

BG2T CHASSIS

KV-HA21M80

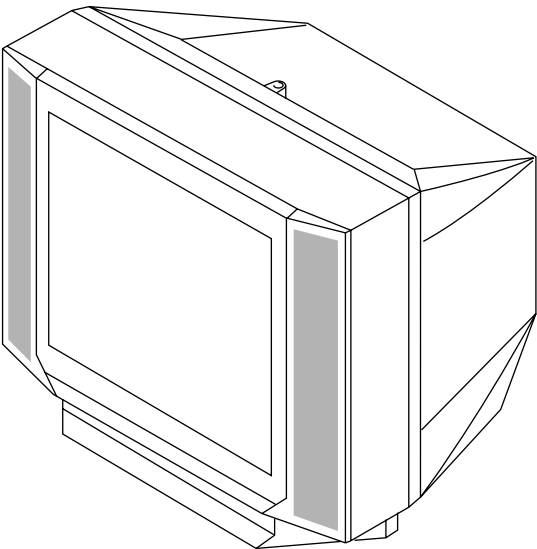
PART NO.: 9-872-344-01

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SERVICE MANUAL

BG2T CHASSIS

<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>	<u>MODEL</u>	<u>COMMANDER</u>	<u>DEST.</u>	<u>CHASSIS NO.</u>
<i>KV-HA21M80</i>	<i>RM-969</i>	<i>Pakistan</i>					



TRINITRON® COLOR TV
SONY®

SPECIFICATIONS

		Note
Power requirements	110-240 V AC, 50/60 Hz	
Power consumption (W)	Indicated on the rear of the TV	
Television system	B/G, I, D/K, M	
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43	
Channel coverage		
B/G	VHF: E2 to E12 UHF: E21 to E69 CATV: S01 to S03, S01 to S41	
I	UHF: B21 to B68 CATV: S01 to S03, S1 to S41	
D/K	VHF: C1 to C12, R1 to R12 UHF: C13 to C57, R21 to R60 CATV: S01 to S03, S1 to S41, Z1 to Z39	
M	VHF: A2 to A13 UHF: A14 to A79 CATV: A-8 to A-2, A to W+4, W+6 to W+84	
⌋ (Antenna)	75-ohm external terminal	
Audio output (Speaker)	5W + 5W	
Number of terminal		
📺 Video	Input: 2* Output: 1 Phono jacks; 1 V _{P-P} , 75 ohms	* One input line available
🎵 Audio	Input: 2* Output: 1 Phono jacks; 500 mVrms	* One input line available
🎧 (Headphone)	Output: 1 Stereo minijack	
Picture tube	21 in.	
Tube size (cm)	54	Measured diagonally
Screen size (cm)	51	Measured diagonally
Dimension (w/h/d, mm)	639 × 458 × 490	
Mass (kg)	26	

Design and specifications are subject to change without notice.

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.

SAFETY-RELATED COMPONENT WARNING!!

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

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SELF DIAGNOSIS FUNCTION

The units in this manual contain a self-diagnosis function. If an error occurs, the STANDBY (⏻) indicator will automatically begin to flash. A description of the self-diagnosis function is explained in the instruction manual.

The number of times the STANDBY (⏻) indicator flashes translates to a probable source of the problem. If an error symptom cannot be reproduced, the remote commander can be used to review the failure occurrence data stored in memory to reveal past problems and how often these problems occur.

1. DIAGNOSIS TEST INDICATORS

When an errors occurs, the STANDBY (⏻) indicator will flash a set number of times to indicate the possible cause of the problem. If there is more than one error, the indicator will identify the first of the problem areas.

Result for all of the following diagnosis items are displayed on screen. No error has occurred if the screen displays a "0".

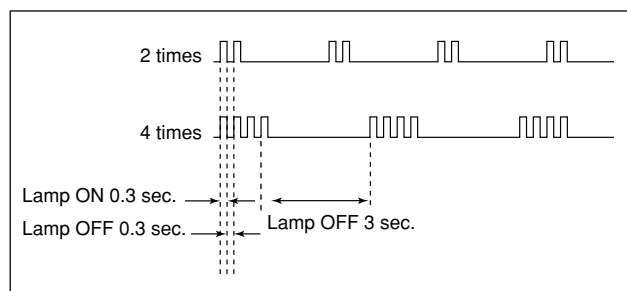
Diagnosis Item Description	No. of times STANDBY (⏻) indicator flashes	Self-diagnostic display/Diagnosis result	Probable Cause Location	Detected Symptoms
• Power does not turn on	Does not light	—	• Power cord is not plugged in. • Fuse is burned out F600 (F)	• Power does not come on. • No power is supplied to the TV. • AC power supply is faulty.
• +B overcurrent (OCP) • Horizontal deflection overdrive	2 times	002:000 or 002:001~255	• H.OUT Q801 is shorted. (A board)	• Power does not come on. • Load on power line is shorted. • Has entered standby state after horizontal raster. • Power line is shorted or power supply is stopped.
• White balance failure (no PICTURE) • Vertical deflection stopped	4 times	004:000 or 004:001~225	• -13V is not supplied. (A board) • IC 551 faulty (A board)	• Vertical deflection pulse is stopped
• Micro reset	—	101:00 or 101:001~225	• Discharge CRT (C Board) • Static discharge • External noise	• Power is shut down shortly, after this return back to normal. • Detect Micro latch up.

Note 1: If a + B overcurrent is detected, stoppage of the vertical deflection is detected simultaneously.

The symptom that is diagnosed first by the microcontroller is displayed on the screen.

Note 2: Refer to screen (G2) Adjustment in section 3-4 of this manual.

2. DISPLAY OF STANDBY (⏻) INDICATOR FLASH COUNT



<u>Diagnosis Item</u>	<u>Flash Count*</u>
+B overcurrent/overvoltage	2 times
Vertical deflection stopped	4 times

* One flash count is not used for self-diagnosis.



3. STOPPING THE STANDBY (⏻) INDICATOR FLASH

Turn off the power switch on the TV main unit or unplug the power cord from the outlet to stop the STANDBY (⏻) indicator from flashing.

4. SELF-DIAGNOSTIC SCREEN DISPLAY

For errors with symptoms such as “power sometimes shuts off” or “screen sometimes goes out” that cannot be confirmed, it is possible to bring up past occurrences of failure for confirmation on the screen:

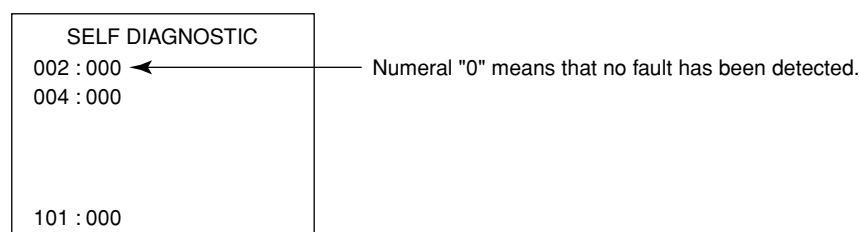
[To Bring Up Screen Test]

In standby mode, press buttons on the remote commander sequentially in rapid succession as shown below:

Screen display ➡ channel **[5]** ➡ Sound volume **-** ➡ Power ON
 ↑

Note that this differs from entering the service mode (volume $\boxed{+}$).

Self-Diagnostic screen display



5. HANDLING OF SELF-DIAGNOSTIC SCREEN DISPLAY

Since the diagnosis results displayed on the screen are not automatically cleared, always check the self-diagnostic screen during repairs. When you have completed the repairs, clear the result display to "0".

Unless the result display is cleared to "0", the self-diagnosis function will not be able to detect subsequent faults after completion of the repairs.

[Clearing the result display]

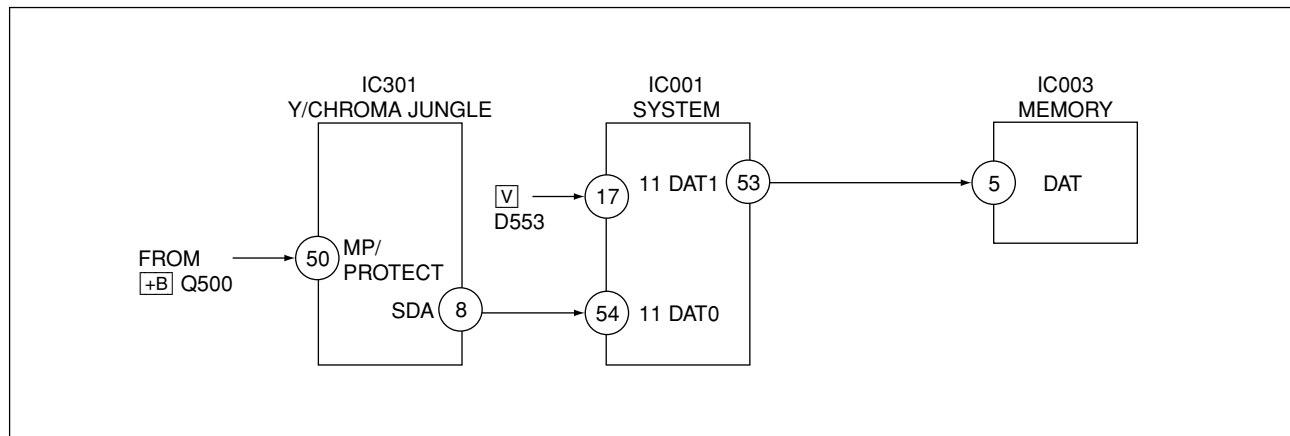
To clear the result display to "0", press buttons on the remote commander sequentially as shown below when the self-diagnostic screen is being displayed.

Channel [8] → 0

[Quitting Self-diagnostic screen]

To quit the entire self-diagnostic screen, turn off the power switch on the remote commander or the main unit.

6. SELF-DIAGNOSIS CIRCUIT



[+B overcurrent OCP]

Occurs when an overcurrent on the +B(135) line is detected by Q500. If Q500 goes to ON and the voltage to pin 50 of IC301 more than 3.5V when V.SYNC is more than seven verticals in a period, the unit will automatically turn off.

[Vertical deflection stopped]

Occurs when an absence of the vertical deflection pulse is detected by Pin 17 and IC001 shut down the power supply.

[White balance failure]

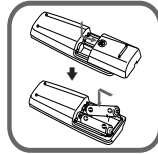
If the RGB levels* do not balance or become low level within 5 seconds, this error will be detected by IC301. TV will stay on, but there will be no picture.

* (Refers to the RGB levels of the AKB detection Ref pulse that detects IK.)

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

SECTION 1 GENERAL

A Getting Started

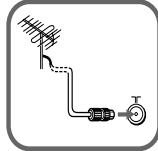


Step 1

Insert the batteries (supplied) into the remote.

Note

- Do not use old batteries nor use different types of batteries together.

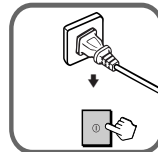


Step 2

Connect the antenna cable (not supplied) to $\overline{\text{T}}$ (antenna input) at the rear of the TV.

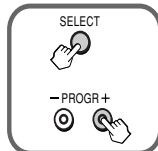
Tip

- You can also connect your TV to other optional components. (See **B**)



Step 3

Plug in the power cord, then press ⏻ on the TV to turn it on.

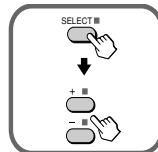


Step 4

Press SELECT and PROG + on the TV at the same time for one to two seconds to preset the channels automatically. (See **I**)

Tip

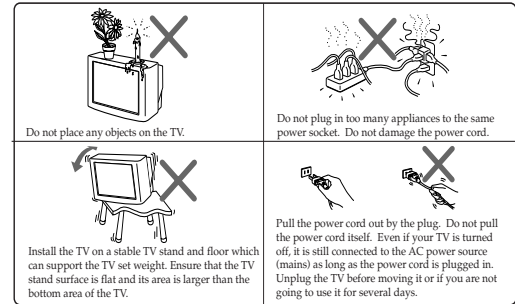
- To stop the automatic channel presetting, press SELECT.



Step 5

Press SELECT on the remote until "LANGUAGE/ اللغة : ENGLISH" appears on the screen, then press + or - to change the on-screen display language.

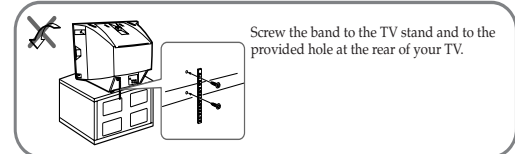
WARNING (continued)



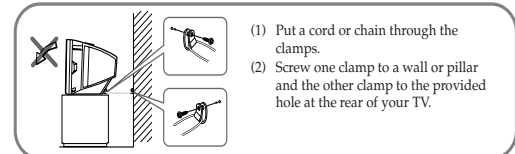
C Securing the TV

► KV-HA21 only

To prevent the TV from falling, use the supplied screws, clamps and band to secure the TV.



or



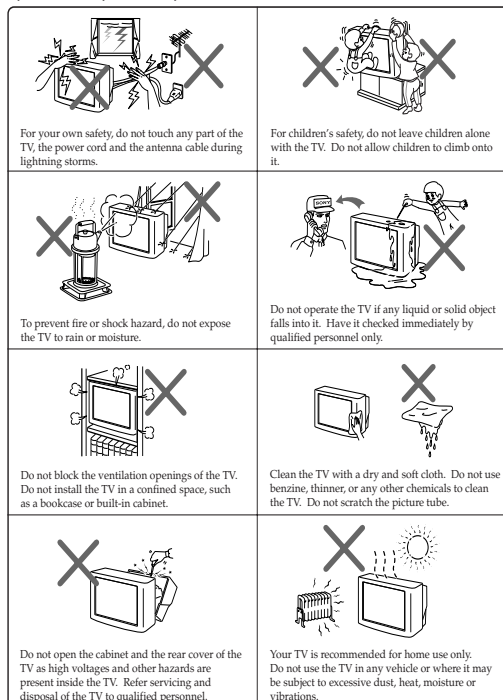
- Put a cord or chain through the clamps.
- Screw one clamp to a wall or pillar and the other clamp to the provided hole at the rear of your TV.

Note

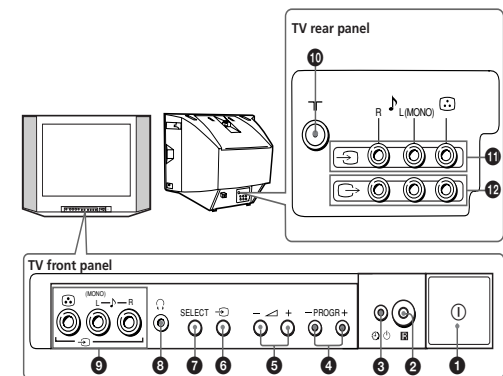
- Use only the supplied screws. Use of other screws may damage the TV.

B WARNING

- Dangerously high voltages are present inside the TV.
- TV operating voltage: 110 ~ 240 V AC.
- Do not plug in the power cord until you have completed making all other connections; otherwise a minimum leakage current might flow through the antenna and other terminals to ground.
- To avoid battery leakage and damage to the remote, remove the batteries from the remote if you are not going to use it for several days. If any liquid that leaks from the batteries touches you, immediately wash it away with water.



D TV front and rear panels

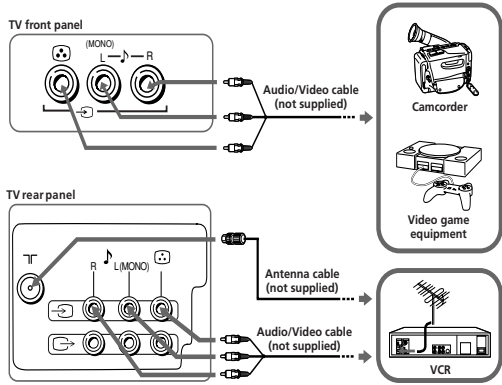


Button	Function
1 ⏻	Turn off or turn on the TV.
2 ⏻	Remote control sensor.
3 ⏻	Standby indicator.
4 ⏻	Wake Up indicator.
5 PROG +/-	Select program number.
6 Δ +/-	Adjust volume.
7 ⏻	Select TV or video input.
8 SELECT	Select the desired item.
9 ⏻	Headphone terminal.
10 ⏻	Video input terminal.
11 ⏻	Antenna input terminal.
12 ⏻	Monitor output terminal.

- * You can also use the Δ +/- buttons on the TV to work as the +/- buttons on the remote.

E Connecting optional components

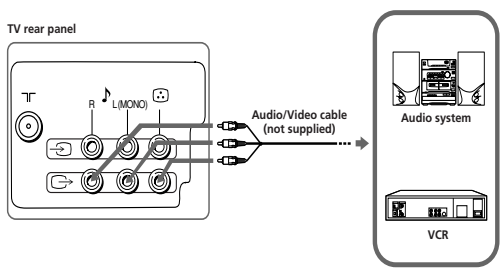
Connecting to the video input terminal ()



Note

- Do not connect video equipment to (video input) at the front and the rear of your TV at the same time; otherwise the picture will not be displayed properly on the screen.

Connecting to the monitor output terminal ()



G Specifications

	KV-HA21M80	KV-HA14M80	Note
Power requirements	110-240 V AC, 50/60 Hz		
Power consumption (W)	Indicated on the rear of the TV		
Television system	B/G, L, D/K, M		
Color system	PAL, PAL 60, SECAM, NTSC3.58, NTSC4.43		
Channel coverage			
B/G	VHF : E2 to E12 UHF : E21 to E69 CATV : S01 to S03, S1 to S41		
I	UHF : R21 to R68 CATV : S01 to S03, S1 to S41		
D/K	VHF : C1 to C12, R1 to R12 UHF : C13 to C37, R21 to R60 CATV : S01 to S03, S1 to S41, Z1 to Z39		
M	VHF : A2 to A13 UHF : A14 to A79 CATV : A-8 to A-2, A to W+4, W+6 to W+84		
Antenna	75-ohm external terminal		
Audio output (Speaker)	5W + 5W		3W + 3W
Number of terminal (Video)	Input: 2* Output: 1		Phono jacks; 1 Vp-p, 75 ohms
(Audio)	Input: 2* Output: 1		Phono jacks; 500 mVrms
(Headphone)	Output: 1		Stereo minijack
Picture tube	21 in.		14 in.
Tube size (cm)	54		37
Screen size (cm)	51		34
Dimensions (w/h/d, mm)	639 × 458 × 490		466 × 346 × 419
Mass (kg)	26		13

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

F Troubleshooting

If you find any problem while viewing your TV, please check the following guide. If any problem persists, contact your Sony dealer.

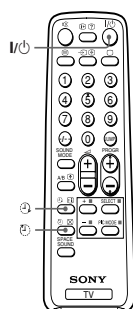
Symptom	Solutions
Snowy picture, noisy sound	- Check the antenna cable and connection on the TV, VCR and on the wall. - Preset the channel manually again. (See I) - Check the antenna setup. Contact a Sony dealer for advice.
Good picture, noisy sound	Select the appropriate TV system. (See I)
No picture, no sound	- Check the power cord, antenna and the VCR connections. - Press I/ (power) or (main power) to turn on the TV.
Good picture, no sound	- Press + to increase the volume level. - Press to cancel the muting.
Dotted lines or stripes	- Do not use a hair dryer or other equipment near the TV. - Check the antenna setup. Contact a Sony dealer for advice.
Double images or "ghosts"	- Use the fine tuning ("FINE") function. (See I) - Turn off or disconnect the booster if it is in use. - Check the antenna setup. Contact a Sony dealer for advice.
No color	- Select the appropriate color system. (See I) - Adjust the color level. (See K) - Check the antenna setup. Contact a Sony dealer for advice.
Abnormal color patches	- Keep external speakers or other electrical equipment away from the TV. - Press (main power) to turn off the TV for about 15 minutes, then turn it on again to demagnetize the TV.
The (standby) indicator on your TV flashes red several times after every three seconds.	Count the number of times the (standby) indicator flashes. Press (main power) to turn off your TV. Contact your nearest Sony service center.
TV cabinet creaks.	Changes in room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.
A "boom" sound is heard when the TV is turned on.	The TV's demagnetizing function is working. This does not indicate a malfunction.

H Remote control

Button	Function	See
1 I/ ()	Turn off temporarily or turn on the TV.	-
2 ()	Display the TV program.	-
3 JUMP	Jump to previous program number.	-
4 PROGR +/-	Select program number.	-
5 +/-	Adjust volume.	-
6 SELECT	Select the desired item.	-
7 PIC MODE	Select picture mode.	K
8 +/-	Adjust items.	-
9 ()	Display on-screen information.	-
10 ()	Mute the sound.	-
11 ()	Select TV or video input.	-
12 0-9, +/-	Input numbers.	-
Timer operations		
13 ()	Set TV to turn on automatically.	I
14 ()	Set TV to turn off automatically.	I
15 SOUND MODE	Select sound mode.	K
16 SPACE SOUND	Select space sound mode.	K
17 A/B	Not function for your TV.	-
Teletext operations (green label)		
18 (red, green, yellow, blue)	Not function for your TV.	-
19 ()		
20 ()		
21 ()		
22 ()		

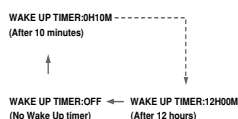
I Setting the timers

You can turn on and off your TV by using the and buttons respectively.



Setting the Wake Up timer

- Press until the desired period of time appears on the screen.



The Wake Up timer starts immediately after you have set it.

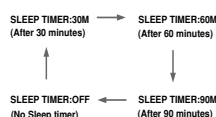
- Select the program number or video input you want to wake up to.

- Press , or set the Sleep timer if you want the TV to turn off automatically.

The indicator on the TV lights up orange when the TV goes into standby mode.

Setting the Sleep timer

Press until the desired period of time appears on the screen.



The Sleep timer starts immediately after you have set it.

Notes

- You can also cancel the Wake Up and Sleep timers by turning off the TV's main power.
- If no buttons or controls are pressed for more than two hours after the TV is turned on using the Wake Up timer, the TV automatically goes into standby mode.

Presetting channels (continued)

To change the TV system setting

If the picture or sound is abnormal when receiving programs through the (antenna input) terminal

- Press SELECT until "TV SYS" appears on the screen.
- Press + or - to select the appropriate TV system until the picture or sound quality is optimal.

B/G → I → D/K → M

To change the color system setting

If the color is abnormal when receiving programs through the (antenna input) terminal or the (video input) terminal

- Press SELECT until "COLOR SYS" appears on the screen.
- Press + or - to select the appropriate color system until the color is optimal.

AUTO → PAL → SECAM → NTSC3.58 → NTSC4.43

To skip program numbers

- Press PROG +/– or the number buttons until the unused or unwanted program number appears on the screen.
- Press SELECT until "MANUAL PROGRAM" appears on the screen.
- Press + or - once to enter the "MANUAL PROGRAM" mode.
- Press PIC MODE to skip the unused or unwanted program number.
- Press SELECT to exit the "MANUAL PROGRAM" mode.

Note

- To restore the skipped program number again, preset the channel automatically or manually.

To use the fine tuning function

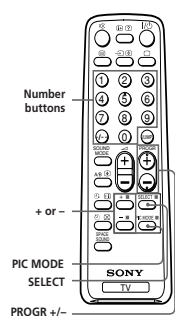
The fine tuning (FINE) function may help to reduce the following problems: double images and lines moving across the TV screen.

You can use the fine tuning function as below:

- Select the program number you want to adjust.
- Press SELECT until "MANUAL PROGRAM" appears on the screen.
- Press + or - once to enter the "MANUAL PROGRAM" mode.
- Press to display "FINE" on the screen.
- Press + or - continuously until the above problems are minimized. The + or - icon on the screen flashes while tuning.
- Press SELECT to exit the "MANUAL PROGRAM" mode.

J Presetting channels

You can automatically preset up to 100 TV channels in numerical sequence from program number 1, or manually preset desired channels and channels that cannot be preset automatically.



Presetting channels automatically from a specified program number

- Press SELECT until "AUTO PROGRAM" appears on the screen.
- Press + or - once to enter the "AUTO PROGRAM" mode. The on-screen display will start flashing.
- Press PROG +/– or the number buttons until the desired program number appears on the screen.
- Press + or - to start presetting channels automatically.

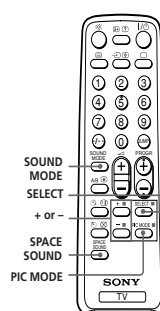
Presetting channels manually

- Press SELECT until "MANUAL PROGRAM" appears on the screen.
- Press + or - once to enter the "MANUAL PROGRAM" mode.
- Press PROG +/– or the number buttons until the desired program number appears on the screen.
- Press + or - until the desired channel picture appears on the screen.
- To preset other channels manually, repeat steps 3 to 4.

K Customizing the picture and sound

You can customize the picture and sound by selecting the picture and sound modes or by adjusting its settings.

You can change the sound effect by selecting the space sound mode.



Selecting the picture mode

Press PIC MODE to select the desired picture mode.

Select	To
"DYNAMIC"	view high contrast pictures.
"STANDARD"	view normal contrast pictures.
"SOFT"	view mild pictures.

Selecting the sound mode

Press SOUND MODE to select the desired sound mode.

Select	To
"DYNAMIC"	listen to dynamic and clear sound that emphasizes the low and high sound.
"DRAMA"	listen to sound that emphasizes vocals and background music.
"SOFT"	listen to soft sound.

Adjusting the picture and sound settings

- Press SELECT until the desired setting appears. Each time you press SELECT, the setting item will change as follows:

PICTURE → COLOR → BRIGHT → HUE
 BALANCE ← TREBLE ← BASS ← SHARP
- Press + or - to adjust the item.
- To adjust other items, repeat steps 1 to 2.

Notes

- "HUE" can be adjusted for the NTSC color system only.
- Reducing "SHARP" can also reduce picture noise.

Customizing the picture and sound (continued)

Selecting the space sound mode

Press SPACE SOUND.

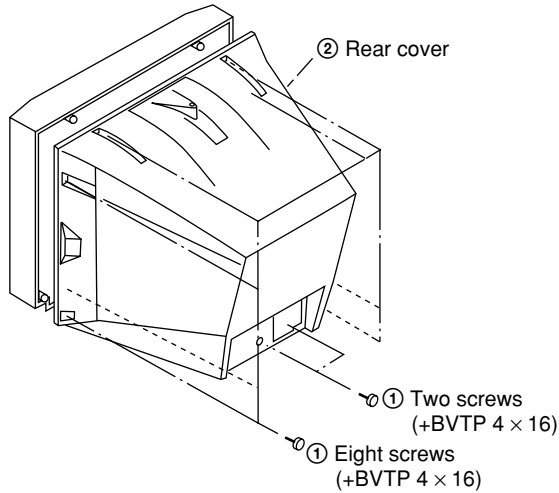
Select	To
"ON"	listen to monaural sound with a stereo-like effect.
"OFF"	turn off space sound mode.

Note

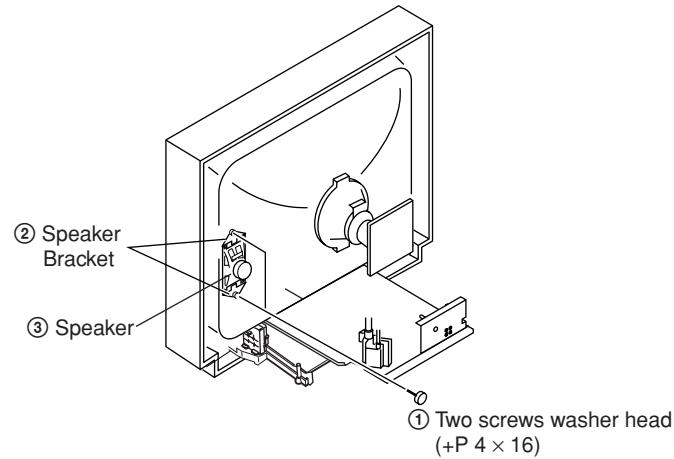
- You can also turn space sound on or off using the SELECT and + or – buttons.

SECTION 2 DISASSEMBLY

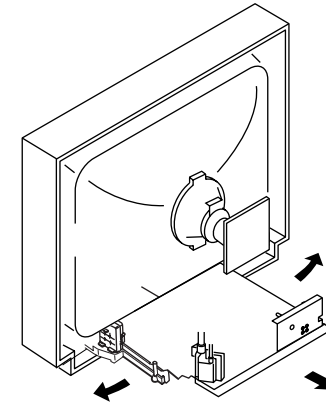
2-1. REAR COVER REMOVAL



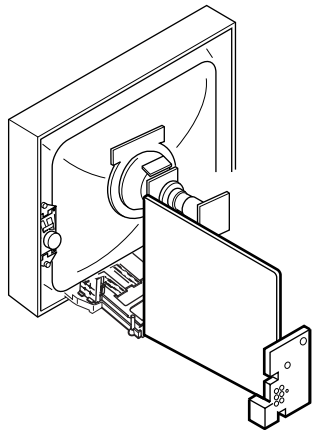
2-2. SPEAKER REMOVAL



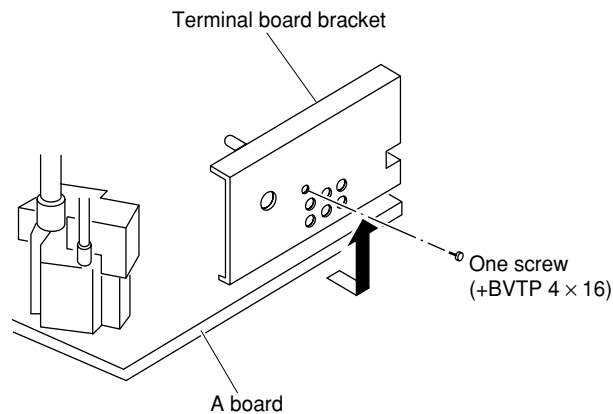
2-3. CHASSIS ASSY REMOVAL



2-4. SERVICE POSITION



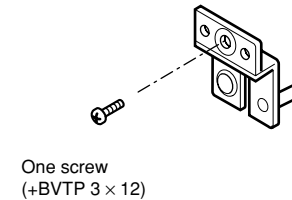
2-5. TERMINAL BRACKET REMOVAL



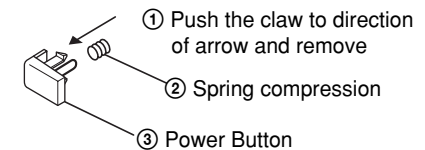
2-6. REPLACEMENT OF PARTS

For replacements of light guide, unscrew them, exchange with new parts and fix them with screws respectively.

2-6-1. Replacement of Light Guide



2-6-2. Replacement of Power Button



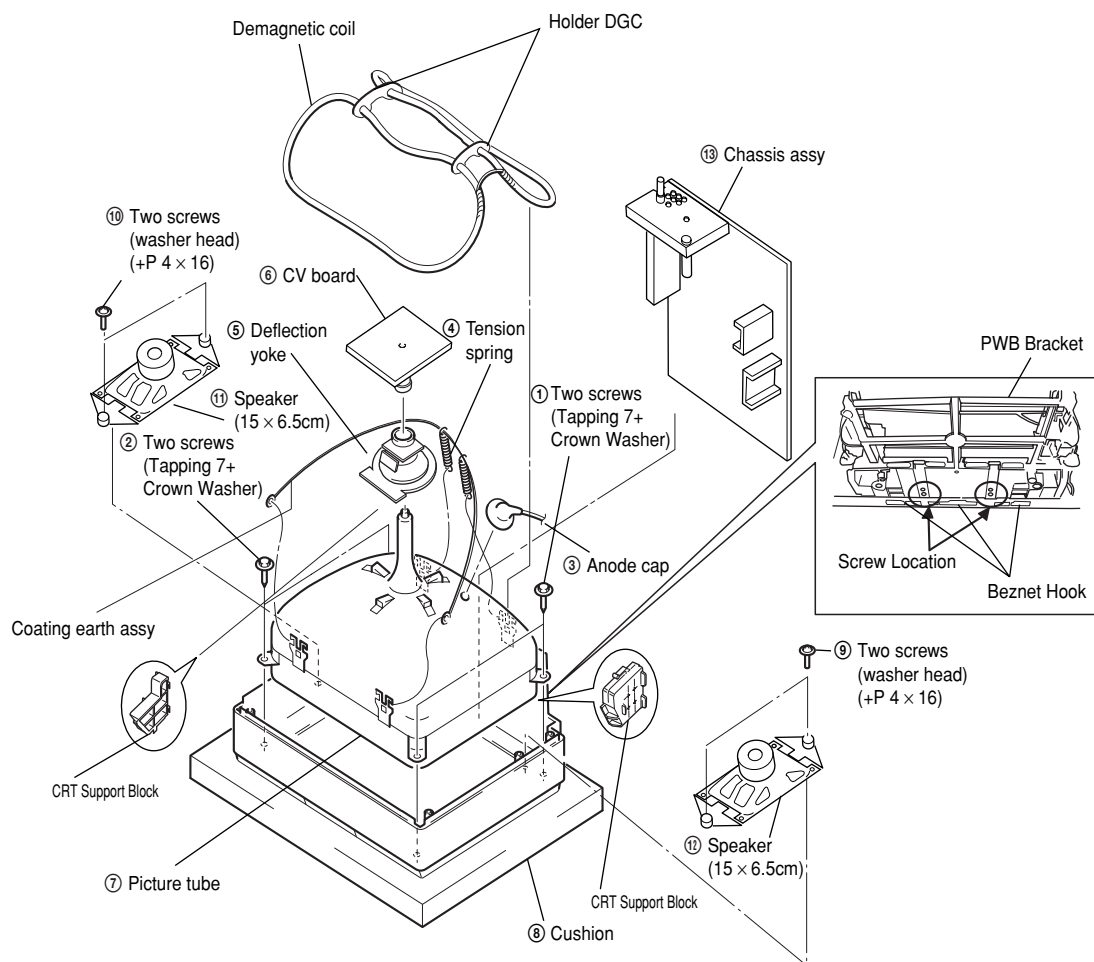
Caution: Do not take out CRT support block while TV set in standing position.

Note: Undress necessary wires that creates tension while placing the chassis into Service Position.

2-7. PICTURE TUBE REMOVAL

Note:

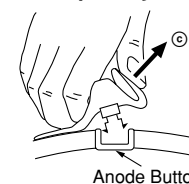
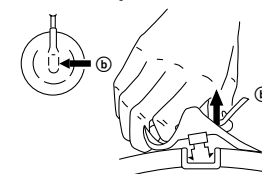
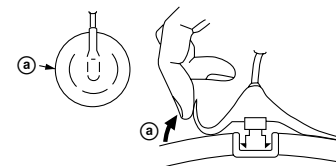
- Please make sure the TV set is not in standing position before removing necessary CRT support located on bottom right and left.



•REMOVAL OF ANODE-CAP

NOTE : After removing the anode, short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT.

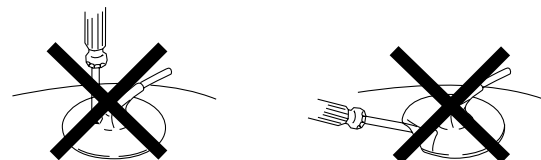
•REMOVING PROCEDURES



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

• HOW TO HANDLE AN ANODE-CAP

- Do not damage the surface of anode-caps with sharp shaped objects.
- Do not press the rubber too hard so as not to damage the inside of anode-cap. A metal fitting called the shatter-hook terminal is built into the rubber.
- Do not turn the foot of rubber over too hard. The shatter-hook terminal will stick out or damage the rubber.



SECTION 3

SET-UP ADJUSTMENTS

The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switches should be set as follows unless otherwise noted:

PICTURE control normal

BRIGHTNESS control normal

Perform the adjustments in the following order :

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

Note : Test Equipment Required.

1. Pattern Generator
2. Degausser
3. 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

1. Input a white signal with the pattern generator.

Contrast } normal
Brightness }

2. Set the pattern generator raster signal to a green raster.
3. Move the deflection yoke to the rear and adjust with the purity control so that the green is at the center and the blue and the red take up equally sized areas on each side.
(See Figures 3-1 through 3-4.)
4. Move the deflection yoke forward and adjust so that the entire screen is green. (See Figure 3-1.)
5. Switch the raster signal to blue, then to red and verify the condition.
6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws and DY spacers.
7. If the beam does not land correctly in all the corners, use a magnet to adjust it.
(See Figure 3-4.)

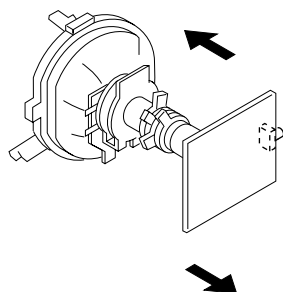


Fig. 3-1

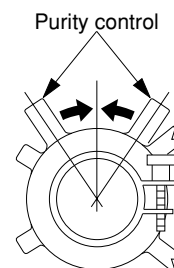


Fig. 3-2

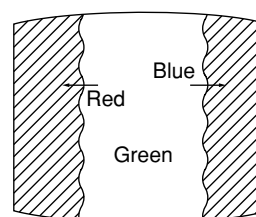


Fig. 3-3

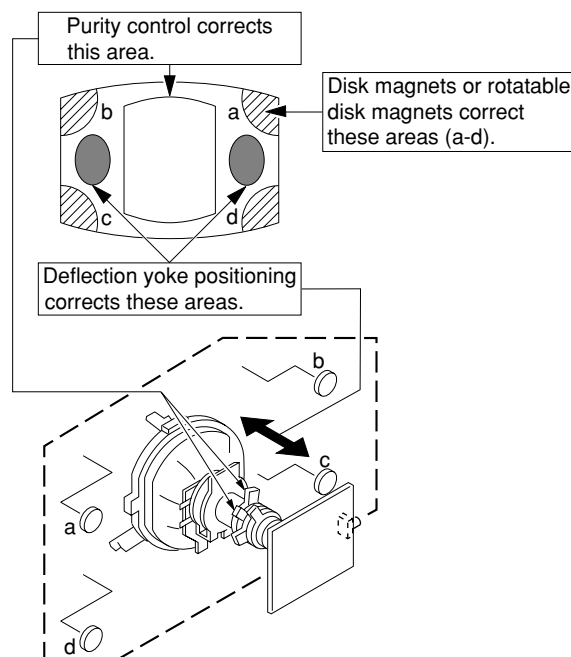


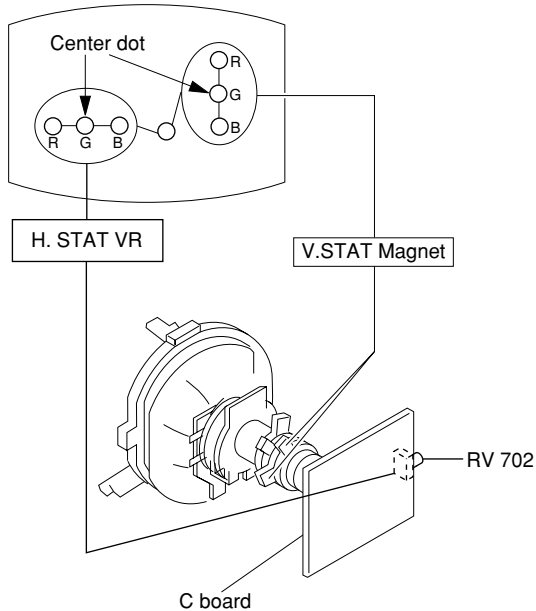
Fig. 3-4

3-2. CONVERGENCE

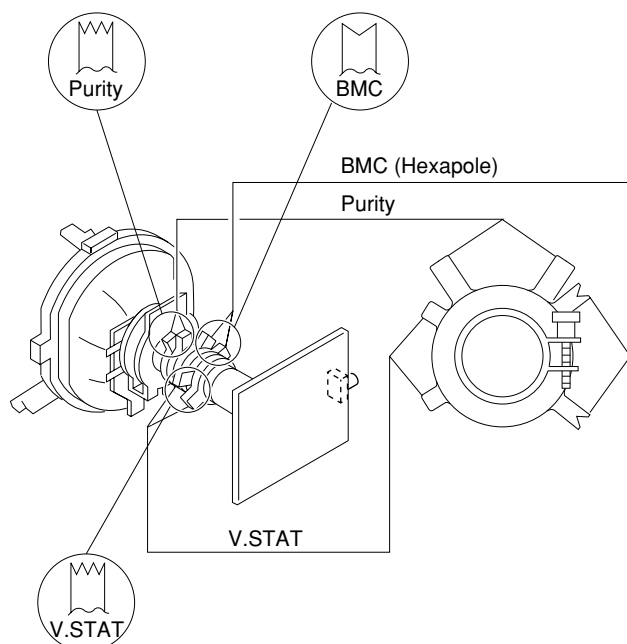
Preparation :

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Receive dot/hatch signal.
- Pic mode: Soft.

(1) Horizontal and Vertical Static Convergence

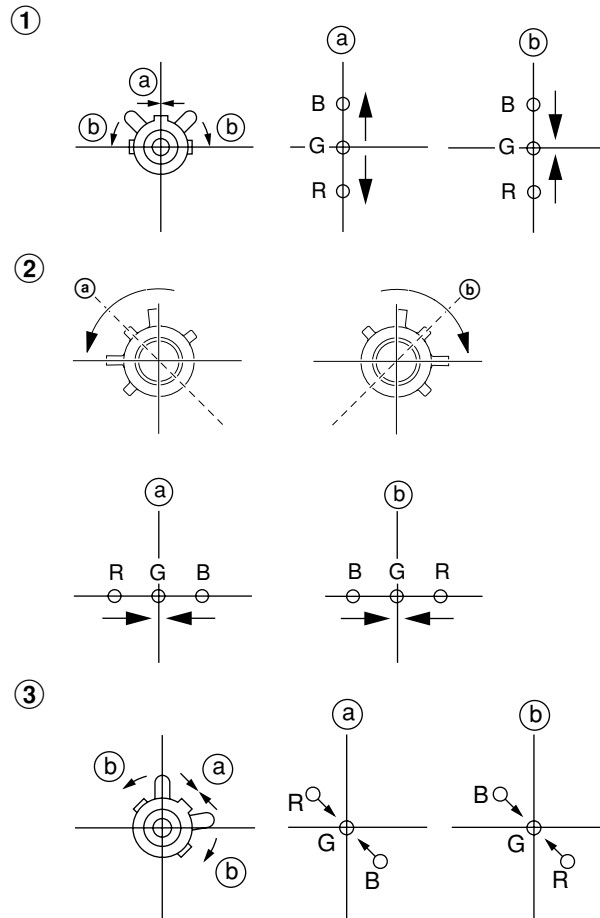


1. (Moving vertically), adjust the V.STAT magnet so that the red, green and blue dots are on top of each other at the center of the screen.
2. (Moving horizontally), adjust the H.STAT VR control so that the red, green and blue dots are on top of each other at the center of the screen.
3. If the H.STAT variable resistor cannot bring the red, green and blue dots together at the center 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, so be sure to perform adjustments while tracking.)



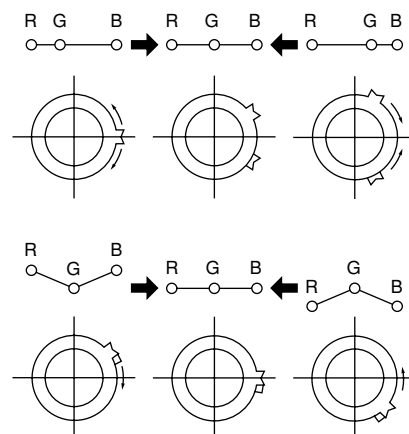
• Operation of V. Stat magnet

If the V. Stat magnet is moved in the "a" and "b" arrows, the red, green and blue dots move as shown below.



④ BMC (Hexapole) Magnet.

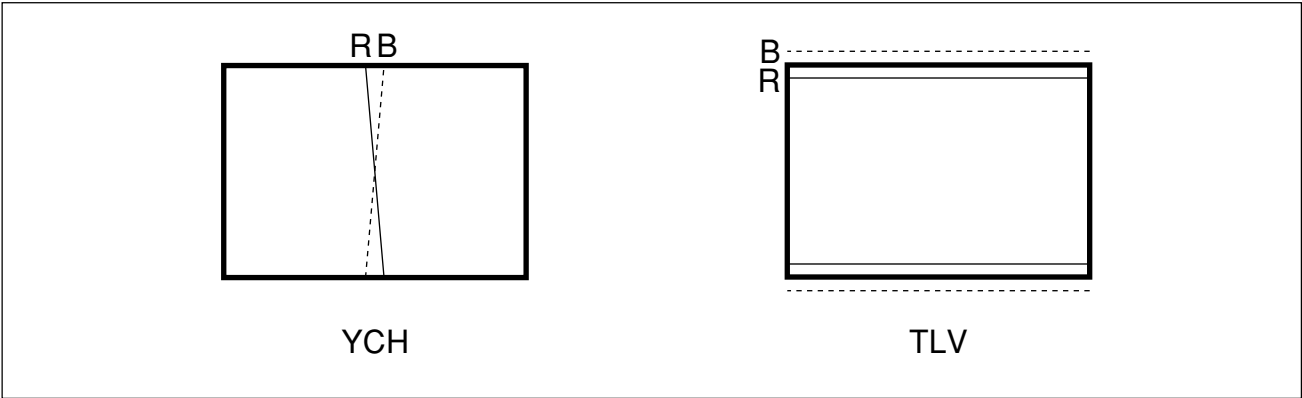
If the red, green and blue dots are not balanced or aligned, then use the BMC magnet to adjust in the manner described below.



(2) Dynamic Convergence Adjustment

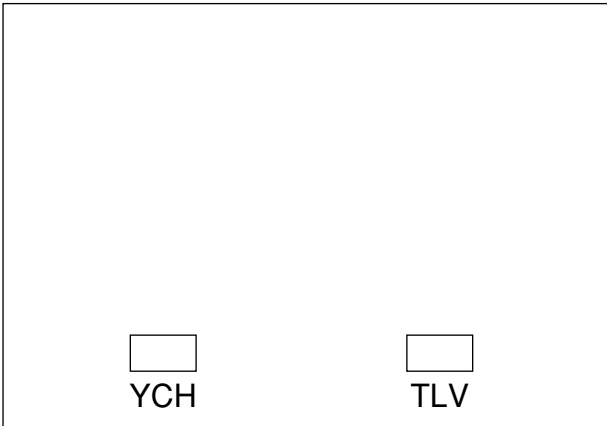
Preparation:

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

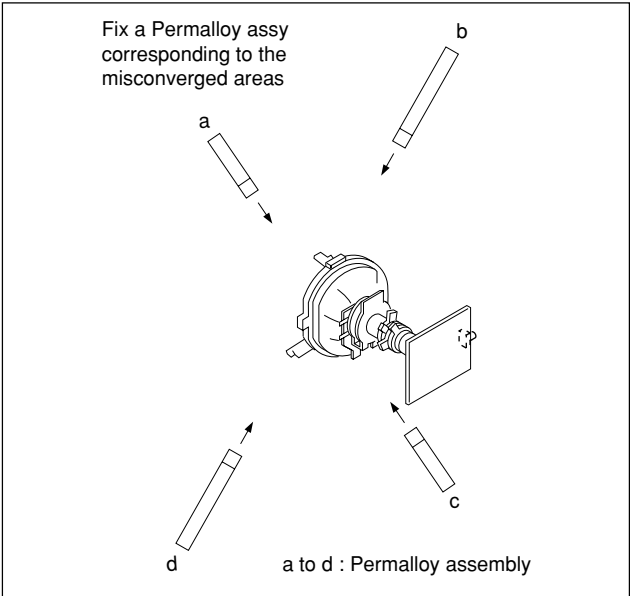
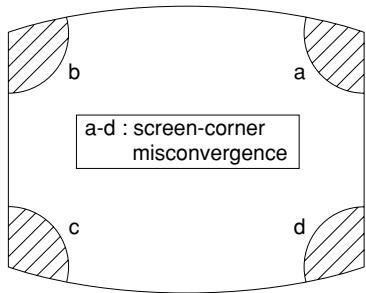


- | | | | |
|-----|--------|-----|---|
| TLH | Insert | TLH | Correction Plate to DY Pocket (Left or Right) |
| YCH | Rotate | YCH | VOL on DY |
| TLV | Rotate | TLV | VOL ON DY |
| XCV | Rotate | XCV | Adj core on DY |

ON DY:



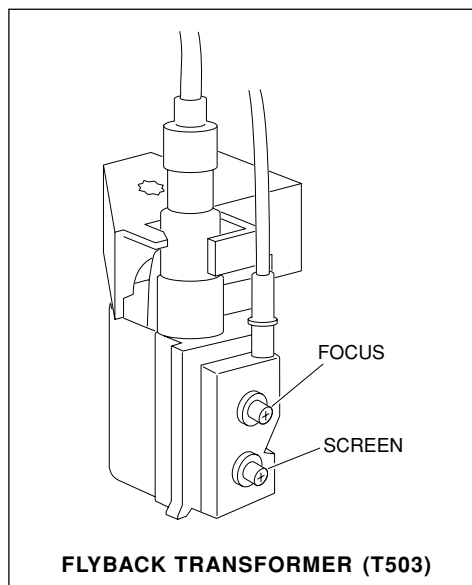
(3) Screen-corner Convergence



3-3. FOCUS ADJUSTMENT

FOCUS adjustment should be completed before W/B adjustment.

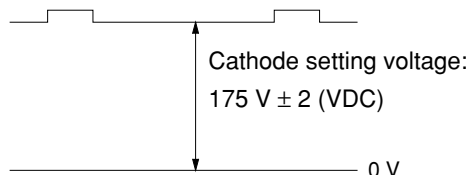
1. Receive digital monoscope pattern.
2. Set "Picture Mode" to "DYNAMIC".
3. Adjust focus VR so that the center of screen becomes just focus.
4. Change the receiving signal to white pattern and blue back.
5. Confirm magenta ring is not noticeable. In case magenta is very obvious, adjust focus VR to take balance of magenta ring and focus.



3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

1. G2 (SCREEN) ADJUSTMENT

- 1) Set the PICTURE to normal.
- 2) Put to VIDEO input mode without signals.
- 3) Connect R, G and B of the C board cathode to the oscilloscope.
- 4) Adjust BRIGHTNESS to obtain the cathode voltage to the value below.
- 5) Adjust G2 (screen) on the FBT until picture shows the point before cut off.

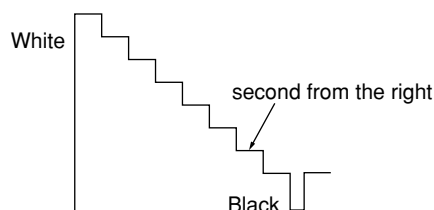


2.a) WHITE BALANCE ADJUSTMENT

- 1) Set to Service Mode (Refer Section 4-1: ADJUSTMENTS WITH COMMANDER).
- 2) Input white raster signal.
- 3) Set 49 (ABL) and IF (VP2) service mode to 00.
- 4) Set Picture to DYNAMIC.
- 5) Select OB (RDR) with [1] and [4], and set the level to 25 with [3] and [6] for best white balance.
- 6) Select OC 'GDR' and OD 'BDR' with [1] and [4], and adjust the level with [3] and [6] for the best white balance.
- 7) Write into the memory by pressing [MUTING] then [0].
- 8) Set back 49 'ABL' and IF 'VP2' service mode to original data.

2.b) SUB BRIGHT ADJUSTMENT

- 1) Set to service mode.
- 2) Set 49(ABL) and IF (VP2) service mode to 00
- 3) Input a staircase signal of black to white from the pattern generator.
- 4) BRIGHTNESS 50%.
PICTURE MINIMUM
- 5) Select OE 'SBR' with [1] and [4], and adjust OE 'SBR' level with [3] and [6] so that the second stripe from the right is dimly lit.
- 6) Write into the memory by pressing [MUTING] then [0].
- 7) Set back 49 (ABL) and IF (VP2) service mode to original data.



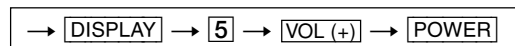
SECTION 4 CIRCUIT ADJUSTMENTS

4-1. ADJUSTMENT WITH COMMANDER

Service adjustments to this model can be performed using the supplied Remote Commander RM-969.

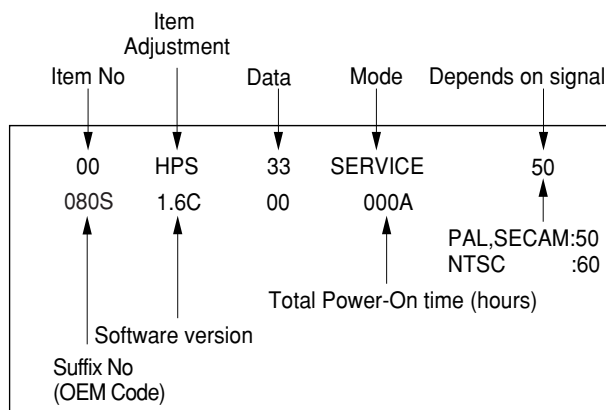
a. ENTERING SERVICE MODE

With the unit on standby



This operation sequence puts the unit into service mode.

The screen display is :



b. METHOD OF CANCELLATION FROM SERVICE MODE

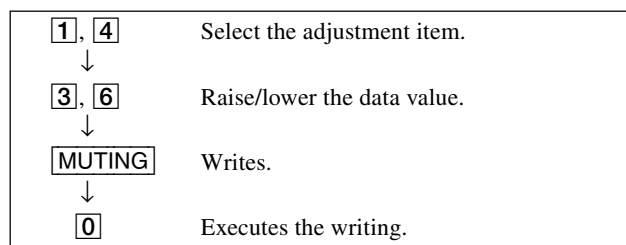
Set the standby condition (Press [POWER] button on the commander), then press [POWER] button again, hereupon it becomes TV mode.

c. METHOD OF WRITE INTO MEMORY

- 1) Set to Service Mode.
- 2) Press [1] (UP) and [4] (DOWN), to select the adjustment.
- 4) Press [MUTING] button to indicate WRITE on the screen.
- 5) Press [0] button to write into memory.

d. MEMORY WRITE CONFIRMATION METHOD

- 1) After adjustment, pull out the plug from AC outlet, and then plug into AC outlet again.
- 2) Turn the power switch ON and set to Service Mode.
- 3) Call the adjusted items again to confirm adjustments were made.



e. OTHER FUNCTION VIA REMOTE COMMANDER

- | | |
|-------------|---|
| [7], [0] | All the data becomes the values in memory. |
| [8], [0] | All user control goes to the standard state. |
| [5], [0] | Service data initialization (Be sure not to use usually.) |
| [2], [0] | Copy and write all data. |
| [MUTE], [0] | Write 50Hz adjustment data to 60Hz or vice versa. |

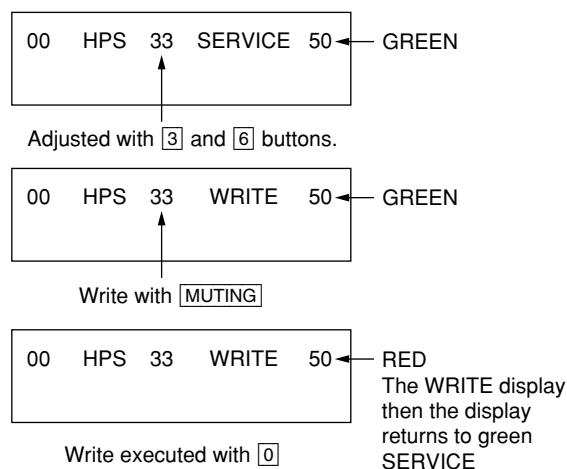
4-2. ADJUSTMENT METHOD

Item Number 00 HPS

This explanation uses H Shift as an example.

1. Select "00 HPS" with the [1] and [4] buttons.
2. Raise/lower the data with the [3] and [6] buttons.
3. Select the optimum state. (The standard is 1F for PAL reception.)
4. Write with the [MUTING] button. (The display changes to WRITE.)
5. Execute the writing with the [0] button. (The WRITE display will be changed to red color while excuting, and back to SERVICE.)

Example on screen display :-



Use the same method for all Items. Use [1] and [4] to select the adjustment item, use [3] and [6] to adjust, write with [MUTING], then execute the write with [0].

- Note :**
1. In [WRITE], the data for all items are written into memory together.
 2. For adjustment items that have different standard data between 50Hz or 60Hz, be sure to use the respective input signal after adjustment.

Adjustment Item Table

Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)													
No.	Name						Common	50	60	SECAM	NTSC	PAL	TV	Video	Teletext	M System	Non-M System	Dynamic	Others
00	HPS	2A	3F	H Position	50/60Hz	TDA8843/44(8A)		2A	2A										
01	HSZ	1F	3F	H Size	50/60Hz			1F	1F										
02	PAP	1F	3F	Pin Amplitude	50/60Hz			1F	1F										
03	CPN	1F	3F	Corner Pin	50/60Hz			1F	1F										
04	TLT	1F	3F	Tilt	50/60Hz			1F	1F										
05	VSL	26	3F	V Slope	50/60Hz			20	20										
06	VAP	0F	3F	V Amplitude	50/60Hz			0F	0F										
07	SCO	0F	3F	S Correction	50/60Hz			0F	0F										
08	VPS	1F	3F	V Shift	50/60Hz			1F	1F										
09	VZM	19	3F	Vertical Zoom			19												
0A	VSC	1F	3F	Vertical Scroll	50/60Hz			1F	1F										
0B	RDR	1F	3F	R Drive	Dynamic/Others													1F	24
0C	GDR	25	3F	G Drive	Dynamic/Others													25	25
0D	BDR	25	3F	B Drive	Dynamic/Others													25	20
0E	SBR	58	7F	Sub Brightness			58												
0F	PMX	20	3F	Picture Maximum Data	TV/Video/Teletext								20	20	20				
10	PMI	04	3F	Picture Minimum Data			04												
11	SHU	07	0F	Sub Hue	TV/Video								07	09					
12	SSH	01	03	Sub Sharpness	TV/Video								01	03					
13	SC1	20	3F	Sub Color Lower	50/60Hz			20	1C										
14	SC2	08	3F	Sub Color Higher	50/60Hz			08	0B										
15	FO	00	03	01 Time Constant	TV/Video/Teletext								00	00	00				
16	AGT	00	3F	AGC Take Over	TV/Video/Teletext								00	00	00				
17	VSW	00	01	Video Mute Switch	TV/Video/Teletext								00	01	00				
18	FOR	03	03	Forced Field Frequency			03												
19	DL	00	01	De-interlace			00												
1A	POC	00	01	Fixed 01 Synchro. Mode			00												
1B	COR	01	01	Noise Coring	TV/Video/Teletext								01	00	00				
1C	RBL	00	01	RGB Blanking	TV/Video/Teletext								00	00	00				
1D	YDL	0A	0F	Y-Delay	PAL/NTSC/SECAM					0A	0C	06							
1E	VP1	00	FF	Extra Bits (see specified pages)			20												
1F	VP2	01	FF	Extra Bits (see specified pages)			01												
20	VP3	0F	FF	Extra Bits (see specified pages)			0F												
21	WST	15	FF	W/G Stereo Threshold		MSP3417G(80)	15												
22	WBT	EC	FF	W/G Bilingual Threshold			EC												
23	WLL	05	FF	W/G Monaural Threshold			05												
24	WAC	01	0F	W/G Agreement Count			01												
25	WDL	30	FF	W/G Search Delay			30												

Adjustment Item Table

Functionality		Init.	Range	Function	Table & Note	Device Name (Slave Address)													
No.	Name						Common	50	60	SECAM	NTSC	PAL	TV	Video	Teletext	M System	Non-M System	Dynamic	Others
26	NDL	20	FF	NICAM Search Delay			20												
27	SDL	10	FF	Stereo Status Read Delay			10												
28	AGC	01	01	AGC Switch auto/constant			01												
29	REL	28	3F	AGC Gain at Constant Mode			28												
2A	CRM	00	01	Carrier Muting on/off			00												
2B	ACO	01	01	Audio Clock-out on/off			01												
2C	FP	1B	7F	FM Prescale for B/G, I, D/K			1B												
2D	FPM	32	7F	FM Prescale for M			32												
2E	FH	36	7F	FM Prescale for HDEV (non-M)			36												
2F	FHM	65	7F	FM Prescale for HDEV (M)			65												
30	WGP	1C	7F	W/G Prescale			1C												
31	NIP	7F	7F	NICAM Prescale			7F												
32	ERR	50	FF	Auto FM Switch Threshold			50												
33	VOL	6D	7F	DFP Volume Maximum			73												
34	ING	00	0F	Input Gain	M System/non-M/Video	TDA7438(88)								00		03	00		
35	VOM	00	3F	Volume Output Gain	M System only		00												
36	BCS	01	03	Bass Center Shift			01												
37	TCS	02	03	Treble Center Shift			02												
38	TXH	2A	FF	Horizontal Display Position		SAA5264(58)	2A												
39	TXV	27	3F	Vertical Display Position (line offset from V-sync)			27												
3A	THD	00	7F	H-sync Active Edge Shift			00												
3B	TVD	3F	7F	V-sync Active Edge Shift			3F												
3C	HPL	01	01	H-sync Polarity Configuration	00 : Positive, 01 : Negative		01												
3D	VPL	01	01	V-sync Polarity Configuration	00 : Positive, 01 : Negative		01												
3E	FPL	01	01	Field Polarity Configuration	00 : V-sync second half line, 01 : V-sync first half line		01												
3F	FMD	00	00	Force Mode	00 : Auto, 01 : Default, 02 : Fasttext, 03 : Top Mode		00												
40	TBR	08	0F	Set Teletext RGB Brightness			08												
41	NOP	01	0F	National Option Table Configuration			01												
42	TCH	01	03	Twisted Character Set Configuration			01												
43	BKP	00	3F	Picture Data at Blanking OFF		Other Control	00												
44	ODL	10	FF	Power ON Delay			12												
45	OSH	0A	3F	OSD H Position			0A												
46	TSY	00	03	TV System at Auto Preset	00 : B/G, 01 : I, 02 : D/K, 03 : M		00												
47	DKS	01	01	D/K Stereo enable/disable			01												
48	MUT	00	01	Muting on/off at No Sync			00												
49	ABL	01	01	Bright ABL Switch			01												
4A	SCM	01	01	SECAM Trap active/inactive			01												
4B	SLS	01	01	Activate SL.OR.IFI Sync			01												
4C	SSV	02	07	Space Sound Volume Step Up			02												
4D	VPW	35	7F	Timer of Video Processor start up wait			35												
4E	OP1	2F	FF	Optional Flags 0 (see specified pages)			2F												
4F	OP2	0F	FF	Optional Flags 1 (see specified pages)			8F												
50	OP3	00	FF	Optional Flags 2 (see specified pages)			10												

NOTE:

- **■** Bold item :- are fixed data
- Standard data listed on the Adjustment Item Table are reference values, therefore it may be different for each model and for each mode.
- Note for Different Data Those are the standard data values written on the microprocessor. Therefore, the data values of the modes and stored respectively in the memory. In case of a device replacement, adjustment by rewriting the data value is necessary for some items.

No. 1E VP1

BCO	Switch-on behaviour 1=Switch -on of picture via internal delay 0=Without delay	00(4)
OSO	1=Switch off in vertical overscan 0=Switch-off undefind	18(7)
SBL	Service blanking 1= on 0= off	0B(7)
HBL	RGB Blanking Mode 1 = wide blanking, 0 = normal blanking	02(7)
FCO	Forced Color-on 1=no colour killer 0=normal colour killer function	1B(0)
FFI	Fast filler IF-PLL 1=increased time constant 0=normal time constant	1A(1)

MAT	PAL-SECAM-/NTSC Matrix 1 =PAL matrix, 0=adapted to standard	0E(7)
DS	Dynamic skin control on/off 1= on 0= off	1A(3)
DSA	Dynamic skin control angle 1=correction angle 117 degrees 0=correction angle 123 degrees	1A(2)
EBS	Extended Blue Stretch 1= on 0= off	1A(0)
BLS	Blue stretch 1= on 0= off	18(4)
BKS	Black stretch 1= on 0= off	18(3)

BB	Blue back when no video signal is identified 1= on 0= off	18(0)
AKB	Black current stabilisation 1=not active 0=active	02(6)
BPS	Bypass of chroma base-band delay line 1=bypassed 0=active	19(6)
CB	Chroma bandpass centre frequency 1= 1.1x Fsc 0=Fsc	18(5)
ACL	Automatic colour limiting 1= active 0= not active	19(5)

No. 4E OP1

Other optional function will be enabled if the corresponding bit is set to 1.

No. 4F OP2

Item	No NICAM	US ST	HDEV	IV-Curve	XTAL		SECAM	2nd Lang.	HEX
KV-HA21M80	1	0	0	0	1	1	1	1	8F

No NICAM
US ST

1 = NICAM search is disable in any TV system, 0 = NICAM search operates
(Reserved for NTSC model)

1 V-Curve
(for monaural mode)

1 = using common volume curve for every mode and every TV system
0 = another volume curve available for video mode and M system

XTAL SEL

00 = only 4.43 XTAL 01 = only 3.58 XTAL
10 = not used 11 = both 4.43 and 3.58 XTAL

Other optional function will be enabled if the corresponding bit is set to 1.

No. 50 OP3

Item	Pict Rot.	Auto TV Sys.	No Bal.	SPACE SOUND	KOREAN ST	VM	H.K. BIL	Thai Bil.	HEX
KV-HA21M80	0	0	0	1	0	0	0	0	10

No Bal.
(for AV stereo model)

1 = no balance in analog select items, 0 = balance included

SPC SOUND

1 = Space Sound available, 0 = not available

Korean ST

(Reserved for NTSC model)

H.K. Bil.
(for monaural model)

1 = NICAM bilingual available (No NICAM stereo), 0 = not available

Other optional function will be enable if the corresponding bit is set to 1.

OPERATION GUIDE

SERVICE MODE

How to set up new NVM (or initialize already written one)

- (1) AC ON
- (2) Enter Service Mode - describing below how to enter
- (3) Push the commander button “5” and “0” sequentially (only set initial data into RAM, but not write them into NVM yet)
- (4) Push the commander button “2” and “0” sequentially (copy the data into all NVM area - all wide modes and 50/60Hz respectively)
- (5) Push the commander button “8” and “0” sequentially (initialize user data, select program 1 and exit Service Mode)
- (6) Select TV system and execute Auto Preset

How to enter Service Mode

- At power ON, push the commander button “test” and “TV ON” sequentially
- At stand-by, push the commander button “display”, “5”, “vol +” and “power” sequentially

How to exit Service Mode

- Push the commander button “other ON” or power (AC) OFF

How to increment/decrement items and data

- Items : push the commander button “1” / “4”
- Data : push the commander button “3” / “6” (not write into NVM)

Other operations

- Write data into NVM - push the commander button “mute” and “0” sequentially
- Read data from NVM - push the commander button “7” and “0” sequentially
- Copy 50Hz data into 60Hz area - push the commander button “display” and “0” sequentially

SELF DIAGNOSIS MODE

How to enter Self Diagnosis Mode

- At stand-by, push the commander button “display”, “5”, “vol-” and “power” sequentially

How to exit Self Diagnosis Mode

- Push the commander button “other ON” or power (AC) OFF

Other operations

- Clear data and Write into NVM - push the commander button “8” and “0” sequentially

HOTEL TV MODE

How to enter Hotel TV Mode ON stage

- At stand-by, push the commander button “display”, “MUTE”, “vol +” and “power” sequentially
- The Hotel TV setup display, where the maximum level of the volume can be applied (=35 or above)
- Write data into NVM - push the commander button “mute” and “0” sequentially

How to enter Hotel TV Mode OFF stage

- At stand-by, push the commander button “display”, “MUTE”, “vol -” and “power” sequentially
- Write data into NVM - push the commander button “mute” and “0” sequentially

Modification Note

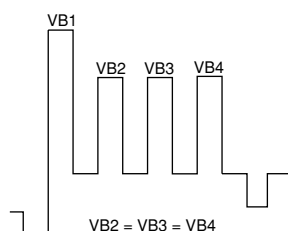
The item including the new addition is yellow.

1. The flag was added to bit 7 of OP1. This is the flag which chooses the volume curve used by HA (ME) model. (V2. IC)

4-3. PICTURE QUALITY ADJUSTMENT

SUB COLOR ADJUSTMENT

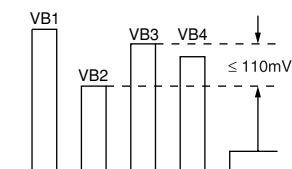
1. Select Video.
2. Input a PAL color-bar.
3. Set to the following condition:
PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
4. Connect an oscilloscope to pin ① (B OUT) of CN300, A board.
5. Set to Service Mode and select 13 'SC1' with [1] and [4] of the commander then adjust to VB2=VB3=VB4 with [3] and [6].
6. Press [MUTING] → [0] of the commander to write the data.
7. Adjust 13 'SC1' as step 2 to 5 when receiving NTSC color-bar.



VB2 = VB3 = VB4 (Difference is within 70mV)

SUB HUE ADJUSTMENT

1. Select Video.
2. Input a NTSC 3.58, color-bar into Video/TV mode.
3. Set the following condition:
PICTURE 100%, BRIGHTNESS 50%, COLOR 50%
4. Connect an oscilloscope to pin ① (B OUT) of CN300, A board.
5. Select 11"SHU" with [1] and [4] of the commander by setting to Service Mode and adjust to VB1=VB2=VB3=VB4 with [3] and [6].



VB1 = VB2 = VB3 = VB4

The highest level of VB1,VB2,VB3,VB4 must be aligned at the same line. Ideal difference level between VB2 and VB3 should be within $\pm 110\text{mV}$.

6. Press [MUTING] → [0] of the commander to write the data.
7. Select TV channel with NTSC 3.58 and repeat 3 to 5.
8. Press [MUTING] → [0] of the commander to write the data.
9. Single system model with NTSC 4.43, select TV channel with NTSC 4.43 and repeat 3 to 5.

4-4. DEFLECTION ADJUSTMENT

NORMAL MODE (50Hz)

1. Set to Service mode.
2. Input PAL color bar.
3. Using the [1] and [4] button, select category GEO (Service Mode).
4. Raise/lower the data using the [3] and [6] buttons.
Select and adjust the following items to obtain optimum image.

Service Item

GEO : 00	HPS	H POSITION
01	HSZ	H SIZE
02	PAP	PIN AMPLITUDE
03	CPN	CORNER PIN
04	TLT	TILT
05	VSL	V SLOPE
06	VAP	VERTICAL AMPLITUDE
07	SCO	S CORRECTION
08	VPS	V SHIFT

NORMAL MODE (60Hz)

5. Input 525/60Hz signal.
6. Using the [1] and [4] buttons select category GEO (Service Mode).
7. Select and adjust the following items to obtain optimum image.

Raise/lower the data with the [3] and [6] buttons.

Service Item

GEO : 00	HPS	H POSITION
01	HSZ	H SIZE
02	PAP	PIN AMPLITUDE
03	CPN	CORNER PIN
04	TLT	TILT
05	VSL	V SLOPE
06	VAP	VERTICAL AMPLITUDE
07	SCO	S CORRECTION
08	VPS	V SHIFT

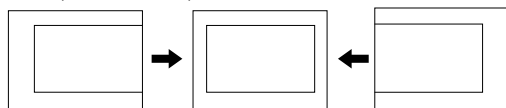
4-5. A BOARD ADJUSTMENT AFTER IC003 (MEMORY) REPLACEMENT

1. Enter to Service Mode.
2. Press commander buttons [5] and [0] (Data Initialize), and [2] and [0] (Data Copy) to initialize the data.
3. Call each item number and check if the respective screen shows the normal picture.
In cases where items are not well adjusted, rectify the fine adjustment.
Write the data per each item number ([MUTING] + [0]).
4. Select item numbers 4E 'OP1', 4F 'OP1', 50 'OP2' and respectively set the bit per model with command buttons [3] and [6].
5. Press commander buttons [8] and [0] (Test Normal) to return to the data that was set on the shipment from the factory. (This will also cancel Service Mode.)

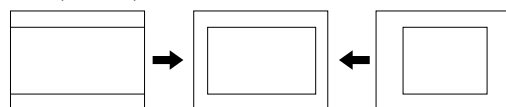
4-6. PICTURE DISTORTION ADJUSTMENT

Item Number 00 – 08

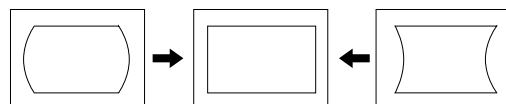
00 HPS (H POSITION)



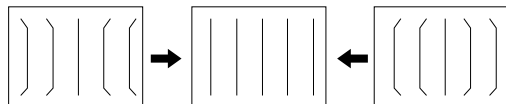
01 HSZ (H SIZE)



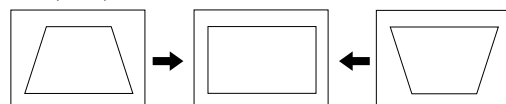
02 PAP (PIN AMPLITUDE)



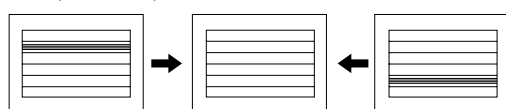
03 CPN (CORNER PIN)



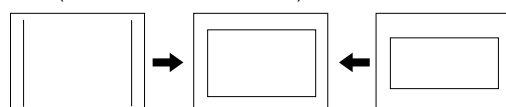
04 TLT (TILT)



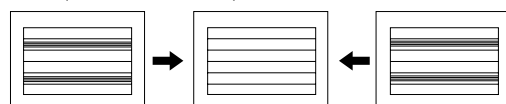
05 VSL (V SLOPE)



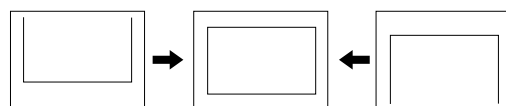
06 VAP (VERTICAL AMPLITUDE)



07 SCO (S CORRECTION)

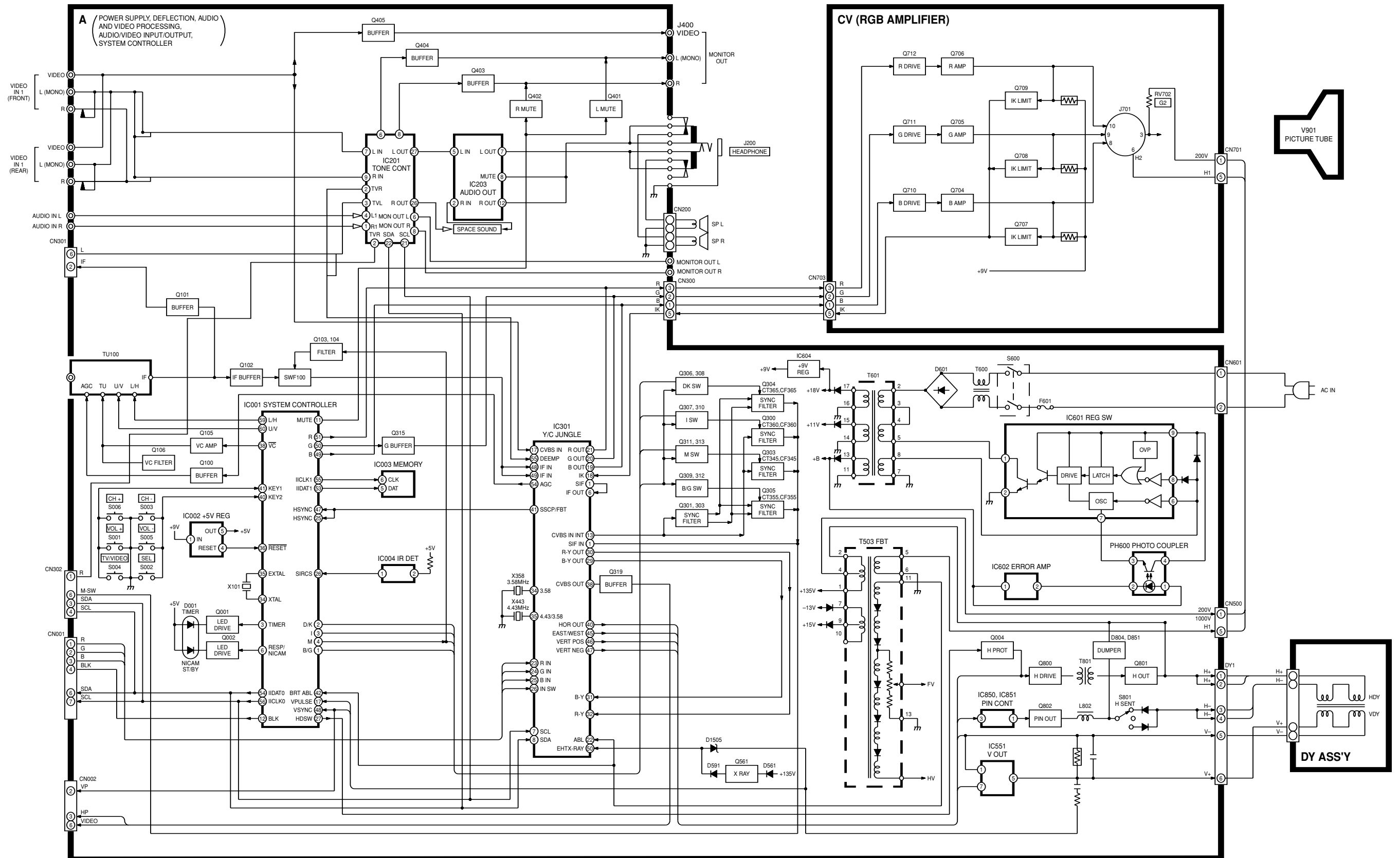


08 VPS (V SHIFT)

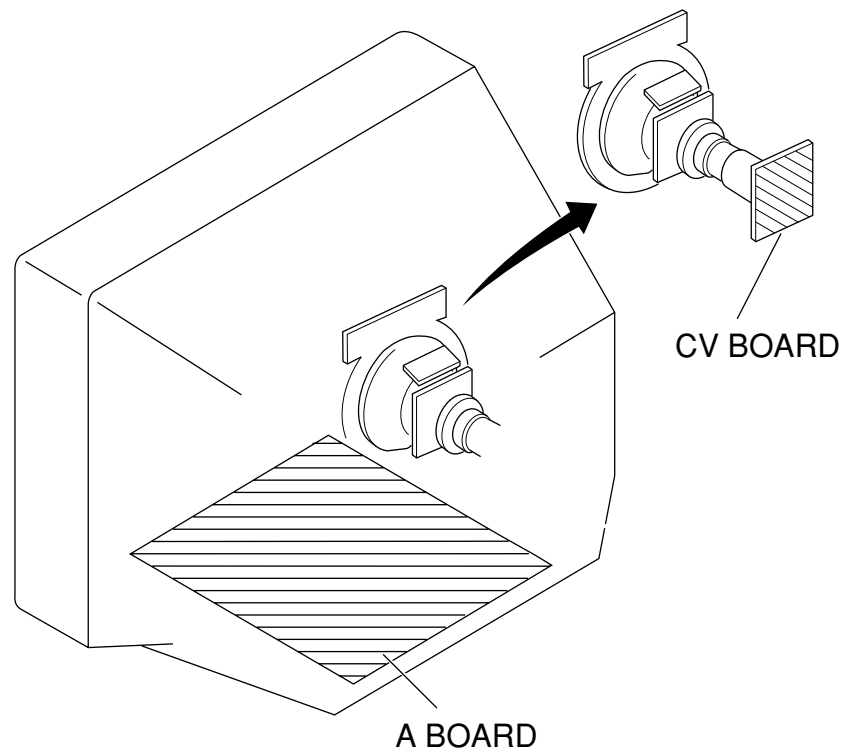


SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM



5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAM

Note:

- All capacitors are in μF unless otherwise noted.
- All electrolytic capacitors are rated at 50V unless otherwise noted.
- All resistors are in ohms.
 $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$
- Indication of resistance which does not have rating electrical power is as follows.

Pitch: 5 mm
Rating electrical power 1/4W (CHIP: 1/10W)

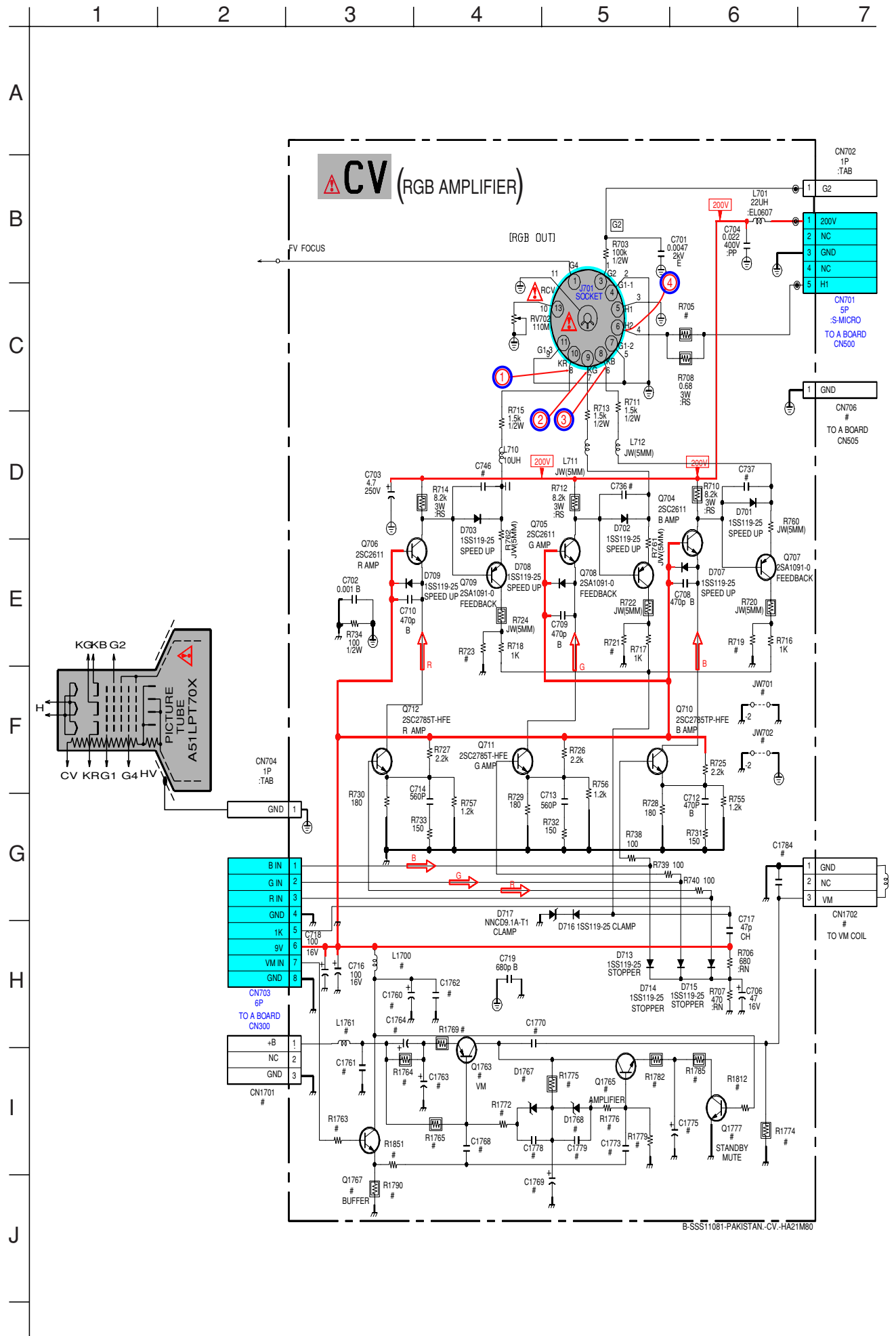
-  : nonflammable resistor.
- Δ : internal component.
-  : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B unless otherwise noted.
- **Readings are taken with a color-bar signal input.**
no mark : Common
() : PAL
[] : NTSC 3.58
- **Readings are taken with a 10 $\text{M}\Omega$ digital multimeter.**
- **Voltage are dc with respect to ground unless otherwise noted.**
- **Voltage variations may be noted due to normal production tolerances.**
- **All voltage are in Volt.**
- * : Cannot be measured.
- **Circled numbers are waveform references.**
-  : B +bus.
-  : B -bus.
-  : signal path.

Reference information

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

Note: The component identified by shading and mark Δ are critical for safety. Replace only with part number specified.

(2) CV Board Schematic Diagram



5-4. VOLTAGE MEASUREMENT

A BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]
IC001	1	(4.6) [0]		4	11		9	6.6
	2	0		5	4.9		10	0
	3	0		6	0		11	3.3
	4	(0) [4.5]		7	0		12	8.2
	5	4.8	IC003	1	0		13	(3.8) [4.6]
	6	(0) [4.9]		2	0		14	0
	7	0		3	0		15	3.1
	8	0		4	0		16	(0.2) [0.5]
	9	4.9		5	4.9		17	(3.3) [3.9]
	10	4.6		6	4.9		18	6.7
	11	0		7	0		19	(2.8) [3.1]
	12	0		8	4.9		20	(2.7) [2.9]
	13	0	IC004	1	4.7		21	(2.8) [3]
	14	4.7		2	3.6		22	3.3
	15	4.9		3	0		23	3.4
	16	0	IC101	I	9		24	3.4
	17	4.7		G	0		25	3.4
	18	0		O	0		26	0
	19	(0.9) [1.8]	IC201	1	4.5		27	(2.7) [2.9]
	20	0		2	4.5		28	(2.7) [2.9]
	21	4.9		3	4.5		29	2.3
	22	0		4	4.5		30	2.4
	23	(0) [4.9]		5	4.5		31	2.3
	24	(4.9) [0]		6	4.5		32	2.4
	25	0.4		7	4.5		33	0.3
	26	3.6		8	4.5		34	2.4
	27	0		9	4.5		35	2.4
	28	(0.8) [1.6]		10	4.5		36	(4.8) [4.3]
	29	4.9		11	4.5		37	8.2
	30	4.7		12	4.5		38	2.5
	31	4.9		13	4.5		39	4.9
	32	0		14	4.5		40	1.5
	33	4.9		15	4.5		41	0.64
	34	2.3		16	4.5		42	3.1
	35	2.1		17	4.5		43	3.9
	36	4.9		18	4.5		44	0
	37	0		19	4.5		45	4.1
	38	(2) [4.8]		20	0		46	1.3
	39	(0.3) [1]		21	4.6		47	1.4
	40	4.9		22	4.6		48	4.6
	41	4.9		23	4.5		49	4.6
	42	(3.4) [3]		24	9		50	1.6
	43	(0.9) [1.6]		25	0		51	3.7
	44	4.9		26	0		52	3.8
	45	(4.9) [2.6]		27	3.8		53	(4.6) [1.2]
	46	4.9		28	4.5		54	(4.2) [8.2]
	47	0.4	IC203	1	0		55	2.9
	48	4.7		2	0	IC402	56	(3.2) [4.1]
	49	0		3	20.3		1	5.5
	50	0		4	0		2	2.5
	51	0		5	0		3	2.5
	52	0		6	0		4	0
	53	4.9		7	(*) [9.8]		5	(9) [2.5]
	54	4.5		8	0.4		6	(5.5) [2.5]
	55	4.9		9	0		7	(2.5) [5.5]
	56	4.5		10	21	IC520	8	(2.4) [9]
	57	3.6		11	9.7		1	9.4
	58	(0) [0.3]		12	9.7		2	5.8
	59	8.9	IC301	1	(0.9) [1.1]		3	5.8
	60	(0.1) [8.9]		2	3.7		4	0
	61	0		3	0		5	2.2
	62	0		4	0		6	2.2
	63	4.9		5	0		7	2.2
	64	4.9		6	(2.4) [3.6]		8	11.6
				7	(2.9) [4.4]			
				8	4.5			
IC002	1	0						
	2	4.9						
	3	4.8						

A BOARD VOLTAGE LIST

Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]	Ref	Pin No	Voltage[v]
IC551	1	0.5	Q201	B	5.6	Q316	B	0
	2	13.6		C	9		C	4.9
	3	-12		E	6.2		E	0
	4	-13	Q202	B	(6) [3.3]	Q317	B	0
	5	0.2		C	(0) [1.3]		C	9
	6	13.7		E	(13) [13.4]		E	0
	7	0.5	Q203	B	(5.5) [5.2]	Q318	B	2.6
IC601	1	*		C	13		C	6.2
	2	*		E	(6.1) [5.8]		E	3.2
	3	(*) [159]	Q204	B	21.4	Q319	B	3.8
	4	(*) [7]		C	21.4		C	(8.2) [0.2]
	5	(*) [2]		E	20.7		E	4.4
IC602	1	(*) [118]	Q205	B	0	Q320	B	0
	2	(*) [135]		C	0		C	(3.3) [5.4]
	3	0		E	(4.7) [0.7]		E	0
IC604	1	(11) [11.6]	Q208	B	1.3	Q400	B	11.4
	2	9		C	1.4		C	(1) [4.4]
	3	0		E	4.8		E	11.6
	4	4.7	Q300	B	(3.1) [0.2]	Q401	B	0
IC850	1	2.1		C	0		C	(0.1) [0]
	2	0.7		E	0		E	(0.1) [0.2]
	3	1.5	Q301	B	(3.2) [4.1]	Q402	B	0
	4	0		C	0		C	(0.1) [0]
	5	2.5		E	(2.4) [4.8]		E	(0.1) [0.2]
	6	2.1	Q302	B	(0) [4.1]	Q403	B	5.2
	7	5.8		C	0		C	0
	8	9		E	(3.8) [3.6]		E	4.5
IC851	1	(2.3) [2.7]	Q303	B	(2.4) [4.8]	Q404	B	5.2
	2	3.2		C	(7.8) [4.8]		C	0
	3	3.2		E	(3.0) [5.5]		E	4.5
	4	(0) [0.1]	Q304	B	(3.0) [5.8]	Q405	B	5.1
	5	(0) [2.8]		C	(2.4) [4.8]		C	0
	6	(2.6) [2.8]		E	(0) [9]		E	(4.4) [4.5]
	7	3.7	Q305	B	(2.9) [5.8]	Q406	B	1.8
	8	9		C	(2.3) [4.8]		C	4.2
Q001	B	0		E	(2.3) [9]		E	2.5
	C	4.9	Q306	B	9	Q407	B	3.5
	E	0		C	9		C	9
Q002	B	0		E	(2.9) [4.3]		E	4.2
	C	4.9	Q307	B	9	Q500	B	(*) [133.7]
	E	0		C	9		C	0
Q003	B	0		E	(2.9) [4.4]		E	(*) [133.6]
	C	4.9	Q308	B	0	Q520	B	0.6
	E	0		C	9		C	0
Q004	B	0.1		E	0		E	0
	C	4.9	Q309	B	(2.3) [9]	Q800	B	0
	E	0.1		C	9		C	(*) [30]
Q005	B	0		E	(2.9) [0.1]		E	0
	C	4.7	Q310	B	0	Q801	B	(0.1) [0]
	E	(0) [0.2]		C	9		C	(*) [99]
Q100	B	(3.6) [7.4]		E	0		E	(*) [0]
	C	9	Q311	B	(9) [3.5]	Q802	D	(5.6) [10]
	E	(4.2) [8.1]		C	9		G	(8) [5.5]
Q102	B	3.1		E	(2.9) [4.4]		S	0
	C	2.4	Q312	B	0	Q850	B	5.6
	E	9		C	(0) [9]		C	9
Q103	B	0		E	(3.8) [0]		E	5.9
	C	3.2	Q313	B	0	Q851	B	5.6
	E	0		C	(8.9) [0]		C	0
Q104	B	0		E	(0) [3.3]		E	5.7
	C	(0) [5.5]	Q314	B	0	Q922	B	2
	E	3.2		C	0		C	5.3
Q105	B	0		E	4		E	2.7
	C	(9) [0]	Q315	B	2.7	Q923	B	(1.4) [1.9]
	E	(0.3) [0.6]		C	9		C	(2.5) [9]
Q106	B	0		E	0		E	(2.1) [2.4]
	C	3.8						
	E	0.6						

A BOARD VOLTAGE LIST

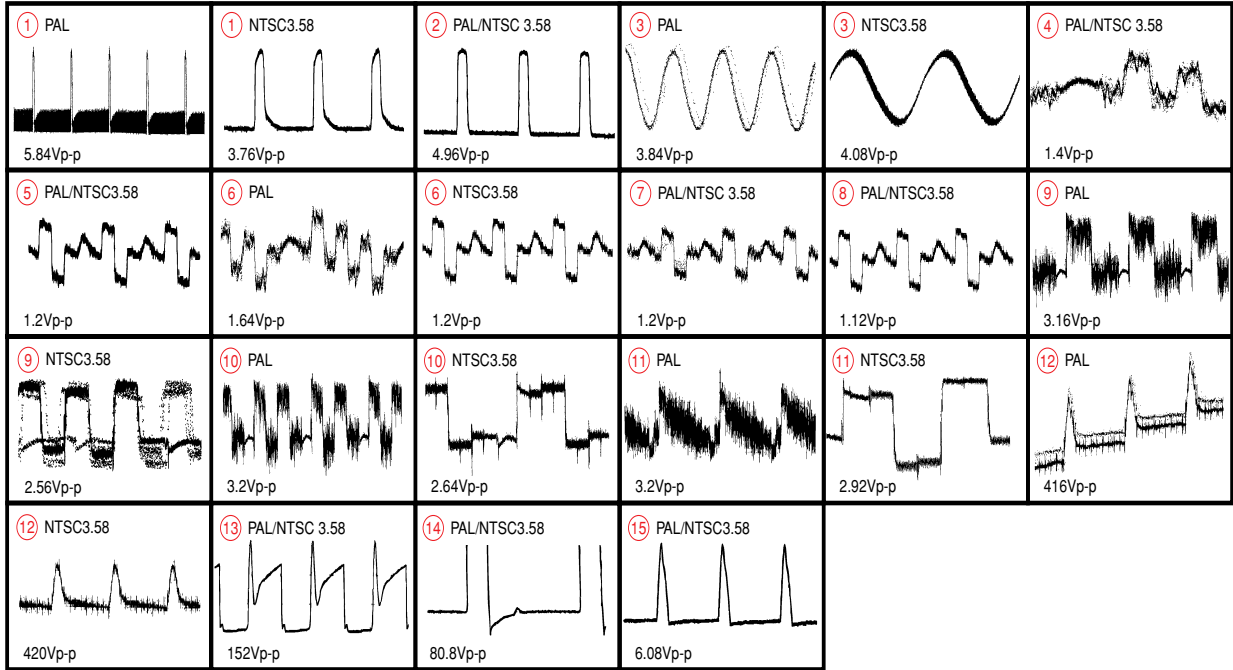
Ref	Pin No.	Voltage[v]
Q924	B	(5.5) [0]
	C	9
	E	(6.1) [8.5]
Q956	B	0
	C	0
	E	0.6
Q961	B	(1.9)[1.4]
	C	(9) [2.4]
	E	(2.5)[2.1]
Q962	B	8.3
	C	3.2
	E	7.7
Q964	B	0.9
	C	6.6
	E	1.5
Q966	B	1.0
	C	6.1
	E	1.6

CV BOARD VOLTAGE LIST

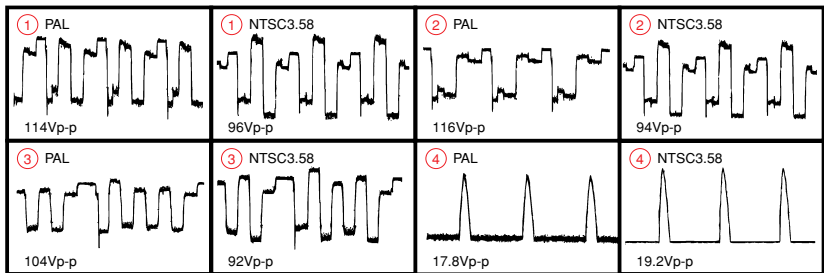
Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]	Ref	Pin No.	Voltage[v]
J701	KR	(110)[102]	Q707	B	(105.6)[96]	Q712	B	2.8
	KG	(112)[104]		C	(7.8)[8.2]		C	8.4
	KB	(103)[96]		E	(102.5)[95]		E	2.1
	H2	(0.1)[0]	Q708	B	(112)[104]	Q1763	B	133.9
	G2	218		C	8		C	68.9
Q704	B	(8.7)[9]		E	(109)[102]		E	134.5
	C	(105.8)[96]	Q709	B	(111)[102]	Q1765	B	0.9
	E	(8.1)[8.4]		C	(8.1)[8.3]		C	68.9
Q705	B	9		E	(108)[100]		E	0.3
	C	(112)[104]	Q710	B	2.9	Q1767	B	5.5
	E	8.3		C	8.4		C	9
Q706	B	9		E	(2.2)[2.4]		E	4.8
	C	(111)[103]	Q711	B	(2.7)[2.9]	Q1777	B	0.7
	E	8.4		C	8.4		C	0
				E	(2.1)[2.3]		E	0

5-5. WAVEFORMS

A BOARD WAVEFORM



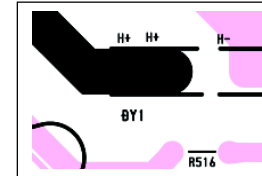
CV BOARD WAVEFORM



5-6. PRINTED WIRING BOARDS AND PARTS LOCATION

PRINTED WIRING BOARDS

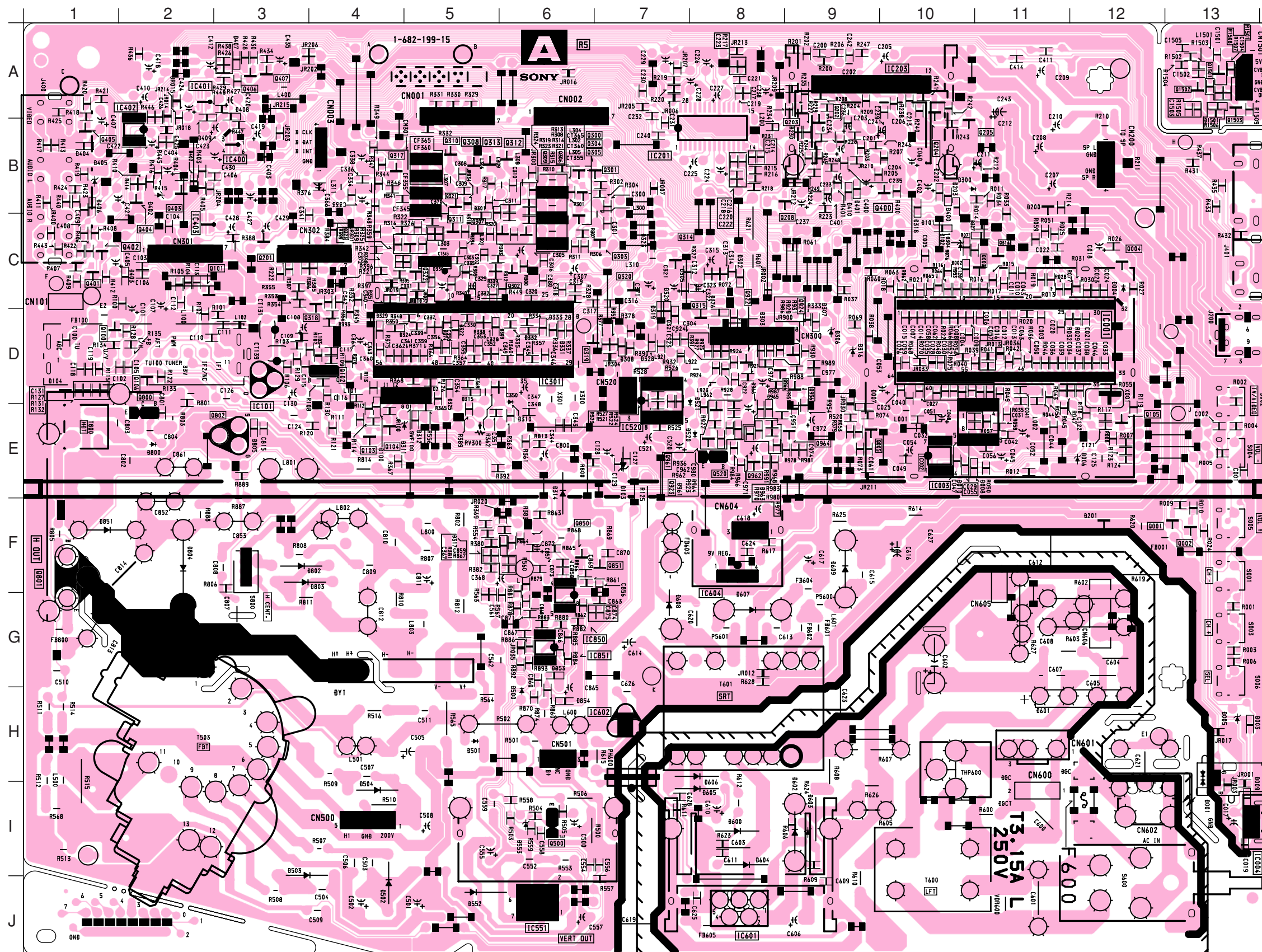
A [POWER SUPPLY, DEFLECTION,
AUDIO AND VIDEO PROCESSING,
AUDIO/VIDEO INPUT/OUTPUT AND SYSTEM CONTROLLER]



NOTE:

The circuit indicated at left contains high voltage of over 1220 Vp-p. Please pay attention when inspecting or repairing it to prevent an electric shock.

- A Board -

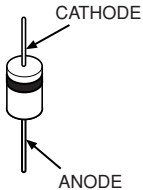
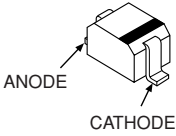
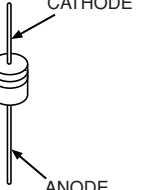
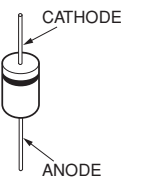
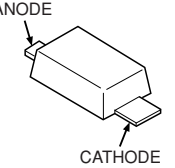
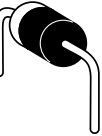


A BOARD

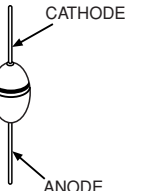
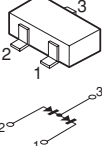
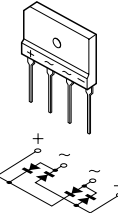
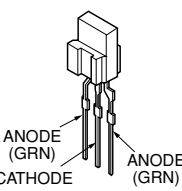
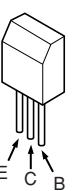
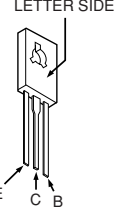
IC		DIODE	
IC001	D-12	D001	I-13
IC002	E-10	D002	C-10
IC003	E-10	D003	H-13
IC004	I-13	D004	C-12
IC101	D-3	D005	I-13
IC201	B-7	D006	E-12
IC203	A-10	D007	D-9
IC301	D-6	D008	E-11
IC400	B-3	D009	I-13
IC401	A-2	D010	E-10
IC402	A-2	D100	E-4
IC403	C-2	D101	C-10
IC520	E-7	D102	C-10
IC551	J-6	D103	E-7
IC601	J-8	D104	D-1
IC602	H-7	D200	B-11
IC604	G-8	D201	F-12
IC850	G-6	D202	B-10
IC851	G-6	D203	B-10
PH600	H-7	D300	B-10
TRANSISTOR		DIODE	
Q001	F-12	D301	B-5
Q002	F-13	D302	C-8
Q003	C-11	D303	D-8
Q004	C-12	D304	C-10
Q005	E-10	D305	C-7
Q100	D-1	D306	D-9
Q101	C-3	D307	D-9
Q102	D-4	D308	D-7
Q103	E-4	D309	D-6
Q104	E-4	D310	E-6
Q105	E-12	D311	E-5
Q106	D-2	D312	E-6
Q201	C-3	D313	D-5
Q202	A-9	D314	D-9
Q203	B-9	D315	D-5
Q204	B-10	D316	D-9
Q205	B-11	D317	F-5
Q208	C-9	D318	C-10
Q300	B-7	D319	D-7
Q301	B-7	D320	C-7
Q302	C-6	D321	D-7
Q303	C-7	D322	D-5
Q304	B-7	D323	C-7
Q305	B-7	D324	D-4
Q306	B-6	D325	D-5
Q307	C-5		
Q308	B-5		
Q309	B-6		
Q310	B-5		
Q311	C-5		
Q312	B-6		
Q313	B-5		
Q314	C-7		
Q315	C-8		
Q316	C-11		
Q317	B-4		
Q318	D-4		
Q319	D-6		
Q320	C-7		
Q321	B-5		
Q400	B-10		

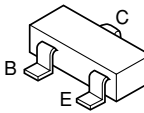
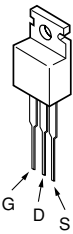
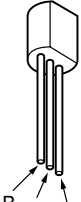
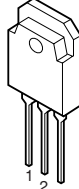
5-7. SEMICONDUCTORS

DIODE

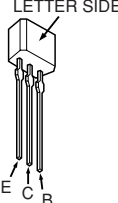
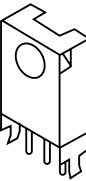
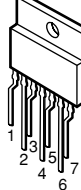
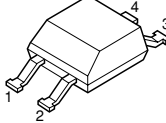
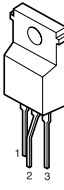
					
D1NL20U D3S6M-F RU4AM-T3 S3L20UF4	MA113-TX UDZSTE-175.1B UDZSTE-179.1B UDZSTE-175.6B 1SS355TE-17	EGOICVI ISS119-25 RD2.2ES-B2 RD15ES-B1 RD5.6ESB2	EGP20G ELIZ GP08D NNCD8.2A-TI NNCD9.1A-TI	MA8024 ISS356-TW11	RN4Z

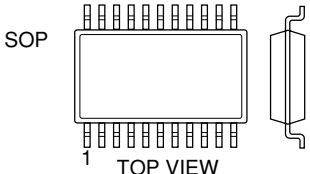
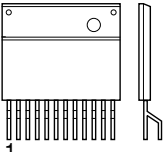
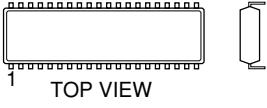
LED TRANSISTOR

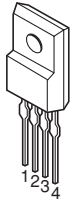
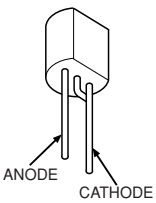
					
BY228	DA204K	D3SB60F3	SPB-25MVWF	2SC3209LK	2SC2611

					
DTC144EKA MSD601-RT1 MSB709-RT1 UN2211 UN2213 UN2216	2SA1162-G	2SA1091-0	IRF614-005	2SC3779C	2SD2624-CA

IC

					
2SC2785-HFE	2SK208GR-TE85L	SBX3081	AN5522	PC123F2	SE135N

SOP  TOP VIEW Small Outline L-Leaded Pin 8~98	MARKING SIDE VIEW  Zig-zag In -line Package Pin 6~99	DIP  TOP VIEW Dual In-line Package Pin 6~98
MM1319AFBE (7 PIN) NJM2903M (8 PIN)	STR-F6706A TDA8844	M24C08-BN6 (A)(8 PIN) CXP85224A-080S (64 PIN) NJM4556AD (8 PIN) TDA7438D013TR (28 PIN)

	
PQO9RD11	UPC574J

SECTION 6 EXPLODED VIEWS

NOTE:

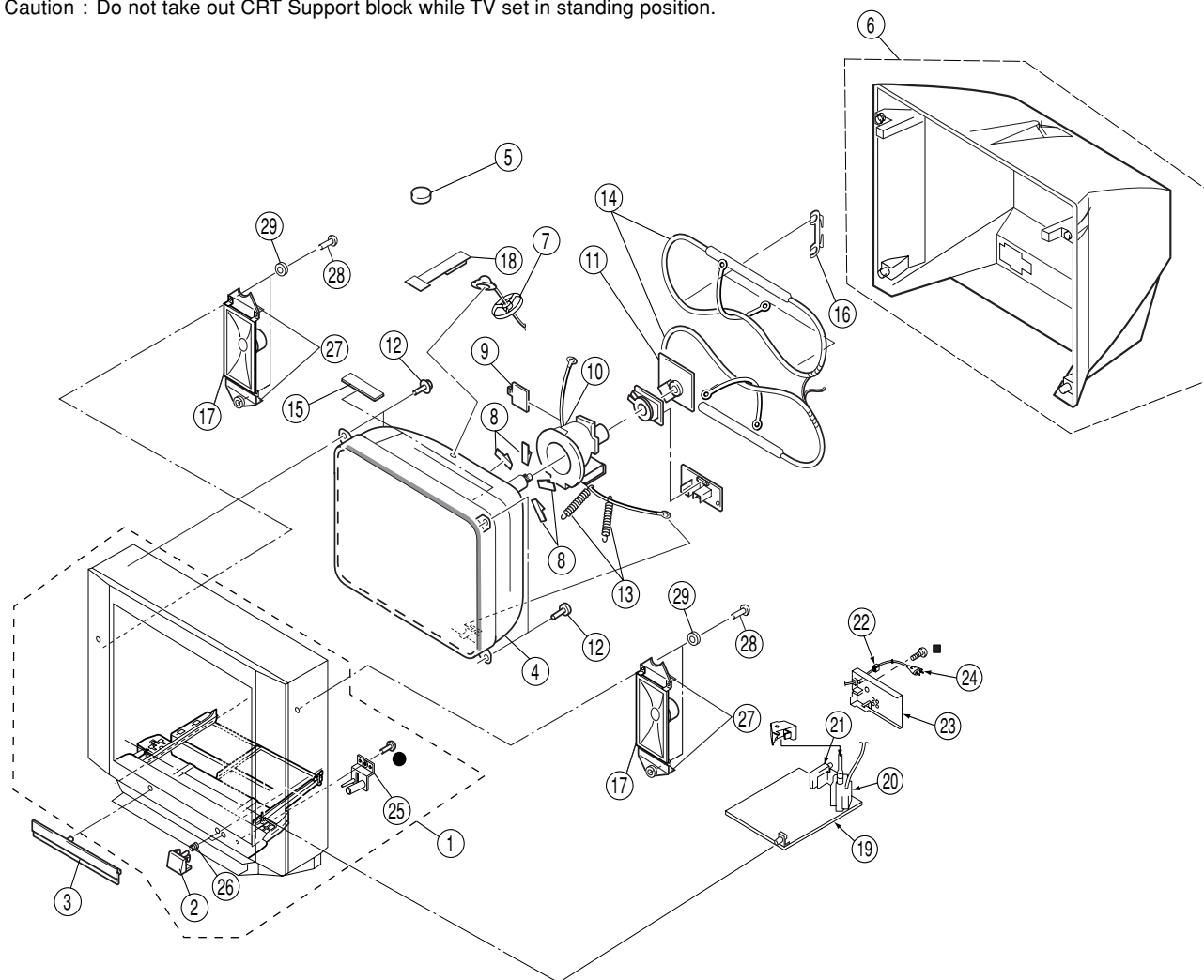
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine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

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

6-1. PICTURE TUBE AND CHASSIS

- : 7-685-646-79 SCREW +BVTP 3 × 8
- : 7-685-663-71 SCREW +BVTP 4 × 16

Caution : Do not take out CRT Support block while TV set in standing position.



REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4039-609-1	BEZNET ASSY	2, 25, 26
2	4-083-943-01	BUTTON POWER	
3	X-4039-851-1	DOOR ASSY, CONTROL	
4	Δ 8-738-809-05	PICTURE TUBE (A51LPT70X)	
5	1-452-032-00	MAGNET, DISC	
6	X-4039-650-2	COVER ASSY, REAR (■ 10 SCREWS)	
7	* 3-704-372-11	HOLDER HV CABLE	
8	4-046-600-11	SPACER DY	
9	4-057-714-01	PIECE TLH CONVERGENCE	
10	Δ 8-451-505-11	DEFLECTION YOKE (Y21RSA-S)	
11	CV BOARD MOUNTED (NOT STOCKED)		
12	4-057-862-01	SCREW TAPPING 5 + CROWN WASHER	
13	4-078-765-01	SPRING EXTENSION	
14	Δ 1-416-479-41	COIL DEGAUSSING	
15	* 4-069-652-02	CUSHION (HS BAND)	

REF. NO.	PART NO.	DESCRIPTION	REMARK
16	4-064-883-03	HOLDER DGC	
17	1-825-039-11	SPEAKER (15 X 6.5 CM)	
18	4-051-736-42	PIECE A (90) CONV CORRECT	
19	A BOARD COMPLETE (NOT STOCKED)		
20	Δ 1-453-329-21	TRANSFORMER ASSY FLY BACK (NX-4751//M3A4)	
21	8-598-591-10	TUNER, VSS BT-AG402	
22	4-022-115-00	HOLDER AC CORD	
23	* 4-083-951-01	BRACKET TERMINAL	
24	Δ 1-823-479-11	CORD AC POWER (WITH CONNECTOR)	
25	* 4-083-944-01	BAR OPTICAL	
26	4-036-405-11	SPRING COMPRESSION	
27	* 4-046-981-03	BRACKET SPEAKER	
28	4-302-404-03	SCREW (WASHER HEAD) (+P 4X16)	
29	4-374-745-21	CUSHION (A)	



SECTION 7 ELECTRICAL PARTS LIST

NOTE:

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

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

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

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

• All resistors are in ohms
• F : nonflammable

CAPACITORS

• MF : μ F, PF : μ μ F

COILS

• MMH : mH, UH : μ H

REF NO.	PART NO.	DESCRIPTION	REMARK		
A BOARD COMPLETE (NOT STOCKED)					

	1-533-223-11	FUSE HOLDER			
*	4-055-304-01	HOLDER, LED			
	4-082-405-01	HOLDER, FBT			
	4-382-854-01	SCREW (M3X8), P, SW (+)			
	4-382-854-11	SCREW (M3X10), P, SW (+)			
	7-685-648-79	SCREW +BVTP	3X12 TYPE2 IT-3		
<CAPACITOR>					
C001	1-163-005-51	CERAMIC CHIP	470PF	10%	50V
C002	1-163-005-51	CERAMIC CHIP	470PF	10%	50V
C004	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C005	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C006	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C007	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C009	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C010	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C011	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C012	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C013	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C014	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C015	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C016	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C017	1-126-947-11	ELECT	47UF	20.00%	16V
C018	1-126-961-11	ELECT	2.2UF	20.00%	50V
C019	8-719-069-55	DIODE UDZSTE-175.6B			
C020	1-163-005-51	CERAMIC CHIP	470PF	10%	50V
C021	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C022	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C023	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C024	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C025	1-164-505-51	CERAMIC CHIP	2.2UF	10%	16V
C026	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C027	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C028	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C029	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C030	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C031	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C032	1-163-011-91	CERAMIC CHIP	1500PF	10%	50V
C033	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C034	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C035	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C036	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C037	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C038	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C039	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C041	1-163-245-11	CERAMIC CHIP	56PF	5.00%	50V
C042	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C043	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V

REF NO.	PART NO.	DESCRIPTION	REMARK		
C044	1-163-245-11	CERAMIC CHIP	56PF	5.00%	50V
C045	1-126-962-11	ELECT	3.3UF	20.00%	50V
C046	1-163-033-51	CERAMIC CHIP	0.022UF		50V
C047	1-164-005-51	CERAMIC CHIP	470000PF	10%	25V
C048	1-126-965-91	ELECT	22UF	20.00%	50V
C049	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C050	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C051	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C052	1-126-935-11	ELECT	470UF	20.00%	10V
C053	1-126-935-11	ELECT	470UF	20.00%	10V
C054	1-104-666-11	ELECT	220UF	20.00%	25V
C055	1-163-001-51	CERAMIC CHIP	220PF	10%	50V
C056	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C057	1-163-001-51	CERAMIC CHIP	220PF	10%	50V
C058	1-163-001-51	CERAMIC CHIP	220PF	10%	50V
C061	1-164-161-11	CERAMIC CHIP	0.0022UF	10.00%	50V
C063	1-163-243-11	CERAMIC CHIP	47PF	5.00%	50V
C100	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C101	1-126-964-11	ELECT	10UF	20.00%	50V
C102	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C103	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C104	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C105	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C106	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C107	1-126-935-11	ELECT	470UF	20.00%	16V
C108	1-126-767-11	ELECT	1000UF	20.00%	16V
C109	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C111	1-164-232-11	CERAMIC CHIP	0.01UF	10.00%	50V
C115	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C116	1-163-017-00	CERAMIC CHIP	0.0047UF	10.00%	50V
C117	1-163-245-11	CERAMIC CHIP	56PF	5.00%	50V
C121	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C122	1-163-227-51	CERAMIC CHIP	10PF	0.50PF	50V
C124	1-130-493-00	MYLAR	0.068UF	5.00%	50V
C125	1-130-495-00	MYLAR	0.1UF	5.00%	50V
C126	1-130-493-00	MYLAR	0.068UF	5.00%	50V
C127	1-163-251-11	CERAMIC CHIP	100PF	5.00%	50V
C128	1-126-965-91	ELECT	22UF	20.00%	50V
C129	1-164-232-11	CERAMIC CHIP	0.01UF	10.00%	50V
C131	1-164-161-11	CERAMIC CHIP	0.0022UF	10.00%	50V
C200	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C201	1-163-037-11	CERAMIC CHIP	0.022UF	10.00%	50V
C202	1-130-471-00	MYLAR	0.001UF	5.00%	50V
C203	1-126-961-11	ELECT	2.2UF	20.00%	50V
C204	1-130-471-00	MYLAR	0.001UF	5.00%	50V
C205	1-126-961-11	ELECT	2.2UF	20.00%	50V
C206	1-126-968-11	ELECT	100UF	20.00%	50V
C207	1-126-942-61	ELECT	1000UF	20.00%	25V
C208	1-128-551-11	ELECT	22UF	20.00%	25V
C209	1-126-942-61	ELECT	1000UF	20.00%	25V

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

A

REF NO.	PART NO.	DESCRIPTION	REMARK	REF NO.	PART NO.	DESCRIPTION	REMARK
C210	1-128-551-11	ELECT	22UF 20.00% 25V	C345	1-164-182-11	CERAMIC CHIP	3300PF 10% 50V
C211	1-126-959-11	ELECT	0.47UF 20.00% 50V	C346	1-163-038-00	CERAMIC CHIP	0.1UF 25V
C213	1-164-232-11	CERAMIC CHIP	0.01UF 10.00% 50V	C347	1-126-933-11	ELECT	100UF 20.00% 16V
C214	1-107-725-11	CERAMIC CHIP	0.1UF 10.00% 16V	C348	1-163-038-00	CERAMIC CHIP	0.1UF 25V
C215	1-107-725-11	CERAMIC CHIP	0.1UF 10.00% 16V	C349	1-164-346-51	CERAMIC CHIP	1UF 10% 16V
C216	1-107-725-11	CERAMIC CHIP	0.1UF 10.00% 16V	C352	1-164-161-11	CERAMIC CHIP	0.0022UF 10.00% 50V
C217	1-163-037-11	CERAMIC CHIP	0.022UF 10.00% 50V	C353	1-107-823-51	CERAMIC CHIP	470000PF 10% 16V
C218	1-107-725-11	CERAMIC CHIP	0.1UF 10.00% 16V	C354	1-163-017-00	CERAMIC CHIP	0.0047UF 10.00% 50V
C219	1-163-024-00	CERAMIC CHIP	0.018UF 10.00% 50V	C355	1-107-823-51	CERAMIC CHIP	470000PF 10% 16V
C220	1-163-037-11	CERAMIC CHIP	0.022UF 10.00% 50V	C356	1-164-232-11	CERAMIC CHIP	0.01UF 10.00% 50V
C221	1-163-017-00	CERAMIC CHIP	0.0047UF 10.00% 50V	C357	1-163-009-11	CERAMIC CHIP	0.001UF 10.00% 50V
C222	1-163-024-00	CERAMIC CHIP	0.018UF 10.00% 50V	C358	1-163-251-11	CERAMIC CHIP	100PF 5.00% 50V
C223	1-163-017-00	CERAMIC CHIP	0.0047UF 10.00% 50V	C359	1-163-038-00	CERAMIC CHIP	0.1UF 25V
C224	1-126-960-11	ELECT	1UF 20.00% 50V	C360	1-136-165-00	FILM	0.1UF 5.00% 50V
C225	1-126-960-11	ELECT	1UF 20.00% 50V	C361	1-164-505-51	CERAMIC CHIP	2.2UF 10% 16V
C226	1-126-963-11	ELECT	4.7UF 20.00% 50V	C362	1-164-005-51	CERAMIC CHIP	470000PF 10% 25V
C227	1-126-947-11	ELECT	47UF 20.00% 16V	C363	1-163-017-00	CERAMIC CHIP	0.0047UF 10.00% 50V
C228	1-126-960-11	ELECT	1UF 20.00% 50V	C364	1-126-964-11	ELECT	10UF 20.00% 50V
C229	1-126-959-11	ELECT	0.47UF 20.00% 50V	C366	1-126-933-11	ELECT	100UF 20.00% 16V
C230	1-164-505-51	CERAMIC CHIP	2.2UF 10% 16V	C369	1-137-194-81	FILM	0.47UF 5.00% 50V
C231	1-164-505-51	CERAMIC CHIP	2.2UF 10% 16V	C370	1-216-295-61	SHORT CHIP	0
C232	1-164-505-51	CERAMIC CHIP	2.2UF 10% 16V	C371	1-126-964-11	ELECT	10UF 20.00% 50V
C234	1-107-823-51	CERAMIC CHIP	470000PF 10% 16V	C400	1-126-934-11	ELECT	220UF 20.00% 16V
C236	1-130-491-00	MYLAR	0.047UF 5.00% 50V	C403	1-164-346-51	CERAMIC CHIP	1UF 10% 16V
C237	1-126-951-11	ELECT	470UF 20.00% 35V	C404	1-126-960-11	ELECT	1UF 20.00% 50V
C240	1-164-505-51	CERAMIC CHIP	2.2UF 10% 16V	C405	1-126-960-11	ELECT	1UF 20.00% 50V
C241	1-163-017-00	CERAMIC CHIP	0.0047UF 10.00% 50V	C406	1-164-346-51	CERAMIC CHIP	1UF 10% 16V
C242	1-163-017-00	CERAMIC CHIP	0.0047UF 10.00% 50V	C407	1-126-934-11	ELECT	220UF 20.00% 16V
C243	1-126-952-11	ELECT	1000UF 20.00% 35V	C408	1-163-038-00	CERAMIC CHIP	0.1UF 25V
C300	1-163-243-11	CERAMIC CHIP	47PF 5.00% 50V	C409	1-163-038-00	CERAMIC CHIP	0.1UF 25V
C301	1-163-237-51	CERAMIC CHIP	27PF 10% 50V	C410	1-126-933-11	ELECT	100UF 20.00% 16V
C302	1-163-243-11	CERAMIC CHIP	47PF 5.00% 50V	C411	1-163-038-00	CERAMIC CHIP	0.1UF 25V
C303	1-163-113-00	CERAMIC CHIP	68PF 10% 50V	C412	1-128-551-11	ELECT	22UF 20.00% 25V
C304	1-163-255-51	CERAMIC CHIP	150PF 10% 50V	C414	1-163-038-00	CERAMIC CHIP	0.1UF 25V
C305	1-126-933-11	ELECT	100UF 20.00% 16V	C418	1-126-933-11	ELECT	100UF 20.00% 16V
C306	1-163-017-00	CERAMIC CHIP	0.0047UF 10.00% 50V	C425	1-163-113-00	CERAMIC CHIP	68PF 10% 50V
C308	1-163-131-00	CERAMIC CHIP	390PF 10% 50V	C426	1-163-113-00	CERAMIC CHIP	68PF 10% 50V
C309	1-163-263-51	CERAMIC CHIP	330PF 10% 50V	C435	1-126-934-11	ELECT	220UF 20.00% 16V
C310	1-163-131-00	CERAMIC CHIP	390PF 10% 50V	C500	1-126-933-11	ELECT	100UF 20.00% 16V
C311	1-163-005-51	CERAMIC CHIP	470PF 10% 50V	C501	1-104-666-11	ELECT	220UF 20.00% 25V
C312	1-163-229-51	CERAMIC CHIP	12PF 10% 50V	C502	1-104-666-11	ELECT	220UF 20.00% 25V
C315	1-126-961-11	ELECT	2.2UF 20.00% 50V	C503	1-162-318-11	CERAMIC	0.001UF 10.00% 500V
C316	1-163-243-11	CERAMIC CHIP	47PF 5.00% 50V	C504	1-162-318-11	CERAMIC	0.001UF 10.00% 500V
C317	1-216-295-61	SHORT CHIP	0	C505	1-123-024-21	ELECT	33UF <160V
C318	1-163-038-00	CERAMIC CHIP	0.1UF 25V	C507	1-102-228-00	CERAMIC	470PF 10.00% 500V
C319	1-163-038-00	CERAMIC CHIP	0.1UF 25V	C508	1-107-654-11	ELECT	33UF 20.00% 250V
C320	1-163-038-00	CERAMIC CHIP	0.1UF 25V	C509	1-106-379-12	MYLAR	0.033UF 10.00% 200V
C321	1-126-963-11	ELECT	4.7UF 20.00% 50V	C510	1-137-150-11	MYLAR	0.01UF 10.00% 100V
C323	1-163-251-11	CERAMIC CHIP	100PF 5.00% 50V	C552	1-137-194-81	FILM	0.47UF 5.00% 50V
C327	1-163-038-00	CERAMIC CHIP	0.1UF 25V	C554	1-163-035-51	CERAMIC CHIP	0.047UF 50V
C328	1-164-222-91	CERAMIC CHIP	0.22UF 25V	C555	1-126-949-11	ELECT	220UF 20.00% 35V
C329	1-163-038-00	CERAMIC CHIP	0.1UF 25V	C556	1-163-038-00	CERAMIC CHIP	0.1UF 25V
C330	1-163-038-00	CERAMIC CHIP	0.1UF 25V	C557	1-126-948-11	ELECT	100UF 20.00% 35V
C332	1-126-933-11	ELECT	100UF 20.00% 16V	C558	1-163-009-11	CERAMIC CHIP	0.001UF 10.00% 50V
C335	1-126-947-11	ELECT	47UF 20.00% 16V	C559	1-106-220-00	MYLAR	0.1UF 10.00% 100V
C337	1-163-038-00	CERAMIC CHIP	0.1UF 25V	C561	1-163-017-00	CERAMIC CHIP	0.0047UF 10.00% 50V
C339	1-163-038-00	CERAMIC CHIP	0.1UF 25V	C562	1-106-220-00	MYLAR	0.1UF 10.00% 100V
C342	1-163-038-00	CERAMIC CHIP	0.1UF 25V	C600	1-161-830-00	CERAMIC	0.0047UF 99% 500V
C343	1-163-231-51	CERAMIC CHIP	15PF 10% 50V	C601	Δ 1-115-165-11	FILM	0.1UF 20.00% 275V
C344	1-163-231-51	CERAMIC CHIP	15PF 10% 50V	C602	1-117-752-11	ELECT(BLOCK)	330UF 20.00% 450V
				C603	1-117-623-11	FILM	1500PF 3.00% 1.2KV

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REF NO.	PART NO.	DESCRIPTION	REMARK		
C604	1-161-830-00	CERAMIC	0.0047UF	99%	500V
C605	1-161-830-00	CERAMIC	0.0047UF	99%	500V
C606	1-104-666-11	ELECT	220UF	20.00%	25V
C607	1-161-830-00	CERAMIC	0.0047UF	99%	500V
C608	1-161-830-00	CERAMIC	0.0047UF	99%	500V
C609	1-163-005-51	CERAMIC CHIP	470PF	10%	50V
C610	1-165-740-31	ELECT	150UF	20%	35V
C611	1-163-145-00	CERAMIC CHIP	0.0015UF	5.00%	50V
C612	Δ 1-119-886-51	CERAMIC	470PF	10.00%	250V
C613	1-102-228-00	CERAMIC	470PF	10.00%	500V
C614	1-123-024-21	ELECT	33UF		<160V
C615	1-102-228-00	CERAMIC	470PF	10.00%	500V
C617	1-126-942-61	ELECT	1000UF	20.00%	25V
C618	1-126-933-11	ELECT	100UF	20.00%	16V
C619	Δ 1-119-886-51	CERAMIC	470PF	10.00%	250V
C620	1-162-134-11	CERAMIC	470PF	10.00%	2KV
C621	Δ 1-117-703-51	CERAMIC	0.0047UF	99%	250V
C625	8-719-083-70	DIODE UDZSTE-1727B			
C626	1-106-383-00	MYLAR	0.047UF	10.00%	200V
C627	1-126-953-11	ELECT	2200UF	20.00%	35V
C628	1-163-005-51	CERAMIC CHIP	470PF	10%	50V
C800	1-126-960-11	ELECT	1UF	20.00%	50V
C801	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C802	1-106-375-12	MYLAR	0.022UF	99%	200V
C803	1-102-244-00	CERAMIC	220PF	10.00%	500V
C804	1-162-318-11	CERAMIC	0.001UF	10.00%	500V
C807	1-162-115-00	CERAMIC	330PF	10.00%	2KV
C808	1-106-365-00	MYLAR	0.0082UF	10.00%	200V
C809	1-107-364-11	MYLAR	0.01UF	10.00%	200V
C810	1-106-375-12	MYLAR	0.022UF	99%	200V
C811	1-107-957-11	ELECT	1UF	20.00%	250V
C812	1-117-665-11	FILM	0.33UF	5.00%	250V
C813	1-162-115-00	CERAMIC	330PF	10.00%	2KV
C814	1-117-646-11	FILM	12000PF	3.00%	1.2KV
C852	1-107-846-11	FILM	0.1UF	5.00%	250V
C856	1-163-009-11	CERAMIC CHIP	0.001UF	10.00%	50V
C857	1-126-964-11	ELECT	10UF	20.00%	50V
C858	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C859	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C860	1-208-834-11	METAL CHIP	150K	0.5%	1/10W
C861	1-130-202-00	FILM	0.022UF	5.00%	400V
C863	1-216-295-61	SHORT CHIP	0		
C865	1-126-933-11	ELECT	100UF	20.00%	16V
C866	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C867	1-164-161-11	CERAMIC CHIP	0.0022UF	10.00%	50V
C868	1-163-033-51	CERAMIC CHIP	0.022UF		50V
C869	1-115-339-51	CERAMIC CHIP	0.1UF	10.00%	50V
C870	1-163-001-51	CERAMIC CHIP	220PF	10%	50V
C872	1-163-038-00	CERAMIC CHIP	0.1UF		25V
C873	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C874	1-163-031-11	CERAMIC CHIP	0.01UF		50V
C875	1-163-038-00	CERAMIC CHIP	0.1UF		25V
<FILTER>					
CF345	1-234-684-21	FILTER, BAND PASS (F4.5C)			
CF355	1-234-686-21	FILTER, BAND PASS (F5.5C)			
CF360	1-234-689-21	FILTER, BAND PASS (F6.0C)			
CF365	1-234-691-21	FILTER, BAND PASS (F6.5C)			

REF NO.	PART NO.	DESCRIPTION	REMARK		
<CONNECTOR>					
CN003	* 1-508-797-00	PIN, CONNECTOR 4P			
CN200	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN300	* 1-564-509-11	PLUG, CONNECTOR 6P			
CN500	* 1-564-508-11	PLUG, CONNECTOR 5P			
CN600	* 1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P			
CN601	* 1-691-134-11	PIN, CONNECTOR (PC BOARD) 2P			
CN602	* 1-580-843-11	PIN, CONNECTOR (POWER)			
<TRIMMER>					
CT131	1-767-774-22	TRAP, CERAMIC			
CT139	1-767-775-22	TRAP, CERAMIC			
CT345	1-795-342-11	TRAP, CERAMIC (T4.5C)			
CT355	1-795-343-21	TRAP, CERAMIC (T55B)			
CT360	1-795-344-11	TRAP, CERAMIC (T60B)			
CT365	1-795-345-11	TRAP, CERAMIC (T65B)			
<DIODE>					
D001	8-719-083-18	DIODE SPB-25MVWF			
D004	8-719-911-19	1SS119-25			
D005	1-162-318-11	CERAMIC	0.001UF	10.00%	500V
D006	8-719-109-89	RD5.6ESB2			
D007	8-719-069-54	UDZSTE-175.1B			
D009	8-719-069-54	UDZSTE-175.1B			
D100	8-719-044-76	1SS356-TW11			
D103	8-759-157-40	UPC574J			
D104	8-719-914-42	DA204K			
D200	8-719-914-42	DA204K			
D202	8-719-988-61	1SS355TE-17			
D203	8-719-988-61	1SS355TE-17			
D301	8-719-041-97	MA113-(TX)			
D304	8-719-017-70	MA8024			
D305	8-719-988-61	1SS355TE-17			
D306	8-719-109-54	RD2.2ES-B2			
D307	8-719-988-61	1SS355TE-17			
D308	8-719-988-61	1SS355TE-17			
D309	8-719-069-60	UDZSTE-179.1B			
D310	8-719-911-19	1SS119-25			
D311	8-719-070-15	NNCD8.2A-T1			
D312	8-719-069-60	UDZSTE-179.1B			
D314	8-719-908-03	GP08D			
D315	8-719-988-61	1SS355TE-17			
D318	8-719-988-61	1SS355TE-17			
D319	8-719-988-61	1SS355TE-17			
D320	8-719-988-61	1SS355TE-17			
D321	8-719-988-61	1SS355TE-17			
D322	8-719-069-60	UDZSTE-179.1B			
D323	8-719-069-60	UDZSTE-179.1B			
D324	8-719-069-60	UDZSTE-179.1B			
D325	8-719-069-60	UDZSTE-179.1B			
D327	8-719-988-61	1SS355TE-17			
D331	8-719-069-60	UDZSTE-179.1B			
D332	8-719-069-60	UDZSTE-179.1B			
D333	8-719-069-60	UDZSTE-179.1B			
D400	8-719-988-61	1SS355TE-17			
D401	8-719-988-61	1SS355TE-17			
D402	8-719-070-16	NNCD9.1A-T1			
D403	8-719-069-60	UDZSTE-179.1B			

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REF NO.	PART NO.	DESCRIPTION	REMARK
D404	8-719-069-60	UDZSTE-179.1B	
D405	8-719-070-16	NNCD9.1A-T1	
D406	8-719-069-60	UDZSTE-179.1B	
D407	8-719-069-60	UDZSTE-179.1B	
D500	8-719-911-19	ISS119-25	
D501	8-719-911-19	ISS119-25	
D502	8-719-302-43	EL1Z	
D503	8-719-302-43	EL1Z	
D504	8-719-302-43	EL1Z	
D552	8-719-908-03	GP08D	
D553	8-719-109-89	RD5.6ESB2	
D600	8-719-030-33	DIODE EG01CV1	
D601	8-719-077-77	D3SB60F3	
D602	8-719-510-73	S3L20UF4	
D603	8-719-110-41	RD15ES-B2	
D604	8-719-063-70	D1NL20U	
D605	8-719-063-70	D1NL20U	
D606	8-719-063-70	D1NL20U	
D607	8-719-027-22	D3S6M-F	
D608	8-719-312-10	RU4AM-T3	
D609	8-719-067-18	RN4Z	
D800	8-719-911-19	ISS119-25	
D802	8-719-908-03	GP08D	
D803	8-719-908-03	GP08D	
D804	8-719-081-00	DIODE BY228/A52A/	
D805	8-719-069-60	UDZSTE-179.1B	
D851	8-719-979-85	EGP20G	
D853	8-719-988-61	ISS355TE-17	
D854	8-719-083-63	DIODE UDZSTE-1713B	
<CONNECTOR>			
DY1	* 1-580-798-11	CONNECTOR PIN (DY) 6P	
<FUSE>			
F600	$\triangle$ 1-576-016-11	FUSE	3.15A 250V 3.1
<FERRITE BEAD>			
FB001	1-410-397-21	FERRITE	1.1UH
FB100	1-410-396-71	FERRITE	0.45UH
FB603	1-412-911-31	FERRITE	0UH
FB604	1-410-397-21	FERRITE	1.1UH
FB800	1-410-397-21	FERRITE	1.1UH
<IC>			
IC001	8-752-925-65	IC CXP85224A-080S	
IC002	8-759-371-21	MM1319AFBE	
IC003	8-759-672-78	M24C08-BN6(A)	
IC004	8-742-225-20	IC SBX3081-21	
IC201	8-759-476-86	TDA7438D013TR	
IC203	6-700-034-01	IC AN5276	
IC301	6-700-146-01	IC TDA8844/N2	
IC402	8-759-649-89	IC MC4558CD	
IC551	8-759-835-98	IC AN5522	
IC601	8-749-019-42	IC STR-F6707A	
IC602	8-749-920-61	SE-135N	
IC604	8-759-459-99	PQ09RD11	
IC850	8-759-700-07	NJM2903M	
IC851	8-759-649-89	IC MC4558CD	

REF NO.	PART NO.	DESCRIPTION	REMARK
<JACK>			
J200	1-770-786-11	JACK	
J400	1-779-850-11	JACK BLOCK, PIN 6P	
J401	1-770-329-13	JACK, PIN 3P	
<CHIP CONDUCTOR>			
JR001	1-216-295-61	SHORT CHIP	0
JR003	1-216-295-61	SHORT CHIP	0
JR006	1-216-295-61	SHORT CHIP	0
JR013	1-216-295-61	SHORT CHIP	0
JR014	1-216-295-61	SHORT CHIP	0
JR015	1-216-295-61	SHORT CHIP	0
JR016	1-216-295-61	SHORT CHIP	0
JR018	1-216-295-61	SHORT CHIP	0
JR020	1-216-295-61	SHORT CHIP	0
JR034	1-216-295-61	SHORT CHIP	0
JR035	1-216-295-61	SHORT CHIP	0
JR036	1-216-295-61	SHORT CHIP	0
JR205	1-216-295-61	SHORT CHIP	0
JR210	1-216-295-61	SHORT CHIP	0
JR212	1-216-295-61	SHORT CHIP	0
JR214	1-216-295-61	SHORT CHIP	0
JR301	1-216-295-61	SHORT CHIP	0
JR304	1-216-295-61	SHORT CHIP	0
JR400	1-216-295-61	SHORT CHIP	0
<COIL>			
L001	1-414-855-31	INDUCTOR	1UH
L002	1-414-184-41	INDUCTOR	15UH
L100	1-414-856-11	INDUCTOR	10UH
L101	1-410-498-11	INDUCTOR	1.2UH
L102	1-410-985-42	INDUCTOR	0.22UH
L103	1-410-987-42	INDUCTOR	0.33UH
L200	1-249-401-11	CARBON	47 5% 1/4W
L300	1-410-512-11	INDUCTOR	18UH
L301	1-410-510-11	INDUCTOR	12UH
L302	1-410-508-11	INDUCTOR	8.2UH
L303	1-410-508-11	INDUCTOR	8.2UH
L304	1-410-510-11	INDUCTOR	12UH
L305	1-410-510-11	INDUCTOR	12UH
L306	1-410-500-11	INDUCTOR	1.8UH
L307	1-410-501-11	INDUCTOR	2.2UH
L308	1-410-501-11	INDUCTOR	2.2UH
L309	1-410-502-11	INDUCTOR	2.7UH
L310	1-408-608-31	INDUCTOR	27UH
L400	1-414-187-11	INDUCTOR	47UH
L500	1-408-947-00	INDUCTOR	2.2MH
L600	1-412-533-21	INDUCTOR	47UH
L601	1-414-487-41	INDUCTOR	1UH
L800	1-406-677-11	INDUCTOR	10MH
L802	1-424-796-11	COIL, HORIZONTAL LINEARITY	
L803	1-414-493-41	INDUCTOR	4.7MH
<PHOTO COUPLER>			
PH600	$\triangle$ 8-749-010-64	PC123F2	



REF NO.	PART NO.	DESCRIPTION	REMARK			
<IC LINK>						
PS600	1-533-597-41	IC LINK		5A		90V
PS601	1-533-597-41	IC LINK		5A		90V
<TRANSISTOR>						
Q001	8-729-421-19	UN2213				
Q002	8-729-421-19	UN2213				
Q003	8-729-010-25	MSD601-RT1				
Q004	8-729-010-25	MSD601-RT1				
Q005	8-729-421-19	UN2213				
Q100	8-729-010-25	MSD601-RT1				
Q102	8-729-022-54	TRANSISTOR 2SC3779C,D-AA				
Q103	8-729-424-67	UN2216				
Q104	8-729-424-67	UN2216				
Q105	8-729-010-25	MSD601-RT1				
Q106	8-729-010-25	MSD601-RT1				
Q201	8-729-010-25	MSD601-RT1				
Q202	8-729-036-56	2SK208-GR-TE85L				
Q203	8-729-010-25	MSD601-RT1				
Q204	8-729-216-22	2SA1162-G				
Q205	8-729-421-22	UN2211				
Q208	1-801-806-11	TR DTC144EKA				
Q300	8-729-010-05	MSB709-RT1				
Q301	8-729-010-05	MSB709-RT1				
Q302	8-729-010-05	MSB709-RT1				
Q303	8-729-010-25	MSD601-RT1				
Q304	8-729-010-05	MSB709-RT1				
Q305	8-729-010-05	MSB709-RT1				
Q306	8-729-010-25	MSD601-RT1				
Q307	8-729-010-25	MSD601-RT1				
Q308	8-729-424-67	UN2216				
Q309	8-729-010-25	MSD601-RT1				
Q310	8-729-424-67	UN2216				
Q311	8-729-010-25	MSD601-RT1				
Q312	8-729-424-67	UN2216				
Q313	8-729-424-67	UN2216				
Q314	8-729-421-22	UN2211				
Q315	8-729-010-25	MSD601-RT1				
Q318	8-729-010-25	MSD601-RT1				
Q320	8-729-421-22	UN2211				
Q400	8-729-010-05	MSB709-RT1				
Q401	8-729-424-67	UN2216				
Q402	8-729-424-67	UN2216				
Q403	8-729-010-05	MSB709-RT1				
Q404	8-729-010-05	MSB709-RT1				
Q405	8-729-010-05	MSB709-RT1				
Q406	8-729-010-25	MSD601-RT1				
Q407	8-729-010-25	MSD601-RT1				
Q500	8-729-200-17	2SA1091-O				
Q800	8-729-140-50	2SC3209LK				
Q801	8-729-055-74	TRANSISTOR 2SD2624-CA				
Q802	8-729-050-48	TRANSISTOR IRF614-005				
Q850	8-729-010-25	MSD601-RT1				
Q851	8-729-010-05	MSB709-RT1				
<RESISTOR>						
R001	1-216-071-61	RES-CHIP	8.2K	5%		1/10W
R002	1-216-071-61	RES-CHIP	8.2K	5%		1/10W
R003	1-216-059-61	RES-CHIP	2.7K	5%		1/10W

REF NO.	PART NO.	DESCRIPTION	REMARK		
R004	1-216-059-61	RES-CHIP	2.7K	5%	1/10W
R005	1-216-043-61	RES-CHIP	560	5%	1/10W
R006	1-216-043-61	RES-CHIP	560	5%	1/10W
R007	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R008	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R009	1-216-037-61	RES-CHIP	330	5%	1/10W
R010	1-216-037-61	RES-CHIP	330	5%	1/10W
R011	1-216-295-61	SHORT CHIP	0		
R012	1-216-049-61	RES-CHIP	1K	5%	1/10W
R013	1-216-021-61	RES-CHIP	68	5%	1/10W
R014	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R015	1-216-025-61	RES-CHIP	100	5%	1/10W
R016	1-216-037-61	RES-CHIP	330	5%	1/10W
R017	1-216-049-61	RES-CHIP	1K	5%	1/10W
R018	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R019	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R020	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R021	1-216-049-61	RES-CHIP	1K	5%	1/10W
R022	1-216-049-61	RES-CHIP	1K	5%	1/10W
R024	1-216-025-61	RES-CHIP	100	5%	1/10W
R025	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R026	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R027	1-216-101-61	RES-CHIP	150K	5%	1/10W
R028	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R029	1-216-025-61	RES-CHIP	100	5%	1/10W
R031	1-216-025-61	RES-CHIP	100	5%	1/10W
R032	1-216-049-61	RES-CHIP	1K	5%	1/10W
R033	1-216-073-61	RES-CHIP	10K	5%	1/10W
R034	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R035	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R036	1-216-057-61	RES-CHIP	2.2K	5%	1/10W
R037	1-216-049-61	RES-CHIP	1K	5%	1/10W
R038	1-216-049-61	RES-CHIP	1K	5%	1/10W
R039	1-216-043-61	RES-CHIP	560	5%	1/10W
R042	1-216-039-61	RES-CHIP	390	5%	1/10W
R043	1-216-025-61	RES-CHIP	100	5%	1/10W
R044	1-216-033-61	RES-CHIP	220	5%	1/10W
R045	1-216-073-61	RES-CHIP	10K	5%	1/10W
R046	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R047	1-216-025-61	RES-CHIP	100	5%	1/10W
R048	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R049	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R050	1-208-820-11	METAL CHIP	39K	0.5%	1/10W
R051	1-216-073-61	RES-CHIP	10K	5%	1/10W
R052	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R053	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R054	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R055	1-216-049-61	RES-CHIP	1K	5%	1/10W
R056	1-216-049-61	RES-CHIP	1K	5%	1/10W
R057	1-216-025-61	RES-CHIP	100	5%	1/10W
R058	1-216-025-61	RES-CHIP	100	5%	1/10W
R059	1-216-033-61	RES-CHIP	220	5%	1/10W
R060	1-216-033-61	RES-CHIP	220	5%	1/10W
R061	1-216-033-61	RES-CHIP	220	5%	1/10W
R062	1-216-049-61	RES-CHIP	1K	5%	1/10W
R063	1-216-049-61	RES-CHIP	1K	5%	1/10W
R064	1-216-049-61	RES-CHIP	1K	5%	1/10W
R065	1-216-049-61	RES-CHIP	1K	5%	1/10W
R066	1-216-049-61	RES-CHIP	1K	5%	1/10W
R072	1-216-065-61	RES-CHIP	4.7K	5%	1/10W
R073	1-216-081-61	RES-CHIP	22K	5%	1/10W
R074	1-216-049-61	RES-CHIP	1K	5%	1/10W

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REF NO.	PART NO.	DESCRIPTION	REMARK	REF NO.	PART NO.	DESCRIPTION	REMARK
R077	1-216-025-61	RES-CHIP	100 5% 1/10W	R300	1-216-033-61	RES-CHIP	220 5% 1/10W
R100	1-216-049-61	RES-CHIP	1K 5% 1/10W	R301	1-216-033-61	RES-CHIP	220 5% 1/10W
R103	1-216-013-61	METAL CHIP	33 5% 1/10W	R302	1-216-033-61	RES-CHIP	220 5% 1/10W
R106	1-216-065-61	RES-CHIP	4.7K 5% 1/10W	R303	1-216-033-61	RES-CHIP	220 5% 1/10W
R107	1-216-063-61	RES-CHIP	3.9K 5% 1/10W	R304	1-216-051-61	RES-CHIP	1.2K 5% 1/10W
R108	1-216-041-61	RES-CHIP	470 5% 1/10W	R305	1-216-045-00	METAL CHIP	680 5% 1/10W
R109	1-216-019-61	METAL CHIP	56 5% 1/10W	R306	1-216-039-61	RES-CHIP	390 5% 1/10W
R111	1-216-073-61	RES-CHIP	10K 5% 1/10W	R307	1-216-033-61	RES-CHIP	220 5% 1/10W
R112	1-216-069-61	RES-CHIP	6.8K 5% 1/10W	R308	1-216-027-61	RES-CHIP	120 5% 1/10W
R113	1-216-057-61	RES-CHIP	2.2K 5% 1/10W	R309	1-216-029-61	RES-CHIP	150 5% 1/10W
R114	1-216-057-61	RES-CHIP	2.2K 5% 1/10W	R310	1-216-039-61	RES-CHIP	390 5% 1/10W
R115	1-216-065-61	RES-CHIP	4.7K 5% 1/10W	R311	1-216-057-61	RES-CHIP	2.2K 5% 1/10W
R117	1-216-081-61	RES-CHIP	22K 5% 1/10W	R312	1-216-033-61	RES-CHIP	220 5% 1/10W
R118	1-216-041-61	RES-CHIP	470 5% 1/10W	R313	1-216-037-61	RES-CHIP	330 5% 1/10W
R119	1-216-081-61	RES-CHIP	22K 5% 1/10W	R314	1-216-037-61	RES-CHIP	330 5% 1/10W
R120	1-216-055-61	RES-CHIP	1.8K 5% 1/10W	R315	1-216-081-61	RES-CHIP	22K 5% 1/10W
R121	1-216-081-61	RES-CHIP	22K 5% 1/10W	R316	1-216-031-61	RES-CHIP	180 5% 1/10W
R122	1-216-109-61	RES-CHIP	330K 5% 1/10W	R317	1-216-041-61	RES-CHIP	470 5% 1/10W
R123	1-216-081-61	RES-CHIP	22K 5% 1/10W	R318	1-216-081-61	RES-CHIP	22K 5% 1/10W
R124	1-216-081-61	RES-CHIP	22K 5% 1/10W	R319	1-216-041-61	RES-CHIP	470 5% 1/10W
R125	1-215-925-11	METAL OXIDE	22K 5% 3W	R320	1-216-081-61	RES-CHIP	22K 5% 1/10W
R128	1-216-025-61	RES-CHIP	100 5% 1/10W	R323	1-216-041-61	RES-CHIP	470 5% 1/10W
R129	1-216-009-61	METAL CHIP	22 5% 1/10W	R324	1-216-041-61	RES-CHIP	470 5% 1/10W
R130	1-216-049-61	RES-CHIP	1K 5% 1/10W	R325	1-216-081-61	RES-CHIP	22K 5% 1/10W
R133	1-249-389-11	CARBON	4.7 5% 1/4W	R326	1-216-081-61	RES-CHIP	22K 5% 1/10W
R134	1-216-295-61	SHORT CHIP	0	R327	1-216-049-61	RES-CHIP	1K 5% 1/10W
R135	1-216-295-61	SHORT CHIP	0	R328	1-216-025-61	RES-CHIP	100 5% 1/10W
R200	1-216-061-00	RES-CHIP	3.3K 5% 1/10W	R329	1-216-043-61	RES-CHIP	560 5% 1/10W
R201	1-216-053-61	RES-CHIP	1.5K 5% 1/10W	R330	1-216-295-61	SHORT CHIP	0
R202	1-216-089-61	RES, CHIP 47K	(2012)	R331	1-216-295-61	SHORT CHIP	0
R203	1-216-041-61	RES-CHIP	470 5% 1/10W	R332	1-216-295-61	SHORT CHIP	0
R204	1-216-061-00	RES-CHIP	3.3K 5% 1/10W	R333	1-216-041-61	RES-CHIP	470 5% 1/10W
R206	1-216-075-61	RES-CHIP	12K 5% 1/10W	R334	1-216-025-61	RES-CHIP	100 5% 1/10W
R207	1-216-075-61	RES-CHIP	12K 5% 1/10W	R335	1-216-025-61	RES-CHIP	100 5% 1/10W
R208	1-216-073-61	RES-CHIP	10K 5% 1/10W	R336	1-216-025-61	RES-CHIP	100 5% 1/10W
R209	1-216-073-61	RES-CHIP	10K 5% 1/10W	R337	1-216-073-61	RES-CHIP	10K 5% 1/10W
R210	1-249-409-11	CARBON	220 5% 1/4W	R339	1-216-035-61	RES-CHIP	270 5% 1/10W
R211	1-249-409-11	CARBON	220 5% 1/4W	R340	1-163-031-11	CERAMIC CHIP	0.01UF 50V
R212	1-216-049-61	RES-CHIP	1K 5% 1/10W	R342	1-216-295-61	SHORT CHIP	0
R214	1-216-295-61	SHORT CHIP	0	R345	1-216-025-61	RES-CHIP	100 5% 1/10W
R215	1-216-061-00	RES-CHIP	3.3K 5% 1/10W	R348	1-216-025-61	RES-CHIP	100 5% 1/10W
R216	1-216-061-00	RES-CHIP	3.3K 5% 1/10W	R350	1-216-039-61	RES-CHIP	390 5% 1/10W
R217	1-216-059-61	RES-CHIP	2.7K 5% 1/10W	R353	1-216-119-61	RES-CHIP	820K 5% 1/10W
R218	1-216-059-61	RES-CHIP	2.7K 5% 1/10W	R354	1-216-119-61	RES-CHIP	820K 5% 1/10W
R219	1-216-025-61	RES-CHIP	100 5% 1/10W	R355	1-216-061-00	RES-CHIP	3.3K 5% 1/10W
R220	1-216-025-61	RES-CHIP	100 5% 1/10W	R356	1-216-061-00	RES-CHIP	3.3K 5% 1/10W
R221	1-216-025-61	RES-CHIP	100 5% 1/10W	R357	1-216-101-61	RES-CHIP	150K 5% 1/10W
R222	1-216-057-61	RES-CHIP	2.2K 5% 1/10W	R358	1-216-025-61	RES-CHIP	100 5% 1/10W
R225	1-216-077-61	RES, CHIP 15K	(2012)	R360	1-216-065-61	RES-CHIP	4.7K 5% 1/10W
R228	1-216-295-61	SHORT CHIP	0	R361	1-216-033-61	RES-CHIP	220 5% 1/10W
R229	1-216-053-61	RES-CHIP	1.5K 5% 1/10W	R362	1-216-083-61	RES-CHIP	27K 5% 1/10W
R230	1-216-053-61	RES-CHIP	1.5K 5% 1/10W	R363	1-216-295-61	SHORT CHIP	0
R231	1-216-049-61	RES-CHIP	1K 5% 1/10W	R364	1-216-077-61	RES, CHIP 15K	(2012)
R234	1-216-113-61	RES-CHIP	470K 5% 1/10W	R365	1-216-295-61	SHORT CHIP	0
R235	1-216-113-61	RES-CHIP	470K 5% 1/10W	R367	1-216-099-61	RES-CHIP	120K 5% 1/10W
R240	1-216-077-61	RES, CHIP 15K	(2012)	R368	1-216-049-61	RES-CHIP	1K 5% 1/10W
R241	1-216-077-61	RES, CHIP 15K	(2012)	R369	1-216-123-61	RES-CHIP	1.2M 5% 1/10W
R242	1-216-073-61	RES-CHIP	10K 5% 1/10W	R370	1-216-083-61	RES-CHIP	27K 5% 1/10W
R243	1-216-073-61	RES-CHIP	10K 5% 1/10W	R371	1-208-820-11	METAL CHIP	39K 0.5% 1/10W
R244	1-216-113-61	RES-CHIP	470K 5% 1/10W	R374	1-216-057-61	RES-CHIP	2.2K 5% 1/10W
R248	1-216-093-11	METAL CHIP	68K 5% 1/10W	R376	1-216-295-61	SHORT CHIP	0
R249	1-216-049-61	RES-CHIP	1K 5% 1/10W				

The components identified by shading
and mark $\triangle$ are critical for safety.
Replace only with part number specified.

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REF NO.	PART NO.	DESCRIPTION	REMARK
R389	1-216-109-61	RES-CHIP	330K 5% 1/10W
R392	1-216-069-61	RES-CHIP	6.8K 5% 1/10W
R393	1-216-295-61	SHORT CHIP	0
R400	1-216-295-61	SHORT CHIP	0
R401	1-216-049-61	RES-CHIP	1K 5% 1/10W
R402	1-216-025-61	RES-CHIP	100 5% 1/10W
R403	1-216-073-61	RES-CHIP	10K 5% 1/10W
R404	1-216-049-61	RES-CHIP	1K 5% 1/10W
R405	1-216-073-61	RES-CHIP	10K 5% 1/10W
R406	1-216-113-61	RES-CHIP	470K 5% 1/10W
R407	1-216-049-61	RES-CHIP	1K 5% 1/10W
R408	1-216-049-61	RES-CHIP	1K 5% 1/10W
R409	1-216-113-61	RES-CHIP	470K 5% 1/10W
R410	1-216-025-61	RES-CHIP	100 5% 1/10W
R411	1-216-049-61	RES-CHIP	1K 5% 1/10W
R412	1-216-049-61	RES-CHIP	1K 5% 1/10W
R413	1-216-113-61	RES-CHIP	470K 5% 1/10W
R414	1-216-049-61	RES-CHIP	1K 5% 1/10W
R415	1-216-073-61	RES-CHIP	10K 5% 1/10W
R416	1-216-073-61	RES-CHIP	10K 5% 1/10W
R417	1-216-021-61	RES-CHIP	68 5% 1/10W
R418	1-216-025-61	RES-CHIP	100 5% 1/10W
R419	1-216-689-11	RES, CHIP 39K	(2012)
R420	1-216-049-61	RES-CHIP	1K 5% 1/10W
R421	1-216-049-61	RES-CHIP	1K 5% 1/10W
R422	1-216-091-61	RES-CHIP	56K 5% 1/10W
R423	1-216-689-11	RES, CHIP 39K	(2012)
R424	1-216-091-61	RES-CHIP	56K 5% 1/10W
R425	1-216-022-00	METAL CHIP	75 5% 1/10W
R426	1-216-049-61	RES-CHIP	1K 5% 1/10W
R427	1-216-051-61	RES-CHIP	1.2K 5% 1/10W
R428	1-216-041-61	RES-CHIP	470 5% 1/10W
R429	1-216-073-61	RES-CHIP	10K 5% 1/10W
R430	1-216-063-61	RES-CHIP	3.9K 5% 1/10W
R431	1-216-091-61	RES-CHIP	56K 5% 1/10W
R432	1-216-121-61	RES-CHIP	1M 5% 1/10W
R433	1-216-091-61	RES-CHIP	56K 5% 1/10W
R434	1-216-049-61	RES-CHIP	1K 5% 1/10W
R435	1-216-121-61	RES-CHIP	1M 5% 1/10W
R436	1-216-022-00	METAL CHIP	75 5% 1/10W
R438	1-216-049-61	RES-CHIP	1K 5% 1/10W
R440	1-216-121-61	RES-CHIP	1M 5% 1/10W
R443	1-216-121-61	RES-CHIP	1M 5% 1/10W
R445	1-216-089-61	RES, CHIP 47K	(2012)
R446	1-216-089-61	RES, CHIP 47K	(2012)
R500	1-260-126-11	CARBON	180K 5% 1/2W
R501	1-249-419-11	CARBON	1.5K 5% 1/4W
R502	1-216-370-11	METAL OXIDE	1.2 5% 2W
R503	1-216-091-61	RES-CHIP	56K 5% 1/10W
R504	1-216-091-61	RES-CHIP	56K 5% 1/10W
R505	1-216-065-61	RES-CHIP	4.7K 5% 1/10W
R506	1-260-125-11	CARBON	150K 5% 1/2W
R507	1-260-288-11	CARBON	0.47 5% 1/2W
R508	1-260-288-11	CARBON	0.47 5% 1/2W
R509	1-260-288-11	CARBON	0.47 5% 1/2W
R510	1-260-127-11	CARBON	220K 5% 1/2W
R511	1-215-449-00	METAL	15K 1% 1/4W
R512	1-215-453-00	METAL	22K 1% 1/4W
R513	1-215-445-00	METAL	10K 1% 1/4W
R514	1-249-421-11	CARBON	2.2K 5% 1/4W
R553	1-249-385-11	CARBON	2.2 5% 1/4W
R554	1-216-057-61	RES-CHIP	2.2K 5% 1/10W

REF NO.	PART NO.	DESCRIPTION	REMARK
R557	1-216-655-11	METAL CHIP	1.5K 0.5% 1/10W
R558	1-216-081-61	RES-CHIP	22K 5% 1/10W
R559	1-216-089-61	RES, CHIP 47K	(2012)
R563	1-216-655-11	METAL CHIP	1.5K 0.5% 1/10W
R564	1-215-865-11	METAL OXIDE	220 5% 1W
R565	1-216-350-11	METAL OXIDE	1.2 5% 1W
R567	1-208-790-11	METAL CHIP	2.2K 0.5% 1/10W
R568	1-215-461-00	METAL	47K 1% 1/4W
R600	1-215-915-11	METAL OXIDE	470 5% 3W
R602	1-240-262-11	CEMENTED	0.68 5% 10W
R603	1-240-262-11	CEMENTED	0.68 5% 10W
R605	1-217-191-21	METAL	0.18 10% 2W
R606	1-216-045-00	METAL CHIP	680 5% 1/10W
R608	1-260-127-11	CARBON	220K 5% 1/2W
R609	1-216-091-61	RES-CHIP	56K 5% 1/10W
R610	1-215-926-00	METAL OXIDE	33K 5% 3W
R611	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R612	1-249-420-11	CARBON	1.8K 5% 1/4W
R615	1-215-877-11	METAL OXIDE	22K 5% 1W
R617	1-216-049-61	RES-CHIP	1K 5% 1/10W
R619	$\triangle$ 1-240-917-51	METAL	8.2M 5% 1W
R620	1-249-389-11	CARBON	4.7 5% 1/4W
R623	1-216-053-61	RES-CHIP	1.5K 5% 1/10W
R624	1-260-126-61	CARBON	180K 5% 1/2W
R627	1-240-262-11	CEMENTED	0.68 5% 10W
R800	1-216-049-61	RES-CHIP	1K 5% 1/10W
R801	1-216-081-61	RES-CHIP	22K 5% 1/10W
R802	1-215-917-11	METAL OXIDE	1K 5% 3W
R803	1-260-332-51	CARBON	2.2K 5% 1/2W
R806	1-216-295-61	SHORT CHIP	0
R808	1-249-421-11	CARBON	2.2K 5% 1/4W
R810	1-215-886-11	METAL OXIDE	100 5% 2W
R811	1-215-911-11	METAL OXIDE	100 5% 3W
R812	1-215-917-11	METAL OXIDE	1K 5% 3W
R813	1-216-049-61	RES-CHIP	1K 5% 1/10W
R814	1-215-917-11	METAL OXIDE	1K 5% 3W
R860	1-216-103-61	METAL CHIP	180K 5% 1/10W
R861	1-216-295-61	SHORT CHIP	0
R862	1-216-057-61	RES-CHIP	2.2K 5% 1/10W
R863	1-216-073-61	RES-CHIP	10K 5% 1/10W
R864	1-208-794-11	METAL CHIP	3.3K 0.5% 1/10W
R865	1-216-073-61	RES-CHIP	10K 5% 1/10W
R866	1-216-049-61	RES-CHIP	1K 5% 1/10W
R867	1-208-812-11	METAL CHIP	18K 0.5% 1/10W
R868	1-249-393-11	CARBON	10 5% 1/4W
R869	1-249-381-11	CARBON	1 5% 1/4W
R870	1-218-760-11	METAL CHIP	220K 0.5% 1/10W
R874	1-215-475-00	METAL	180K 1% 1/4W
R878	1-216-049-61	RES-CHIP	1K 5% 1/10W
R879	1-216-057-61	RES-CHIP	2.2K 5% 1/10W
R880	1-216-097-61	RES-CHIP	100K 5% 1/10W
R881	1-216-085-00	METAL CHIP	33K 5% 1/10W
R882	1-216-073-61	RES-CHIP	10K 5% 1/10W
R883	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R884	1-216-089-61	RES, CHIP 47K	(2012)
R885	1-216-073-61	RES-CHIP	10K 5% 1/10W
R886	1-216-295-61	SHORT CHIP	0
R887	1-215-477-00	METAL	220K 1% 1/4W
R888	1-215-477-00	METAL	220K 1% 1/4W
R889	1-208-830-11	METAL CHIP	100K 0.5% 1/10W

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

A **CV**

REF NO.	PART NO.	DESCRIPTION	REMARK
		<VARIABLE RESISTOR>	
RV300	1-241-769-11	RES, ADJ, CARBON 470K	
		<SWITCH>	
S001	1-692-431-21	SWITCH, TACTILE	
S002	1-692-431-21	SWITCH, TACTILE	
S003	1-692-431-21	SWITCH, TACTILE	
S004	1-692-431-21	SWITCH, TACTILE	
S005	1-692-431-21	SWITCH, TACTILE	
S006	1-692-431-21	SWITCH, TACTILE	
S600	Δ 1-571-433-31	SWITCH, PUSH (AC POWER)	
S800	1-572-707-11	SWITCH, LEVER	
SWF100	1-781-042-11	FILTER, SURFACE WAVE	
		<TRANSFORMER>	
T503	Δ 1-453-329-21	TRANSFORMER ASSY FLYBACK (NX-4751//M3A4)	
T600	1-431-747-11	TRANSFORMER, LINE FILTER	
T601	Δ 1-437-333-21	TRANSFORMER, CONVERTER (SRT)	
T800	1-435-374-11	TRANSFORMER, FERRITE (HDT)	
		<THERMISTOR>	
THP600	1-803-744-11	THERMISTOR, POSITIVE	
		<TUNER>	
TU100	8-598-591-10	TUNER, VSS BT-AG402	
		<VARISTOR>	
VDR600	1-803-830-11	VARISTOR (ERZV14D621)	
		<CRYSTAL>	
X001	1-577-358-21	VIBRATOR, CERAMIC	
X300	1-567-505-11	OSCILLATOR, CRYSTAL	
X301	1-567-504-11	OSCILLATOR, CRYSTAL	

CV BOARD MOUNTED (NOT STOCKED)			

4-382-854-01		SCREW (M3X8), P, SW (+)	
		<CAPACITOR>	
C701	1-115-350-51	CERAMIC 0.0047UF	2KV
C702	1-102-074-00	CERAMIC 0.001UF	10.00% 50V
C703	1-107-651-11	ELECT 4.7UF	20.00% 250V
C704	1-130-202-00	FILM 0.022UF	5.00% 400V
C706	1-126-947-11	ELECT 47UF	20.00% 16V
C708	1-102-114-00	CERAMIC 470PF	10.00% 50V
C709	1-102-114-00	CERAMIC 470PF	10.00% 50V
C710	1-102-114-00	CERAMIC 470PF	10.00% 50V

REF NO.	PART NO.	DESCRIPTION	REMARK
C712	1-102-114-00	CERAMIC 470PF	10.00% 50V
C713	1-102-115-00	CERAMIC 560PF	10.00% 50V
C714	1-102-115-00	CERAMIC 560PF	10.00% 50V
C716	1-126-933-11	ELECT 100UF	20.00% 16V
C717	1-102-852-91	CERAMIC 47PF	5.00% 50V
C718	1-126-933-11	ELECT 100UF	20.00% 16V
C719	1-102-116-00	CERAMIC 680PF	10.00% 50V
CLP701	* 4-042-408-01	PIN, COATING LEAD	
		<CONNECTOR>	
CN701	* 1-564-508-11	PLUG, CONNECTOR 5P	
CN702	1-695-915-11	TAB (CONTACT)	
CN703	* 1-564-509-11	PLUG, CONNECTOR 6P	
CN704	1-695-915-11	TAB (CONTACT)	
		<DIODE>	
D701	8-719-911-19	1SS119-25	
D702	8-719-911-19	1SS119-25	
D703	8-719-911-19	1SS119-25	
D707	8-719-911-19	1SS119-25	
D708	8-719-911-19	1SS119-25	
D709	8-719-911-19	1SS119-25	
D713	8-719-911-19	1SS119-25	
D714	8-719-911-19	1SS119-25	
D715	8-719-911-19	1SS119-25	
D716	8-719-911-19	1SS119-25	
D717	8-719-070-16	NNCD9.1A-T1	
		<JACK>	
J701	1-540-071-22	SOCKET, CRT	
		<COIL>	
L701	1-414-185-41	INDUCTOR 22UH	
L710	1-414-183-41	INDUCTOR 10UH	
		<TRANSISTOR>	
Q704	8-729-326-11	2SC2611	
Q705	8-729-326-11	2SC2611	
Q706	8-729-326-11	2SC2611	
Q707	8-729-200-17	2SA1091-O	
Q708	8-729-200-17	2SA1091-O	
Q709	8-729-200-17	2SA1091-O	
Q710	8-729-119-78	2SC2785-HFE	
Q711	8-729-119-78	2SC2785-HFE	
Q712	8-729-119-78	2SC2785-HFE	
		<RESISTOR>	
R703	1-219-752-11	METAL 100K	5% 1/2W
R706	1-215-417-00	METAL 680	1% 1/4W
R707	1-215-413-00	METAL 470	1% 1/4W
R708	1-216-387-11	METAL OXIDE 0.68	5% 3W
R710	1-216-486-00	METAL OXIDE 8.2K	5% 3W
R712	1-216-486-00	METAL OXIDE 8.2K	5% 3W
R714	1-216-486-00	METAL OXIDE 8.2K	5% 3W
R716	1-249-923-11	CARBON 1K	5% 1/4W



REF NO.	PART NO.	DESCRIPTION	REMARK
R717	1-249-923-11	CARBON	1K 5% 1/4W
R718	1-249-923-11	CARBON	1K 5% 1/4W
R725	1-249-421-11	CARBON	2.2K 5% 1/4W
R726	1-249-421-11	CARBON	2.2K 5% 1/4W
R727	1-249-421-11	CARBON	2.2K 5% 1/4W
R728	1-249-408-11	CARBON	180 5% 1/4W
R729	1-249-408-11	CARBON	180 5% 1/4W
R730	1-249-408-11	CARBON	180 5% 1/4W
R731	1-249-407-11	CARBON	150 5% 1/4W
R732	1-249-407-11	CARBON	150 5% 1/4W
R733	1-249-407-11	CARBON	150 5% 1/4W
R734	1-219-753-11	METAL	100 5% 1/2W
R738	1-247-807-31	CARBON	100 5% 1/4W
R739	1-247-807-31	CARBON	100 5% 1/4W
R740	1-247-807-31	CARBON	100 5% 1/4W
R755	1-249-418-11	CARBON	1.2K 5% 1/4W
R756	1-249-418-11	CARBON	1.2K 5% 1/4W
R757	1-249-418-11	CARBON	1.2K 5% 1/4W
		<VARIABLE RESISTOR>	
RV702	1-241-656-11	RES, ADJ, METAL FILM 110M	

REF NO.	PART NO.	DESCRIPTION	REMARK

		ACCESSORIES AND PACKING MATERIALS	

	3-701-910-00	SCREW, SPECIAL (DIA. 3.8X20)	
	1-501-730-41	ANTENNA, TELESCOPIC	
*	4-039-372-01	BAG, PROTECTION	
*	4-089-642-01	CUSHION, LOWER	
*	4-089-641-01	CUSHION, UPPER	
*	4-092-808-01	INDIVIDUAL CARTON	
	1-417-151-41	MATCHING TRANSFORMER, ANTENNA	
	4-392-003-11	BAND, HOLD	
	4-392-004-11	CLIP	

		BATTERY COVER REMOTE COMMANDER	

	1-477-047-11	REMOTE COMMANDER (RM-969)	
	4-084-290-01	BATTERY COVER REMOTE COMANDER	