TOSHIBA

SERVICE MANUAL

# COLOUR TELEVISION

# 21V33D2

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# SERVICING NOTICES ON CHECKING

### 1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

### 2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

### 3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

### 4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

### 5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

### 6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

### 7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

**(INSULATION CHECK PROCEDURE)**

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

**[Note 1]**

If you have not the 500V insulation resistance meter, use a Tester.

**[Note 2]**

External exposure metal: Antenna terminal
Earphone jack

# HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

# IMPORTANT

Inferior silicon grease can damage IC's and transistors.
When replacing an IC's or transistors, use only specified silicon grease (YG6260M).
Remove all old silicon before applying new silicon.

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# GENERAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| **G-1** | **TV System** | CRT | CRT Size / Visual Size | 21 inch / 660.0mmV |
| | | | CRT Type | FLAT |
| | | | Deflection | 90 degree |
| | | | Magnetic Field BV/BH | +0.45G/0.18G |
| | | Color System | | PAL |
| | | Speaker | | 2 Speaker |
| | | | Position | Front |
| | | | Size | 2.0 x4.7 Inch |
| | | | Impedance | 8 ohm |
| | | Sound Output | MAX | 5.0+5.0 W |
| | | | 10%(Typical) | 4.0+4.0 W |
| | | DDR SECAM | | No |
| | | NTSC3.58(AV)+NTSC4.43 | | Yes |
| | | PAL60Hz | | Yes |
| **G-2** | **Tuning System** | Broadcasting System | | CCIR System B/G |
| | | Tuner and Receive CH | System | 1Tuner |
| | | | Destination | Hyper |
| | | | Tuning System | F-Synth |
| | | | Input Impedance | VHF/UHF 75 ohm |
| | | | CH Coverage | E2 - E4, X - Z+2, S1 - S10, E5 - E12, S11 - S41, E21 - E69 |
| | | Intermediate Frequency | Picture(FP) | 38.9 MHz |
| | | | Sound(FS) | 33.4 MHz |
| | | | FP-FS | 5.5 MHz |
| | | Preset CH | | 100 |
| | | Stereo/Dual TV Sound | | G-ST |
| | | Tuner Sound Muting | | Yes |
| **G-3** | **Power** | Power Source | AC | 230V-240V AC 50Hz |
| | | | DC | |
| | | Power Consumption | at AC | |
| | | | | 60 W at AC 230 V 50 Hz |
| | | | Stand by (at AC) | 3 W at AC 230 V 50 Hz |
| | | | Per Year | -- kWh/Year |
| | | Protector | Power Fuse | Yes |
| **G-4** | **Regulation** | | Safety | CE(EN60065:98) |
| | | | Radiation | CE |
| | | | X-Radiation | - |
| **G-5** | **Temperature** | | Operation | +5oC ~ +40oC |
| | | | Storage | -20oC ~ +60oC |
| **G-6** | **Operating Humidity** | | | Less than 80% RH |

# GENERAL SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **G-7** | **On Screen Display** | Menu | | | Yes |
| | | Menu Type | | | Character |
| | | Picture | | | Yes |
| | | | Contrast | | Yes |
| | | | Brightness | | Yes |
| | | | Colour | | Yes |
| | | | Tint (NTSC Only) | | Yes |
| | | | Sharpness | | Yes |
| | | Audio | | | Yes |
| | | | Bass | | Yes |
| | | | Treble | | Yes |
| | | | Balance | | Yes |
| | | | BBE On/Off | | No |
| | | | Stable Sound On/Off | | No |
| | | CH Tuning | | | Yes |
| | | | Manual | | Yes |
| | | | ITS | | Yes |
| | | | CH MAPPING | | Yes |
| | | | CH Allocation | | No |
| | | | Text Langage(East/West) | | Yes |
| | | Language | | | Yes |
| | | Clock Set | | | No |
| | | On/OffTimer Set | | | Yes |
| | | On Timer Set | | | No |
| | | Pin Code Registration | | | No |
| | | Panel Lock | | | Yes |
| | | Nicam Auto Off | | | No |
| | | AV Colour System | | | Yes |
| | | Sound System | | | No |
| | | Auto 4:3 Default | | | No |
| | | AV2 Output | | | Yes |
| | | | Output Source | | Yes |
| | | | Source | | Yes |
| | | Control Level | | | Yes |
| | | | Volume | | Yes |
| | | | Brightness | | Yes |
| | | | Contrast | | Yes |
| | | | Colour | | Yes |
| | | | Tint (NTSC Only) | | Yes |
| | | | Sharpness | | Yes |
| | | | Tuning | | Yes |
| | | | Bass | | Yes |
| | | | Treble | | Yes |
| | | | Balance | | Yes |
| | | | Back Light | | No |
| | | Nicam ST | | | No |
| | | G(A2)Stereo | | | Yes |
| | | Tone 1/2 (A/B) | | | Yes |
| | | Surround On/Off | | | No |
| | | Pin Code | | | No |
| | | AV | | | Yes |
| | | Skip | | | Yes |
| | | Channel | | | Yes |
| | | Broadcasting Station Name | | | Yes |
| | | Hotel Lock | | | No |
| | | Sleep Timer | | | No |
| | | Selectable Picture | | | Yes |
| | | Wide Mode | | | No |
| | | Sound Mute | | | Yes |
| **G-8** | **OSD Language** | | | | English , French , Spanish<br>Germany , Italian<br>Polski , Turkey , Sweden<br>Netherland , Portgal<br>Norway , Finland , Denmark<br>Czech , Slovak , Hungarian<br>Russian , Greek<br>Yugoslavian , Bulgarian , Romanian<br>Slovenian , Croatian |
| **G-9** | **Clock and Timer** | Sleep Timer | Max Time | | - Min |
| | | | Step | | - Min |
| | | Clock | | | No |
| | | On Timer | Program( On Timer) | | Yes |
| | | Off Timer | Program( Off Timer) | | Yes |
| | | Wake Up Timer | | | No |
| | | Timer Back-up (at Power Off Mode) | | more than | -- Min Sec |

# GENERAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| **G-10** | **Remote Control** | Unit | | RC-GX |
| | | Glow in Dark Remocon | | No |
| | | Format | | NEC |
| | | Custom Code | | 40-BF h |
| | | Power Source | Voltage(D.C) | 3V |
| | | | UM size x pcs | UM-4 x 2 pcs |
| | | Total Keys | | 34 Keys |
| | | Keys | Power | Yes |
| | | | 1/Rename | Yes |
| | | | 2/Move | Yes |
| | | | 3 | Yes |
| | | | 4 | Yes |
| | | | 5 | Yes |
| | | | 6 | Yes |
| | | | 7 | Yes |
| | | | 8 | Yes |
| | | | 9 | Yes |
| | | | 0 | Yes |
| | | | Volume Up / + | Yes |
| | | | Volume Down / - | Yes |
| | | | Previous | Yes |
| | | | Select Picture | Yes |
| | | | Menu | Yes |
| | | | OK(Enter) | Yes |
| | | | EXIT | Yes |
| | | | Audio Select | Yes |
| | | | On/OffTimer | No |
| | | | Mute | Yes |
| | | | DSP/surround/Virtual Dolby | No |
| | | | Woofer/Bass | No |
| | | | Picture Size | No |
| | | T'TEXT Keys | TEXT / MIX / TV | Yes |
| | | | CH Up / Page Up | Yes |
| | | | CH Down / Page Down | Yes |
| | | | Red | Yes |
| | | | Green | Yes |
| | | | Yellow | Yes |
| | | | Cyan | Yes |
| | | | TEXT F/T/B | Yes |
| | | | Reveal | Yes |
| | | | TIMED PAGE(SUB PAGE) | Yes |
| | | | CALL / TEXT INDEX | Yes |
| | | | INPUT SELECT | Yes |
| | | | TEXT HOLD | Yes |
| | | | TIME / TXCL | Yes |

# GENERAL SPECIFICATIONS

| | | | | |
|---|---|---|---|---|
| **G-11** | **Features** | Auto Degauss | | Yes |
| | | Auto Shut Off | | Yes |
| | | Canal+ | | No |
| | | CATV | | No |
| | | Anti-theft(Back Up 30 Min.) | | No |
| | | Memory(Last CH) | | Yes |
| | | Memory(Last Volume) | | Yes |
| | | BBE | | No |
| | | Auto Search | | No |
| | | ITS | | Yes |
| | | CH Allocation | | No |
| | | CH MAPPING | | Yes |
| | | Just Clock Function | | No |
| | | Game Position | | No |
| | | CH Label | | No |
| | | VM Circuit | | No |
| | | Full OSD | | No |
| | | Noise Blue Back | | Yes |
| | | T'Text | | Yes |
| | | | Text type | Fastext |
| | | | Text Language | English , French, Swedish, Hungarian Finnish, Turkish, German, Dutch Portuguese, Spanish, Italian, Greek Polish, Russian, Bulgarian, Czech Slovak, Romanian, Slovenian Croatian, Yugoslavian |
| | | Premiere | | No |
| | | Comb Filter | | No<br>Lines |
| | | Auto CH Memory | | No |
| | | Stable Sound | | No |
| | | Auto Set Up | | No |
| | | FBT Leak Test Protect | | Yes |
| | | Previous (Quick View) | | Yes |
| | | Panel Lock | | Yes |
| | | Power ON Memory | | Yes |
| | | Double Focus & Dynamic Focus | | No |
| | | Wss Signal Wide Change | | No |
| | | Virtual Dolby Surround | | No |
| | | Hotel Lock | | No |
| **G-12** | **Accessories** | Owner's Manual | Language | Germany, Dutch, Italian |
| | | | w/Guarantee Card | No |
| | | | Buyer Model No. | 21V33D2 x |
| | | Remote Control Unit | | Yes |
| | | Rod Antenna | | No |
| | | | Poles | - |
| | | | Terminal | - |
| | | Loop Antenna | | No |
| | | | Terminal | - |
| | | U/V Mixer | | No |
| | | DC Car Cord (Center+) | | No |
| | | Guarantee Card | | No |
| | | Warning Sheet | | No |
| | | Circuit Diagram | | No |
| | | Antenna Change Plug | | No |
| | | Service Facility List | | No |
| | | Important Safeguard | | Yes (Owner's Manual In) |
| | | Dew/AHC Caution Sheet | | No |
| | | AC Plug Adapter | | No |
| | | Quick Set-up Sheet | | Yes |
| | | Battery | | Yes |
| | | | UM size x pcs | UM-4 x 2 pcs |
| | | | OEM Brand | No |
| | | AC Cord | | No |
| | | AV Cord (2Pin-1Pin) | | No |
| | | Registration Card | | Yes |
| | | PTB Sheet | | No |
| | | 300 ohm to 75 ohm Antenna Adapter | | No |

# GENERAL SPECIFICATIONS

| | | | | | |
|---|---|---|---|---|---|
| **G-13** | **Interface** | Switch | Front | Power (Tact Sw) | No |
| | | | | System Select | No |
| | | | | Main Power SW | Yes |
| | | | | Sub Power | No |
| | | | | Channel Up | Yes |
| | | | | Channel Down | Yes |
| | | | | Volume Up | Yes |
| | | | | Volume Down | Yes |
| | | | Rear | AC/DC | No |
| | | | | TV/CATV Selector | No |
| | | | | Degauss | No |
| | | | | Main Power SW | No |
| | | Indicator | | Power | No |
| | | | | Stand-by | No |
| | | | | Stand-by/ON | Yes(Red) |
| | | | | On Timer | Yes(Green) |
| | | Terminals | Front | Video Input | RCA |
| | | | | Audio Input | RCA x 2(Stereo) |
| | | | | Other Terminal | HeadPhone (Stereo) |
| | | | Rear | Video Input(Rear1) | No |
| | | | | Video Input(Rear2) | No |
| | | | | Audio Input(Rear1) | No |
| | | | | Audio Input(Rear2) | No |
| | | | | Video Output | No |
| | | | | Audio Output | No |
| | | | | Euro Scart(21Pin) | Yes ( x1 ) |
| | | | | S-INPUT | Yes ( x1 ) |
| | | | | Euro Scart(21Pin) | Yes ( x1 ) |
| | | | | RGB-INPUT | Yes ( x1 ) |
| | | | | Component Input | No |
| | | | | Diversity | No |
| | | | | Ext Speaker | No |
| | | | | DC Jack 12V(Center +) | No |
| | | | | VHF/UHF Antenna Input | D Type |
| | | | | AC Outlet | No |
| **G-14** | **Set Size** | | | Approx. W x D x H (mm) | 590 x 492 x 446.5 |
| **G-15** | **Weight** | | | Net (Approx.) | 23.0 kg ( --- lbs) |
| | | | | Gross (Approx.) | 26.5kg ( ---lbs) |
| **G-16** | **Carton** | | Master Carton | | No |
| | | | | Content | --- Sets |
| | | | | Material | --- / --- |
| | | | | Dimensions W x D x H(mm) | --- |
| | | | | Description of Origin | --- |
| | | | Gift Box | | Yes |
| | | | | Material | Double/Brown |
| | | | | Dimensions W x D x H(mm) | 675 x 575 x 549 |
| | | | | Design | As per Buyer's |
| | | | | Description of Origin | No (Assembled in U.K.) |
| | | | | Buyer Model No. | 21V33D2 |
| | | | Drop Test | | Natural Dropping At 1 Corner / 3 Edges / 6 Surfaces |
| | | | | Height (cm) | 46 |
| | | | Container Stuffing | | 276 Sets/40' container |
| **G-17** | **Material** | | Cabinet | Front | PS 94HB |
| | | | | Rear | PS 94HB |
| | | | | Holder | PS 94V0 NON-Decabrom |
| | | | PCB | Non-Halogen Demand | Yes |
| | | | | Eyelet Demand | Yes |
| **G-18** | **Environment** | | Pb Free | Lead-free Solder | No |
| | | | | Other | No |
| | | | Cd Free | | No |

# DISASSEMBLY INSTRUCTIONS

## 1. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

**REMOVAL**

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 1-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

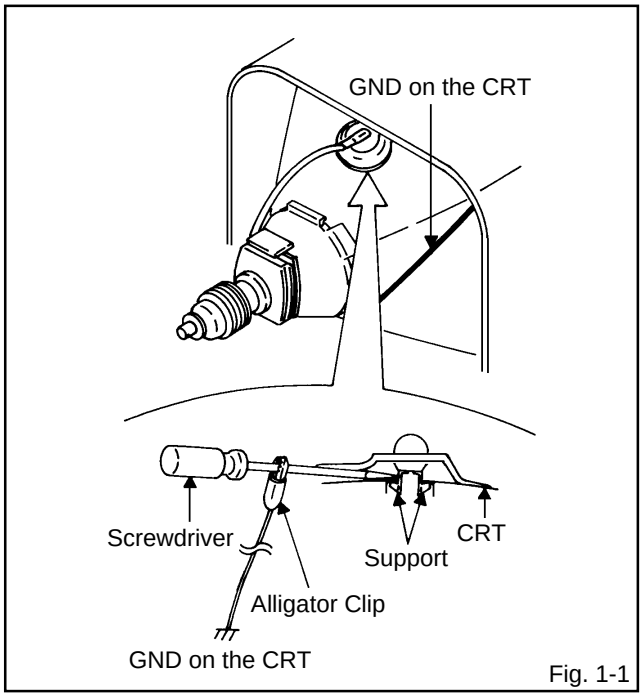


Fig. 1-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support. **(Refer to Fig. 1-2.)**

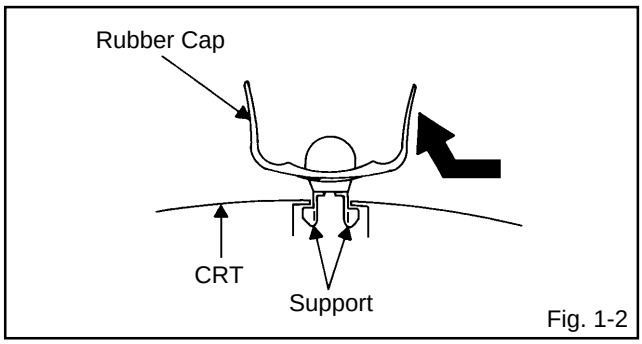


Fig. 1-2

3. After one side is removed, pull in the opposite direction to remove the other.

**NOTE**

Take care not to damage the Rubber Cap.

**INSTALLATION**

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 1-3.)**

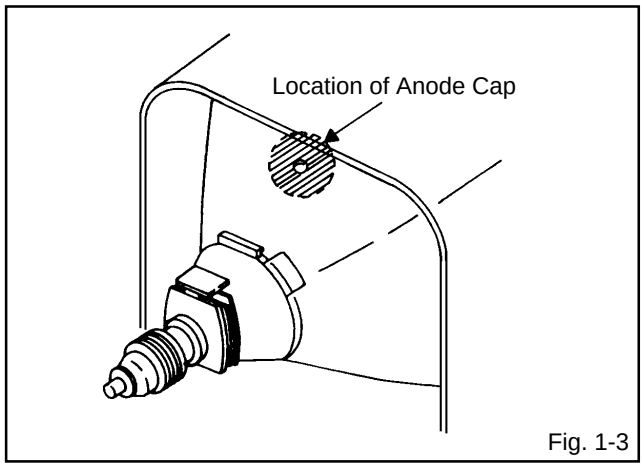
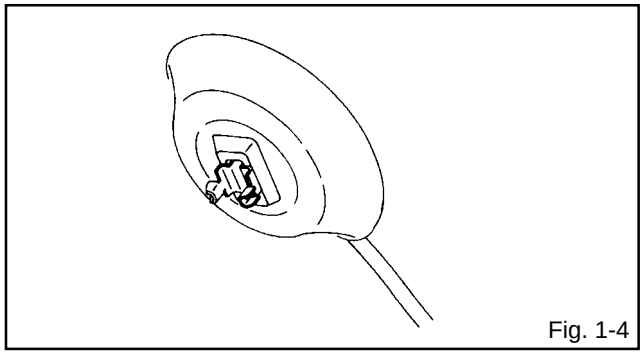


Fig. 1-3

**NOTE**

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 1-4.)**


Fig. 1-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 1-5**.

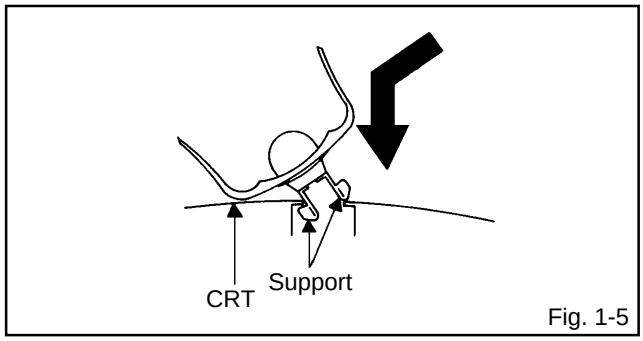


Fig. 1-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

# DISASSEMBLY INSTRUCTIONS

## 2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

**REMOVAL**

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 2-1.)**

   **NOTE**

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

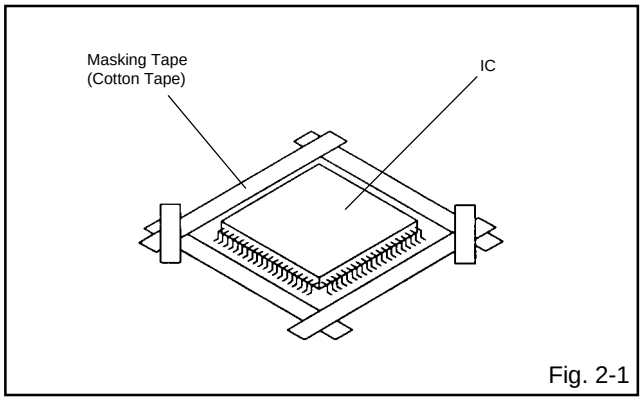


Fig. 2-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 2-2.)**

   **NOTE**

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

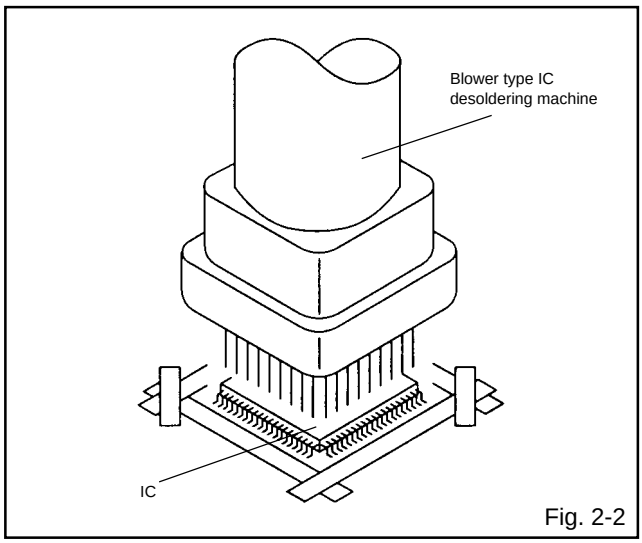


Fig. 2-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 2-3.)**

   **NOTE**

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

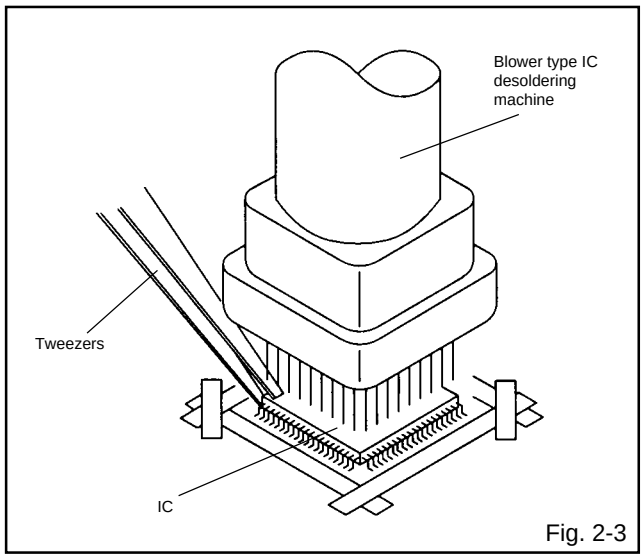


Fig. 2-3

4. Peel off the Masking Tape.

5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 2-4.)**

   **NOTE**

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

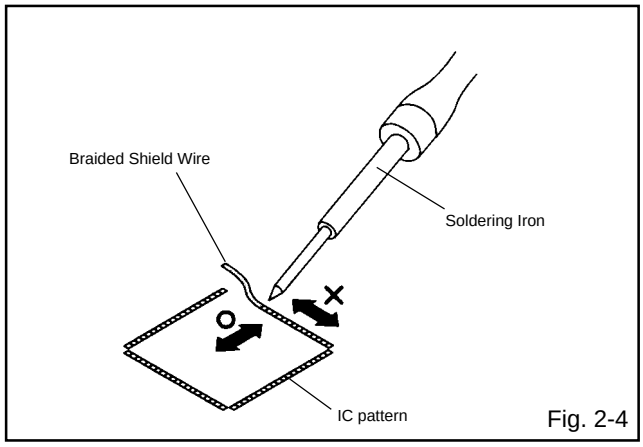


Fig. 2-4

# DISASSEMBLY INSTRUCTIONS

**INSTALLATION**

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 2-5.)**

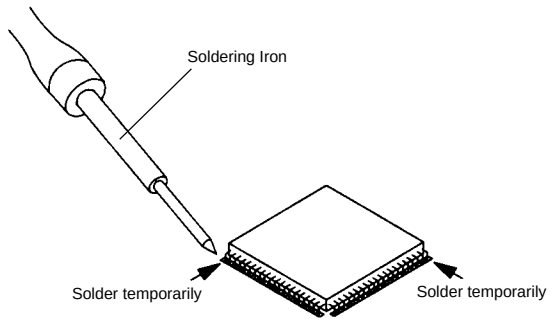



Fig. 2-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 2-6.)**

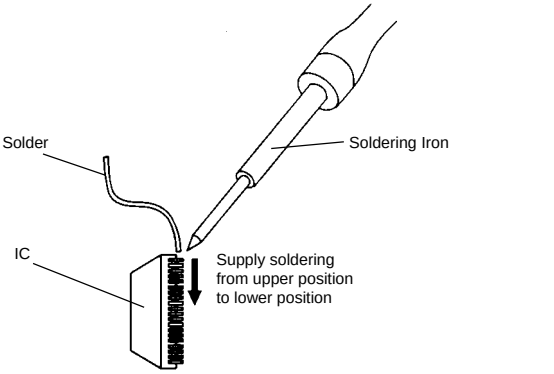



Fig. 2-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 2-7.)**

   **NOTE**

   Do not absorb the solder to excess.

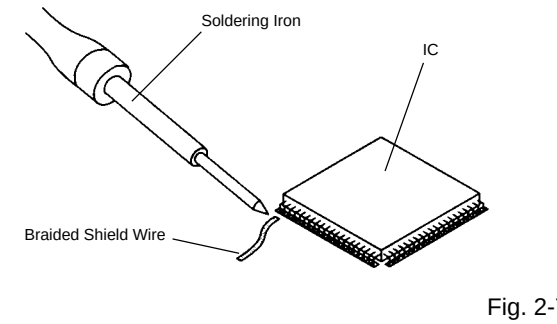



Fig. 2-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 2-8.)**

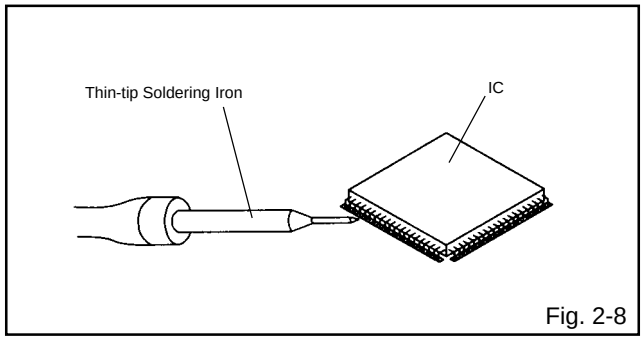



Fig. 2-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   **NOTE**

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be sure to replace the IC in this case.

# SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.
To enter the Service Mode, press both set key and remote control key for more than 2 seconds.

| Set Key | Remocon Key | Operations |
|---|---|---|
| VOL. (-) MIN | 0 | Reset the user setting items (PICTURE, VOLUME and LANGUAGE) to the initial state for delivery. |
| VOL. (-) MIN | 1 | Initialization of the factory.<br>NOTE: Do not use this for the normal servicing.<br>If you set a factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours. |
| VOL. (-) MIN | 6 | POWER ON total hours is displayed on the screen.<br>Refer to the "CONFIRMATION OF HOURS USED".<br><br>Can be checked of the INITIAL DATA of MEMORY IC.<br>Refer to the "WHEN REPLACING EEPROM (MEMORY) IC". |
| VOL. (-) MIN | 8 | Writing of EEPROM initial data.<br>NOTE: Do not use this for the normal servicing. |
| VOL. (-) MIN | 9 | Display of the Adjustment MENU on the screen.<br>Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment). |

# CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

**NOTE: If you set a factory initialization, the total hours is reset to "0".**

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds.
3. After the confirmation of using hours, turn off the power.

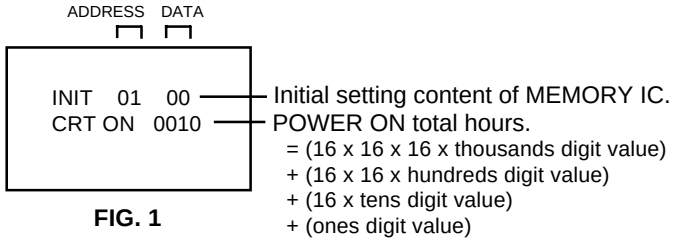



**FIG. 1**

# WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

**NOTE: No need setting for after INI 16 due to the adjustment value.**

| INI | +0 | +1 | +2 | +3 | +4 | +5 | +6 | +7 | +8 | +9 | +A | +B | +C | +D | +E | +F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00 | --- | 00 | 38 | 23 | 18 | 71 | 80 | 60 | 68 | 46 | 27 | 07 | 03 | 00 | 06 | 73 |
| 10 | 10 | 00 | 90 | 90 | 90 | BC | 40 | --- | --- | --- | --- | --- | --- | --- | --- | --- |

**Table 1**

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as FIG 1.
3. ADDRESS is now selected and should "blink". Using the VOL. +/- button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press OK to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using VOL. +/- button until required DATA value has been selected.
6. Pressing OK will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input. **After the data input, set to the initializing of shipping.**
9. Turn POWER on.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

# ELECTRICAL ADJUSTMENTS

## 1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

**CAUTION**

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor).

**Prepare the following measurement tools for electrical adjustments.**

1. Oscilloscope
2. Digital Voltmeter
3. Pattern Generator

**On-Screen Display Adjustment**

1. In the condition of NO indication on the screen. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 2 seconds to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

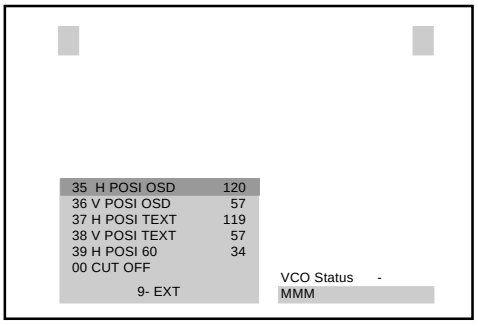



Fig. 1-1

2. Use the Channel button **(0-9)** or Channel UP/DOWN button on the remote control to select the options shown in **Fig. 1-2**.
3. Press the MENU button on the remote control to end the adjustments.

| NO. | FUNCTION | NO. | FUNCTION |
|---|---|---|---|
| 00 | CUT OFF | 20 | TINT |
| 01 | RF AGC | 21 | SHARP |
| 02 | AGC GAIN | 22 | CONTRAST CENT |
| 03 | R DRIVE | 23 | CONTRAST MAX |
| 04 | R CUTOFF | 24 | CONTRAST MIN |
| 05 | G DRIVE | 25 | COLOR CENT |
| 06 | G CUTOFF | 26 | COLOR MAX |
| 07 | B DRIVE | 27 | COLOR MIN |
| 08 | H POSI (50) | 28 | M R CUT OFF |
| 09 | V POSI (50) | 29 | M G CUT OFF |
| 10 | V POSI (60) | 30 | M B CUT OFF |
| 11 | V SIZE (50) | 31 | CVBS OUT |
| 12 | V SIZE (60) | 32 | APR THRESHOLD |
| 13 | VCO COARSE | 33 | BELL FILTER |
| 14 | VCO FINE | 34 | BANDPASS |
| 15 | VCO COARSE L1 | 35 | H POSI OSD |
| 16 | VCO FINE L1 | 36 | V POSI OSD |
| 17 | BRIGHT CENT | 37 | H POSI TEXT |
| 18 | BRIGHT MAX | 38 | V POSI TEXT |
| 19 | BRIGHT MIN | 39 | H POSI (60) |

Fig. 1-2

## 2. BASIC ADJUSTMENTS

**2-1: CONSTANT VOLTAGE**

1. Place the set with Aging Test for more than 5 minutes.
2. Connect the digital voltmeter to **TP501**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR501** until the DC voltage is 115 ± 0.5V.

**2-2: VCO COASE, VCO FINE**

1. Place the set with Aging Test for more than 10 minutes.
2. Connect the oscillator (38.9MHz) to **TP001**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(13)** on the remote control to select "VCO COARSE".
4. Press the VOL. +/- button on the remote control until the "OK" appear on the screen. If the "OK" is not displayed, select the "+" side on the changed from "+" to "-".
5. Press the Page UP button once to set to "VCO FINE" mode.
6. Press the VOL. +/- button on the remote control to select the 5 step down point from the upper limit on the "OK".
   (Example: In case of the "OK" range 30~41, select 36.)

**2-3: AGC VOLTAGE**

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the UHF (63 ± 1dB).
3. Connect the digital voltmeter to **pin 5 of CP101**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(01)** on the remote control to select "RF AGC".
5. Press the VOL. +/- button on the remote control until the digital voltmeter is 2.5 ± 0.05V.

**2-4: CUT OFF**

1. Set condition is AV MODE without signal.
2. Using the remote control, set the brightness and contrast to normal position.
3. Place the set with Aging Test for more than 15 minutes.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(00)** on the remote control to select "CUT OFF".
5. Adjust the **Screen Volume** until a dim raster is obtained.

**2-5: WHITE BALANCE**

**NOTE:** Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 10 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "R DRIVE".
5. Press the Page UP/DOWN button on the remote control to select the "R DRIVE", "G DRIVE", "M R CUTOFF" or "M G CUTOFF".
6. Adjust the VOL. +/- button on the remote control to whiten the R DRIVE, G DRIVE, M R CUT OFF, and M G CUT OFF at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is looked like a white.

# ELECTRICAL ADJUSTMENTS

### 2-6: FOCUS

1. Receive a 70dB monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

### 2-7: HORIZONTAL POSITION

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select "H POSI (50)".
4. Press the VOL. +/- button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.
5. Receive the monoscope pattern of NTSC. (Audio Video Input)
6. Using the remote control, set the brightness and contrast to normal position.
7. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(39)** on the remote control to select "H POSI (60)".
8. Press the VOL. +/- button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

### 2-8: VERTICAL SIZE

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(11)** on the remote control to select "V SIZE (50)".
4. Adjust by using the VOL. +/- button on the remote control so that the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.
5. Receive a broadcast and check if the picture is normal.
6. Receive the monoscope pattern of NTSC. (Audio Video Input)
7. Using the remote control, set the brightness and contrast to normal position.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(12)** on the remote control to select "V SIZE (60)".
9. Adjust by using the VOL. +/- button on the remote control so that the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.

### 2-9: VERTICAL POSITION/VERTICAL LINEARITY

1. Receive the monoscope pattern from the Pattern Generator.
2. Using the remote control, set the brightness and contrast to normal position.
3. Adjust the **VR401** until the horizontal line becomes fit to the notch of the shadow mask.
4. Adjust the **VR420** until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

### 2-10: BRIGHT CENT

1. Receive the PAL black pattern*. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Place the set with Aging Test for more than 15 minutes.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(17)** on the remote control to select "BRIGHT CENT".
5. Press the VOL. +/- button on the remote control until the screen begin to shine.
6 Receive the PAL black pattern*. (Audio Video Input)
7. Set to the AV mode. Then perform the above adjustments 2~5.

*The Black Pattern means the whole black raster signal. Select the "RASTER" of the pattern generator, set to the OFF position for each R, G and B.

### 2-11: COLOR CENT

1. Receive the PAL color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast and color to normal position.
3. Connect the oscilloscope to **TP022**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(25)** on the remote control to select "COLOR CENT".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 5 scales on the screen of the oscilloscope.
6. Press the VOL. +/- button on the remote control until the red color level is adjusted to 90 ± 10% of the white level. **(Refer to Fig. 2-1)**
7. Receive the PAL color bar pattern. (Audio Video Input)
8. Set to the AV mode. Then perform the above adjustments 2~6.

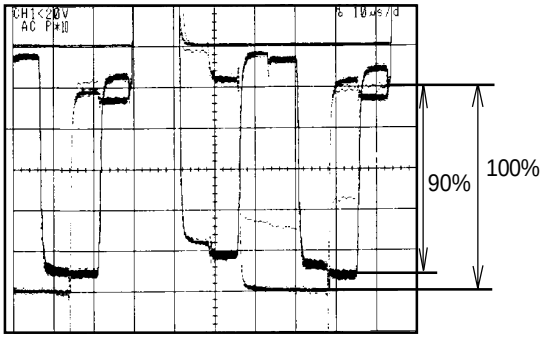



Fig. 2-1

### 2-12: CONTRAST CENT

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "CONTRAST CENT".
2. Press the VOL. +/- button on the remote control until the contrast step No. becomes "40".
3. Receive a broadcast and check if the picture is normal.
4. Set to the AV mode. Then perform the above adjustments 1~3.

# ELECTRICAL ADJUSTMENTS

**2-13: TINT**

1. Receive the NTSC color bar pattern. (Audio Video Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Connect the oscilloscope to **TP024**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(20)** on the remote control to select "TINT".
5. Press the VOL. +/- button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**

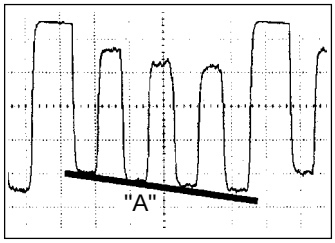



Fig. 2-2

**2-14: Confirmation of Fixed Value (Step No.)**

Please check if the fixed values of the each adjustment items are set correctly referring below.

| NO. | FUNCTION | RF | AV |
|---|---|---|---|
| 02 | AGC GAIN | 00 | --- |
| 04 | R CUTOFF | 00 | --- |
| 06 | G CUTOFF | 00 | --- |
| 07 | B DRIVE | 45 | --- |
| 09 | V POSI (50) | 08 | --- |
| 10 | V POSI (60) | 08 | --- |
| 18 | BRIGHT MAX | 35 | 35 |
| 19 | BRIGHT MIN | 10 | 10 |
| 20 | TINT | 30 | ADJ. |
| 21 | SHARP | 03 | 03 |
| 23 | CONTRAST MAX | 63 | 63 |
| 24 | CONTRAST MIN | 05 | 05 |
| 26 | COLOR MAX | 55 | 55 |
| 27 | COLOR MIN | 10 | 10 |
| 30 | M B CUT OFF | 127 | --- |
| 31 | CVBS OUT | 31 | --- |
| 32 | APR THRESHOLD | 00 | --- |
| 33 | BELL FILTER | 00 | --- |
| 34 | BANDPASS | 00 | --- |
| 35 | H POSI OSD | 125 | --- |
| 36 | V POSI OSD | 57 | --- |
| 37 | H POSI TEXT | 125 | --- |
| 38 | V POSI TEXT | 60 | --- |

*To check for the fixed values of the RF (60Hz), indicate the adjustment mode screen while input the 60Hz video signal.

# ELECTRICAL ADJUSTMENTS

## 3. PURITY AND CONVERGENCE ADJUSTMENTS

**NOTE**

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

### 3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

### 3-2: PURITY

**NOTE**

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

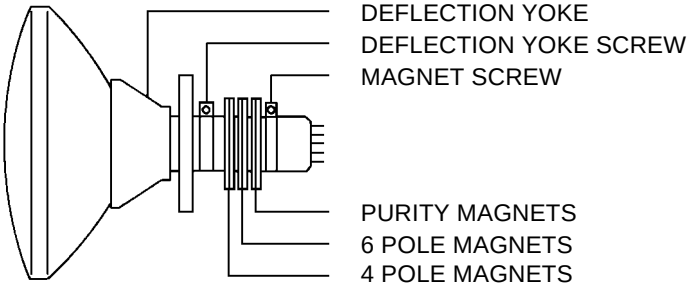



**Fig. 3-1**

### 3-3: STATIC CONVERGENCE

**NOTE**

Adjust after performing adjustments in section 3-2.

1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

### 3-4: DYNAMIC CONVERGENCE

**NOTE**

Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**

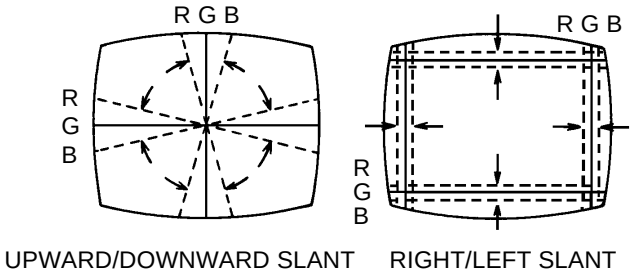



**Fig. 3-2-a**

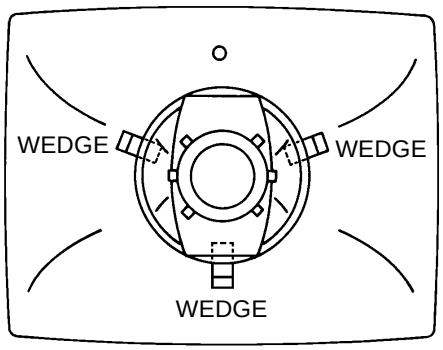
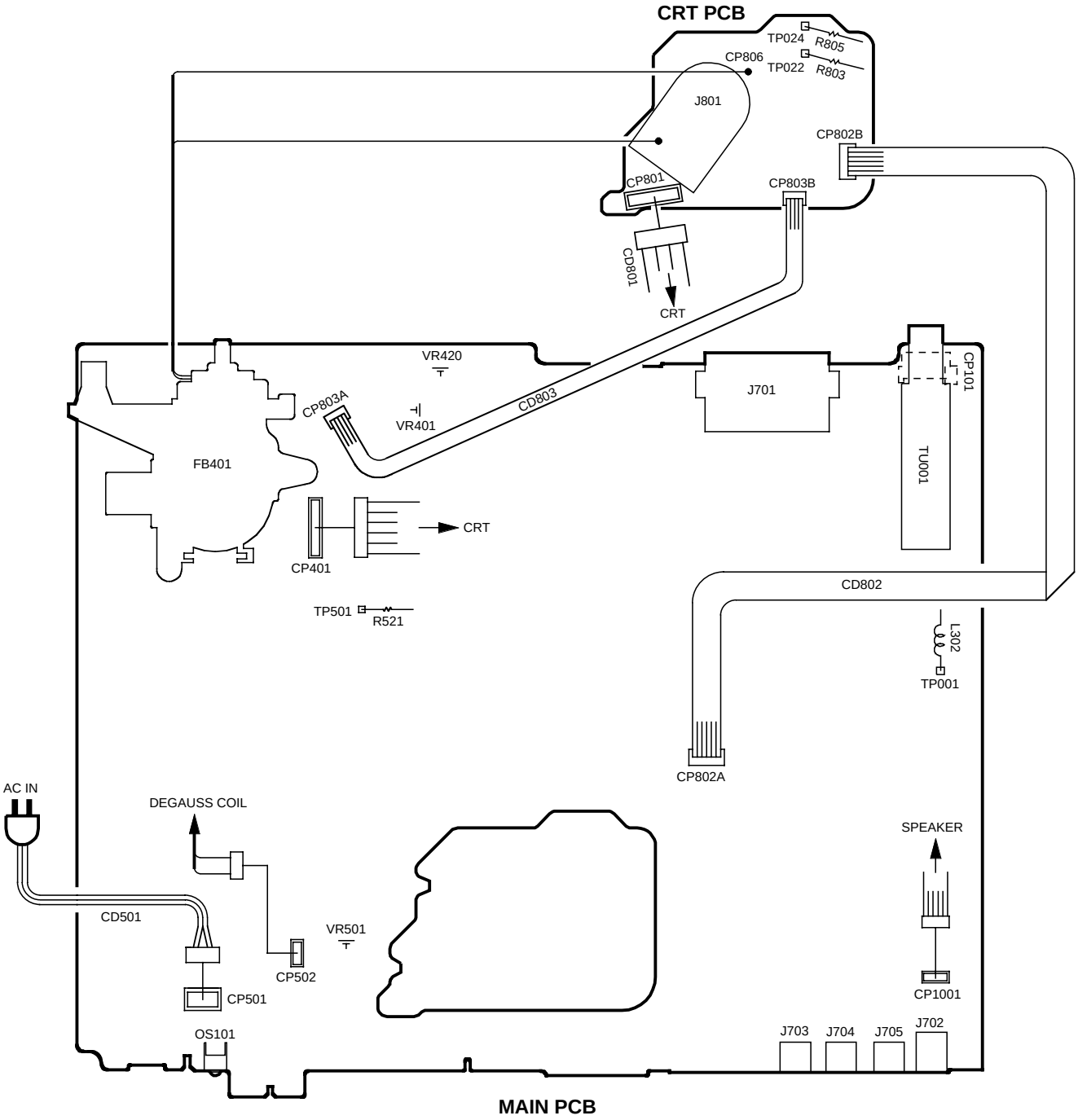


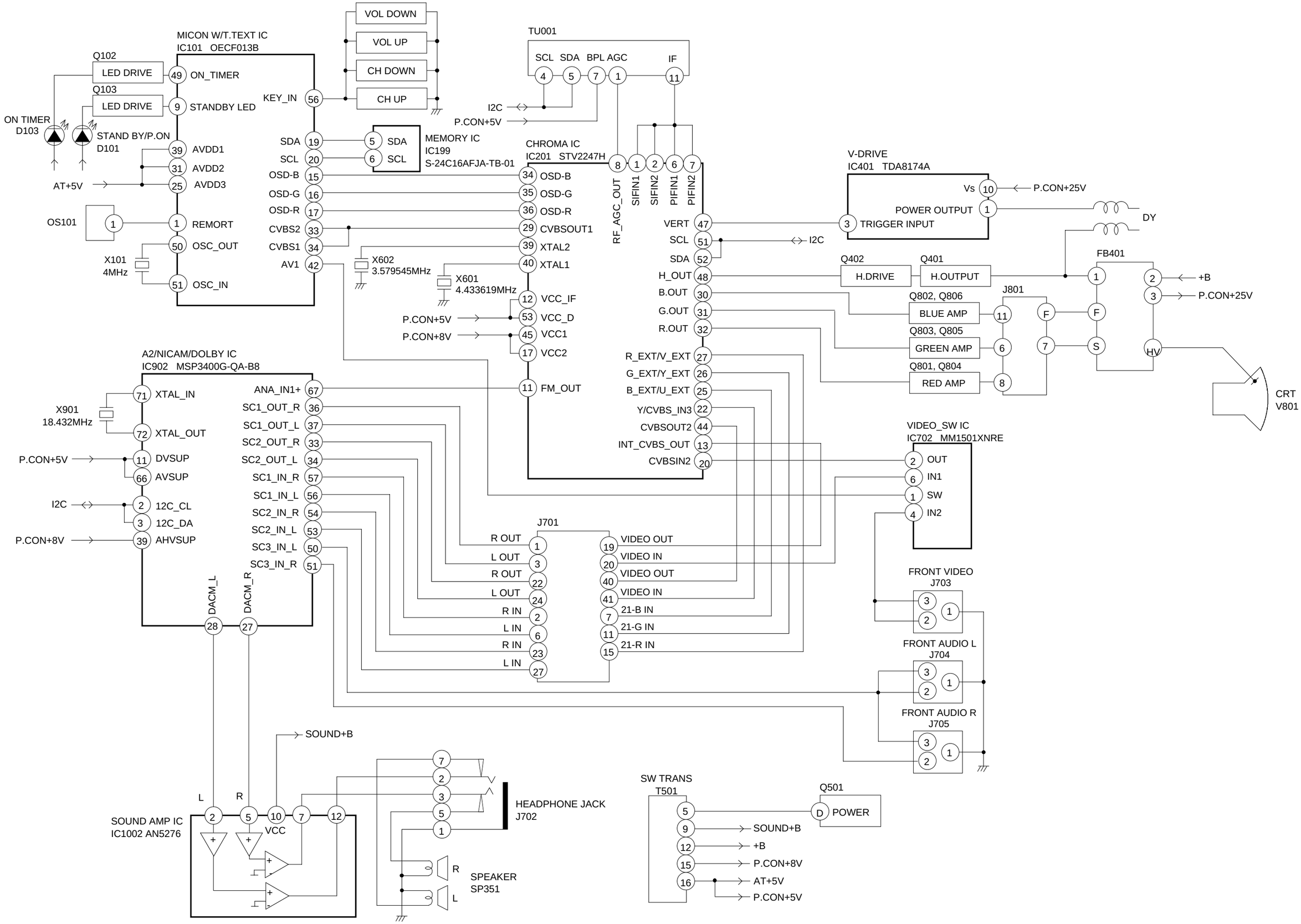

**Fig. 3-2-b**

# ELECTRICAL ADJUSTMENTS

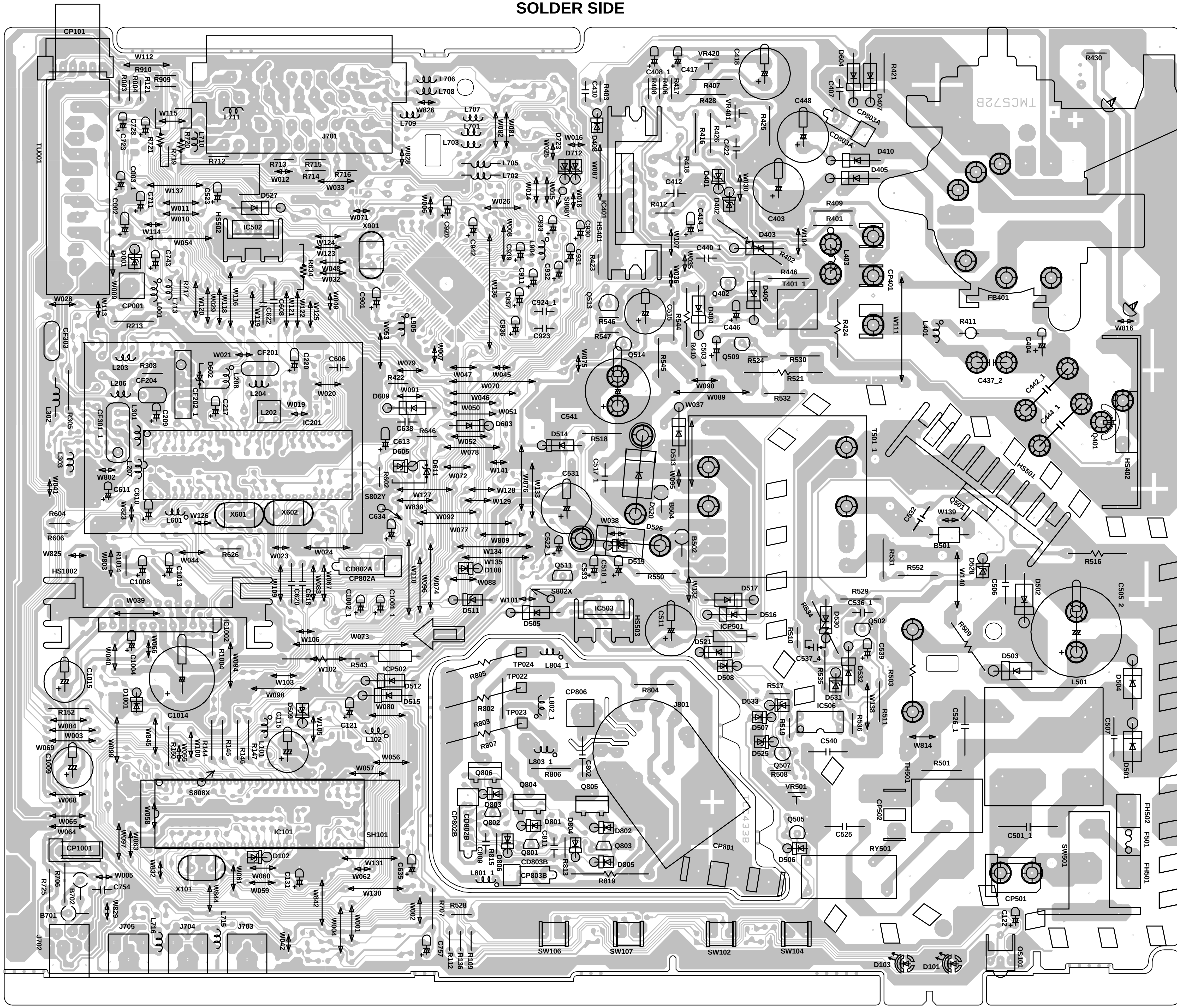
## 4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



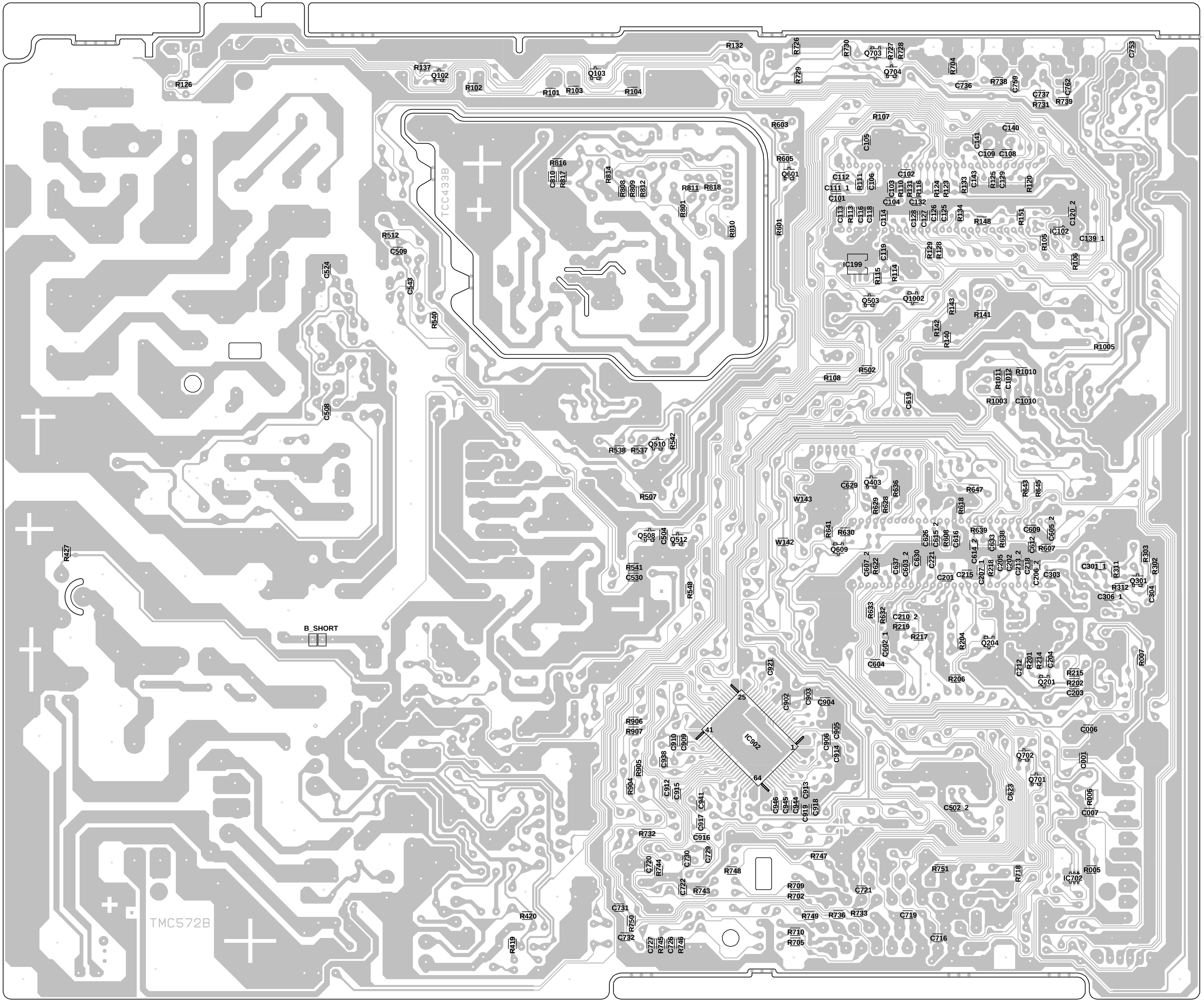
# BLOCK DIAGRAM



# PRINTED CIRCUIT BOARDS
# MAIN/CRT (INSERTED PARTS)
## SOLDER SIDE

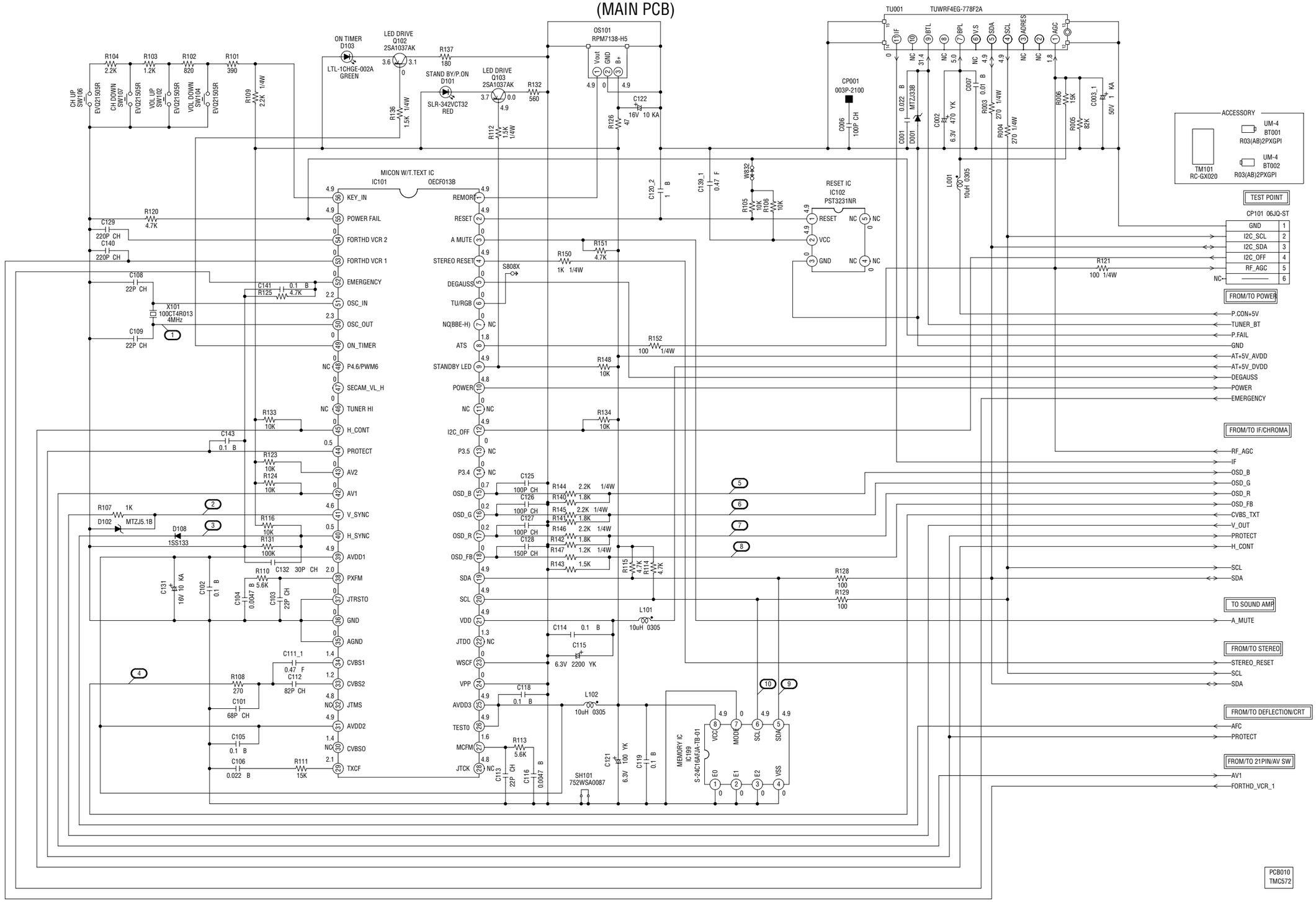


# PRINTED CIRCUIT BOARDS
# MAIN/CRT (CHIP MOUNTED PARTS)
## SOLDER SIDE



# MICON/TUNER SCHEMATIC DIAGRAM

## (MAIN PCB)

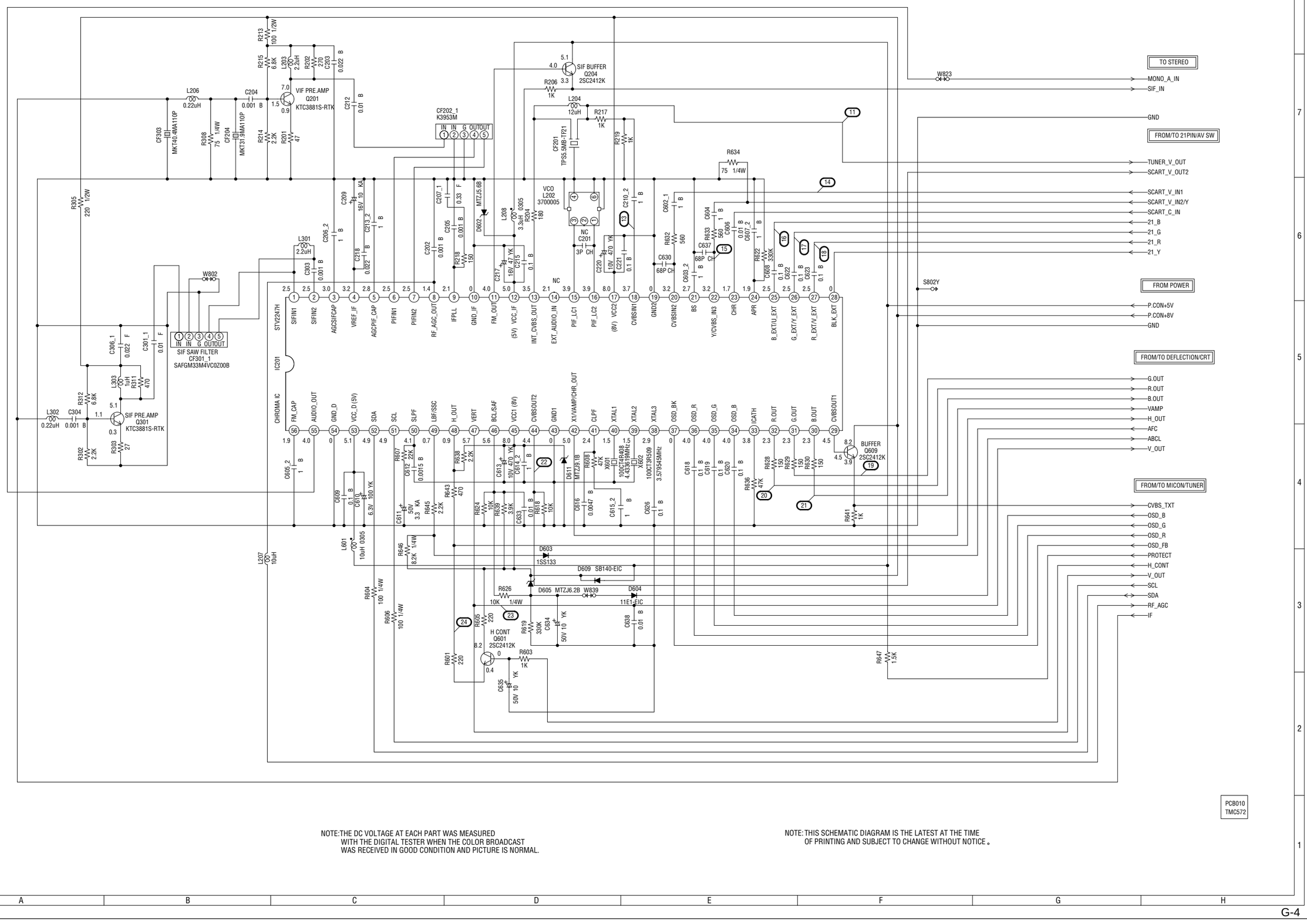



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

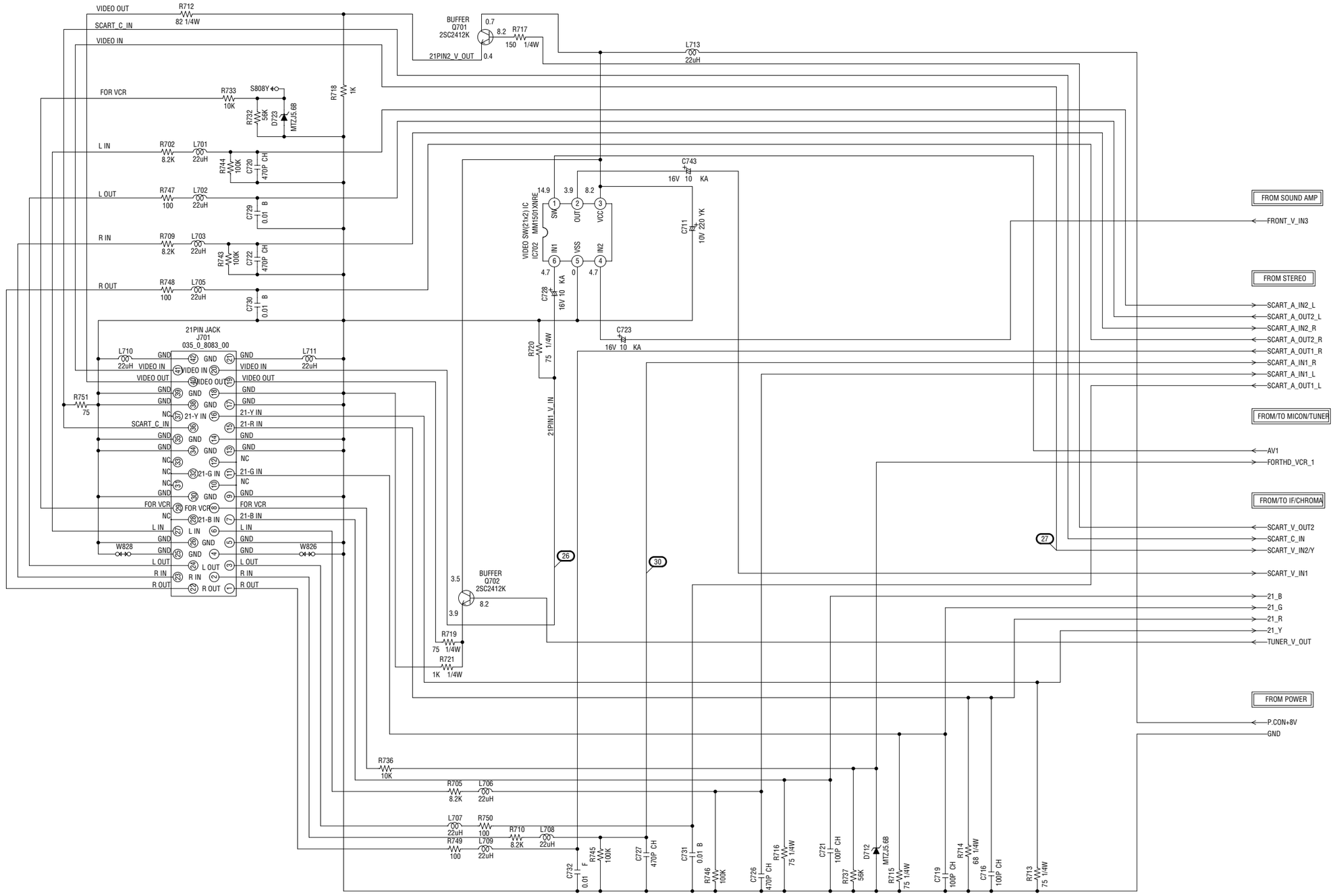
# IF/CHROMA SCHEMATIC DIAGRAM

(MAIN PCB)



# 21PIN/AV SW SCHEMATIC DIAGRAM

## (MAIN PCB)

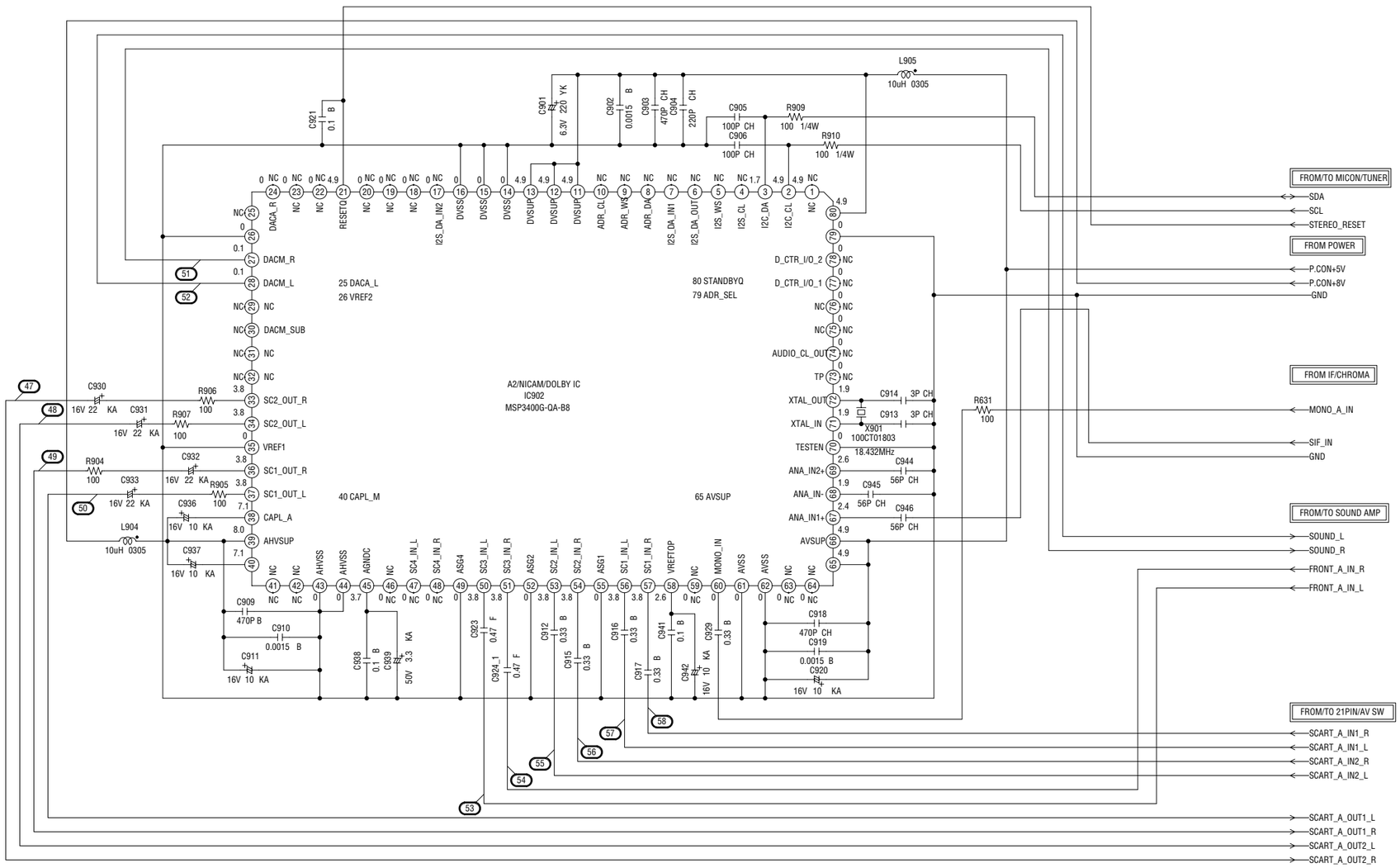



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

# STEREO SCHEMATIC DIAGRAM

## (STEREO PCB)



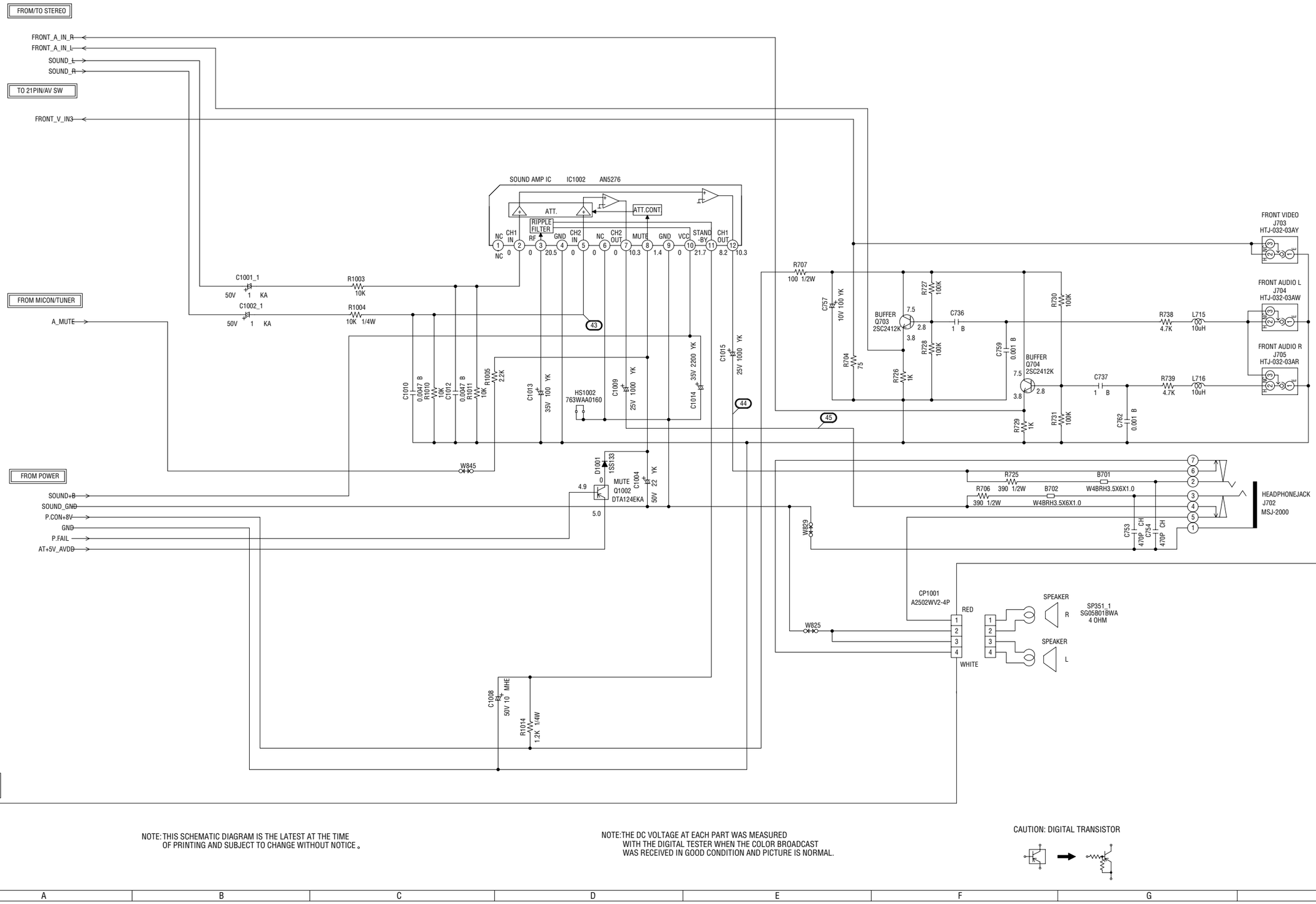

PCB010
TMC572

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

# SOUND AMP SCHEMATIC DIAGRAM

(MAIN PCB)

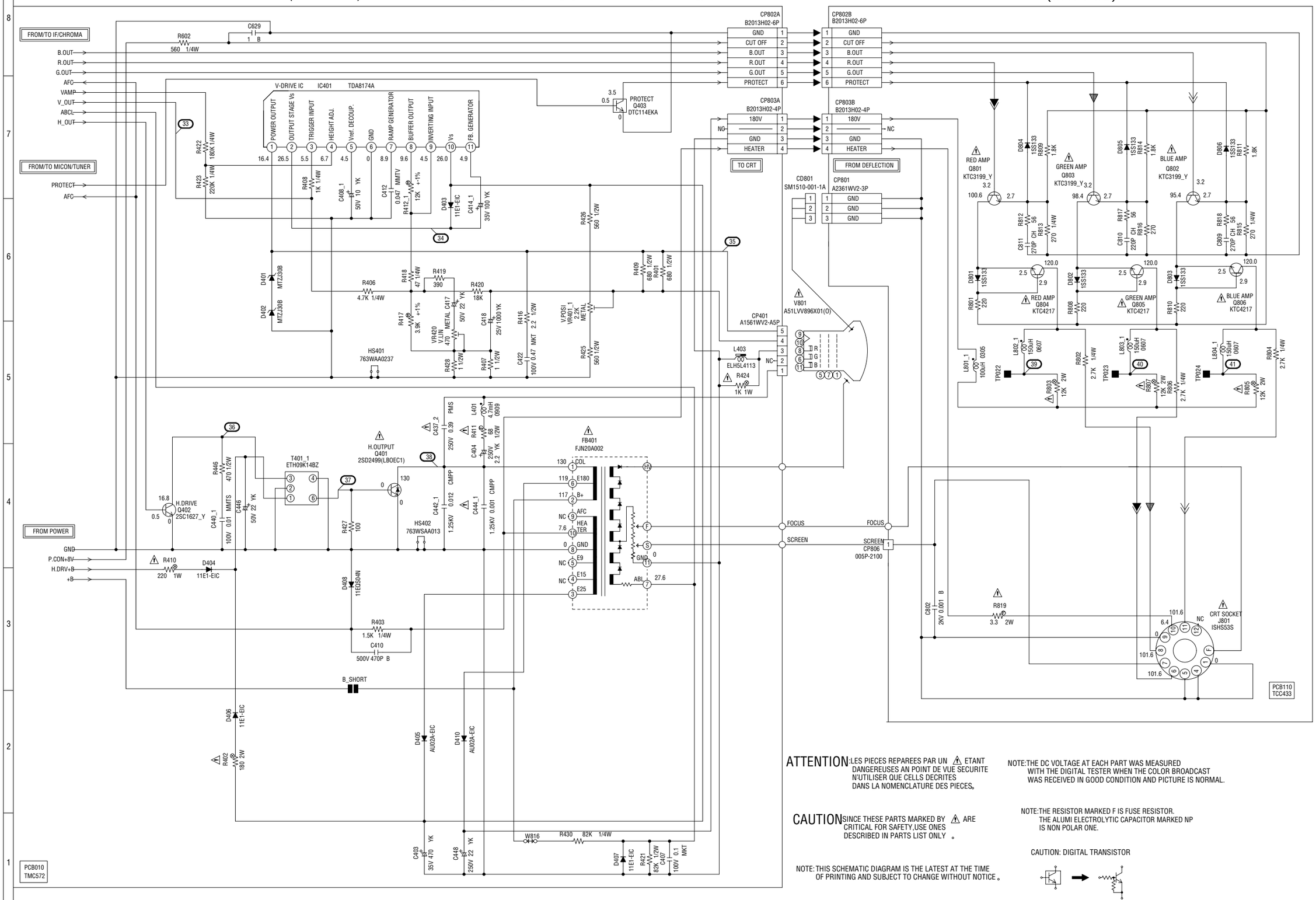



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR

# (MAIN PCB) DEFLECTION/CRT SCHEMATIC DIAGRAM (CRT PCB)




**ATTENTION**: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

**CAUTION**: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

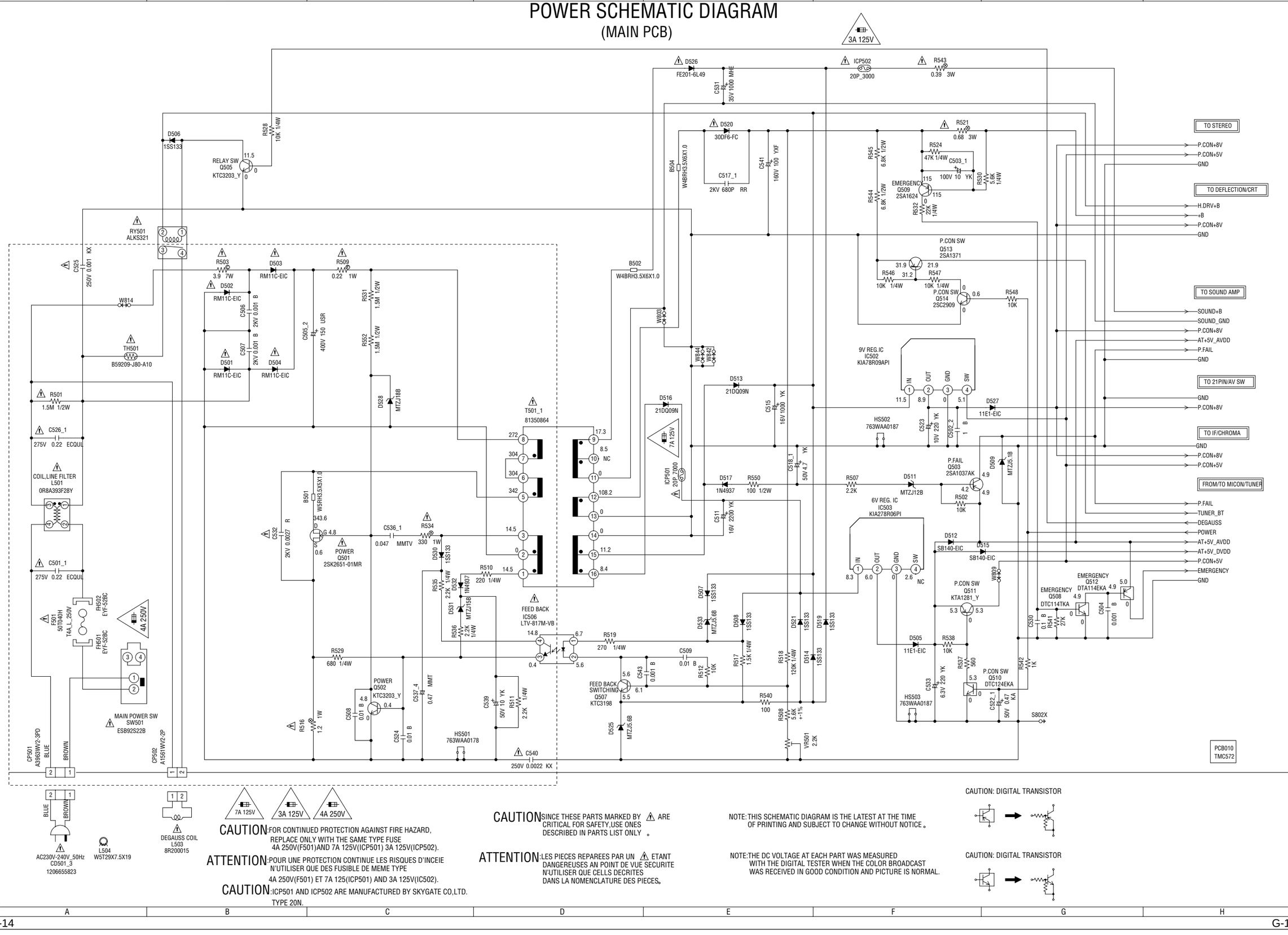
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

CAUTION: DIGITAL TRANSISTOR

# POWER SCHEMATIC DIAGRAM
## (MAIN PCB)




**CAUTION**: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 4A 250V(F501)AND 7A 125V(ICP501) 3A 125V(ICP502).

**ATTENTION**: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 4A 250V(F501) ET 7A 125(ICP501) AND 3A 125V(IC502).

**CAUTION**: ICP501 AND ICP502 ARE MANUFACTURED BY SKYGATE CO,LTD. TYPE 20N.

**CAUTION** SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

**ATTENTION**: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR



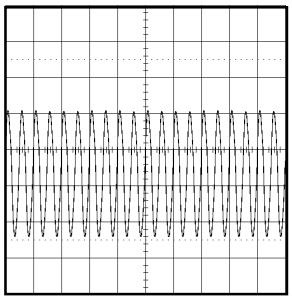
CAUTION: DIGITAL TRANSISTOR

# WAVEFORMS

## MICON/TUNER

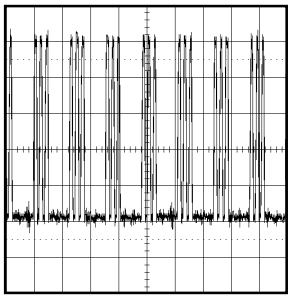
0.5µs
1V

1



50µs
100mV

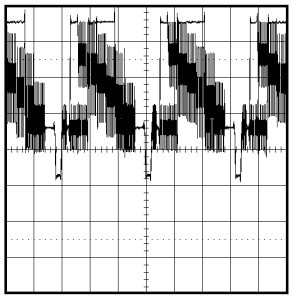
6



## IF/CHROMA

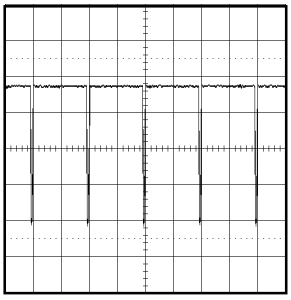
20µs
0.5V

11



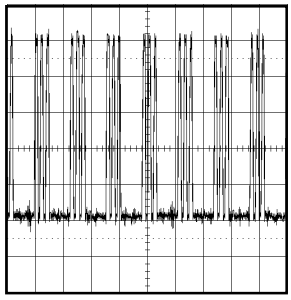
10ms
1V

2



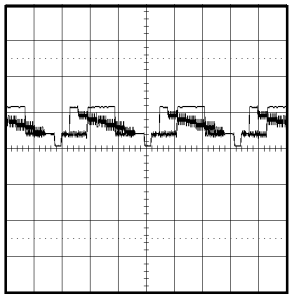
50µs
100mV

7



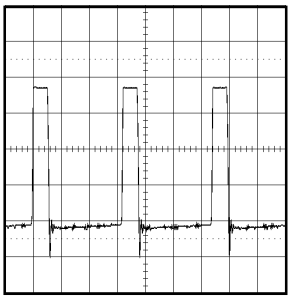
20µs
1V

13



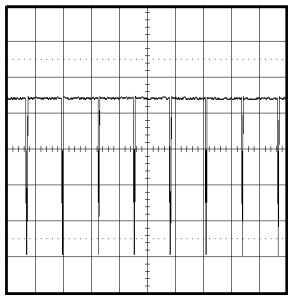
20µs
1V

3



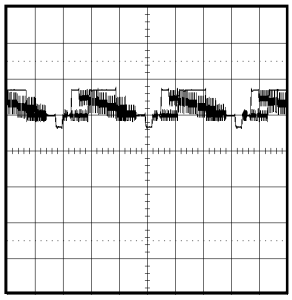
50µs
0.5V

8



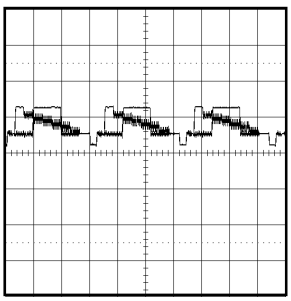
20µs
1V

14



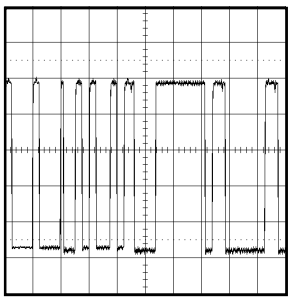
20µs
1V

4



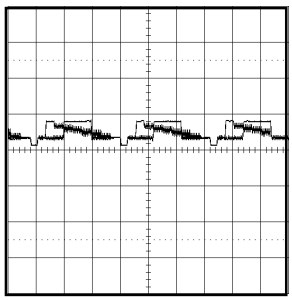
0.2ms
1V

9



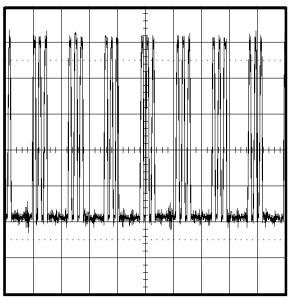
20µs
1V

15



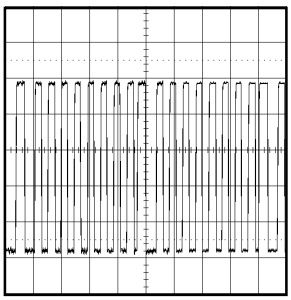
50µs
100mV

5



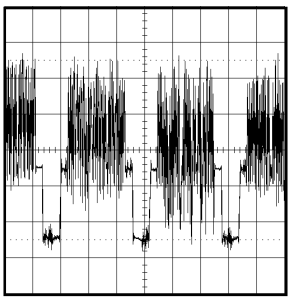
0.2ms
1V

10



20µs
100mV

16

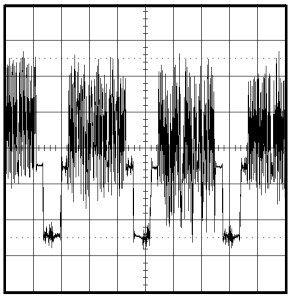


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# WAVEFORMS

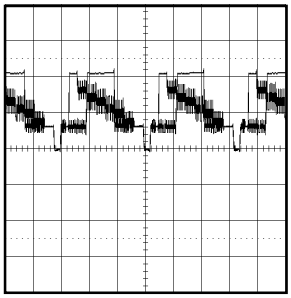
20µs
1V

⑰



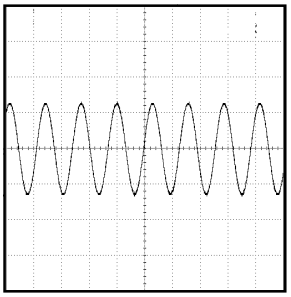
20µs
1V

㉒



2ms
200mV

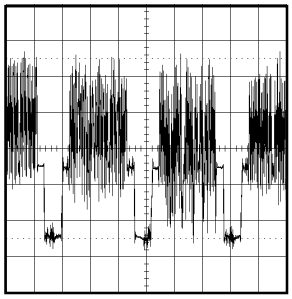
㉚



## DEFLECTION/CRT

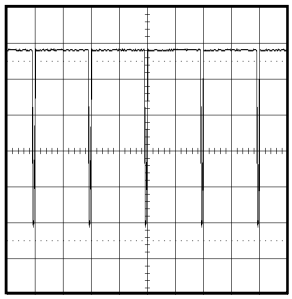
20µs
100mV

⑱



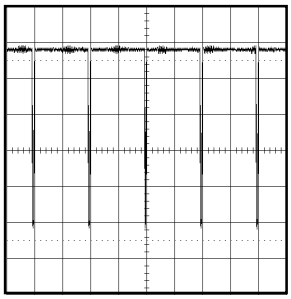
10ms
1V

㉓



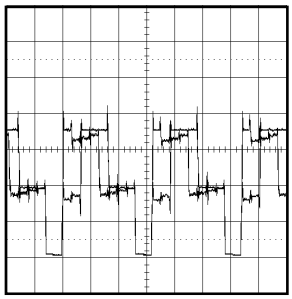
10ms
1V

㉝



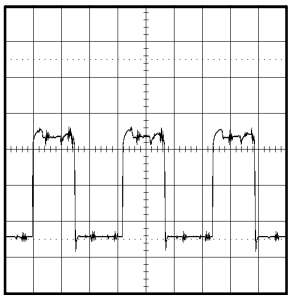
20µs
1V

⑲



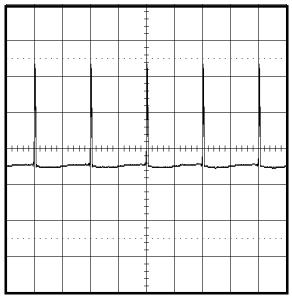
20µs
200mV

㉔



10ms
10V

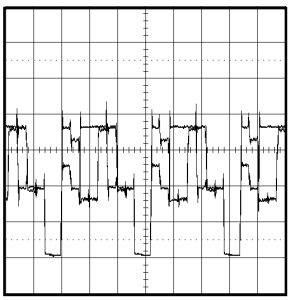
㉞



## 21PIN/AV SW

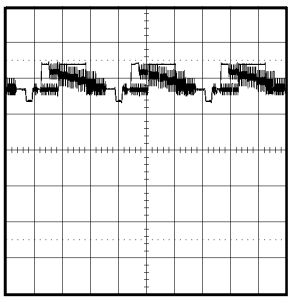
20µs
1V

⑳



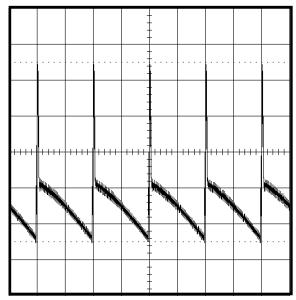
20µs
1V

㉖



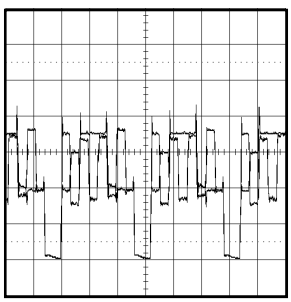
10ms
10V

㉟



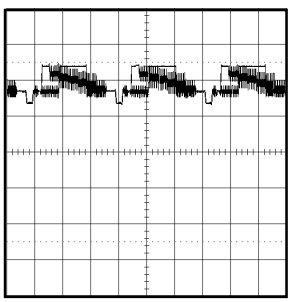
20µs
1V

㉑



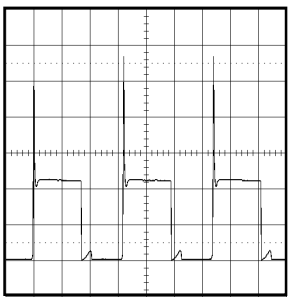
20µs
1V

㉗



20µs
10V

㊱



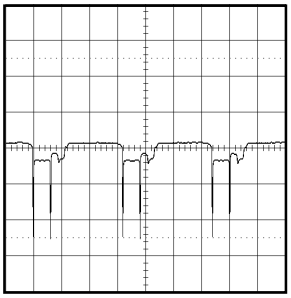
NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# WAVEFORMS

## SOUND AMP

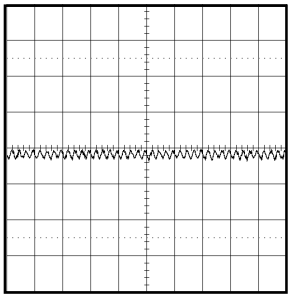
20µs
5V

(37)



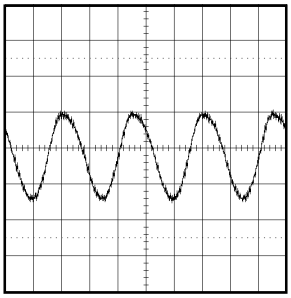
2ms
0.5V

(43)



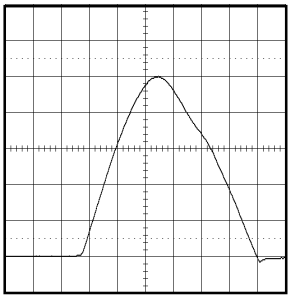
0.2ms
0.5V

(49)



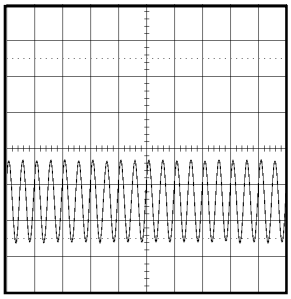
2µs
200V

(38)



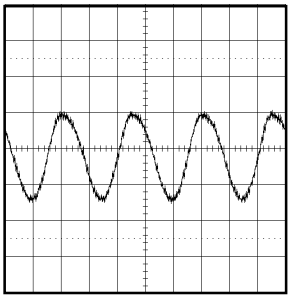
0.2ms
5V

(44)



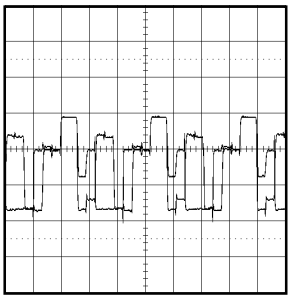
0.2ms
0.5V

(50)



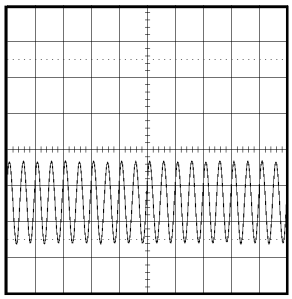
20µs
50V

(39)



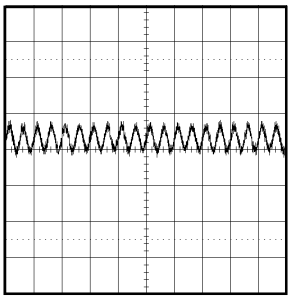
0.2ms
5V

(45)



0.2ms
100mV

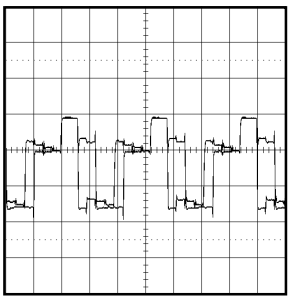
(51)



## STEREO

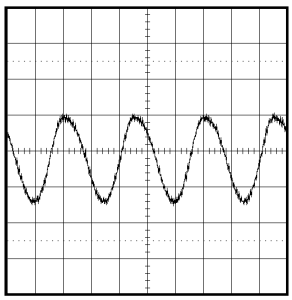
20µs
50V

(40)



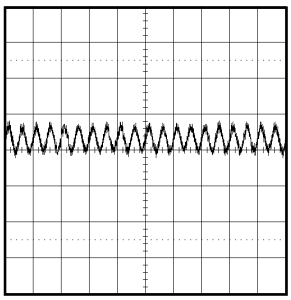
0.2ms
0.5V

(47)



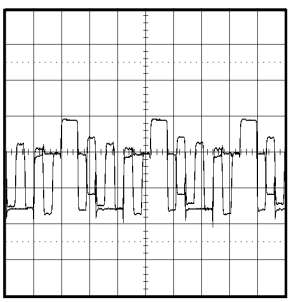
0.2ms
100mV

(52)



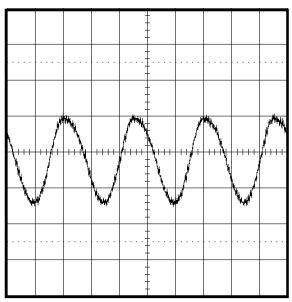
20µs
50V

(41)



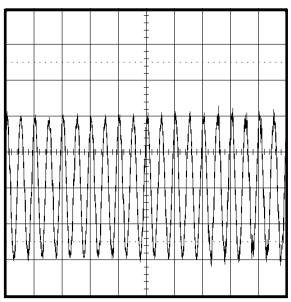
0.2ms
0.5V

(48)



0.2ms
200mV

(53)

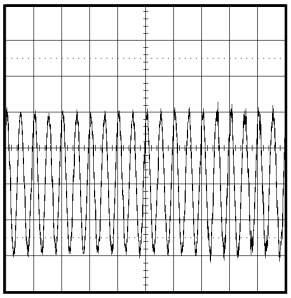


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# WAVEFORMS

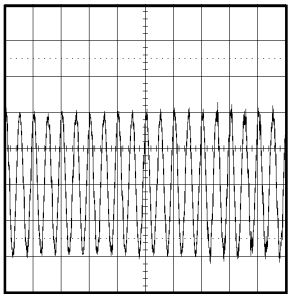
0.2ms
200mV

54



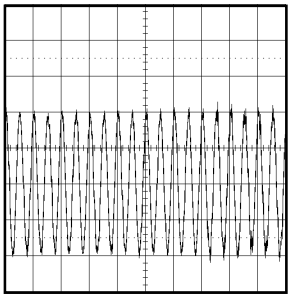
0.2ms
200mV

55



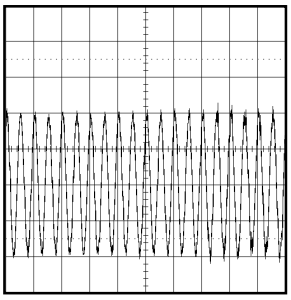
0.2ms
200mV

56



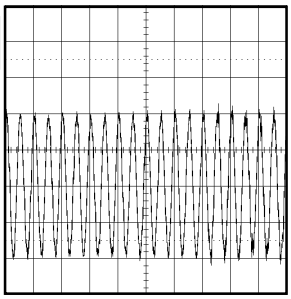
0.2ms
200mV

57



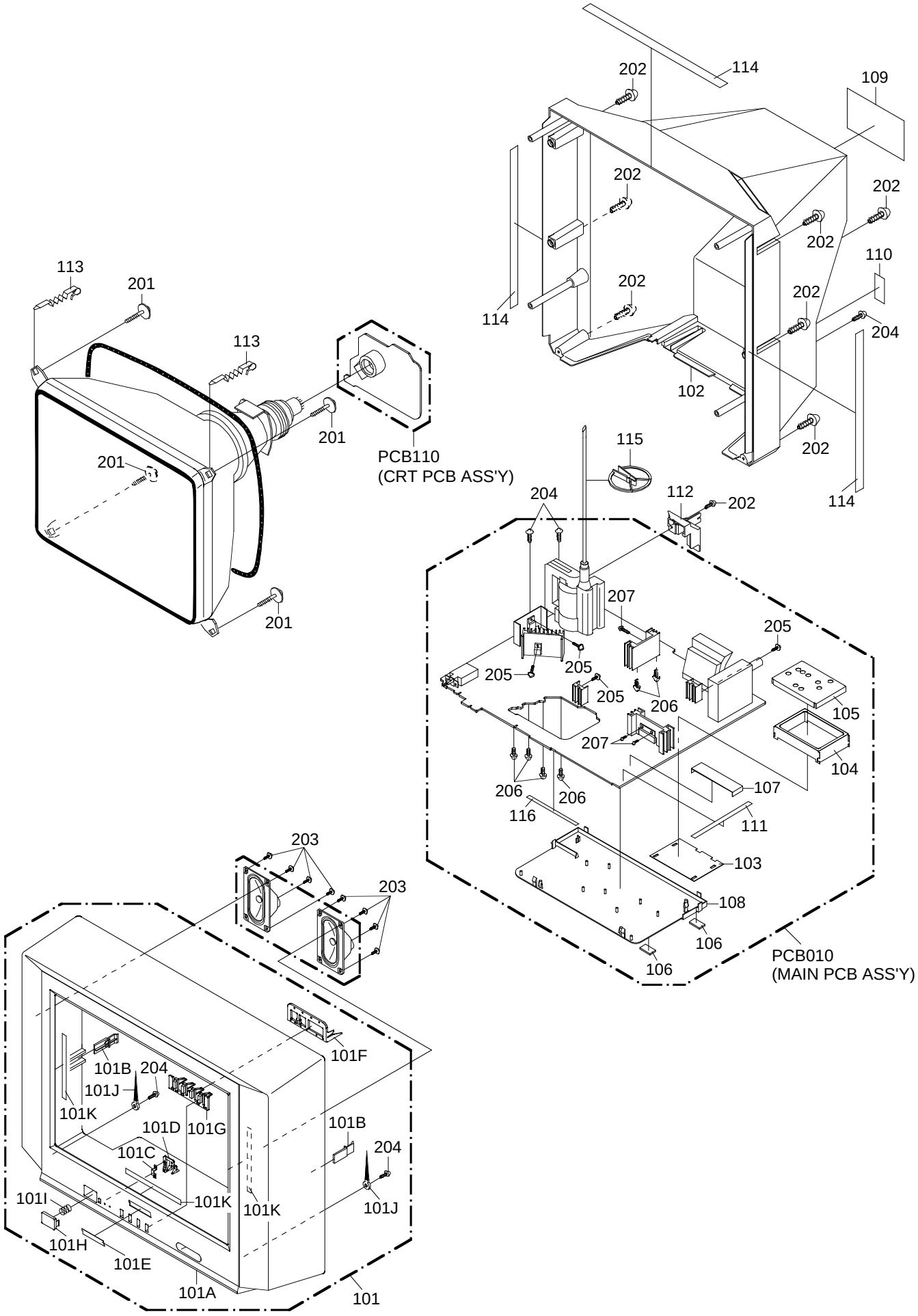
0.2ms
200mV

58



NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

# MECHANICAL EXPLODED VIEW



# MECHANICAL REPLACEMENT PARTS LIST

| Location | Part Number | Description | |
|---|---|---|---|
| 101 | A3N806Z720 | CABINET,FRONT ASSY | |
| 101A | 701WPJC219 | CABINET,FRONT | |
| 101B | 709WPA0024 | CABINET HOLDER | |
| 101C | 711WPA0166 | PLATE,FRONT | |
| 101D | 713WPA0197 | GUIDE,REMOCON | |
| 101E | 7235490022 | BADGE,BRAND | |
| 101F | 735WPA0691 | BUTTON,BASE | |
| 101G | 735WPBA701 | BUTTON,FRAME | |
| 101H | 735WPBA702 | BUTTON,POWER | |
| 101I | 743WKA0040 | SPRING,BUTTON | |
| 101J | 899EFBA001 | WIRING CLIP | |
| 101K | 800WQ00045 | FELT SHEET | |
| 102 | A3N806Z740 | CABINET,BACK ASSY | |
| 103 | 752WSAA006 | PLATE,SHIELD | |
| 104 | 752WSAA008 | SHIELD,CASE | |
| 105 | 752WSAA013 | SHIELD,LID | |
| 106 | 800WFA0045 | CUSHION,LEG | |
| 107 | 752WSA0087 | SHIELD,IC | |
| 108 | 755WPAA016 | COVER,PCB | |
| 109 | 722549A273 | SHEET,RATING | |
| 110 | 7230007471 | SHEET,JACK | |
| 111 | 800WQ00045 | FELT SHEET | |
| 112 | 761WPAA072 | HOLDER,FBT | |
| 113 | 762WPA0009 | HOLDER,CRT WIRE | |
| 114 | 800WQ00068 | FELT SHEET | |
| 115 | 899HV3T000 | HOLDER,ANODE WIRE | |
| 116 | 800WQ0A034 | FELT SHEET | |
| 201 | 8141J50C54 | SCREW,TAP TITE(P) GW22 | 5x35 |
| 202 | 8117540A64 | SCREW,TAPPING(B0) TRUSS | 4x16 |
| 203 | 8117D30A04 | SCREW,TAPPING(B0) WH8 BRAZIER | 3x10 |
| 204 | 8110630A04 | SCREW,TAP TITE(P) BRAZIER | 3x10 |
| 205 | 8109I30A04 | SCREW,TAP TITE(B) WH7 | 3x10 |
| 206 | 8109630802 | SCREW,TAP TITE(B) BRAZIER | 3x8 |
| 207 | 8107630804 | SCREW,TAP TITE(S) BRAZIER | 3x8 |
| --- | 723000C390 | SHEET,BAR CODE | |
| --- | 791WHA0085 | LAMIFILM,BAG | |
| --- | 792UHA0167 | PACKAGE,TOP | |
| --- | 792UHA0168 | PACKAGE,BOTTOM | |
| --- | 793UCDB247 | GIFT BOX | |
| --- | A3N806Z975 | INSTRUCTION BOOK KIT (Type: X) | |
| --- | J3N71099A | CORRECTION SHEET (Type: X) | |
| --- | J3N80601A | INSTRUCTION BOOK(G) (Type: X) | |
| --- | J3N80610A | INSTRUCTION BOOK(H) (Type: X) | |
| --- | J3N80611A | INSTRUCTION BOOK(I) (Type: X) | |
| --- | J3N80607A | QUICK SET-UP SHEET(G) (Type: X) | |
| --- | J3N80670A | QUICK SET-UP SHEET(H) (Type: X) | |
| --- | J3N80671A | QUICK SET-UP SHEET(I) (Type: X) | |
| --- | A3N802A975 | INSTRUCTION BOOK KIT (Type: Y) | |
| --- | J3N80210A | INSTRUCTION BOOK(PR) (Type: Y) | |
| --- | J3N80201A | INSTRUCTION BOOK(S) (Type: Y) | |
| --- | J3N80211A | INSTRUCTION BOOK(SW) (Type: Y) | |
| --- | J3N80270A | QUICK SET-UP SHEET(PR) (Type: Y) | |
| --- | J3N80207A | QUICK SET-UP SHEET(S) (Type: Y) | |
| --- | J3N80271A | QUICK SET-UP SHEET(SW) (Type: Y) | |
| --- | J3M40717A | REGISTRATION CARD (Type: X, Y) | |
| --- | JB5XD800 | POLYBAG,INSTRUCTION(RED CAUTION) (Type: X, Y) | |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location | Part Number | Description | |
|---|---|---|---|
| | | **RESISTORS** | |
| R003 | R002T4271J | RC | 270 OHM 1/4W |
| R004 | R002T4271J | RC | 270 OHM 1/4W |
| R005 | R801R7823J | RC | 82K OHM 1/10W |
| R006 | R801R7153J | RC | 15K OHM 1/10W |
| R101 | R801R7391J | RC | 390 OHM 1/10W |
| R102 | R801R7821J | RC | 820 OHM 1/10W |
| R103 | R801R7122J | RC | 1.2K OHM 1/10W |
| R104 | R801R7222J | RC | 2.2K OHM 1/10W |
| R105 | R801R7103J | RC | 10K OHM 1/10W |
| R106 | R801R7103J | RC | 10K OHM 1/10W |
| R107 | R801R7102J | RC | 1K OHM 1/10W |
| R108 | R801R7271J | RC | 270 OHM 1/10W |
| R109 | R002T4222J | RC | 2.2K OHM 1/4W |
| R110 | R801R7562J | RC | 5.6K OHM 1/10W |
| R111 | R801R7153J | RC | 15K OHM 1/10W |
| R112 | R002T4152J | RC | 1.5K OHM 1/4W |
| R113 | R801R7562J | RC | 5.6K OHM 1/10W |
| R114 | R801R7472J | RC | 4.7K OHM 1/10W |
| R115 | R801R7472J | RC | 4.7K OHM 1/10W |
| R116 | R801R7103J | RC | 10K OHM 1/10W |
| R120 | R801R7472J | RC | 4.7K OHM 1/10W |
| R121 | R002T4101J | RC | 100 OHM 1/4W |
| R123 | R801R7103J | RC | 10K OHM 1/10W |
| R124 | R801R7103J | RC | 10K OHM 1/10W |
| R125 | R801R7472J | RC | 4.7K OHM 1/10W |
| R126 | R801R7470J | RC | 47 OHM 1/10W |
| R128 | R801R7101J | RC | 100 OHM 1/10W |
| R129 | R801R7101J | RC | 100 OHM 1/10W |
| R131 | R801R7104J | RC | 100K OHM 1/10W |
| R132 | R801R7561J | RC | 560 OHM 1/10W |
| R133 | R801R7103J | RC | 10K OHM 1/10W |
| R134 | R801R7103J | RC | 10K OHM 1/10W |
| R136 | R002T4152J | RC | 1.5K OHM 1/4W |
| R137 | R801R7181J | RC | 180 OHM 1/10W |
| R140 | R801R7182J | RC | 1.8K OHM 1/10W |
| R141 | R801R7182J | RC | 1.8K OHM 1/10W |
| R142 | R801R7182J | RC | 1.8K OHM 1/10W |
| R143 | R801R7152J | RC | 1.5K OHM 1/10W |
| R144 | R002T4222J | RC | 2.2K OHM 1/4W |
| R145 | R002T4222J | RC | 2.2K OHM 1/4W |
| R146 | R002T4222J | RC | 2.2K OHM 1/4W |
| R147 | R002T4122J | RC | 1.2K OHM 1/4W |
| R148 | R801R7103J | RC | 10K OHM 1/10W |
| R150 | R002T4102J | RC | 1K OHM 1/4W |
| R151 | R801R7472J | RC | 4.7K OHM 1/10W |
| R152 | R002T4101J | RC | 100 OHM 1/4W |
| R201 | R801R7470J | RC | 47 OHM 1/10W |
| R202 | R801R7271J | RC | 270 OHM 1/10W |
| R204 | R801R7181J | RC | 180 OHM 1/10W |
| R206 | R801R7102J | RC | 1K OHM 1/10W |
| R213 | R002T2101J | RC | 100 OHM 1/2W |
| R214 | R801R7222J | RC | 2.2K OHM 1/10W |
| R215 | R801R7682J | RC | 6.8K OHM 1/10W |
| R217 | R801R7102J | RC | 1K OHM 1/10W |
| R218 | R801R7151J | RC | 150 OHM 1/10W |
| R219 | R801R7102J | RC | 1K OHM 1/10W |
| R302 | R801R7222J | RC | 2.2K OHM 1/10W |
| R303 | R801R7270J | RC | 27 OHM 1/10W |
| R305 | R002T2221J | RC | 220 OHM 1/2W |
| R308 | R002T4750J | RC | 75 OHM 1/4W |
| R311 | R801R7471J | RC | 470 OHM 1/10W |
| R312 | R801R7682J | RC | 6.8K OHM 1/10W |
| R401 | R002T2681J | RC | 680 OHM 1/2W |
| ⚠R402 | R3X18A181J | R,METAL OXIDE | 180 OHM 2W |
| R403 | R002T4152J | RC | 1.5K OHM 1/4W |
| R406 | R002T4472J | RC | 4.7K OHM 1/4W |
| R407 | R002T2010J | RC | 1 OHM 1/2W |
| R408 | R002T4102J | RC | 1K OHM 1/4W |
| R409 | R002T2681J | RC | 680 OHM 1/2W |
| ⚠R410 | R3X181221J | R,METAL OXIDE | 220 OHM 1W |
| ⚠R411 | R635U2680J | R,FUSE | 68 OHM 1/2W |
| R412 | R4X5T6123F | R,METAL | 12K OHM 1/6W |
| R416 | R002T22R2J | RC | 2.2 OHM 1/2W |
| R417 | R4X5T6392F | R,METAL | 3.9K OHM 1/6W |
| R418 | R002T4470J | RC | 47 OHM 1/4W |
| R419 | R801R7391J | RC | 390 OHM 1/10W |
| R420 | R801R7183J | RC | 18K OHM 1/10W |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location | Part Number | Description | |
|---|---|---|---|
| | | **RESISTORS** | |
| R421 | R002T2823J | RC | 82K OHM 1/2W |
| R422 | R002T4184J | RC | 180K OHM 1/4W |
| R423 | R002T4224J | RC | 220K OHM 1/4W |
| ⚠R424 | R3X181102J | R,METAL OXIDE | 1K OHM 1W |
| R425 | R002T2561J | RC | 560 OHM 1/2W |
| R426 | R002T2561J | RC | 560 OHM 1/2W |
| R427 | R801R7101J | RC | 100 OHM 1/10W |
| R428 | R002T2010J | RC | 1 OHM 1/2W |
| R430 | R002T4823J | RC | 82K OHM 1/4W |
| R446 | R002T2471J | RC | 470 OHM 1/2W |
| ⚠R501 | R002T2155J | RC | 1.5M OHM 1/2W |
| R502 | R801R7103J | RC | 10K OHM 1/10W |
| ⚠R503 | R5X2AE3R9J | R,CEMENT | 3.9 OHM 7W |
| R507 | R801R7222J | RC | 2.2K OHM 1/10W |
| R508 | R4X5T6562F | R,METAL | 5.6K OHM 1/6W |
| ⚠R509 | R63581R22J | R,FUSE | 0.22 OHM 1W |
| R510 | R002T4221J | RC | 220 OHM 1/4W |
| R511 | R002T4222J | RC | 2.2K OHM 1/4W |
| R512 | R801R7103J | RC | 10K OHM 1/10W |
| ⚠R516 | R3X1811R2J | R,METAL OXIDE | 1.2 OHM 1W |
| R517 | R002T4152J | RC | 1.5K OHM 1/4W |
| R518 | R002T4124J | RC | 120K OHM 1/4W |
| R519 | R002T4271J | RC | 270 OHM 1/4W |
| ⚠R521 | R3X28BR68J | R,METAL | 0.68 OHM 3W |
| R524 | R002T4473J | RC | 47K OHM 1/4W |
| R528 | R002T4103J | RC | 10K OHM 1/4W |
| R529 | R002T4681J | RC | 680 OHM 1/4W |
| R530 | R002T4562J | RC | 5.6K OHM 1/4W |
| R531 | R002T2155J | RC | 1.5M OHM 1/2W |
| R532 | R002T4223J | RC | 22K OHM 1/4W |
| ⚠R534 | R3X181331J | R,METAL OXIDE | 330 OHM 1W |
| R535 | R002T4222J | RC | 2.2K OHM 1/4W |
| R536 | R002T4222J | RC | 2.2K OHM 1/4W |
| R537 | R801R7561J | RC | 560 OHM 1/10W |
| R538 | R801R7103J | RC | 10K OHM 1/10W |
| R540 | R801R7101J | RC | 100 OHM 1/10W |
| R541 | R801R7273J | RC | 27K OHM 1/10W |
| R542 | R801R7102J | RC | 1K OHM 1/10W |
| ⚠R543 | R3X28BR39J | R,METAL OXIDE | 0.39 OHM 3W |
| R544 | R002T2682J | RC | 6.8K OHM 1/2W |
| R545 | R002T2682J | RC | 6.8K OHM 1/2W |
| R546 | R002T4103J | RC | 10K OHM 1/4W |
| R547 | R002T4103J | RC | 10K OHM 1/4W |
| R548 | R801R7103J | RC | 10K OHM 1/10W |
| R550 | R002T2101J | RC | 100 OHM 1/2W |
| R552 | R002T2155J | RC | 1.5M OHM 1/2W |
| R601 | R801R7221J | RC | 220 OHM 1/10W |
| R602 | R002T4561J | RC | 560 OHM 1/4W |
| R603 | R801R7102J | RC | 1K OHM 1/10W |
| R604 | R002T4101J | RC | 100 OHM 1/4W |
| R605 | R801R7221J | RC | 220 OHM 1/10W |
| R606 | R002T4101J | RC | 100 OHM 1/4W |
| R607 | R801R7223J | RC | 22K OHM 1/10W |
| R608 | R801R7473J | RC | 47K OHM 1/10W |
| R618 | R801R7103J | RC | 10K OHM 1/10W |
| R619 | R801R7334J | RC | 330K OHM 1/10W |
| R622 | R801R7334J | RC | 330K OHM 1/10W |
| R624 | R801R7103J | RC | 10K OHM 1/10W |
| R626 | R002T4103J | RC | 10K OHM 1/4W |
| R628 | R801R7151J | RC | 150 OHM 1/10W |
| R629 | R801R7151J | RC | 150 OHM 1/10W |
| R630 | R801R7151J | RC | 150 OHM 1/10W |
| R631 | R801R7101J | RC | 100 OHM 1/10W |
| R632 | R801R7561J | RC | 560 OHM 1/10W |
| R633 | R801R7561J | RC | 560 OHM 1/10W |
| R634 | R00204750J | RC | 75 OHM 1/4W |
| R636 | R801R7473J | RC | 47K OHM 1/10W |
| R638 | R801R7222J | RC | 2.2K OHM 1/10W |
| R639 | R801R7392J | RC | 3.9K OHM 1/10W |
| R641 | R801R7102J | RC | 1K OHM 1/10W |
| R643 | R801R7471J | RC | 470 OHM 1/10W |
| R645 | R801R7222J | RC | 2.2K OHM 1/10W |
| R646 | R002T4822J | RC | 8.2K OHM 1/4W |
| R647 | R801R7152J | RC | 1.5K OHM 1/10W |
| R702 | R801R7822J | RC | 8.2K OHM 1/10W |
| R704 | R801R7750J | RC | 75 OHM 1/10W |
| R705 | R801R7822J | RC | 8.2K OHM 1/10W |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location | Part Number | Description | |
|---|---|---|---|
| | | **RESISTORS** | |
| R706 | R002T2391J | RC | 390 OHM 1/2W |
| R707 | R002T2101J | RC | 100 OHM 1/2W |
| R709 | R801R7822J | RC | 8.2K OHM 1/10W |
| R710 | R801R7822J | RC | 8.2K OHM 1/10W |
| R712 | R002T4820J | RC | 82 OHM 1/4W |
| R713 | R002T4750J | RC | 75 OHM 1/4W |
| R714 | R002T4680J | RC | 68 OHM 1/4W |
| R715 | R002T4750J | RC | 75 OHM 1/4W |
| R716 | R002T4750J | RC | 75 OHM 1/4W |
| R717 | R002T4151J | RC | 150 OHM 1/4W |
| R718 | R801R7102J | RC | 1K OHM 1/10W |
| R719 | R002T4750J | RC | 75 OHM 1/4W |
| R720 | R00204750J | RC | 75 OHM 1/4W |
| R721 | R00204102J | RC | 1K OHM 1/4W |
| R725 | R002T2391J | RC | 390 OHM 1/2W |
| R726 | R801R7102J | RC | 1K OHM 1/10W |
| R727 | R801R7104J | RC | 100K OHM 1/10W |
| R728 | R801R7104J | RC | 100K OHM 1/10W |
| R729 | R801R7102J | RC | 1K OHM 1/10W |
| R730 | R801R7104J | RC | 100K OHM 1/10W |
| R731 | R801R7104J | RC | 100K OHM 1/10W |
| R732 | R801R7563J | RC | 56K OHM 1/10W |
| R733 | R801R7103J | RC | 10K OHM 1/10W |
| R736 | R801R7103J | RC | 10K OHM 1/10W |
| R737 | R801R7563J | RC | 56K OHM 1/10W |
| R738 | R801R7472J | RC | 4.7K OHM 1/10W |
| R739 | R801R7472J | RC | 4.7K OHM 1/10W |
| R743 | R801R7104J | RC | 100K OHM 1/10W |
| R744 | R801R7104J | RC | 100K OHM 1/10W |
| R745 | R801R7104J | RC | 100K OHM 1/10W |
| R746 | R801R7104J | RC | 100K OHM 1/10W |
| R747 | R801R7101J | RC | 100 OHM 1/10W |
| R748 | R801R7101J | RC | 100 OHM 1/10W |
| R749 | R801R7101J | RC | 100 OHM 1/10W |
| R750 | R801R7101J | RC | 100 OHM 1/10W |
| R751 | R801R7750J | RC | 75 OHM 1/10W |
| R801 | R801R7221J | RC | 220 OHM 1/10W |
| R802 | R002T4272J | RC | 2.7K OHM 1/4W |
| ⚠R803 | R3X18A123J | R,METAL OXIDE | 12K OHM 2W |
| R804 | R002T4272J | RC | 2.7K OHM 1/4W |
| ⚠R805 | R3X18A123J | R,METAL OXIDE | 12K OHM 2W |
| R806 | R002T4272J | RC | 2.7K OHM 1/4W |
| ⚠R807 | R3X18A123J | R,METAL OXIDE | 12K OHM 2W |
| R808 | R801R7221J | RC | 220 OHM 1/10W |
| R809 | R801R7182J | RC | 1.8K OHM 1/10W |
| R810 | R801R7221J | RC | 220 OHM 1/10W |
| R811 | R801R7182J | RC | 1.8K OHM 1/10W |
| R812 | R801R7560J | RC | 56 OHM 1/10W |
| R813 | R002T4271J | RC | 270 OHM 1/4W |
| R814 | R801R7182J | RC | 1.8K OHM 1/10W |
| R815 | R002T4271J | RC | 270 OHM 1/4W |
| R816 | R801R7271J | RC | 270 OHM 1/10W |
| R817 | R801R7560J | RC | 56 OHM 1/10W |
| R818 | R801R7560J | RC | 56 OHM 1/10W |
| ⚠R819 | R6358A3R3J | R,FUSE | 3.3 OHM 2W |
| R904 | R801R7101J | RC | 100 OHM 1/10W |
| R905 | R801R7101J | RC | 100 OHM 1/10W |
| R906 | R801R7101J | RC | 100 OHM 1/10W |
| R907 | R801R7101J | RC | 100 OHM 1/10W |
| R909 | R002T4101J | RC | 100 OHM 1/4W |
| R910 | R002T4101J | RC | 100 OHM 1/4W |
| R1003 | R801R7103J | RC | 10K OHM 1/10W |
| R1004 | R002T4103J | RC | 10K OHM 1/4W |
| R1005 | R801R7222J | RC | 2.2K OHM 1/10W |
| R1010 | R801R7103J | RC | 10K OHM 1/10W |
| R1011 | R801R7103J | RC | 10K OHM 1/10W |
| R1014 | R002T4122J | RC | 1.2K OHM 1/4W |
| | | **CAPACITORS** | |
| C001 | CS0RB04H4K | CC | 0.022 UF 50V B |
| C002 | E02LU0471M | CE | 470 UF 6.3V |
| C003 | E50HU5010M | CE | 1 UF 50V |
| C006 | CS0RCH412J | CC | 100 PF 50V CH |
| C007 | CS0RB0414K | CC | 0.01 UF 50V B |
| C101 | CS0RCH4U1J | CC | 68 PF 50V CH |
| C102 | CS0RB0315K | CC | 0.1 UF 25V B |
| C103 | CS0RCH4H1J | CC | 22 PF 50V CH |
| C104 | CS0RB04Q3K | CC | 0.0047UF 50V B |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location | Part Number | Description | |
|---|---|---|---|
| | | **CAPACITORS** | |
| C105 | CS0RB0315K | CC | 0.1 UF 25V B |
| C106 | CS0RB04H4K | CC | 0.022 UF 50V B |
| C108 | CS0RCH4H1J | CC | 22 PF 50V CH |
| C109 | CS0RCH4H1J | CC | 22 PF 50V CH |
| C111 | CS0RF02Q5Z | CC | 0.47 UF 16V F |
| C112 | CS0RCH4W1J | CC | 82 PF 50V CH |
| C113 | CS0RCH4H1J | CC | 22 PF 50V CH |
| C114 | CS0RB0315K | CC | 0.1 UF 25V B |
| C115 | E02LT0222M | CE | 2200 UF 6.3V |
| C116 | CS0RB04Q3K | CC | 0.0047UF 50V B |
| C118 | CS0RB0315K | CC | 0.1 UF 25V B |
| C119 | CS0RB0315K | CC | 0.1 UF 25V B |
| C120 | CS0RB0216K | CC | 1 UF 16V B |
| C121 | E02LU0101M | CE | 100 UF 6.3V |
| C122 | E50HU2100M | CE | 10 UF 16V |
| C125 | CS0RCH412J | CC | 100 PF 50V CH |
| C126 | CS0RCH412J | CC | 100 PF 50V CH |
| C127 | CS0RCH412J | CC | 100 PF 50V CH |
| C128 | CS0RCH4E2J | CC | 150 PF 50V CH |
| C129 | CS0RCH4H2J | CC | 220 PF 50V CH |
| C131 | E50HU2100M | CE | 10 UF 16V |
| C132 | CS0RCH431J | CC | 30 PF 50V CH |
| C139 | CS0RF02Q5Z | CC | 0.47 UF 16V F |
| C140 | CS0RCH4H2J | CC | 220 PF 50V CH |
| C141 | CS0RB0315K | CC | 0.1 UF 25V B |
| C143 | CS0RB0315K | CC | 0.1 UF 25V B |
| C201 | CS0RCH430C | CC | 3 PF 50V CH |
| C202 | CS0RB0413K | CC | 0.001 UF 50V B |
| C203 | CS0RB04H4K | CC | 0.022 UF 50V B |
| C204 | CS0RB0413K | CC | 0.001 UF 50V B |
| C205 | CS0RB0413K | CC | 0.001 UF 50V B |
| C206 | CS0RB0216K | CC | 1 UF 16V B |
| C207 | CS0RF04L5Z | CC | 0.33 UF 50V F |
| C209 | E50HU2100M | CE | 10 UF 16V |
| C210 | CS0RB0216K | CC | 1 UF 16V B |
| C212 | CS0RB0414K | CC | 0.01 UF 50V B |
| C213 | CS0RB0216K | CC | 1 UF 16V B |
| C215 | CS0RB0315K | CC | 0.1 UF 25V B |
| C217 | E02LU2470M | CE | 47 UF 16V |
| C218 | CS0RB04H4K | CC | 0.022 UF 50V B |
| C220 | E02LU1471M | CE | 470 UF 10V |
| C221 | CS0RB0315K | CC | 0.1 UF 25V B |
| C301 | CS0RF0414Z | CC | 0.01 UF 50V F |
| C303 | CS0RB0413K | CC | 0.001 UF 50V B |
| C304 | CS0RB0413K | CC | 0.001 UF 50V B |
| C306 | CS0RF04H4Z | CC | 0.022 UF 50V F |
| C403 | E02LT4471M | CE | 470 UF 35V |
| C404 | E02LTD2R2M | CE | 2.2 UF 250V |
| C407 | P235W1104J | CMP | 0.1 UF 100V MKT |
| C408 | E02LU5100M | CE | 10 UF 50V |
| C410 | C0JTB05Q2K | CC | 470 PF 500V B |
| C412 | P232T0473J | CMPL | 0.047 UF 50V MMTV |
| ⚠C414 | E02LU4101M | CE | 100 UF 35V |
| C417 | E02LU5220M | CE | 22 UF 50V |
| C418 | E02LF3102M | CE | 1000 UF 25V |
| C422 | P235W1474J | CMP | 0.47 UF 100V MKT |
| C437 | P4J7F3394J | CMPP | 0.39 UF 250V PMS |
| C440 | P232W1103J | CMP | 0.01 UF 100V MMTS |
| C442 | P4N8FJ123H | CMPP | 0.012 UF 1.25KV |
| C444 | P4N8FJ102H | CMPP | 0.001 UF 1.25KV |
| ⚠C446 | E02LU5220M | CE | 22 UF 50V |
| ⚠C448 | E0ELFD220M | CE | 22 UF 250V |
| ⚠C501 | P2122B224M | CMP | 0.22 UF 275V ECQUL |
| C502 | CS0RB0216K | CC | 1 UF 16V B |
| C503 | E02LT8100M | CE | 10 UF 100V |
| C504 | CS0RB0413K | CC | 0.001 UF 50V B |
| ⚠C505 | E52DHH151M | CE | 150 UF 400V |
| C506 | C0JBB0713K | CC | 0.001 UF 2KV B |
| C507 | C0JBB0713K | CC | 0.001 UF 2KV B |
| C508 | CS0RB0414K | CC | 0.01 UF 50V B |
| C509 | CS0RB0414K | CC | 0.01 UF 50V B |
| C511 | E02LF2222M | CE | 2200 UF 16V |
| C515 | E02LT2102M | CE | 1000 UF 16V |
| C517 | C0PLRR7U2K | CC | 680 PF 2KV R |
| C518 | E02LU54R7M | CE | 4.7 UF 50V |
| C522 | E50HU5R47M | CE | 0.47 UF 50V |
| C523 | E02LU1221M | CE | 220 UF 10V |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location | Part Number | Description | | |
|---|---|---|---|---|
| | | **CAPACITORS** | | |
| C524 | CS0RB0414K | CC | 0.01 UF 50V B | |
| ⚠C525 | CD39E0M13M | CC | 0.001 UF 250V | |
| ⚠C526 | P2122B224M | CMP | 0.22 UF 275V ECQUL | |
| C530 | CS0RB0315K | CC | 0.1 UF 25V B | |
| ⚠C531 | E5EZF4102M | CE | 1000 UF 35V | |
| C532 | C03L0R7K3K | CC | 0.0027UF 2KV R | |
| C533 | E02LU0221M | CE | 220 UF 6.3V | |
| C536 | P232T0473J | CMPL | 0.047 UF 50V MMTV | |
| C537 | P23200474J | CMP | 0.47 UF 50V MMT | or |
| | P232W0474J | CMPL | 0.47 UF 50V MMTS | |
| C539 | E02LU5100M | CE | 10 UF 50V | |
| ⚠C540 | CD39E0MH3M | CC | 0.0022UF 250V | |
| C541 | E62NFB101M | CE | 100 UF 160V | |
| C543 | CS0RB0413K | CC | 0.001 UF 50V B | |
| C602 | CS0RB0216K | CC | 1 UF 16V B | |
| C603 | CS0RB0216K | CC | 1 UF 16V B | |
| C604 | CS0RB0216K | CC | 1 UF 16V B | |
| C605 | CS0RB0216K | CC | 1 UF 16V B | |
| C606 | CQGTB0414K | CC | 0.01 UF 50V B | |
| C607 | CS0RB0216K | CC | 1 UF 16V B | |
| C608 | CQGTB0415K | CC | 0.1 UF 50V B | |
| C609 | CS0RB0315K | CC | 0.1 UF 25V B | |
| C610 | E02LU0101M | CE | 100 UF 6.3V | |
| C611 | E50HU53R3M | CE | 3.3 UF 50V | |
| C612 | CS0RB04E3K | CC | 0.0015UF 50V B | |
| C613 | E02LU1471M | CE | 470 UF 10V | |
| C614 | CS0RB0216K | CC | 1 UF 16V B | |
| C615 | CS0RB0216K | CC | 1 UF 16V B | |
| C616 | CS0RB04Q3K | CC | 0.0047UF 50V B | |
| C618 | CQGTB0415K | CC | 0.1 UF 50V B | |
| C619 | CS0RB0315K | CC | 0.1 UF 25V B | |
| C620 | CQGTB0415K | CC | 0.1 UF 50V B | |
| C622 | CQGTB0415K | CC | 0.1 UF 50V B | |
| C623 | CS0RB0315K | CC | 0.1 UF 25V B | |
| C626 | CS0RB0315K | CC | 0.1 UF 25V B | |
| C629 | CS0RB0216K | CC | 1 UF 16V B | |
| C630 | CS0RCH4U1J | CC | 68 PF 50V CH | |
| C633 | CS0RB0414K | CC | 0.01 UF 50V B | |
| C634 | E02LU5100M | CE | 10 UF 50V | |
| C635 | E02LU5100M | CE | 10 UF 50V | |
| C637 | CS0RCH4U1J | CC | 68 PF 50V CH | |
| C638 | CQGTB0414K | CC | 0.01 UF 50V B | |
| C711 | E02LU1221M | CE | 220 UF 10V | |
| C716 | CS0RCH412J | CC | 100 PF 50V CH | |
| C719 | CS0RCH412J | CC | 100 PF 50V CH | |
| C720 | CS0RCH4Q2J | CC | 470 PF 50V CH | |
| C721 | CS0RCH412J | CC | 100 PF 50V CH | |
| C722 | CS0RCH4Q2J | CC | 470 PF 50V CH | |
| C723 | E50HU2100M | CE | 10 UF 16V | |
| C726 | CS0RCH4Q2J | CC | 470 PF 50V CH | |
| C727 | CS0RCH4Q2J | CC | 470 PF 50V CH | |
| C728 | E50HU2100M | CE | 10 UF 16V | |
| C729 | CS0RB0414K | CC | 0.01 UF 50V B | |
| C730 | CS0RB0414K | CC | 0.01 UF 50V B | |
| C731 | CS0RB0414K | CC | 0.01 UF 50V B | |
| C732 | CS0RF0414Z | CC | 0.01 UF 50V F | |
| C736 | CS0RB0216K | CC | 1 UF 16V B | |
| C737 | CS0RB0216K | CC | 1 UF 16V B | |
| C743 | E50HU2100M | CE | 10 UF 16V | |
| C753 | CS0RCH4Q2J | CC | 470 PF 50V CH | |
| C754 | CQGTCH4Q2J | CC | 470 PF 50V CH | |
| C757 | E02LU1101M | CE | 100 UF 10V | |
| C759 | CS0RB0413K | CC | 0.001 UF 50V B | |
| C762 | CS0RB0413K | CC | 0.001 UF 50V B | |
| C802 | C0JBB0713K | CC | 0.001 UF 2KV B | |
| C809 | CQGTCH4K2J | CC | 270 PF 50V CH | |
| C810 | CS0RCH4H2J | CC | 220 PF 50V CH | |
| C811 | CQGTCH4K2J | CC | 270 PF 50V CH | |
| C901 | E02LU0221M | CE | 220 UF 6.3V | |
| C902 | CS0RB04E3K | CC | 0.0015UF 50V B | |
| C903 | CS0RCH4Q2J | CC | 470 PF 50V CH | |
| C904 | CS0RCH4H2J | CC | 220 PF 50V CH | |
| C905 | CS0RCH412J | CC | 100 PF 50V CH | |
| C906 | CS0RCH412J | CC | 100 PF 50V CH | |
| C909 | CS0RB04Q2K | CC | 470 PF 50V B | |
| C910 | CS0RB04E3K | CC | 0.0015UF 50V B | |
| C911 | E50HU2100M | CE | 10 UF 16V | |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location | Part Number | Description | | |
|---|---|---|---|---|
| | | **CAPACITORS** | | |
| C912 | CS0RB02L5K | CC | 0.33 UF 16V B | |
| C913 | CS0RCH430C | CC | 3 PF 50V CH | |
| C914 | CS0RCH430C | CC | 3 PF 50V CH | |
| C915 | CS0RB02L5K | CC | 0.33 UF 16V B | |
| C916 | CS0RB02L5K | CC | 0.33 UF 16V B | |
| C917 | CS0RB02L5K | CC | 0.33 UF 16V B | |
| C918 | CS0RCH4Q2J | CC | 470 PF 50V CH | |
| C919 | CS0RB04E3K | CC | 0.0015UF 50V B | |
| C920 | E50HU2100M | CE | 10 UF 16V | |
| C921 | CS0RB0315K | CC | 0.1 UF 25V B | |
| C923 | CQGTF04Q5Z | CC | 0.47 UF 50V F | |
| C924 | CQGTF04Q5Z | CC | 0.47 UF 50V F | |
| C929 | CS0RB02L5K | CC | 0.33 UF 16V B | |
| C930 | E50HU2220M | CE | 22 UF 16 V | |
| C931 | E50HU2220M | CE | 22 UF 16 V | |
| C932 | E50HU2220M | CE | 22 UF 16 V | |
| C933 | E50HU2220M | CE | 22 UF 16 V | |
| C936 | E50HU2100M | CE | 10 UF 16V | |
| C937 | E50HU2100M | CE | 10 UF 16V | |
| C938 | CS0RB0315K | CC | 0.1 UF 25V B | |
| C939 | E50HU53R3M | CE | 3.3 UF 50V | |
| C941 | CS0RB0315K | CC | 0.1 UF 25V B | |
| C942 | E50HU2100M | CE | 10 UF 16V | |
| C944 | CS0RCH4S1J | CC | 56 PF 50V CH | |
| C945 | CS0RCH4S1J | CC | 56 PF 50V CH | |
| C946 | CS0RCH4S1J | CC | 56 PF 50V CH | |
| C1001 | E50HU5010M | CE | 1 UF 50V | |
| C1002 | E50HU5010M | CE | 1 UF 50V | |
| C1004 | E02LU5220M | CE | 22 UF 50V | |
| C1008 | E5EZU5100M | CE | 10 UF 50V | |
| C1009 | E02LF3102M | CE | 1000 UF 25V | |
| C1010 | CS0RB04Q3K | CC | 0.0047UF 50V B | |
| C1012 | CS0RB04Q3K | CC | 0.0047UF 50V B | |
| C1013 | E02LU4101M | CE | 100 UF 35V | |
| C1014 | E02LF4222M | CE | 2200 UF 35V | |
| C1015 | E02L03102M | CE | 1000 UF 25V | or |
| | E02LT3102M | CE | 1000 UF 25V | |
| | | **DIODES** | | |
| D001 | D97U03301B | DIODE,ZENER | MTZJ33B T-77 | |
| D101 | 0021721150 | LED | SLR-342VCT32 | |
| D102 | D97U05R11B | DIODE,ZENER | MTZJ5.1B T-77 | |
| D103 | 0021E5Q210 | LED | LTL-1CHGE-002A | |
| D108 | D1VT001330 | DIODE,SILICON | 1SS133T-77 | |
| D401 | D97U03001B | DIODE,ZENER | MTZJ30B T-77 | |
| D402 | D97U03001B | DIODE,ZENER | MTZJ30B T-77 | |
| D403 | D2WT011E10 | DIODE,SILICON | 11E1-EIC | |
| D404 | D2WT011E10 | DIODE,SILICON | 11E1-EIC | |
| ⚠D405 | D2WTAU02A0 | DIODE,SILICON | AU02A-EIC | |
| D406 | D2WT011E10 | DIODE,SILICON | 11E1-EIC | |
| D407 | D2WT011E10 | DIODE,SILICON | 11E1-EIC | |
| D408 | D28XQS04N0 | DIODE,SCHOTTKY | 11EQS04N-TA2B5 | |
| ⚠D410 | D2WTAU02A0 | DIODE,SILICON | AU02A-EIC | |
| ⚠D501 | D2WTRM11C0 | DIODE,SILICON | RM11C-EIC | |
| ⚠D502 | D2WTRM11C0 | DIODE,SILICON | RM11C-EIC | |
| ⚠D503 | D2WTRM11C0 | DIODE,SILICON | RM11C-EIC | |
| ⚠D504 | D2WTRM11C0 | DIODE,SILICON | RM11C-EIC | |
| D505 | D2WT011E10 | DIODE,SILICON | 11E1-EIC | |
| D506 | D1VT001330 | DIODE,SILICON | 1SS133T-77 | |
| D507 | D1VT001330 | DIODE,SILICON | 1SS133T-77 | |
| D508 | D1VT001330 | DIODE,SILICON | 1SS133T-77 | |
| D509 | D97U05R11B | DIODE,ZENER | MTZJ5.1B T-77 | |
| D511 | D97U01201B | DIODE,ZENER | MTZJ12B T-77 | |
| D512 | D2WXSB1400 | DIODE,SCHOTTKY | SB140-EIC | |
| ⚠D513 | D28T21DQN9 | DIODE,SCHOTTKY | 21DQ09N-TA2B1 | |
| D514 | D1VT001330 | DIODE,SILICON | 1SS133T-77 | |
| D515 | D2WXSB1400 | DIODE,SCHOTTKY | SB140-EIC | |
| ⚠D516 | D28T21DQN9 | DIODE,SCHOTTKY | 21DQ09N-TA2B1 | |
| D517 | D2WXN49370 | DIODE,SILICON | 1N4937 | |
| D519 | D1VT001330 | DIODE,SILICON | 1SS133T-77 | |
| D520 | D28F30DF60 | DIODE,RECTIFIER | 30DF6-FC | |
| D521 | D1VT001330 | DIODE,SILICON | 1SS133T-77 | |
| D525 | D97U05R61B | DIODE,ZENER | MTZJ5.6B T-77 | |
| ⚠D526 | D2CF2016L0 | DIODE,SILICON | FE201-6L49 | |
| D527 | D2WT011E10 | DIODE,SILICON | 11E1-EIC | |
| D528 | D97U01801B | DIODE,ZENER | MTZJ18B T-77 | |
| D530 | D1VT001330 | DIODE,SILICON | 1SS133T-77 | |
| D531 | D97U01501B | DIODE,ZENER | MTZJ15B T-77 | |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location | Part Number | Description | |
|---|---|---|---|
| | | **DIODES** | |
| D532 | D2WXN49370 | DIODE,SILICON | 1N4937 |
| D533 | D97U05R61B | DIODE,ZENER | MTZJ5.6B T-77 |
| D602 | D97U05R61B | DIODE,ZENER | MTZJ5.6B T-77 |
| D603 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D604 | D2WT011E10 | DIODE,SILICON | 11E1-EIC |
| D605 | D97U06R21B | DIODE,ZENER | MTZJ6.2B T-77 |
| D609 | D2WXSB1400 | DIODE,SCHOTTKY | SB140-EIC |
| D611 | D97U09R11B | DIODE,ZENER | MTZJ9.1B T-77 |
| D712 | D97U05R61B | DIODE,ZENER | MTZJ5.6B T-77 |
| D723 | D97U05R61B | DIODE,ZENER | MTZJ5.6B T-77 |
| D801 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D802 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D803 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D804 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D805 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D806 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| D1001 | D1VT001330 | DIODE,SILICON | 1SS133T-77 |
| | | **ICS** | |
| IC101 | I5PD0F013B | IC | OECF013B |
| IC102 | I9UF032310 | IC | PST3231NR |
| IC199 | A3N802A015 | IC | S-24C16AFJA-TB-01 |
| IC201 | I0WDE2247H | IC | STV2247H |
| ⚠IC401 | I0WTD81740 | IC | TDA8174A |
| IC502 | I1KA98R09A | IC | KIA78R09API |
| IC503 | I1KA98R060 | IC | KIA278R06PI |
| ⚠IC506 | 0002E00610 | PHOTO COUPLER | LTV-817M-VB |
| IC702 | I0UF015010 | IC | MM1501XNRE |
| IC902 | I19FF34000 | IC | MSP3400G-QA-B8 |
| IC1002 | I0FSP52760 | IC | AN5276 |
| | | **TRANSISTORS** | |
| Q102 | T6YJ1037K0 | TRANSISTOR,SILICON | 2SA1037AKT146R,S |
| Q103 | T6YJ1037K0 | TRANSISTOR,SILICON | 2SA1037AKT146R,S |
| Q201 | T8AA03881S | TRANSISTOR,SILICON | KTC3881S-RTK |
| Q204 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q301 | T8AA03881S | TRANSISTOR,SILICON | KTC3881S-RTK |
| Q401 | TDUU024990 | TRANSISTOR,SILICON | 2SD2499(LB0EC1) |
| Q402 | TC5T01627Y | TRANSISTOR,SILICON | 2SC1627_Y(TPE2) |
| Q403 | TNYJB05001 | COMPOUND TRANSISTOR | DTC114EKAT146 |
| ⚠Q501 | T41F026510 | TRANSISTOR,FIELD EFF | ECT 2SK2651-01MR |
| ⚠Q502 | TCAT032034 | TRANSISTOR,SILICON | KTC3203_Y-AT |
| Q503 | T6YJ1037K0 | TRANSISTOR,SILICON | 2SA1037AKT146R,S |
| Q505 | TCAT032034 | TRANSISTOR,SILICON | KTC3203_Y-AT |
| Q507 | TCATC31980 | TRANSISTOR,SILICON | KTC3198-AT(Y,GR) |
| Q508 | TNYJJ05001 | COMPOUND TRANSISTOR | DTC114TKAT146 |
| Q509 | TA3T016240 | TRANSISTOR,SILICON | 2SA1624-AA |
| Q510 | TNYJC05001 | COMPOUND TRANSISTOR | DTC124EKAT146 |
| Q511 | TAAT01281Y | TRANSISTOR,SILICON | KTA1281_Y |
| Q512 | TPYJB05001 | COMPOUND TRANSISTOR | DTA114EKAT146 |
| Q513 | TA3T1371A0 | TRANSISTOR,SILICON | 2SA1371(D,E)-AE |
| Q514 | TC3T029090 | TRANSISTOR,SILICON | 2SC2909(S,T)-AA |
| Q601 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q609 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q701 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q702 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q703 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q704 | T8YJ2412K0 | TRANSISTOR,SILICON | 2SC2412KT146 R,S |
| Q801 | TCATC3199Y | TRANSISTOR,SILICON | KTC3199_Y-AT |
| Q802 | TCATC3199Y | TRANSISTOR,SILICON | KTC3199_Y-AT |
| Q803 | TCATC3199Y | TRANSISTOR,SILICON | KTC3199_Y-AT |
| ⚠Q804 | TCA0042170 | TRANSISTOR,SILICON | KTC4217(O,Y) |
| ⚠Q805 | TCA0042170 | TRANSISTOR,SILICON | KTC4217(O,Y) |
| ⚠Q806 | TCA0042170 | TRANSISTOR,SILICON | KTC4217(O,Y) |
| Q1002 | TPYJC05001 | COMPOUND TRANSISTOR | DTA124EKAT146 |
| | | **COILS &TRANSFORMERS** | |
| L001 | 02167F100J | COIL | 10 UH |
| L101 | 02167F100J | COIL | 10 UH |
| L102 | 02167F100J | COIL | 10 UH |
| L202 | 033700005R | COIL,VIDEO IFT | 3700005 |
| L203 | 021LA62R2K | COIL | 2.2 UH |
| L204 | 021LA6120K | COIL | 12 UH |
| L206 | 021LA6R22M | COIL | 0.22 UH |
| L207 | 021LA6100J | COIL | 10 UH |
| L208 | 02167F3R3J | COIL | 3.3 UH |
| L301 | 021LA62R2K | COIL | 2.2 UH |
| L302 | 021LA6R22M | COIL | 0.22 UH |
| L303 | 021LA61R0M | COIL | 1 UH |
| L401 | 021679472K | COIL | 4.7 MH |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location | Part Number | Description | |
|---|---|---|---|
| | | **COILS &TRANSFORMERS** | |
| L403 | 022100027A | COIL,LINEARITY | ELH5L4113 |
| ⚠L501 | 029T000091 | COIL,LINE FILTER | 0R8A393F28Y |
| ⚠L503 | 028R200015 | COIL,DEGAUSS | 8R200015 |
| L504 | 02AHB9A972 | CORE,FERRITE | W5T29X7.5X19 |
| L601 | 02167F100J | COIL | 10 UH |
| L701 | 021LA6220J | COIL | 22 UH |
| L702 | 021LA6220J | COIL | 22 UH |
| L703 | 021LA6220J | COIL | 22 UH |
| L705 | 021LA6220J | COIL | 22 UH |
| L706 | 021LA6220J | COIL | 22 UH |
| L707 | 021LA6220J | COIL | 22 UH |
| L708 | 021LA6220J | COIL | 22 UH |
| L709 | 021LA6220J | COIL | 22 UH |
| L710 | 021LA6220J | COIL | 22 UH |
| L711 | 021LA6220J | COIL | 22 UH |
| L713 | 021LA6220J | COIL | 22 UH |
| L715 | 021LA6100J | COIL | 10 UH |
| L716 | 021LA6100J | COIL | 10 UH |
| L801 | 02167F101J | COIL | 100 UH |
| L802 | 02167D151K | COIL | 150 UH |
| L803 | 02167D151K | COIL | 150 UH |
| L804 | 02167D151K | COIL | 150 UH |
| L904 | 02167F100J | COIL | 10 UH |
| L905 | 02167F100J | COIL | 10 UH |
| T401 | 045009003J | TRANS,HORIZONTAL DRIVE | ETH09K14BZ |
| ⚠T501 | 0481350864 | TRANSFORMER,SWITCHING | 81350864 |
| | | **JACKS** | |
| J701 | 063G100041 | SOCKET,21PIN | 035_0_8083_00 |
| J702 | 060J131015 | HEADPHONE JACK | MSJ-2000 |
| J703 | 060G401047 | RCA JACK | HTJ-032-03AY |
| J704 | 060G401046 | RCA JACK | HTJ-032-03AW |
| J705 | 060G401039 | RCA JACK | HTJ-032-03AR |
| ⚠J801 | 066F130020 | SOCKET,CATHODE RAY,TUBE | ISHS53S |
| | | **SWITCHES** | |
| SW102 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| SW104 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| SW106 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| SW107 | 0504101T34 | SWITCH,TACT | EVQ21505R |
| ⚠SW501 | 0530105019 | SWITCH | ESB92S22B |
| | | **VARIABLE RESISTORS** | |
| VR401 | V1K63H3BTE | VOLUME,SEMI FIXED | NVG6TLTAB222 |
| VR420 | V1K62Q2BT8 | VOLUME,SEMI FIXED | NVG6THTB471 |
| VR501 | V1163H3BTC | VOLUME,SEMI FIXED | EVNCYAA03BE3 |
| | | **P.C.BOARD ASSEMBLIES** | |
| PCB010 | A3N806Z010K | PCB ASS'Y | TMC572B |
| PCB110 | A3N806Z110K | PCB ASS'Y | TCC433B |
| | | **MISCELLANEOUS** | |
| B501 | 024HT03553 | CORE,BEADS | W5RH3.5X5X1.0 |
| B502 | 024HT03564 | CORE,BEADS | W4BRH3.5X6X1.0 |
| B504 | 024HT03564 | CORE,BEADS | W4BRH3.5X6X1.0 |
| B701 | 024HT03564 | CORE,BEADS | W4BRH3.5X6X1.0 |
| B702 | 024HT03564 | CORE,BEADS | W4BRH3.5X6X1.0 |
| BT001 | 1412004013 | BATTERY,MANGAN | R03(AB)2PXGPI |
| BT002 | 1412004013 | BATTERY,MANGAN | R03(AB)2PXGPI |
| ⚠CD501 | 1206655823 | CORD,AC BUSH | 1206655823 |
| CD801 | 1278210013 | BRAIDED WIRE | SM1510-001-1A |
| CD802 | WDL6042038 | FLAT CABLE | AWM2468 AWG26 6C BLACK 420MM |
| CD803 | WBL6034038 | FLAT CABLE | AWM2468 AWG26 4C BLACK 340MM |
| CF201 | 1012T5R503 | FILTER,CERAMIC TRAP | TPS5.5MB-TF21 |
| CF202 | 102E038R9B | FILTER,SAW | K3953M |
| CF204 | 1012T03101 | FILTER,CERAMIC TRAP | MKT31.9MA110P-TF |
| CF301 | 1022133R41 | FILTER,SAW | SAFGM33M4VC0Z00B03 |
| CF303 | 1012T04001 | FILTER,CERAMIC TRAP | MKT40.4MA110P-TF |
| CP001 | 069W01001A | CONNECTOR PCB SIDE | 003P-2100 |
| CP101 | 069X160379 | CONNECTOR PCB SIDE | 06JQ-ST |
| CP401 | 069S450089 | CONNECTOR PCB SIDE | A1561WV2-A5P |
| CP501 | 069S320419 | CONNECTOR PCB SIDE | A3963WV2-3PD |
| CP502 | 069S420110 | CONNECTOR PCB SIDE | A1561WV2-2P |
| CP801 | 069S330010 | CONNECTOR PCB SIDE | A2361WV2-3P |
| CP806 | 069W010010 | CONNECTOR PCB SIDE | 005P-2100 |
| CP1001 | 069S140419 | CONNECTOR PCB SIDE | A2502WV2-4P |
| CP802A | 067U006049 | WIRE HOLDER | B2013H02-6P |
| CP802B | 067U006049 | WIRE HOLDER | B2013H02-6P |
| CP803A | 067U004029 | WIRE HOLDER | B2013H02-4P |
| CP803B | 067U004029 | WIRE HOLDER | B2013H02-4P |
| CUS012 | 800WFAA008 | CUSHION C | |
| EL001 | 124116281A | EYE LET | XRY16X28BD |

# ELECTRICAL REPLACEMENT PARTS LIST

| Location | Part Number | Description | |
|---|---|---|---|
| | | **MISCELLANEOUS** | |
| EL002 | 124120301A | EYE LET | XRY20X30BD |
| ⚠F501 | 080NT04004 | FUSE | 50T040H |
| ⚠FB401 | 043220057F | TRANSFORMER,FLYBACK | FJN20A002 |
| FH501 | 06710T0006 | HOLDER,FUSE | EYF-52BC |
| FH502 | 06710T0006 | HOLDER,FUSE | EYF-52BC |
| ⚠ICP501 | 0845T07003 | IC PROTECTOR | 20P_7000 |
| ⚠ICP502 | 0845T03003 | IC PROTECTOR | 20P_3000 |
| OS101 | 0773071001 | REMOTE RECEIVER | RPM7138-H5 |
| ⚠RY501 | 0560V20115 | RELAY | ALKS321 |
| SP351 | 070C555007 | SPEAKER | SG05B01BWA |
| ⚠TH501 | D8E080A100 | DEGAUSS ELEMENT | B59209-J80-A10 |
| TM101 | 076N0GX020 | TRANSMITTER | RC-GX020 |
| TU001 | 0145517007 | TUNER,VHF-UHF | TUWRF4EG-778F2A |
| ⚠V801 | 098W210438 | CRT W/DY | A51LVV896X01(O) |
| X101 | 100CT4R013 | CRYSTAL | HC-49/U-S |
| X601 | 100CT4R408 | CRYSTAL | HC-49/U |
| X602 | 100CT3R509 | CRYSTAL | HC-49/U |
| X901 | 100CT01803 | CRYSTAL | HC-49/U-S |

RESISTOR

RC..... CARBON RESISTOR

CAPACITORS

CC..... CERAMIC CAPACITOR
CE..... ALUMI ELECTROLYTIC CAPACITOR
CP..... POLYESTER CAPACITOR
CPP..... POLYPROPYLENE CAPACITOR
CPL..... PLASTIC CAPACITOR
CMP..... METAL POLYESTER CAPACITOR
CMPL..... METAL PLASTIC CAPACITOR
CMPP..... METAL POLYPROPYLENE CAPACITOR

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