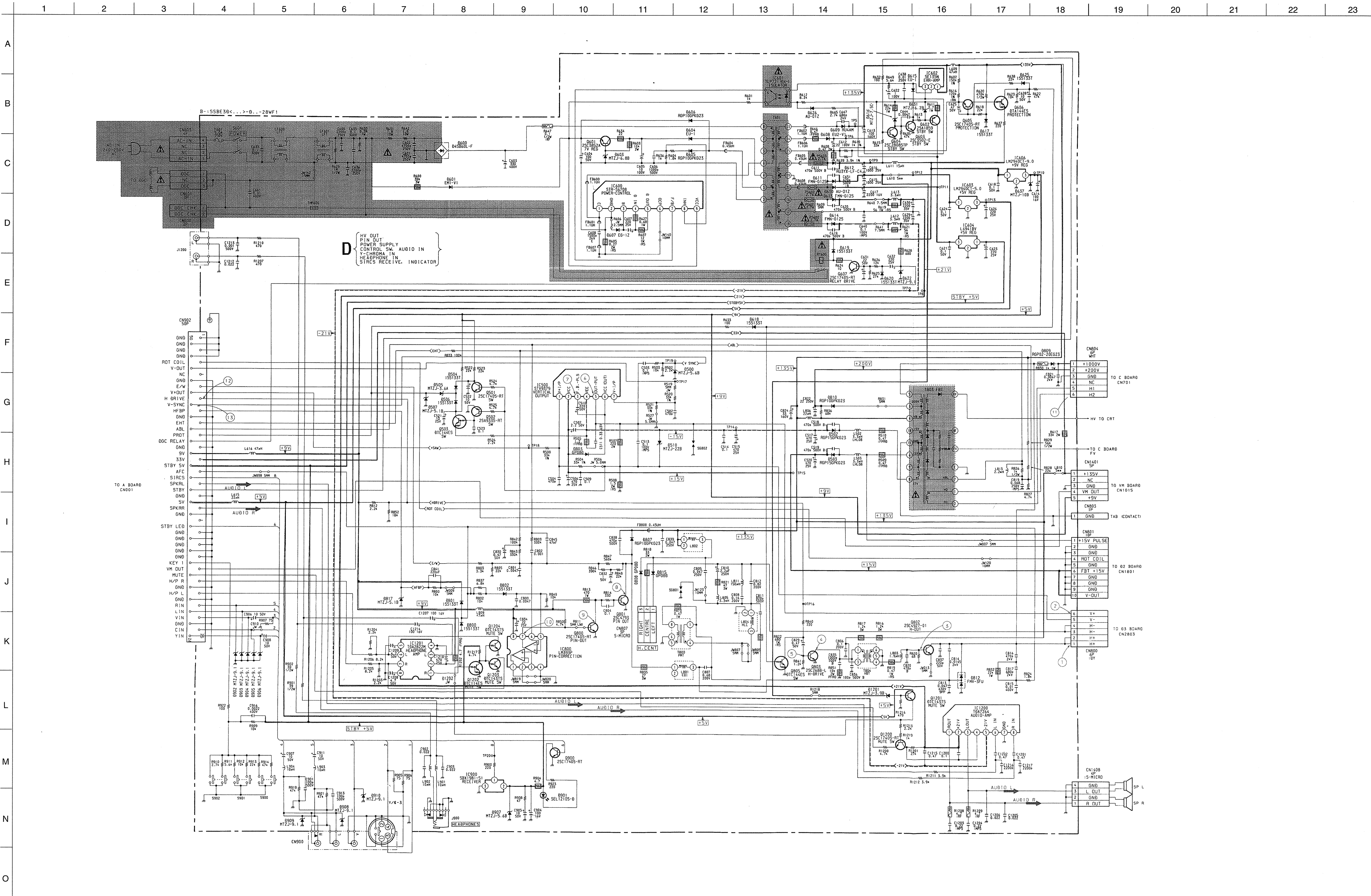
IC		DIODE	
IC500	G-13	D604	D-7
IC600	B-8	D605	C-6
IC601	D-6	D606	C-6
IC602	F-10	D607	C-7
IC603	G-5	D608	F-9
IC604	F-7	D609	F-9
IC606	E-6	D610	F-7
IC800	F-12	D611	F-6
IC900	D-1	D612	E-7
IC901	C-1	D613	F-8
IC1200	G-10	D614	F-8
IC1201	F-5	D615	H-7
TRANSISTOR		D616	G-7
Q501	H-14	D617	F-9
Q502	H-14	D618	F-11
Q503	H-14	D619	E-6
Q601	C-7	D620	E-6
Q602	G-7	D622	E-6
Q603	H-7	D625	G-9
Q604	G-7	D626	G-6
Q605	F-9	D631	F-6
Q606	F-9	D800	F-12
Q607	D-7	D801	G-12
Q800	F-12	D802	G-12
Q801	E-12	D803	F-13
Q802	A-11	D807	E-12
Q803	E-11	D808	E-14
Q805	F-10	D809	A-14
Q900	G-4	D810	A-13
Q1200	H-10	D812	B-11
Q1201	G-6	D815	E-14
Q1202	G-5	D817	H-11
Q1203	G-5	D901	C-1
Q1204	G-5	D902	I-5
DIODE		D903	H-4
D500	H-12	D904	H-5
D502	H-13	D905	I-5
D503	I-14	D906	I-5
D504	H-11	D907	G-1
D505	H-13	D908	I-4
D506	I-14	D909	G-1
D507	H-13	D910	H-1
D600	A-7	D1201	G-6
D601	C-6	D1202	G-5
D603	C-7		

D BOARD IC VOLTAGE TABLE

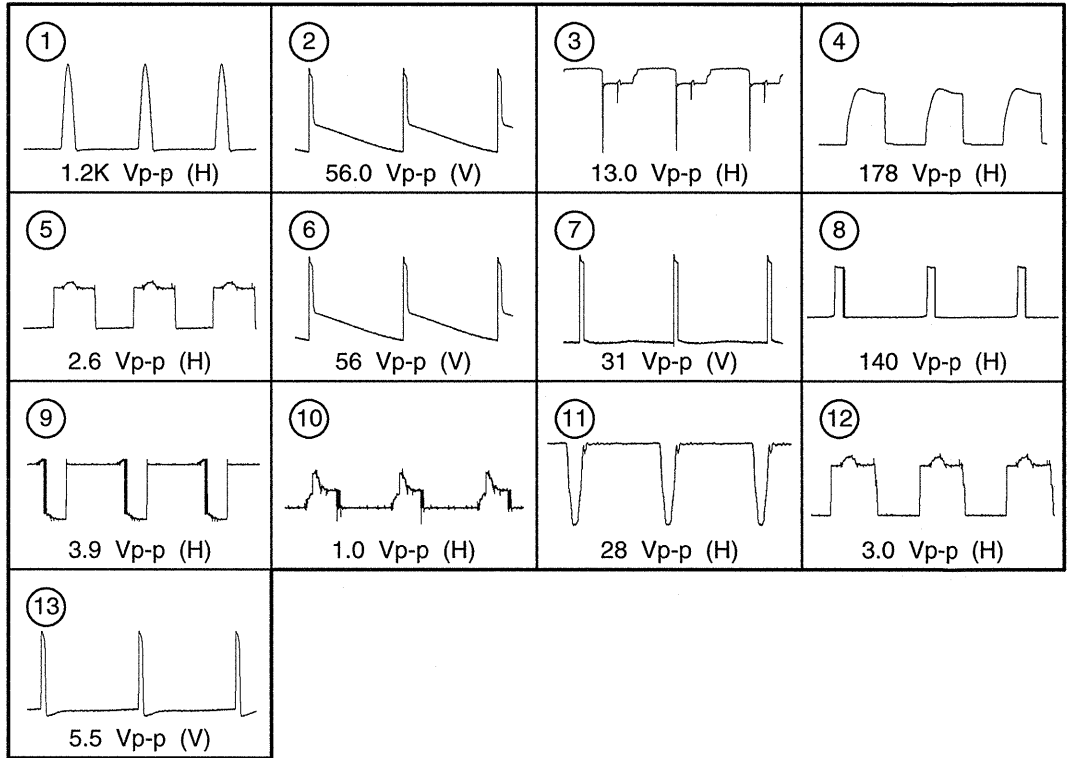
IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC500	1	1.5
	2	15.0
	3	-12.3
	4	-14.0
	5	0.1
	6	15.2
	7	1.4
IC600	1	170.0
	2	-62.4
	3	-62.6
	4	-62.2
	5	-62.0
	6	-62.6
	7	-62.4
IC601	1	64.3
	2	63.0
	3	-62.5
	4	-58.6
IC602	1	135.0
	2	63.2
	3	-0.1
	4	0.9
	5	1.5
	6	2.0
	7	0.2
IC800	1	9.0
	2	21.7
	4	21.5
	5	-21.7
IC1200	1	4.0
	2	9.0
	3	4.0
	5	0.5
IC1201	1	4.0
	2	9.0
	3	4.0
	5	0.5
	8	0.5

D BOARD TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table				
Ref No	B Base	C Collector	E Emitter	
Q501	-0.1	0.2	-	
Q502	0.1	-5.8	-	
Q503	-5.8	-12.0	-12.0	
Q602	72.0	7.5	72.7	
Q603	0	72.0	-	
Q604	0.7	-	-	
Q605	0.5	-	0.3	
Q606	-	-	12.0	
Q607	-	12.0	-	
Q800	0.2	3.1	-	
Q801	0.3	17.0	-	
Q802	-0.2	143.3	-	
Q803	-0.6	99.8	-	
Q805	-	3.6	-	
Q900	-	5.4	-	
Q1200	2.9	21.5	4.6	
Q1201	3.4	5.0	3.0	
Q1202	2.8	-	-	

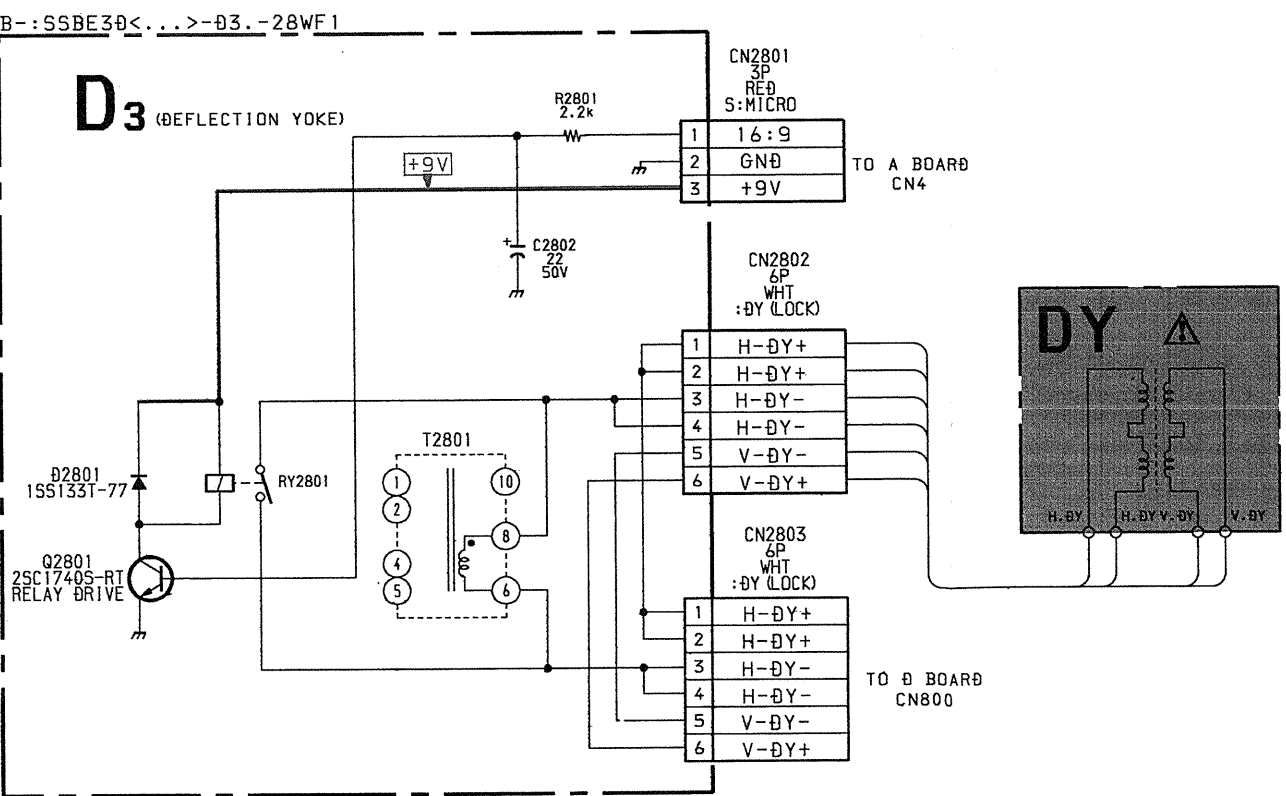


WAVEFORMS D BOARD



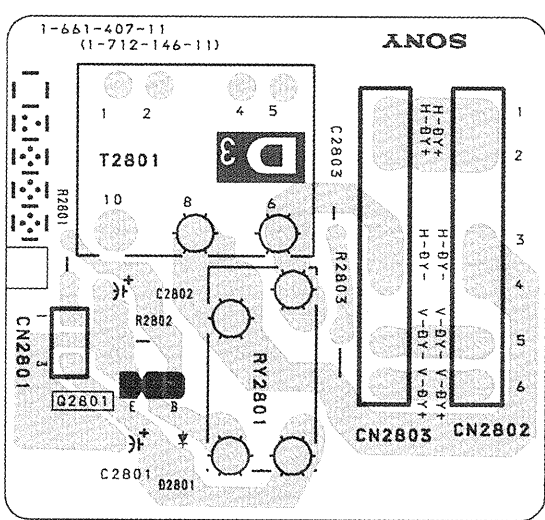
D BOARD
TRANSISTOR VOLTAGE TABLE

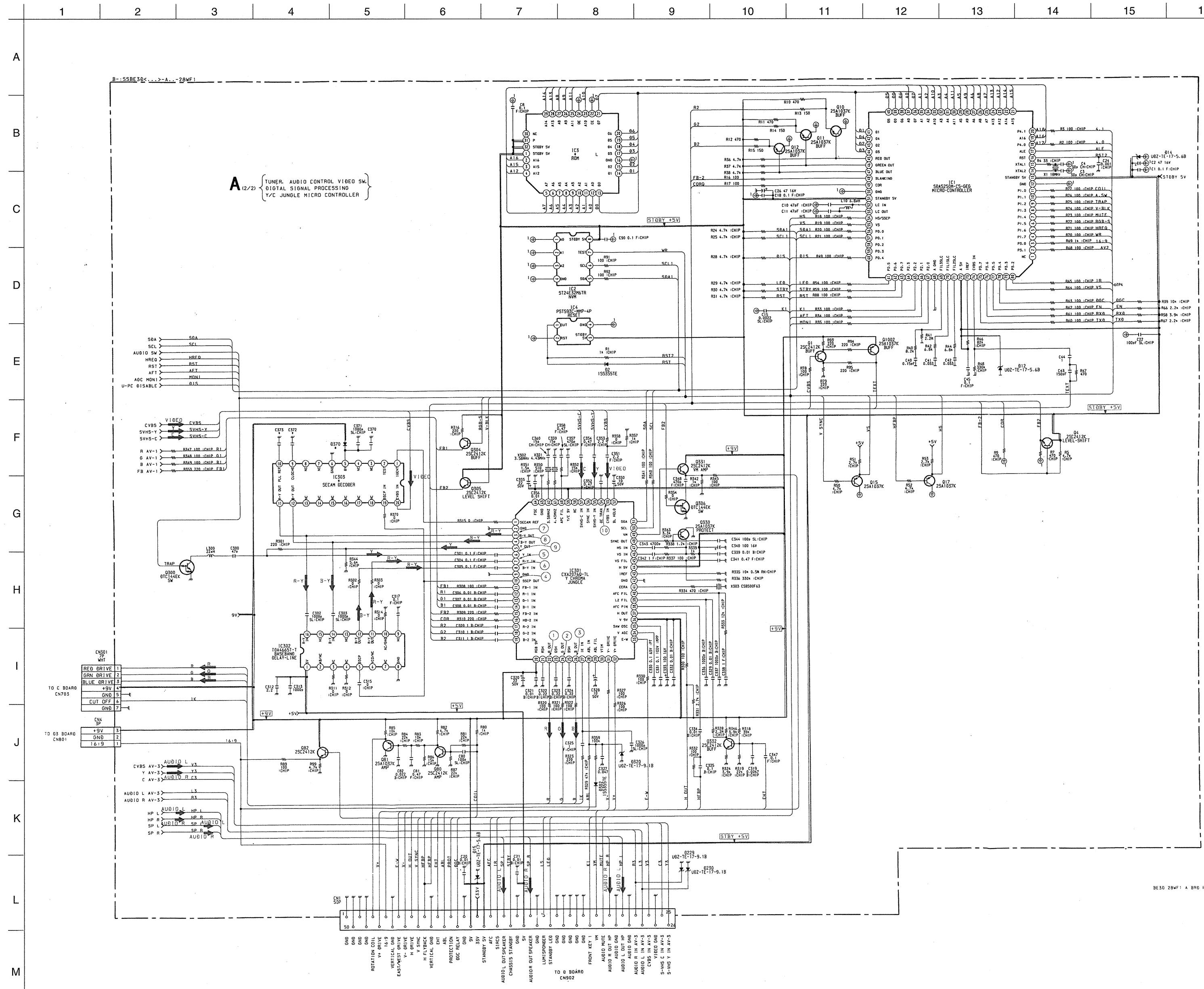
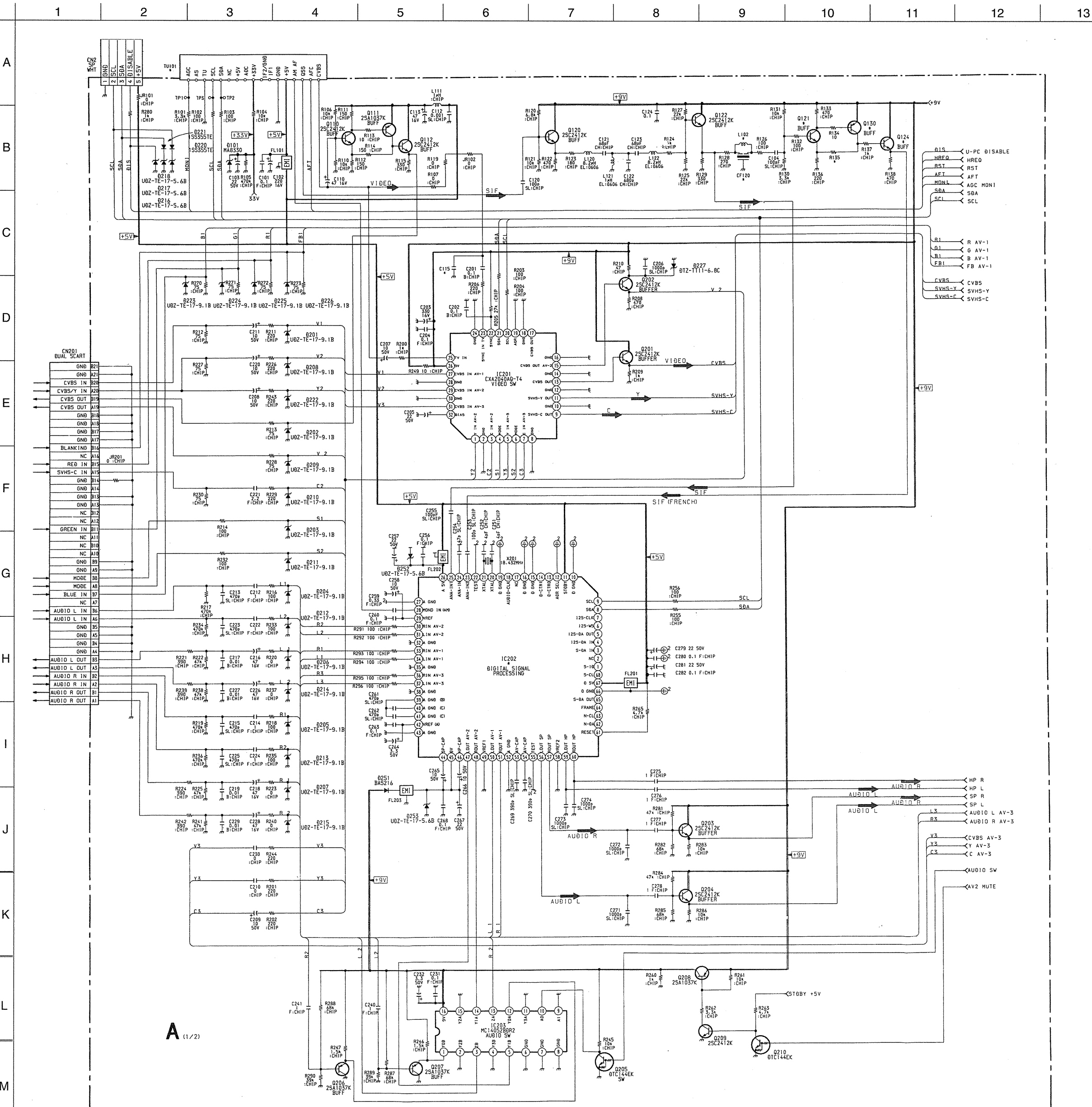
Transistor Voltage Table				
Ref No	B	C	E	
Q501	-0.1	0.2	-	
Q502	0.1	-5.8	-	
Q503	-5.8	-12.0	-12.0	
Q602	0	72.0	72.0	
Q603	0	72.0	-	
Q604	0.7	-	-	
Q605	0.5	-	0.3	
Q606	-	-	12.0	
Q607	-	12.0	-	
Q800	0.2	3.1	-	
Q801	-0.2	143.3	-	
Q803	-0.6	99.8	-	
Q805	-	3.6	-	
Q900	-	5.4	-	
Q1200	2.9	21.5	4.6	
Q1201	3.4	5.0	3.0	
Q1202	2.8	-	-	



D3 [DEFLECTION YOKE]

D3 Board





A (1/2) BOARD IC VOLTAGE TABLE

Ref No	Pin No	Voltage (V)
IC201	13	4.4
	15	4.4
	20	3.5
	21	2.7
	22	4.9
	23	4.4
	24	0
	25	4.4
	26	8.8
	32	4.4
IC202	4	2.8
	6-7	0.1
	8	3.0
	9	3.8
	11	4.7
	13	4.7
	20-21	2.4
	23	0.2
	25	1.5
	26	4.8
IC203	28	3.8
	29	2.8
	39-42	3.8
	44	7.1
	45	8.0
	46	7.1
	47-48	3.8
	53-54	3.8
	1	4.7
	3	3.8

A (2/2) BOARD TRANSISTOR VOLTAGE TABLE

Ref No	B	C	E
Q1	3.7	4.8	3.1
Q4	0.1	4.8	-
Q15	-	4.3	-
Q80	-	2.2	-
Q81	2.4	-	3.0
Q300	-	0.2	-
Q304	-	4.8	-
Q305	-	4.8	-
Q306	-	0.1	-
Q330	4.5	-	5.1
Q331	6.3	8.8	5.7
Q332	3.1	8.8	2.5
Q1001	4.4	-	-

A (1/2) BOARD TRANSISTOR VOLTAGE TABLE

Ref No	B	C	E
Q110	1.8	8.2	1.2
Q112	1.5	8.8	0.8
Q113	1.8	-	-
Q114	5.4	6.0	-
Q120	9.0	8.8	3.7
Q121	1.5	5.4	0.9
Q122	5.4	8.8	4.7
Q124	-	8.8	-
Q130	8.2	5.3	-
Q201	4.4	8.8	3.7
Q202	4.4	8.8	3.7
Q205	-	8.9	-
Q206	4.1	-	4.7
Q207	4.1	-	4.7

D2

[ROTATION AMP]

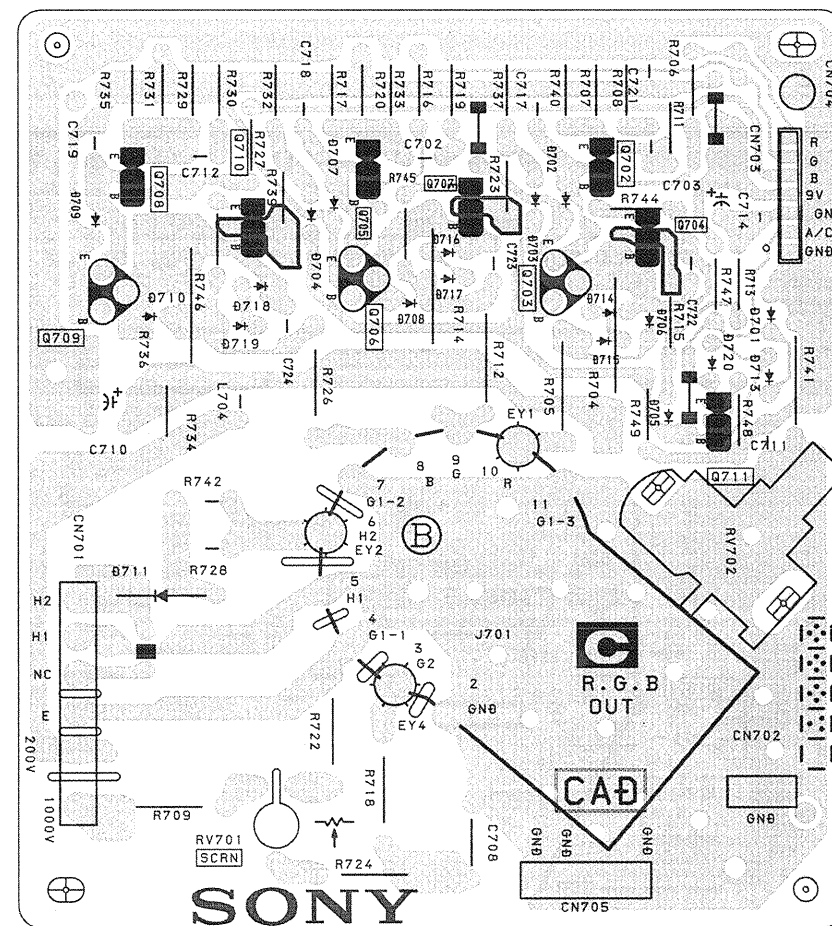
C

[R, G, B OUT]

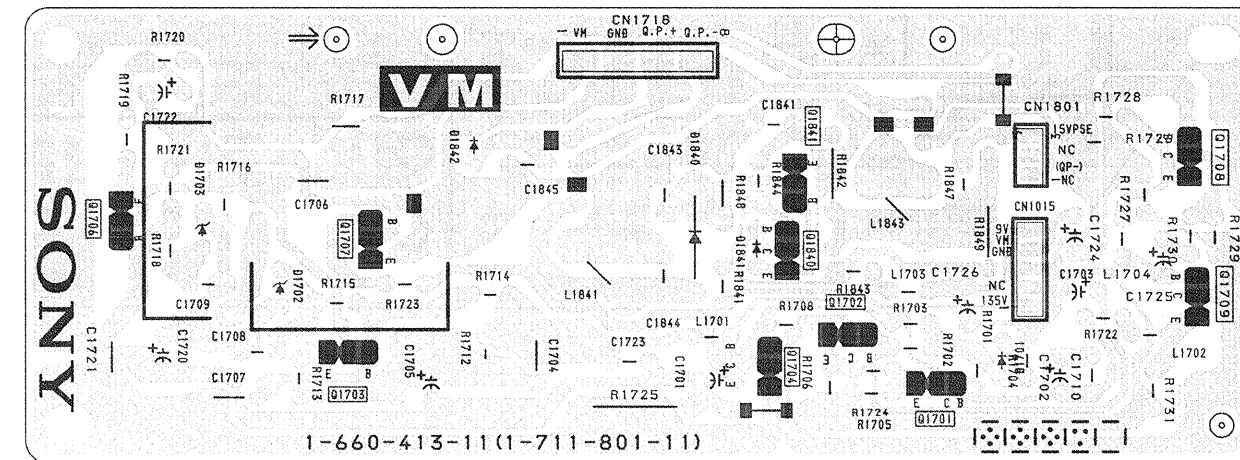
VM

[VM AMP]

C Board



VM Board

C BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table				
Ref No	B	C	E	
Q702	2.0	11.4	1.4	
Q703	12.0	168.3	11.4	
Q704	168.3	6.0	163.5	
Q705	1.7	11.4	1.2	
Q706	12.0	178.8	11.4	
Q707	178.2	6.2	173.8	
Q708	2.0	11.4	1.4	
Q709	12.0	168.3	11.4	
Q710	168.0	6.4	160.0	

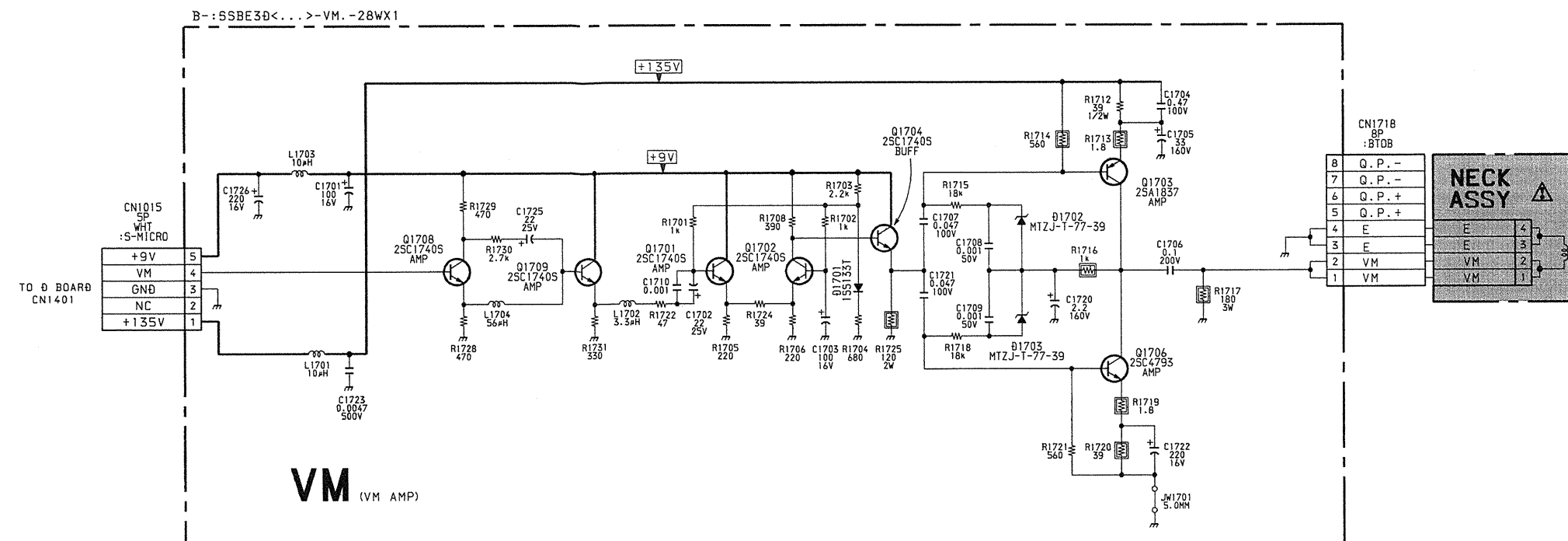
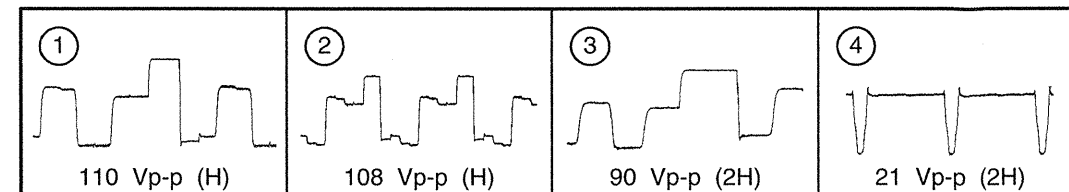
VM BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table				
Ref No	B	C	E	
Q1701	2.5	8.8	1.8	
Q1702	2.5	5.5	1.8	
Q1703	134.3	71.8	134.8	
Q1704	5.5	8.8	4.8	
Q1706	1.0	71.8	0.4	
Q1708	2.9	6.6	2.2	
Q1709	2.2	8.8	1.5	

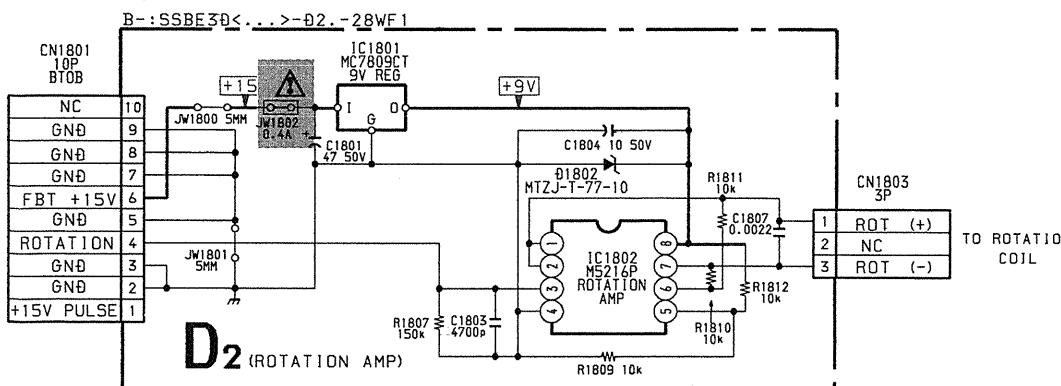
D2 BOARD IC VOLTAGE TABLE

IC Voltage Table		
Ref No	Pin No	Voltage (V)
IC1802	1-2	2.8
	3	3.0
	5-6	4.4
	7	6.2
	8	9.0

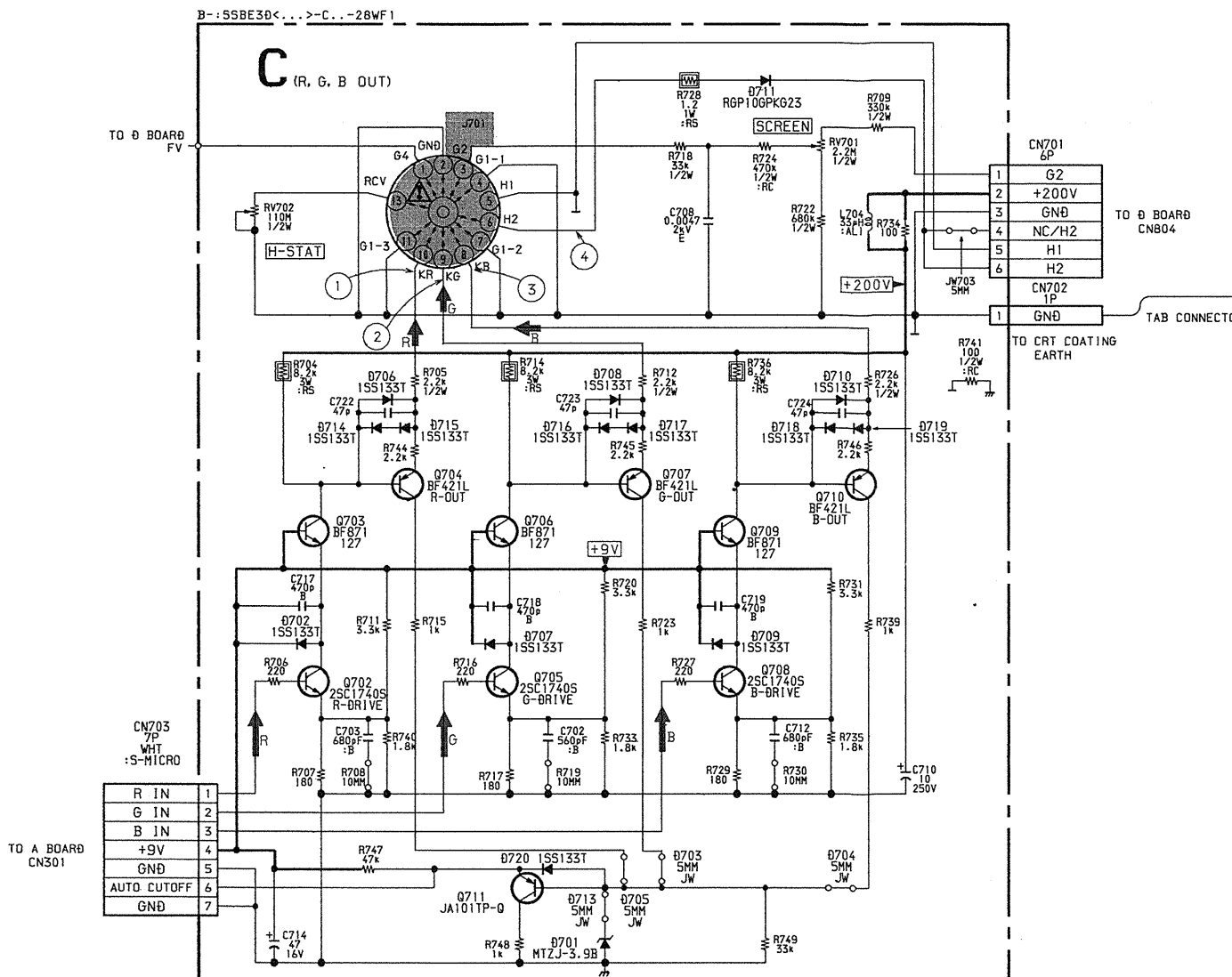
WAVEFORMS C BOARD



VM (VM AMP)

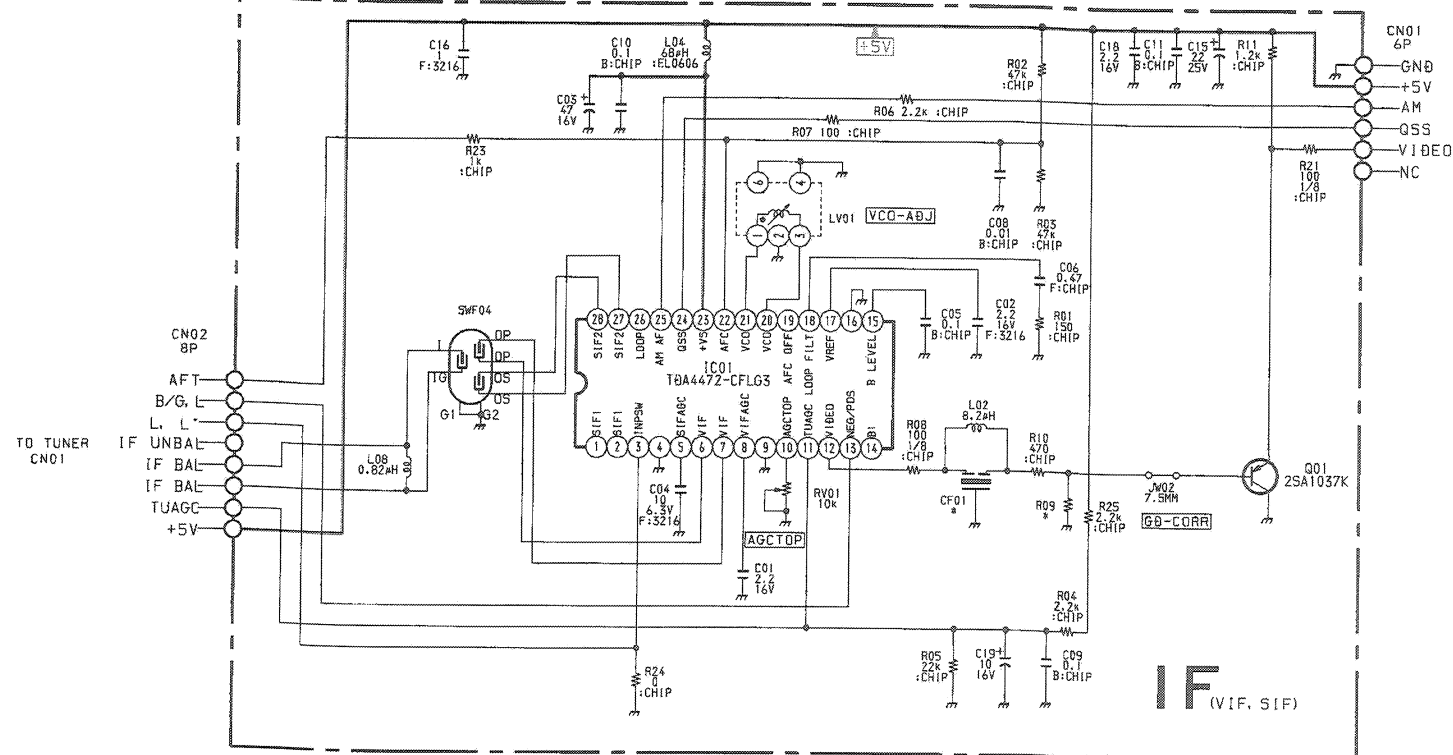


D2 (ROTATION AMP)



TUVIF (AEP) (KV-28WF1A, 28WF1D, 28WF1E, and 28WF1K, 28WF1R ONLY)
TUVIF (UK) (KV-28WF1U ONLY)

B-#TVF-01<UK/AEP>-IF.

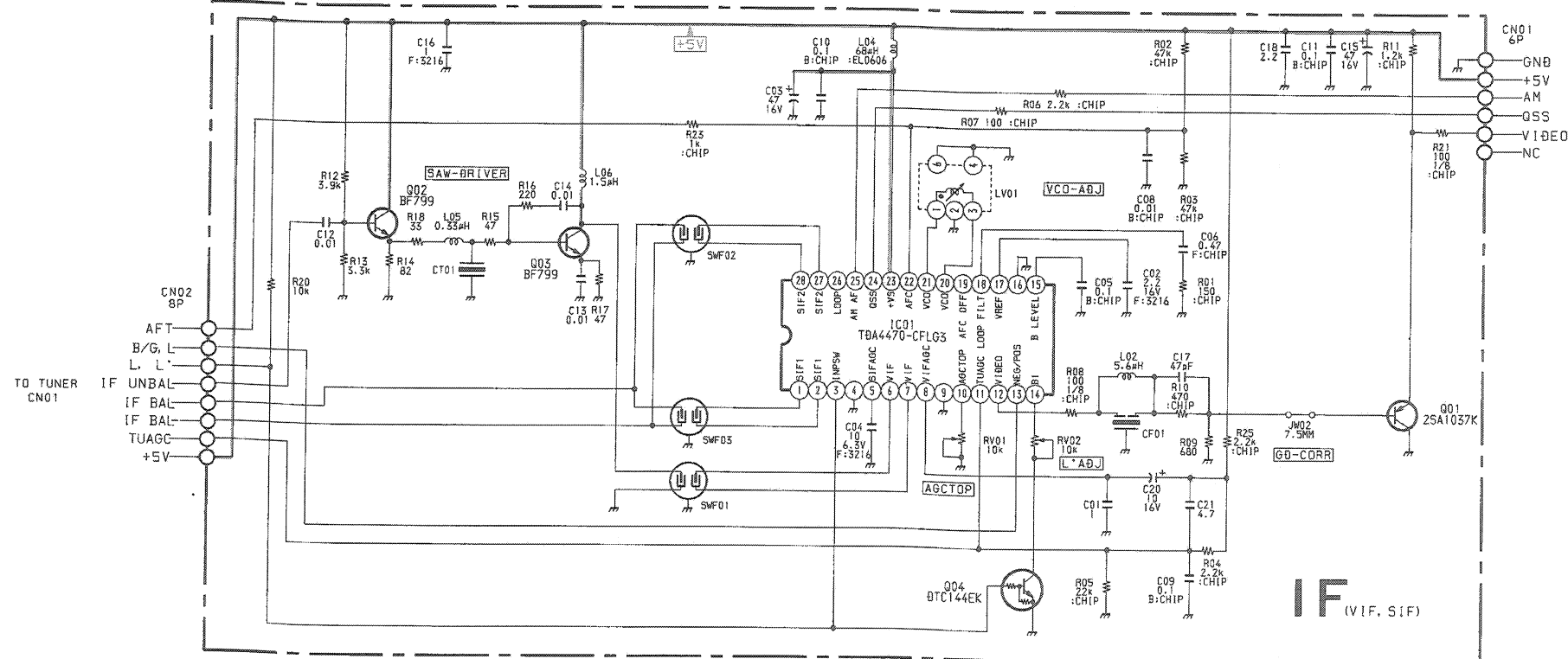


IF Board

Ref. No	Model	28WF1A	28WF1D	28WF1E	28WF1K	28WF1R	28WF1U
CF01		5.5MHz	5.5MHz	5.5MHz	5.5MHz	5.5MHz	6.0MHz
R09		680MF	680MF	680MF	680MF	680MF	1K

TUVIF (FR) (KV-28WF1B ONLY)

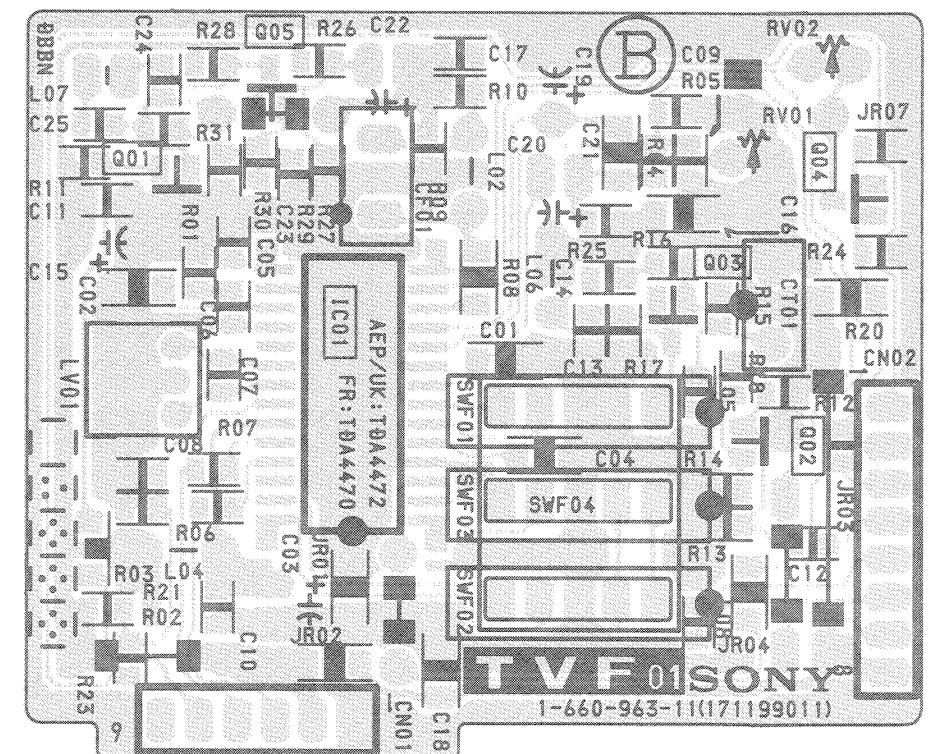
B-#TVF-01<FR.>-IF.



IF

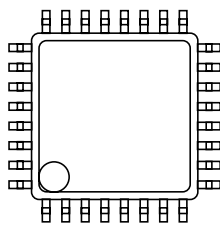
[VIF, SIF]

IF Board

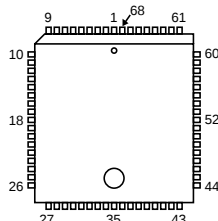


5-4. SEMICONDUCTORS

CXA2040Q-T4

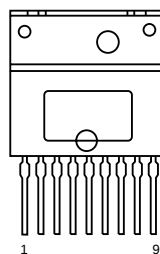


(TOP VIEW)

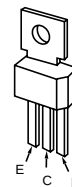
MSP3400C-PS-C6-T
MSP3410B-PS-F7-T

(TOP VIEW)

STR-S6708

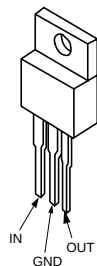


BF871-127

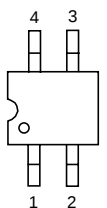


BF421L-AMMO

JA101TP-Q
2SA733-K
2SA933AS
2SA933S
2SA1091-O
2SC3502-E
2SC3601-E
2SC2808STP-R

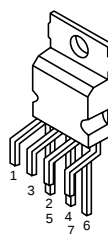
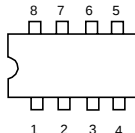
L4941BV
TEA7605

PST593C-MMP-4P



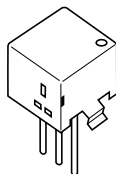
(TOP VIEW)

STV9379

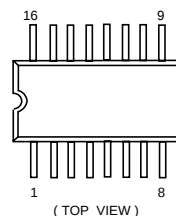
LM393P
M5216P
TDA2822M
 μ PC393C

(TOP VIEW)

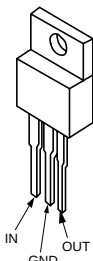
SBX1790-51



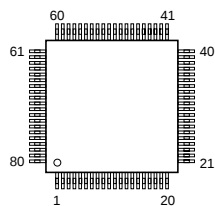
TDA4665T-T



(TOP VIEW)

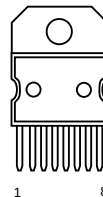
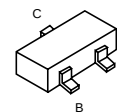
DTA144ES
DTC114ES
DTC143TS
DTC144ES
2SC1740S-RTLM2940CT-5.0
LM2940CT
LM2940T-9.0
MCT7809CT
NJM78M09FA
 μ PC2405HF

SDA5250M-C5-GEG

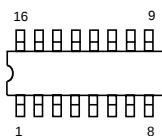


(TOP VIEW)

TDA7264

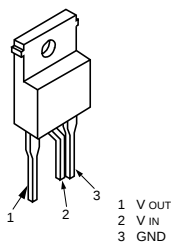
DTC144EK
2SA1037K
2SA1162-G
2SC2412K

MC14052BDR2

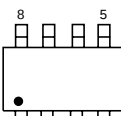


(TOP VIEW)

SE135N

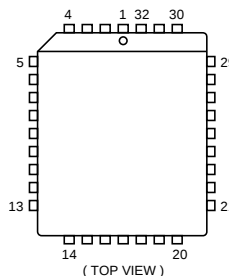


ST24E32M6TR



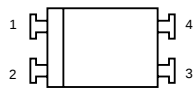
(TOP VIEW)

TMS27PC010A-15FML



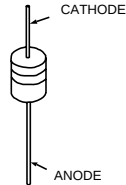
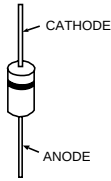
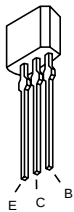
(TOP VIEW)

TLP721(D4-)

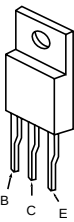


AU-01Z-V1	FML-G12S	MTZJ-3.6A	RD3.9ESB2
EG-1Z-V1	GP08D	MTZJ-3.9B	RD5.1ESB2
EGP20G	RGP02	MTZJ-5.1B	RD5.6ESB2
EL1Z	RGP10GPKG23	MTZJ-5.6B	RD6.2ESB2
EM1-V1	RGP15GPKG23	MTZJ-6.2B	RD6.8ESB2
EU-1-V1	RU3YX-V1	MTZJ-6.8B	RD7.5ESB2
EU2A	RU4AM-T3	MTZJ-7.5C	RD10ESB2
EU2-V1	RU4DS	MTZJ-9.1	RD39ES-B2
		MTZJ-T-77-9.1A	
		MTZJ-10	1SS133T-77
		MTZJ-39	

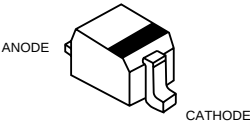
2SC2785-HFE



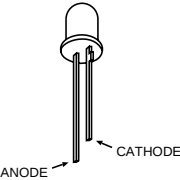
2SA1837



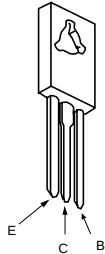
BAS216	MA8330
DTZ6.8C	1SS355
DTZ9.1	UDZ-TE-17-5.6B
DTZ33B	UDZ-TE-17-9.1B



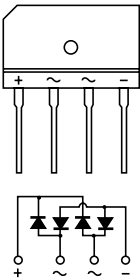
SLA-570KT3F



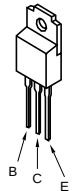
2SC2688-LK



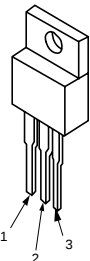
D4SB60L



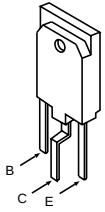
2SC4793



FMS-3FU



2SC4927-01



SECTION 6

EXPLODED VIEWS

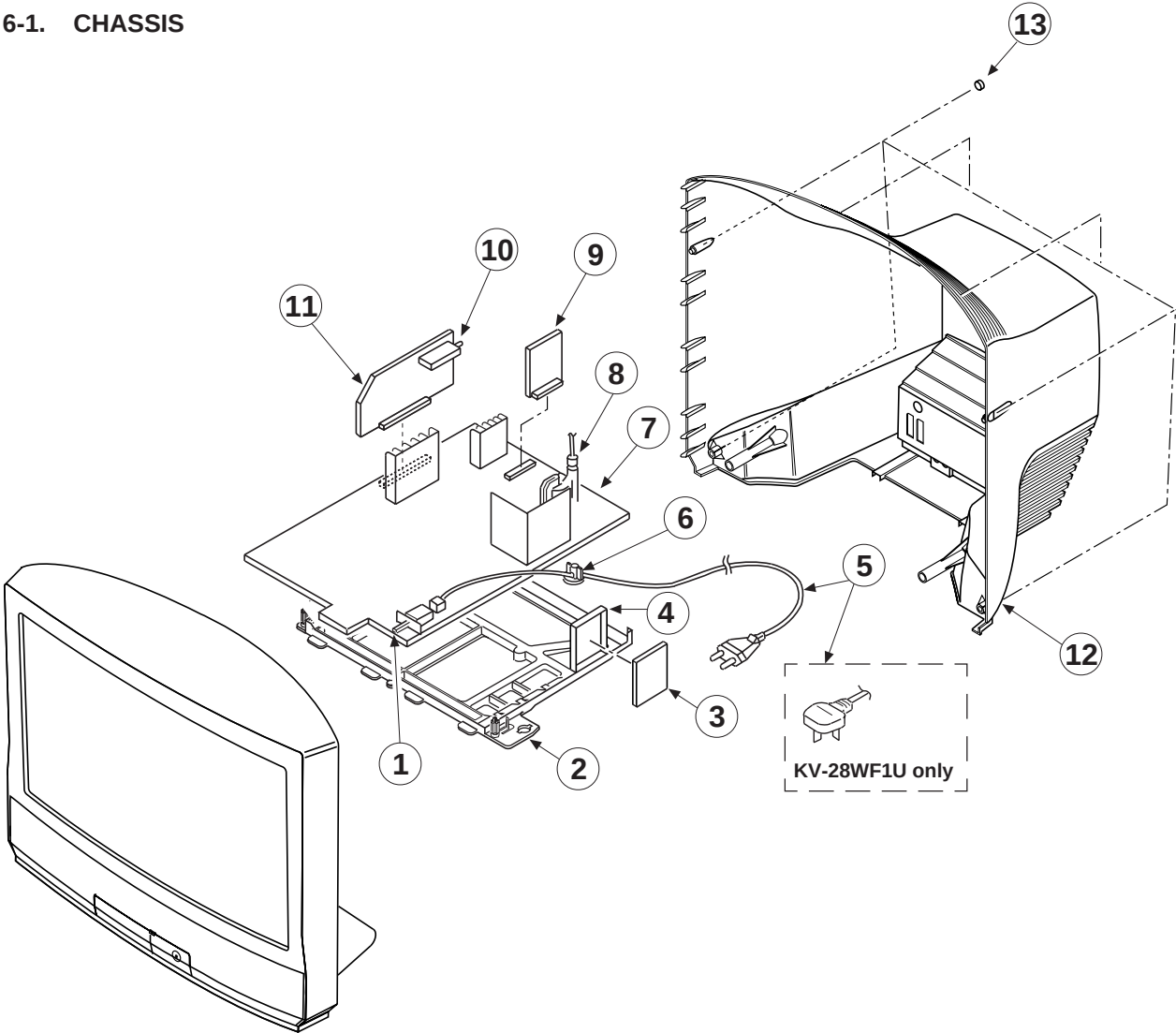
NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and marked ⚠ are critical for safety.
Replace only with the part number specified.

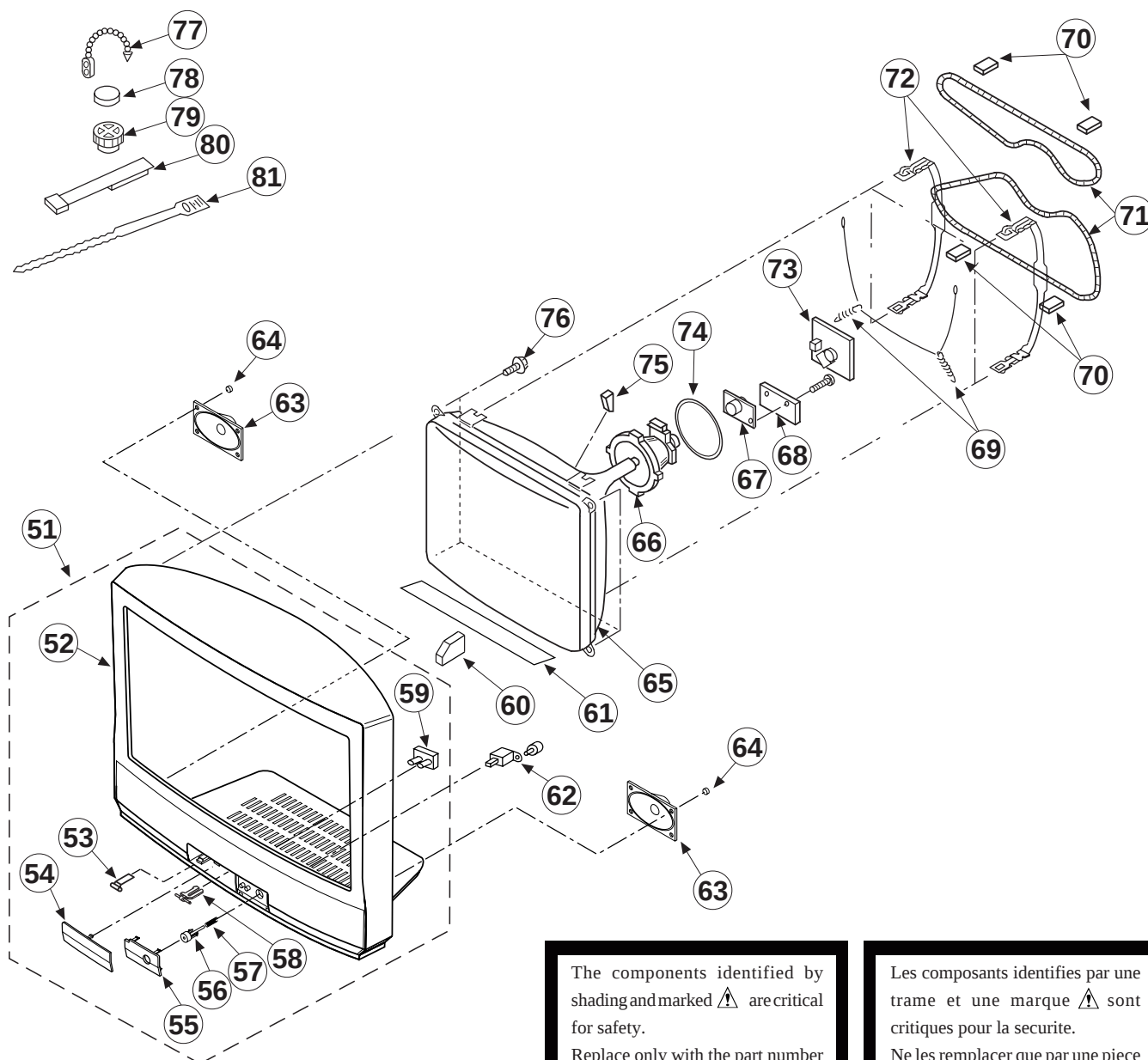
Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

6-1. CHASSIS



REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
1	⚠ 1-571-433-21	SWITCH, PUSH (AC POWER)		10	1-693-338-11	TUNER (TUVIF) (AEP)	(KV-28WF1A/28WF1D/28WF1E/28WF1K/28WF1R)
2	*4-203-315-01	BRACKET, MAIN			1-693-340-11	TUNER (TUVIF) (FR)	(KV-28WF1B)
3	*A-1640-235-A	D3 BOARD, COMPLETE			1-693-339-11	TUNER (TUVIF) (UK)	(KV-28WF1U)
4	*4-203-404-01	BRACKET, D3		11	*A-1632-673-A	A BOARD, COMPLETE	(KV-28WF1A)
5	⚠ 1-765-286-11	CORD, POWER 2.5A/250V			*A-1632-670-A	A BOARD, COMPLETE	(KV-28WF1B)
		(KV-28WF1A/28WF1B/28WF1D/28WF1E/28WF1K/28WF1R)			*A-1632-671-A	A BOARD, COMPLETE	(KV-28WF1D)
	⚠ 1-776-204-12	CORD, POWER (FILTER)	(KV-28WF1U)		*A-1632-672-A	A BOARD, COMPLETE	(KV-28WF1E)
6	⚠ *4-202-531-01	AC CORD LOCK (SC)			*A-1632-675-A	A BOARD, COMPLETE	(KV-28WF1K)
7	*A-1642-208-A	D BOARD, COMPLETE			*A-1632-674-A	A BOARD, COMPLETE	(KV-28WF1R)
8	⚠ 1-453-220-11	TRANSFORMER ASSY, FLYBACK	(UX-1670/U12B4)		*A-1632-676-A	A BOARD, COMPLETE	(KV-28WF1U)
9	*A-1640-214-A	D2 BOARD, COMPLETE		12	4-203-775-01	COVER, REAR	
				13	7-685-663-79	(+) BV TP 4X16 TYPE 2 IT-3	

6-2. PICTURE TUBE



The components identified by shading and marked ⚠ are critical for safety.

Replace only with the part number specified.

Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

REF NO	PART NO	DESCRIPTION	REMARK	REF NO	PART NO	DESCRIPTION	REMARK
51	X-4200-344-1	BEZNET ASSY	52-59 (KV-28WF1A/28WF1D/ 28FW1K/28WF1R)	63	1-505-782-11	SPEAKER, LOUD	
	X-4200-344-2	BEZNET ASSY	(KV-28WF1B/28WF1E 28WF1U)	64	7-685-661-14	SCREW + BV TP (4X12) TYPE2 IT3	
52	4-203-774-01	BEZNET		65	⚠ 8-737-773-05	PICTURE TUBE (SD-284T) (W66LG011X)	
53	3-703-035-11	SHAFT, LID		66	⚠ 8-451-434-21	DEFLECTION YOKE (Y28GIAM)	
54	4-203-723-01	DOOR	(KV-28WF1A/28WF1D/ 28WF1K/28WF1R)	67	⚠ 8-453-005-51	NECK ASSY (NA297-M5)	
	4-203-723-11	DOOR	(KV-28WF1B/28WF1E/ 28WF1U)	68	*A-1644-070-A	VM BOARD, COMPLETE	
55	4-203-724-01	WINDOW, ORNAMENTAL		69	4-200-433-11	SPRING, EXTENSION	
56	4-203-722-01	BUTTON, POWER		70	*4-203-390-11	CUSHION, DGC	
57	4-202-964-01	SPRING		71	⚠ 1-411-893-11	COIL, DEGAUSSING	
58	4-045-250-01	DAMPER		72	4-203-769-01	DGC, HOLDER (28")	
59	4-203-739-01	GUIDE LIGHT		73	*A-1638-081-A	C BOARD, COMPLETE	
60	4-203-870-01	SUPPORTER, CRT		74	1-452-724-11	COIL, NA ROTATION (RT-165)	
61	4-203-128-11	SHEET BLOTING		75	3-704-495-01	SPACER, DY	
62	4-042-940-21	UNIT LOCK		76	4-203-043-01	SCREW (M), PT	
				77	4-308-870-00	CLIP, LEAD WIRE	
				78	1-452-032-00	MAGNET, DISK; 10MM Ø	
				79	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
				80	X-4387-214-1	PERMALLOY ASSY, CORRECTION	
				81	3-701-007-00	BAND, BINDING	

SECTION 7

ELECTRICAL PARTS LIST

The components identified by shading and marked Δ are critical for safety.
Replace only with the part number specified.

Les composants identifiés par une trame et une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

When indicating parts by reference number, please include the board name.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

- All resistors are in ohms
- F : nonflammable

CAPACITORS

MF : mF, PF : mmF

COILS

MMH : mH, μ H : mH

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1632-673-A	A BOARD COMPLETE (KV-28WF1A) *****		C113	1-126-967-11	ELECT 47MF	20% 16V
	*A-1632-670-A	A BOARD COMPLETE (KV-28WF1B) *****		C115	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
	*A-1632-671-A	A BOARD COMPLETE (KV-28WF1D) *****		C120	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
	*A-1632-672-A	A BOARD COMPLETE (KV-28WF1E) *****		C121	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
	*A-1632-675-A	A BOARD COMPLETE (KV-28WF1K) *****		C122	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
	*A-1632-674-A	A BOARD COMPLETE (KV-28WF1R) *****		C123	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
	*A-1632-676-A	A BOARD COMPLETE (KV-28WF1U) *****		C124	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C201	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
				C202	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
				C203	1-104-661-91	ELECT 330MF	20% 16V
				C204	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C205	1-126-965-11	ELECT 22MF	20% 50V
				C206	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
				C207	1-126-964-11	ELECT 10MF	20% 50V
	1-750-797-11	SOCKET, PLCC		C208	1-126-964-11	ELECT 10MF	20% 50V
	< CAPACITOR >			C209	1-126-964-11	ELECT 10MF	20% 50V
C1	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C210	1-216-295-00	CONDUCTOR, CHIP	(2012)
C2	1-126-967-11	ELECT 47MF	20% 16V	C211	1-126-964-11	ELECT 10MF	20% 50V
C3	1-163-104-00	CERAMIC CHIP 30PF	5% 50V	C212	1-164-346-11	CERAMIC CHIP 1MF	16V
C4	1-163-104-00	CERAMIC CHIP 30PF	5% 50V	C213	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C8	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C214	1-164-346-11	CERAMIC CHIP 1MF	16V
C10	1-163-243-91	CERAMIC CHIP 47PF	10% 50V	C215	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C11	1-163-243-91	CERAMIC CHIP 47PF	10% 50V	C216	1-126-967-11	ELECT 47MF	20% 16V
C15	1-164-695-11	CERAMIC CHIP 0.0022MF	5% 50V	C217	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C18	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C218	1-126-967-11	ELECT 47MF	20% 16V
C20	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C219	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C21	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C220	1-126-964-11	ELECT 10MF	20% 50V
C22	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C221	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C24	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C222	1-164-346-11	CERAMIC CHIP 1MF	16V
C26	1-104-660-91	ELECT 47MF	20% 16V	C223	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C40	1-164-492-11	CERAMIC CHIP 0.15MF	10% 16V	C224	1-164-346-11	CERAMIC CHIP 1MF	16V
C41	1-163-989-11	CERAMIC CHIP 0.033MF	10% 25V	C225	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C42	1-163-989-11	CERAMIC CHIP 0.033MF	10% 25V	C226	1-126-967-11	ELECT 47MF	20% 16V
C43	1-163-121-91	CERAMIC CHIP 150PF	10% 50V	C227	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C44	1-164-346-11	CERAMIC CHIP 1MF	16V	C228	1-126-967-11	ELECT 47MF	20% 16V
C45	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C229	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C80	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C230	1-216-295-00	CONDUCTOR, CHIP	(2012)
C81	1-126-959-11	ELECT 0.47MF	20% 50V	C231	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C82	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V	C232	1-126-962-11	ELECT 3.3MF	20% 50V
C90	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C240	1-164-346-11	CERAMIC CHIP 1MF	16V
C101	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C241	1-164-346-11	CERAMIC CHIP 1MF	16V
C102	1-126-934-11	ELECT 220MF	20% 16V	C251	1-163-087-00	CERAMIC CHIP 4PF	0.25PF 50V
C103	1-126-965-11	ELECT 22MF	20% 50V	C252	1-163-087-00	CERAMIC CHIP 4PF	0.25PF 50V
C104	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C253	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C110	1-126-967-11	ELECT 47MF	20% 16V				
C112	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V				

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REF.NO.	PART NO.	DESCRIPTION	REMARK
C254	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C255	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C256	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C257	1-126-965-11	ELECT 22MF	20% 50V
C258	1-126-964-11	ELECT 10MF	20% 50V
C259	1-164-336-11	CERAMIC CHIP 0.33MF	25V
C260	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C261	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C262	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C263	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C264	1-126-962-11	ELECT 3.3MF	20% 50V
C265	1-126-964-11	ELECT 10MF	20% 50V
C266	1-126-964-11	ELECT 10MF	20% 50V
C267	1-126-965-11	ELECT 22MF	20% 50V
C268	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C269	1-163-131-00	CERAMIC CHIP 390PF	5% 50V
C270	1-163-131-00	CERAMIC CHIP 390PF	5% 50V
C271	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C272	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C273	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C274	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C275	1-164-346-11	CERAMIC CHIP 1MF	16V
C276	1-164-346-11	CERAMIC CHIP 1MF	16V
C277	1-164-346-11	CERAMIC CHIP 1MF	16V
C278	1-164-346-11	CERAMIC CHIP 1MF	16V
C279	1-126-965-11	ELECT 22MF	20% 50V
C280	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C281	1-126-965-11	ELECT 22MF	20% 50V
C282	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C300	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C301	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C302	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C303	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C304	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C305	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C306	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C307	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C308	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C309	1-164-346-11	CERAMIC CHIP 1MF	16V
C310	1-164-346-11	CERAMIC CHIP 1MF	16V
C311	1-164-346-11	CERAMIC CHIP 1MF	16V
C312	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C313	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C315	1-216-295-00	CONDUCTOR, CHIP	(2012)
C317	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C319	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C320	1-126-965-11	ELECT 22MF	20% 50V
C321	1-163-021-71	CERAMIC CHIP 0.01MF	10% 50V
C322	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V
C323	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V
C324	1-163-037-11	CERAMIC CHIP 0.022MF	10% 50V
C325	1-164-346-11	CERAMIC CHIP 1MF	16V
C326	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C327	1-137-374-11	FILM 0.047MF	5% 50V
C328	1-126-964-11	ELECT 10MF	20% 50V
C329	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C330	1-137-132-91	FILM 0.1MF	5% 63V
C331	1-137-581-11	FILM 0.1MF	5% 100V
C332	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C333	1-126-933-11	ELECT 100MF	20% 16V
C334	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V

REF.NO.	PART NO.	DESCRIPTION	REMARK
C335	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C336	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C337	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C338	1-164-346-11	CERAMIC CHIP 1MF	16V
C339	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C340	1-126-933-11	ELECT 100MF	20% 16V
C341	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C342	1-164-346-11	CERAMIC CHIP 1MF	16V
C343	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C344	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C347	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C348	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C350	1-126-964-11	ELECT 10MF	20% 50V
C351	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C352	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C353	1-164-505-11	CERAMIC CHIP 2.2MF	16V
C354	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C355	1-126-965-11	ELECT 22MF	20% 50V
C356	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C357	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C358	1-164-005-11	CERAMIC CHIP 0.47MF	25V
C359	1-163-231-11	CERAMIC CHIP 15PF	5% 50V
C360	1-163-231-11	CERAMIC CHIP 15PF	5% 50V
C370	1-164-505-11	CERAMIC CHIP 2.2MF	16V
		(KV-28WF1B/28WF1D/28WF1E/28WF1K/28WF1R)	
C371	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C372	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
		(KV-28WF1B/28WF1D/28WF1E/28WF1K/28WF1R)	
C373	1-164-489-11	CERAMIC CHIP 0.22MF	10% 16V
		(KV-28WF1B/28WF1D/28WF1E/28WF1K/28WF1R)	
		< FILTER >	
CF120	1-409-327-00	TRAP, CERAMIC (6.5MHZ)	
		(KV-28WF1A/28WF1B/28WF1D/28WF1E)	
		< CONNECTOR >	
CN1	1-695-302-11	CONNECTOR, BOARD TO BOARD 50P	
CN2	*1-564-508-11	PLUG, CONNECTOR 5P	
CN4	1-568-878-51	PIN, CONNECTOR 3P	
CN201	1-766-296-11	CONNECTOR, DUAL SCART	
CN301	*1-568-882-51	PIN, CONNECTOR 7P	
		< DIODE >	
D2	8-719-988-62	DIODE 1SS355	
D12	8-719-158-15	DIODE RD5.6S-B	
D14	8-719-158-15	DIODE RD5.6S-B	
D15	8-719-158-15	DIODE RD5.6S-B	
D101	8-719-977-81	DIODE DTZ33B	
D201	8-719-977-22	DIODE DTZ9.1	
D202	8-719-977-22	DIODE DTZ9.1	
D203	8-719-977-22	DIODE DTZ9.1	
D204	8-719-977-22	DIODE DTZ9.1	
D205	8-719-977-22	DIODE DTZ9.1	
D206	8-719-977-22	DIODE DTZ9.1	
D207	8-719-977-22	DIODE DTZ9.1	
D208	8-719-977-22	DIODE DTZ9.1	
D209	8-719-977-22	DIODE DTZ9.1	
D210	8-719-977-22	DIODE DTZ9.1	
D211	8-719-977-22	DIODE DTZ9.1	
D212	8-719-977-22	DIODE DTZ9.1	
D213	8-719-977-22	DIODE DTZ9.1	
D214	8-719-977-22	DIODE DTZ9.1	

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
D215	8-719-977-22	DIODE DTZ9.1		Q15	8-729-216-22	TRANSISTOR 2SA1162-G	
D216	8-719-158-15	DIODE RD5.6S-B		Q17	8-729-216-22	TRANSISTOR 2SA1162-G	
D217	8-719-158-15	DIODE RD5.6S-B		Q80	8-729-620-06	TRANSISTOR 2SC3052-EF	
D218	8-719-158-15	DIODE RD5.6S-B		Q81	8-729-216-22	TRANSISTOR 2SA1162-G	
D220	8-719-988-62	DIODE 1SS355		Q82	8-729-620-06	TRANSISTOR 2SC3052-EF	
D221	8-719-988-62	DIODE 1SS355		Q110	8-729-620-06	TRANSISTOR 2SC3052-EF	
D222	8-719-977-22	DIODE DTZ9.1		Q111	8-729-216-22	TRANSISTOR 2SA1162-G	
D223	8-719-977-22	DIODE DTZ9.1		Q112	8-729-620-06	TRANSISTOR 2SC3051-EF	
D224	8-719-977-22	DIODE DTZ9.1		Q120	8-729-620-06	TRANSISTOR 2SC3052-EF	
D225	8-719-977-22	DIODE DTZ9.1		Q121	8-729-620-06	TRANSISTOR 2SC3052-EF	(KV-28WF1A/28WF1B/28WF1D/28WF1E)
D226	8-719-977-22	DIODE DTZ9.1		Q122	8-729-620-06	TRANSISTOR 2SC3052-EF	
D227	8-719-977-13	DIODE DTZ6.8C		Q124	8-729-620-06	TRANSISTOR 2SC3052-EF	(KV-28WF1A/28WF1B/28WF1D/28WF1E)
D229	8-719-977-22	DIODE DTZ9.1		Q130	8-729-216-22	TRANSISTOR 2SA1162-G	(KV-28WF1A/28WF1B/28WF1D/28WF1E)
D230	8-719-977-22	DIODE DTZ9.1		Q201	8-729-620-06	TRANSISTOR 2SC3052-EF	
D251	8-719-047-16	DIODE BAS216		Q202	8-729-620-06	TRANSISTOR 2SC3052-EF	
D252	8-719-158-15	DIODE RD5.6S-B		Q203	8-729-620-06	TRANSISTOR 2SC3052-EF	
D253	8-719-158-15	DIODE RD5.6S-B		Q204	8-729-620-06	TRANSISTOR 2SC3052-EF	
D302	8-719-988-62	DIODE 1SS355		Q205	1-801-806-11	TRANSISTOR DTC144EA	
D320	8-719-977-22	DIODE DTZ9.1		Q206	8-729-216-22	TRANSISTOR 2SA1162-G	
D370	8-719-047-16	DIODE BAS216		Q207	8-729-216-22	TRANSISTOR 2SA1162-G	
< ENCAPSULATED FILTER >				Q208	8-729-216-22	TRANSISTOR 2SA1162-G	
FL101	1-236-071-11	ENCAPSULATED COMPONENT		Q209	8-729-620-06	TRANSISTOR 2SC3052-EF	
FL201	1-236-071-11	ENCAPSULATED COMPONENT		Q210	1-801-806-11	TRANSISTOR DTC144EKA	
FL202	1-236-071-11	ENCAPSULATED COMPONENT		Q300	1-801-806-11	TRANSISTOR DTC144EKA	
FL203	1-236-071-11	ENCAPSULATED COMPONENT		Q304	8-729-620-06	TRANSISTOR 2SC3052-EF	
< IC >				Q305	8-729-620-06	TRANSISTOR 2SC3052-EF	
IC1	8-759-376-75	IC SDA5250M-C5-GEG		Q306	1-801-806-11	TRANSISTOR DTC144EA	
IC2	8-759-334-20	IC ST24E32M6TR		Q330	8-729-216-22	TRANSISTOR 2SA1162-G	
IC3	8-759-167-62	IC TMS27PC010A-15FML	(KV-28WF1B/28WF1D/28WF1E/28WF1U)	Q331	8-729-620-06	TRANSISTOR 2SC3052-EF	
	8-759-452-96	IC TMS27PC010A-15FMBE606	(KV-28WF1A/28WF1K/28WF1R)	Q332	8-729-620-06	TRANSISTOR 2SC3052-EF	
IC4	8-759-394-57	IC PST593C-MMP-4P		Q1002	8-729-216-22	TRANSISTOR 2SA1162-G	
IC201	8-752-081-26	IC CXA2040AQ-T4		< RESISTOR >			
IC202	8-759-376-56	IC MSP3400C-PS-C6-T	(KV-28WF1A/28WF1D/28WF1K/28WF1R)	JR101	1-216-295-00	CONDUCTOR, CHIP	(2012)
	8-759-376-80	IC MSP3410B-PS-F7-T	(KV-28WF1B/28WF1E/28WF1U)	JR102	1-216-295-00	CONDUCTOR, CHIP	(2012)
IC203	8-759-385-76	IC MC14052BDR2		JR201	1-216-295-00	CONDUCTOR, CHIP	(2012)
IC301	8-752-081-43	IC CXA2076Q-TL		R1	1-216-049-00	METAL GLAZE	1K 5% 1/10W
IC302	8-759-288-85	IC TDA4665T-T		R2	1-216-025-00	METAL GLAZE	100 5% 1/10W
IC303	8-759-430-79	IC TDA8395T/N3	(KV-28WF1B/28WF1D/28WF1E/28WF1K/28WF1R)	R3	1-216-025-00	METAL GLAZE	100 5% 1/10W
< COIL >				R4	1-216-013-00	METAL GLAZE	33 5% 1/10W
L10	1-410-379-41	INDUCTOR	6.8UH	R5	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
L102	1-408-406-00	INDUCTOR	5.6UH	R7	1-216-041-00	METAL GLAZE	470 5% 1/10W
			(KV-28WF1A/28WF1B/28WF1D/28WF1E)	R9	1-216-041-00	METAL GLAZE	470 5% 1/10W
L111	1-410-993-11	INDUCTOR CHIP	1UH	R10	1-216-041-91	METAL GLAZE	470 5% 1/10W
L120	1-408-408-00	INDUCTOR	8.2UH	R11	1-216-041-91	METAL GLAZE	470 5% 1/10W
L121	1-408-397-00	INDUCTOR	1UH	R12	1-216-041-91	METAL GLAZE	470 5% 1/10W
L122	1-408-408-00	INDUCTOR	8.2UH	R13	1-216-029-00	METAL GLAZE	150 5% 1/10W
L300	1-408-607-31	INDUCTOR	22UH	R14	1-216-029-00	METAL GLAZE	150 5% 1/10W
< TRANSISTOR >				R15	1-216-029-00	METAL GLAZE	150 5% 1/10W
Q1	8-729-620-06	TRANSISTOR 2SC23052-EF		R16	1-216-025-00	METAL GLAZE	100 5% 1/10W
Q4	8-729-620-06	TRANSISTOR 2SC23052-EF		R17	1-216-025-00	METAL GLAZE	100 5% 1/10W
Q10	8-729-216-22	TRANSISTOR 2SA1162-G		R18	1-216-025-00	METAL GLAZE	100 5% 1/10W
Q11	8-729-216-22	TRANSISTOR 2SA1162-G		R19	1-216-025-00	METAL GLAZE	100 5% 1/10W
Q12	8-729-216-22	TRANSISTOR 2SA1162-G		R20	1-216-025-00	METAL GLAZE	100 5% 1/10W
				R21	1-216-025-00	METAL GLAZE	100 5% 1/10W
				R24	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
				R25	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
				R28	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W

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REF.NO.	PART NO.	DESCRIPTION	REMARK
R29	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R30	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R31	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R33	1-216-025-00	METAL GLAZE 100	5% 1/10W
R34	1-216-025-00	METAL GLAZE 100	5% 1/10W
R35	1-216-025-00	METAL GLAZE 100	5% 1/10W
R36	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R37	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R38	1-216-065-91	METAL GLAZE 4.7K	5% 1/10W
R39	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R40	1-216-071-00	METAL GLAZE 8.2K	5% 1/10W
R41	1-216-129-00	METAL GLAZE 2.2M	5% 1/10W
R42	1-216-069-91	METAL GLAZE 6.8K	5% 1/10W
R44	1-216-069-91	METAL GLAZE 6.8K	5% 1/10W
R46	1-216-095-00	METAL GLAZE 82K	5% 1/10W
R47	1-216-041-00	METAL GLAZE 470	5% 1/10W
R48	1-216-109-00	METAL GLAZE 330K	5% 1/10W
R49	1-216-025-00	METAL GLAZE 100	5% 1/10W
R50	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R51	1-216-059-00	METAL GLAZE 2.7K	5% 1/10W
R52	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R53	1-216-059-00	METAL GLAZE 2.7K	5% 1/10W
R54	1-216-025-00	METAL GLAZE 100	5% 1/10W
R58	1-216-063-91	METAL GLAZE 3.9K	5% 1/10W
R59	1-216-025-00	METAL GLAZE 100	5% 1/10W
R60	1-216-025-00	METAL GLAZE 100	5% 1/10W
R61	1-216-025-00	METAL GLAZE 100	5% 1/10W
R62	1-216-025-00	METAL GLAZE 100	5% 1/10W
R63	1-216-025-00	METAL GLAZE 100	5% 1/10W
R64	1-216-025-00	METAL GLAZE 100	5% 1/10W
R65	1-216-025-00	METAL GLAZE 100	5% 1/10W
R66	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R67	1-216-057-00	METAL GLAZE 2.2K	5% 1/10W
R68	1-216-025-00	METAL GLAZE 100	5% 1/10W
R69	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R70	1-216-025-00	METAL GLAZE 100	5% 1/10W
R71	1-216-025-00	METAL GLAZE 100	5% 1/10W
R72	1-216-025-00	METAL GLAZE 100	5% 1/10W
R73	1-216-025-00	METAL GLAZE 100	5% 1/10W
R74	1-216-025-00	METAL GLAZE 100	5% 1/10W
R75	1-216-025-00	METAL GLAZE 100	5% 1/10W
R76	1-216-025-00	METAL GLAZE 100	5% 1/10W
R77	1-216-025-00	METAL GLAZE 100	5% 1/10W
R78	1-216-025-00	METAL GLAZE 100	5% 1/10W
R79	1-216-033-00	METAL GLAZE 220	5% 1/10W
R80	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R81	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R82	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R83	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R84	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R85	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R86	1-216-077-00	METAL GLAZE 15K	5% 1/10W
R87	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R88	1-216-025-00	METAL GLAZE 100	5% 1/10W
R89	1-216-025-00	METAL GLAZE 100	5% 1/10W
R91	1-216-025-00	METAL GLAZE 100	5% 1/10W
R92	1-216-025-00	METAL GLAZE 100	5% 1/10W
R93	1-216-033-00	METAL GLAZE 220	5% 1/10W
R94	1-216-033-00	METAL GLAZE 220	5% 1/10W
R95	1-216-033-00	METAL GLAZE 220	5% 1/10W
R99	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W

REF.NO.	PART NO.	DESCRIPTION	REMARK
R101	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
R102	1-216-025-00	METAL GLAZE 100	5% 1/10W
R103	1-216-025-00	METAL GLAZE 100	5% 1/10W
R104	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R105	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R106	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R107	1-216-295-00	CONDUCTOR, CHIP	(2012)
R110	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R111	1-216-029-00	METAL GLAZE 150	5% 1/10W
R112	1-216-029-00	METAL GLAZE 150	5% 1/10W
R113	1-216-001-00	METAL GLAZE 10	5% 1/10W
R114	1-216-029-00	METAL GLAZE 150	5% 1/10W
R115	1-216-037-00	METAL GLAZE 330	5% 1/10W
R119	1-216-295-00	CONDUCTOR, CHIP	(2012)
R120	1-216-069-00	METAL GLAZE 6.8K	5% 1/10W
R121	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R122	1-216-041-00	METAL GLAZE 470	5% 1/10W
R123	1-216-031-00	METAL GLAZE 180	5% 1/10W
R124	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R125	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R126	1-216-025-00	METAL GLAZE 100	5% 1/10W
R127	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R128	1-216-035-00	METAL GLAZE 270	5% 1/10W
R129	1-216-037-00	METAL GLAZE 330	5% 1/10W
R130	1-216-061-00	METAL GLAZE 3.3K	5% 1/10W
R131	1-216-073-00	METAL GLAZE 10K	5% 1/10W
R132	1-216-025-00	METAL GLAZE 100	5% 1/10W
R133	1-216-041-00	METAL GLAZE 470	5% 1/10W
R134	1-216-001-00	METAL GLAZE 10	5% 1/10W
R135	1-216-037-00	METAL GLAZE 330	5% 1/10W
		(KV-28WF1A/28WF1B/28WF1D/28WF1E)	
	1-216-045-00	METAL GLAZE 680	5% 1/10W
		(KV-28WF1K/28WF1R/28WF1U)	
R136	1-216-033-00	METAL GLAZE 220	5% 1/10W
R137	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R138	1-216-041-00	METAL GLAZE 470	5% 1/10W
R200	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R201	1-216-033-00	METAL GLAZE 220	5% 1/10W
R202	1-216-033-00	METAL GLAZE 220	5% 1/10W
R203	1-216-025-00	METAL GLAZE 100	5% 1/10W
R204	1-216-025-00	METAL GLAZE 100	5% 1/10W
R205	1-216-083-00	METAL GLAZE 27K	5% 1/10W
R206	1-216-033-00	METAL GLAZE 220	5% 1/10W
R208	1-216-041-00	METAL GLAZE 470	5% 1/10W
R209	1-216-049-00	METAL GLAZE 1K	5% 1/10W
R210	1-216-017-91	METAL GLAZE 47	5% 1/10W
R211	1-216-033-00	METAL GLAZE 220	5% 1/10W
R212	1-216-022-00	METAL GLAZE 75	5% 1/10W
R213	1-216-022-00	METAL GLAZE 75	5% 1/10W
R214	1-216-025-00	METAL GLAZE 100	5% 1/10W
R216	1-216-025-00	METAL GLAZE 100	5% 1/10W
R217	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R218	1-216-025-00	METAL GLAZE 100	5% 1/10W
R219	1-216-113-00	METAL GLAZE 470K	5% 1/10W
R220	1-216-295-00	CONDUCTOR, CHIP	(2012)
R221	1-216-039-00	METAL GLAZE 390	5% 1/10W
R222	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R223	1-216-295-00	CONDUCTOR, CHIP	(2012)
R224	1-216-039-00	METAL GLAZE 390	5% 1/10W
R225	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R226	1-216-033-00	METAL GLAZE 220	5% 1/10W

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
R227	1-216-022-00	METAL GLAZE	75 5% 1/10W	R316	1-216-033-00	METAL GLAZE	220 5% 1/10W
R228	1-216-022-00	METAL GLAZE	75 5% 1/10W	R318	1-216-689-11	METAL GLAZE	39K 5% 1/10W
R229	1-216-033-00	METAL GLAZE	220 5% 1/10W	R319	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R230	1-216-022-00	METAL GLAZE	75 5% 1/10W	R320	1-216-025-00	METAL GLAZE	100 5% 1/10W
R232	1-216-025-00	METAL GLAZE	100 5% 1/10W	R321	1-216-025-00	METAL GLAZE	100 5% 1/10W
R233	1-216-025-00	METAL GLAZE	100 5% 1/10W	R322	1-216-025-00	METAL GLAZE	100 5% 1/10W
R234	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R323	1-216-033-00	METAL GLAZE	220 5% 1/10W
R235	1-216-025-00	METAL GLAZE	100 5% 1/10W	R324	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R236	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R326	1-216-025-00	METAL GLAZE	100 5% 1/10W
R237	1-216-295-00	CONDUCTOR, CHIP	(2012)	R327	1-216-025-00	METAL GLAZE	100 5% 1/10W
R238	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R328	1-216-129-00	METAL GLAZE	2.2M 5% 1/10W
R239	1-216-039-00	METAL GLAZE	390 5% 1/10W	R329	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R240	1-216-295-00	CONDUCTOR, CHIP	(2012)	R330	1-216-025-00	METAL GLAZE	100 5% 1/10W
R241	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R331	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R242	1-216-039-00	METAL GLAZE	390 5% 1/10W	R332	1-216-025-00	METAL GLAZE	100 5% 1/10W
R243	1-216-033-00	METAL GLAZE	220 5% 1/10W	R333	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R244	1-216-033-00	METAL GLAZE	220 5% 1/10W	R334	1-216-041-00	METAL GLAZE	470 5% 1/10W
R245	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R335	1-216-675-11	METAL CHIP	10K 0.50% 1/10W
R246	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R336	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R247	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R337	1-216-025-00	METAL GLAZE	100 5% 1/10W
R249	1-216-001-00	METAL GLAZE	10 5% 1/10W	R338	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R255	1-216-025-00	METAL GLAZE	100 5% 1/10W	R339	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R256	1-216-025-00	METAL GLAZE	100 5% 1/10W	R340	1-216-025-00	METAL GLAZE	100 5% 1/10W
R260	1-216-198-91	METAL GLAZE	1K 5% 1/8W	R341	1-216-025-00	METAL GLAZE	100 5% 1/10W
R261	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R342	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R262	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R343	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R263	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R344	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R265	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R345	1-216-025-00	METAL GLAZE	100 5% 1/10W
R270	1-216-022-00	METAL GLAZE	75 5% 1/10W	R346	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W
R271	1-216-022-00	METAL GLAZE	75 5% 1/10W	R347	1-216-025-00	METAL GLAZE	100 5% 1/10W
R272	1-216-022-00	METAL GLAZE	75 5% 1/10W	R348	1-216-025-00	METAL GLAZE	100 5% 1/10W
R273	1-216-022-00	METAL GLAZE	75 5% 1/10W	R349	1-216-025-00	METAL GLAZE	100 5% 1/10W
R280	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R350	1-216-042-00	METAL GLAZE	510 5% 1/10W
R281	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R351	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R282	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R352	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R283	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R353	1-216-033-00	METAL GLAZE	220 5% 1/10W
R284	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R354	1-216-295-00	CONDUCTOR, CHIP	(2012)
R285	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R357	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R286	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R358	1-216-295-00	CONDUCTOR, CHIP	(2012)
R287	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R359	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R288	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R370	1-216-295-00	CONDUCTOR, CHIP	(2012)
R289	1-216-689-11	METAL GLAZE	39K 5% 1/10W	< TUNER >			
R290	1-216-689-11	METAL GLAZE	39K 5% 1/10W	TU101	1-693-338-11	(TUVIF) (AEP)	
R291	1-216-025-71	METAL GLAZE	100 5% 1/10W			(KV-28WF1A/28WF1D/28WF1E/28WF1K/28WF1R)	
R292	1-216-025-71	METAL GLAZE	100 5% 1/10W		1-693-340-11	(TUVIF) (FR)	(KV-28WF1B)
R293	1-216-025-71	METAL GLAZE	100 5% 1/10W		1-693-339-11	(TUVIF) (UK)	(KV-28WF1U)
R294	1-216-025-71	METAL GLAZE	100 5% 1/10W	< CRYSTAL >			
R295	1-216-025-71	METAL GLAZE	100 5% 1/10W	X1	1-767-120-21	VIBRATOR, CERAMIC	
R296	1-216-025-71	METAL GLAZE	100 5% 1/10W	X201	1-760-628-11	VIBRATOR, CRYSTAL	
R300	1-216-025-00	METAL GLAZE	100 5% 1/10W	X301	1-567-504-11	OSCILLATOR, CRYSTAL	
R301	1-216-033-00	METAL GLAZE	220 5% 1/10W	X302	1-567-505-11	OSCILLATOR, CRYSTAL	
R302	1-216-295-00	CONDUCTOR, CHIP	(2012)	X303	1-767-127-11	VIBRATOR, CERAMIC	
R303	1-216-295-00	CONDUCTOR, CHIP	(2012)				
R308	1-216-025-00	METAL GLAZE	100 5% 1/10W				
R309	1-216-033-00	METAL GLAZE	220 5% 1/10W				
R310	1-216-033-00	METAL GLAZE	220 5% 1/10W				
R311	1-216-295-00	CONDUCTOR, CHIP	(2012)				
R312	1-216-295-00	CONDUCTOR, CHIP	(2012)				
R314	1-216-295-00	CONDUCTOR, CHIP	(2012)				
R315	1-216-295-00	CONDUCTOR, CHIP	(2012)				

IF (KV-28WFA/28WFD/28WF1E/
28WFK/28WFR/28WF1U)

IF (KV-28WFB)

REF.NO.	PART NO.	DESCRIPTION	REMARK
A-1652-037-A	IF BOARD, COMPLETE	(KV-28WF1A/28WF1D/ 28WF1E/28WF1K/ 28WFR)	
A-1652-038-A	IF BOARD, COMPLETE	(KV-28WF1U)	
< CAPACITOR >			
C01	1-164-337-11	CERAMIC CHIP 2.2MF	16V
C02	1-164-337-11	CERAMIC CHIP 2.2MF	16V
C03	1-104-957-11	ELECT 47MF	20% 16V
C04	1-135-259-11	TANTAL. CHIP 10MF	20% 6.3V
C05	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C06	1-164-005-11	CERAMIC CHIP 0.47MF	16V
C08	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C09	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C10	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C11	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C15	1-124-282-00	ELECT 22MF	20% 25V
C16	1-162-638-11	CERAMIC CHIP 1MF	16V
C18	1-164-337-11	CERAMIC CHIP 2.2MF	16V
C19	1-124-937-11	ELECT 10MF	20% 16V
< FILTER >			
CF01	1-404-134-00	TRAP, CERAMIC (5.5MHZ)	(KV-28WF1A/28WF1D/28WF1E/ 28WF1K/28WF1R)
	1-409-333-21	TRAP, CERAMIC (6.0MHZ)	(KV-28WF1U)
SWF04	1-767-084-11	FILTER, SURFACE WAVE	
< IC >			
IC01	8-759-385-26	IC TDA4472-CFLG3	
< COIL >			
L02	1-408-408-00	INDUCTOR 8.2UH	
L04	1-408-419-00	INDUCTOR 68UH	
L08	1-410-992-11	INDUCTOR CHIP 0.82UH	
< VARIABLE COIL >			
LV01	1-411-874-11	COIL	
< TRANSISTOR >			
Q01	8-729-216-22	TRANSISTOR 2SA1162-G	
< RESISTOR >			
JR01	1-216-296-91	METAL GLAZE 0 5%	1/8W
JR02	1-216-296-91	METAL GLAZE 0 5%	1/8W
JR03	1-216-295-00	METAL GLAZE 0 5%	1/10W
JR04	1-216-296-91	METAL GLAZE 0 5%	1/8W
JR05	1-216-295-00	METAL GLAZE 0 5%	1/10W
JR07	1-216-295-00	METAL GLAZE 0 5%	1/10W
R01	1-216-029-00	METAL GLAZE 150 5%	1/10W
R02	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R03	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R04	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R05	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R06	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R07	1-216-025-91	METAL GLAZE 100 5%	1/10W
R08	1-216-174-00	METAL GLAZE 100 5%	1/8W

REF.NO.	PART NO.	DESCRIPTION	REMARK
R09	1-216-045-00	METAL GLAZE 680 5%	1/10W (KV-28WF1A/28WF1D/28WF1E/ 28WX1K/28WF1R)
	1-216-049-91	METAL GLAZE 1K 5%	1/10W (KV-28WF1U)
R10	1-216-041-00	METAL GLAZE 470 5%	1/10W
R11	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R23	1-216-049-91	METAL GLAZE 1K 5%	1/10W
R24	1-216-295-91	METAL GLAZE 0 5%	1/10W
R25	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R021	1-216-174-00	METAL GLAZE 100 5%	1/8W
< VARIABLE RESISTOR >			
RV01	1-226-703-11	RES, ADJ, METAL GLAZE 10K	

	A-1652-036-A	IF BOARD, COMPLETE (KV-28WF1B)	*****
< CAPACITOR >			
C01	1-162-638-11	CERAMIC CHIP 1MF	16V
C02	1-164-337-11	CERAMIC CHIP 2.2MF	16V
C03	1-104-957-11	ELECT 47MF	20% 16V
C04	1-135-259-11	TANTAL. CHIP 10MF	20% 6.3V
C05	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C06	1-164-005-11	CERAMIC CHIP 0.47MF	16V
C08	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C09	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C10	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C11	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C12	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C13	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C14	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C15	1-104-957-11	ELECT 47MF	20% 16V
C16	1-162-638-11	CERAMIC CHIP 1MF	16V
C17	1-163-243-11	CERAMIC CHIP 47PF	5% 50V
C18	1-164-337-11	CERAMIC CHIP 2.2MF	16V
C20	1-124-937-11	ELECT 10MF	20% 16V
C21	1-164-506-11	CERAMIC CHIP 4.7MF	16V
< FILTER >			
CF01	1-409-430-11	TRAP, CERAMIC	
SWF01	1-579-273-11	FILTER, SURFACE WAVE	
SWF02	1-760-329-11	FILTER, SURFACE WAVE	
SWF03	1-767-083-11	FILTER, SURFACE WAVE	
< TRIMMER >			
CT01	1-760-662-11	TRAP, CERAMIC	
< IC >			
IC01	8-759-069-36	IC MC74HC4046AF	
< COIL >			
L02	1-408-406-00	INDUCTOR 5.6UH	
L04	1-408-419-00	INDUCTOR 68UH	
L05	1-410-987-11	INDUCTOR CHIP 0.33UH	
L06	1-408-399-00	INDUCTOR 1.5UH	
< VARIABLE COIL >			
LV01	1-411-874-11	COIL	

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KV-28WF1

IF (KV-28WF1B)

C

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
< TRANSISTOR >				< CONNECTOR >			
Q01	8-729-216-22	TRANSISTOR 2SA1162-G		CN701	1-778-037-11	PIN, CONNECTOR 6P	
Q02	8-729-035-11	TRANSISTOR BF799-GEG		CN702	1-695-915-11	TAB (CONTACT)	
Q03	8-729-035-11	TRANSISTOR BF799-GEG		CN703	*1-568-882-51	PIN, CONNECTOR 7P	
Q04	8-729-901-01	TRANSISTOR DTC144EK		< DIODE >			
< RESISTOR >				D701	8-719-109-72	DIODE RD3.9ES-B2	
JR01	1-216-296-91	METAL GLAZE	0 5% 1/8W	D702	8-719-991-33	DIODE 1SS133T-77	
JR02	1-216-296-91	METAL GLAZE	0 5% 1/8W	D703	1-535-456-11	LEAD JUMPER (5.0MM)	
JR03	1-216-295-00	METAL GLAZE	0 5% 1/10W	D704	1-535-456-11	LEAD JUMPER (5.0MM)	
JR04	1-216-296-91	METAL GLAZE	0 5% 1/8W	D705	1-535-456-11	LEAD JUMPER (5.0MM)	
JR05	1-216-295-00	METAL GLAZE	0 5% 1/10W	< CRT SOCKET >			
JR07	1-216-295-00	METAL GLAZE	0 5% 1/10W	J701 Δ	1-526-990-21	SOCKET, CRT	
R01	1-216-029-00	METAL GLAZE	150 5% 1/10W	< COIL >			
R02	1-216-089-91	METAL GLAZE	47K 5% 1/10W	L704	1-408-609-41	INDUCTOR 33UH	
R03	1-216-089-91	METAL GLAZE	47K 5% 1/10W	< TRANSISTOR >			
R04	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	Q702	8-729-119-78	TRANSISTOR 2SC2785-HFE	
R05	1-216-081-00	METAL GLAZE	22K 5% 1/10W	Q703	8-729-906-70	TRANSISTOR BF871-127	
R06	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	Q704	8-729-200-17	TRANSISTOR BF421L-AMMO	
R07	1-216-025-91	METAL GLAZE	100 5% 1/10W	Q705	8-729-119-78	TRANSISTOR 2SC2785-HFE	
R08	1-216-174-00	METAL GLAZE	100 5% 1/8W	Q706	8-729-906-70	TRANSISTOR BF871-127	
R09	1-216-045-00	METAL GLAZE	680 5% 1/10W	Q707	8-729-200-17	TRANSISTOR BF421L-AMMO	
R10	1-216-041-00	METAL GLAZE	470 5% 1/10W	Q708	8-729-119-78	TRANSISTOR 2SC2785-HFE	
R11	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	Q709	8-729-906-70	TRANSISTOR BF871-127	
R12	1-216-063-91	METAL GLAZE	3.9K 5% 1/10W	Q710	8-729-200-17	TRANSISTOR BF421L-AMMO	
R13	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	Q711	8-729-026-41	TRANSISTOR 2SA933AS-QRT	
R14	1-216-023-00	METAL GLAZE	82 5% 1/10W	< RESISTOR >			
R15	1-216-017-91	METAL GLAZE	47 5% 1/10W	R704	1-216-486-00	METAL OXIDE 8.2K 5% 3W F	
R16	1-216-033-00	METAL GLAZE	220 5% 1/10W	R705	1-260-103-11	CARBON 2.2K 5% 1/2W	
R17	1-216-017-91	METAL GLAZE	47 5% 1/10W	R706	1-247-815-91	CARBON 220 5% 1/4W	
R18	1-216-013-00	METAL GLAZE	33 5% 1/10W	R707	1-249-408-11	CARBON 180 5% 1/4W	
R20	1-216-222-00	METAL GLAZE	10K 5% 1/8W	R708	1-535-143-11	LEAD, JUMPER (10.0MM)	
R23	1-216-049-91	METAL GLAZE	1K 5% 1/10W	R709	1-202-844-00	SOLID 330K 10% 1/2W	
R25	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R711	1-247-843-11	CARBON 3.3K 5% 1/4W	
R21	1-216-174-00	METAL GLAZE	100 5% 1/8W	R712	1-260-103-11	CARBON 2.2K 5% 1/2W	
< VARIABLE RESISTOR >				R714	1-216-486-00	METAL OXIDE 8.2K 5% 3W F	
RV01	1-226-703-11	RES, ADJ, METAL GLAZE	10K	R715	1-249-417-11	CARBON 1K 5% 1/4W	
RV02	1-226-703-11	RES, ADJ, METAL GLAZE	10K	R716	1-247-815-91	CARBON 220 5% 1/4W	
*****				R717	1-249-408-11	CARBON 180 5% 1/4W	
*A-1638-081-A C BOARD, COMPLETE				R718	1-202-814-11	SOLID 33K 10% 1/2W	
*****				R719	1-535-143-11	LEAD, JUMPER (10.0MM)	
< CAPACITOR >				R720	1-247-843-11	CARBON 3.3K 5% 1/4W	
C702	1-102-115-00	CERAMIC	560PF 10% 50V				
C703	1-102-116-00	CERAMIC	680PF 10% 50V				
C708	1-162-114-00	CERAMIC	0.0047MF 2KV				
C710	1-107-652-11	ELECT	10MF 20% 250V				
C712	1-102-116-00	CERAMIC	680PF 10% 50V				
C714	1-126-967-11	ELECT	47MF 20% 16V				
C717	1-102-114-00	CERAMIC	470PF 10% 50V				
C718	1-102-114-00	CERAMIC	470PF 10% 50V				
C719	1-102-114-00	CERAMIC	470PF 10% 50V				
C722	1-101-880-00	CERAMIC	47PF 5% 50V				
C723	1-101-880-00	CERAMIC	47PF 5% 50V				
C724	1-101-880-00	CERAMIC	47PF 5% 50V				



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REF.NO.	PART NO.	DESCRIPTION	REMARK
R722	1-202-848-00	SOLID 680K 10%	1/2W
R723	1-249-417-11	CARBON 1K 5%	1/4W
R724	1-202-846-00	SOLID 470K 10%	1/2W
R726	1-260-103-11	CARBON 2.2K 5%	1/2W
R727	1-247-815-91	CARBON 220 5%	1/4W
R728	1-216-350-11	METAL OXIDE 1.2 5%	1W F
R729	1-249-408-11	CARBON 180 5%	1/4W
R730	1-535-143-11	LEAD, JUMPER (10.0MM)	
R731	1-247-843-11	CARBON 3.3K 5%	1/4W
R733	1-249-420-11	CARBON 1.8K 5%	1/4W
R734	1-247-807-31	CARBON 100 5%	1/4W
R735	1-249-420-11	CARBON 1.8K 5%	1/4W
R736	1-216-486-00	METAL OXIDE 8.2K 5%	3W F
R739	1-249-417-11	CARBON 1K 5%	1/4W
R740	1-249-420-11	CARBON 1.8K 5%	1/4W
R741	1-202-549-00	SOLID 100 20%	1/2W
R744	1-249-421-11	CARBON 2.2K 5%	1/4W
R745	1-249-421-11	CARBON 2.2K 5%	1/4W
R746	1-249-421-11	CARBON 2.2K 5%	1/4W
R747	1-249-437-11	CARBON 47K 5%	1/4W
R748	1-249-417-11	CARBON 1K 5%	1/4W
R749	1-249-435-11	CARBON 33K 5%	1/4W

< VARIABLE RESISTOR >

RV701	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M
RV702	1-241-656-21	RES, ADJ, METAL FILM 110M

*A-1640-214-A D2 BOARD, COMPLETE

< CAPACITOR >

C1801	1-126-967-11	ELECT 47MF 20%	50V
C1803	1-137-368-11	FILM 0.0047MF 5%	50V
C1804	1-126-964-11	ELECT 10MF 20%	50V
C1807	1-137-366-11	FILM 0.0022MF 5%	50V

< CONNECTOR >

CN1801	1-573-299-21	CONNECTOR, BOARD TO BOARD 10P
CN1803	*1-568-878-51	PIN, CONNECTOR 3P

< DIODE >

D1802	8-719-110-17	DIODE RD10ESB2
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< IC >

IC1801	8-759-701-59	IC NJM78M09FA
IC1802	8-759-603-37	IC M5216P

< IC LINK >

JW1802	Δ 1-532-605-00	LINK, IC
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< RESISTOR >

R1807	1-247-883-00	CARBON 150K 5%	1/4W
R1809	1-249-429-11	CARBON 10K 5%	1/4W
R1810	1-249-429-11	CARBON 10K 5%	1/4W
R1811	1-249-429-11	CARBON 10K 5%	1/4W
R1812	1-249-429-11	CARBON 10K 5%	1/4W

REF.NO.	PART NO.	DESCRIPTION	REMARK
	*A-1640-235-A	D3 BOARD, COMPLETE *****	
		< CAPACITOR >	
C2802	1-126-965-11	ELECT 22MF 20%	50V
		< CONNECTOR >	
CN2801	1-568-878-51	PIN, CONNECTOR 3P	
CN2802	*1-580-798-11	CONNECTOR PIN (DY) 6P	
CN2803	*1-580-798-11	CONNECTOR PIN (DY) 6P	
		< DIODE >	
D2801	8-719-991-33	DIODE 1SS133T-77	
		< TRANSISTOR >	
Q2801	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R2801	1-249-421-11	CARBON 2.2K 5%	1/4W
		< RELAY >	
RY2801	1-755-172-11	RELAY	
		< COIL >	
T2801	1-411-981-11	COIL, CHOKE 245UH	

*A-1642-208-A D BOARD, COMPLETE

4-201-023-11 SPACER, INSULATING

4-202-373-01 SPRING, IC

< CAPACITOR >

C502	1-102-824-00	CERAMIC 470PF 5%	50V
C503	1-136-165-00	FILM 0.1MF 5%	50V
C504	1-102-824-00	CERAMIC 470PF 5%	50V
C506	1-126-941-11	ELECT 470MF 20%	25V
C507	1-109-953-11	ELECT 2.2MF 20%	50V
C509	1-136-165-00	FILM 0.1MF 5%	50V
C510	1-126-969-11	ELECT 220MF 20%	50V
C511	1-136-202-11	FILM 0.33MF 5%	63V
C513	1-106-220-00	MYLAR 0.1MF 10%	100V
C514	1-136-165-00	FILM 0.1MF 5%	50V
C515	1-126-941-11	ELECT 470MF 20%	25V
C517	1-126-941-11	ELECT 470MF 20%	25V
C518	1-102-228-00	CERAMIC 470PF 10%	500V
C519	1-102-228-00	CERAMIC 470PF 10%	500V
C520	1-126-941-11	ELECT 470MF 20%	25V
C521	1-107-698-11	ELECT 10MF 20%	25V
C522	1-126-964-11	ELECT 10MF 20%	50V
C523	1-136-165-00	FILM 0.1MF 5%	50V
C600	Δ 1-113-890-51	CERAMIC 0.0022MF 20%	250V
C601	Δ 1-161-964-91	CERAMIC 0.0047MF 250V	
C602	Δ 1-161-964-91	CERAMIC 0.0047MF 250V	
C603	1-125-555-11	ELECT 330MF 20%	400V
C604	1-126-968-11	ELECT 100MF 20%	50V
C605	1-107-929-11	ELECT 10MF 20%	100V
C606	1-162-318-11	CERAMIC 0.001MF 10%	500V

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KV-28WF1

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
C607	1-104-666-11	ELECT	220MF 20% 25V	C838	1-102-228-00	CERAMIC	470PF 10% 500V
C608	1-109-880-11	FILM	0.0015MF 3% 2KV	C839	1-136-207-11	FILM	0.047MF 10% 250V
C611	1-102-228-00	CERAMIC	470PF 10% 500V	C841	1-102-110-00	CERAMIC	220PF 10% 50V
C612	1-111-160-11	ELECT	22MF 20% 100V	C845	1-101-880-00	CERAMIC	47PF 5% 50V
C613	1-124-347-00	ELECT	100MF 20% 160V	C901	1-101-810-00	CERAMIC	100PF 5% 500V
C614	1-126-933-11	ELECT	100MF 20% 16V	C902	1-137-372-11	FILM	0.022MF 5% 50V
C615	1-111-067-11	ELECT	0.001F 20% 25V	C903	1-137-372-11	FILM	0.022MF 5% 50V
C616	1-111-067-11	ELECT	0.001F 20% 25V	C904	1-126-933-11	ELECT	100MF 20% 16V
C617	1-128-339-11	ELECT	2200MF 20% 16V	C905	1-126-964-11	ELECT	10MF 20% 50V
C618	1-136-165-00	FILM	0.1MF 5% 50V	C906	1-126-964-11	ELECT	10MF 20% 50V
C619	1-102-228-00	CERAMIC	470PF 10% 500V	C907	1-126-964-11	ELECT	10MF 20% 50V
C620	1-102-228-00	CERAMIC	470PF 10% 500V	C908	1-126-964-11	ELECT	10MF 20% 50V
C621	1-136-165-00	FILM	0.1MF 5% 50V	C910	1-535-465-11	LEAD, JUMPER (5.0MM)	
C622	1-107-925-11	ELECT	1MF 20% 100V	C911	1-126-964-11	ELECT	10MF 20% 50V
C623	1-104-666-11	ELECT	220MF 20% 25V	C913	1-101-810-00	CERAMIC	100PF 5% 500V
C624	1-136-165-00	FILM	0.1MF 5% 50V	C916	1-137-040-11	FILM	0.0022MF 10% 400V
C625	1-126-967-11	ELECT	47MF 20% 50V	C1200	1-136-165-00	FILM	0.1MF 5% 50V
C626	1-104-666-11	ELECT	220MF 20% 25V	C1201	1-136-173-00	FILM	0.47MF 5% 50V
C628	1-126-964-11	ELECT	10MF 20% 50V	C1202	1-136-173-00	FILM	0.47MF 5% 50V
C629	1-111-097-11	ELECT	0.0022F 20% 35V	C1203	1-136-169-00	FILM	0.22MF 5% 50V
C630	1-111-097-11	ELECT	0.0022F 20% 35V	C1204	1-136-169-00	FILM	0.22MF 5% 50V
C631	1-126-965-11	ELECT	22MF 20% 50V	C1205	1-101-005-00	CERAMIC	0.022MF 50V
C632	1-104-666-11	ELECT	220MF 20% 25V	C1206	1-101-005-00	CERAMIC	0.022MF 50V
C633	Δ 1-107-563-11	FILM	0.1MF 20% 300V	C1207	1-126-933-11	ELECT	100MF 20% 16V
C635	Δ 1-107-563-11	FILM	0.1MF 20% 300V	C1208	1-126-963-11	ELECT	4.7MF 20% 50V
C636	Δ 1-113-890-51	CERAMIC	0.0022MF 20% 250V	C1209	1-126-963-11	ELECT	4.7MF 20% 50V
C638	1-136-203-11	FILM	0.01MF 10% 250V	C1212	1-137-372-91	CERAMIC	0.0221MF 10% 500V
C640	1-106-220-00	MYLAR	0.1MF 10% 100V	C1213	1-162-318-11	CERAMIC	0.001MF 10% 500V
C641	1-161-744-00	CERAMIC	0.01MF 400V	C1214	1-126-933-11	ELECT	100MF 20% 16V
C644	1-136-559-11	MYLAR	0.0047MF 10% 400V	C1215	1-136-173-00	FILM	0.47MF 5% 50V
C647	1-162-116-00	CERAMIC	680PF 10% 2KV	C1216	1-137-366-11	FILM	0.0022MF 5% 50V
C651	1-102-228-00	CERAMIC	470PF 10% 500V	C1217	1-137-366-11	FILM	0.0022MF 5% 50V
C800	1-137-368-11	FILM	0.0047MF 5% 50V	C1218	1-126-941-11	ELECT	470MF 20% 25V
C801	1-137-368-11	FILM	0.0047MF 5% 50V	< CONNECTOR >			
C802	1-102-074-00	CERAMIC	0.001MF 10% 50V	CN600	Δ 1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
C804	1-136-165-00	FILM	0.1MF 5% 50V	CN601	Δ 1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
C805	1-136-207-11	FILM	0.047MF 10% 250V	CN603	*1-580-844-11	PIN, CONNECTOR (POWER)	
C806	1-104-999-11	MYLAR	0.1MF 10% 200V	CN800	*1-580-798-11	CONNECTOR PIN (DY) 6P	
C807	1-136-109-00	FILM	0.68MF 5% 200V	CN801	*1-573-296-21	CONNECTOR, BOARD TO BOARD 10P	
C808	1-136-104-00	FILM	0.16MF 5% 200V	CN803	1-695-915-11	TAB (CONTACT)	
C810	1-107-683-11	ELECT	2.2MF 0 250V	CN804	1-778-037-11	PIN, CONNECTOR 6P	
C811	1-102-212-00	CERAMIC	820PF 10% 500V	CN807	1-568-878-51	PIN, CONNECTOR 3P	
C812	1-136-540-11	FILM	0.82MF 5% 200V	CN900	1-568-678-11	TERMINAL BLOCK, S 3P	
C813	1-129-722-00	FILM	0.047MF 10% 630V	CN902	1-695-299-11	CONNECTOR, BOARD TO BOARD 50P	
C814	1-136-084-00	FILM	0.0145MF 3% 2KV	CN1401	*1-568-880-51	PIN, CONNECTOR 5P	
C815	1-137-047-11	FILM	0.01MF 10% 400V	CN1408	*1-568-879-11	PIN, CONNECTOR 4P	
C816	1-162-134-11	CERAMIC	470PF 10% 2KV	< DIODE >			
C817	1-162-116-00	CERAMIC	680PF 10% 2KV	D500	8-719-109-85	DIODE RD5.IES-B2	
C819	1-136-208-11	FILM	0.068MF 10% 250V	D502	8-719-979-85	DIODE EGP20G	
C820	1-102-114-00	CERAMIC	470PF 10% 50V	D503	8-719-979-85	DIODE EGP20G	
C821	1-162-114-00	CERAMIC	0.0047MF 2KV	D504	8-719-991-33	DIODE 1SS133T-77	
C822	1-107-662-11	ELECT	22MF 20% 250V	D505	8-719-982-03	DIODE MTZJ-3.6A	
C824	1-123-024-21	ELECT	33MF 160V	D506	8-719-991-33	DIODE 1SS133T-77	
C829	1-126-959-11	ELECT	0.47MF 20% 50V	D507	8-719-109-85	DIODE RD5.IES-B2	
C830	1-126-959-11	ELECT	0.47MF 20% 50V	D510	8-719-924-13	DIODE MTZJ-T-77-22B	
C832	1-126-960-11	ELECT	1MF 20% 50V	D600	8-719-510-53	DIODE D4SB60L	
C834	1-128-551-11	ELECT	22MF 20% 25V	D601	8-719-046-77	DIODE EM1-V1	
C835	1-162-318-11	CERAMIC	0.001MF 10% 500V	D603	8-719-109-97	DIODE RD6.8ES-B2	
C836	1-162-117-00	CERAMIC	100PF 10% 500V				
C837	1-102-978-00	CERAMIC	220PF 5% 50V				

D

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
D604	8-719-046-75	DIODE EU-1-V1		< IC >			
D605	8-719-302-43	DIODE ELIZ		IC500	8-759-192-71	IC STV9379	
D606	8-719-302-43	DIODE ELIZ		IC600	8-749-010-84	IC STR-S6708	
D607	8-719-046-78	DIODE EG-1Z-V1		IC601 Δ	8-749-013-21	IC TLP721(D4-G,T)	
D608	8-719-302-06	DIODE EU2A		IC602	8-749-920-61	IC SE135N	
D609	8-719-312-10	DIODE RU4AM-T3		IC603	8-759-144-82	UPC2405HF	
D610	8-719-046-74	DIODE AU-01Z-V1		IC604	8-759-510-52	IC L4941BV	
D611	8-719-058-38	DIODE FMN-G12S		IC606	8-759-267-25	IC LM2940T-9.0	
D612	8-719-046-76	DIODE RU3YX-LF-C4		IC800	8-759-103-93	IC UPC393C	
D613	8-719-058-38	DIODE FMN-G12S		IC900	8-742-014-10	IC SBX1981-51	
D614	8-719-058-38	DIODE FMN-G12S		IC1200	8-759-250-68	IC TDA7264	
D615	8-719-046-75	DIODE EU-1-V1		IC1201	8-759-502-21	IC TDA2822M	
D616	8-719-110-03	DIODE RD7.5ES-B2		< JACK >			
D617	8-719-991-33	DIODE 1SS133T-77		J900	1-764-606-11	JACK	
D618	8-719-991-33	DIODE 1SS133T-77		J1200	1-770-218-11	JACK, PIN	
D619	8-719-991-33	DIODE 1SS133T-77		< COIL >			
D620	8-719-923-60	DIODE MTZJ-T-77-9.1		L502	1-412-519-11	INDUCTOR 3.3UH	
D622	8-719-923-60	DIODE MTZJ-T-77-9.1		L503	1-412-519-11	INDUCTOR 3.3UH	
D625	8-719-991-33	DIODE 1SS133T-77		L609	1-412-533-21	INDUCTOR 47UH	
D626	8-719-046-74	DIODE AU-01Z-V1		L610	1-535-465-11	LEAD JUMPER (5MM)	
D631	8-719-109-93	DIODE RD6.2ES-B2		L611	1-412-527-11	INDUCTOR 15UH	
D637	8-719-110-17	DIODE RD10ES-B2		L612	1-412-519-11	INDUCTOR 3.3UH	
D800	8-719-991-33	DIODE 1SS133T-77		L613	1-412-519-11	INDUCTOR 3.3UH	
D801	8-719-991-33	DIODE 1SS133T-77		L615	1-412-529-11	INDUCTOR 22UH	
D802	8-719-991-33	DIODE 1SS133T-77		L616	1-412-533-21	INDUCTOR 47UH	
D803	8-719-908-03	DIODE GP08D		L801	1-459-111-00	COIL, DRAM CORE (CDI)	
D807	8-719-302-43	DIODE ELIZ		L802	1-459-104-00	COIL, WITH CORE	
D808	8-719-908-03	DIODE GP08D		L803	1-420-872-00	COIL, AIR-CORE	
D809	8-719-031-34	DIODE RGP02-20EG23		L804	1-429-306-11	TRANSFORMER, HORIZONTAL LINEAR	
D810	8-719-302-43	DIODE ELIZ		L805	1-406-674-11	COIL, CHOKE 3.3MMH	
D812	8-719-038-49	DIODE FMV-3FU-LF027-103		L806	1-412-529-11	INDUCTOR 22UH	
D815	8-719-908-03	DIODE GP08D		L809	1-408-417-00	INDUCTOR 47UH	
D817	8-719-109-85	DIODE RD5.IES-B2		L810	1-535-465-11	LEAD JUMPER (5MM)	
D901	8-719-302-45	DIODE SEL1210S-CD		L811	1-406-978-11	COIL, CHOKE 150UH	
D902	8-719-923-60	DIODE MTZJ-T-77-9.1A		L813	1-412-552-11	INDUCTOR 2.2MMH	
D903	8-719-923-60	DIODE MTZJ-T-77-9.1A		L901	1-408-603-31	INDUCTOR 10UH	
D904	8-719-923-60	DIODE MTZJ-T-77-9.1A		L902	1-408-603-31	INDUCTOR 10UH	
D905	8-719-923-60	DIODE MTZJ-T-77-9.1A		L903	1-408-409-00	INDUCTOR 10UH	
D906	8-719-923-60	DIODE MTZJ-T-77-9.1A		L904	1-408-409-00	INDUCTOR 10UH	
D907	8-719-109-89	DIODE RD5.6ES-B2		< IC LINK >			
D908	8-719-923-60	DIODE MTZJ-T-77-9.1A		PS600 Δ	1-532-686-21	LINK, IC 2.7A (ICP-F75)	
D909	8-719-923-60	DIODE MTZJ-T-77-9.1A		PS601 Δ	1-532-686-21	LINK, IC 2.7A (ICP-F75)	
D910	8-719-923-60	DIODE MTZJ-T-77-9.1A		PS602 Δ	1-532-686-21	LINK, IC 2.7A (ICP-F75)	
D1201	8-719-109-72	DIODE RD3.9ES-B2		PS603 Δ	1-532-686-21	LINK, IC 2.7A (ICP-F75)	
D1202	1-535-465-11	LEAD, JUMPER (5.0MM)		< TRANSISTOR >			
< FUSE >				Q501	8-729-119-78	TRANSISTOR 2SC2785-HFE	
F601 Δ	1-576-232-11	FUSE (H.B.C.) 5.0A/250V		Q502	8-729-119-76	TRANSISTOR 2SA1175-HFE	
	*1-533-725-11	HOLDER FUSE : F601		Q503	8-729-030-02	TRANSISTOR DTC144ES	
< FERRITE BEAD >				Q601	8-729-025-04	TRANSISTOR 2SC3852A	
FB600	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH		Q602	8-729-320-28	TRANSISTOR 2SA1667	
FB601	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH		Q603	8-729-805-05	TRANSISTOR 2SC3601-E	
FB602	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH		Q604	8-729-024-35	TRANSISTOR 2SC2808STP-R	
FB604	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH		Q605	8-729-119-78	TRANSISTOR 2SC2785-HFE	
FB605	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH		Q606	8-729-900-65	TRANSISTOR DTA144ES	
FB606	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH		Q607	8-729-119-78	TRANSISTOR 2SC2785-HFE	
FB607	1-410-397-21	FERRITE BEAD INDUCTOR 1.1UH					
FB608	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH					
FB800	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH					

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KV-28WF1

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REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
Q800	8-729-119-78	TRANSISTOR 2SC2785-HFE		R629	Δ 1-260-135-11	CARBON 1M 5%	1/2W
Q801	8-729-017-06	TRANSISTOR 2SC4793		R630	Δ 1-218-265-11	METAL 8.2M 5%	1W
Q802	8-729-016-32	TRANSISTOR 2SC4927-01					
Q803	8-729-119-80	TRANSISTOR 2SC2688-LK		R631	Δ 1-202-961-11	WIREWOUND 1.8 5%	10W
Q805	8-729-030-02	TRANSISTOR DTC144ESA		R632	1-247-807-31	CARBON 100 5%	1/4W
				R633	1-247-807-31	CARBON 100 5%	1/4W
Q900	8-729-119-78	TRANSISTOR 2SC2785-HFE		R634	1-249-397-11	CARBON 22 5%	1/4W F
Q1200	8-729-119-78	TRANSISTOR 2SC2785-HFE		R635	1-249-437-11	CARBON 47K 5%	1/4W
Q1201	8-729-029-94	TRANSISTOR DTC143TSA					
Q1202	8-729-029-66	TRANSISTOR DTC114ESA		R636	1-249-417-11	CARBON 1K 5%	1/4W
Q1203	8-729-029-94	TRANSISTOR DTC143TSA		R637	1-247-815-91	CARBON 220 5%	1/4W
				R638	1-247-863-91	CARBON 22K 5%	1/4W
Q1204	8-729-029-94	TRANSISTOR DTC143TSA		R639	1-215-435-00	METAL 3.9K 1%	1/4W
				R640	1-535-143-71	LEAD, JUMPER (7.5MM)	
< RESISTOR >							
R500	1-215-457-00	METAL 33K 1%	1/4W	R641	1-535-143-71	LEAD, JUMPER (7.5MM)	
R502	1-249-421-11	CARBON 2.2K 5%	1/4W	R642	Δ 1-202-961-11	WIREWOUND 1.8 5%	10W
R503	1-249-429-11	CARBON 10K 5%	1/4W	R645	1-249-422-11	CARBON 2.7K 5%	1/4W
R504	1-215-457-00	METAL 33K 1%	1/4W	R646	1-249-377-11	CARBON 0.47 5%	1/4W F
R505	1-249-382-11	CARBON 1.2 5%	1/4W F	R647	1-202-933-61	FUSIBLE 0.1 10%	1/2W F
R506	1-535-465-11	LEAD, JUMPER (5.0MM)		R649	1-249-426-11	CARBON 5.6K 5%	1/4W
R507	1-215-888-00	METAL OXIDE 220 5%	2W F	R800	1-249-429-11	CARBON 10K 5%	1/4W
R508	1-216-371-00	METAL OXIDE 1.5 5%	2W F	R802	1-249-429-11	CARBON 10K 5%	1/4W
R509	1-249-443-11	CARBON 0.47 5%	1/4W F	R803	1-247-843-11	CARBON 3.3K 5%	1/4W
R510	1-249-443-11	CARBON 0.47 5%	1/4W F	R805	1-247-863-91	CARBON 22K 5%	1/4W
R519	1-535-465-11	LEAD, JUMPER (5.0MM)		R809	1-247-891-00	CARBON 330K 5%	1/4W
R520	1-215-457-00	METAL 33K 1%	1/4W	R811	1-535-465-11	LEAD, JUMPER (5.0MM)	
R521	1-215-457-00	METAL 33K 1%	1/4W	R812	1-249-421-11	CARBON 2.2K 5%	1/4W
R522	1-247-863-91	CARBON 22K 5%	1/4W	R813	1-215-867-00	METAL OXIDE 470 5%	1W F
R523	1-247-863-91	CARBON 22K 5%	1/4W	R814	1-249-411-11	CARBON 330 5%	1/4W
R524	1-249-425-11	CARBON 4.7K 5%	1/4W	R816	1-216-481-11	METAL OXIDE 1.2K 5%	3W F
R525	1-249-425-11	CARBON 4.7K 5%	1/4W	R817	1-216-481-11	METAL OXIDE 1.2K 5%	3W F
R526	1-249-421-11	CARBON 2.2K 5%	1/4W	R818	1-215-883-11	METAL OXIDE 33 5%	2W F
R527	1-535-465-11	LEAD, JUMPER (5.0MM)		R819	1-216-345-11	METAL OXIDE 0.47 5%	1W F
R600	1-216-490-11	METAL OXIDE 39K 5%	3W F	R820	1-249-403-11	CARBON 68 5%	1/4W
R601	1-249-417-11	CARBON 1K 5%	1/4W	R821	1-215-909-11	METAL OXIDE 47 5%	3W F
R602	1-215-473-00	METAL 150K 1%	1/4W	R822	1-215-868-00	METAL OXIDE 680 5%	1W F
R603	1-215-898-11	METAL OXIDE 10K 5%	2W F	R824	1-249-420-11	CARBON 1.8K 5%	1/4W
R604	1-249-420-11	CARBON 1.8K 5%	1/4W	R826	1-260-099-11	CARBON 1K 5%	1/2W
R605	1-216-362-11	METAL OXIDE 0.27 5%	2W F	R827	1-249-425-11	CARBON 4.7K 5%	1/4W
R606	1-535-143-21	LEAD, JUMPER (12.5MM)		R828	1-247-863-91	CARBON 22K 5%	1/4W
R607	1-216-421-11	METAL OXIDE 12 5%	1W F	R829	1-260-120-11	CARBON 56K 5%	1/2W
R608	1-216-365-00	METAL OXIDE 0.47 5%	2W F	R830	1-217-778-11	FUSIBLE 1K 5%	1W F
R609	1-535-465-11	LEAD, JUMPER (5.0MM)		R831	1-535-465-11	LEAD, JUMPER (5.0MM)	
R610	1-215-421-00	METAL 1K 1%	1/4W	R832	1-215-877-11	METAL OXIDE 22K 5%	1W F
R611	1-216-354-11	METAL OXIDE 2.7 5%	1W F	R833	1-249-441-11	CARBON 100K 5%	1/4W
R612	1-249-428-11	CARBON 8.2K 5%	1/4W	R835	1-216-471-11	METAL OXIDE 27 5%	3W F
R613	1-249-417-11	CARBON 1K 5%	1/4W	R836	1-249-439-11	CARBON 68K 5%	1/4W
R614	1-215-877-11	METAL OXIDE 22K 5%	1W F	R837	1-249-427-11	CARBON 6.8K 5%	1/4W
R615	1-249-435-11	CARBON 33K 5%	1/4W	R840	1-247-815-91	CARBON 220 5%	1/4W
R616	1-215-471-00	METAL 120K 1%	1/4W	R841	1-249-418-11	CARBON 1.2K 5%	1/4W
R617	1-215-901-00	METAL OXIDE 33K 5%	2W F	R842	1-249-441-11	CARBON 100K 5%	1/4W
R618	1-247-863-91	CARBON 22K 5%	1/4W	R843	1-247-891-00	CARBON 330K 5%	1/4W
R619	1-216-425-11	METAL OXIDE 56 5%	1W F	R846	1-247-893-11	CARBON 390K 5%	1/4W
R620	1-260-131-11	CARBON 470K 5%	1/2W	R847	1-247-897-11	CARBON 560K 5%	1/4W
R621	1-216-425-11	METAL OXIDE 56 5%	1W F	R848	1-247-863-91	CARBON 22K 5%	1/4W
R622	1-249-437-11	CARBON 47K 5%	1/4W	R849	1-249-429-11	CARBON 10K 5%	1/4W
R623	1-249-429-11	CARBON 10K 5%	1/4W	R850	1-249-425-11	CARBON 4.7K 5%	1/4W
R624	1-249-393-11	CARBON 10 5%	1/4W F	R851	1-215-898-11	METAL OXIDE 10K 5%	2W F
R625	1-249-434-11	CARBON 27K 5%	1/4W	R852	1-249-432-11	CARBON 18K 5%	1/4W
R626	1-249-430-11	CARBON 12K 5%	1/4W	R870	1-216-345-21	METAL OXIDE 1 5%	1W F
R627	1-216-347-11	METAL OXIDE 0.68 5%	1W F	R900	1-247-815-91	CARBON 220 5%	1/4W
R628	1-249-415-11	CARBON 680 5%	1/4W F	R901	1-260-311-11	CARBON 39 5%	1/2W



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REF.NO.	PART NO.	DESCRIPTION	REMARK
R902	1-260-311-11	CARBON 39 5%	1/2W
R904	1-249-389-11	CARBON 4.7 5%	1/4W F
R905	1-247-804-11	CARBON 75 5%	1/4W
R906	1-247-804-11	CARBON 75 5%	1/4W
R907	1-247-804-11	CARBON 75 5%	1/4W
R908	1-249-401-11	CARBON 47 5%	1/4W
R909	1-249-429-11	CARBON 10K 5%	1/4W
R910	1-249-422-11	CARBON 2.7K 5%	1/4W
R911	1-249-426-11	CARBON 5.6K 5%	1/4W
R912	1-249-429-11	CARBON 10K 5%	1/4W
R913	1-247-863-91	CARBON 22K 5%	1/4W
R914	1-249-437-11	CARBON 47K 5%	1/4W
R919	1-249-437-11	CARBON 47K 5%	1/4W
R921	1-249-437-11	CARBON 47K 5%	1/4W
R922	1-247-807-31	CARBON 100 5%	1/4W
R923	1-247-815-91	CARBON 220 5%	1/4W
R1200	1-249-425-11	CARBON 4.7K 5%	1/4W
R1201	1-249-434-11	CARBON 27K 5%	1/4W
R1202	1-249-389-11	CARBON 4.7 5%	1/4W F
R1203	1-249-421-11	CARBON 2.2K 5%	1/4W
R1204	1-249-421-11	CARBON 2.2K 5%	1/4W
R1205	1-249-428-11	CARBON 8.2K 5%	1/4W
R1206	1-249-428-11	CARBON 8.2K 5%	1/4W
R1207	1-249-413-11	CARBON 470 5%	1/4W
R1208	1-212-849-00	FUSIBLE 4.7 5%	1/4W F
R1209	1-212-849-00	FUSIBLE 4.7 5%	1/4W F
R1210	1-249-413-11	CARBON 470 5%	1/4W
R1211	1-249-424-11	CARBON 3.9K 5%	1/4W
R1212	1-249-424-11	CARBON 3.9K 5%	1/4W
R1213	1-249-421-11	CARBON 2.2K 5%	1/4W
R1216	1-249-413-11	CARBON 470 5%	1/4W
R1217	1-249-425-11	CARBON 4.7K 5%	1/4W
R1218	1-535-465-11	LEAD, JUMPER (5.0MM)	
R1219	1-249-417-11	CARBON 1K 5%	1/4W

< RELAY >

RY600 Δ 1-755-018-11 RELAY

< SWITCH >

S601 Δ 1-571-433-21 SWITCH, PUSH (AC POWER)
 S900 1-692-979-11 SWITCH, TACTILE
 S901 1-692-979-11 SWITCH, TACTILE
 S902 1-692-979-11 SWITCH, TACTILE

< SPARK GAP >

SG801 1-519-422-11 GAP, SPARK
 SG802 1-519-422-21 GAP, SPARK

< TRANSFORMER >

LF600 Δ 1-421-776-11 LFT
 LF601 Δ 1-421-776-11 LFT

T601 Δ 1-429-605-11 TRANSFORMER, CONVERTER
 T800 1-426-981-11 TRANSFORMER, FERRITE (PMT)
 T803 Δ 8-453-220-11 TRANSFORMER ASSY, FLYBACK
 (NX-1670/U2B4)
 T804 1-437-090-31 HDT

< THERMISTOR >

THP600 Δ 1-809-827-11 THERMISTOR, POSITIVE

REF.NO. PART NO. DESCRIPTION REMARK

*A-1644-070-A VM, BOARD COMPLETE

< CAPACITOR >

C1701	1-126-933-11	ELECT	100MF	20%	16V
C1702	1-128-551-11	ELECT	22MF	20%	25V
C1703	1-126-933-11	ELECT	100MF	20%	16V
C1704	1-107-357-11	FILM	0.47MF	5%	100V
C1705	1-107-638-11	ELECT	33MF	20%	160V
C1706	1-104-999-11	FILM	0.1MF	5%	200V
C1707	1-137-397-11	FILM	0.047MF	5%	100V
C1708	1-137-364-11	FILM	0.001MF	5%	50V
C1709	1-137-364-11	FILM	0.001MF	5%	50V
C1710	1-102-074-00	CERAMIC	0.001MF	10%	50V
C1720	1-107-667-11	ELECT	2.2MF	20%	160V
C1721	1-137-397-11	FILM	0.047MF	5%	100V
C1722	1-126-934-11	ELECT	220MF	20%	16V
C1723	1-161-830-00	CERAMIC	0.0047MF		500V
C1725	1-128-551-11	ELECT	22MF	20%	25V

C1726 1-126-934-11 ELECT 220MF 20% 16V

< CONNECTOR >

CN1015 *1-568-880-51 PIN, CONNECTOR 5P
 CN1718 1-774-418-11 CONNECTOR, BOARD TO BOARD 8P

< DIODE >

D1701 8-719-991-33 DIODE 1SS133T-77
 D1702 8-719-110-88 DIODE RD39ES-B2
 D1703 8-719-110-88 DIODE RD39ES-B2

< COIL >

L1701 1-408-409-00 INDUCTOR 10UH
 L1702 1-408-403-00 INDUCTOR 3.3UH
 L1703 1-408-409-00 INDUCTOR 10UH
 L1704 1-408-418-00 INDUCTOR 56UH

< TRANSISTOR >

Q1701 8-729-119-78 TRANSISTOR 2SC2785-HFE
 Q1702 8-729-119-78 TRANSISTOR 2SC2785-HFE
 Q1703 8-729-017-05 TRANSISTOR 2SA1837
 *4-368-683-21 SPRING, TRANSISTOR (Q1703)
 4-382-854-11 SCREW (M3X10), P, SW (+) (Q1703)

Q1704 8-729-119-78 TRANSISTOR 2SC2785-HFE
 Q1706 8-729-017-06 TRANSISTOR 2SC4793
 *4-368-683-21 SPRING, TRANSISTOR (Q1706)
 4-382-854-11 SCREW (M3X10), P, SW (+) (Q1706)
 Q1708 8-729-119-78 TRANSISTOR 2SC2785-HFE

Q1709 8-729-119-78 TRANSISTOR 2SC2785-HFE

< RESISTOR >

R1701	1-249-417-11	CARBON	1K	5%	1/4W
R1702	1-249-417-11	CARBON	1K	5%	1/4W
R1703	1-249-421-11	CARBON	2.2K	5%	1/4W
R1704	1-249-415-11	CARBON	680	5%	1/4W
R1705	1-247-815-91	CARBON	220	5%	1/4W

R1706	1-247-815-91	CARBON	220	5%	1/4W
R1708	1-249-412-11	CARBON	390	5%	1/4W
R1712	1-260-311-11	CARBON	39	5%	1/2W
R1713	1-249-384-11	CARBON	1.8	5%	1/4 F
R1714	1-249-414-11	CARBON	560	5%	1/4W F

The components identified by shading and marked Δ are critical for safety.
Replace only with the part number specified.

Les composants identifiés par une trame et une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

KV-28WF1



REF.NO.	PART NO.	DESCRIPTION	REMARK
R1715	1-249-432-11	CARBON	18K 5% 1/4W
R1716	1-249-417-11	CARBON	1K 5% 1/4W F
R1717	1-216-476-11	METAL OXIDE	180 5% 3W F
R1718	1-249-432-11	CARBON	18K 5% 1/4W
R1719	1-249-384-11	CARBON	1.8 5% 1/4W F
R1720	1-249-400-11	CARBON	39 5% 1/4W F
R1721	1-249-414-11	CARBON	560 5% 1/4W
R1722	1-249-401-11	CARBON	47 5% 1/4W
R1724	1-249-400-11	CARBON	39 5% 1/4W
R1725	1-216-451-11	METAL OXIDE	120 5% 2W F
R1728	1-249-413-11	CARBON	470 5% 1/4W
R1729	1-249-413-11	CARBON	470 5% 1/4W
R1730	1-249-422-11	CARBON	2.7K 5% 1/4W
R1731	1-249-411-11	CARBON	330 5% 1/4W

REF.NO.	PART NO.	DESCRIPTION	REMARK
MISCELLANEOUS *****			
Δ	1-411-893-11	COIL, DEGAUSSING	
	1-452-032-00	MAGNET, DISK; 10MM Ø	
	1-452-094-00	MAGNET, ROTABLE DISK; 15MM Ø	
Δ	1-453-220-11	TRANSFORMER ASSY, FLYBACK(UX-1604A2)	
	1-505-782-11	SPEAKER (8CM)	
Δ	1-571-433-21	SWITCH, PUSH (AC POWER)	
	1-693-338-11	TUNER (TUVIF) (AEP)	
		(KV-28WF1A/28WF1D/28WF1E/28WF1K/28WF1R)	
	1-693-340-11	TUNER (TUVIF) (FR) (KV-28WF1B)	
	1-693-339-11	TUNER (TUVIF) (UK) (KV-28WF1U)	
Δ	1-765-286-11	CORD, POWER 2.5A/250V	
		(KV-28WF1A/28WF1B/28WF1D/28WF1E/28WF1K/28WF1R)	
Δ	1-776-204-12	CORD, POWER (FILTER)	
		3A/250V (KV-28WF1U)	
Δ	8-451-434-11	DEFLECTION YOKE (Y28GIAM)	
Δ	8-453-005-51	NECK ASSY, (NA297-M5)	
V901 Δ	8-737-773-05	PICTURE TUBE (SD-284T)(W66LGY011X)	

ACCESSORIES AND PACKING MATERIALS *****

4-203-891-41	MANUAL, INSTRUCTION (KV-28WF1A)(ITALIAN)
4-203-891-51	MANUAL, INSTRUCTION (KV-28WF1B)
	(FRENCH/GERMAN/ITALIAN/DUTCH)
4-203-891-11	MANUAL, INSTRUCTION (KV-28WF1D)
	(DUTCH/GREEK/ENGLISH/GERMAN)
4-203-891-71	MANUAL, INSTRUCTION (KV-28WF1E)(SPANISH)
4-203-509-81	MANUAL, INSTRUCTION (KV-28WF1E)
	(PORTUGUESE/FINNISH/DANISH/NORWEGIAN/SWEDISH)
4-203-891-91	MANUAL, INSTRUCTION (KV-28WF1K/28WF1R)
	(ENGLISH/CZECH/POLISH/RUSSIAN/BULGARIAN)
4-203-891-61	MANUAL, INSTRUCTION (KV-28WF1U)
	(ENGLISH)
*4-203-885-01	INDIVIDUAL CARTON
*4-203-883-01	CUSHION (LOWER) (ASSY)
*4-203-884-01	CUSHION (UPPER) (ASSY)
*4-029-168-01	BAG, PROTECTION

REMOTE COMMANDER *****

1-473-693-11	COMMANDER, STANDARD TYPE (RM-839)
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