

# JVC

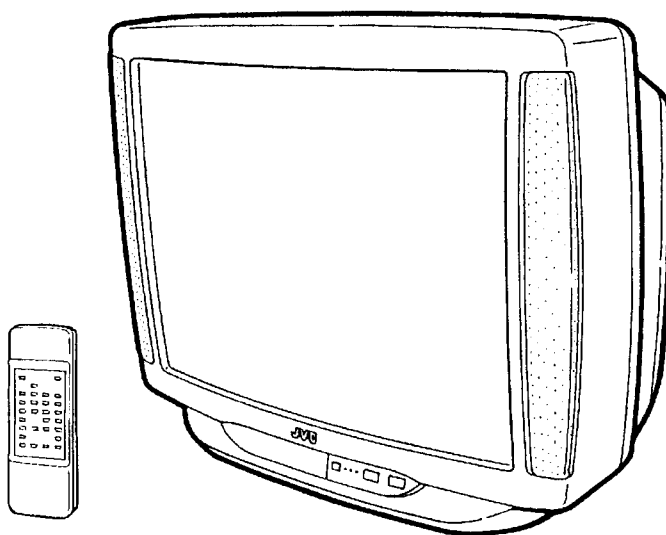
## SERVICE MANUAL

### COLOUR TELEVISION

## AV-G290MX

BASIC CHASSIS

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# SPECIFICATIONS

Item	Content
<b>Dimensions (W × H × D)</b>	73.3cm × 58.3cm × 49.2cm
<b>Mass</b>	39.2kg
<b>Type</b>	Colour Television
<b>TV RF System</b>	CCIR B / G, I, D / K, K1 / M
<b>Colour System</b>	PAL / SECAM / NTSC 3.58 / NTSC 4.43
<b>Stereo System</b>	PLAYBACK ONLY
<b>Receiving Channels and Frequency</b>	
VHF (VL)	46.25MHz ~ 168.25MHz
(VH)	175.25MHz ~ 463.25MHz
UHF	471.25MHz ~ 863.25MHz
	• Cable TVs of Mid (X-Z, S1-S10) Super (S11-S20) & Hyper (S21-S41) bands receivable
<b>Intermediate Frequency</b>	
VIF Carrier	38.0MHz
SIF Carrier	32.5MHz (5.5MHz), 31.5MHz (6.5MHz) 33.5MHz (4.5MHz), 32.0MHz (6.0MHz)
<b>Colour Sub Carrier Frequency</b>	PAL (4.43MHz), SECAM (4.40625MHz, 4.25MHz) NTSC (3.58MHz, 4.43MHz)
<b>Aerial Input Terminal</b>	75Ω Unbalanced
<b>Power Input</b>	
Rated voltage	AC120-240V, 50 / 60Hz
Operating voltage	AC90-260V, 50 / 60Hz
<b>Power Consumption</b>	185W (Max.) / 120W (Avg.)
<b>Picture Tube</b>	29" (73cm), Visible size: 68cm (measured Diagonally)
<b>High Voltage</b>	31kV ± 1kV (at zero beam current)
<b>Speaker</b>	10cm Round type × 2
<b>Audio Output</b>	10W + 10W
<b>S/VIDEO-1&amp;3, VIDEO-2, Input</b>	
Video	1Vp-p, 75Ω (RCA Pin jack)
Audio	500mV rms (-4dBs), High Impedance (RCA Pin jack)
S-Video	Y: 1Vp-p 75Ω / C: 0.3Vp-p (Burst signal), 75Ω
<b>Line Out</b>	
Video	1Vp-p, 75Ω (RCA Pin jack)
Audio	500mV rms (-4dBs), Low Impedance (RCA pin jack)
<b>Headphone Terminal</b>	Stereo mini jack (dia. 3.5mm)
<b>Remote Control Unit</b>	RM-C463 (Battery size : AA(R6) × 2)

*Design & specification subject to change without notice.*

# OPERATING INSTRUCTIONS

AV-G290MX

# JVC

## COLOUR TELEVISION

# INSTRUCTIONS

Thank you for purchasing this JVC colour television.  
To ensure your complete understanding, please read this manual thoroughly before operation.

**WARNING:**

TO PREVENT FIRE OR SHOCK  
HAZARD, DO NOT EXPOSE THIS  
APPLIANCE TO RAIN OR MOISTURE.

**CAUTION:** TO ENSURE PERSONAL  
SAFETY, OBSERVE THE FOLLOWING  
RULES REGARDING THE USE OF THIS  
UNIT.

1. Operate only from the power source specified on the unit.
2. Avoid damaging the AC plug and power cord.
3. Avoid improper installation and never position the unit where good ventilation is unattainable.
4. Do not allow objects or liquid into the cabinet openings.
5. In the event of a fault, unplug the unit and call a service technician. Do not attempt to repair it yourself or remove the rear cover.

When you don't use this TV set for a long period of time, be sure to disconnect the power plug from the AC outlet.

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**CONNECTION ..... 2**


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**PREPARATION ..... 4**


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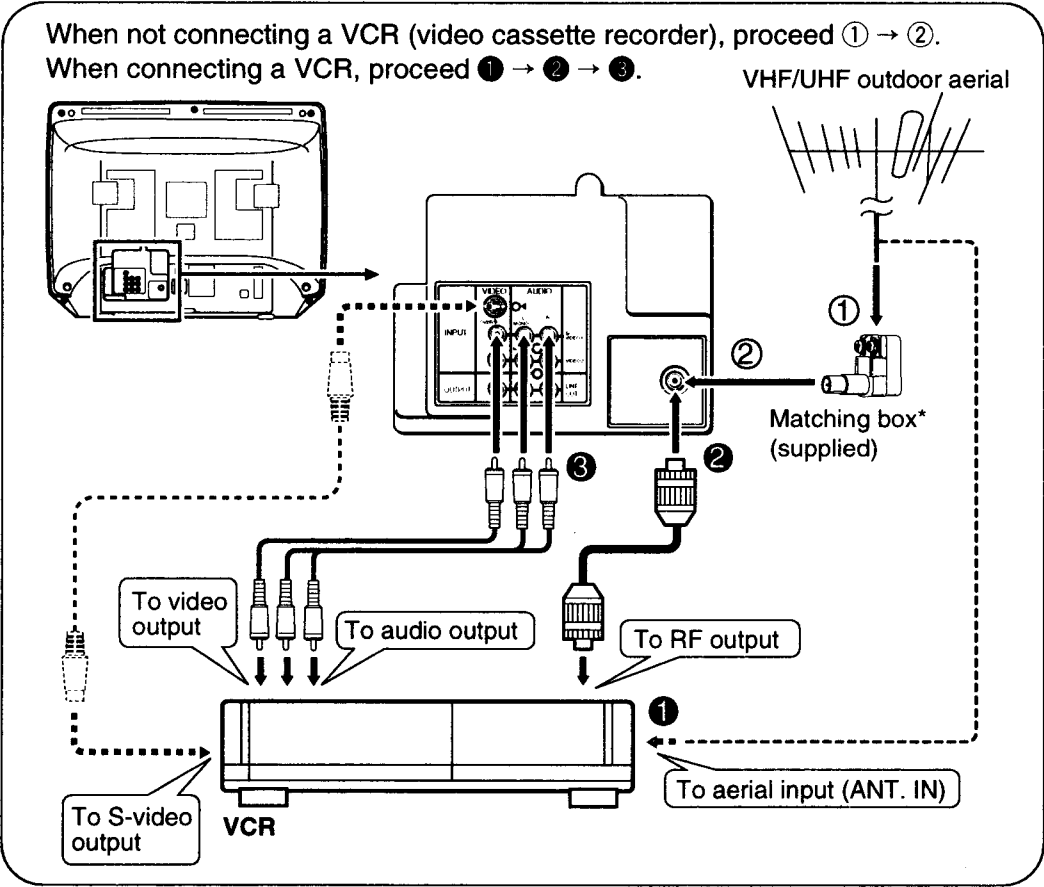
**SPECIFICATIONS ..... 18**


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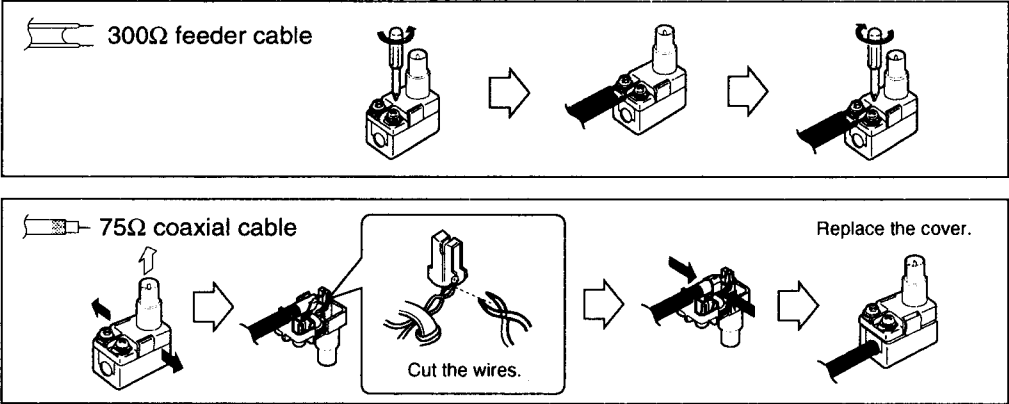
# CONNECTION

## Connecting the aerial and VCR (video cassette recorder)

- Notes:** .....
- Refer to manuals provided with devices for further details.
  - Connecting cables are not provided.
  - When connecting monaural audio to the TV, use the L MONO jack.
- .....



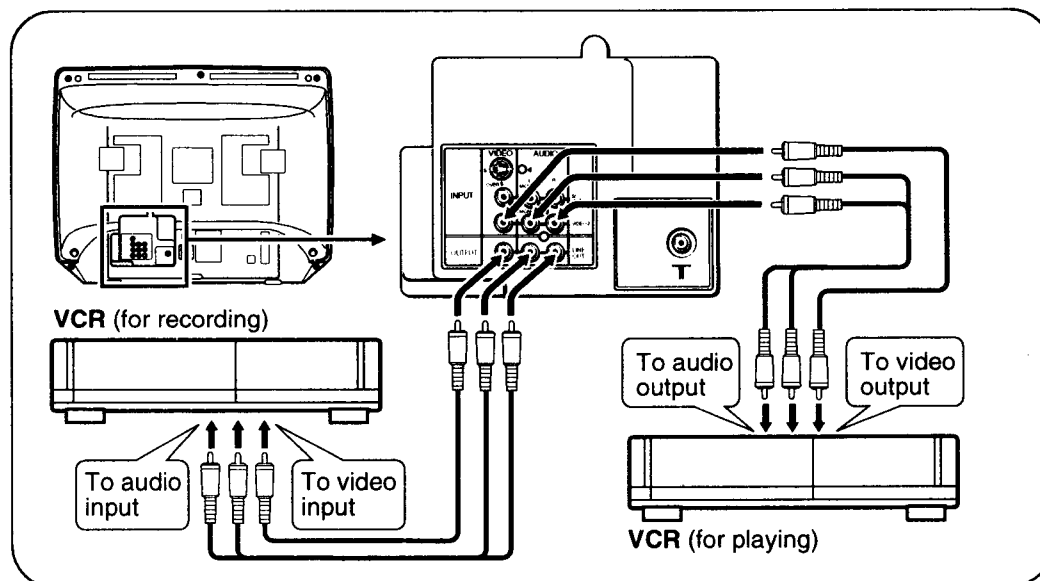
### \* How to connect to the matching box



## CONNECTION

### Connecting other external devices

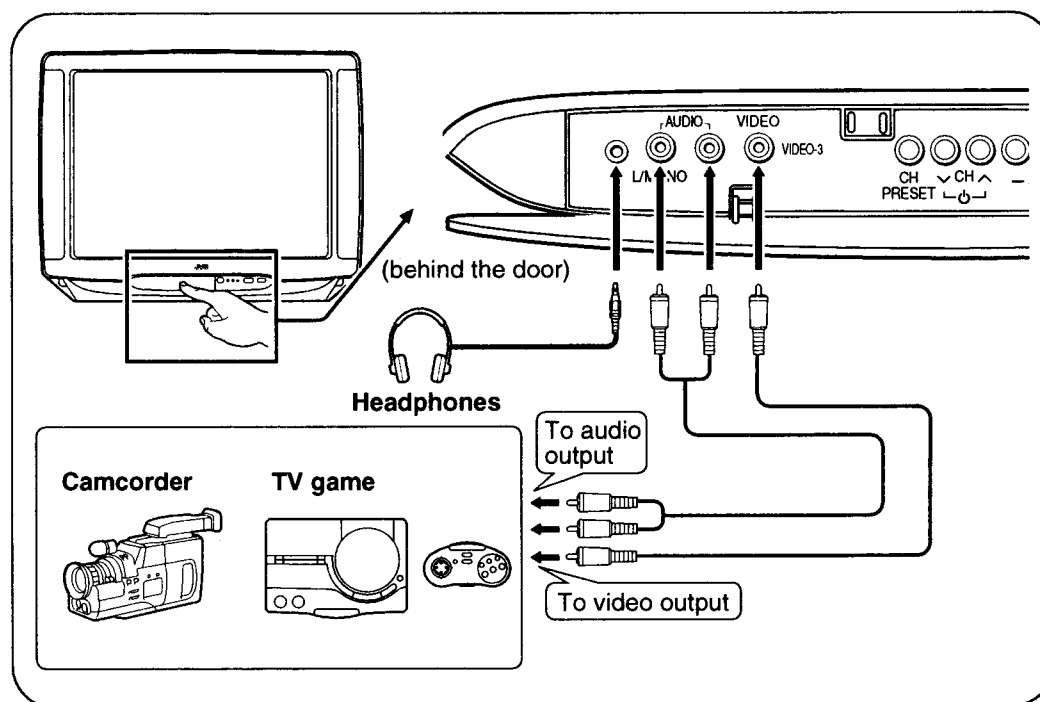
#### ■ If connecting to the terminals on the rear panel



#### Note:

- The same sounds and pictures that you are watching on your TV are output from LINE OUT terminals.

#### ■ If connecting to the terminals on the front panel



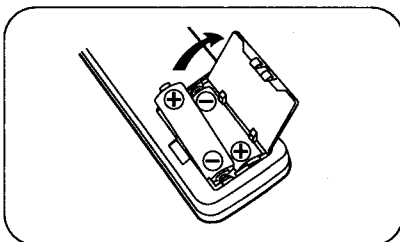
## PREPARATION

### Connecting the power cord

Insert the Power plug into the AC outlet (AC 120 – 240V, 50/60 Hz (operating at 90 – 260 V, 50/60 Hz)).

### Inserting batteries into the remote control

Correctly insert two batteries, observing the  $\oplus$  and  $\ominus$  polarities, inserting the  $\ominus$  end first.



#### Caution: .....

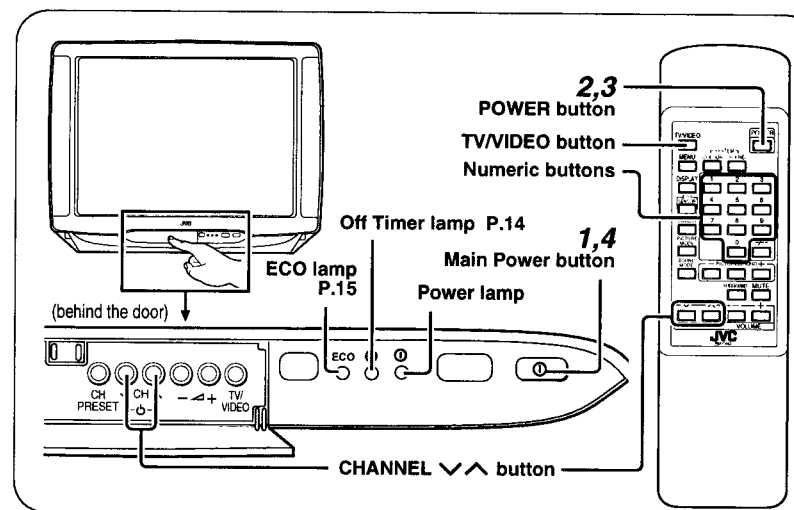
- Follow the cautions printed on the batteries.

#### Notes: .....

- Use AA/R6/UM-3 dry cell batteries.
- Battery life is approximately six months to one year depending on frequency of use.
- If the remote control operates erratically, replace the batteries.

## PREPARATION

### Turning your TV ON/OFF



#### ■ To turn your TV ON

1. Press the Main Power button to turn the Main Power ON.

- The Power lamp lights up red.
- Your TV enters Standby mode.

2. Press POWER to turn your TV ON.

The Power lamp changes to green.

#### Note: .....

- In step 2, you can turn ON your TV by pressing any of the following buttons:
  - CHANNEL  $\nabla$   $\wedge$  button
  - Numeric buttons
  - TV/VIDEO button

#### ■ To turn your TV OFF

3. Press POWER to your TV OFF.

- The Power lamp changes to red.
- Your TV enters Standby mode.

4. Press Main Power to turn the Main Power OFF.

The Power lamp goes off.

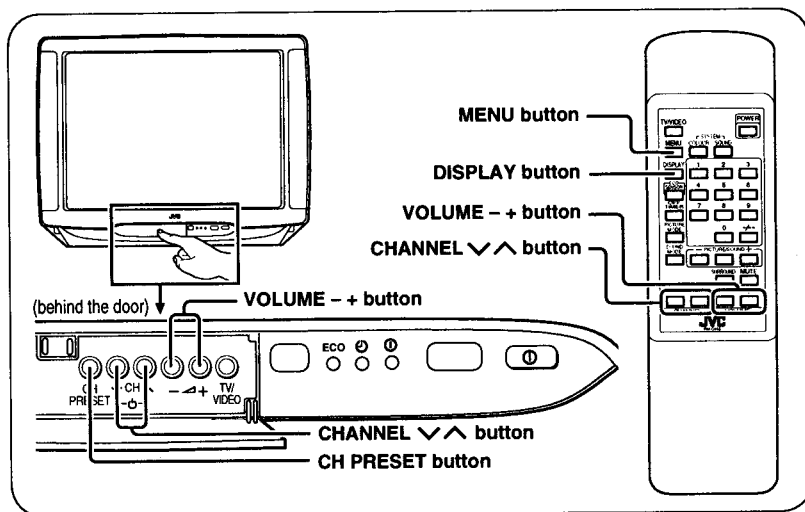
#### Note: .....

- We recommend that you turn the Main Power OFF if you do not plan to use your TV for a long time or if you wish to save energy.

## PREPARATION

### Allocating Stations to Channels

To view a TV programme, you must first preset stations to channels. Up to 100 stations can be preset to channels on this TV. There are two ways to preset a station to a channel, automatic and manual. Choose whichever method you like to allocate stations to channels.



#### Automatic Preset

All stations that can be received on your TV are automatically preset to TV channels in a simple operation.

##### Note:

- In automatic preset, no station can be allocated to channel 0 (AV channel). Channel 0 is for viewing RF output video from a VCR (Video Cassette Recorder). Allocate the VCR to the AV channel using manual preset.

#### To use the buttons on your TV:

##### 1. Press CH PRESET.

```

CH PRESET
  AUTO
  MANUAL
  FINE
PR 1 : VL
*****
CH PRESET/MENU:SELECT
VOL + :START
    
```

##### 2. Press VOLUME +

"→→→" is displayed on the screen, and automatic preset begins. All stations that can be received on your TV are automatically allocated to TV channels.

- When automatic preset ends, the display disappears.

## PREPARATION

### To use the remote control:

##### 1. Press MENU.

```

MENU
  AUTO SHUTOFF ON/OFF
  CH PRESET
  EDIT
MENU :SELECT
VOL -/+ :ON/OFF
    
```

##### 2. Press MENU to select CH PRESET.

```

MENU
  AUTO SHUTOFF ON/OFF
  CH PRESET
  EDIT
MENU :SELECT
VOL + :ENTER CH PRESET
    
```

##### 3. Press VOLUME +.

```

CH PRESET
  AUTO
  MANUAL
  FINE
PR 1 : VL
*****
CH PRESET/MENU:SELECT
VOL + :START
    
```

##### 4. Press VOLUME +.

"→→→" is displayed on the screen, and automatic preset begins. All stations that can be received on your TV are automatically allocated to TV channels.

- When automatic preset ends, the display disappears.

#### Manual Preset

You can allocate any station to any desired channel number. Also, stations not activated by automatic preset can be stored manually to a channel.

##### Note:

- When selecting a station, if picture or sound are abnormal, see "Selecting the Colour System" or "Selecting the Sound System" on page 12.

#### To use the buttons on your TV:

##### 1. Press CH PRESET.

```

CH PRESET
  AUTO
  MANUAL
  FINE
PR 1 : VL
*****
CH PRESET/MENU:SELECT
VOL + :START
    
```

##### 2. Press CH PRESET to select MANUAL.

```

CH PRESET
  AUTO
  MANUAL
  FINE
PR 1 : VL
*****
CH PRESET/MENU:SELECT
VOL -/+ :SEARCH UP/DOWN
    
```

##### 3. Press CHANNEL V ^ to select a channel number.

- The channel number is displayed on screen as a PR number ("PR number" means preset channel number).

Example: Channel 1 is displayed as "PR 1".

##### 4. Press VOLUME - + to select a station.

Station selection starts automatically. When a broadcast is received, station selection stops, and the display flashes once.

## PREPARATION

Press VOLUME – + repeatedly to select another station until you get the station you want.

- Repeat steps 3 and 4 to allocate all desired channels.

**If the picture is not clear:**

1. Press CH PRESET to select FINE.

```

CH PRESET
AUTO
MANUAL
FINE
PR 1 : VL
*****
CH PRESET/MENU:EXIT
VOL-/+:SEARCH
  
```

2. Press CHANNEL  $\nabla$   $\wedge$  to select a channel.

3. Press VOLUME – + to fine-adjust station selection.

5. Press CH PRESET repeatedly to turn the display off.

This completes manual preset.

**To use the remote control:**

1. Press MENU.

```

MENU
PAUTO SHUTOFF ON/OFF
CH PRESET
EDIT
MENU :SELECT
VOL-/+:ON/OFF
  
```

2. Press MENU to select CH PRESET, and then press VOLUME +.

```

CH PRESET
PAUTO
MANUAL
FINE
PR 1 : VL
*****
CH PRESET/MENU:SELECT
VOL + :START
  
```

3. Press MENU to select MANUAL.

```

CH PRESET
AUTO
MANUAL
FINE
PR 1 : VL
*****
CH PRESET/MENU:SELECT
VOL-/+:SEARCH UP/DOWN
  
```

4. Press CHANNEL  $\nabla$   $\wedge$  to select a channel number.

- The channel number is displayed on screen as a PR number ("PR number" means preset channel number).

Example: Channel 1 is displayed as "PR 1".

5. Press VOLUME – + to select a station.

Station selection starts automatically. When a broadcast is received, station selection stops, and the display flashes once. Press VOLUME – + repeatedly to select another station until you get the station you want.

- Repeat steps 4 and 5 to preset all desired channels.

**If the picture is not clear:**

1. Press MENU to select FINE.

```

CH PRESET
AUTO
MANUAL
FINE
PR 1 : VL
*****
CH PRESET/MENU:EXIT
VOL-/+:SEARCH
  
```

2. Press CHANNEL  $\nabla$   $\wedge$  to select a channel.
3. Press VOLUME – + to fine-adjust station selection.

6. Press DISPLAY twice to turn the display off.

This completes manual preset.

**Note:** .....  
 • You can also turn the display off by pressing MENU repeatedly.  
 .....

## PREPARATION

### Editing Channels

In the EDIT screen, you can delete (un-allocate) a station already allocated to a channel, or skip a specific channel.

1. Press MENU to display the MENU screen.

```

MENU
PAUTO SHUTOFF ON/OFF
CH PRESET
EDIT
MENU :SELECT
VOL-/+:ON/OFF
  
```

2. Press MENU to select EDIT, and press VOLUME +.

```

EDIT
PSKIP ON/OFF
DELETE
PR 1
MENU:SELECT
CH-/+:PR VOL-/+:ON/OFF
  
```

3. Press CHANNEL  $\nabla$   $\wedge$  to select a channel.

The station preset to that channel is displayed on your TV.

4. Skip or delete the channel.

**■ To skip a channel:**

1. Press VOLUME – + to turn the channel skip setting ON.
- When you turn on skip for a channel, that channel is skipped when you scroll through channels using CHANNEL  $\nabla$   $\wedge$ . However, note that you can select a skipped station using direct station selection.
- To cancel channel skip, turn the channel skip setting OFF.

**■ To delete a station:**

1. Press MENU to select DELETE.

```

EDIT
SKIP ON/OFF
DELETE
PR 1
MENU:SELECT
CH-/+:PR VOL + :START
  
```

2. Press VOLUME +.

- The station preset to that channel is deleted.

**Note:** .....  
 • When you delete a station, the channel number of every station after it moves forward by one. For example, if you delete the station preset to channel 1, then the station preset to channel 2 moves forward to channel 1, the station preset to channel 3 moves forward to channel 2, and so forth. Likewise, all preset stations up to channel 99 moves forward, one by one.  
 .....

5. To skip or delete other channels, repeat steps 3 and 4.

6. Press DISPLAY twice to turn the display off.

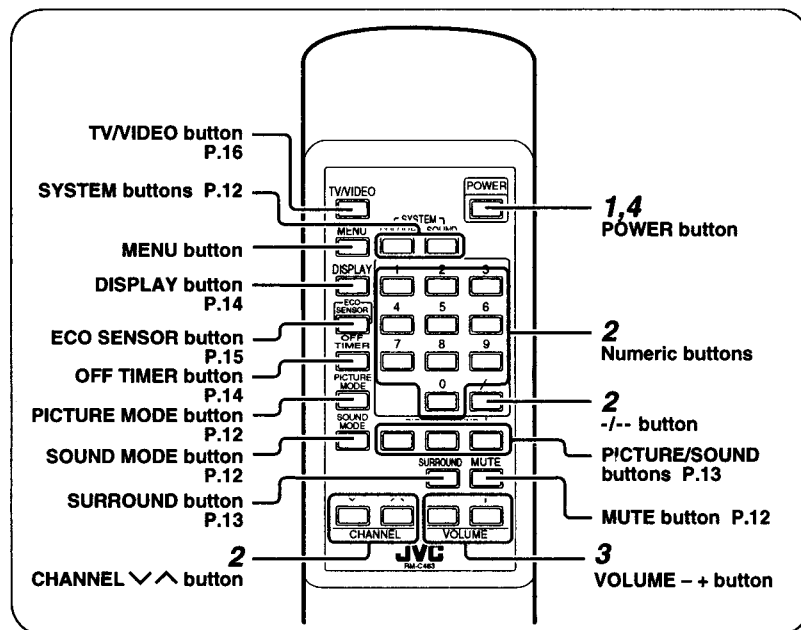
This completes channel editing.

**Note:** .....  
 • You can also turn the display off by pressing MENU repeatedly.  
 .....



## VIEWING A TELEVISION PROGRAMME

### Using the remote control



#### 1. Press **POWER** to turn your TV ON.

The Power lamp changes from red to green.

**Note:** .....

- If your TV does not turn ON, press the Main Power button and press **POWER** again.

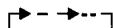
#### 2. Select a PR channel.

##### ■ Scan selection

Press **CHANNEL V ^**.

##### ■ Direct selection

First: Press the **-/--** button to select 1-digit or 2-digit mode. The mode cycles in the following order.



##### --: 1-digit mode

Only to select a channel with a 1-digit number.

##### --: 2-digit mode

To select a channel with a 2-digit number (You can also select a 1-digit number).

#### 1. Press the Numeric buttons to select a channel.

■ For 1-digit mode (example)

Channel 6 → Press 6.

■ For 2-digit mode (example)

Channel 6 → Press 0, 6.

Channel 16 → Press 1, 6.

**Notes:** .....

- Channel 0 (AV channel) is displayed as "AV".

## VIEWING A TELEVISION PROGRAMME

- If picture or sound are abnormal, see "Selecting the colour System" or "Selecting the Sound System" on page 12.

#### 3. Press **VOLUME - +** to adjust the sound.

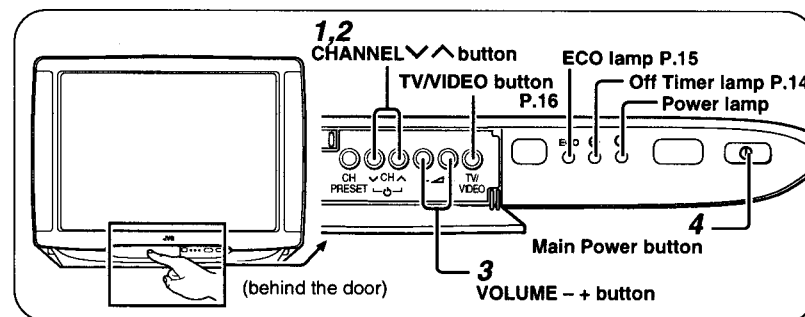
#### 4. To turn your TV OFF, press **POWER**.

The Power lamp changes from green to red.

**Note:** .....

- We recommend that you press the Main Power button to turn the Main Power OFF if you do not plan to use your TV for a long time or if you wish to save energy.

### Using the front panel buttons



#### 1. Press **CHANNEL V ^** to turn your TV ON.

The Power lamp changes from red to green, and your TV enters TV mode.

**Note:** .....

- If your TV does not turn ON, press the Main Power button and then press **CHANNEL V ^** again.

#### 2. Press **CHANNEL V ^** to select a channel.

#### 3. Press **VOLUME - +** to adjust the sound.

#### 4. To turn off your TV, press the **Main Power** button to turn the **Main Power OFF**.

The Power lamp goes off.

- If you press the Main Power button again, your TV turns ON immediately. Step 1 is no longer required.

## SOUND AND PICTURE

### MUTE

You can turn the sound off instantly by pressing MUTE. To turn the sound back on, press MUTE again.

### Selecting the Colour System

If the picture is not clear or no colour appears, repeatedly press SYSTEM-COLOUR to select the appropriate system.

The system changes cyclically in the following order.

**In TV mode (Channel 1 to 99):**

→ PAL → SECAM → NTSC 3.58 → NTSC 4.43

**In TV mode (channel 0 (AV channel)):**

→ AUTO → PAL → SECAM  
NTSC 4.43 ← NTSC 3.58 ←

**In VIDEO mode:**

→ AUTO → PAL → SECAM  
NTSC 4.43 ← NTSC 3.58 ←

#### AUTO:

Automatic colour system selection

**Note:** .....

- If picture is abnormal even though you selected the AUTO colour system, select the optimum colour system manually.

### Selecting the Sound System

If the sound is not clear or no sound is heard, repeatedly press SYSTEM-SOUND to select the appropriate system.

The system changes cyclically in the following order.

→ B/G I D/K → M

**Note:** .....

- You cannot select the sound system when in VIDEO mode.

### Selecting the Picture Mode

You can select the desired mode from three preset picture modes. To do this, repeatedly press PICTURE MODE to select the desired PICTURE mode. The mode changes cyclically in the following order.

→ BRIGHT → STANDARD → SOFT

#### BRIGHT:

Heightens contrast and sharpness.

#### STANDARD:

Standardises picture adjustments.

#### SOFT:

Softens contrast and sharpness.

### Selecting the Sound Mode

You can select the desired mode from three preset sound modes. To do this, repeatedly press SOUND MODE to select the desired SOUND mode. The mode changes cyclically in the following order.

→ DYNAMIC → STANDARD → LIGHT

#### DYNAMIC:

Heightens bass and treble.

#### STANDARD:

Sets standard tone.

#### LIGHT:

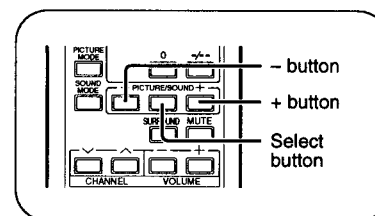
Softens bass and treble.

### SURROUND

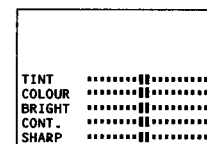
You can enjoy sound with a wider ambience by using the SURROUND function. To do this, press SURROUND. To return to normal sound, press SURROUND again.

### PICTURE/SOUND Adjustment

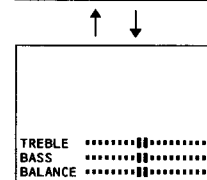
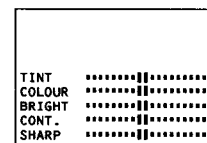
You can adjust the picture and sound as you like to suit your preferences.



#### 1. Press the Select button.



#### 2. Press the Select button to select an item.



## SOUND AND PICTURE

### 3. Press the – or + button to adjust.

+	ITEM	–
Reddish	TINT (tint)	Greenish
Lighter	COLOUR (colour depth)	Deeper
Darker	BRIGHT (brightness)	Brighter
Lower	CONT. (contrast)	Higher
Softer	SHARP (sharpness)	Sharper
Lower	TREBLE (high-frequency sound level)	Higher
Lower	BASS (low-frequency sound level)	Higher
To left	BALANCE (left/right speaker balance)	To right

**Notes:** .....

- TINT (tint) is displayed only when viewing images from NTSC3.58 or NTSC4.43 colour systems.
- If you do not do anything for about five seconds, the display is turned off and adjustment ends.

.....

## OTHER FEATURES

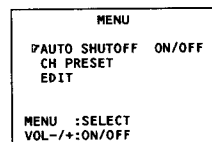
### DISPLAY

You can continuously display the current channel number on the screen. To do this, press DISPLAY. To turn the display off, press DISPLAY again.

### AUTO SHUTOFF

The AUTO SHUTOFF function can be set to turn your TV off if no signals are received for about 10 minutes or longer after the end of a broadcast.

1. Press MENU to display the MENU screen.



2. Each press of VOLUME – + toggles the AUTO SHUTOFF setting ON and OFF.

#### ON:

The auto shutoff function is enabled.

#### OFF:

The auto shutoff function is disabled.

3. Press DISPLAY to turn the display off.

This completes the setting.

#### Notes: .....

- The auto shutoff function does not work in VIDEO mode.
- The main power cannot be turned off by the auto shutoff function.

### OFF TIMER

You can set your TV to turn off automatically within a specified period of time. To do this, press OFF TIMER repeatedly. The period of time increases in 10-minute intervals.

→ 00 → 10 → 20 ... 100 → 110 → 120

- The Off Timer lamp lights when the Off Timer is set.
- 1 minute before the Off Timer turns off the TV, "GOOD NIGHT!" appears. 3 seconds before the Off Timer turns off the TV, "JVC" is displayed, blinking, on the screen.

#### To display the remaining time:

Press OFF TIMER once.

#### To cancel the OFF TIMER:

Press OFF TIMER to return the OFF time to 00.

The Off Timer lamp goes off.

#### Note: .....

- The Off Timer does not turn off the Main Power.

.....

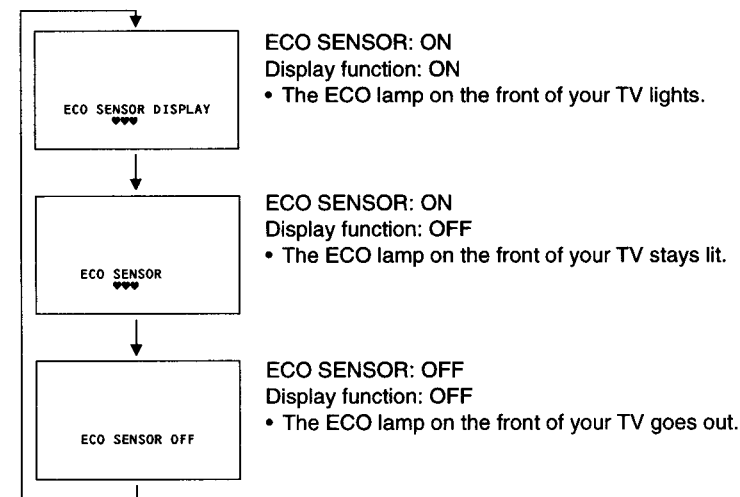
## OTHER FEATURES

### ECO SENSOR

When you turn the ECO SENSOR ON, the screen contrast is automatically adjusted to match the brightness of your room.

For example, you can avoid watching a screen that is too bright in a dark room. This reduces eye strain and the power consumption of the TV.

1. Each press of ECO SENSOR switches the function as follows.



#### What is the "Display function"?

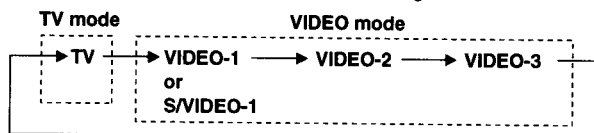
This function displays the darkness of your room in ♥ each time the darkness changes when the ECO SENSOR is ON. Darkness can be up to six hearts ♥. The greater the number of hearts, the darker your room is.

## VIEWING IMAGES FROM AN EXTERNAL DEVICE

You can view images from a VCR or other external device connected to your TV by selecting the appropriate VIDEO mode.

### 1. Repeatedly press TV/VIDEO to select the desired VIDEO mode.

The mode changes cyclically in the following order.



#### TV mode:

Shows TV broadcasts or RF output video from an external device.

#### VIDEO mode:

Shows video input from the external device connected to the S/VIDEO-1, VIDEO-2, or VIDEO-3 terminal.

- When "S/VIDEO-1" is displayed, the TV shows video input from external devices connected to the corresponding S terminal.

#### Notes:

- If picture is abnormal, see "Selecting the Colour System" on page 12.
- When VCRs or other external devices are connected to both the S terminal and the VIDEO terminal, the TV shows images from the VCR or other external device connected to the S terminal.
- In TV mode, the sound is monaural only. If you input a stereo sound signal from an external device (in VIDEO mode), the sound is stereo.

## TROUBLESHOOTING

**Important:** Review all the instructions in this INSTRUCTIONS manual.

Problem	Action
Cannot turn TV ON	Press the Main Power button. Insert the power plug in an AC outlet.
No picture or sound	Press TV/VIDEO to engage the correct mode. Check the aerial connections.
Inoperable remote control	Replace the batteries.
The power shuts OFF automatically	Press POWER to turn the TV ON again. Turn OFF the AUTO SHUTOFF function (see page 14).
No sound	Disconnect the headphones. Press SYSTEM-SOUND to engage the correct sound system.
Poor colours	Adjust the COLOUR and BRIGHTNESS. Press SYSTEM-COLOUR to select the appropriate system. Press PICTURE MODE to select STANDARD.
Lines or streaks in picture (interference)	Move the components apart until the interference disappears. Reposition the aerial.
Spotted picture (crosstalk)	Move the aerial away from the source of interference. Replace the aerial cable with a coaxial cable, which is less prone to interference.
Double pictures (ghost)	Reposition the aerial. Replace with an aerial with good directionality.
Snowy picture (image noise)	Check the aerial connection and aim it correctly. Replace or repair the aerial.
The screen turns blue	Broadcast not being received. Select another channel.

The following are normal occurrences and are not the result of TV malfunctions:

- When you touch the CRT surface, you might feel a slight charge of static electricity. This is because the CRT contains static electricity; it does not affect the human body.
- Your TV may emit a crackling sound due to a sudden change in temperature. There is no problem unless the picture or sound is abnormal.
- When a still bright image (of a white dress, for example) appears on the screen, the image may be coloured. This problem occurs in all CRTs, and when the bright image disappears, the colouration also disappears.

# SPECIFICATIONS

Model	AV-G290MX
TV RF system	B, G, I, D, K, K1, M
Colour system	PAL, SECAM, NTSC 3.58, 4.43 MHz
Channel and frequencies	VHF low channel (VL): 46.25 – 168.25 MHz VHF high channel (VH): 175.25 – 463.25 MHz UHF channel (U): 471.25 – 863.25 MHz ■ Receives cable channels in mid band (X-Z, S1-S10) super band (S11-S20) and hyper band (S21-S41)
Power input	AC120 – 240 V, 50/60 Hz (operating AC 90 – 260 V, 50/60 Hz)
Power consumption	Average 120 W, Maximum 185 W
Screen size (measured diagonally)	Picture tube 73 cm Visible area 68 cm
Audio output	Rated power output: 10 W + 10 W
Speaker	10 cm round × 2
External input/output	<ul style="list-style-type: none"> <li>• S/VIDEO-1: Video input: RCA S-video input: S-VIDEO (4-pin) Audio input: RCA × 2</li> <li>• VIDEO-2: Video input: RCA Audio input: RCA × 2</li> <li>• VIDEO-3: Video input: RCA Audio input: RCA × 2</li> <li>• LINE OUT: Video output: RCA Audio output: RCA × 2</li> <li>• Headphone jack : stereo mini jack (dia. 3.5 mm)</li> </ul>
Dimensions (W × H × D)	733 mm × 583 mm × 492 mm
Weight	39.2 kg
Accessories	<ul style="list-style-type: none"> <li>• REMOTE CONTROL (RM-C463) × 1</li> <li>• AA/R6/UM-3 Dry Cell Battery × 2</li> <li>• Matching box × 1</li> </ul>

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

# SAFETY PRECAUTIONS

1. The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (▲) on the parts list in Service manual.** The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.
4. **Don't short between the LIVE side ground and ISOLATED(NEUTRAL) side ground or EARTH side ground when repairing.**  
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED(NEUTRAL) : (⌋) side GND and EARTH : (⊕) side GND. Don't short between the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND and never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and ISOLATED(NEUTRAL) side GND or EARTH side GND at the same time.  
If above note will not be kept, a fuse or any parts will be broken.
5. If any repair has been made to the chassis, it is recommended that the B1 setting should be checked or adjusted (See ADJUSTMENT OF B<sub>1</sub> POWER SUPPLY).
6. The high voltage applied to the picture tube must conform with that specified in Service manual. Excessive high voltage can cause an increase in X-Ray emission, arcing and possible component damage, therefore operation under excessive high voltage conditions should be kept to a minimum, or should be prevented. If severe arcing occurs, remove the AC power immediately and determine the cause by visual inspection (incorrect installation, cracked or melted high voltage harness, poor soldering, etc.). To maintain the proper minimum level of soft X-Ray emission, components in the high voltage circuitry including the picture tube must be the exact replacements or alternatives approved by the manufacturer of the complete product.
7. Do not check high voltage by drawing an arc. Use a high voltage meter or a high voltage probe with a VTVM. Discharge the picture tube before attempting meter connection, by connecting a clip lead to the ground frame and connecting the other end of the lead through a 10k $\Omega$  2W resistor to the anode button.
8. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

## 9. Isolation Check

### (Safety for Electrical Shock Hazard)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screwheads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

### (1) Dielectric Strength Test

The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second.

(. . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)

This method of test requires a test equipment not generally found in the service trade.

### (2) Leakage Current Check

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).

#### • Alternate Check Method

Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000 ohms per volt or more sensitivity in the following manner. Connect a 1500 $\Omega$  10W resistor paralleled by a 0.15 $\mu$ F AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.35V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).

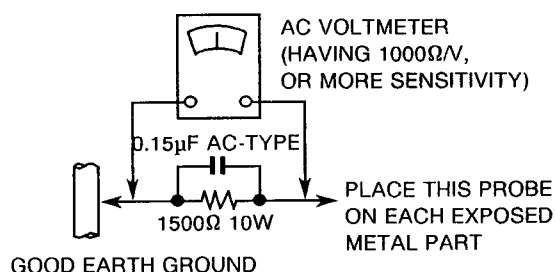


Fig.A

# FEATURES

- By means of AUTO PROGRAM, the TV stations can be selected automatically and the TV channels can also be rearranged automatically.
- Built-in ECO MODE (ECONOMY, ECOLOGY)  
In accordance with the brightness in a room, the brightness and / or contrast of the picture can be adjusted automatically to make the optimum picture which is easy on the eye.
- Built-in stereo system (playback only).

## SPECIFIC SERVICE INSTRUCTIONS

### DISASSEMBLY PROCEDURE

#### REMOVING THE REAR COVER

1. Unplug the power supply cord.
2. Remove the eight screws marked (A) as shown in figure.
3. Withdraw the rear cover toward you.

#### REMOVING THE CHASSIS

- After removing the rear cover.
1. Slightly raise the both sides of the chassis by hand and remove the two claws under the both sides of the chassis from the front cabinet.
  2. Withdraw the chassis backward.  
(If necessary, take off the wire clamp, connectors etc.)

#### REMOVING THE AV TERMI. BOARD

- After removing the rear cover.
1. Remove the two screws marked (B) as shown in figure.
  2. While raising the claw marked (A), remove the top of the AV TERMI. board slightly in the direction of arrow (E) as shown in Fig. 1.
  3. Pressing the claws marked (A), remove the AV TERMI. board toward you marked (E) as shown in Fig. 2.

#### REMOVING THE CONTROL BASE

- After removing the rear cover & the chassis.
1. While pushing down the claws marked (C), remove the CONTROL BASE in the arrow direction marked (D) as shown in Fig.3.  
(If necessary, take off the wire clamp, connectors etc.)

#### REMOVING THE DOME SPEAKER

- After removing the rear cover.
1. Remove the two screws marked (C) as shown in figure.
  2. Follow the same steps when removing the other hand dome speaker.

Note:

- When removing the screws marked (C) of the dome speaker, remove the lower side screw first, and then remove the upper screw.

#### CHECKING THE PW BOARD

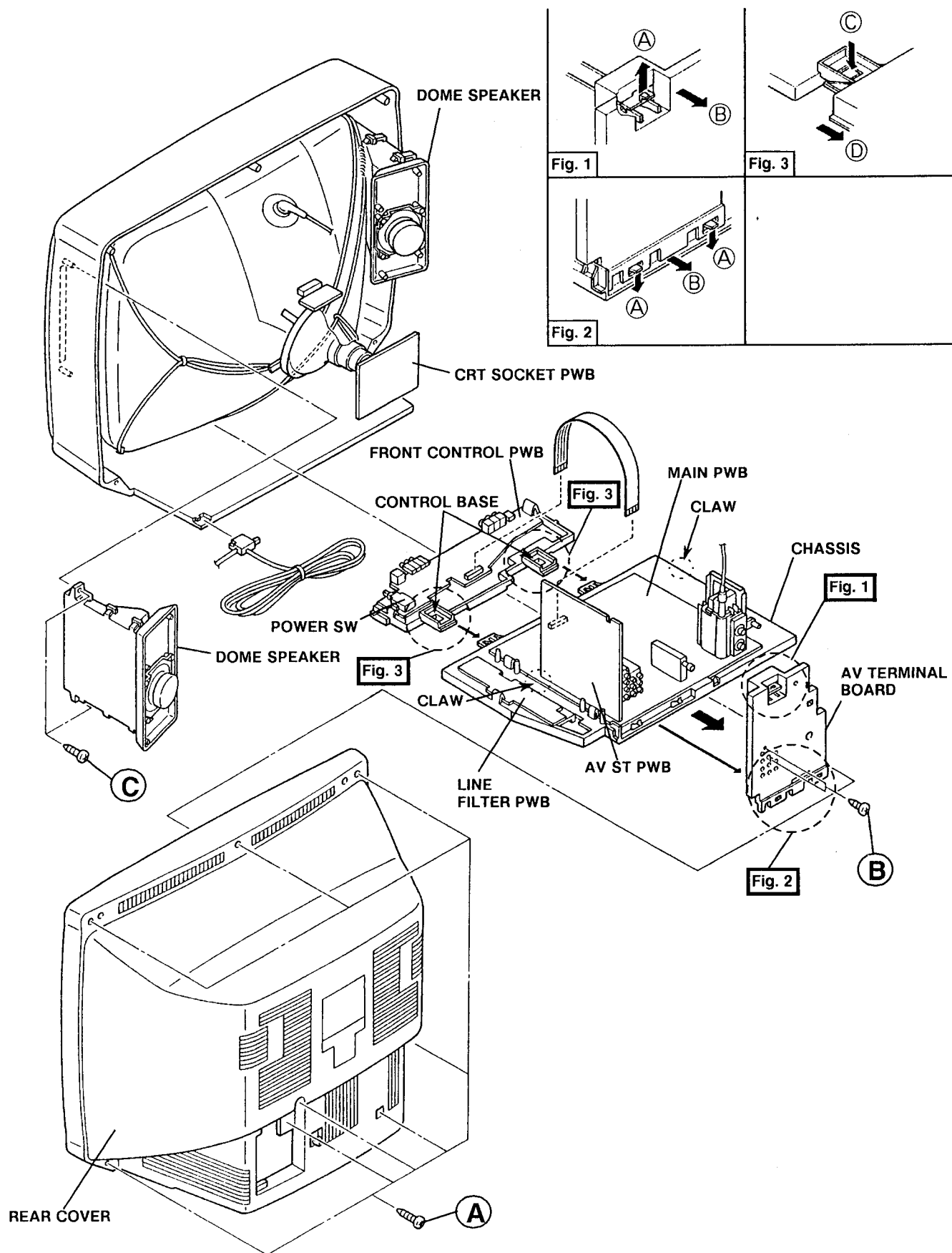
1. To check the back side of the PW Board.
  - 1) Pull out the chassis. (Refer to REMOVING THE CHASSIS).
  - 2) Erect the chassis vertically so that you can easily check the back side of the PW Board.

#### [CAUTION]

- When erecting the chassis, be careful so that there will be no contacting with other PW Board.
- Before turning on power, make sure that the wire connector is properly connected.

#### WIRE CLAMPING AND CABLE TYING

1. Be sure to clamp the wire.
2. Never remove the cable tie used for tying the wires together.  
Should it be inadvertently removed, be sure to tie the wires with a new cable tie.





## REPLACEMENT OF MEMORY ICs

### 1. Memory ICs

This TV use memory ICs (EEP-ROM IC). In the memory ICs are memorized data for correctly operating the video and deflection circuits. When replacing memory ICs, be sure to use ICs written with the initial values of data.

### 2. Procedure for replacing memory ICs

Procedure
<b>(1) Power off</b> Switch the power off and unplug the power code from the outlet.
<b>(2) Replace ICs.</b> Be sure to use memory ICs written with the initial data values.
<b>(3) Power on</b> Plug the power code into the outlet and switch the power on.
<b>(4) Check and set SYSTEM CONSTANT SET:</b> <ol style="list-style-type: none"> <li>1) Press the DISPLAY key and the PICTURE MODE key (shown in Fig.3) of the REMOTE CONTROL UNIT simultaneously.</li> <li>2) The SERVICE MENU screen of Fig. 1 will be displayed.</li> <li>3) While the SERVICE MENU on display, press the DISPLAY key and PICTURE MODE key simultaneously, and the SYSTEM CONSTANT SET screen of Fig. 2 will be displayed.</li> <li>4) Check the setting value of the SYSTEM CONSTANT SET of Table 1. If the value is different, select the setting item with the PICTURE / SOUND CENTER key, and set the correct value with the PICTURE / SOUND - / + key.</li> <li>5) Press the MENU key and memorize the setting value.</li> <li>6) Press the DISPLAY key twice, and return to the normal screen.</li> </ol>
<b>(5) Receive channel setting</b> Refer to the <b>OPERATING INSTRUCTIONS</b> and set the receive channels (channels preset) as described.
<b>(6) User setting</b> Check the user setting value of Table 2, and if setting value is different, set the correct value. For setting, refer to the <b>OPERATING INSTRUCTIONS</b> .
<b>(7) SERVICE MENU setting</b> Verify the setting items of the SERVICE MENU of Table 3, and reset where necessary. For setting, refer to the <b>SERVICE ADJUSTMENTS</b> .

#### SERVICE MENU

SERVICE MENU	
1.IF	2.V/C
3.AUDIO	4.DEF
5.VSM PRESET	
6.SSM PRESET	7.CENTER
1-7: SELECT	DISP: EXIT

Fig. 1

#### SYSTEM CONSTANT SET

SYSTEM CONSTANT SET	
MODEL = KA (V A.***)	
1.VIDEO-3	: YES
2.POWER BASS	: NO
3.ECO SENSOR	: YES
4.INCH	: 29/25
5.COLOUR	: MULTI
- + MENU : STORE	DISP : EXIT
***** - *****	

Fig. 2

#### NAMES OF REMOTE CONTROL KEY

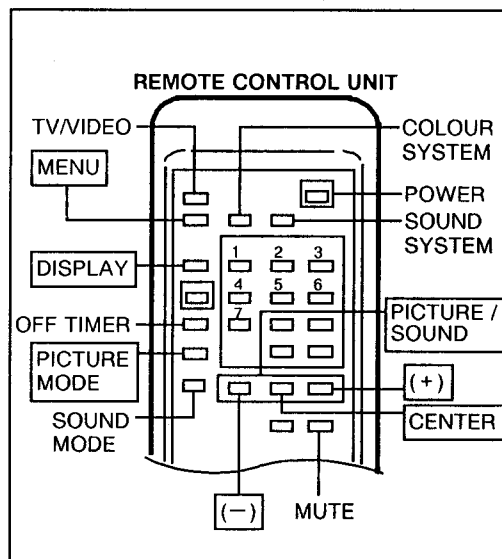


Fig. 3

## SETTING VALUES OF SYSTEM CONSTANT SET

Setting item	Setting content	Setting value
VIDEO-3	→ YES → NO →	YES
POWER BASS	→ YES → NO →	NO
ECO SENSOR	→ YES → NO →	YES
INCH	→ 21 → 29 / 25 →	29 / 25
COLOUR	→ PAL → MULTI → TRIPLE →	MULTI

Table 1

## USER SETTING VALUES

Setting item	Setting value	Setting item	Setting value
SUB POWER	ON	SURROUND	OFF
CHANNEL	2 POSITION	OFF TIMER	OFF
CHANNEL PRESET	see, 2.(5) receive channel setting.	PICTURE MODE (VSM)	BRIGHT
VOLUME	Appropriate sound volume	SOUND MODE (SSM)	DYNAMIC
TV/VIDEO	TV	ECO	OFF
DISPLAY	POSITION DISPLAY	AUTO SHUT OFF	OFF
COLOUR SYSTEM	PAL	BALANCE	CENTER
SOUND SYSTEM	B / G		

Table 2

## SERVICE MENU SETTING ITEMS

Service menu	Setting item	Service menu	Setting item
1. IF	1. VCO 2. DELAY POINT	4. DEF (50Hz / 60Hz)	1. V-SLOPE 2. V-SHIFT 3. V-SIZE 4. H-CENT 5. H-SIZE 6. EW-PIN 7. TRAPEZ 8. V-S.CR 9. EW-COR
2. V / C	1. CUT OFF 2. R DRIVE 3. G DRIVE 4. B DRIVE (Do not adjust) 5. BRIGHT 6. CONT. 7. COLOUR (AUTO / PAL / SECAM / N3 / N4) 8. TINT (NTSC) 9. DELAY TIME (Do not adjust) 10. SHARP	5. VSM PRESET (BRIGHT/STD/SOFT)	1. BRIGHT 2. CONT. 3. COLOUR 4. SHARP 5. TINT
3. AUDIO (Do not adjust)	1. CONC LIMIT 2. A2 ID THR 3. SOUND SYSTEM	6. SSM PRESET (DYNAMIC/STD/LIGHT)	TREBLE BASS
		7. CENTER	CENTER ADJUST TREBLE BASS

Table 3

## REPLACEMENT OF CHIP COMPONENT

### CAUTIONS

1. Avoid heating for more than 3 seconds.
2. Do not rub the electrodes and the resist parts of the pattern.
3. When removing a chip part, melt the solder adequately.
4. Do not reuse a chip part after removing it.

### SOLDERING IRON

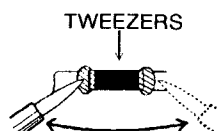
1. Use a high insulation soldering iron with a thin pointed end of it.
2. A 30w soldering iron is recommended for easily removing parts.

### REPLACEMENT STEPS

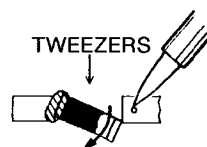
#### 1. How to remove Chip parts

##### •Resistors, capacitors, etc

- (1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.

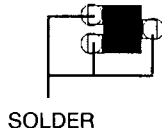


- (2) Shift with tweezers and remove the chip part.

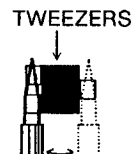


##### •Transistors, diodes, variable resistors, etc

- (1) Apply extra solder to each lead.



- (2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.

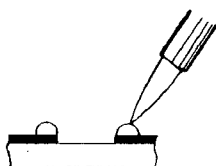


**Note:** After removing the part, remove remaining solder from the pattern.

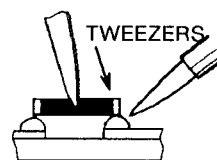
#### 2. How to install Chip parts

##### •Resistors, capacitors, etc

- (1) Apply solder to the pattern as indicated in the figure.



- (2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.



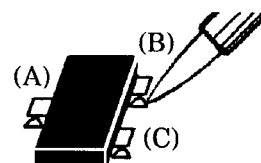
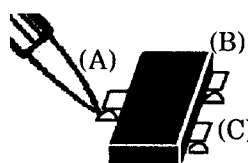
##### •Transistors, diodes, variable resistors, etc

- (1) Apply solder to the pattern as indicated in the figure.

- (2) Grasp the chip part with tweezers and place it on the solder.

- (3) First solder lead A as indicated in the figure.

- (4) Then solder leads B and C.



# SERVICE ADJUSTMENTS

## BEFORE STARTING SERVICE ADJUSTMENT

- There are 2 ways of adjusting this TV: One is with the REMOTE CONTROL UNIT and the other is the conventional method using adjustment parts and components.
- The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.
- Turn on the power of the TV and measuring equipment for warming up for at least 30 minutes before starting adjustment.
- Make sure that connection is correctly made to AC power (220V) source.
- If the receive or input signal is not specified, use the most appropriate signal for adjustment.
- Never touch parts (such as variable resistors, transformers and condensers) not shown in the adjustment items of this service adjustment.
- Preparation for adjustment (presetting):  
Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT:

(1) PICTURE MODE (VSM)	BRIGHT
(2) ECO	OFF
(3) SOUND MODE (SSM)	STANDARD
(4) SURROUND	OFF
(5) BALANCE	CENTER
(6) POWER BASS	OFF

## MEASUREMENT EQUIPMENT AND FIXTURES

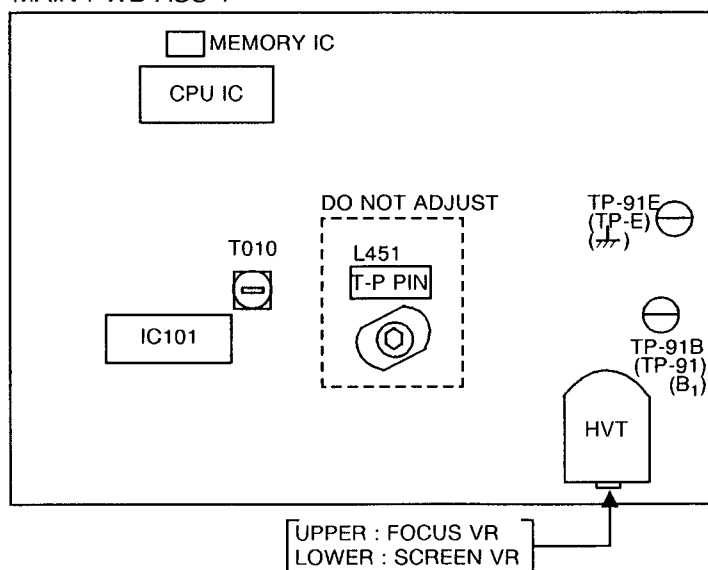
- DC voltmeter (or digital voltmeter)
- Oscilloscope
- Signal generator (Pattern generator) [PAL / SECAM / NTSC]
- Remote control unit

## ADJUSTMENT ITEMS

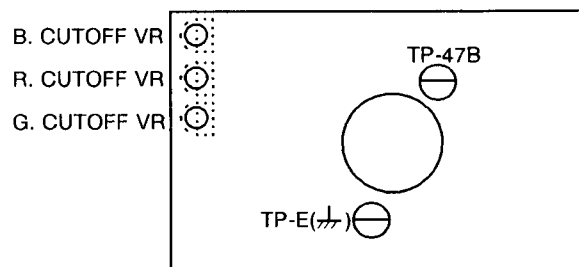
Adjustment item	Adjustment item
B1 POWER SUPPLY check	VSM / SSM / CENTER ADJUST PRESET setting
	VIDEO/CHROMA CIRCUIT adjustment
FOCUS adjustment	DEFLECTION CIRCUIT adjustment
IF CIRCUIT adjustment	AUDIO CIRCUIT (Do not adjust.)

## ADJUSTMENT LOCATIONS

### MAIN PWB ASS'Y



### CRT SOCKET PWB ASS'Y



## BASIC OPERATION OF SERVICE MENU

### 1. TOOL OF SERVICE MENU OPERATION

Operate the SERVICE MENU with the REMOTE CONTROL UNIT.

### 2. SERVICE MENU ITEMS

With the SERVICE MENU, various settings (adjustments) can be made, and they are broadly classified in the following items of settings (adjustments):

- |                         |  |
|-------------------------|--|
| (1) 1. IF .....         | For entering/adjusting the setting values (adjustment values) of the IF circuit.                 |
| (2) 2. V/C .....        | For entering/adjusting the setting values (adjustment values) of the VIDEO/CHROMA circuit.       |
| (3) 3. AUDIO .....      | For entering/adjusting the setting values (adjustment values) of the multiplicity SOUND circuit. |
| (4) 4. DEF .....        | For entering/adjusting the setting values (adjustment values) of the DEFLECTION circuit.         |
| (5) 5. VSM PRESET ..... | For setting the values of STANDARD, SOFT and BRIGHT.<br>(VSM : video status memory)              |
| (6) 6. SSM PRESET ..... | For setting the values of STANDARD, LIGHT and DYNAMIC.<br>(SSM : sound status memory)            |
| (7) 7. CENTER .....     | For setting the CENTER ADJUST values of TREBLE and BASS.   |

There are two different kinds of TV sets one can display CENTER ADJUST and the other cannot do so.

For the TV set whose CENTER ADJUST can be displayed, refer to the method of "CENTER ADJUST" described in the "Setting of VSM / SSM PRESET & CENTER ADJUST" for adjustment.

### 3. BASIC OPERATION OF SERVICE MENU

#### (1) How to enter SERVICE MENU

Press the DISPLAY key and the PICTURE MODE key of the REMOTE CONTROL UNIT (Fig.2) simultaneously.

The SERVICE MENU screen of Fig.1 will be displayed.

#### SERVICE MENU

SERVICE MENU	
1. IF	2. V/C
3. AUDIO	4. DEF
5. VSM PRESET	
6. SSM PRESET	7. CENTER
1-7: SELECT DISP: EXIT	

Fig. 1

#### (2) Selection of SUB MENU SCREEN

- 1) Press one of the keys 1 ~ 7 of the REMOTE CONTROL UNIT (Fig.2), and select the SUB MENU SCREEN (See Fig. 3) from the SERVICE MENU.

SERVICE MENU → SUB MENU

- |               |
|---------------|
| 1. IF         |
| 2. V / C      |
| 3. AUDIO      |
| 4. DEF.       |
| 5. VSM PRESET |
| 6. SSM PRESET |
| 7. CENTER     |

#### NAMES OF REMOTE CONTROL KEY

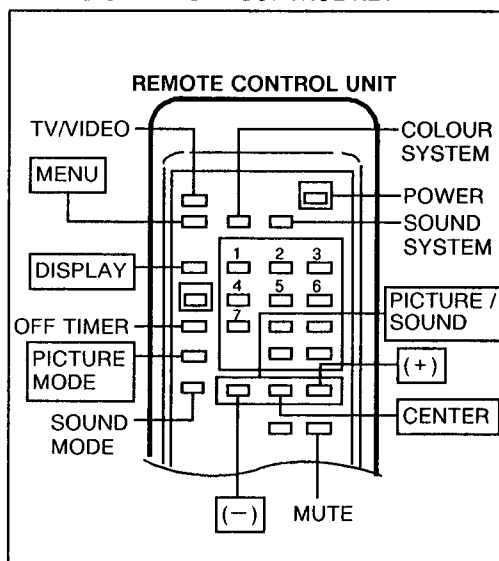


Fig. 2

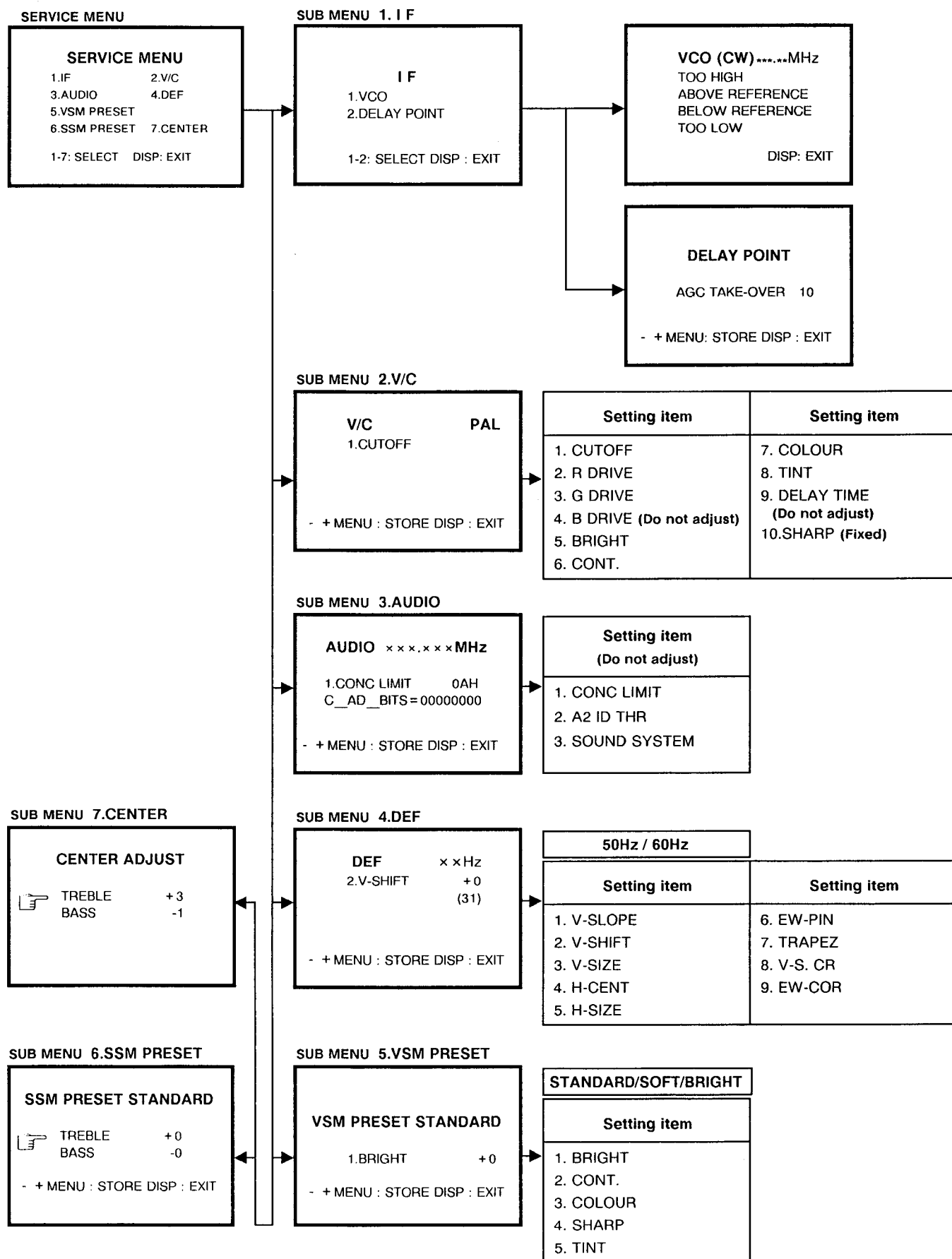


Fig. 3 SUB MENU SCREEN

**(3) Method of Setting**1) Method of Setting **1. IF****[1. VCO]**

- ① 1 Key ..... Select **1.IF**.
- ② 1 Key ..... Select **1.VCO**.
- ③ The VCO (CW) screen will be displayed in yellow when the AFC voltage is at a certain level and in blue when it is at other levels.
- ④ DISPLAY Key ..... As you press this twice, you will return to the **SERVICE MENU**.

**[2. DELAY POINT]**

- ① 1 Key ..... Select **1.IF**.
- ② 2 Key ..... Select **2.DELAY POINT**.
- ③ PICTURE / SOUND -/+ Key ..... Set (adjust) the setting values of the setting items.
- ④ MENU Key ..... Memorize the set value.  
(Before storing the setting values in memory, do not press the CH, TV / VIDEO, DISPLAY, POWER ON / OFF keys - if you do, the values will not be stored in memory.)
- ⑤ DISPLAY Key ..... When this is pressed twice, you will return to the **SERVICE MENU**.

2) Method of setting **2.V/C, 3.AUDIO, 4.DEF, 5.VSM PRESET, 6.SSM PRESET and 7. CENTER.**

- ① 2 ~ 7 Keys ..... Select one from **2. V/C, 3. AUDIO, 4. DEF, 5. VSM PRESET, 6. SSM PRESET and 7. CENTER.**
- ② PICTURE / SOUND CENTER Key ... Select setting items.
- ③ PICTURE / SOUND -/+ Key ..... Set (adjust) the setting values of the setting items.(When 1.CUTOFF of 2.V/C is selected, press its - or + key, and the whole screen will change to a faint horizontal line appearing in its center. Press the same - or + key again, and the screen will return to the original 1.CUTOFF screen.)
- ④ MENU Key ..... Memorize the setting value.  
(Before storing the setting values in memory, do not press the CH, TV / VIDEO, DISPLAY, POWER ON / OFF keys - if you do, the values will not be stored in memory.)
- ⑤ DISPLAY Key ..... Return to the **SERVICE MENU** screen.

**(4) Release of SERVICE MENU**

- 1) After completings the setting, return to the **SERVICE MENU**, then again press the **DISPLAY** key.

## ADJUSTMENTS

### B1 POWER SUPPLY CHECK

Item	Measuring instrument	Test point	Adjustment part	Description
Check of B1 Voltage	Signal generator  DC Volt-meter	TP-91B(B1) (TP-91) TP-91E ( $\frac{1}{\text{---}}$ ) (TP-E)		<ol style="list-style-type: none"> <li>1. Receive a whole black signal.</li> <li>2. Connect a DC voltmeter to TP-91B and TP-91E(<math>\frac{1}{\text{---}}</math>).</li> <li>3. Make sure that the voltage is <math>\text{DC}142.5 \pm 1.5\text{V}</math>.</li> </ol>

### FOCUS ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of FOCUS	Signal generator		FOCUS VR [In HVT]	<ol style="list-style-type: none"> <li>1. Receive a cross-hatch signal.</li> <li>2. While watching the screen, adjust the FOCUS VR to make the vertical and horizontal lines as fine and sharp as possible.</li> <li>3. Make sure that when the screen is darkened, the lines remain in good focus.</li> </ol>

### IF CIRCUIT ADJUSTMENT

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of VCO	Remote control unit		T010 TRANSF.	<ul style="list-style-type: none"> <li>Do not make any adjustment unless the adjustment is out of way and you cannot get correct PICTURE.</li> </ul> <ol style="list-style-type: none"> <li>1. Select 1.IF from the SERVICE MENU.</li> <li>2. Press 1 key and select 1.VCO.</li> <li>3. Select a receivable broadcast channel with the CHANNEL key.</li> <li>4. Turn the core of T010 TRANSF. until the colour of the characters TOO HIGH displayed on the screen changes from blue to <u>yellow</u>. (Step 1)</li> <li>5. Then slowly turn the core of T010 TRANSF. to the <u>left</u> until the colour of the characters BELOW REFERENCE changes from blue to <u>yellow</u>. (Step 3)</li> <li>6. Perform CHANNEL PRESET again, and make sure that each broadcast is being received properly.</li> </ol>
<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p>VCO (CW)....MHz ← fv</p> <p>TOO HIGH</p> <p>ABOVE REFERENCE</p> <p>BELOW REFERENCE ← YELLOW</p> <p>TOO LOW</p> <p>DISP: EXIT</p> </div>				
Screen display		Step		
		1	→	2 → 3
TOO HIGH		<u>Yellow</u>	→	Blue → Blue
ABOVE REFERENCE		Blue	→	<u>Yellow</u> → Blue
BELOW REFERENCE		Blue	→	Blue → <u>Yellow</u>
TOO LOW		Blue	→	Blue



Item	Measuring instrument	Test point	Adjustment part	Description						
Adjustment of DELAY POINT (AGC)	Remote control unit		DELAY POINT (AGC TAKE-OVER)	<div>1. Receive a black and white signal (colour off).</div> <div>2. Select 1.IF from the SERVICE MENU.</div> <div>3. Select 2.DELAY POINT by pressing the 2 key on the remote control.</div> <div>4. Adjust the PICTURE / SOUND - or + key until video noise disappears.</div> <div>5. Press the MENU key and memorize the seting value.</div> <div>6. Turn to other channels and make sure that there are not irregularities.</div>						
<table><tr><th>Setting (adjustment) item</th><th>Variable range</th><th>Initial setting value</th></tr><tr><td>DELAY POINT (AGC TAKE-OVER)</td><td>0~63</td><td>10</td></tr></table>					Setting (adjustment) item	Variable range	Initial setting value	DELAY POINT (AGC TAKE-OVER)	0~63	10
Setting (adjustment) item	Variable range	Initial setting value								
DELAY POINT (AGC TAKE-OVER)	0~63	10								

## VSM / SSM / PRESET,CENTER ADJUST SETTING

Item	Measuring instrument	Test point	Adjustment part	Description
Setting of VSM PRESET SSM PRESET CENTER ADJUST	Remote control unit		1. BRIGHT 2. CONT. 3. COLOUR 4. SHARP 5. TINT	(VSM PRESET) 1. Select 5.VSM PRESET from the SERVICE MENU. 2. Select BRIGHT with the PICTURE MODE key. 3. Adjust the PICTURE / SOUND CENTER and PICTURE SOUND - or + key to bring the set values of 1.BRIGHT ~ 5.TINT to the values shown in the table. 4. Press the MENU key and memorize the set value. 5. Respectively select the VSM PRESET mode for STANDARD and SOFT, and make similar adjustment as in 3 above.
			7. CENTER TREBLE BASS	(SSM PRESET) 6. Select 6. SSM PRESET from the SERVICE MENU. 7. Select STANDARD with the sound mode key. 8. Adjust the PICTURE / SOUND CENTER and - or + key to bring the set values BASS and TREBLE to the values shown in the table. 9. Press the MENU key and memorize the set value. 10. Respectively select the SSM PRESET mode for LIGHT and DYNAMIC, and make similar adjustment as in 8 above.

<div>VSM preset mode</div> <div>Setting item</div>	BRIGHT	STANDARD	SOFT
1. BRIGHT SETTING VALUE	0	0	0
2. CONT. SETTING VALUE	+ 15	+ 4	-4
3. COLOUR SETTING VALUE	0	0	0
4. SHARP SETTING VALUE	0	0	-3
5. TINT SETTING VALUE	0	0	0

SETTING VALUES OF VSM PRESET

<div>SSM preset mode</div> <div>Setting item</div>	DYNAMIC	STANDARD	LIGHT
TREBLE SETTING VALUE	+ 4	0	+ 0
BASS SETTING VALUE	+ 3	0	-8

SETTING VALUES OF SSM PRESET

<div>CENTER ADJUST mode</div> <div>Setting item</div>	CENTER
TREBLE SETTING VALUE	+ 2
BASS SETTING VALUE	-1

SETTING VALUES OF CENTER ADJUST

11. Select 7. CENTER from the SERVICE MENU.				
12. Adjust the PICTURE / SOUND CENTER and PICTURE SOUND - or + key to bring the set values BASS and TREBLE to the values show in the table.				
13. Press the MENU key and memorize the set value.				

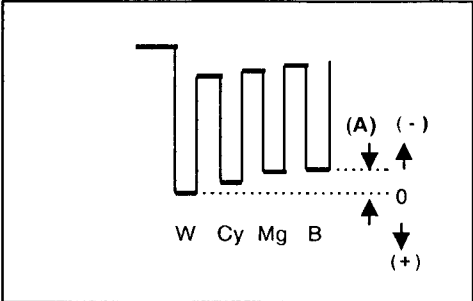
## VIDEO/CHROMA CIRCUIT ADJUSTMENT

The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.  
The setting values which adjust the screen to the optimum condition can be different from the initial setting values.

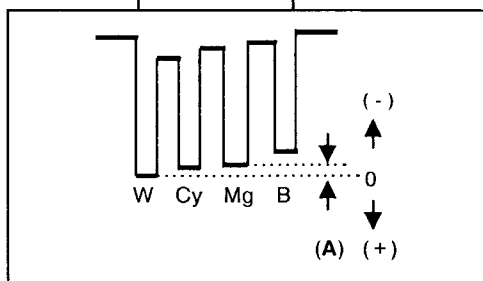
Setting (adjustment) item	Variable range	Initial setting value	Setting (adjustment) item	Colour system	Variable range	PAL	SECAM	NTSC 3.58	NTSC 4.43
1. CUTOFF	ON / OFF	OFF	7. COLOUR initial setting value		-31 ~ +32	+3	+3	+13	+0
2. R DRIVE	-31 ~ +32	+0	8. TINT initial setting value	TV	-31 ~ +32	—	—	-1	+0
3. G DRIVE	-31 ~ +32	+0		VIDEO				+0	+0
4. B DRIVE (Do not adjust)	-31 ~ +32	+0 (Fixed)	9. DELAY TIME initial setting value (Do not adjust)	TV	00H ~ 0FH	01H	00H	00H	00H
5. BRIGHT	-31 ~ +32	+3		C VIDEO		00H	00H	00H	00H
6. CONT.	-46 ~ +17	-5		S VIDEO		01H	00H	00H	00H
			10. SHARP		-8 ~ +6	-1	←	←	←

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of WHITE BALANCE (Low light)	Signal generator  Remote control unit		R. CUT OFF VR (R108)  G. CUT OFF VR (R107)  B. CUT OFF VR (R109) [CRT SKT PWB]  SCREEN VR [In HVT]	<ol style="list-style-type: none"> <li>1. Receive a black and white signal (colour off).</li> <li>2. Select 2.V/C from the SERVICE MENU.</li> <li>3. Select 1.CUT OFF with the PICTURE / SOUND CENTER key.</li> <li>4. Show one horizontal line with the PICTURE / SOUND - or + key. With the SCREEN VR, adjust so that the horizontal line will not be too bright.</li> <li>5. Turn the CUT OFF VR respectively for R, G and B fully to the left (to the left direction when seen from the rear).</li> <li>6. Gradually turn the SCREEN VR from the left end to the right direction to bring one of the red, green and blue colours faintly visible.</li> <li>7. By adjusting the CUT OFF VR, bring out the other 2 colours and make one horizontal line visible in white</li> <li>8. Turn the SCREEN VR and bring one white horizontal line faintly visible.</li> <li>9. With the PICTURE / SOUND - or + key, turnoff 1.CUTOFF screen.</li> </ol>
Adjustment of WHITE BALANCE (High light)	Signal generator  Remote control unit		2. R. DRIVE 3. G. DRIVE  4. B. DRIVE (Do not adjust)	<ol style="list-style-type: none"> <li>1. Receive a black and white signal (colour off).</li> <li>2. Select 2.V/C with the SERVICE MENU.</li> <li>3. Select 2.R DRIVE and 3.G DRIVE with the PICTURE / SOUND CENTER key.</li> <li>4. Change the screen colour to white with the PICTURE / SOUND - or + key.</li> <li>5. Press the MENU key, and memorize the respectively set values.</li> </ol>

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB BRIGHT	Remote control unit		5. BRIGHT	<ol style="list-style-type: none"> <li>1. Receive any broadcast.</li> <li>2. Select 2.V/C from the SERVICE MENU.</li> <li>3. Select 5.BRIGHT with the PICTURE / SOUND CENTER key.</li> <li>4. Set the initial setting value with the PICTURE / SOUND - or + key.</li> <li>5. If the brightness is not the best with the initial set value, make fine adjustment until you get the best brightness.</li> <li>6. Press the MENU key and memorize the set value.</li> </ol>
Adjustment of SUB CONT.	Remote control unit		6. CONT.	<ol style="list-style-type: none"> <li>1. Receive any broadcast.</li> <li>2. Select 2.V/C with the SERVICE MENU.</li> <li>3. Select 6.CONT. with the PICTURE / SOUND CENTER key.</li> <li>4. Set the initial setting value with the PICTURE / SOUND - or + key.</li> <li>5. If the contrast is not the best with the initial set value, make fine adjustment until you get the best contrast.</li> <li>6. Press the MENU key and memorize the set value.</li> </ol>
Adjustment of SUB COLOUR I	Remote control unit		7. COLOUR	<b>[Method of adjustment without using measuring equipment]</b>
			PAL COLOUR	<b>(PAL COLOUR)</b> <ol style="list-style-type: none"> <li>1. Receive a PAL broadcast.</li> <li>2. Select 2.V/C from the SERVICE MENU.</li> <li>3. Select 7.COLOUR with the PICTURE / SOUND CENTER key.</li> <li>4. Set the initial setting value for PAL COLOUR with the PICTURE / SOUND - or + key.</li> <li>5. If the colour is not the best with the initial set value, make fine adjustment until you get the best colour.</li> <li>6. Press the MENU key and memorize the set value.</li> </ol>
			SECAM COLOUR	<b>(SECAM COLOUR)</b> <ol style="list-style-type: none"> <li>7. Receive a SECAM broadcast. Make fine adjustment of SECAM COLOUR as previously.</li> </ol>
			NTSC 3.58 COLOUR	<b>(NTSC 3.58 COLOUR)</b> <ol style="list-style-type: none"> <li>8. Receive a NTSC 3.58MHz broadcast.</li> <li>9. Make similar fine adjustment of NTSC3.58 COLOUR as previously.</li> </ol>
				<b>(NTSC 4.43 COLOUR)</b> When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB COLOUR II	Signal generator	TP-47B TP-E( $\frac{1}{\sqrt{2}}$ ) [CRT SOCKET PWB]	7. COLOUR	<b>[Method of adjustment using measuring equipment]</b>
	Oscilloscope		PAL COLOUR	<b>(PAL COLOUR)</b> <ol style="list-style-type: none"> <li>1. Receive a PAL full field colour bar signal (75% white).</li> <li>2. Select 2.V/C from SERVICE MENU.</li> <li>3. Select 7.COLOUR with the PICTURE / SOUND CENTER key.</li> <li>4. Set the initial setting value of PAL COLOUR with the PICTURE / SOUND - or + key.</li> <li>5. Connect the oscilloscope between TP-47B and TP-E.</li> <li>6. Adjust PAL COLOUR and bring the value of (A) in the illustration to -6V (voltage difference between white and blue).</li> <li>7. Press the MENU key and memorize the setting value.</li> </ol>
	Remote control unit			
				
			SECAM COLOUR	<b>(SECAM COLOUR)</b> <ol style="list-style-type: none"> <li>1. Receive a SECAM full field colour bar signal (75% white).</li> <li>2. Set the initial setting value of SECAM COLOUR with the PICTURE / SOUND - or + key.</li> <li>3. Adjust SECAM COLOUR and bring the value of (A) of the illustration to -4V (voltage difference between white and blue).</li> <li>4. Press the MENU key and memorize the set value.</li> </ol>
			NTSC 3.58 COLOUR	<b>(NTSC 3.58 COLOUR)</b> <ol style="list-style-type: none"> <li>1. Receive a NTSC 3.58 full field colour bar (75% white) signal.</li> <li>2. Set the initial setting value of NTSC3.58 COLOUR with the PICTURE / SOUND - or + key.</li> <li>3. Adjust NTSC3.58 COLOUR and bring the value of (A) of the illustration to +4V (voltage difference between white and blue).</li> <li>4. Press the MENU key and memorize the set value.</li> </ol>
				<b>(NTSC 4.43 COLOUR)</b> When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.

Item	Measuring instrument	Test point	Adjustment part	Description
Adjustment of SUB TINT I	Remote control unit		8. TINT	[Method of adjustment without using measuring equipment]
			NTSC 3.58 TINT	<p>(NTSC 3.58 TINT)</p> <ol style="list-style-type: none"> <li>1. Receive a NTSC 3.58 colour bar signal (full field colour bar 75% white).</li> <li>2. Select 2.V/C from the SERVICE MENU.</li> <li>3. Select 8.TINT with the PICTURE / SOUND CENTER key.</li> <li>4. Set the initial setting value of NTSC 3.58 TINT with the PICTURE / SOUND - or + key.</li> <li>5. If you cannot get the best tint with the initial setting value, make fine adjustment until you get the best tint.</li> <li>6. Press the MENU key and memorize the set value.</li> </ol>
				<p>(NTSC 4.43 TINT)</p> <p>When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.</p>
Adjustment of SUB TINT II	Signal generator	TP-47B	8. TINT	[Method of adjustment using measuring equipment]
	Oscilloscope	TP-E (1/2)	NTSC 3.58 TINT	<p>(NTSC 3.58 TINT)</p> <ol style="list-style-type: none"> <li>1. Receive a NTSC 3.58 colour bar signal (full field colour bar 75% white).</li> <li>2. Select 2.V/C from the SERVICE MENU.</li> <li>3. Select 8.TINT with the PICTURE / SOUND CENTER key.</li> <li>4. Set the initial setting value of NTSC 3.58 TINT with the PICTURE / SOUND - or + key.</li> <li>5. Connect the oscilloscope between TP-47B and TP-E.</li> <li>6. Adjust NTSC3.58 TINT to bring the value of (A) of the illustration to -8V (voltage difference between white and magenta).</li> <li>7. Press the MENU key and memorize the setting value.</li> </ol>
	Remote control unit	[CRT SOCKET PWB]		<p>(NTSC 4.43 TINT)</p> <p>When NTSC 3.58 is set, NTSC 4.43 will be automatically set at the respective values.</p>
Adjustment of SHARP	Remote control unit		10.SHARP	<ol style="list-style-type: none"> <li>1. Receive any broadcast.</li> <li>2. Select 2.V/C with the SERVICE MENU.</li> <li>3. Select 10.SHARP with the PICTURE / SOUND CENTER key.</li> <li>4. Set the initial setting value with the PICTURE / SOUND - or + key.</li> <li>5. Press the MENU key and memorize the set value.</li> </ol>



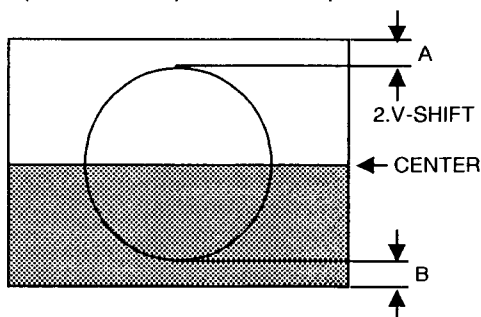
## DEFLECTION CIRCUIT ADJUSTMENT

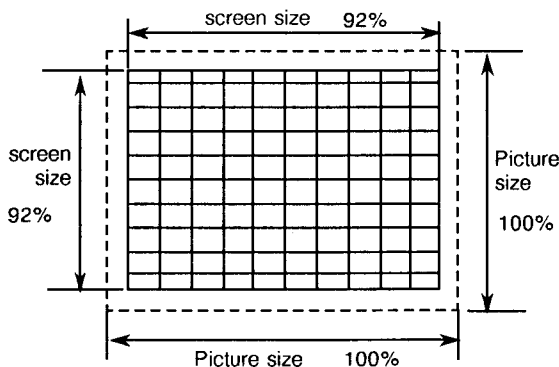
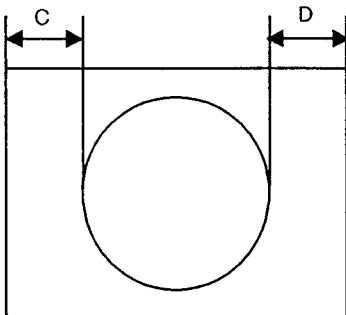
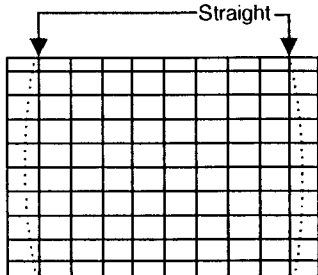
- There are 2 modes of adjustment — ① 50Hz mode and ② 60Hz mode — depending upon the kind of signals (VERTICAL FREQUENCY 50Hz / 60Hz) .
- When adjusted in mode ①, mode ② will be automatically set.

The setting (adjustment) using the REMOTE CONTROL UNIT is made on the basis of the initial setting values.  
The setting values which adjust the screen to the optimum condition can be different from the initial set values.

Setting (adjustment) item	Adjustment name	Variable range	Initial setting value	
			50Hz mode	60Hz mode
1. V-SLOPE	Vertical height (Size of bottom side of screen)	-31 ~ +32	+0	(-1)
2. V-SHIFT	Vertical center	-31 ~ +32	+0	(+0)
3. V-SIZE	Vertical height	-31 ~ +32	-8	(+0)
4. H-CENT	Horizontal center	-31 ~ +32	+7	(+10)
5. H-SIZE	Horizontal width	-31 ~ +32	+13	(+0)
6. EW-PIN	Side pin correction	-31 ~ +32	+15	(+2)
7. TRAPEZ	Trapezoidal distortion correction	-31 ~ +32	-9	(-3)
8. V-S.CR	Vertical height correction	-31 ~ +32	+0	(+0)
9. EW-COR	Side pin four corner correction	-31 ~ +32	+2	(+3)

Item	Measuring instrument	Test point	Adjustment part	Description
1. Adjustment of VERTICAL SLOPE	Signal generator  Remote control unit		1. V-SLOPE	<p>[①50Hz mode]</p> <ol style="list-style-type: none"> <li>Receive a circle pattern signal of vertical frequency 50Hz.</li> <li>Select 4.DEF from the SERVICE MENU.</li> <li>Select 1.V-SLOPE with the PICTURE / SOUND CENTER key.</li> <li>Set the initial setting value of V-SLOPE (50Hz mode) with the PICTURE / SOUND - or + key.</li> <li>Adjust V-SLOPE and make the screen's center line and the blanking line coincide.</li> </ol>
2. Adjustment of VERTICAL SHIFT			2. V-SHIFT	<ol style="list-style-type: none"> <li>Select 2.V-SHIFT and set the initial setting value.</li> <li>Adjust V-SHIFT to make <math>A = B</math>.</li> <li>Press the MENU key and memorize the set value.</li> </ol>



Item	Measuring instrument	Test point	Adjustment part	Description
3. Adjustment of VERTICAL SIZE			3. V-SIZE	<p>9. Receive a cross-hatch signal.</p> <p>10. Adjust 3.V-SIZE and set the initial setting value.</p> <p>11. Adjust V-SIZE and make the vertical screen size 92% of the picture size.</p> <p>12. Press the MENU key and memorize the set value.</p>
				
4. Adjustment of H. CENTER			4. H-CENT	<p>13. Receive a circle pattern signal.</p> <p>14. Select 4.H-CENT and set the initial setting value.</p> <p>15. Adjust H-CENT to make C = D.</p> <p>16. Press the MENU key and memorize the set value.</p>
				
5. Adjustment of H. SIZE			5. H-SIZE	<p>17. Receive a cross-hatch signal.</p> <p>18. Select 5.H-SIZE and set the initial setting value.</p> <p>19. Adjust H-SIZE and make the horizontal screen size 92% of the picture size.</p> <p>20. Press the MENU key and memorize the set value.</p>
6. Adjustment of EW-PIN			6. EW-PIN	<p>21. Select 6.EW-PIN and set the initial setting value.</p> <p>22. Adjust EW-PIN and make the 1st vertical lines at the left and right edges of the screen straight. Also make sure that the 2nd vertical lines are also straight.</p>
				

Item	Measuring instrument	Test point	Adjustment part	Description
7. Adjustment of TRAPEZ			7. TRAPEZ	23. Select 7. TRAPEZ and set the initial setting value. 24. Adjust TRAPEZ and bring the vertical lines at the right and left edges of the screen in parallel.
8. Adjustment of V-S. CR			8. V-S. CR	25. Select 8. V-S. CR and set the initial setting values. 26. Adjust V-S. CR and make the gaps between the horizontal lines same.
9. Adjustment of EW-COR			9. EW-COR	27. Select 9. EW-COR and set the initial setting values. 28. Adjust EW-COR and make the vertical lines at the four corners of the screen straight. 29. Press the MENU key and memorize the set values.
				30. Make sure that the adjustment is properly done on the screen of ② 60Hz mode.

## AUDIO CIRCUIT

- Do not touch 3. AUDIO (1. CONC LIMIT, 2. A2 ID THR, 3. SOUND SYSTEM) of the SERVICE MENU as it requires no adjustment.

### 3. AUDIO


Setting (adjustment) item (Do not adjust)	Variable range	Initial setting value (fixed)
1. CONC LIMIT	00H~FFH	0AH
2. A2 ID THR	00H~FFH	0AH
3. SOUND SYSTEM	_____	_____



# AV-G290MX STANDARD CIRCUIT DIAGRAM

## ■ NOTE ON USING CIRCUIT DIAGRAMS

### 1. SAFETY

The components identified by the  symbol and shading are critical for safety. For continued safety replace safety critical components only with manufactures recommended parts.

### 2. SPECIFIED VOLTAGE AND WAVEFORM VALUES

The voltage and waveform values have been measured under the following conditions.

- (1) Input signal : PAL Color bar signal
- (2) Setting positions  
of each knob/button  
and variable resistor : Original setting position  
when shipped
- (3) Internal resistance of tester : DC 20k $\Omega$ /V
- (4) Oscilloscope sweeping time  
: H  $\Rightarrow$  20 $\mu$ S/div  
: V  $\Rightarrow$  5mS/div  
: Others  $\Rightarrow$  Sweeping time is  
specified
- (5) Voltage values : All DC voltage values

\* Since the voltage values of signal circuit vary to some extent according to adjustments, use them as reference values.

### 3. INDICATION OF PARTS SYMBOL [EXAMPLE]

- In the PW board : R1209  $\rightarrow$  R209

### 4. INDICATIONS ON THE CIRCUIT DIAGRAM

#### (1) Resistors

##### • Resistance value

- No unit : [ $\Omega$ ]
- K : [K $\Omega$ ]
- M : [M $\Omega$ ]

##### • Rated allowable power

- No indication : 1/6[W]
- Others : As specified

##### • Type

- No indication : Carbon resistor
- OMR : Oxide metal film resistor
- MFR : Metal film resistor
- MPR : Metal plate resistor
- UNFR : Uninflamable resistor
- FR : Fusible resistor

\* Composition resistor 1/2 [W] is specified as 1/2S or Comp.

#### (2) Capacitors

##### • Capacitance value

- 1 or higher : [pF]
- less than 1 : [ $\mu$ F]

##### • Withstand voltage

- No indication : DC 50[V]
- Others : DC withstand voltage[V]
- AC indicated : AC withstand voltage[V]

##### \* Electrolytic Capacitors

- 47/50 [Example]: Capacitance value [ $\mu$ F]/withstand voltage[V]





##### • Type

- No indication : Ceramic capacitor
- MY : Mylar capacitor
- MM : Metalized mylar capacitor
- PP : Polypropylene capacitor
- MPP : Metalized polypropylene capacitor
- MF : Metalized film capacitor
- TF : Thin film capacitor
- BP : Bipolar electrolytic capacitor
- TAN : Tantalum capacitor

#### (3) Coils



- No unit : [ $\mu$ H]
- Others : As specified

#### (4) Power Supply



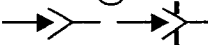
-  : B1 (142.5V)
-  : B2 (12V)
-  : 8V
-  : 5V

\* Respective voltage values are indicated.





#### (5) Test Point

-  : Test point
-  : Only test point display



#### (6) Connecting method

-  : Connector
-  : Wrapping or soldering
-  : Receptacle

#### (7) Ground symbol

-  : LIVE side ground
-  : ISOLATED (NEUTRAL) side ground
-  : EARTH ground
-  : DIGITAL ground

## 5. NOTE FOR REPAIRING SERVICE


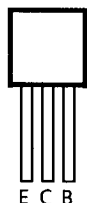
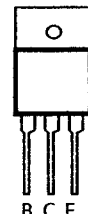




This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : () side GND and the ISOLATED (NEUTRAL) : () side GND. Therefore, care must be taken for the following points.

- (1) Do not touch the LIVE side GND or the LIVE side GND and the ISOLATED (NEUTRAL) side GND simultaneously. If the above caution is not respected, an electric shock may be caused. Therefore, make sure that the power cord is surely removed from the receptacle when, for example, the chassis is pulled out.
- (2) Do not short between the LIVE side GND and ISOLATED (NEUTRAL) side GND or never measure with a measuring apparatus (oscilloscope, etc.) the LIVE side GND and ISOLATED (NEUTRAL) side GND at the same time. If the above precaution is not respected, a fuse or any parts will be broken.

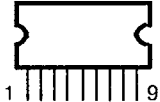
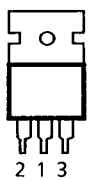
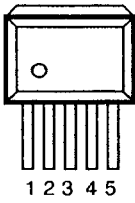
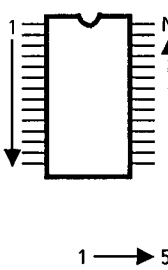
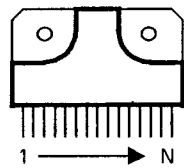
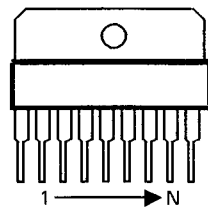
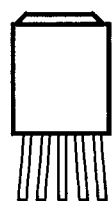
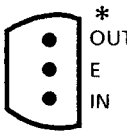
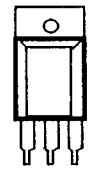
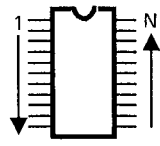
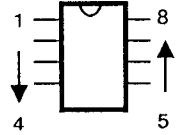
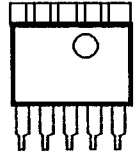
◇ Since the circuit diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

# SEMICONDUCTOR SHAPES (\* = Bottom view)

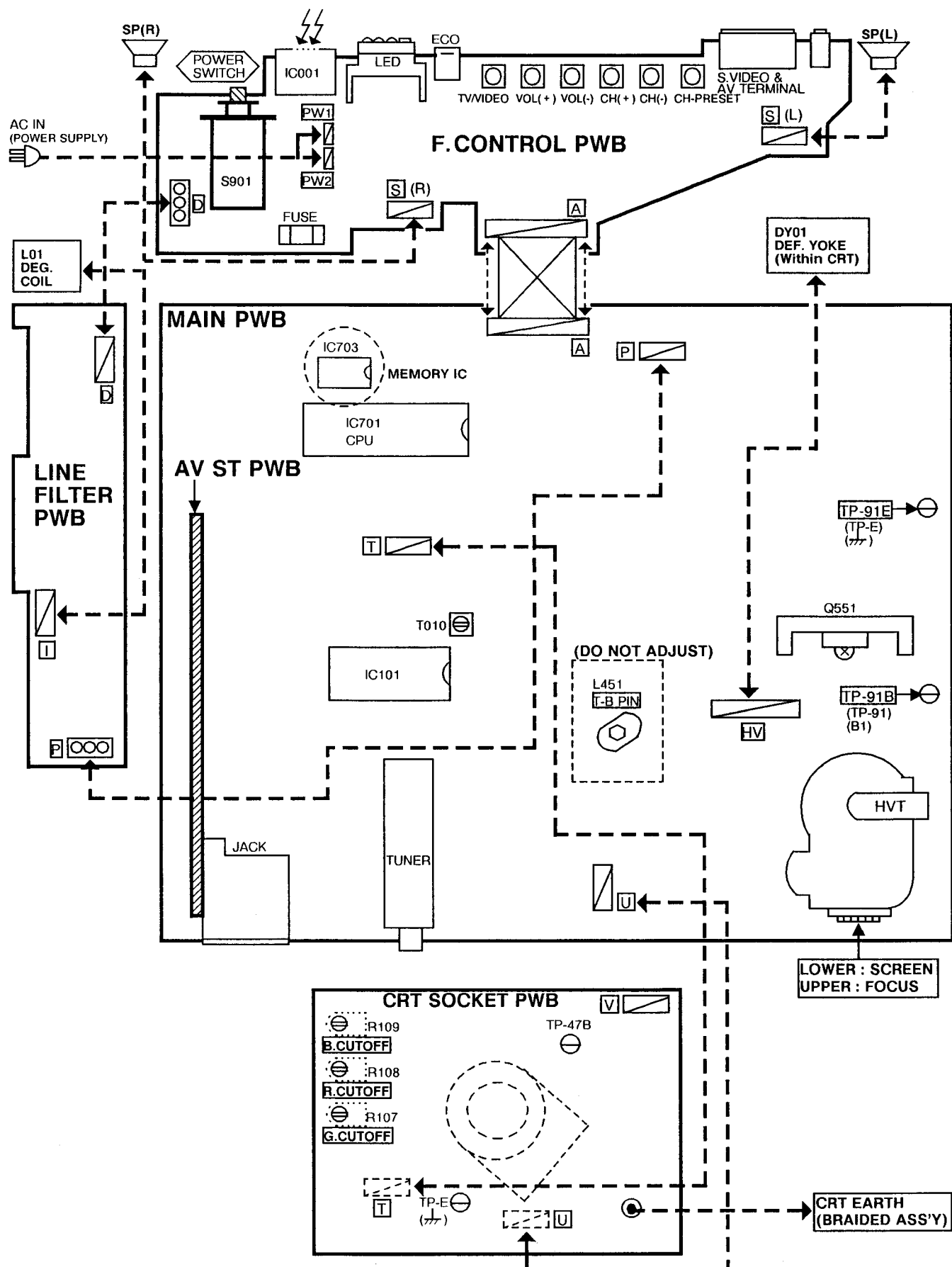
## TRANSISTORS

 <p>* E C B</p> <p>2SA1013(0) 2SA673(C) 2SC2240(GB) 2SC1906 2SA966(0Y)-T 2SC1815(YG) 2SC2482(C1) 2SC4722(NP) 2PA1015(YG) 2PC1815(YG)</p>	 <p>E C B</p> <p>2SA933AS(QR) 2SA933S(QR) 2SC1740S(QR) 2SC2785(JH) DTC124ESA-T DTC323TS</p>	 <p>B C E</p> <p>2SD1554-C1 2SD1878-YD 2SD1876-YD BU2506DX MTA2N60E 2SC4544-C1</p>	
 <p>E C B</p> <p>2SC4502 2SC5082(L-P) 2SC5083(L-P)</p>	 <p>* S G D</p> <p>2SK301(Q) BSN274</p>	 <p>E C B</p> <p>2SC2371(MLK) 2SC3271(NP)</p>	 <p>GND IN OUT</p> <p>DTC144ESA DTA144GS DTC144ES DTA144ES</p>

## ICs

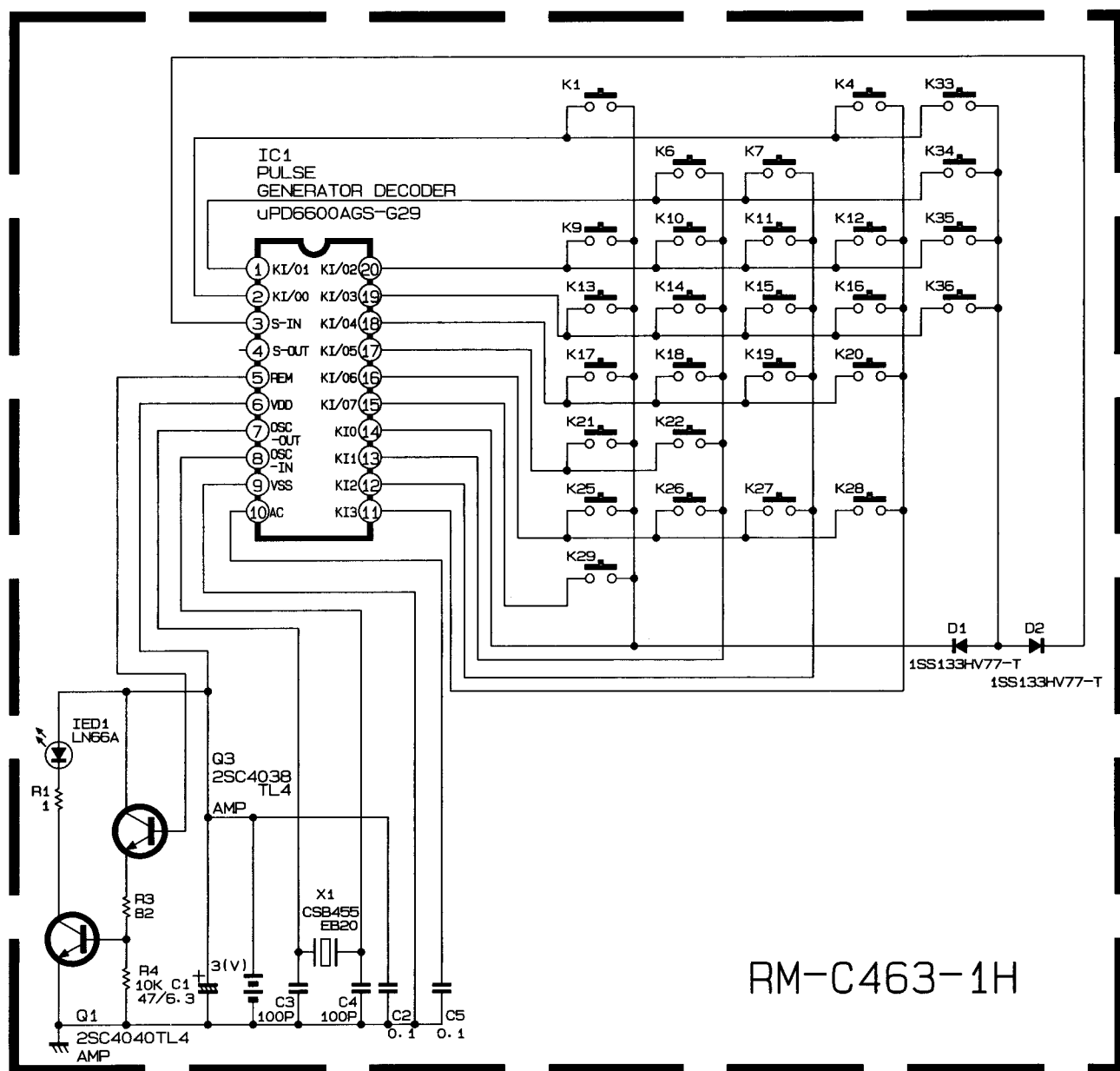
 <p> TDA8351 / N3 </p>	 <p> S1854-C1  S1854-C2 </p>	 <p> LA7975 </p>	 <p> MSP3410-SDIL  SAA5281P / E / M3  M37201M6-B44SP  P83C654FBP / 541  MN1873237JKH6  M52343SP  M37102M8-C41SP </p>
 <p> LA7838  UPC1488H  LA7837  TA8200AH </p>	 <p> AN5265 </p>	 <p> L78LR05E-MA </p>	 <p> KIA78L08BP </p>
 <p> KIA7805PI AN7805F  KIA7808PI AN78N12  AN78M05 </p>	 <p> TEA6416 TEA5114A  LA7577N M52325P  TDA8366 MC44603P  U3660M-B BU4066BC  TDA4665 </p>	 <p> ST24C02AB1  ST93C46AB1  AT24C04-10PC  AT93C56-10PC  XL24C04P-21ME </p>	 <p> STR-S6707  STR-S6706 </p>

# MAIN PARTS ALIGNMENTS LOCATION & WIRING DIAGRAM



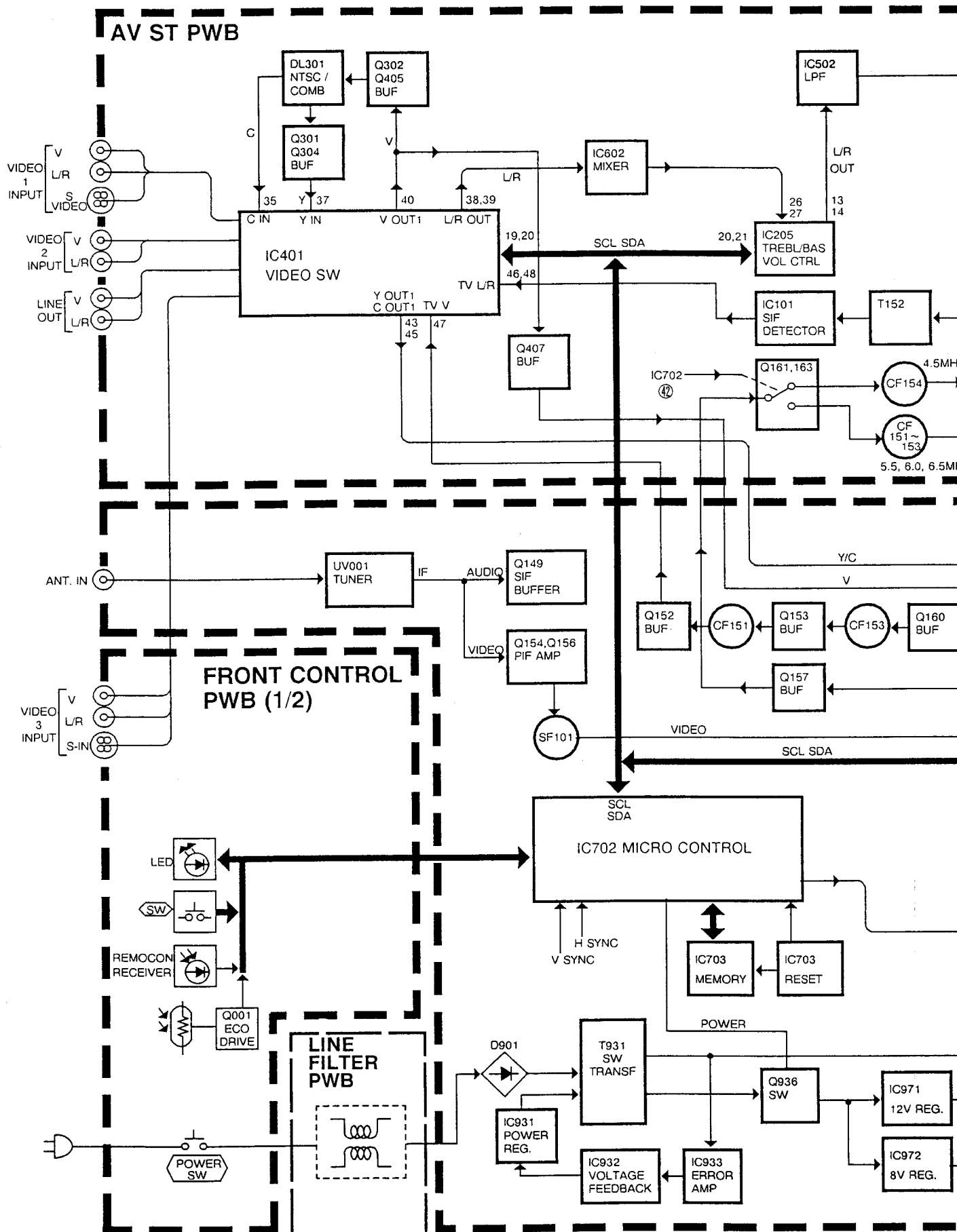
REMOTE CONTROL TRANSMITTER CIRCUIT DIAGRAM

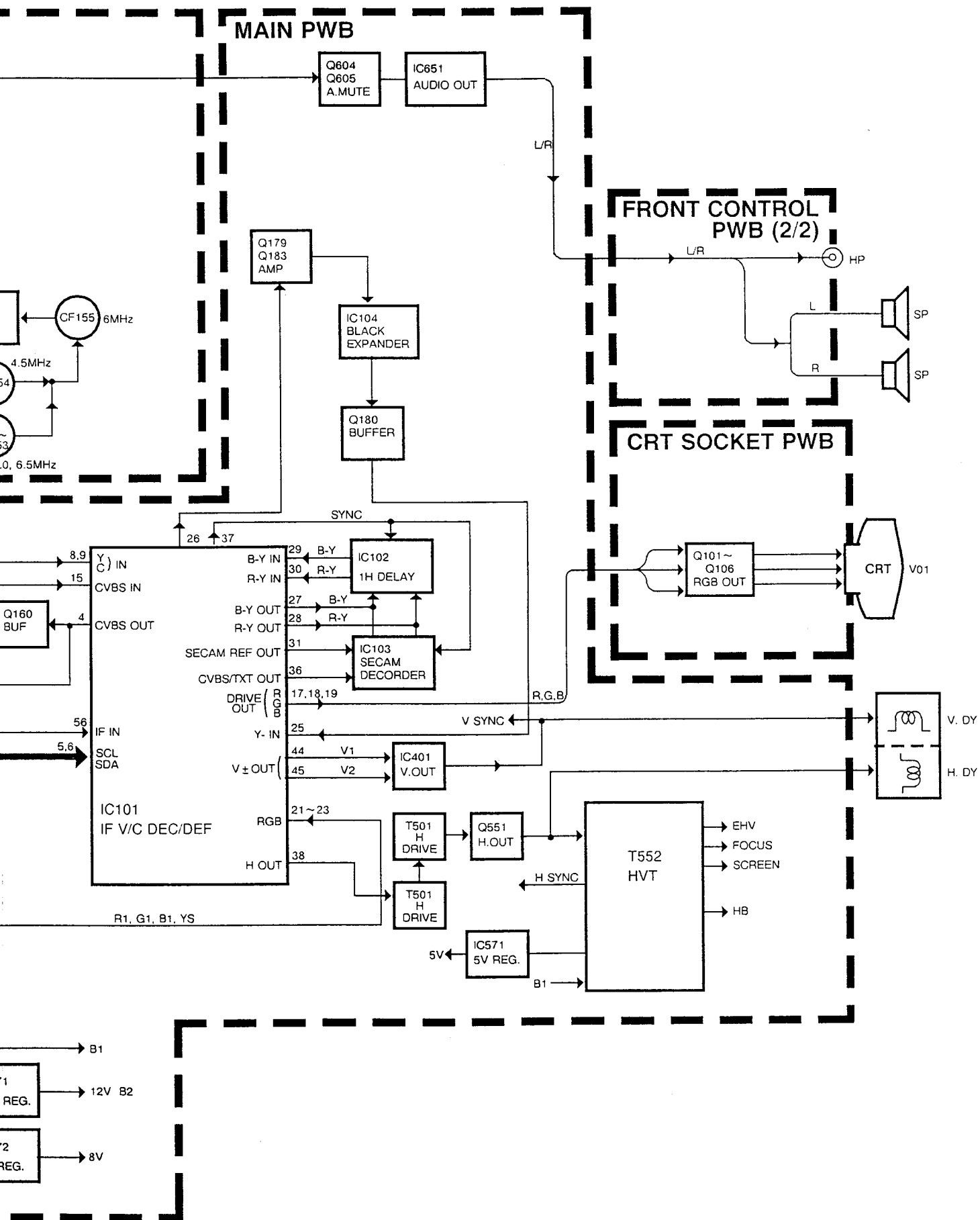
[RM-C463-1H]



KEY NO.	FUNCTION	KEY NO.	FUNCTION	KEY NO.	FUNCTION	KEY NO.	FUNCTION
1	POWER	10	2	19	7	28	PICTURE MODE
2	—	11	1	20	OFF TIMER	29	MUTE
3	—	12	DISPLAY	21	- / - -	30	—
4	TV/VIDEO	13	6	22	0	31	—
5	—	14	5	23	—	32	—
6	SOUND SYSTEM	15	4	24	—	33	VOLUME +
7	COLOUR SYSTEM	16	MENU	25	+PICTURE/SOUND	34	VOLUME -
8	—	17	9	26	PICTURE/SOUND	35	CHANNEL + ^
9	3	18	8	27	-PICTURE/SOUND	36	CHANNEL - v

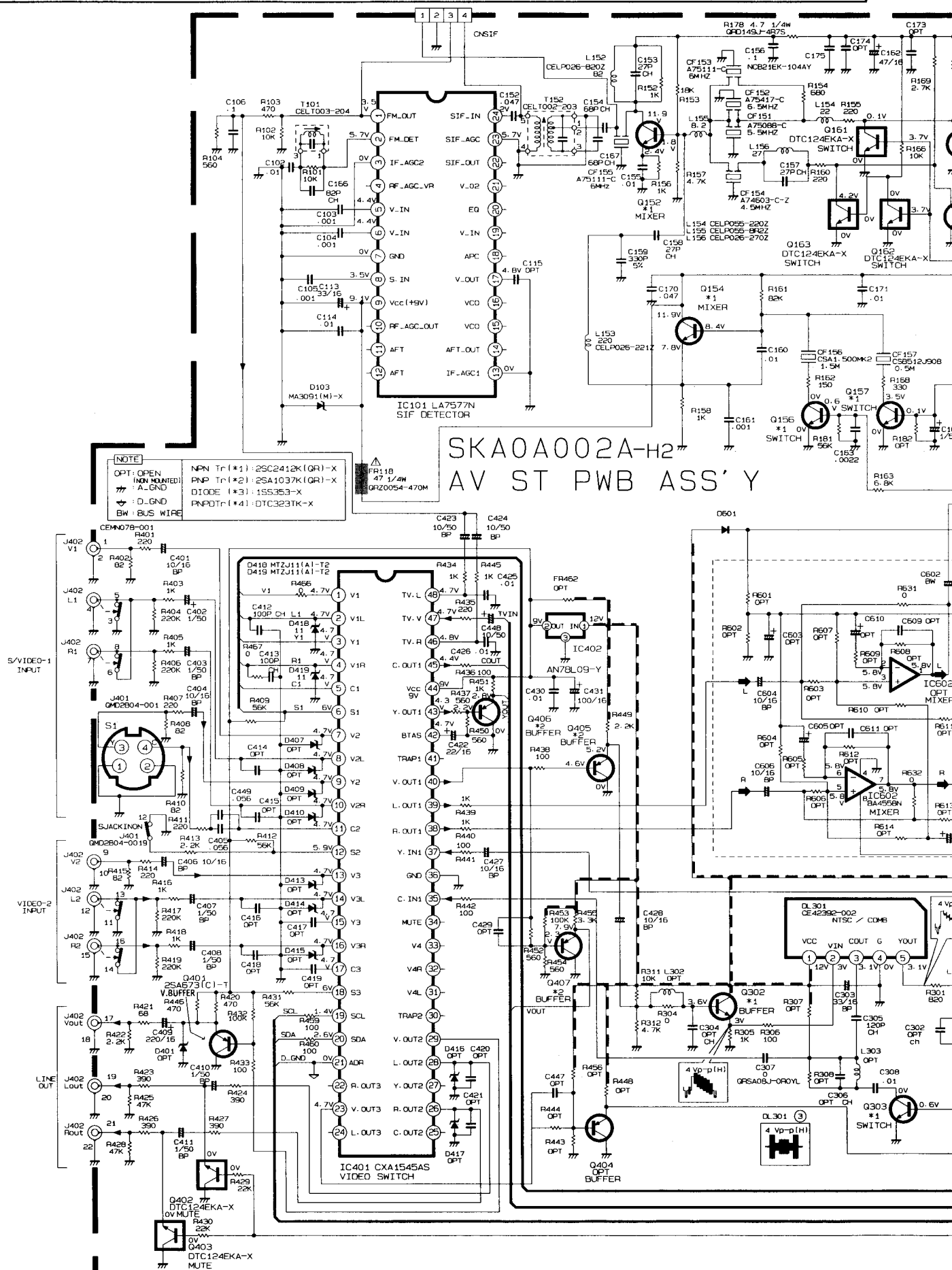
## BLOCK DIAGRAM



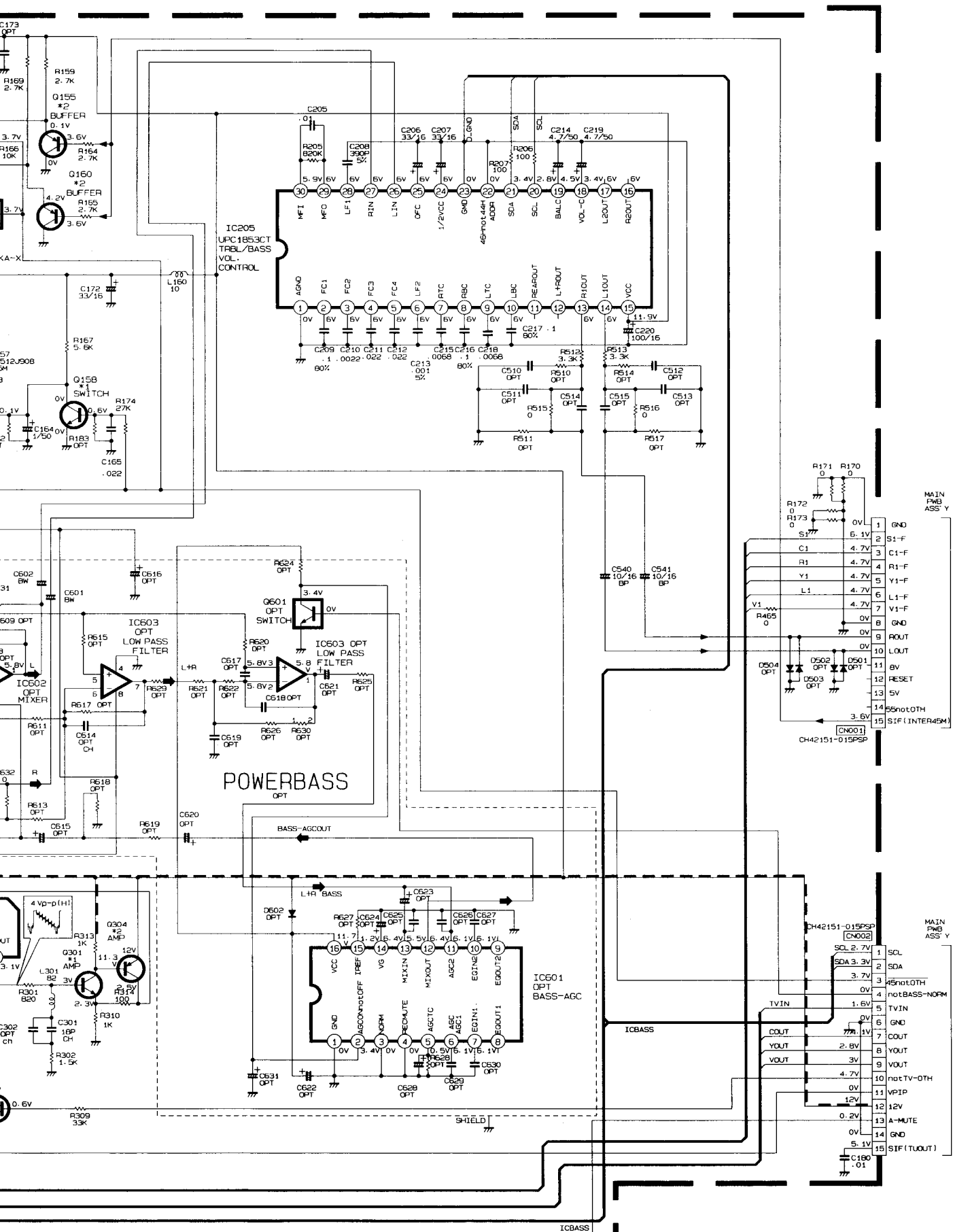


## CIRCUIT DIAGRAMS AND PWB PATTERNS

### AV ST PWB CIRCUIT DIAGRAM



Refer to the following PWB pattern. : AV ST PWB PATTERN page 2-19 ~ 2-20 .

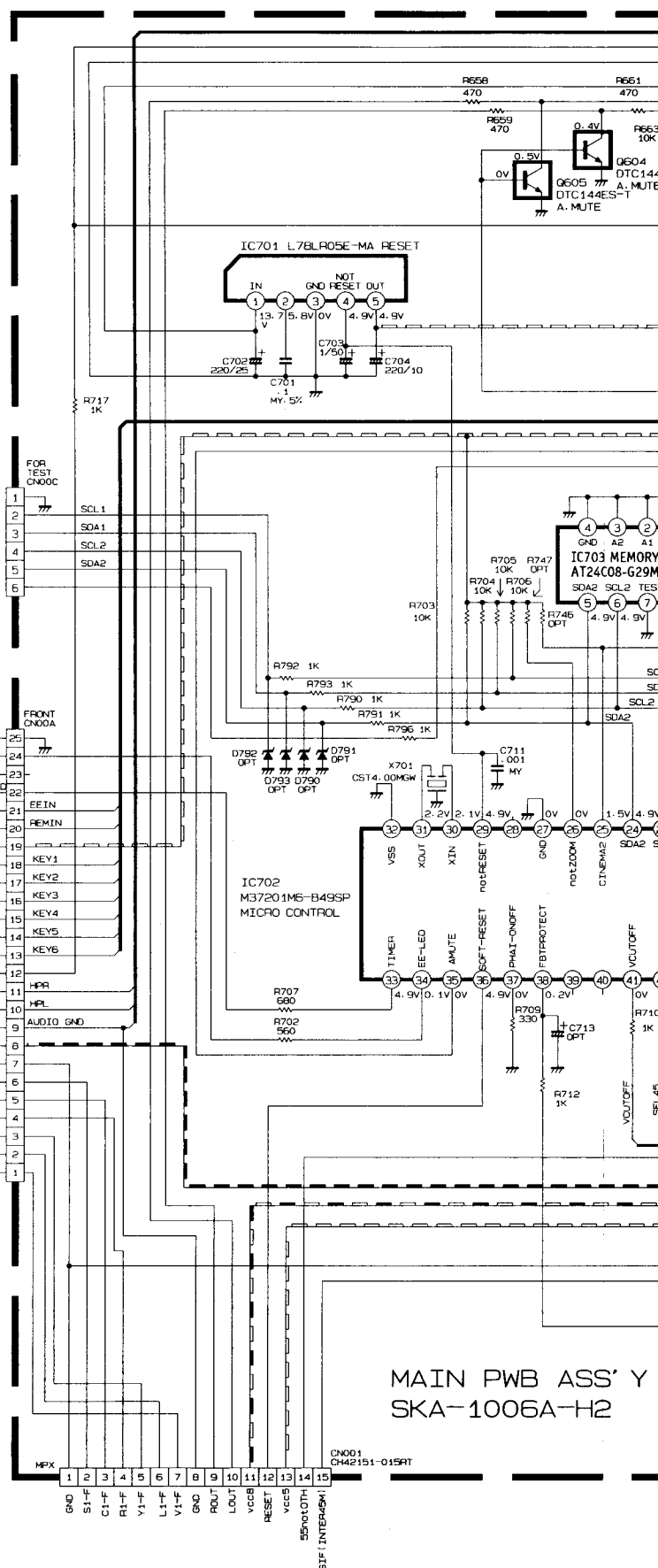
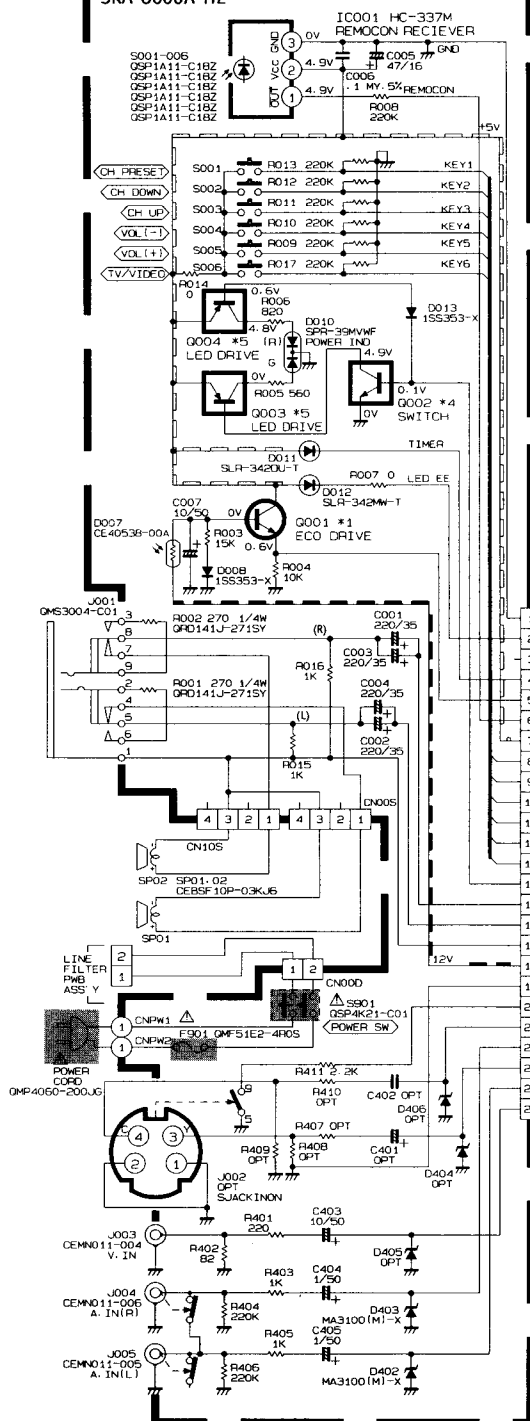




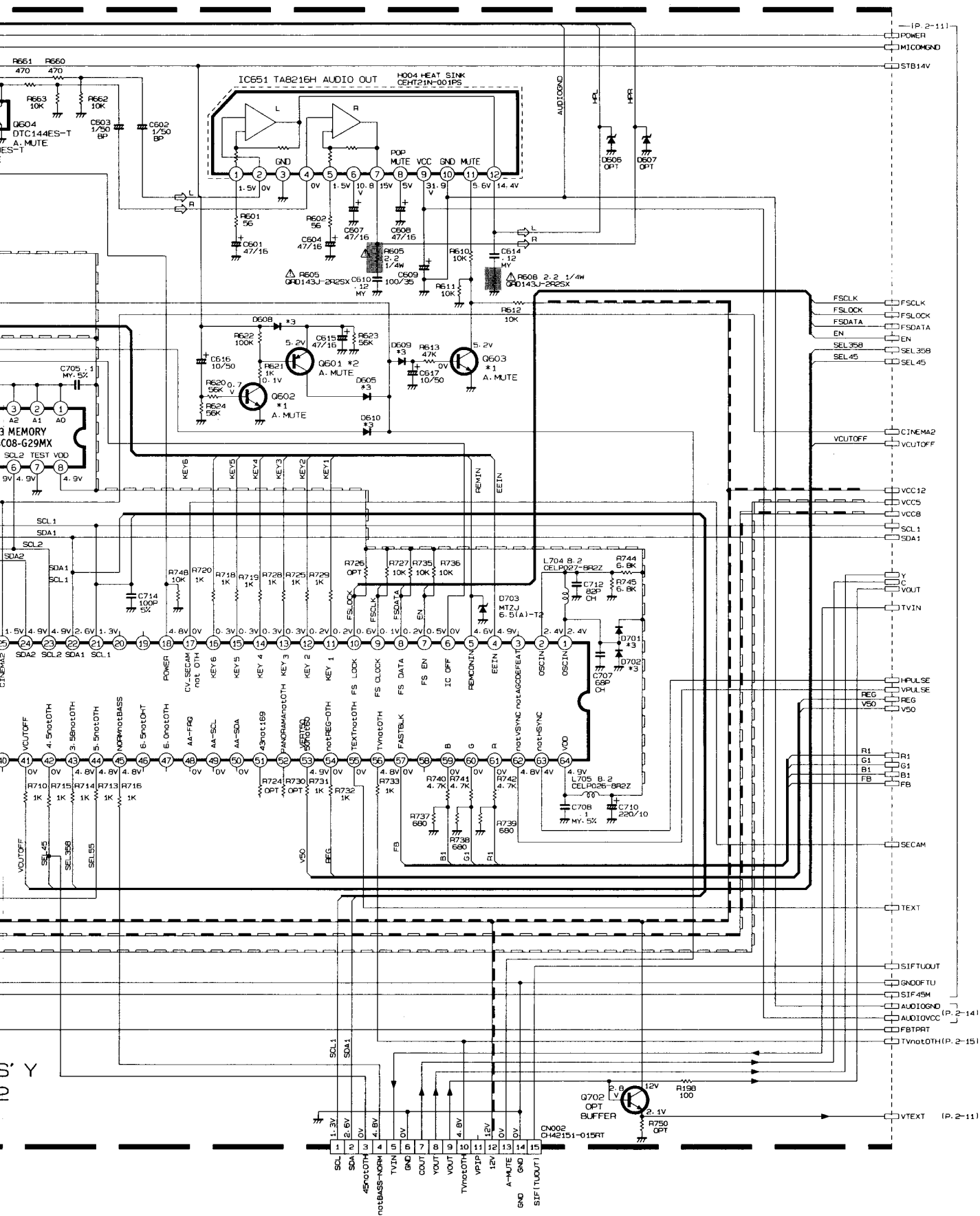
## FRONT CONTROL &amp; MAIN PWB CIRCUIT DIAGRAMS

## NOTE

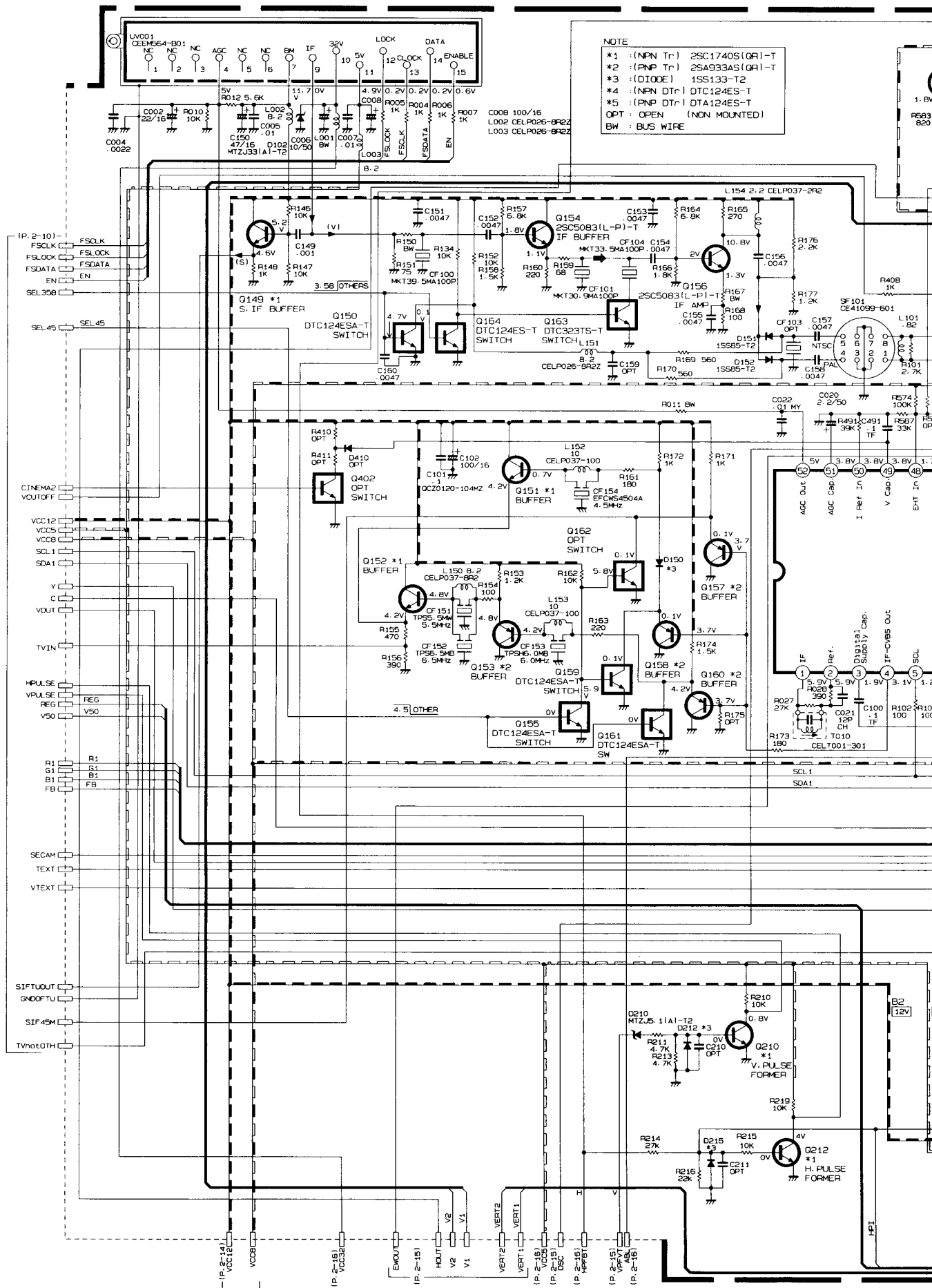
- \*1 : (NPN Tr) 2SC1740S(OR)-T
- \*2 : (PNP Tr) 2SA933AS(OR)-T
- \*3 : (DIODE) 1SS133-T2
- \*4 : (NPN DTr) DTC124ES-T
- \*5 : (PNP DTr) DTA124ES-T
- OPT : OPEN (NON MOUNTED)
- BW : BUS WIRE

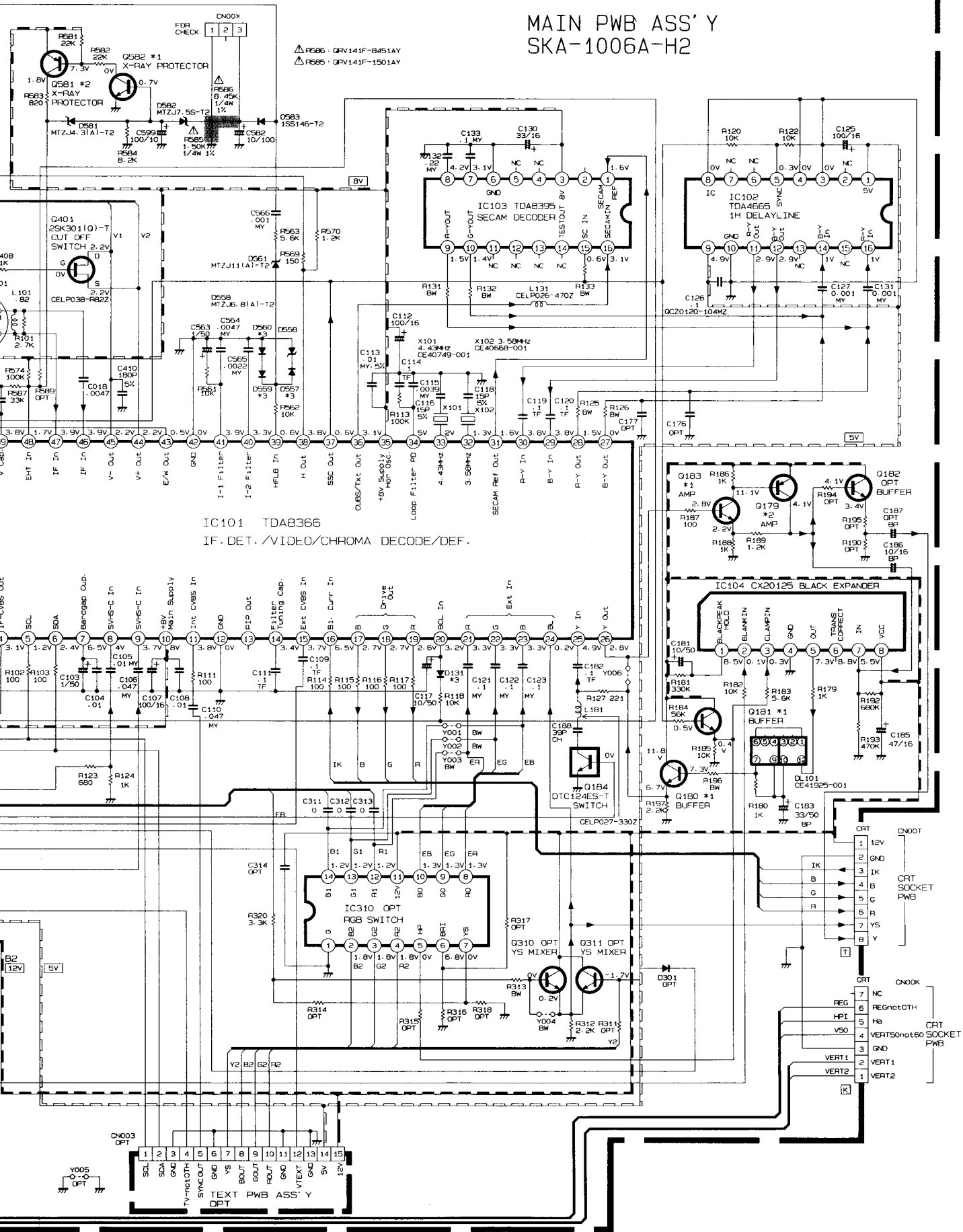
FRONT CONTROL ASSY  
SKA-8006A-H2MAIN PWB ASS'Y  
SKA-1006A-H2

Refer to the following PWB pattern. : FRONT CONTROL PWB PATTERN page 2-21 ~ 2-22, MAIN PWB PATTERN page 2-23 ~ 2-26 .



## MAIN PWB CIRCUIT DIAGRAM

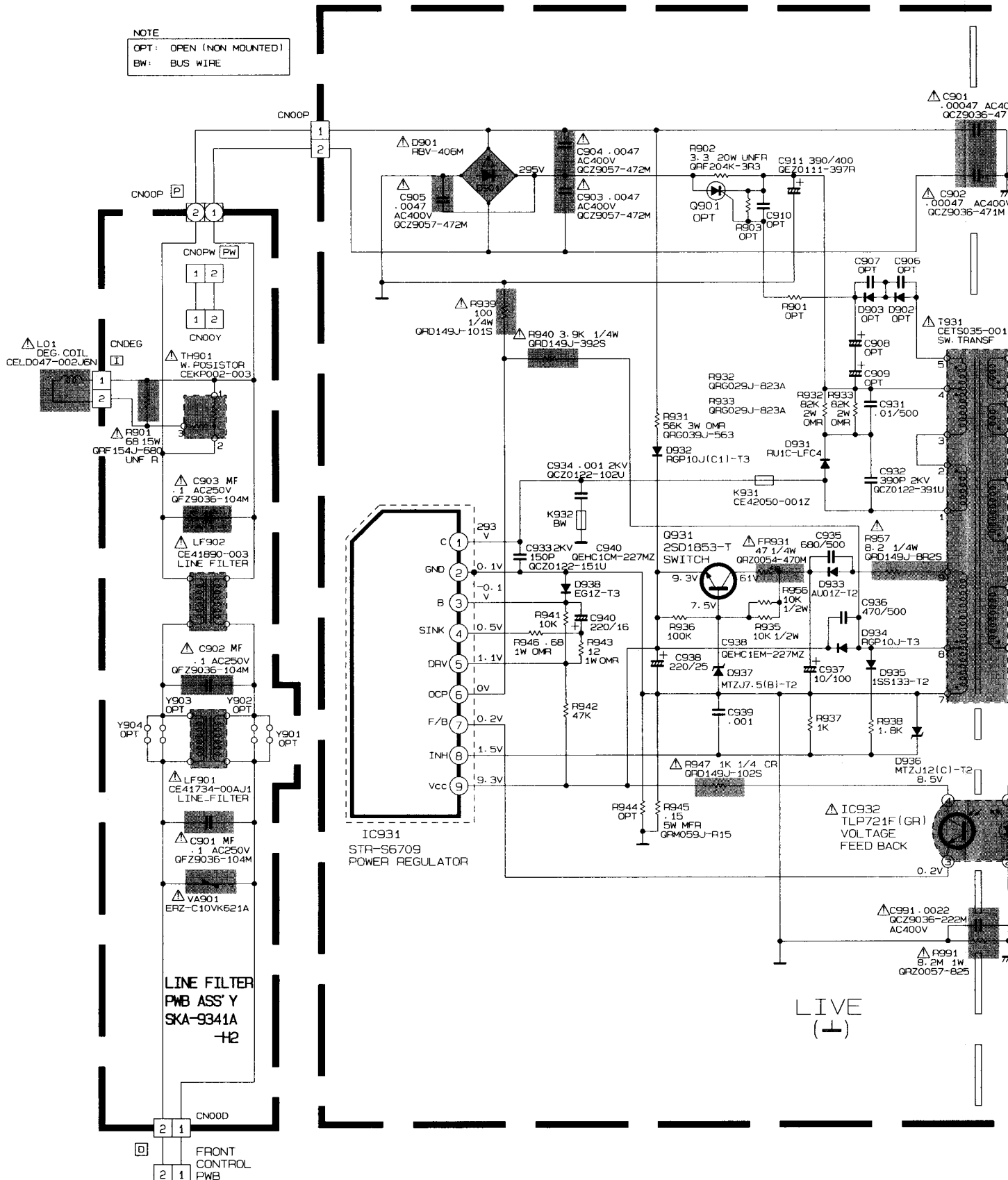




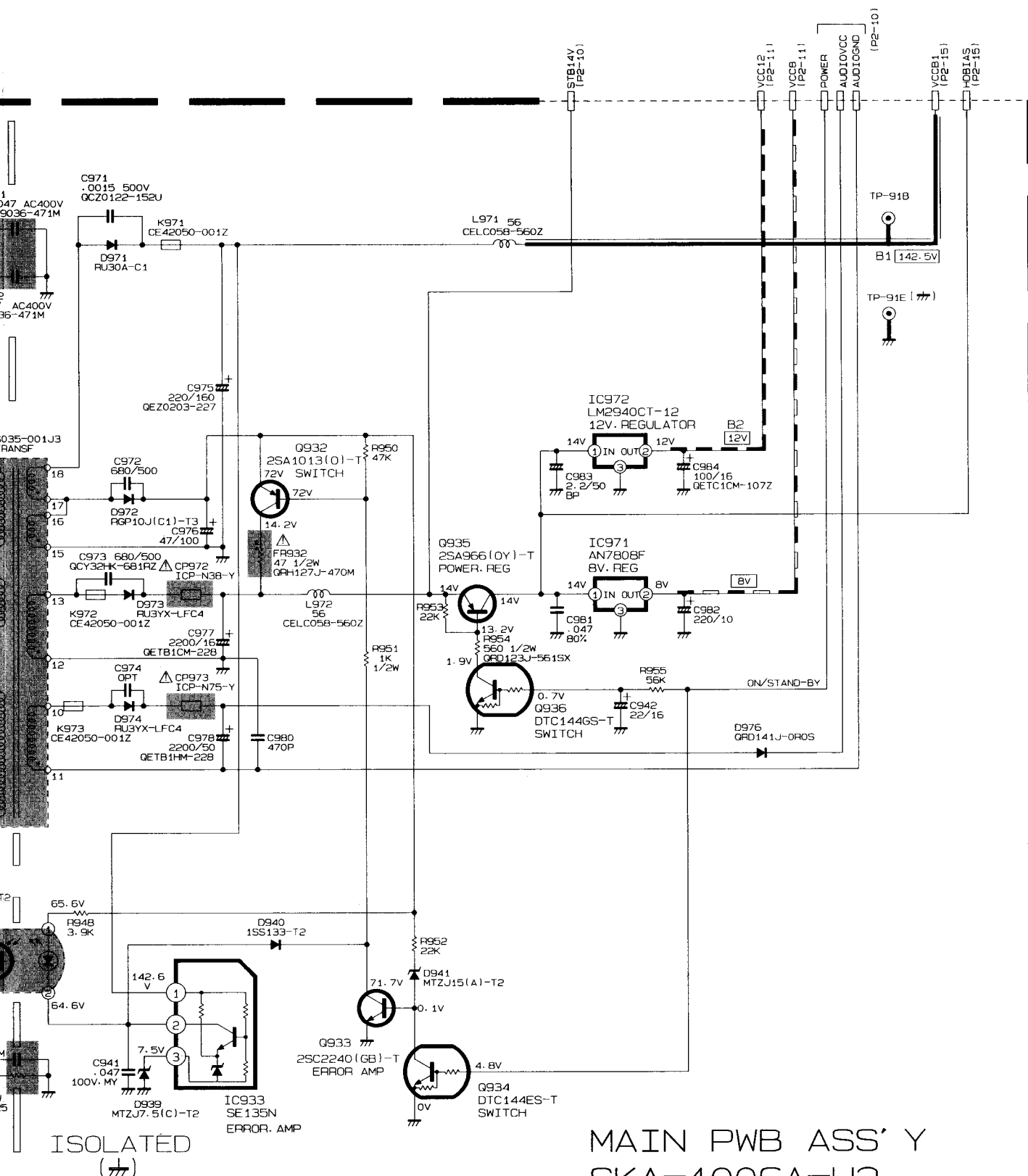
LINE FILTER & MAIN PWB CIRCUIT DIAGRAMS

NOTE

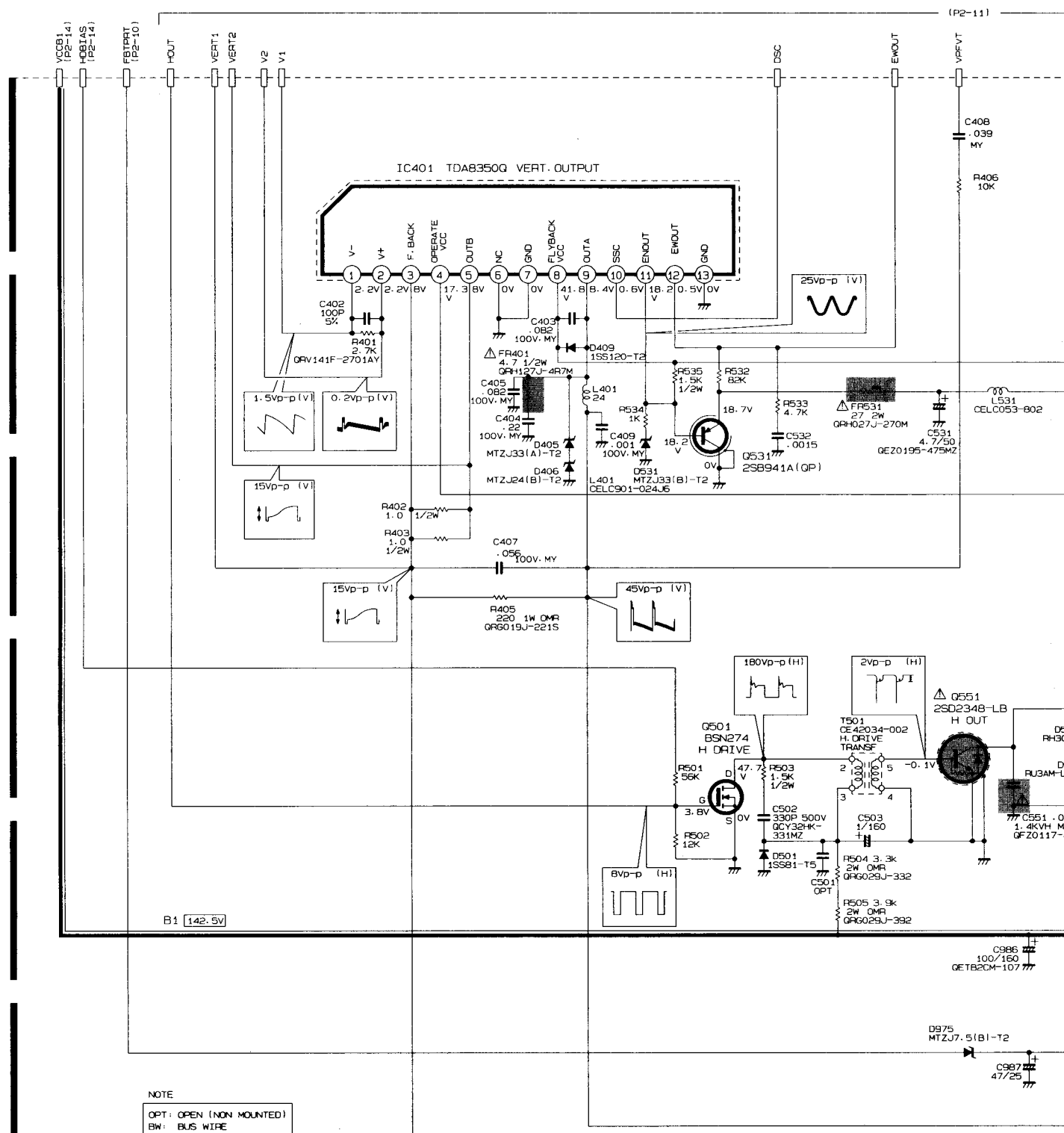
OPT: OPEN (NON MOUNTED)  
BW: BUS WIRE



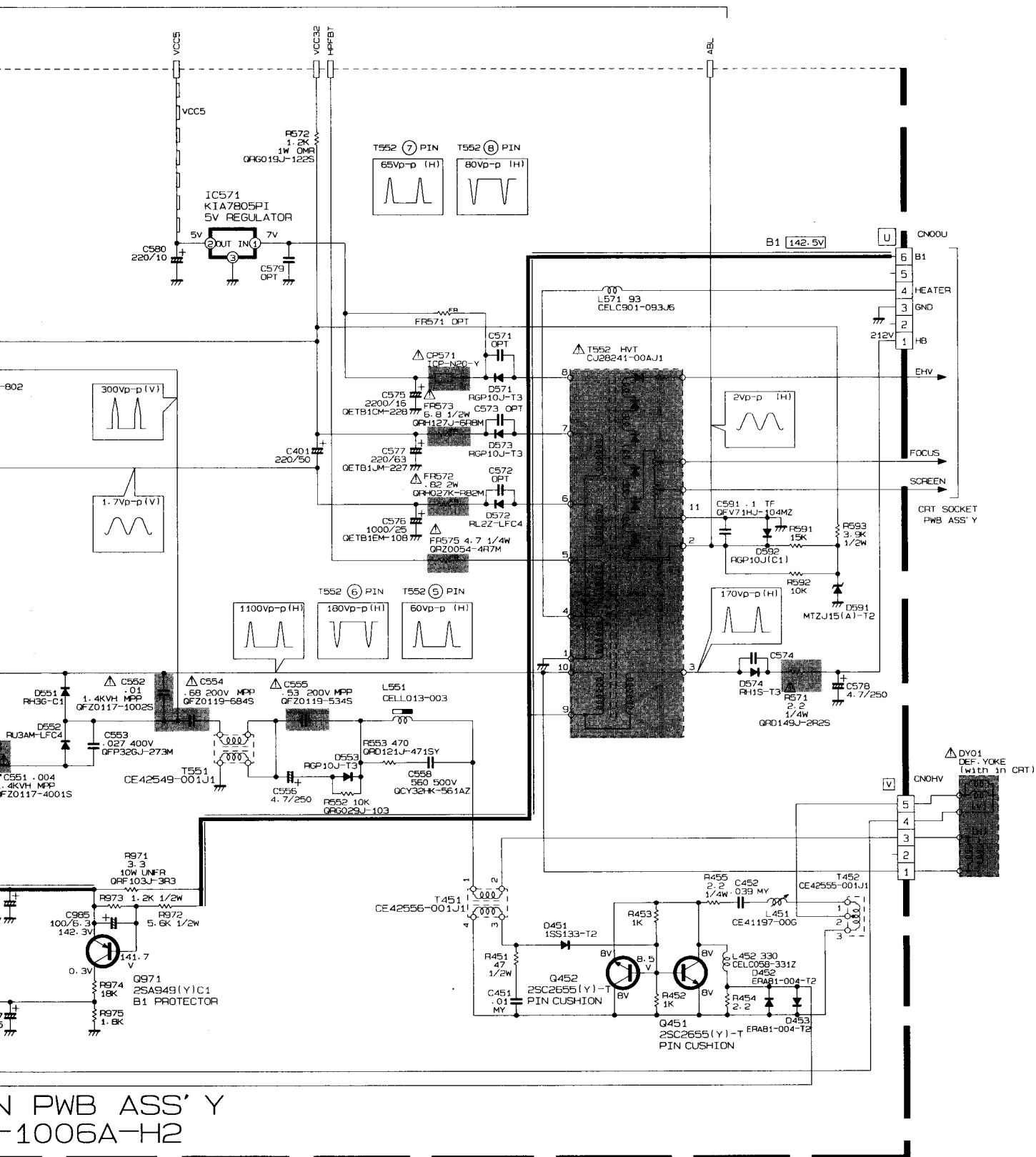
Refer to the following PWB pattern. : LINE FILTER PWB PATTERN page 2-28 , MAIN PWB PATTERN page 2-23 ~ 2-26.



## MAIN PWB CIRCUIT DIAGRAM

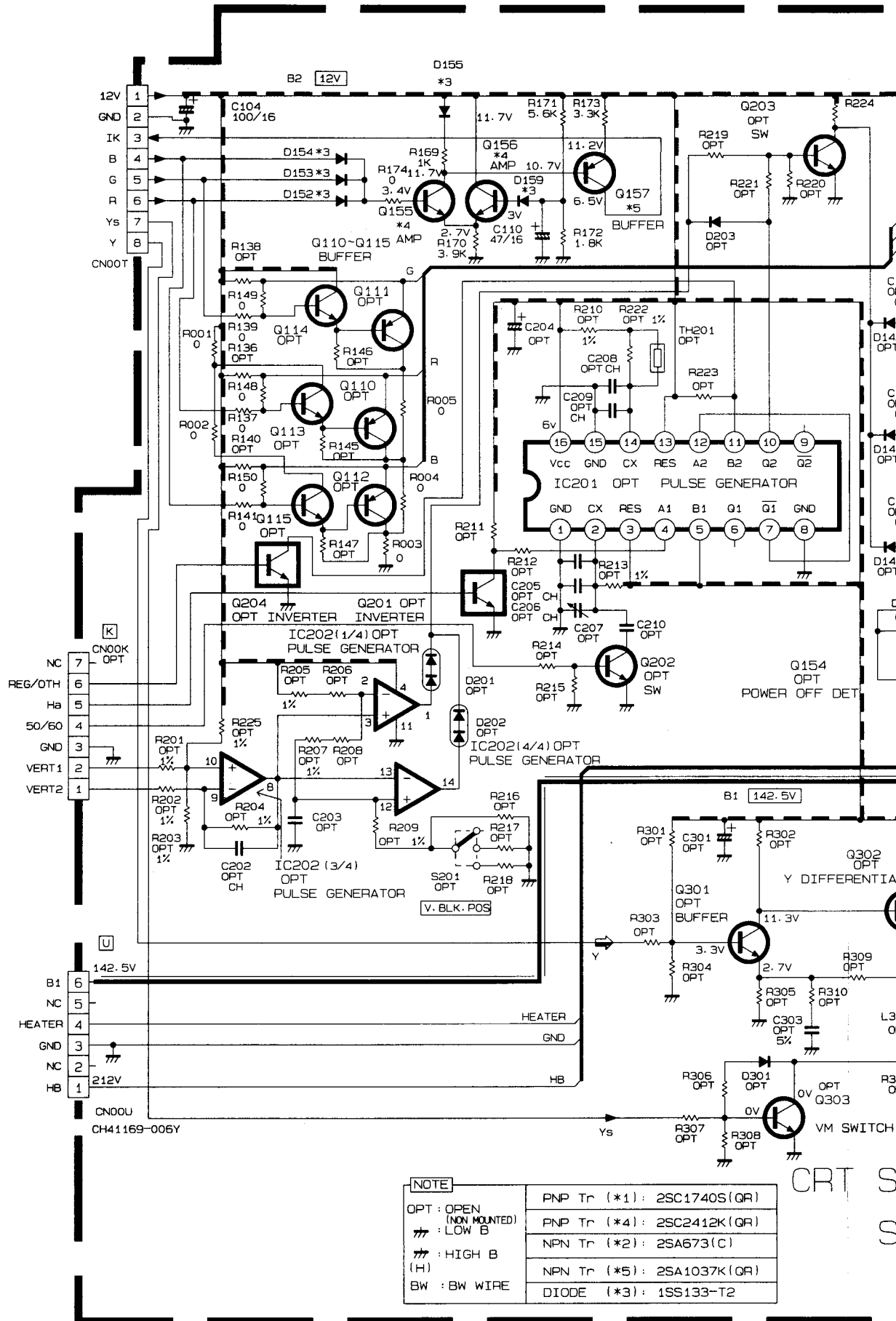
MAIN P  
SKA-10

Refer to the following PWB pattern. : MAIN PWB PATTERN page 2-23 ~ 2-26 .

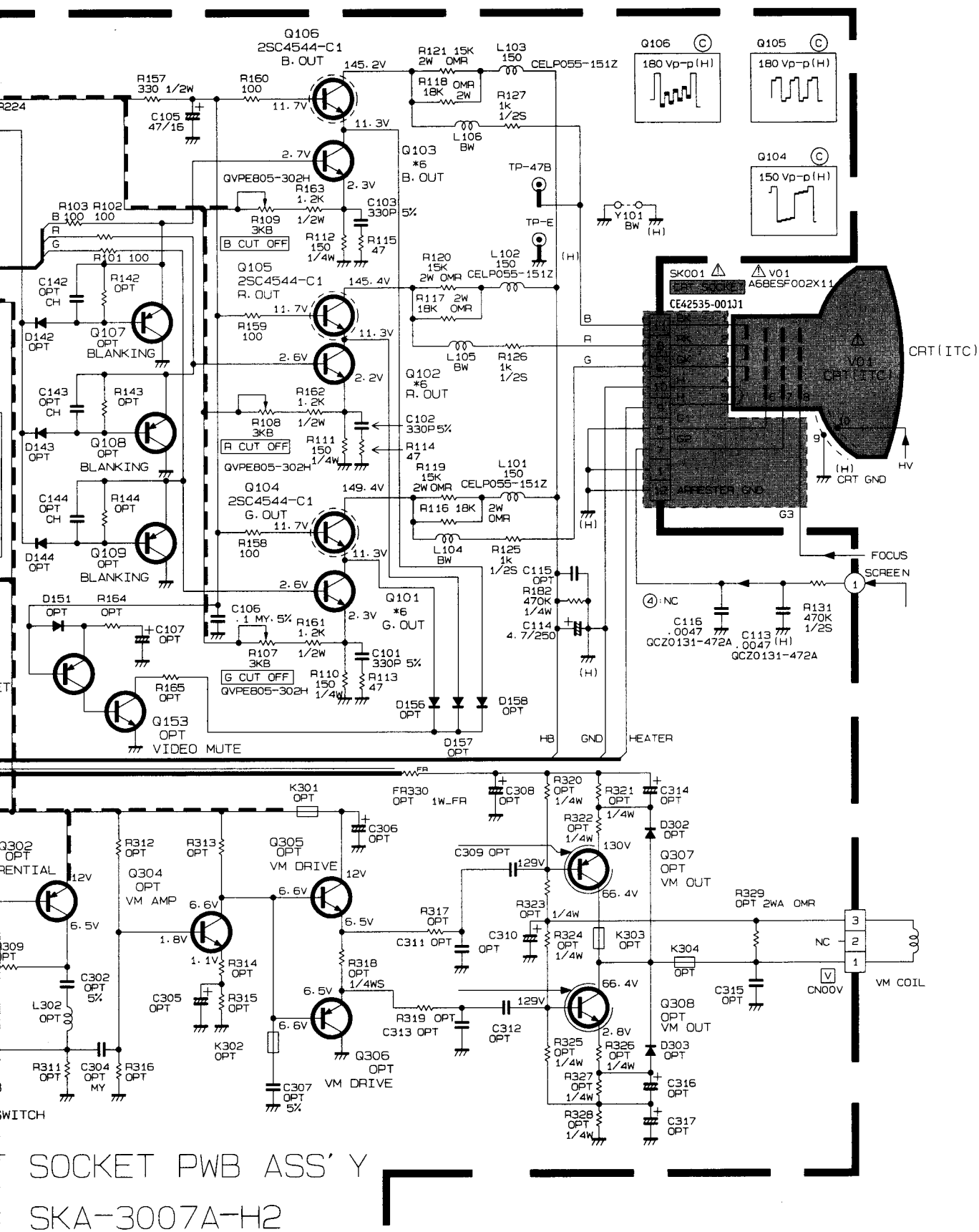




## CRT SOCKET PWB CIRCUIT DIAGRAM



Refer to the following PWB pattern. : CRT SOCKET PWB PATTERN page 2-27 .



# PARTS LIST

## CAUTION

- The parts identified by the  $\triangle$  symbol are important for the safety . Whenever replacing these parts, be sure to use specified ones to secure the safety .
  - The parts not indicated in this Parts List and those which are filled with lines — in the Parts No. columns will not be supplied .
  - P. W. Board Ass'y will not be supplied, but those which are filled with the Parts No. in the Parts No. columns will be supplied .
  - As a rule, the resistors and capacitors which are indicated as shown in "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" are not shown in the list of the parts on the board .
- When ordering the service parts, confirm the resistance/rated power, capacitance/rated voltage, and type of the parts, then order by the part No. indicated according to "HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS" .

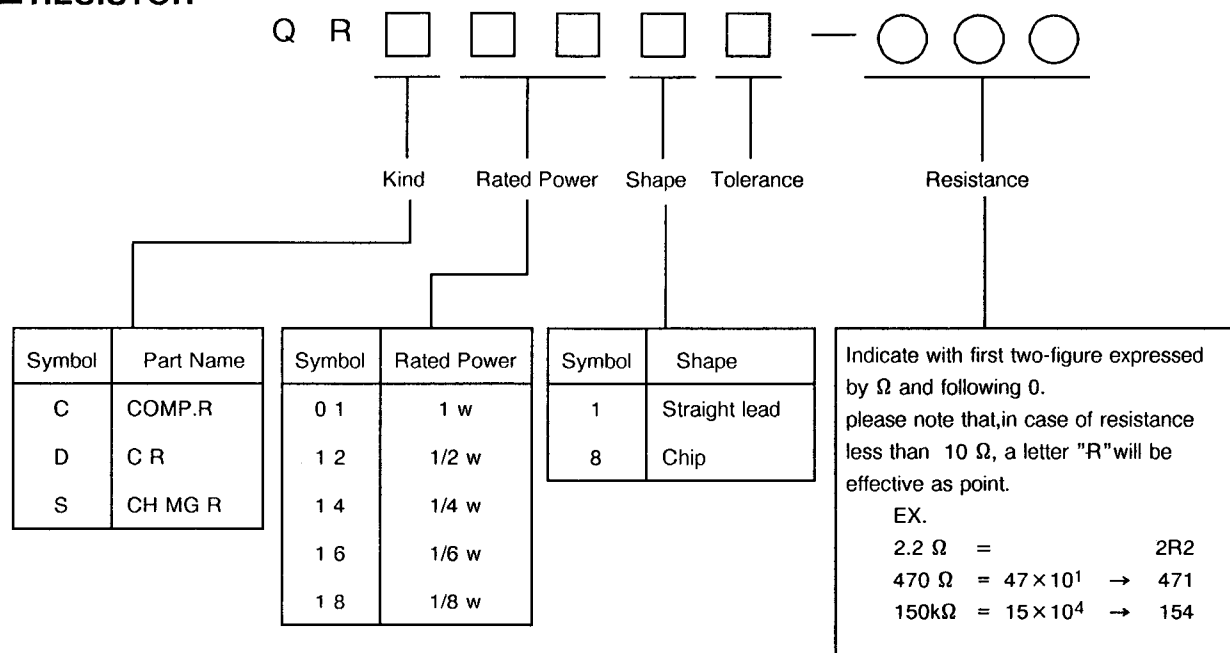
## ABBREVIATIONS OF RESISTORS, CAPACITORS AND TOLERANCES

RESISTORS		CAPACITORS	
C R	Carbon Resistor	C CAP.	Ceramic Capacitor
F R	Fusible Resistor	E CAP.	Electrolytic Capacitor
P R	Plate Resistor	M CAP.	Mylar Capacitor
V R	Variable Resistor	HV CAP.	High Voltage Capacitor
HV R	High Voltage Resistor	MF CAP.	Metalized Film Capacitor
MF R	Metal Film Resistor	MM CAP.	Metalized Mylar Capacitor
MG R	Metal Glazed Resistor	MP CAP.	Metalized Polystyrol Capacitor
MP R	Metal Plate Resistor	PP CAP.	Polypropylene Capacitor
OM R	Metal Oxide Film Resistor	PS CAP.	Polystyrol Capacitor
CMF R	Coating Metal Film Resistor	TF CAP.	Thin Film Capacitor
UNF R	Non-Flammable Resistor	MPP CAP.	Metalized Polypropylene Capacitor
CH V R	Chip Variable Resistor	TAN. CAP.	Tantalum Capacitor
CH MG R	Chip Metal Glazed Resistor	CH C CAP.	Chip Ceramic Capacitor
COMP. R	Composition Resistor	BP E CAP.	Bi-Polar Electrolytic Capacitor
LPTC R	Linear Positive Temperature Coefficient Resistor	CH AL E CAP.	Chip Aluminum Electrolytic Capacitor
		CH AL BP CAP.	Chip Aluminum Bi-Polar Capacitor
		CH TAN. E CAP.	Chip Tantalum Electrolytic Capacitor
		CH AL BP E CAP.	Chip Tantalum Bi-Polar Electrolytic Capacitor

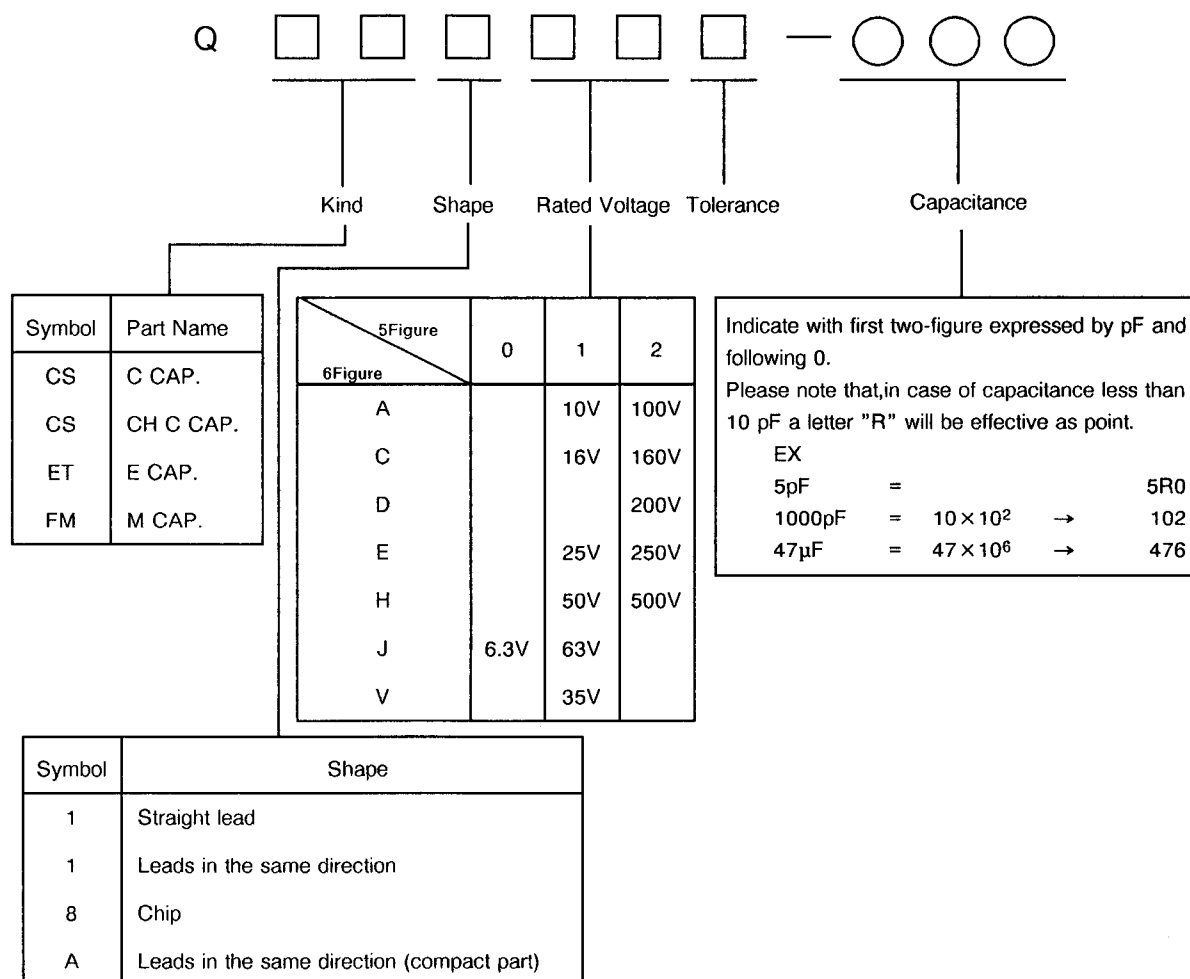
TOLERANCES									
F	G	J	K	M	N	R	H	Z	P
$\pm 1\%$	$\pm 2\%$	$\pm 5\%$	$\pm 10\%$	$\pm 20\%$	$\pm 30\%$	+ 30% - 10%	+ 50% - 10%	+ 80% - 20%	+ 100% - 0%

## HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS

### ■ RESISTOR



### ■ CAPACITOR



**CONTENTS of PARTS LIST**

PARTS LIST NAME	PARTS LIST No.	Page
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EXPLODED VIEW	—————	27
MAIN PW BOARD ASS'Y	SKA-1006A-H2	28 ~ 32
CRT SOCKET PW BOARD ASS'Y	SKA-3007A-H2	32
FRONT CONTROL PW BOARD ASS'Y	SKA-8006A-H2	33
LINE FILTER PW BOARD ASS'Y	SKA-9341A-H2	33
AV ST PW BOARD ASS'Y	SKA0A002A-H2	34 ~ 35
PACKING & PACKING PARTS LIST	—————	36

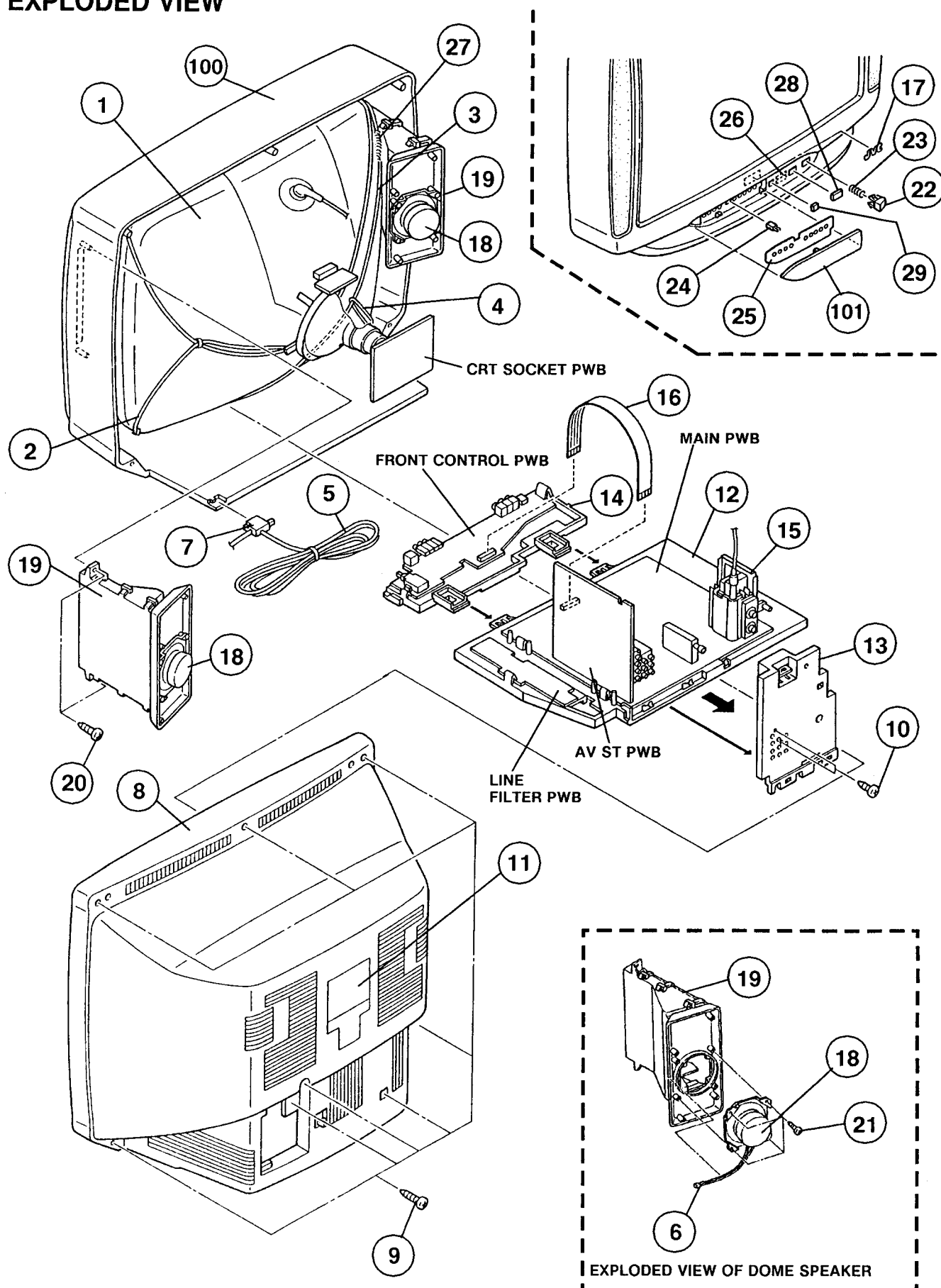
**REMOTE CONTROL UNIT (RM-C463-1H)**

△ Ref.No.	Part No.	Part Name	Description	Local
	BAS11M201A	BATTERY COVER		

## EXPLODED VIEW PARTS LIST

△ Ref.No.	Part No.	Part Name	Description	Local
△ 1	A68ESF002X11	PICTURE TUBE(ITC)	V01 Inc.DY,Wed&PC	
△ 2	CELD047-002J6N	DEG.COIL	L01	
3	CHGB0020-0B-FH	BRAIDED ASSY		
4	CHGB0016-0C-FH	SUB BRAIDED ASSY		
△ 5	QMP4060-200JG	POWER CORD		
6	CHGS0030-0F	S.P WIRE ASSY	( × 2 )	
7	CM47016-001-H	POWER CORD CLAMP		
△ 8	CM12663-B02-VH	REAR COVER		
9	GBSF4020M-H	W TAP SCREW	( × 8 )	
10	SBSF3012M-H	TAP SCREW	( × 2 )	
△ 11	CM22925-001	RATING LABEL		
12	CM12669-C01-VH	CHASSIS BASE		
13	CM12671-C01-H	AV TERMINAL BASE		
14	CM12640-004-H	CONTROL BASE		
△ 15	CJ28241-00AJ1	H.V.TRANSF.	T1552	
16	CHFB125-12BD	FFC WIRE		
17	CM48006-002	JVC MARK		
18	CEBSF10P-03KJ6	SPEAKER	( × 2 )SP01,SP02	
19	2528MXSP-STE	DOME SP ASSY	( × 2 )	
20	GBSF4016Z-H	TAPPING SCREW	( × 4 )For DOME SP	
21	GBSF4016Z-H	TAPPING SCREW	( × 8 )For SP01,SP02	
22	CM36212-A01-H	POWER KNOB		
23	CM35235-009-H	SPRING		
24	CM48001-00A	DOOR LATCH		
25	CM36211-003-H	CONTROL SHEET		
26	CM36248-B01-H	LED LENS		
27	A48457-3-H	SPRING		
28	CM36247-001-H	REMOCON WINDOW		
29	CM36246-001-H	EE WINDOW		
100	CM12661-00F-H	FRONT CABI.ASSY	Inc.No.101	
101	CM22893-006-H	DOOR		

## EXPLODED VIEW



## PRINTED WIRING BOARD ASS'Y PARTS LIST

## MAIN PW BOARD ASS'Y (SKA-1006A-H2)

△ Symbol No.	Part No.	Part Name	Description	Local
R E S I S T O R				
R1401	QRV141F-2701AY	MF R	2.7kΩ 1/4W	F
R1402-03	QRD123J-1R0SX	C R	1 Ω 1/2W	J
R1405	QRG019J-221S	OM R	220 Ω 1W	J
R1451	QRD123J-470SX	C R	47 Ω 1/2W	J
R1503	QRD123J-152SX	C R	1.5kΩ 1/2W	J
R1504	QRG029J-332	OM R	3.3kΩ 2W	J
R1505	QRG029J-392	OM R	3.9kΩ 2W	J
R1535	QRD123J-152SX	C R	1.5kΩ 1/2W	J
R1552	QRG029J-103	OM R	10kΩ 2W	J
△ R1571	QRD149J-2R2S	C R	2.2 Ω 1/4W	J
R1572	QRG019J-122S	OM R	1.2kΩ 1W	J
△ R1585	QRV141F-1501AY	MF R	1.5kΩ 1/4W	F
△ R1586	QRV141F-8451AY	MF R	8.45kΩ 1/4W	F
R1593	QRD123J-392SX	C R	3.9kΩ 1/2W	J
△ R1605	QRD143J-2R2SX	C R	2.2 Ω 1/4W	J
△ R1608	QRD143J-2R2SX	C R	2.2 Ω 1/4W	J
R1902	QRF204K-3R3	UNF R	3.3 Ω 20W	K
R1931	QRG039J-563	OM R	56kΩ 3W	J
R1932-33	QRG029J-823A	OM R	82kΩ 2W	J
R1935	QRD123J-103SX	C R	10kΩ 1/2W	J
△ R1939	QRD149J-101S	C R	100 Ω 1/4W	J
△ R1940	QRD149J-392S	C R	3.9kΩ 1/4W	J
R1943	QRG019J-120S	OM R	12 Ω 1W	J
R1945	QRM059J-R15	MP R	0.15 Ω 5W	J
R1946	QRX019J-R68S	MF R	0.68 Ω 1W	J
△ R1947	QRD149J-102S	C R	1kΩ 1/4W	J
R1951	QRD123J-102SX	C R	1kΩ 1/2W	J
R1954	QRD123J-561SX	C R	560 Ω 1/2W	J
R1956	QRD123J-103SX	C R	10kΩ 1/2W	J
△ R1957	QRD149J-8R2S	C R	8.2 Ω 1/4W	J
R1971	QRF103J-3R3	UNF R	3.3 Ω 10W	J
R1972	QRD123J-562SX	C R	5.6kΩ 1/2W	J
R1973	QRD123J-122SX	C R	1.2kΩ 1/2W	J
△ R1991	QRZ0057-825	C R	8.2MΩ 1W	J
C A P A C I T O R				
C1021	QCT25CH-120AZ	C CAP.	12 p F 50V	J
C1022	QFLC1HJ-103MZ	M CAP.	0.01 μ F 50V	J
C1100	QFV71HJ-104MZ	TF CAP.	0.1 μ F 50V	J
C1101	QCZ0120-104MZ	C CAP.	0.1 μ F 25V	Z
C1105	QFLC1HJ-103MZ	M CAP.	0.01 μ F 50V	J
C1106	QFLC1HJ-473MZ	M CAP.	0.047 μ F 50V	J
C1109	QFV71HJ-104MZ	TF CAP.	0.1 μ F 50V	J
C1110	QFLC1HJ-473MZ	M CAP.	0.047 μ F 50V	J
C1111	QFV71HJ-104MZ	TF CAP.	0.1 μ F 50V	J
C1113	QFLC1HJ-103MZ	M CAP.	0.01 μ F 50V	J
C1114	QFV71HJ-104MZ	TF CAP.	0.1 μ F 50V	J
C1115	QFN31HJ-392ZJ1	M CAP.	3900 p F 50V	J
C1119-20	QFV71HJ-104MZ	TF CAP.	0.1 μ F 50V	J
C1121-23	QFLC1HJ-104MZ	M CAP.	0.1 μ F 50V	J
C1126	QCZ0120-104MZ	C CAP.	0.1 μ F 25V	Z
C1127	QFN31HJ-102ZJ1	M CAP.	1000 p F 50V	J
C1131	QFN31HJ-102ZJ1	M CAP.	1000 p F 50V	J
C1132	QFLC1HJ-224MZ	M CAP.	0.22 μ F 50V	J
C1133	QFLC1HJ-104MZ	M CAP.	0.1 μ F 50V	J
C1182	QFV71HJ-104MZ	TF CAP.	0.1 μ F 50V	J
C1186	QEN61CM-106Z	BP E CAP.	10 μ F 16V	M
C1188	QCT25CH-390AZ	C CAP.	39 p F 50V	J
C1403	QFLC2AK-823MZ	M CAP.	0.082 μ F 100V	K
C1404	QFN32AK-224J1	M CAP.	0.22 μ F 100V	K



△ Symbol No.	Part No.	Part Name	Description	Local
CAPACITOR				
C1405	QFLC2AK-823MZ	M CAP.	0.082 $\mu$ F 100V	K
C1407	QFLC2AK-563MZ	M CAP.	0.056 $\mu$ F 100V	K
C1408	QFLC1HJ-393MZ	M CAP.	0.039 $\mu$ F 50V	J
C1409	QFN32AK-102ZJ1	M CAP.	1000 p F 100V	K
C1451	QFLC1HJ-103MZ	M CAP.	0.01 $\mu$ F 50V	J
C1452	QFLC1HJ-393MZ	M CAP.	0.039 $\mu$ F 50V	J
C1491	QFV71HJ-104MZ	TF CAP.	0.1 $\mu$ F 50V	J
C1503	QETC2CM-105Z	E CAP.	1 $\mu$ F 160V	M
C1531	QEZ0195-475MZ	E CAP.	4.7 $\mu$ F 50V	M
△ C1551	QFZ0117-4001S	MPP CAP.	4000 p F 1.4kVH $\pm$ 2.5%	
△ C1552	QFZ0117-1002S	MPP CAP.	0.01 $\mu$ F 1.4kVH $\pm$ 2.5%	
C1553	QFP32GJ-273M	PP CAP.	0.027 $\mu$ F 400V	J
△ C1554	QFZ0119-684S	MPP CAP.	0.68 $\mu$ F 200V $\pm$ 3%	
△ C1555	QFZ0119-534S	MPP CAP.	0.53 $\mu$ F 200V $\pm$ 3%	
C1556	QETC2EM-475Z	E CAP.	4.7 $\mu$ F 250V	M
C1565	QFN31HJ-222ZJ1	M CAP.	2200 p F 50V	J
C1566	QFN31HJ-102ZJ1	M CAP.	1000 p F 50V	J
C1577	QETB1JM-227	E CAP.	220 $\mu$ F 63V	M
C1578	QETC2EM-475Z	E CAP.	4.7 $\mu$ F 250V	M
C1582	QETC2AM-106Z	E CAP.	10 $\mu$ F 100V	M
C1591	QFV71HJ-104MZ	TF CAP.	0.1 $\mu$ F 50V	J
C1602-03	QEN61HM-105Z	BP E CAP.	1 $\mu$ F 50V	M
C1609	QETB1VM-108	E CAP.	1000 $\mu$ F 35V	M
C1610	QFLC1HJ-124MZ	M CAP.	0.12 $\mu$ F 50V	J
C1614	QFLC1HJ-124MZ	M CAP.	0.12 $\mu$ F 50V	J
C1701	QFLC1HJ-104MZ	M CAP.	0.1 $\mu$ F 50V	J
C1705	QFLC1HJ-104MZ	M CAP.	0.1 $\mu$ F 50V	J
C1707	QCT25CH-680AZ	C CAP.	68 p F 50V	J
C1708	QFLC1HJ-104MZ	M CAP.	0.1 $\mu$ F 50V	J
C1711	QFN31HJ-102ZJ1	M CAP.	1000 p F 50V	J
C1712	QCT25CH-820AZ	C CAP.	82 p F 50V	J
△ C1901	QCZ9036-471M	C CAP.	470 p FAC400V	K
△ C1902	QCZ9036-471M	C CAP.	470 p FAC400V	K
△ C1903	QCZ9057-472M	C CAP.	4700 p FAC400V	Z
△ C1904	QCZ9057-472M	C CAP.	4700 p FAC400V	Z
△ C1905	QCZ9057-472M	C CAP.	4700 p FAC400V	Z
C1911	QEZ0111-397R	E CAP.	390 $\mu$ F 400V	M
C1931	QCF22HP-103M	CH C CAP.	0.01 $\mu$ F 500V	P
C1932	QCZ0122-391U	C CAP.	390 p F 2kV	K
C1933	QCZ0122-151U	C CAP.	150 p F 2kV	K
C1934	QCZ0122-102U	C CAP.	1000 p F 2kV	K
C1937	QETC2AM-106Z	E CAP.	10 $\mu$ F 100V	M
C1941	QFLC2AJ-473MZ	M CAP.	0.047 $\mu$ F 100V	J
C1971	QCZ0122-152U	C CAP.	1500 p F 2kV	K
C1975	QEZ0203-227	E CAP.	220 $\mu$ F 160V	
C1976	QETC2AM-476Z	E CAP.	47 $\mu$ F 100V	M
C1983	QEN61HM-225Z	BP E CAP.	2.2 $\mu$ F 50V	M
C1985	QETC0JM-107Z	E CAP.	100 $\mu$ F 6.3V	M
C1986	QETB2CM-107	E CAP.	100 $\mu$ F 160V	M
△ C1991	QCZ9036-222M	C CAP.	2200 p FAC400V	M
TRANSFORMER				
T1010	CELT001-301J1	C.WAVE TRANSF.		
T1451	CE42556-001J1	PULSE TRANSF.		
T1452	CE42555-001J1	SATURABLE REACT		
T1501	CE42034-002	H.DRIVE TRANSF.		
T1551	CE42549-001J1	BRIGE COIL		
△ T1552	CJ28241-00AJ1	H.V.TRANSF.		
△ T1931	CETS035-001J3	SWITCH.TRANSF.		
COIL				
L1002-03	CELP026-8R2Z	PEAKING COIL	8.2 $\mu$ H	
L1101	CELP038-R82Z	PEAKING COIL	0.82 $\mu$ H	

△ Symbol No.	Part No.	Part Name	Description	Local
C O I L				
L1131	CELP026-470Z	PEAKING COIL	47 $\mu$ H	
L1150	CELP037-8R2	PEAKING COIL	8.2 $\mu$ H	
L1151	CELP026-8R2Z	PEAKING COIL	8.2 $\mu$ H	
L1152-53	CELP037-100	PEAKING COIL	10 $\mu$ H	
L1154	CELP037-2R2	PEAKING COIL	2.2 $\mu$ H	
L1181	CELP027-330Z	PEAKING COIL	33 $\mu$ H	
L1401	CELC901-024J6	HEATER CHOKE		
L1451	CE41197-00G	WIDTH COIL		
L1452	CELC058-331Z	CHOKE COIL		
L1531	CELC053-802	CHOKE COIL		
L1551	CELL013-003	LINEARITY COIL		
L1571	CELC901-093J6	HEATER CHOKE		
L1704	CELP027-8R2Z	PEAKING COIL	8.2 $\mu$ H	
L1705	CELP026-8R2Z	PEAKING COIL	8.2 $\mu$ H	
L1971-72	CELC058-560Z	CHOKE COIL		
D I O D E				
D1102	MTZJ33(A)-T2	ZENER DIODE		
D1131	1SS133-T2	SI.DIODE		
D1150	1SS133-T2	SI.DIODE		
D1151-52	1SS85-T2	SI.DIODE		
D1210	MTZJ5.1(A)-T2	ZENER DIODE		
D1212	1SS133-T2	SI.DIODE		
D1215	1SS133-T2	SI.DIODE		
D1405	MTZJ33(A)-T2	ZENER DIODE		
D1406	MTZJ24(B)-T2	ZENER DIODE		
D1409	1SS120-T2	SI.DIODE		
D1451	1SS133-T2	SI.DIODE		
D1452-53	ERA81-004-T2	SI.DIODE		
D1501	1SS81-T5	SI.DIODE		
D1531	MTZJ33(B)-T2	ZENER DIODE		
D1551	RH3G-C1	SI.DIODE		
D1552	RU3AM-LFC4	SI.DIODE		
D1553	RGP10J-T3	SI.DIODE		
D1557	1SS146-T2	SI.DIODE		
D1558	MTZJ6.8(A)-T2	ZENER DIODE		
D1559-60	1SS133-T2	SI.DIODE		
D1561	MTZJ11(A)-T2	ZENER DIODE		
D1571	RGP10J-T3	SI.DIODE		
D1572	RL2Z-LFC4	SI.DIODE		
D1573	RGP10J-T3	SI.DIODE		
D1574	RH1S-T3	SI.DIODE		
D1581	MTZJ4.3(A)-T2	ZENER DIODE		
D1582	MTZJ7.5S-T2	ZENER DIODE		
D1583	1SS146-T2	SI.DIODE		
D1591	MTZJ15(A)-T2	ZENER DIODE		
D1592	RGP10J(C1)	SI DIODE		
D1605	1SS133-T2	SI.DIODE		
D1608-10	1SS133-T2	SI.DIODE		
D1701-02	1SS133-T2	SI.DIODE		
△ D1703	MTZJ5.6(A)-T2	ZENER DIODE		
△ D1901	RBV-406M	BRIDGE DIODE		
D1931	RU1C-LFC4	SI.DIODE		
D1932	RGP10J(C1)-T3	SI.DIODE		
D1933	AU01Z-T2	SI.DIODE		
D1934	RGP10J-T3	SI.DIODE		
D1935	1SS133-T2	SI.DIODE		
D1936	MTZJ12(C)-T2	ZENER DIODE		
D1937	MTZJ7.5(B)-T2	ZENER DIODE		
D1938	EG1Z-T3	SI.DIODE		
D1939	MTZJ7.5(C)-T2	ZENER DIODE		
D1940	1SS133-T2	SI.DIODE		
D1941	MTZJ15(A)-T2	ZENER DIODE		
D1971	RU30A-C1	SI.DIODE		
D1972	RGP10J(C1)-T3	SI.DIODE		

△ Symbol No.	Part No.	Part Name	Description	Local
<b>D I O D E</b>				
D1973-74	RU3YX-LFC4	SI.DIODE		
D1975	MTZJ7.5(B)-T2	ZENER DIODE		
<b>T R A N S I S T O R</b>				
Q1149	2SC1740S(QR)-T	SI.TRANSISTOR		
Q1150	DTC124ESA-T	DIGI.TRANSISTOR		
Q1151-52	2SC1740S(QR)-T	SI.TRANSISTOR		
Q1153	2SA933AS(QR)-T	SI.TRANSISTOR		
Q1154	2SC5083(L-P)-T	SI.TRANSISTOR		
Q1155	DTC124ESA-T	DIGI.TRANSISTOR		
Q1156	2SC5083(L-P)-T	SI.TRANSISTOR		
Q1157-58	2SA933AS(QR)-T	SI.TRANSISTOR		
Q1159	DTC124ESA-T	DIGI.TRANSISTOR		
Q1160	2SA933AS(QR)-T	SI.TRANSISTOR		
Q1161	DTC124ESA-T	DIGI.TRANSISTOR		
Q1163	DTC323TS-T	DIGI.TRANSISTOR		
Q1164	DTC124ES-T	DIGI.TRANSISTOR		
Q1179	2SA933AS(QR)-T	SI.TRANSISTOR		
Q1180-81	2SC1740S(QR)-T	SI.TRANSISTOR		
Q1183	2SC1740S(QR)-T	SI.TRANSISTOR		
Q1184	DTC124ES-T	DIGI.TRANSISTOR		
Q1210	2SC1740S(QR)-T	SI.TRANSISTOR		
Q1212	2SC1740S(QR)-T	SI.TRANSISTOR		
Q1401	2SK301(Q)-T	F.E.T.		
Q1451-52	2SC2655(Y)-T	SI.TRANSISTOR		
Q1501	BSN274	F.E.T.		
Q1531	2SB941A(QP)	SI.TRANSISTOR		
△ Q1551	2SD2348-LB	SI.TRANSISTOR	H.OUT	
Q1581	2SA933AS(QR)-T	SI.TRANSISTOR		
Q1582	2SC1740S(QR)-T	SI.TRANSISTOR		
Q1601	2SA933AS(QR)-T	SI.TRANSISTOR		
Q1602-03	2SC1740S(QR)-T	SI.TRANSISTOR		
Q1604-05	DTC144ES-T	DIGI.TRANSISTOR		
Q1931	2SD1853-T	SI.TRANSISTOR		
Q1932	2SA1013(O)-T	SI.TRANSISTOR		
Q1933	2SC2240(GB)-T	SI.TRANSISTOR		
Q1934	DTC144ES-T	DIGI.TRANSISTOR		
Q1935	2SA966(OY)-T	SI.TRANSISTOR		
Q1936	DTC144GS-T	DIGI.TRANSISTOR		
Q1971	2SA949(Y)C1	SI.TRANSISTOR		
<b>I C</b>				
IC1101	TDA8366	I.C.(MONO-ANA)		
IC1102	TDA4665	I.C.(MONO-ANA)		
IC1103	TDA8395	I.C.(MONO-ANA)		
IC1104	CX20125	I.C.(DIGI.OTHER)		
IC1401	TDA8350Q	I.C.(MONO-ANA)		
IC1571	KIA7805PI	I.C.(MONO-ANA)		
IC1651	TA8216H	I.C.(MONO-ANA)		
IC1701	L78LR05E-MA	I.C.(MONO-ANA)		
IC1702	M37201M6-B49SP	I C		
IC1703	AT24C08-G29MX	I.C.(EP-ROM)	(SERVICE)	
IC1931	STR-S6709	I.C.(HYBRID)		
△ IC1932	TLP721F(GR)	I.C.(PH.COUPLER)		
IC1933	SE135N	I.C.(HYBRID)		
IC1971	AN7808F	I.C.(MONO-ANA)		
IC1972	LM2940CT-12	I.C.(MONO-ANA)		
<b>O T H E R S</b>				
CF1100	MKT39.5MA100P	CERAMIC FILTER		
CF1101	MKT30.9MA100P	CERAMIC FILTER		
CF1104	MKT33.5MA100P	CERAMIC FILTER		
CF1151	TPS5.5MW	CERAMIC FILTER		

△ Symbol No.	Part No.	Part Name	Description	Local
O T H E R S				
	CF1152	TPS6.5MB	CERAMIC FILTER	
	CF1153	TPSH6.0MB	CERAMIC FILTER	
	CF1154	EFCWS4504A	CERAMIC FILTER	
△	CP1571	ICP-N20-Y	I.C.PROTECT	
△	CP1972	ICP-N38-Y	I.C.PROTECT	
△	CP1973	ICP-N75-Y	I.C.PROTECT	
△	FR1401	QRH127J-4R7M	F R	4.7 Ω 1/2W J
△	FR1531	QRH027J-270M	F R	27 Ω 2W J
△	FR1572	QRH027K-R82M	F R	0.82 Ω 2W K
△	FR1573	QRH127J-6R8M	F R	6.8 Ω 1/2W J
△	FR1575	QRZ0054-4R7M	F R	4.7 Ω 1/4W J
△	FR1931	QRZ0054-470M	F R	47 Ω 1/4W J
△	FR1932	QRH127J-470M	F R	47 Ω 1/2W J
	K1931	CE42050-001Z	CORE	
	K1971-73	CE42050-001Z	CORE	
	SF1101	CE41099-601	SAW FILTER	
	UV1001	CEEM564-B01	TUNER	
	X1101	CE40749-001J2	CRYSTAL	
	X1102	CE40668-001	CRYSTAL	
	X1701	CST4.00MGW-T2	CERAMIC RESONATO	

## CRT SOCKET PW BOARD ASS'Y (SKA-3007A-H2)

△ Symbol No.	Part No.	Part Name	Description	Local
V A R I A B L E R E S I S T O R				
	R3107	QVPE805-302H	V R(G CUT OFF)	3k Ω B
	R3108	QVPE805-302H	V R(R CUT OFF)	3k Ω B
	R3109	QVPE805-302H	V R(B CUT OFF)	3k Ω B
R E S I S T O R				
	R3116-18	QRG029J-183A	OM R	18k Ω 2W J
	R3119-21	QRG029J-153A	OM R	15k Ω 2W J
	R3125-27	QRZ0111-102	C R	1k Ω 1/2W
	R3131	QRZ0111-474	C R	470k Ω 1/2W
C A P A C I T O R				
	C3106	QFLC1HJ-104MZ	M CAP.	0.1 μ F 50V J
	C3113	QCZ0131-472A	C CAP.	4700 p F 2kV K
	C3114	QETC2EM-475Z	E CAP.	4.7 μ F 250V M
	C3116	QCZ0131-472A	C CAP.	4700 p F 2kV K
C O I L				
	L3101-03	CELP055-151Z	PEAKING COIL	150 μ H
D I O D E				
	D3152-55	1SS353-X	SI.DIODE	
	D3159	1SS353-X	SI.DIODE	
T R A N S I S T O R				
	Q3101-03	2SC1815(YG)-T	SI.TRANSISTOR	
	Q3104-06	2SC4544-C1	SI.TRANSISTOR	
	Q3155-56	2SC2412K(QR)-X	CHIP TRANSISTOR	
	Q3157	2SA1037K(QR)-X	CHIP TRANSISTOR	
O T H E R S				
△	SK3001	CE42535-001J1	CRT SOCKET	

## FRONT CONTROL PW BOARD ASS'Y (SKA-8006A-H2)

△ Symbol No.	Part No.	Part Name	Description	Local
C A P A C I T O R				
C8001-04	QETC1VM-227Z	E CAP.	220 $\mu$ F 35V	M
C8006	QFLC1HJ-104MZ	M CAP.	0.1 $\mu$ F 50V	J
D I O D E				
D8007	CE40538-00A	PHOTO CONDUCTOR		
D8008	1SS353-X	SI.DIODE		
D8010	SPR-39MVWF	L.E.D.		
D8011	SLR-342DU-T	L.E.D.(ORG)		
D8012	SLR-342MW-T	L.E.D.(GRN)		
D8013	1SS353-X	SI.DIODE		
D8402-03	MA3100(M)-X	ZENER DIODE		
T R A N S I S T O R				
Q8001	2SC1740S(QR)-T	SI.TRANSISTOR		
Q8002	DTC124ES-T	DIGI.TRANSISTOR		
Q8003-04	DTA124ES-T	DIGI.TRANSISTOR		
I C				
IC8001	HC-337M	IFR DETECT UNIT		
O T H E R S				
△ F8901	CM36005-001-H	LED HOLDER		
J8001	QMF51E2-4R0S	FUSE	4.0A	
J8003	QMS3004-C01	HEADPHONE JACK		
J8004	CEMN011-004	PIN JACK		
J8005	CEMN011-006	PIN JACK		
S8001	CEMN011-005	PIN JACK		
S8002	QSP1A11-C18Z	PUSH SWITCH	CH PRESET	
	QSP1A11-C18Z	PUSH SWITCH	CH DOWN	
S8003	QSP1A11-C18Z	PUSH SWITCH	CH UP	
S8004	QSP1A11-C18Z	PUSH SWITCH	VOL (-)	
S8005	QSP1A11-C18Z	PUSH SWITCH	VOL (+)	
S8006	QSP1A11-C18Z	PUSH SWITCH	TV/VIDEO	
△ S8901	QSP4K21-C01	PUSH SWITCH	POWER SW	

## LINE FILTER PW BOARD ASS'Y (SKA-9341A-H2)

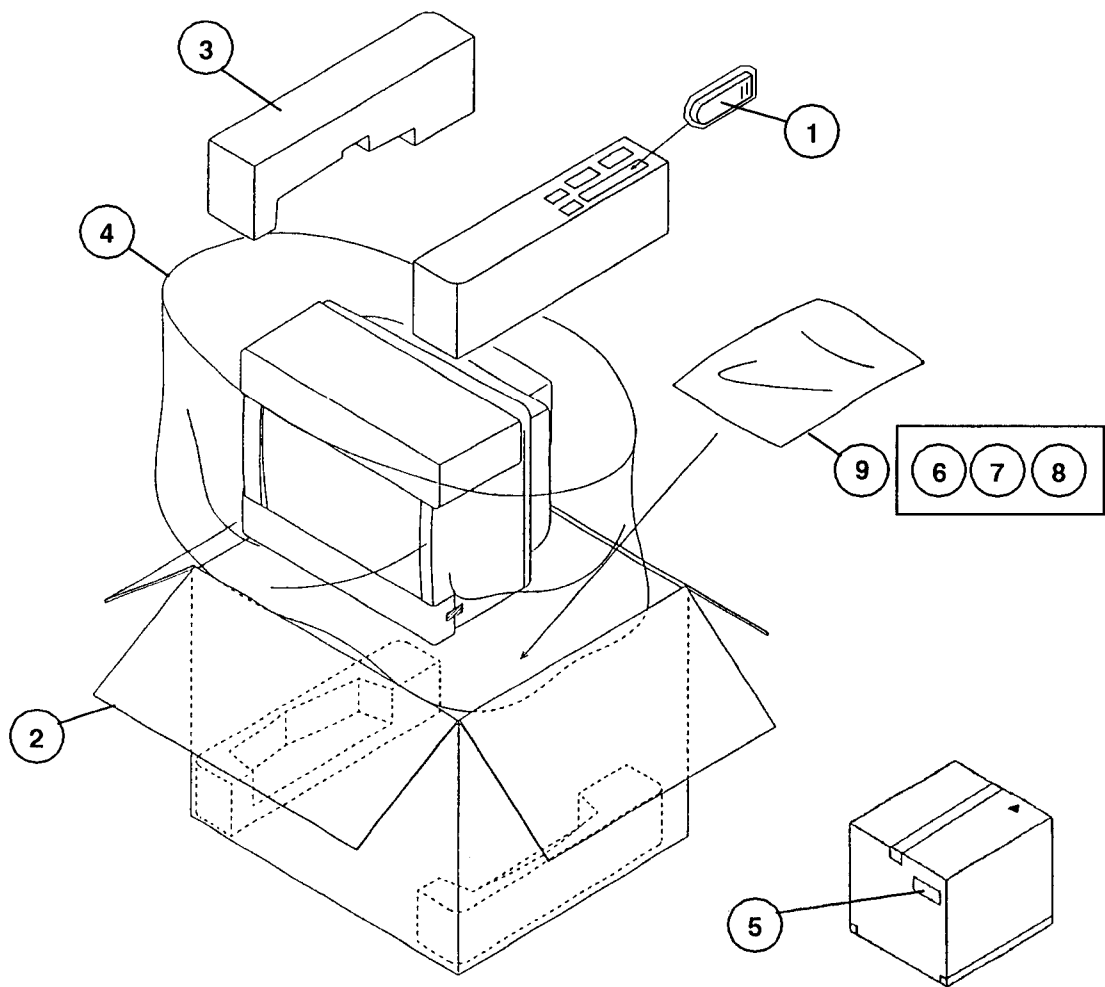
△ Symbol No.	Part No.	Part Name	Description	Local
R E S I S T O R				
△ R9901	QRF154J-680	UNF R	68 $\Omega$ 15W	J
C A P A C I T O R				
△ C9901	QFZ9036-104M	MF CAP.	0.1 $\mu$ FAC250V	M
△ C9902	QFZ9036-104M	MF CAP.	0.1 $\mu$ FAC250V	M
△ C9903	QFZ9036-104M	MF CAP.	0.1 $\mu$ FAC250V	M
O T H E R S				
△ LF9901	CE41734-00AJ1	LINE FILTER		
△ LF9902	CE41890-003	LINE FILTER		
△ TH9901	CEKP002-003	W.P.THERMISTOR		
△ VA9901	ERZ-C10VK621A	VARISTOR		

## AV ST PW BOARD ASS'Y (SKA0A002A-H2)

Symbol No.	Part No.	Part Name	Description	Local
RESISTOR				
R0178	QRD149J-4R7S	C R	4.7 Ω 1/4W J	
CAPACITOR				
C0102	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V K	
C0103-05	NCB21HK-102AY	CHIP CAP.	1000 p F 50V K	
C0106	NCB21EK-104AY	CHIP CAP.	0.1 μ F 25V K	
C0114	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V K	
C0152	NCB21HK-473AY	CHIP CAP.	0.047 μ F 50V K	
C0153	NCT03CH-270AY	CHIP CAP.	27 p F 1600V H	
C0154	NCT03CH-680AY	CHIP CAP.	68 p F 1600V H	
C0155	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V K	
C0156	NCB21EK-104AY	CHIP CAP.	0.1 μ F 25V K	
C0157-58	NCT03CH-270AY	CHIP CAP.	27 p F 1600V H	
C0159	NCS21HJ-331AY	CHIP C CAP.	330 p F 50V J	
C0160	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V K	
C0161	NCB21HK-102AY	CHIP CAP.	1000 p F 50V K	
C0163	NCB21HK-222AY	CHIP CAP.	2200 p F 50V K	
C0165	NCB21HK-223AY	CHIP CAP.	0.022 μ F 50V K	
C0166	NCT03CH-820AY	CHIP CAP.	82 p F 1600V H	
C0167	NCT03CH-680AY	CHIP CAP.	68 p F 1600V H	
C0170	NCB21HK-473AY	CHIP CAP.	0.047 μ F 50V K	
C0171	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V K	
C0176	NCB21HK-223AY	CHIP CAP.	0.022 μ F 50V K	
C0180	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V K	
C0205	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V K	
C0208	NCS21HJ-391AY	CHIP C CAP.	390 p F 50V J	
C0209	NCF21HZ-104AY	CHIP C CAP.	0.1 μ F 50V Z	
C0210	NCB21HK-222AY	CHIP CAP.	2200 p F 50V K	
C0211-12	NCB21HK-223AY	CHIP CAP.	0.022 μ F 50V K	
C0213	NCS21HJ-102AY	CHIP C CAP.	1000 p F 50V J	
C0215	NCB21HK-682AY	CHIP CAP.	6800 p F 50V K	
C0216-17	NCF21HZ-104AY	CHIP C CAP.	0.1 μ F 50V Z	
C0218	NCB21HK-682AY	CHIP CAP.	6800 p F 50V K	
C0301	NCT03CH-180AY	CHIP CAP.	18 p F 1600V H	
C0303	QEN61CM-336Z	BP E CAP.	33 μ F 16V M	
C0305	NCT03CH-121AY	CHIP CAP.	120 p F 1600V H	
C0308	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V K	
C0401	QEN61CM-106Z	BP E CAP.	10 μ F 16V M	
C0403	QEN61HM-105Z	BP E CAP.	1 μ F 50V M	
C0404	QEN61CM-106Z	BP E CAP.	10 μ F 16V M	
C0405	NCB21EK-563AY	CHIP CAP.	0.056 μ F 25V K	
C0406	QEN61CM-106Z	BP E CAP.	10 μ F 16V M	
C0407-08	QEN61HM-105Z	BP E CAP.	1 μ F 50V M	
C0410-11	QEN61HM-105Z	BP E CAP.	1 μ F 50V M	
C0423-24	QEN61HM-106Z	BP E CAP.	10 μ F 50V M	
C0425-26	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V K	
C0427-28	QEN61CM-106Z	BP E CAP.	10 μ F 16V M	
C0430	NCB21HK-103AY	CHIP CAP.	0.01 μ F 50V K	
C0449	NCB21EK-563AY	CHIP CAP.	0.056 μ F 25V K	
C0512	QFLC1HK-224MZ	M CAP.	0.22 μ F 50V K	
C0540-41	QEN61CM-106Z	BP E CAP.	10 μ F 16V M	
C0604	QEN61CM-106Z	BP E CAP.	10 μ F 16V M	
C0606	QEN61CM-106Z	BP E CAP.	10 μ F 16V M	
TRANSFORMER				
T0101	CELT003-204	SIF TRANSF		
T0152	CELT002-203	TAKE TRANSF.		

△ Symbol No.	Part No.	Part Name	Description	Local
<b>C O I L</b>				
L0152	CELP026-820Z	PEAKING COIL	82 $\mu$ H	
L0153	CELP026-221Z	PEAKING COIL	220 $\mu$ H	
L0154	CELP055-220Z	PEAKING COIL	22 $\mu$ H	
L0155	CELP055-8R2Z	PEAKING COIL	8.2 $\mu$ H	
L0156	CELP026-270Z	PEAKING COIL	27 $\mu$ H	
L0160	CELP026-100Z	PEAKING COIL	10 $\mu$ H	
L0301	CELP026-820Z	PEAKING COIL	82 $\mu$ H	
<b>D I O D E</b>				
D0103	MA3091(M)-X	ZENER DIODE		
D0402	1SS353-X	SI. DIODE		
D0418-19	MTZJ11(A)-T2	ZENER DIODE		
<b>T R A N S I S T O R</b>				
Q0152	2SC2412K(QR)-X	CHIP TRANSISTOR		
Q0154	2SC2412K(QR)-X	CHIP TRANSISTOR		
Q0155	2SA1037K(QR)-X	CHIP TRANSISTOR		
Q0156-58	2SC2412K(QR)-X	CHIP TRANSISTOR		
Q0160	2SA1037K(QR)-X	CHIP TRANSISTOR		
Q0161-63	DTC124EKA-X	DIGI. TRANSISTOR		
Q0301-03	2SC2412K(QR)-X	CHIP TRANSISTOR		
Q0304	2SA1037K(QR)-X	CHIP TRANSISTOR		
Q0401	2SA673(C)-T	SI. TRANSISTOR		
Q0402-03	DTC124EKA-X	DIGI. TRANSISTOR		
Q0405-08	2SA1037K(QR)-X	CHIP TRANSISTOR		
<b>I C</b>				
IC0101	LA7577N	I. C. (MONO-ANA)		
IC0205	UPC1853CT	I. C. (MONO-ANA)		
IC0401	CXA1545AS	I. C. (MONO-ANA)		
IC0402	AN78L09-Y	I C		
<b>O T H E R S</b>				
CF0151	A75088-C-T2	CERAMIC FILTER		
CF0152	A75417-C-T2	CERAMIC FILTER		
CF0153	A75111-C-T2	CERAMIC FILTER		
CF0154	A74603-C-Z	CERAMIC FILTER		
CF0155	A75111-C-T2	CERAMIC FILTER		
CF0156	CSA1.500MK2	CERAMIC FILTER		
CF0157	CSB512J908	CER. RESONATOR		
DL0301	CE42392-002	COMB FILTER		
△ FR0118	QRZ0054-470M	F R	47 $\Omega$ 1/4W J	
J0401	QMD2B04-001	MINI CONNECTOR		
J0402	CEMN078-001	PIN JACK		

PACKING



PACKING PARTS LIST

△ Ref.No.	Part No.	Part Name	Description	Local
1	RM-C463-1H	REMOCON UNIT		
2	CP11400-048-H	PACKING CASE		
3	CP11410-A0C-H	CUSHION ASSY	4pcs in 1set	
4	CP30697-006-H	POLY BAG		
5	CM47385-00B-H	POS,SERIAL LABEL		
△ 6	CQ40110-001-H	INST BOOK		
7	CQ40111-001-H	DIGEST MANUAL		
8	CE41983-00A	MATCHING BOX		
9	QPGA025-03505H	POLY BAG		

JVC

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