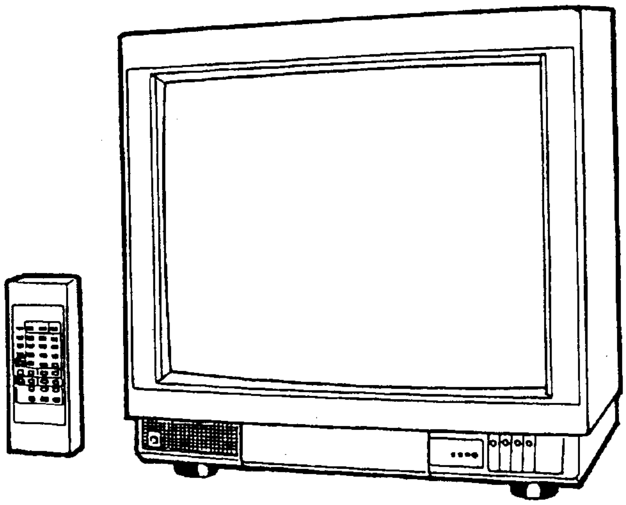
JVC

SERVICE MANUAL

51cm COLOUR TV

C-S2180KM

BASIC CHASSIS
BX II



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★SCHEMATIC DIAGRAM(APPENDED) .... ①~⑫

No.50247
July 1989

SPECIFICATIONS

Item	Content
Dimension	50.4cm (W) × 48.7cm (D) × 46.4cm (H)
Weight	22.4kg
TV RF System	CCIR (B, G,D,K,K1,I&M)
Colour System	PAL / SECAM / NTSC
Receiving Channel & Frequency	
VHF Ch (VL)	47MHz ~ 99MHz
VHF Ch (VH)	174MHz ~ 230MHz
UHF Ch (U)	470MHz ~ 862MHz
Intermediate Frequency	
V IF Carrier	38.9MHz
S IF Carrier	33.4MHz (5.5MHz), 32.4MHz(6.5MHz), 34.4MHz(4.5MHz), 32.9MHz(6.0MHz)
Colour Sub Carrier	PAL (4.43MHz), SECAM (4.40625MHz / 4.25MHz), NTSC(3.58MHz / 4.43MHz)
ANT Input Impedance	75Ω Unbalanced
Power Input	120V ~240V AC,50Hz/60Hz
Power Consumption	110W (max.), 80W (avg.)
Picture Tube	51cm In-Line Type, Flatsquare Tube
Viewable Picture Size	30.5cm (H) × 40.7cm (W)
High Voltage	28kV ±1kV (at zero beam current)
Speaker	5 × 9cm Oval Type, 4Ω
Audio Power Output	5W
Music Power	7W
Video Input (BNC Connector Type)	1Vp-p, 75Ω
Audio Input (RCA Pin Jack Type)	390mV rms (−6dBs), High Impedance
Video Line Output (BNC Connector Type)	1Vp-p, 75Ω
Audio Line Output (RCA Pin Jack Type)	300mV rms(−8dBs) ,Low Impedance
S-VHS	
S-Video Input (4 Pin)	Y: 1Vp-p, 75Ω Positive (Negative sync. provided) C: 0.3Vp-p (Burst level), 75Ω
Audio Input (RCA Pin Jack Type)	500mV rms (−4dBs), High Impedance
Tube	1
IC	15 (In TV), 1 (In REMOCON)
Transistor	77 (In TV), 2 (In REMOCON)

Design & specifications subject to change without notice.

SAFETY PRECAUTIONS

1. The design of this product contains special hardware and 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 product 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 product 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 replace ment 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 the 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 create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

WARNING

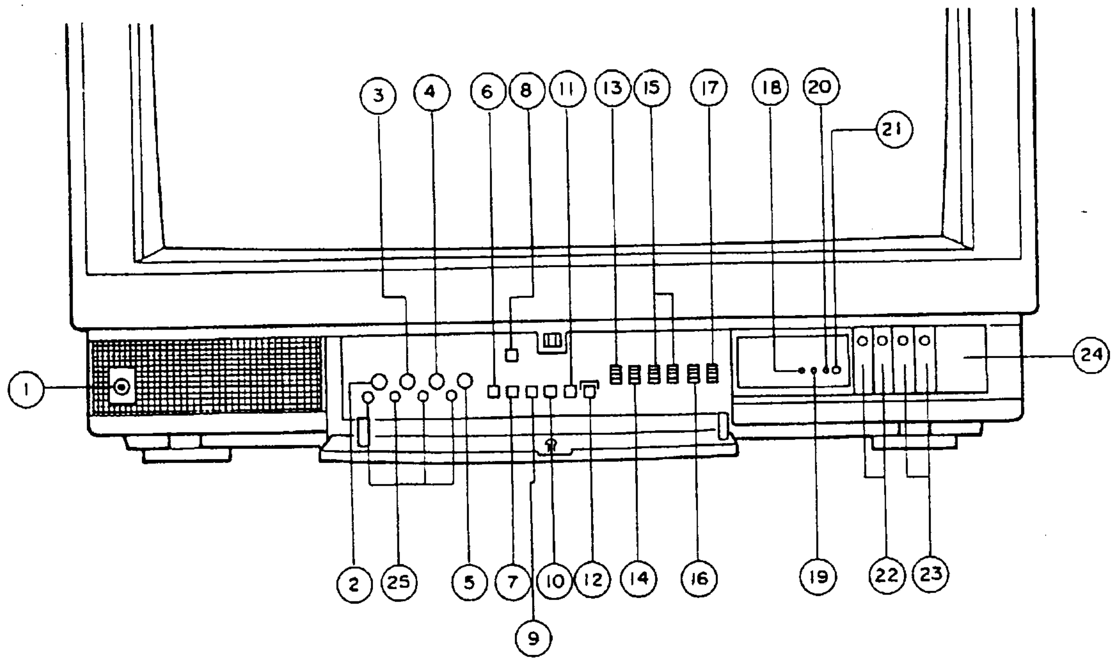
1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

FEATURES

- Sub power supply circuit has been eliminated by using the main switch circuit of power-source circuit to supply power to 12 V power source for microcomputer and −30 V power source for memory.
- Adoption of voltage doubler rectifier switching circuit on power -source circuit enables coping with wide range voltage AC power input.
- V. HOLD and H. HOLD are deleted as a result of employment of IC with built-in deflection circuit that adopts the count-down method for V./H. OSC.
- Newly incorporated is an off-timer with functions of max. 2-hour time setting in 30-min. units and of time remaining indication
- An on-timer also offers max. 24-hour time setting in 1-hour units plus time remaining indication function.
- Multifunctional remote control system enables control Via the hand held remote commander, of many of the receiver's functions.
- Dual-system compatibility: PAL B/G/D/I, SECAM B/G./D/K/K1 and NTSC 3.58/4.43.
- 4-Pin S-VIDEO (separated video) input terminal for direct connection to a Super VHS video recorder, taking full advantage of the new, superior-quality Super VHS video format.

FUNCTIONS

FRONT VIEW



①	HEADPHONE JACK	⑩	4.43(NTSC) BUTTON	⑲	ON TIMER INDICATOR
②	TINT CONTROL	⑪	SKEW BUTTON	⑳	OFF TIMER INDICATOR
③	COLOUR CONTROL	⑫	PRESET BUTTON	㉑	MAIN POWER INDICATOR
④	BRIGHT CONTROL	⑬	MEMORY BUTTON	㉒	CH (+/−) BUTTON
⑤	PICTURE CONTROL	⑭	AUTO SEARCH BUTTON	㉓	VOL. (+/−) BUTTON
⑥	P/S AUTO BUTTON	⑮	TUNING BUTTON	㉔	MAIN POWER BUTTON
⑦	SECAM BUTTON	⑯	TV/VIDEO BUTTON	㉕	SERVICE ADJ. VRS
⑧	DISC BUTTON	⑰	POWER BUTTON		
⑨	3.58(NTSC) BUTTON	⑱	AUTO SEARCH INDICATOR		

CHANNEL MEMORY PRESETTING

1. Press PRESET button to "ON" to engage the Channel Preset mode.

2. Set the colour system button to P/S AUTO,SECAM or NTSC as required.

3. Select the Channel Position number from "0" to "29" using CH (– / +) buttons on the front panel or Numerical Keypad on the Remote Control.

4. Tune to the broadcast station to be stored on the selected Channel Position.

   (A) Using AUTO SEARCH button.

   - Press the AUTO SEARCH button.
     The AUTO SEARCH indicator lights and searching for a TV programme being broadcast begins automatically with the next higher-frequency from the current tuned to station. When a station is reached, searching stops and the AUTO SEARCH indicator goes off. When you wish to re-start auto searching, press the AUTO SEARCH button again. If you wish to stop the auto searching process while in progress, press AUTO SEARCH again.

   Note:
   If the signal of the broadcast station you wish to tune is weak, the auto searching function may not be sufficient. In this case, use TUNING (– / +) buttons.

   (B) Using TUNING (– / +) buttons.

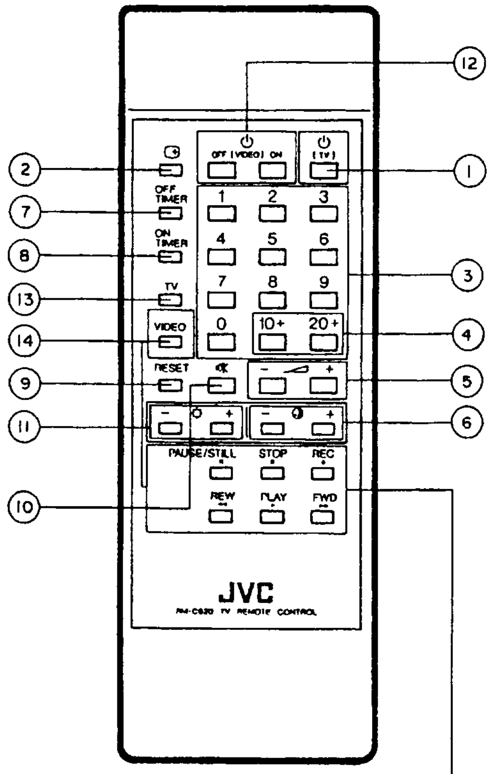
   - Press the TUNING (– / +) buttons to manually tune to a broadcast station. Pressing the " + " button advances to higher frequency stations, and " – " to lower-frequency stations.

5. Press MEMORY button to store the station in memory (Channel Position). The Channel Position number blinks once to show that the station has been memorized in the Channel Position.

6. Repeat steps 2. through 5. to store broadcast stations for up to 30 Channel Positions.

7. Press the PRESET button to "OFF" to disengage the Channel Preset mode.

REMOTE CONTROL



PAUSE/ STILL	STOP	REC
REW	PLAY	FWD

① POWER (TV) BUTTON
② ON-SCREEN BUTTON
③ CHANNEL BUTTON
④ CH. BUTTON (10 + & 20 +)
⑤ VOL. UP-DOWN BUTTON
⑥ COLOUR BUTTON
⑦ OFF-TIMER BUTTON
⑧ ON-TIMER BUTTON
⑨ RESET BUTTON
⑩ MUTE BUTTON
⑪ BRIGHT BUTTON
⑫ POWER ON/OFF (VIDEO) BUTTON
⑬ TV BUTTON
⑭ VIDEO BUTTON

OPERABLE VTRs

With the supplied Remote control unit, some of the functions of the following VTRs can be remotely controlled.
Before start operation, be sure to turn the power of the VTR on.
For detailed operation, refer to the VTR instruction Book.

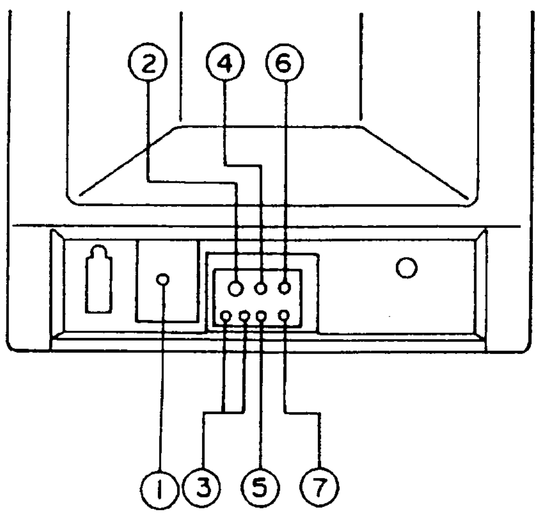
Note: Place the VTR so that it is within the operation range of the Remote control unit.

[ ]: Suffix of each model designate specific areas and specifications.

- OPERABLE VTRs (JVC)

HR-D455[ ]
HR-D565[ ]
HR-D725[ ]
HR-D158MS
HR-D170[ ]
HR-D370[ ]
HR-D755[ ]
HR-D250[ ]
HR-D566[ ]
HR-D157MS
HR-D257MS
HR-D180[ ]
HR-D470[ ]
HR-S5000[ ]

BACK VIEW

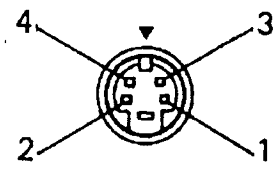


1 ANT. TERMINAL
2 VIDEO INPUT TERMINAL (S-VHS)
3 AUDIO INPUT (L & R) TERMINAL (S-VHS)
4 VIDEO INPUT TERMINAL
5 AUDIO INPUT TERMINAL.
6 VIDEO LINE OUTPUT TERMINAL
7 AUDIO LINE OUTPUT TERMINAL

VIDEO INPUT TERMINAL

(4-pin Y/C separate video input connector)

PIN ASSIGNMENT



Pin No.	Signal
1	GND
2	GND
3	Y (luminance)/1 Vp-p 75 Ω
4	C (chrominance)/0.3 Vp-p (burst level), 75 Ω

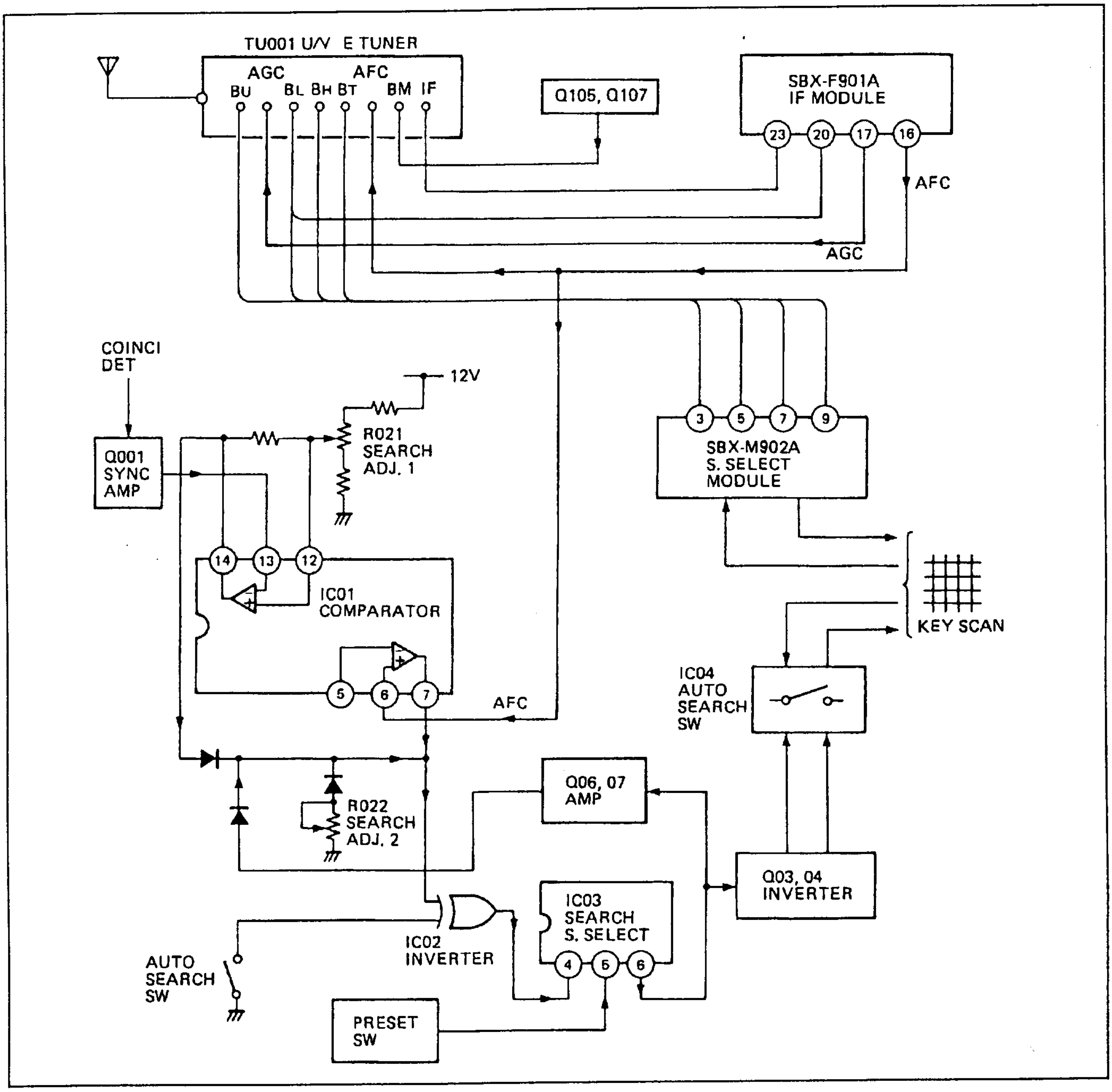
- Connecting to an S-VHS VTR (for playback)
  This TV set is equipped to accept the separated Y (luminance) and C (chrominance) video signals, conforming to an S-VHS (Super VHS) Euro System, ideal for connection of an S-VHS VTR.

1. Connect the VTR's S-VIDEO OUT connector (4-pin) to TV set's S-VIDEO connector (4-pin).
2. Connect the VTR's AUDIO OUT connectors to the TV set's S-AUDIO connectors while making sure that the left and right channels are correctly connected.
3. Press the VIDEO button on the Remote Control or the TV/VIDEO button on the front panel to engage the VIDEO mode.
4. Set the colour system button to either P/S AUTO or SECAM S-VHS VTR as required.
5. Engage the S-VHS VTR's playback mode.

TECHNICAL INFORMATION

CIRCUIT ANALYSIS

•BLOCK DIAGRAM



REGARDING AUTO SEARCH:

1. An auto search circuit has been added to the tuner channel selection circuit to realize speed-varying operations on a level with TTL.
2. The auto search section has the following circuit structure:
   a) Op-Amp circuit with phase correction.
   b) Exclusive OR Gate circuit.
   c) Duplex J-K flip-flop circuit.
   d) Bi-directioal switch circuit.

SPECIFIC SERVICE INSTRUCTIONS

DISASSEMBLY PROCEDURE

REMOVING THE REAR COVER

1. Unplug the power supply cord and remove the nine screws marked Ⓐ shown in Fig. A.

* When reinstalling the rear cover, carefully push it inward after inserting the main PC board into the rear cover groove.

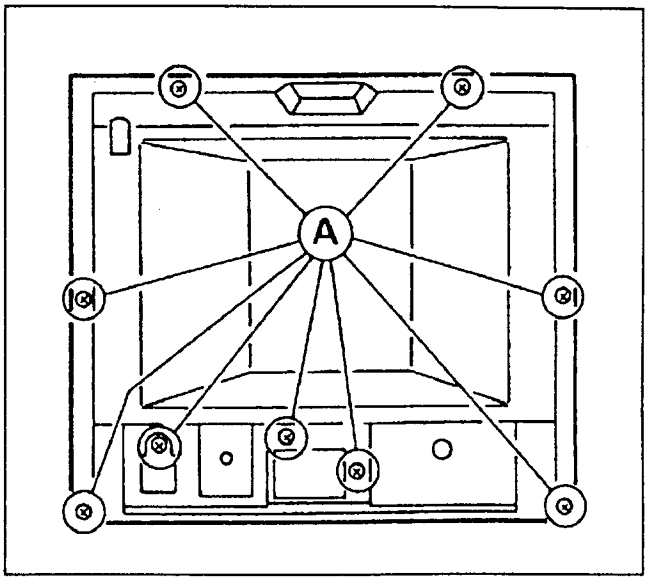


Fig. A

REMOVING THE AUTO-SEARCH & LINE FILTER PC BOARD

* After removing the rear cover,

1. Remove the two screws marked Ⓑ shown in Fig. B.
2. Then remove the AUTO-SEARCH & LINE FILTER PC board toward yourself.

REMOVING THE MAIN P.C BOARD

* After removing the rear cover,

1. As shown in Fig. B, slide and pull out the main P.C board in the arrow direction marked Ⓐ.
(If necessary, take off the wire clamp and connectors, etc.)

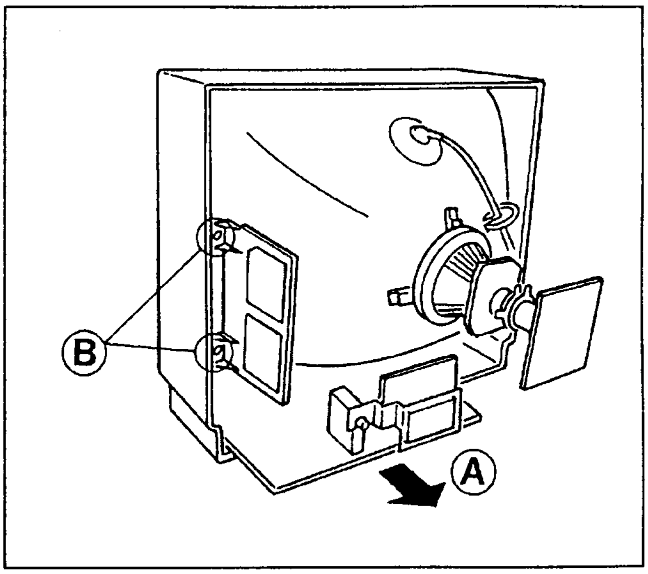


Fig. B

REMOVING THE AV TERMINAL

* After removing the rear cover.

1. As shown Fig.C, while expanding the claw of the AV TERMINAL's legs in the arrow directions Ⓐ,remove the AV TERMINAL by raising it upward in the arrow direction Ⓑ.

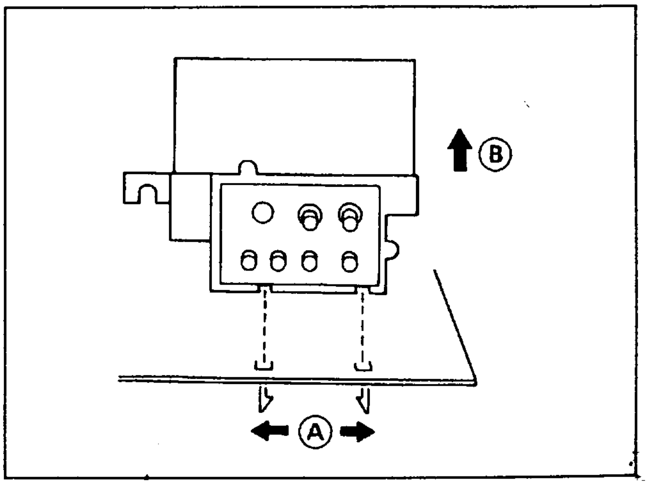


Fig. C

AN EXAMPLE OF PLACEMENT FOR SERVICE

1. As shown in Fig. D, place the unit for service.
2. When the main P.C board, chassis, sub P.C board, etc, have been removed, the wire clamp, connector, earth wire, etc, which were also detached together must be reattached to their original places in order to make preparations for service.
3. While taking care that there is no short circuit with the conductor section, etc., place the unit.
   Insulate the unit with a cardbord, or the like, if necessary.
4. After making sure that there is no short circuit and other obstructive matters with the unit, turn on electricity for service.

* When conducting a check with power supplied, be sure to confirm that the CRT earth wire is connected to the CRT socket board and the MAIN P.C board.

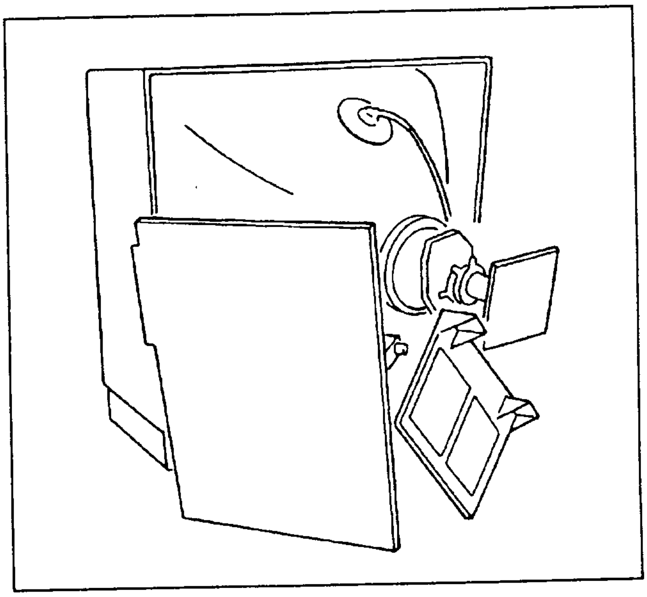


Fig. D

WIRE CLAMPING AND CABLE TIES

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.

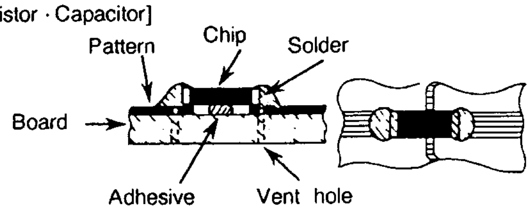
REPLACEMENT OF CHIP COMPONENTS

- **CHIPS ARE NOT USED ON CERTAIN MODELS. REFER TO THE DESCRIPTIONS ON THIS PAGE ONLY WHEN WORKING ON MODELS ON WHICH CHIPS ARE EMPLOYED.**

Replacement of the chip on printed circuit board can be performed easily as follows.

1 When mounted

[Resistor · Capacitor]

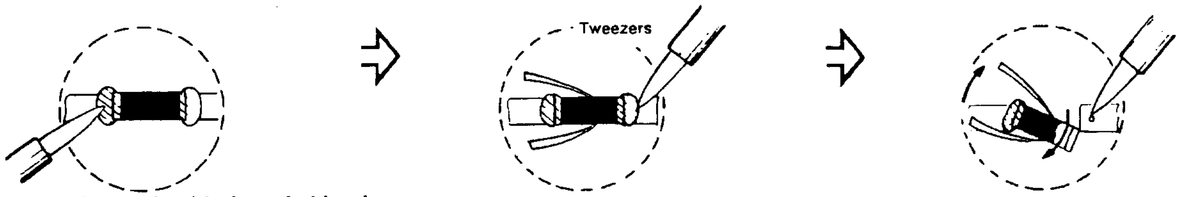


2 Removal of the chip

(1) Remove either of the soldered contacts.

(2) Hold the chip with tweezers and remove the other contact.

(3) Work the chip free from the adhesive with tweezers.

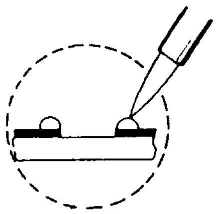


3 Preheating and soldering of chip pieces

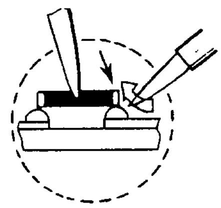
Be sure to preheat chip pieces (except the transistor) especially the capacitor before soldering with hot air, about 150°C (hair dryer or such can be used) for about 2 minutes. Then, immediately solder with an iron of about 30W.

4 Replacing the chip pieces

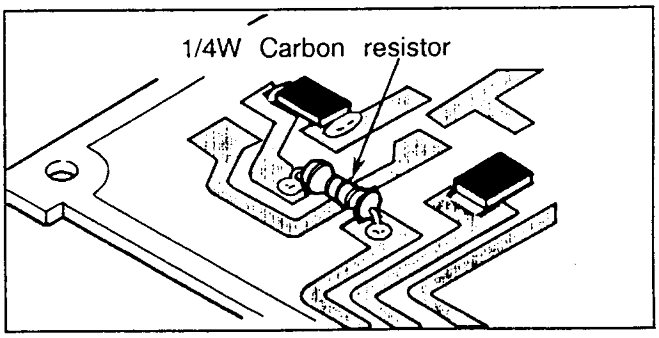
(1) Apply the solder to the board first.



(2) Hold the chip with tweezers and solder it in place, hold the iron at a 45° angle when soldering.

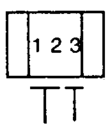


- Discrete parts can be substitutionally mounted as shown in the figure on the right.
  Mounting is also possible by passing the wires from the board front side (parts side) through the chip soldering hole (vent hole of registration part).
  Substitute parts are as follows.
  - Chip Metal Glaze Resistor
    →Carbon Resistor 1/4W ±5%
  - Chip Ceramic Capacitor
    →Ceramic Capacitor 50V ±5%



- Decoding of chip parts constant terms

<Chip Metal Glaze Resistor>



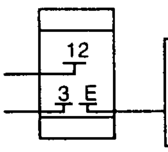
Constant term Multiplier

12×10^3 = 12000Ω
= 12kΩ

<Chip Ceramic Capacitor>

Constant term

Multiplier



K, M, Z, P · · · · · Tolerance of ordinary type

C, P, R, S, T, U · · Temperature coefficient of temperature compensation type

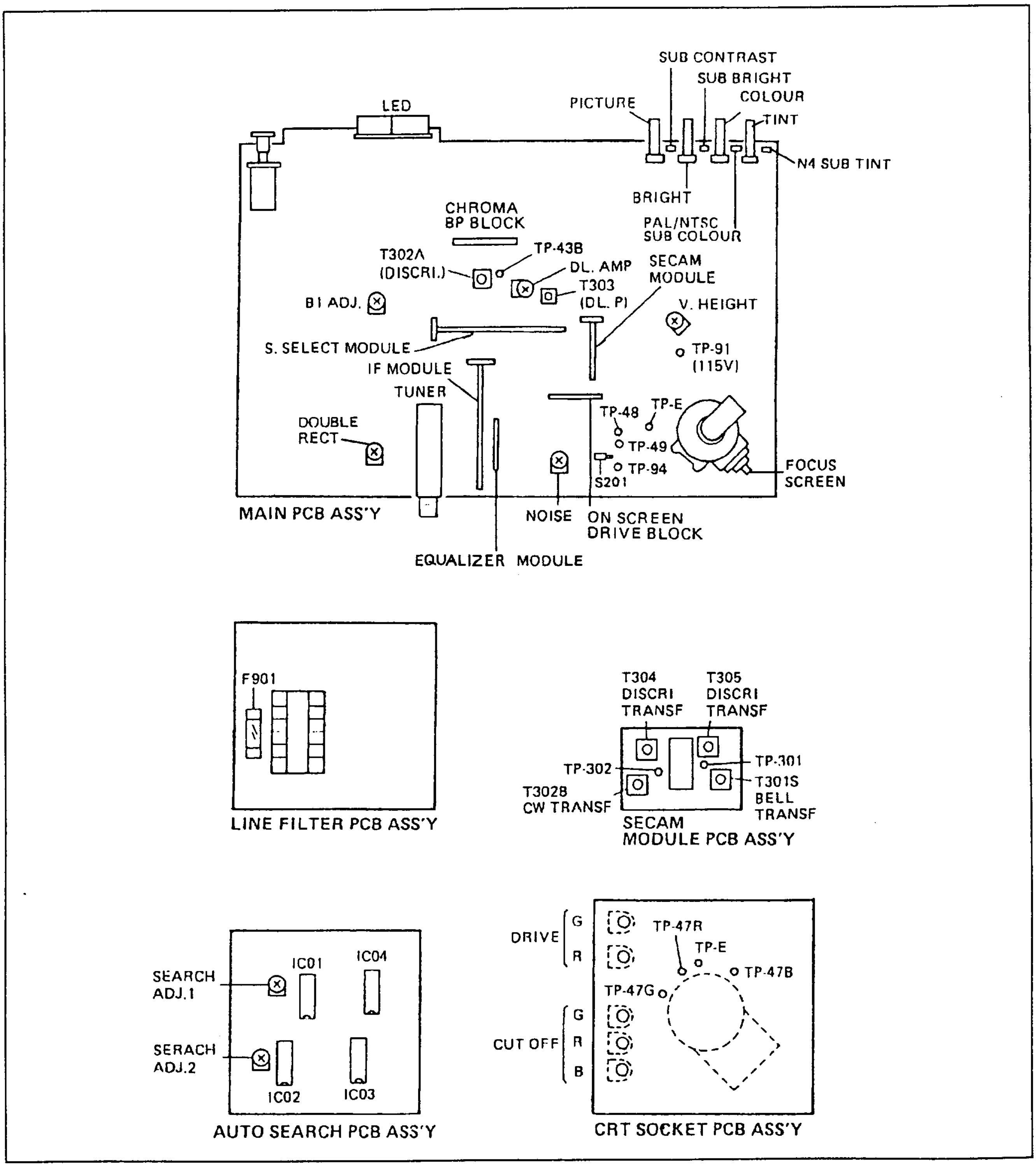
12×10^3 = 12000pF
= 0.012μF

SERVICE ADJUSTMENT

TOOLS AND FIXTURES FOR ADJUSTMENT

- DC VOLTMETER
- OSCILLOSCOPE
- PATTERN GENERATOR (PAL/SECAM/NTSC)

ADJUSTMENT LOCATION

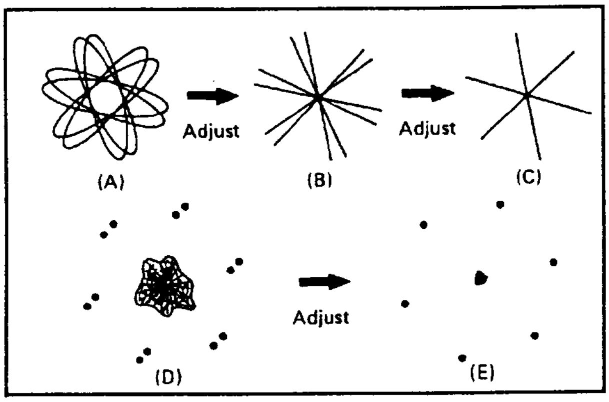
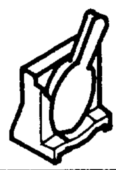


ADJUSTMENT

MAIN CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
B1 POWER SUPPLY	DC Voltmeter	TP-91	B1 ADJ. VR	Connect a tester to TP-91 and TP-E (⏚) to check that the voltage is DC 115V. * The tester must have an internal resistance of 20kΩ /V or above.
DOUBLER RECTIFIER SWITCHING POINT CONTROL	DC Voltmerter	C909	DOUBLE RECT.SW VR	1. Connect power supply of AC145V ±2V. 2. By rotating clockwise the doubler rectifier adj. VR,adjust to set at a point where the both ends voltage of C909 abruptly drops. 3. Next, change the power supply voltage to AC141 V ±2V. 4. Confirm that the both ends voltage of C909 is 120 V DC~140 V DC. 5. Further,change the power supply voltage to AC 149 V ±2V. 6. Confirm that the both ends voltage of C909 is 50 V DC ~80 V DC.
SUB BRIGHT & SUB CONTRAST			SUB BRIGHT SUB CONTRAST	Obtain optimum pictures by adjusting SUB BRIGHT VR & SUB CONTRAST VR. * Avoid excessive brightness.
PAL/NTSC SUB COLOUR			PAL/NTSC SUB COLOUR VR	1. Receive a SECAM (System SW: SECAM) colour bar signal. 2. Adjust the colour control knob to obtain natural colour density. 3. Receive a PAL (System SW: AUTO) colour bar signal. 4. Adjust the PAL / NTSC SUB COLOUR VR until natural colour density is obtained.
NOISE (RF AGC)			NOISE VR	1. Turn the NOISE VR fully counter clockwise (or clockwise) so that noise is synchronized with the pictures. 2. Then slowly turn the NOISE VR clockwise (or counter clockwise) and stop it when noise disappears. 3. Change the channel, and check that no trouble is encountered. * This adjustment should be made when noise is annoying, when such symptoms are detected as stripe-pattern interference in weak field areas, inter modulation noise in strong field areas, and horizontal strethcing of pictures.

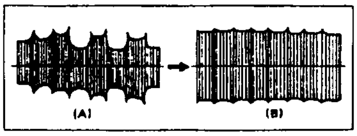
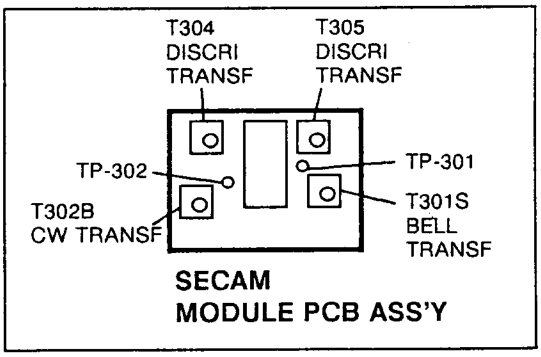
MAIN CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
V. HEIGHT			V. HEIGHT VR	1. Receive a picture that enables vertical symmetry to be checked. 2. Using the V HEIGHT VR reduce the picture vertically. 3. Upon adjusting with the V HEIGHT VR, return the picture to normal vertically. * Pictures that enable vertical symmetry to be checked should be circles and crosshatches.
FOCUS			FOCUS VR	1. Adjust the FOCUS VR to obtain clear pictures. 2. Check that pictures have been adjusted to optimum appearance in both central and peripheral areas of the screen.
CHROMA CIRCUIT  	· Oscilloscope · Pattern Generator (PAL)	TP-48 (Y-axis) TP-49 (X-zxis)	DL AMP VR DL P TRANSF. DISCRI TRANSF.	· PAL 1. Receive a PAL colour bar signal and set the oscilloscope at the X-Y mode and then connect CH-1 (X-axis) to TP-49 and CH-2 (Y-axis) to TP-48 respectively. 2. Short the C317 capacitor with a jumper wire and connect pin ㉔ and ㉘ of IC201 with 5.6kΩ resistor. See Lissajous' Fig. (A). 3. Adjust the PAL/NTSC SUB COLOUR VR so that the figure is not saturated. 4. Adjust the DL AMP VR so that the figure is altered to (B) from (A). 5. Adjust the DL P TRANSF (T303) so that the figure is altered to (C) from (B). 6. Repeat adjustments 4. and 5. more than twice. 7. Remove the shorted jumper wire and 5.6kΩ resistor from pin ㉔ and pin ㉘ of IC201. 8. Then adjust the DISCRI TRANSF (T302A: Burst cleaning) so that the figure is minimized to (E) from (D).
N4 SUB TINT (ONLY NTSC)			N4 SUB TINT VR	1. Receive an NTSC(3.58 MHz) colour bar singal. (System SW: 3.58) 2. Adjust COLOUR and TINT knobs to obtain natural colour density. 3. Receive an NTSC (4.43 MHz) colour bar singal. (System SW: 4.43) 4. Adjust the N4 SUB TINT VR until natural tint is obtained.
HORIZONTAL LINE			SERVICE SWITCH	1. Turning the SERVICE SWITCH from the N side to the S side will bring the horizontal line display to the screen. Ⓢ Will appear a H. LINE  Ⓝ Normal picture

AUTO SEARCH CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
SEARCH ADJUSTMENT	DC Voltmeter	Pin ⑫ of ICO1 Anode side of D002	SEARCH ADJ. 1 VR SEARCH ADJ. 2 VR	* Carry out these adjustments in a non-signal state. 1. Connect a voltage meter to pin ⑫ of IC01 on the AUTO SEARCH PC Board and adjust SEARCH ADJ. 1 VR until the voltage is DC3V ±0.2V. 2. Then connect the voltage meter to D002 (anode side) and adjust SEARCH ADJ. 2 VR until voltage is DC 8.2V ±0.1V.

SECAM MODULE CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
CHROMA CIRCUIT	Oscilloscope DC Voltmeter	TP-301 TP-302	BELL TRANSF. (T301S) CW TRANSF (T302B) DISCRI TRANSF (T304/T305)	· SECAM 1. Receive a SECAM colour bar signal (System SW: SECAM). 2. Connect an oscilloscope to pin ⑮ (or TP-301) of IC301. 3. Adjust the BELL TRANSF (T301S) for flat waveform as altered to figure (B) from (A).  4. Connect a voltmeter to pin ⑫ (or TP-302) of IC301. 5. Adjust CW TRANSF (T302B) for minimum DC voltage. 6. Adjust the DISCRI TRANSF (T304 & T305) until colours are eliminated from the black-and-white (or white) sections of colour bars on the screen. 

PURITY, CONVERGENCE AND WHITE BALANCE

* The locations of SERVICE SWITCH, SCREEN VR, CUT-OFF VR and DRIVE VR are described in the ALIGNMENT LOCATION of SERVICE ADJUSTMENT or the SCHEMATIC DIAGRAM.

PICTURE TUBE

The picture tube is a precision in-line gun type. For this picture tube, dynamic convergence is carried out by a precision deflection yoke which eliminated the use of convergence yoke and convergence circuit. The adjustment of picture tube is therefore made easier as only the adjustment of static convergence by using a magnetic is enough. The deflection yoke and purity/convergency magnets assembly has been set at the factory and requires no field adjustments. However, should the assembly be accidentally jarred or tampered with, some or all adjustments may by necessary.

COLOR PURITY & VERTICAL CENTER

Loosen yoke retaining screw (Fig. B-1) . With a sharp knife cut between the picture tube and the wedge. Remove wedges completely and clean off dried adhesive from the picture tube. PAINT is used to lock the tabs of the purity/convergence magnet assembly in place (Fig. B-1) . The paint must be removed with the end of a screwdriver before any adjustments are attempted.

(As to models equipped with a magnet locking ring, beforehand loosen it.)

1. Select no signal UHF channel. (or Display a monochrome pattern)
2. Let the purity tabs come in line horizontally as is shown in Fig. B-2. A long tab should be in the same direction as the other short tab.
3. Move the yoke slowly backward.
4. Turn the GREEN CUT-OFF VR to maximum and the RED and BLUE CUT-OFF VRs to minimum. Then adjust the SCREEN VR so that the green band can be seen best. (Fig. B-3)
5. Rotate the two tabs in the opposite directions and with them kept at an angle, together in either direction so that the green band is centered on the picture tube.
6. Check the vertical center position by displaying a horizontal line. (Select the CUT-OFF SERVICE SWITCH from N to S and a HORIZONTAL LINE will appear.) Unless correct, bring it to the nearest center by rotating the two tabs, kept at an angle, together in either direction. (Fig. B-4)
7. Repeat steps 5 and 6 alternately until the green band and the vertical center come to the center.
8. Move the yoke slowly towards the bell of the tube so that the whole surface of the picture tube is filled with a green pure raster.
9. Turning RED or BLUE CUT-OFF VR to maximum and GREEN CUT-OFF VR to minimum, make sure of a red or blue pure raster.
10. Secure yoke retaining screw (do not install wedges at this time) .

(As to models equipped with a magnet locking ring, secure it and keep six magnets from moving even if it is touched slightly.)

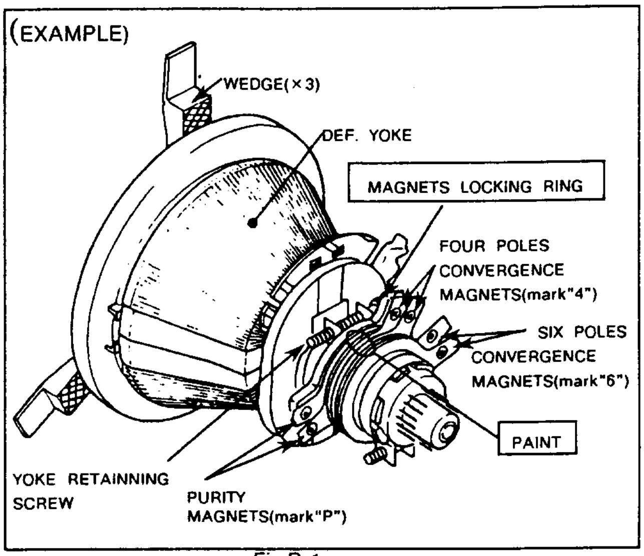


Fig.B-1

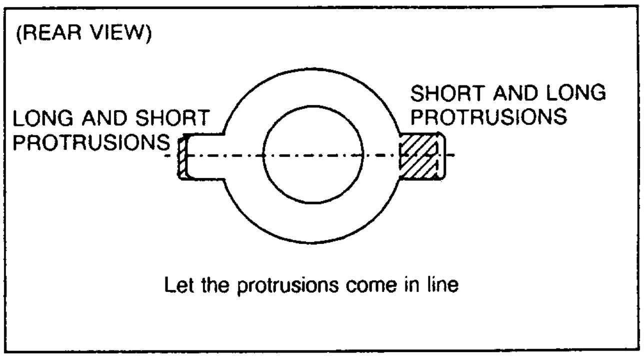


Fig.B-2

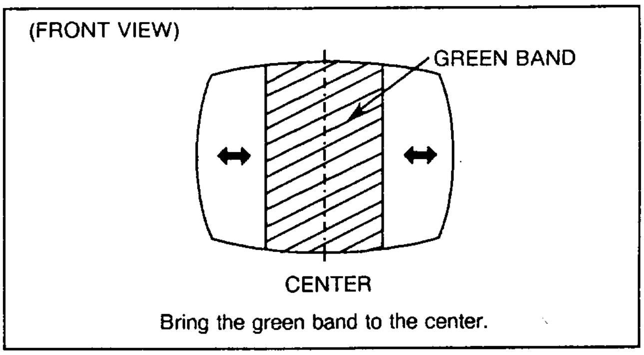


Fig.B-3

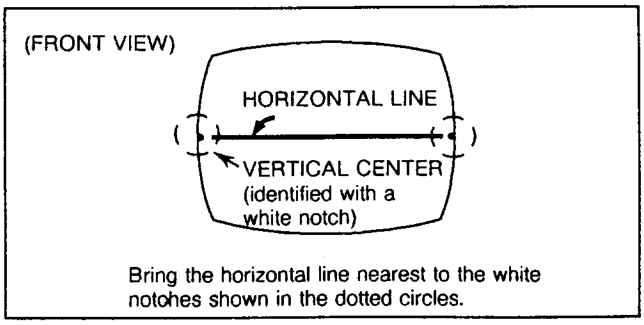


Fig.B-4

STATIC CONVERGENCE & DYNAMIC CONVERGENCE

1. Connect a crosshatch generator to the input terminals and adjust BRIGHTNESS and CONTRAST control for a distinct pattern.
2. Adjust the convergence around the edges of the picture tube by tilting the yoke, up-down and left-right, and temporarily install one wedge at the top of the yoke. (Fig. B-7, 8, 9)
3. Rotate the front pair of tabs (four pole convergence magnet) as a unit to minimize the separation of the red and blue lines around the center of the screen. To adjust the convergence of red and blue, vary the angle between the tabs (Fig. B-5)
4. Rotate the rear pair of tabs (six pole convergence magnets) as a unit to minimize the separation of the magenta (R/B) and green lines. (Fig. B-6)
5. Adjust the spacing of the rear tabs to converge the magenta and green lines.
6. Apply paint to fix six magnets.
   (As to models equipped with a magnet locking ring, tighten it.)
7. Remove the wedge installed temporarily on the yoke.
8. Tilting the angle of the yoke up, down and sideways, and adjust the yoke so as to obtain the circumference convergence. (Fig. B-8, 9)
9. Insert wedges to the position as shown in Fig. B-10 to obtain the best circumference convergence.
10. Wedge has a backing of double sided adhesive tape. Therefor, tear off one side of adhesive tape, and fix the wedges.
11. White balance adjustment (Black & White tracking) can now be performed.

WHITE BALANCE ADJUSTMENT
(Black and White Tracking)

1. Display a monochrome pattern.
2. Set the RED and GREEN DRIVE VRs for their mechanical center.
3. Turn the RED, GREEN and BLUE CUT-OFF VRs and the SCREEN VR fully counterclockwise.
4. Display a horizontal line. (Select the CUT-OFF SERVICE SWITCH from N to S and a HORIZONTAL LINE will appear.)
5. Turn SCREEN VR slowly clockwise until a very faint horizontal line appears.
6. Turn the CUT-OFF VR of the color which has appeared first, clockwise by about 10°and then adjust the SCREEN VR again so that the color may shine faintly.
7. Turn the other color CUT-OFF VRs slowly clockwise until a reasonable white line appears.
8. Return the monochrome pattern. (When returning a monochrome pattern select the CUT-OFF SERVICE SWITCH from S to N and a monochrome pattern will appear.)
9. Adjust the RED and GREEN DRIVE VRs for best white highlights.

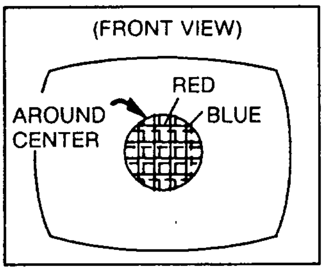


Fig.B-5

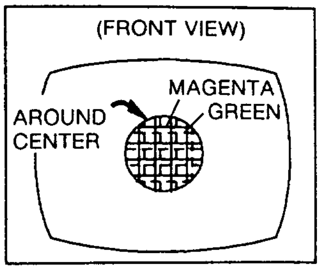


Fig.B-6

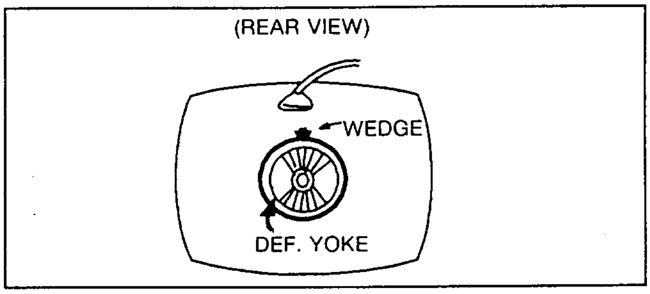
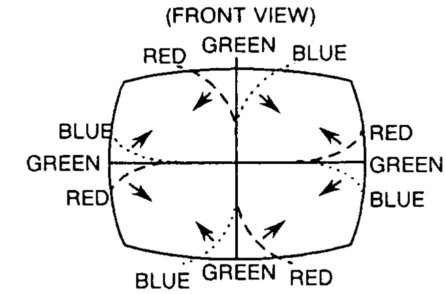
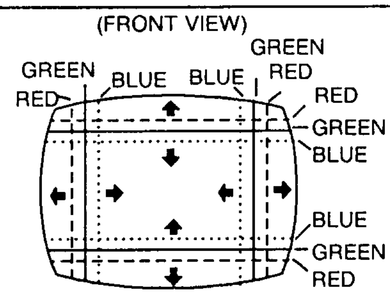


Fig.B-7



Tilting the yoke upward will move the lines as shown with the arrows.

Fig.B-8



Tilting the yoke to the right will move the lines as shown with the arrows.

Fig.B-9

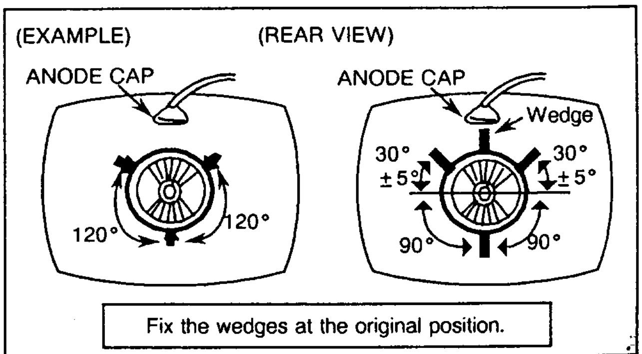


Fig.B-10

PARTS LIST

CAUTION

- The parts marked ⚠ are very important for the safety. When replacing these parts, be sure to use specified ones to secure the safety and performance.
- The module circuit board is supplied together with the assembly, but the parts which do not have the drawing in this Parts List, P. C. Board Ass'y and the Parts No. columns of which are filled with lines —— . will not be supplied.
- As a rule, the resistors and capacitors which are indicated as shown in (NOTE 2) "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 (NOTE 2).

(NOTE 1) 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
±1%	±2%	±5%	±10%	±20%	±30%	+30% -10%	+50% -10%	+80% -20%	+100% -0%

(NOTE 2) HOW TO EXPRESS PARTS NUMBERS OF STANDARD PARTS

■ RESISTOR

Q R □ □ □ □ □ — ○ ○ ○

Kind | Rated Power | Shape | Tolerance | Resistance

Symbol	Part Name
C	COMP.R
D	C R
S	CH MG R

Symbol	Rated Power
0 1	1 w
1 2	1/2 w
1 4	1/4 w
1 6	1/6 w
1 8	1/8 w

Symbol	Shape
1	Straight lead
8	Chip

Indicate with first two-figure expressed by Ω and following 0.
please note that,in case of resistance less than 10 Ω, a letter "R"will be effective as point.

EX.

2.2 Ω	=			2R2
470 Ω	=	47×10^1	→	471
150kΩ	=	15×10^4	→	154

■ CAPACITOR

Q □ □ □ □ □ □ — ○ ○ ○

Kind | Shape | Rated Voltage | Tolerance | Capacitance

Symbol	Part Name
CS	C CAP.
CS	CH C CAP.
ET	E CAP.
FM	M CAP.

6Figure \ 5Figure	0	1	2
A		10V	100V
C		16V	160V
D			200V
E		25V	250V
H		50V	500V
J	6.3V	63V	
V		35V	

Indicate with first two-figure expressed by pF and following 0.
Please note that,in case of capacitance less than 10 pF a letter "R" will be effective as point.

EX

5pF	=			5R0
1000pF	=	10×10^2	→	102
47μF	=	47×10^6	→	476

Symbol	Shape
1	Straight lead
1	Leads in the same direction
8	Chip
A	Leads in the same direction (compact part)

MAIN PARTS LIST

SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
CRT & TUNER				
		A75034-B	P&C MAGNET	
		CE40764-00A	WEDGE ASSY	(×3)
	⚠	CE20093-A0A	DEFLECTION YOKE	DY01
	⚠	CELD008-002	DEGAUSING COIL	L01
TU1001	⚠	EM7451ES-B05	U/V E TUNER	
	⚠	A51JFC61X-H-AO	PICTURE TUBE	V01
VARIABLE R				
R1104		QVPE611-203HZ	V R (NOISE)	20kΩ B
R1221		QVPA603-333A	V R (SUB CONT)	33kΩ B
R1222		QVAA009-CB14A	V R (PICTURE)	10kΩ B
R1227		QVPA603-103A	V R (SUB BRIGHT)	10kΩ B
R1230		QVAA010-CB14A	V R (BRIGHT)	10kΩ B
R1309		QVPA603-103A	V R (PAL SUB COLOUR)	10kΩ B
R1335		QVPA603-103A	V R (N4 SUB TINT)	10kΩ B
R1337		QVAA009-CB14A	V R (TINT)	10kΩ B
R1339		QVPE611-102HZ	V R (DL AMP)	1kΩ B
R1361		QVAA009-CC14A	V R (COLOUR)	10kΩ C
R1403		QVPA801-201M	TRIM. R (V HEIGHT)	200Ω B
R1912		QVPA804-503M	V R (B1 ADJ)	50kΩ B
R1944		QVPA803-103M	V R (DOUBLE RECT.	10kΩ B
R3009		QVPH801-502M	V R (B CUT OFF)	5kΩ B
R3015		QVPH801-502M	V R (R CUT OFF)	5kΩ B
R3017		QVPH801-502M	V R (G CUT OFF)	5kΩ B
R3021		QVPH801-201M	V R (R DRIVE)	200Ω B
R3023		QVPH801-201M	V R (G DRIVE)	200Ω B
R8021		QVPE611-503HZ	V R (SEARCH 1)	50kΩ B
R8022		QVPE611-503HZ	V R (SEARCH 2)	50kΩ B
TRANSFORMER				
	⚠	CE41101-00A	H. V. TRANSF.	T1522
T1552	⚠	CE40203-00A	DRIVE TRANSF.	
T1901	⚠	CE41100-00A	SW TRANSF	
T1902	⚠	CE41059-00B	DRIVE TRANSF.	
DIODE				
D1309		MA4030 (M) -Y	ZENER DIODE	
D1311		MA4075 (H) -Y	ZENER DIODE	
D1314		RD5. 6ES (B3) -Y	ZENER DIODE	
D1321		RD5. 6ES (B3) -Y	ZENER DIODE	
D1502		MA4056 (M) -Y	ZENER DIODE	
D1507	⚠	MA4091 (M) -Y	ZENER DIODE	
D1510		MA4051 (M) -Y	ZENER DIODE	
D1512		RD8. 2E (B2)	ZENER DIODE	
D1513		RD8. 2E (B2)	ZENER DIODE	
D1551		DFA1A4-Z	SI. DIODE	
D1552		DFA1A4-Z	SI. DIODE	
D1553		RH1S-Z	SI. DIODE	
D1572	⚠	MA4068 (L) -Y	ZENER DIODE	
D1580		1SS82-Y	SI. DIODE	
D1901		LB-156-LFB	DIODE BRIDGE	
D1925		RD9. 1E (B)	ZENER DIODE	
D1929		RD20E (B3)	ZENER DIODE	
D1943		RD20EV2-K	ZENER DIODE	
D1945		LB-156-LFB	DIODE BRIDGE	
D4001		SLR-40VR5F	L. E. D.	POWER
D4002		GL4HS8	L. E. D.	OFF TIMER
D4003		SLR-40VR5F	L. E. D.	ON TIMER
D4004		GL4EG8	L. E. D.	SEARCH
D7002		RD12ES (B) -T2	ZENER DIODE	
D7011		RD12ES (B) -T2	ZENER DIODE	

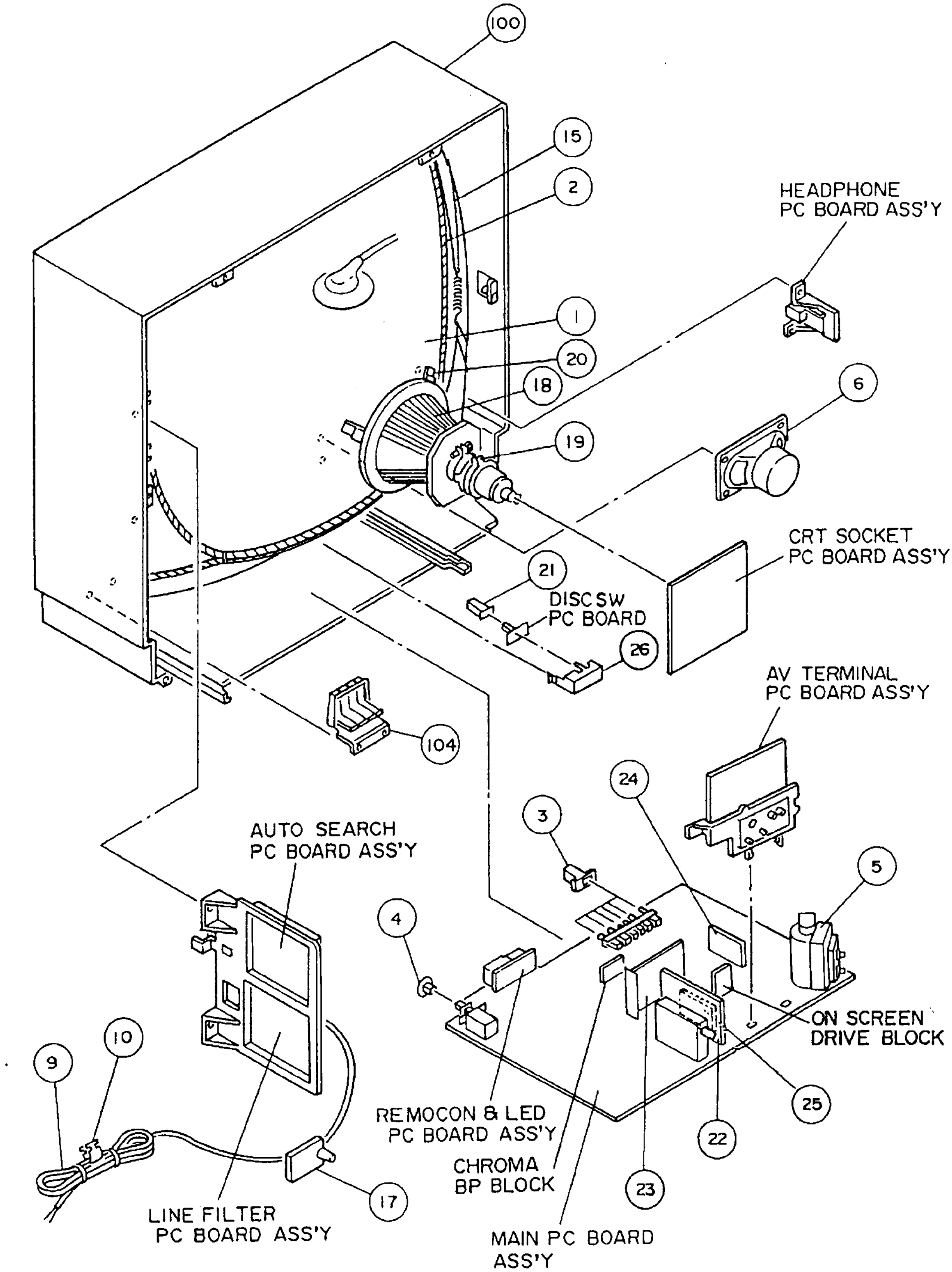
SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
DIODE				
D7012		RD12ES (B) -T2	ZENER DIODE	
TRANSISTOR				
Q1551	⚠	2SD1427	SI. TRANSISTOR	H. OUT
Q1901		2SC2655 (Y) -Y	SI. TRANSISTOR	
Q1902		2SA966-Y	SI. TRANSISTOR	
Q3001		2SC2371 (K-M)	SI. TRANSISTOR	
Q3002		2SC2371 (K-M)	SI. TRANSISTOR	
Q3004		2SC2371 (K-M)	SI. TRANSISTOR	
IC				
IC1201		M52016SP	I. C. (M)	
IC1401		UPC1488H	I. C.	
IC1651		TA7222AP	I. C. (M)	
IC1721		AN78L05-Y	I. C.	
IC1901	⚠	STR54041S	I. C. (H)	
IC1921		UPC574J	I. C.	
IC4001		GP1U501W	IR DETECT UNIT	
IC7001		TC4066BP	I. C. (M)	
IC7002		TC4066BP	I. C. (M)	
IC7003		TC4066BP	I. C. (M)	
IC8001		MB3614	I. C.	
IC8002		TC74HC86P	I. C. (M)	
IC8003		TC74HC109P	I. C.	
IC8004		TC4066BP	I. C. (M)	
IC8005		AN78L05	I. C. (M)	
OTHERS				
		SBX-F901A	IF MODULE	
		SBX-M902A	S. SELECT MODULE	
		SBX-S904A	SECAM MODULE	
		SBX-E901A	EQALIZER MODULE	
		CM11526-F0D	FRONT CABI ASSY	Include No. 101-109
		CM33766-A01	POWER KNOB	
		CM33765-B0A	AV TERMINAL ASSY	
		CM33772-002	CH KNOB	
	⚠	QMP51B8-200R	POWER CORD	
		CM41678-B01	PUSH KNOB	
		CM41678-B01	PUSH KNOB	(×6)
		CM11491-B02-M0	REAR COVER	
CP1401	⚠	ICP-N10	IC PROTECTER	
CP1901	⚠	ICP-N5	IC PROTECTOR	
DL1201		CE41125-A01	DELAY LINE	
DL1301		CE41082-001	1H DELAY LINE	
F9901	⚠	QMF51E2-3R15S	FUSE	3. 15A
J5001		AX49607-004	HEADPHONE JACK	
J7001		QMD4A04-001	DIN CONNECTOR	
J7002		CEMN021-001	PIN JACK	
LF1901	⚠	CE41213-00A	LINE FILTER	
LF9902	⚠	CE40719-00A	LINE FILTER	
R1552	⚠	QRH127J-2R2M	F R	2. 2 Ω 1/2W J
R1555	⚠	QRH017J-680M	F R	68 Ω 1W J
R1571	⚠	QRH017J-4R7M	F R	4. 7 Ω 1W J
R1580	⚠	QRZ0054-150M	F R	15 Ω 1/4W J
R1657	⚠	QRZ0054-3R9M	F R	3. 9 Ω 1/4W J
R1908	⚠	QRZ0054-6R8M	F R	6. 8 Ω 1/4W J
R1916	⚠	QRH017J-2R2M	F R	2. 2 Ω 1W J
R1934	⚠	QRH017J-101M	F R	100 Ω 1W J
S0001		QSP2B22-C02	PUSH SWITCH	DISC SW
S1201		QSL4A13-C02	LEVER SWITCH	SERVICE SW

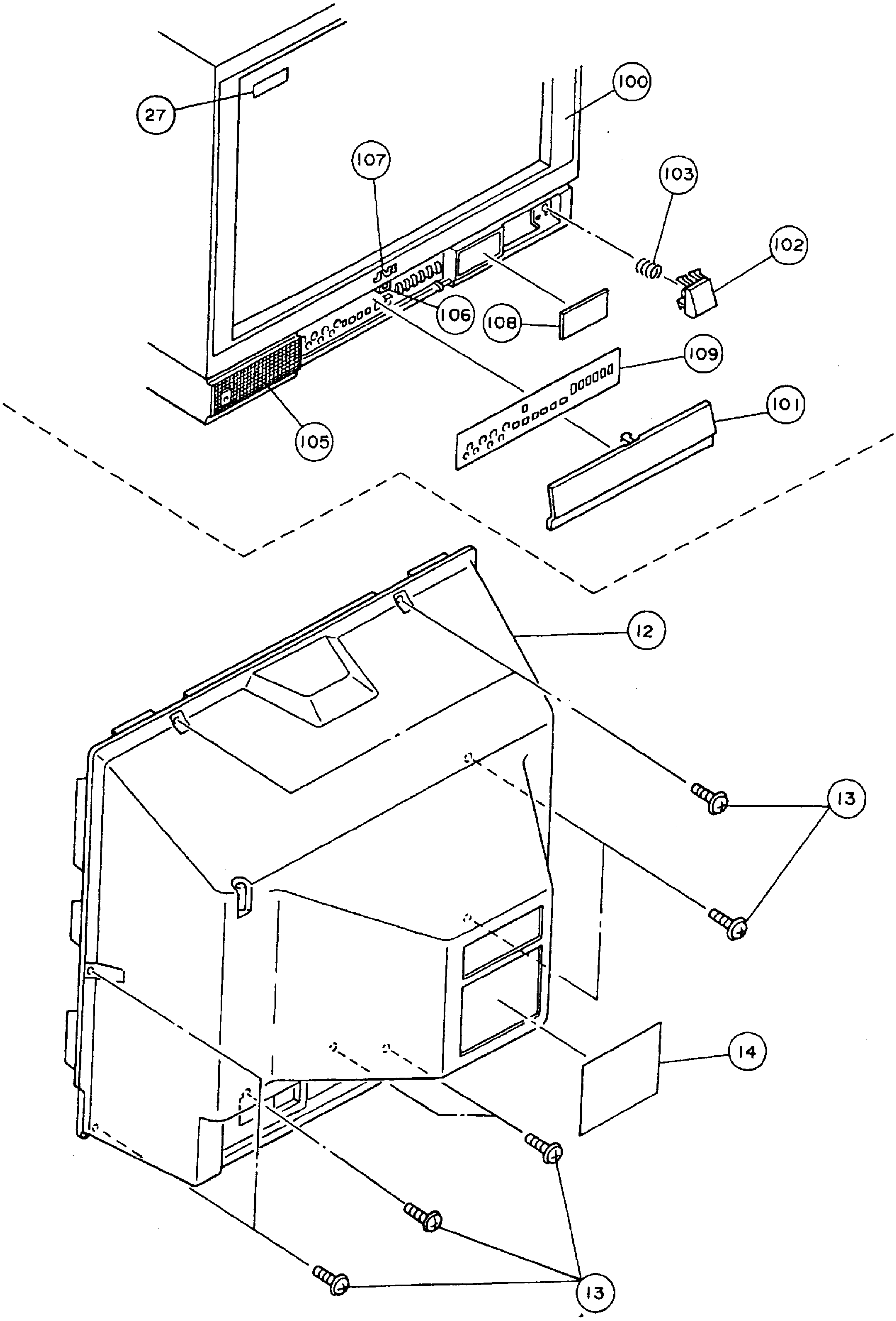
SYMBOL NO.	⚠	PART NO.	PART NAME	REMARKS
OTHERS				
S1701		QST3621-C01	PUSH SWITCH	SECAM/SKEW/PRESET
S1703		QSP4H11-C02	PUSH SWITCH	POWER
S1704		QSP4H11-C02	PUSH SWITCH	TV/VIDEO
S1705		QSP4H11-C02	PUSH SWITCH	TUNING △
S1706		QSP4H11-C02	PUSH SWITCH	TUNING ▽
S1707		QSP4H11-C02	PUSH SWITCH	MEMORY
S1708		QSP4H11-C02	PUSH SWITCH	CH △
S1709		QSP4H11-C02	PUSH SWITCH	CH ▽
S1710		QSP4H11-C02	PUSH SWITCH	VOL △
S1711		QSP4H11-C02	PUSH SWITCH	VOL ▽
S1712		QSP4H11-C02	PUSH SWITCH	AUTO SEARCH
S1901	⚠	QSP4D21-C06	PUSH SWITCH	MAIN POWER
TH1901	⚠	A76038-T	POSISTOR	
X1301		CE41092-00A	CRYSTAL	
X1302		CE41115-001	CRYSTAL	
X1501		CSB500F9	CERAMIC RESONATO	R

EXPLODED VIEW PARTS LIST

⚠	SYMBOL NO.	PART NO.	PART NAME	REMARKS
⚠	1	A51JFC61X-H-AO	PICTURE TUBE	V01
⚠	2	CELD008-002	DEGAUSING COIL	L01
	3	CM41678-B01	PUSH KNOB	(×6)
	4	CM41677-A01	KNOB CAP	
⚠	5	CE41101-00A	H. V. TRANSF.	T1522
	6	FF9050-024	CONE SPEAKER	SP01
⚠	9	QMP51B8-200R	POWER CORD	
	10	N47971	CORD CLAMP	
	12	CM11491-B02-M0	REAR COVER	
	13	GBSA4018N	W TAP SCREW	(×9)
	14	CM20162-030 (R)	ROLL R LABEL	
	15	CH30385-00A	BRAIDED ASSY	
	17	CM21165-001-V0	POWER CORD CLAMP	
⚠	18	CE20093-A0A	DEFLECTION YOKE	DY01
	19	A75034-B	P&C MAGNET	
	20	CE40764-00A	WEDGE ASSY	(×3)
	21	CM41678-B01	PUSH KNOB	
	22	SBX-F901A	IF MODULE	
	23	SBX-M902A	S. SELECT MODULE	
	24	SBX-S904A	SECAM MODULE	
	25	SBX-E901A	EQALIZER MODULE	
	26	CM33820-B01	PB HOLDER	
	27	JAPAN-ST	JAPAN STICKER	
	100	CM11526-F0D	FRONT CABI ASSY	Include No. 101-109
	101	CM21747-004	DOOR	
	102	CM33766-A01	POWER KNOB	
	103	CM30861-065	SPRING	
	104	CM33772-002	CH KNOB	
	105	CM33537-A01	SPEAKER NET	
	106	CM45436-00A	DOOR LATCH	
	107	CM43094-002	JVC MARK	
	108	CM33614-B03	INDICATOR WINDOW	
	109	CM21741-E04	CONTROL SHEET	

EXPLODED VIEW




27
100
107
103
102
106
108
109
101
105
12
13
14
13

PRINTED CIRCUIT BOARD PARTS LIST

MAIN PC BOARD ASS'Y (SBX-1956A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R1104	QVPE611-203HZ	V R (NOISE)	20kΩ B
R1221	QVPA603-333A	V R (SUB CONT)	33kΩ B
R1222	QVAA009-CB14A	V R (PICTURE)	10kΩ B
R1227	QVPA603-103A	V R (SUB BRIGHT)	10kΩ B
R1230	QVAA010-CB14A	V R (BRIGHT)	10kΩ B
R1309	QVPA603-103A	V R (PAL SUB COLOUR)	10kΩ B
R1335	QVPA603-103A	V R (N4 SUB TINT)	10kΩ B
R1337	QVAA009-CB14A	V R (TINT)	10kΩ B
R1339	QVPE611-102HZ	V R (DL AMP)	1kΩ B
R1361	QVAA009-CC14A	V R (COLOUR)	10kΩ C
R1403	QVPA801-201M	TRIM. R (V HEIGHT)	200Ω B
R1912	QVPA804-503M	V R (B1 ADJ)	50kΩ B
R1944	QVPA803-103M	V R (DOUBLE RECT.	10kΩ B
RESISTOR			
R1235	QRG019J-150S	OM R	15 Ω 1W J
R1519	QRG029J-121A	OM R	120 Ω 2W J
⚠ R1522	QRD161J-683Y	C R	68kΩ 1/6W J
R1524	QRG029J-151A	OM R	150 Ω 2W J
R1531	QRG029J-820A	OM R	82 Ω 2W J
⚠ R1532	QRD161J-223Y	C R	22kΩ 1/6W J
⚠ R1533	QRD143J-6R8SX	C R	6.8 Ω 1/4W J
⚠ R1534	QRD161J-683Y	C R	68kΩ 1/6W J
R1551	QRG019J-471S	OM R	470 Ω 1W J
R1553	QRX029J-3R3A	MF R	3.3 Ω 2W J
R1554	QRX029J-4R7	MF R	4.7 Ω 2W J
⚠ R1572	QRV141F-7681AY	MF R	7.68kΩ 1/4W F
⚠ R1573	QRV141F-2491AY	MF R	2.49kΩ 1/4W F
R1902	QRF204K-5R6	UNF R	5.6 Ω 20W K
R1904	QRG029J-473A	OM R	47kΩ 2W J
R1907	QRG019J-221S	OM R	220 Ω 1W J
R1909	QRM055K-R22	MP R	0.22 Ω
R1914	QRX019J-3R9S	MF R	3.9 Ω 1W J
R1917	QRG029J-150	OM R	15 Ω 2W J
R1920	QRX029J-1R8A	MF R	1.8 Ω 2W J
R1921	QRG029J-472A	OM R	4.7kΩ 2W J
R1922	QRG029J-333A	OM R	33kΩ 2W J
R1923	QRG029J-682A	OM R	6.8kΩ 2W J
R1925	QRG029J-101A	OM R	100 Ω 2W J
R1931	QRG019J-273S	OM R	27kΩ 1W J
R1932	QRG029J-391A	OM R	390 Ω 2W J
R1940	QRG029J-333A	OM R	33kΩ 2W J
⚠ R1961	QRZ0057-825	C R	8.2MΩ 1W J
CAPACITOR			
C1001	QEM61EK-106MZ	E CAP.	10μF 25V K
C1004	QEM51EK-106M	E CAP.	10μF 25V K
C1005	QEC01HM-224MZ	E CAP.	0.22μF 50V M
C1230	QEN61HM-106Z	BP E CAP.	10μF 50V M
C1308	QEN61HM-105Z	BP E CAP.	1μF 50V M
C1309	QFV71HJ-104MZ	TF CAP.	0.1μF 50V J
C1317	QEN61HM-105Z	BP E CAP.	1μF 50V M
C1322	QFV71HJ-393MZ	TF CAP.	0.039μF 50V J
C1401	QEE51CK-225B	TAN. CAP.	2.2μF 16V K
C1402	QEM51HK-475M	E CAP.	4.7μF 50V K
C1403	QFV71HJ-394MZ	TF CAP.	0.39μF 50V J
C1410	QFV71HJ-393MZ	TF CAP.	0.039μF 50V J
C1422	QFV81HJ-474M	TF CAP.	0.47μF 50V J
C1506	QEM51CM-477M	E CAP.	470μF 16V M
C1512	QFV71HJ-224MZ	TF CAP.	0.22μF 50V J

SYMBOL NO.	PART NO.	PART NAME	REMARKS
CAPACITOR			
⚠ C1513	QETC0JM-477Z	E CAP.	470μF 6.3V M
⚠ C1551	QFZ0081-2801S	MPP CAP.	2800pF 1600V ±3%
C1557	QFV71HJ-104MZ	TF CAP.	0.1μF 50V J
C1558	QFZ0089-354S	MPP CAP.	0.35μF 200V J
⚠ C1559	QFZ0081-5501S	MPP CAP.	5500pF 1600V ±3%
C1563	QCY32HK-152AZ	C CAP.	1500pF 500V K
C1655	QFV71HJ-184MZ	TF CAP.	0.18μF 50V J
⚠ C1901	QFZ9022-473M	M. F. CAP.	0.047μFAC250V M
⚠ C1902	QFZ9022-473M	M. F. CAP.	0.047μFAC250V M
⚠ C1904	QCZ9041-471A	C CAP.	470pFAC400V K
⚠ C1905	QCZ9034-472A	C CAP.	4700pFAC400V P
⚠ C1906	QCZ9034-472A	C CAP.	4700pFAC400V P
⚠ C1907	QCZ9034-472A	C CAP.	4700pFAC400V P
C1912	QCZ0122-391U	C CAP.	390pF 2000V K
C1914	QEH62AM-106MZ	E CAP.	10μF 100V M
C1916	QFV71HJ-474MZ	TF CAP.	0.47μF 50V J
C1923	QCZ0122-152A	C CAP	1500pF
C1924	QEH52CM-107M	E CAP.	100μF 160V M
C1942	QEH61AM-227MZ	E CAP.	220μF 10V M
⚠ C1961	QCZ9041-102A	C CAP	1000pFAC400V M
⚠ C1962	QCZ9041-471A	C CAP.	470pFAC400V K
C1972	QCZ0122-821U	C CAP.	820pF 2000V K
TRANSFORMER			
T1302A	CE40359	IDENT TRANSF	IDENT
T1303	CE40396-A01	DL P TRANSF	
⚠ T1552	CE40203-00A	DRIVE TRANSF.	
⚠ T1901	CE41100-00A	SW TRANSF	
⚠ T1902	CE41059-00B	DRIVE TRANSF.	
COIL			
L1201	CE40041-150Z	PEAKING COIL	15μH
L1202	CELP006-270Z	PEAKING COIL	27μH
L1203	CELP006-270Z	PEAKING COIL	27μH
L1303	CELP006-8R2Z	PEAKING COIL	8.2μH
L1551	CE40669-00A	LINIARITY COIL	
L1557	CELP002-272Z	PEAKING COIL	2700μH
DIODE			
D1103	1SS133-Y	SI. DIODE	
D1104	1SS133-Y	SI. DIODE	
D1202	1SS133-Y	SI. DIODE	
D1205	1SS133-Y	SI. DIODE	
D1206	1SS133-Y	SI. DIODE	
D1221	1SS133-Y	SI. DIODE	
D1222	1SS133-Y	SI. DIODE	
D1223	1SS133-Y	SI. DIODE	
D1231	1SS133-Y	SI. DIODE	
D1234	1SS133-Y	SI. DIODE	
D1270	1SS133-Y	SI. DIODE	
D1271	1SS133-Y	SI. DIODE	
D1303	1SS133-Y	SI. DIODE	
D1304	1SS133-Y	SI. DIODE	
D1305	1SS133-Y	SI. DIODE	
D1306	1SS133-Y	SI. DIODE	
D1307	1SS133-Y	SI. DIODE	
D1308	1SS133-Y	SI. DIODE	
D1309	MA4030 (M) -Y	ZENER DIODE	
D1310	1SS133-Y	SI. DIODE	
D1311	MA4075 (H) -Y	ZENER DIODE	
D1312	1SS133-Y	SI. DIODE	

SYMBOL NO.	PART NO.	PART NAME	REMARKS
DIODE			
D1313	1SS133-Y	SI. DIODE	
D1314	RD5.6ES(B3)-Y	ZENER DIODE	
D1318	1SS133-Y	SI. DIODE	
D1319	1SS133-Y	SI. DIODE	
D1320	1SS133-Y	SI. DIODE	
D1321	RD5.6ES(B3)-Y	ZENER DIODE	
D1324	1SS133-Y	SI. DIODE	
D1401	1SR35-100-Z	SI. DIODE	
D1403	EU2A-LFF4	SI. DIODE	
D1404	1SS133	SI. DIODE	
D1405	1SS133-Y	SI. DIODE	
D1501	1SS133-Y	SI. DIODE	
D1502	MA4056(M)-Y	ZENER DIODE	
D1503	1SS133-Y	SI. DIODE	
D1504	1SS146-Y	SI. DIODE	
D1505	1SS146-Y	SI. DIODE	
⚠ D1507	MA4091(M)-Y	ZENER DIODE	
⚠ D1508	1SS133-Y	SI. DIODE	
D1509	1SS133-Y	SI. DIODE	
D1510	MA4051(M)-Y	ZENER DIODE	
D1511	1SS133-Y	SI. DIODE	
D1512	RD8.2E(B2)	ZENER DIODE	
D1513	RD8.2E(B2)	ZENER DIODE	
D1514	RH4F-LFK2	SI DIODE	
D1515	U19E-FK	SI. DIODE	
D1551	DFA1A4-Z	SI. DIODE	
D1552	DFA1A4-Z	SI. DIODE	
D1553	RH1S-Z	SI. DIODE	
D1571	1SR35-100-Z	SI. DIODE	
⚠ D1572	MA4068(L)-Y	ZENER DIODE	
D1580	1SS82-Y	SI. DIODE	
D1581	1SS133-Y	SI. DIODE	
D1704	1SS133-Y	SI. DIODE	
D1720	1SS133	SI DIODE	
D1721	1SS133-Y	SI. DIODE	
D1722	1SS133-Y	SI. DIODE	
D1723	1SS133-Y	SI. DIODE	
D1724	1SS133-Y	SI. DIODE	
D1725	1SS133-Y	SI. DIODE	
D1801	1SS133-Y	SI. DIODE	
D1802	1SS133-Y	SI. DIODE	
D1803	1SS133-Y	SI. DIODE	
D1804	1SS133-Y	SI. DIODE	
D1805	1SS133-Y	SI. DIODE	
D1806	1SS133-Y	SI. DIODE	
D1901	LB-156-LFB	DIODE BRIDGE	
D1902	EU2A-Z	SI. DIODE	
D1903	RU1C-LFA1	SI. DIODE	
D1904	EU2A-Z	SI. DIODE	
D1905	W06-B-Z	SI. DIODE	
D1921	RU4B-LFK2	SI. DIODE	
D1922	EU2A-Z	SI. DIODE	
D1923	1SS133-Y	SI. DIODE	
D1924	EU2A	SI. DIODE	
D1925	RD9.1E(B)	ZENER DIODE	
D1926	DFA1A4-Z	SI. DIODE	
D1929	RD20E(B3)	ZENER DIODE	
D1934	EU2A-Z	SI. DIODE	

SYMBOL NO.	PART NO.	PART NAME	REMARKS
DIODE			
D1941	TVR4J	SI DIODE	
D1943	RD20EV2-K	ZENER DIODE	
D1944	SF5J42	THYRISTOR	
D1945	LB-156-LFB	DIODE BRIDGE	
D1947	TVR4J	SI DIODE	
·			
D1964	TVR4J	SI DIODE	
TRANSISTOR			
Q1105	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1106	2SK301 (P) -Y	F E T	
Q1107	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1201	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1202	2SC1740S (Q, R) Y	SI TRANSISTOR	
Q1203	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1204	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1210	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1211	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1301	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1302	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1303	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1304	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1305	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1306	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1307	2SC1815 (BL) -Y	TRANSISTOR	
Q1309	2SC1815 (GR) -Y	SI. TRANSISTOR	
Q1401	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1501	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1502	2SC1627A-Y	SI. TRANSISTOR	
Q1503	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1504	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1505	2SK301 (P) -Y	F E T	
Q1507	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
⚠ Q1508	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
⚠ Q1509	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
⚠ Q1551	2SD1427	SI. TRANSISTOR	H. OUT
Q1571	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1591	2SC1815 (Y, GR) L	SI. TRANSISTOR	
Q1721	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1722	2SC1815 (GR) -Y	SI. TRANSISTOR	
Q1730	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q1901	2SC2655 (Y) -Y	SI. TRANSISTOR	
Q1902	2SA966-Y	SI. TRANSISTOR	
Q1920	2SC2655 (Y) -Y	SI. TRANSISTOR	
Q1921	2SA966-Y	SI. TRANSISTOR	
Q1922	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q1923	2SD1274AV	SI. TRANSISTOR	
Q1924	2SA1013 (O) -Y	TRANSISTOR	
Q1925	2SC2229 (Y) -Y	SI. TRANSISTOR	
Q1926	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
IC			
IC1201	M52016SP	I. C. (M)	
IC1401	UPC1488H	I. C.	
IC1651	TA7222AP	I. C. (M)	
IC1721	AN78L05-Y	I. C.	
⚠ IC1901	STR54041S	I. C. (H)	
IC1921	UPC574J	I. C.	

	SYMBOL NO.	PART NO.	PART NAME	REMARKS
	OTHERS			
⚠	CP1401	ICP-N10	IC PROTECTER	
⚠	CP1901	ICP-N5	IC PROTECTOR	
	DL1201	CE41125-A01	DELAY LINE	
	DL1301	CE41082-001	1H DELAY LINE	
⚠	LF1901	CE41213-00A	LINE FILTER	
⚠	R1552	QRH127J-2R2M	F R	2.2 Ω 1/2W J
⚠	R1555	QRH017J-680M	F R	68 Ω 1W J
⚠	R1571	QRH017J-4R7M	F R	4.7 Ω 1W J
⚠	R1580	QRZ0054-150M	F R	15 Ω 1/4W J
⚠	R1657	QRZ0054-3R9M	F R	3.9 Ω 1/4W J
⚠	R1908	QRZ0054-6R8M	F R	6.8 Ω 1/4W J
⚠	R1916	QRH017J-2R2M	F R	2.2 Ω 1W J
⚠	R1934	QRH017J-101M	F R	100 Ω 1W J
	S1201	QSL4A13-C02	LEVER SWITCH	SERVICE SW
	S1701	QST3621-C01	PUSH SWITCH	SECAM/SKEW/PRESET
	S1703	QSP4H11-C02	PUSH SWITCH	POWER
	S1704	QSP4H11-C02	PUSH SWITCH	TV/VIDEO
	S1705	QSP4H11-C02	PUSH SWITCH	TUNING △
	S1706	QSP4H11-C02	PUSH SWITCH	TUNING ▽
	S1707	QSP4H11-C02	PUSH SWITCH	MEMORY
	S1708	QSP4H11-C02	PUSH SWITCH	CH △
	S1709	QSP4H11-C02	PUSH SWITCH	CH ▽
	S1710	QSP4H11-C02	PUSH SWITCH	VOL △
	S1711	QSP4H11-C02	PUSH SWITCH	VOL ▽
	S1712	QSP4H11-C02	PUSH SWITCH	AUTO SEARCH
⚠	S1901	QSP4D21-C06	PUSH SWITCH	MAIN POWER
⚠	TH1901	A76038-T	POSISTOR	
⚠	TU1001	EM7451ES-B05	U/V E TUNER	
	X1301	CE41092-00A	CRYSTAL	
	X1302	CE41115-001	CRYSTAL	
	X1501	CSB500F9	CERAMIC RESONATOR	
	CHROMA BP BLOCK			
	TRANSFORMER			
	T1301	CE41178-001	3.58 BP TRANS	
	T1301P	CE41177-001	BP TRANS	
	COIL			
	L1301	CELP005-2R7	PEAKING COIL	2.7μH
	L1302	CELP005-2R7	PEAKING COIL	2.7μH
	DIODE			
	D1301	1SS133	SI. DIODE	
	D1302	1SS133	SI. DIODE	
	ON SCREEN DRIVE BLOCK			
	DIODE			
	D1203	W06A	SI. DIODE	
	D1204	1SS133	SI. DIODE	
	D1232	1SS133	SI. DIODE	
	D1233	1SS133	SI. DIODE	
	TRANSISTOR			
	Q1205	2SA1015 (Y, GR)	SI. TRANSISTOR	
	Q1206	2SC1815 (Y)	SI. TRANSISTOR	
	Q1207	2SC1815 (Y)	SI. TRANSISTOR	
	Q1208	2SA673 (C)	SI. TRANSISTOR	

CRT SOCKET PC BOARD ASS'Y (SBX-3903A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R3009	QVPH801-502M	V R (B CUT OFF)	5kΩ B
R3015	QVPH801-502M	V R (R CUT OFF)	5kΩ B
R3017	QVPH801-502M	V R (G CUT OFF)	5kΩ B
R3021	QVPH801-201M	V R (R DRIVE)	200Ω B
R3023	QVPH801-201M	V R (G DRIVE)	200Ω B
RESISTOR			
R3024	QRG029J-153A	OM R	15kΩ 2W J
R3025	QRG029J-153A	OM R	15kΩ 2W J
R3026	QRG029J-153A	OM R	15kΩ 2W J
R3035	QRG029J-473A	OM R	47kΩ 2W J
CAPACITOR			
C3004	QCY31HK-821AZ	C CAP.	820pF 50V K
C3005	QCY31HK-821AZ	C CAP.	820pF 50V K
C3006	QCY31HK-561AZ	C CAP.	560pF 50V K
C3007	QCZ9016-103A	C CAP.	0.01μFAC400V P
COIL			
L3001	QQL043K-221	PEAKING COIL	220μH
L3011	A76186-150Z	PEAKING COIL	150μH
L3012	A76186-150Z	PEAKING COIL	150μH
L3013	A76186-150Z	PEAKING COIL	150μH
L3552	CJ30030-034	HEATER CHOKE	
L3552	CELC001-350	CHOKE COIL	
DIODE			
D3001	1SS83	SI. DIODE	
TRANSISTOR			
Q3001	2SC2371 (K-M)	SI. TRANSISTOR	
Q3002	2SC2371 (K-M)	SI. TRANSISTOR	
Q3003	2SC1815 (Y) -Y	SI. TRANSISTOR	
Q3004	2SC2371 (K-M)	SI. TRANSISTOR	
Q3005	2SC1815 (Y) -Y	SI. TRANSISTOR	
OTHERS			
⚠	CE41603-001	CRT SOCKET	

REMOCON & LED PC BOARD ASS'Y (SBX-4902A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
DIODE			
D4001	SLR-40VR5F	L. E. D.	POWER
D4002	GL4HS8	L. E. D.	OFF TIMER
D4003	SLR-40VR5F	L. E. D.	ON TIMER
D4004	GL4EG8	L. E. D.	SEARCH
IC			
IC4001	GP1U501W	IR DETECT UNIT	

HEADPHONE PC BOARD ASS'Y (SBX-5903A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
OTHERS			
J5001	AX49607-004	HEADPHONE JACK	

DISC SW PC BOARD ASS'Y (SBX-0491A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
OTHERS			
S0001	QSP2B22-C02	PUSH SWITCH	DISC SW

AV TERMINAL PC BOARD ASS'Y (SBX-7903A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
RESISTOR			
R7066	QRG019J-680S	OM R	68 Ω 1W J
R7071	QRG019J-271S	OM R	270 Ω 1W J
R7077	QRG019J-680S	OM R	68 Ω 1W J
COIL			
L7001	A76186-47	PEAKING COIL	47μH
DIODE			
D7001	1SS133-Y	SI. DIODE	
D7002	RD12ES (B) -T2	ZENER DIODE	
D7003	1SS133-Y	SI. DIODE	
D7004	1SS133-Y	SI. DIODE	
D7011	RD12ES (B) -T2	ZENER DIODE	
D7012	RD12ES (B) -T2	ZENER DIODE	
TRANSISTOR			
Q7001	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7003	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7004	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7005	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7006	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7007	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7008	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7009	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7010	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7021	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7022	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7023	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7024	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q7025	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7026	2SA1015 (Y, GR) Y	SI. TRANSISTOR	
Q7027	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7028	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7029	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7030	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
Q7031	2SC1815 (Y, GR) Y	SI TRANSISTOR	
Q7032	2SC1815 (Y, GR)	SI. TRANSISTOR	
Q7033	2SC1815 (Y, GR) Y	SI. TRANSISTOR	
IC			
IC7001	TC4066BP	I. C. (M)	
IC7002	TC4066BP	I. C. (M)	
IC7003	TC4066BP	I. C. (M)	
OTHERS			
	CM33765-B0A	AV TERMINAL ASS'Y	
J7001	QMD4A04-001	DIN CONNECTOR	
J7002	CEMN021-001	PIN JACK	

AUTO SEARCH PC BOARD ASS'Y (SBX-8901A)

SYMBOL NO.	PART NO.	PART NAME	REMARKS
VARIABLE R			
R8021	QVPE611-503HZ	V R (SEARCH 1)	50kΩ B
R8022	QVPE611-503HZ	V R (SEARCH 2)	50kΩ B
DIODE			
D8001	1SS133-Y	SI. DIODE	
D8002	1SS133-Y	SI. DIODE	
D8003	1SS133-Y	SI. DIODE	
D8004	1SS133-Y	SI. DIODE	
D8005	1SS133-Y	SI. DIODE	
TRANSISTOR			
Q8001	2SA1015 (Y. GR) Y	SI. TRANSISTOR	
Q8002	2SC1815 (Y. GR) Y	SI. TRANSISTOR	
Q8003	2SC1815 (Y. GR) Y	SI. TRANSISTOR	
Q8004	2SC1815 (Y. GR) Y	SI. TRANSISTOR	
Q8005	2SC1815 (Y. GR) Y	SI. TRANSISTOR	
Q8006	2SC1815 (Y. GR) Y	SI. TRANSISTOR	
Q8007	2SC1815 (Y. GR) Y	SI. TRANSISTOR	
IC			
IC8001	MB3614	I. C.	
IC8002	TC74HC86P	I. C. (M)	
IC8003	TC74HC109P	I. C.	
IC8004	TC4066BP	I. C. (M)	
IC8005	AN78L05	I. C. (M)	

LINE FILTER PC BOARD ASS'Y (SBX-9903A)

	SYMBOL NO.	PART NO.	PART NAME	REMARKS
	CAPACITOR			
⚠	C9902	QFZ9022-473M	MF CAP	0. 047μFAC250V M
	OTHERS			
⚠	F9901	QMF51E2-3R15S	FUSE	3. 15A
⚠	LF9902	CE40719-00A	LINE FILTER	

MODULE P.C BOARD PARTS LIST

The following module pc boards are supplied as assemblies.

The component parts on the module PC boards are available only when the parts are listed in the "MODULE PRINTED CIRCUIT BOARD PARTS LIST."

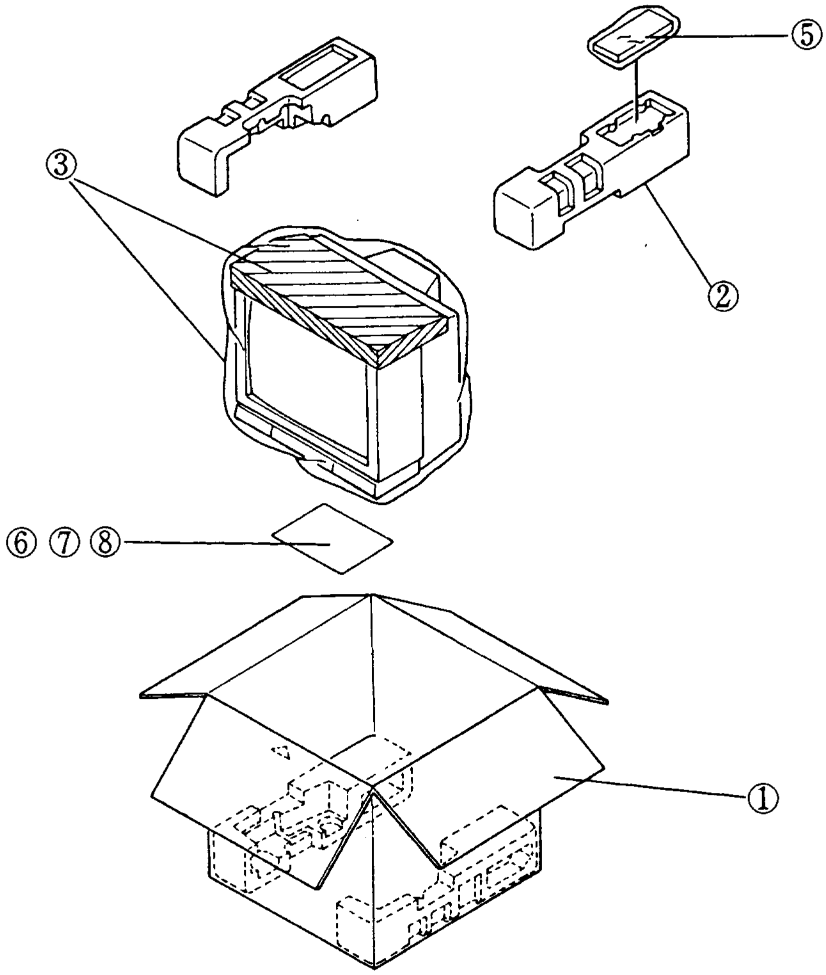
IF MODULE PC BOARD Ass'y (SBX-F901A)

S.SELECT MODULE PC BOARD Ass'y (SBX-M902A)

SECAM MODULE PC BOARD Ass'y (SBX-S904A)

EQUALIZER MODULE PC BOARD Ass'y(SBX-E901A)

PACKING



PACKING PARTS LIST

SYMBOL NO.	PART NO.	PART NAME	REMARKS
1	CP10891-A01	PAKING CASE	
2	CP10803-B0A	CUSHION ASSY	4 PCS IN 1 SET
3	CP30148-005	SET COVER	
5	RM-C620	REMOCON	
6	C-S2180KM-IB-A	INST BOOK	
7	BT-20060	WARRANTY CARD	
8	BT-20066A	ADDRESS CARD	

JVC
VICTOR COMPANY OF JAPAN,LIMITED
TETEVISION RECEIVER DIVISION 1106 Iwai-city,Ibaraki-prefecture,306-06,Japan

GP. 2.90/.4M

Printed in t

JVC C-S2180KM SCHEMATIC DIAGRAM

■ NOTICE

- Voltage values and waveforms are measured by respectively receiving and displaying on the screen the colour bars signals of the PAL, SECAM, and NTSC(3.58MHz/ 4.43MHz).
  [Voltage value display method]
  The voltage values indicated within the circuits denote those obtained when PAL colour bar signals are received and displayed an the screen. However, as for those points where the voltage values are caused to vary by input signals (SECAM, NTSC); discrimination is effected by indicating as per an example [Example ; (4.2 V)].
- The voltage values when receiving and displaying the PAL signal on the screen are shown in the LIST on page ② (⇨ Difference voltage list).
  Multimeter used.
  DC 20kΩ/V
  Given figures are all DC voltages.
  Sweep speed of oscilloscope
  H→20μS/div. V→5mS/div.
  Others→sweep speed specified
- Since the schematic diagram is a standard one, the circuit and circuit constants may be subject to change for improvement without any notice.

■ SAFETY

FR (—/\/\/\/—) denotes a fusible resistor which operates as a fuse. When replacing fusible resistors and parts indicated with black shading ( ) in the circuit diagrams, be sure to ensure safety by using designated parts.
As to other parts too, use designated parts to maintain safety and performance.

NOTE FOR SERVICE

This model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE (primary: ⊥) side GND and the NEUTRAL (secondary: ⏚) side GND.
Don't short between the LIVE side GND and NEUTRAL side GND or never measure with a measuring apparatus (oscilloscope etc.) the LIVE side GND and NEUTRAL side GND at the same time.
If above note will not be kept, a fuse or any parts will be broken.

■ INDICATION OF PARTS SYMBOL

Inside board (Example) SBX-1956A : R1209→R209
Outside board (Example) R0001→R01

■ SCHEMATIC DIAGRAM INDICATION

Resistor

- Resistance value
  Without unit : [Ω] K : [kΩ] M : [MΩ]
- Rated allowable power
  Without indication : 1/6W
- * Others Indicated
- Type

Without indication	: Carbon resistor
OMR	: Oxide metal film resistor
UNFR	: Unflammable resistor
MFR	: Metal film resistor
MPR	: Metal plate resistor
FR	: Fusible resistor

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

Capacitor

- Capacitance
  Above 1 [pF] Below 1 [μF]
- Withstnad voltage

Without indication	: DC 50 [V]
Others	: DC withstand voltage [V]
AC indicated	: AC withstand voltage [V]

- Indications for electrolitic capacitors are as follows.
  (Example)
  47/50→capacitance [μF] /withstand voltage [V]
- Type

Without indication	: Ceramic capacitor
MY	: Mylar capacitor
MM	: Metalized mylar capacitor
PP	: Polypropylene capacitor
MPP	: Metalized polypropylene capacitor
MF	: Metalized film capacitor
BP	: Bipolar electrolytic capacitor
TAN.	: Tantalum capacitor

Coil

Without unit : [μH]

Connection method

▭ : Connector
→▶— —▷|◁— : Receptacle
◦ ○ : Wrapping or soldering

Power Supply

━━━ : B_1(115V) ▬▬▬ : B_2(12V)
▬▭▬▭ : 9V ▭▭▭ : 5V

* Each voltage reading specified

Test point & GND. symbol.

- : Test point by miniature GT pin
- : Only test point display
- ⊥ : Live (Primary) side ground
- ⏚ : Neutral (Secondary) side ground

DIFFERENT VOLTAGE LIST

System SW Position \ Symbol / Pin No.	IC201						SBX-M902A			SBX-F901A	SBX-S904A		
	17	23	29	30	31	32	40	42	44	13	8	10	
PAL	4.9V	5.3V	8.8V	3.5V	7.4V	3.5V	0V	11.7V	0.1V	0V	0.1V	3.9V	
SECAM	4.9V	0V	7.7V	3.5V	7.4V	3.5V	0V	0.1V	11.5V	0V	11.6V	0V	
NTSC (3.58MHz)	0.4V	5.3V	2.1V	1.9V	2V	1.9V	12V	0.1V	0.1V	12V	0.1V	4.1V	
NTSC (4.43MHz)	0.3V	0.4V	2.1V	1.9V	2V	1.9V	12V	0V	0V	0V	0.1V	3.8V	

System SW Position \ Symbol / Electrode	Q202		Q301		Q302		Q303		Q304		Q305		Q306		Q401		Q721		Q722	
	B	C	B	C	B	C	B	C	B	C	B	C	B	C	B	C	B	C	B	C
PAL	0V	4.8V	0V	12V	11.5V	12V	0V	5.3V	0V	6.5V	0.7V	0V	7.4V	6.7V	0V	6.2V	0V	11.7V	0.4V	0V
SECAM	0V	4.8V	0V	12V	11.5V	12V	0.7V	0V	0V	6.5V	0.7V	0V	0.7V	5.8V	0V	6.2V	0.7V	0.1V	-0.7V	1.2V
NTSC (3.58MHz)	0.7V	0V	0.7V	0V	12V	1.7V	0V	5.3V	0.7V	0V	0V	1.4V	2V	1.4V	0.7V	0V	0.7V	0.1V	-0.5V	1.2V
NTSC (4.43MHz)	0.7V	0V	0.7V	0V	12V	1.7V	0V	5.3V	0V	1.4V	0.7V	0V	2V	1.4V	0.7V	0V	0.7V	0.1V	-0.5V	1.2V

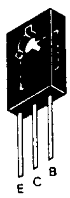
Basing of Transistor & ICs

2SA1015(Y,GR)
2SC1815(Y,GR)
2SC1815(BL)
2SC1627A

2SA1013(O)
2SA966
2SC2655(Y)
2SC2229(Y)

2SK301(P)

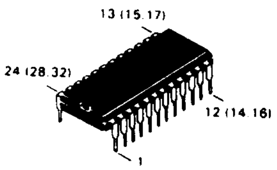
2SD1274AV



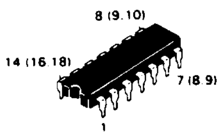
2SC2371(K-M)

2SD1426

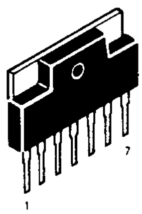
IC
AN78L05



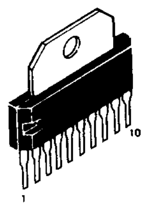
IC
M52016SP



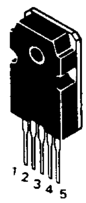
IC
TC4066BP
MB3614
TC74HC86P
TC74HC109P



μPC1488H

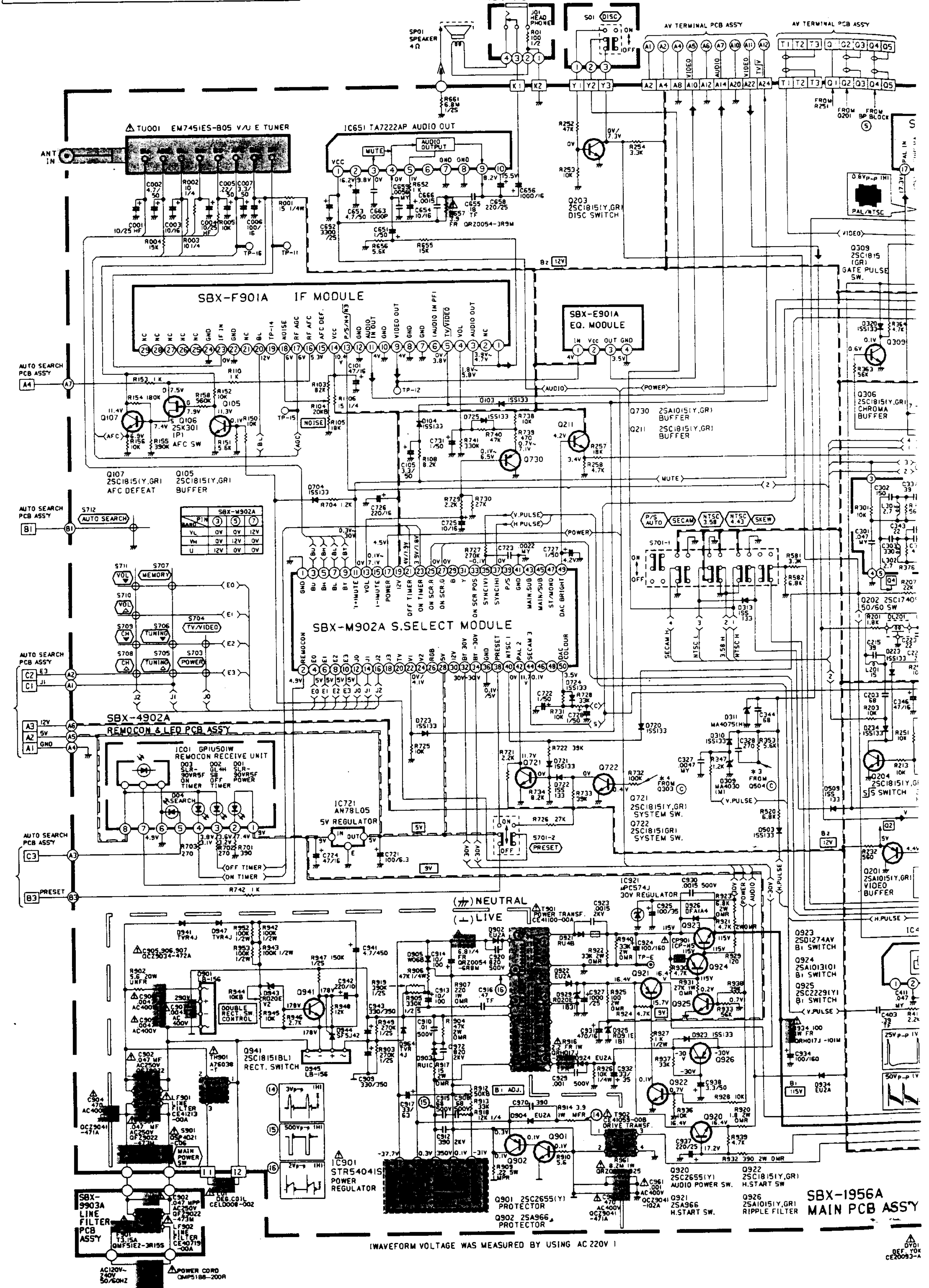


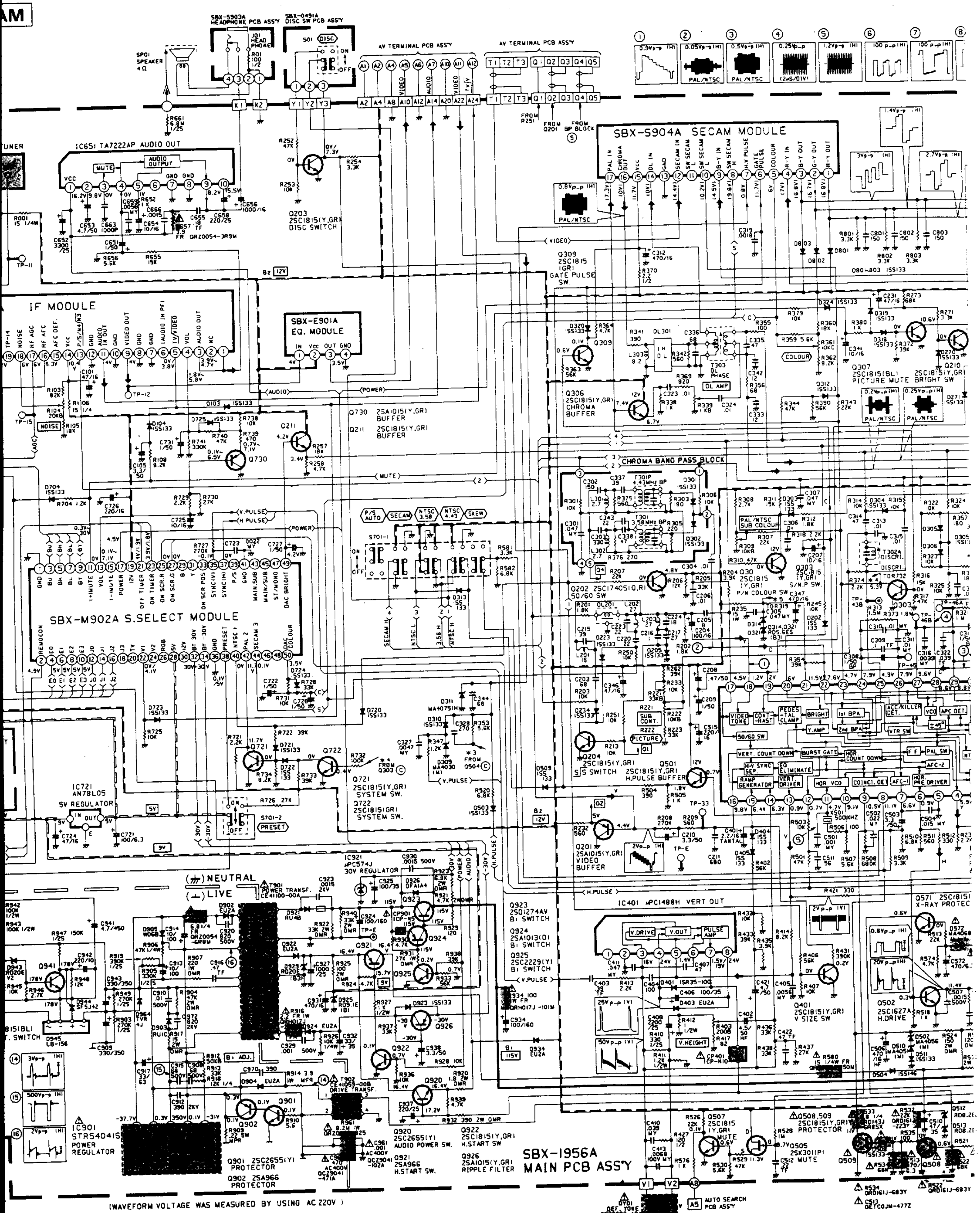
IC
TA7222AP



IC
STR54041S

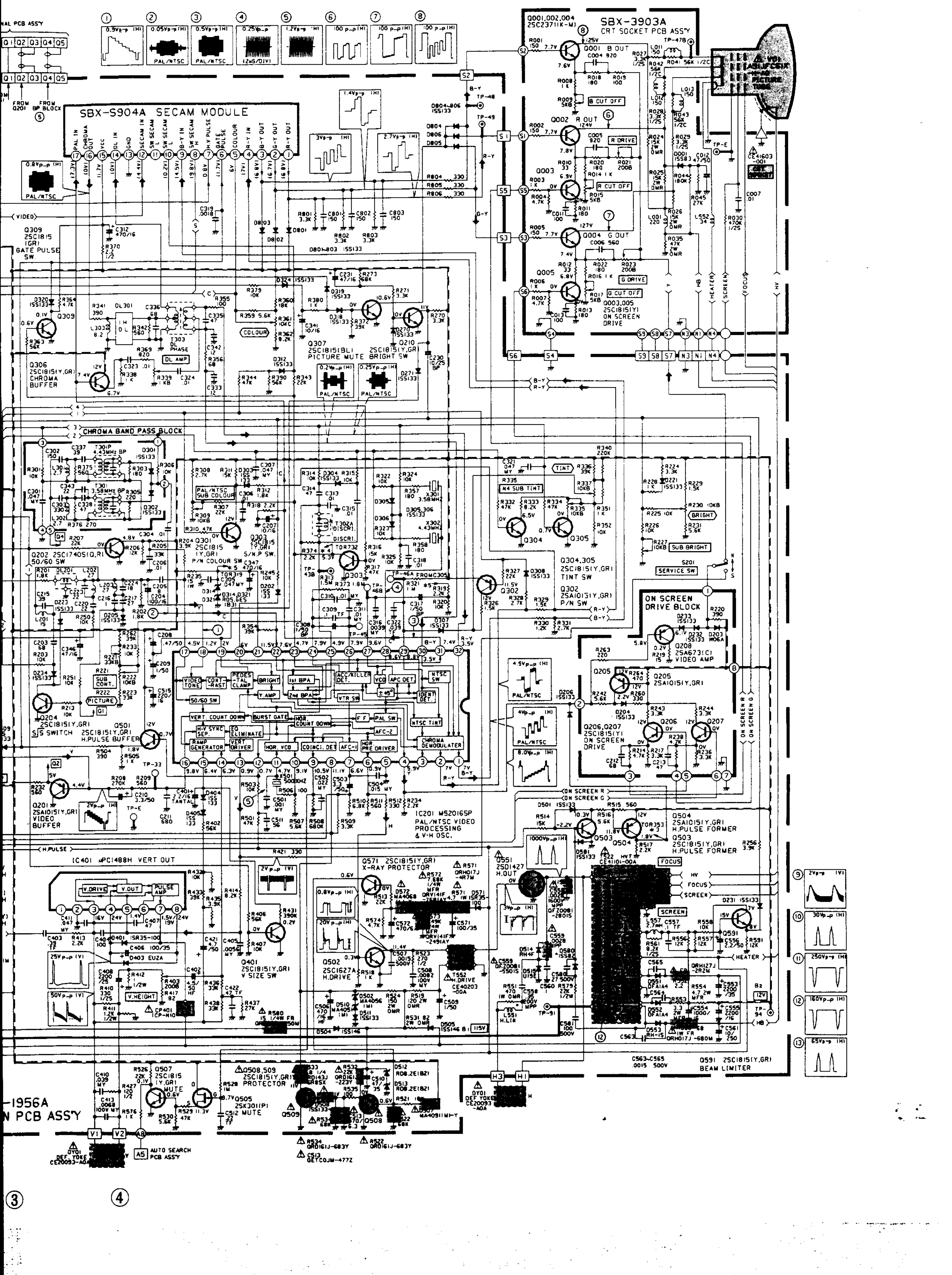
MAIN SCHEMATIC DIAGRAM



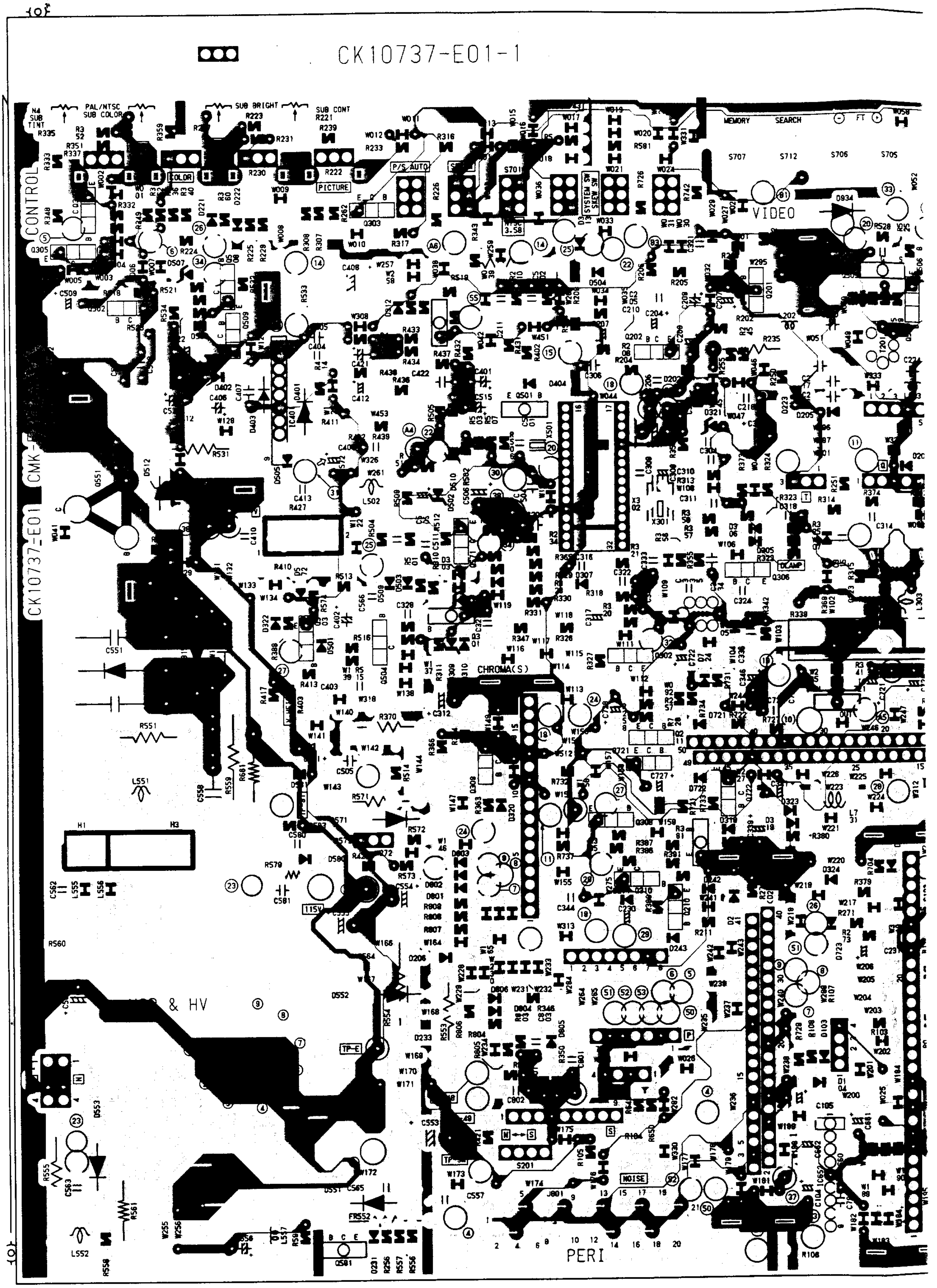


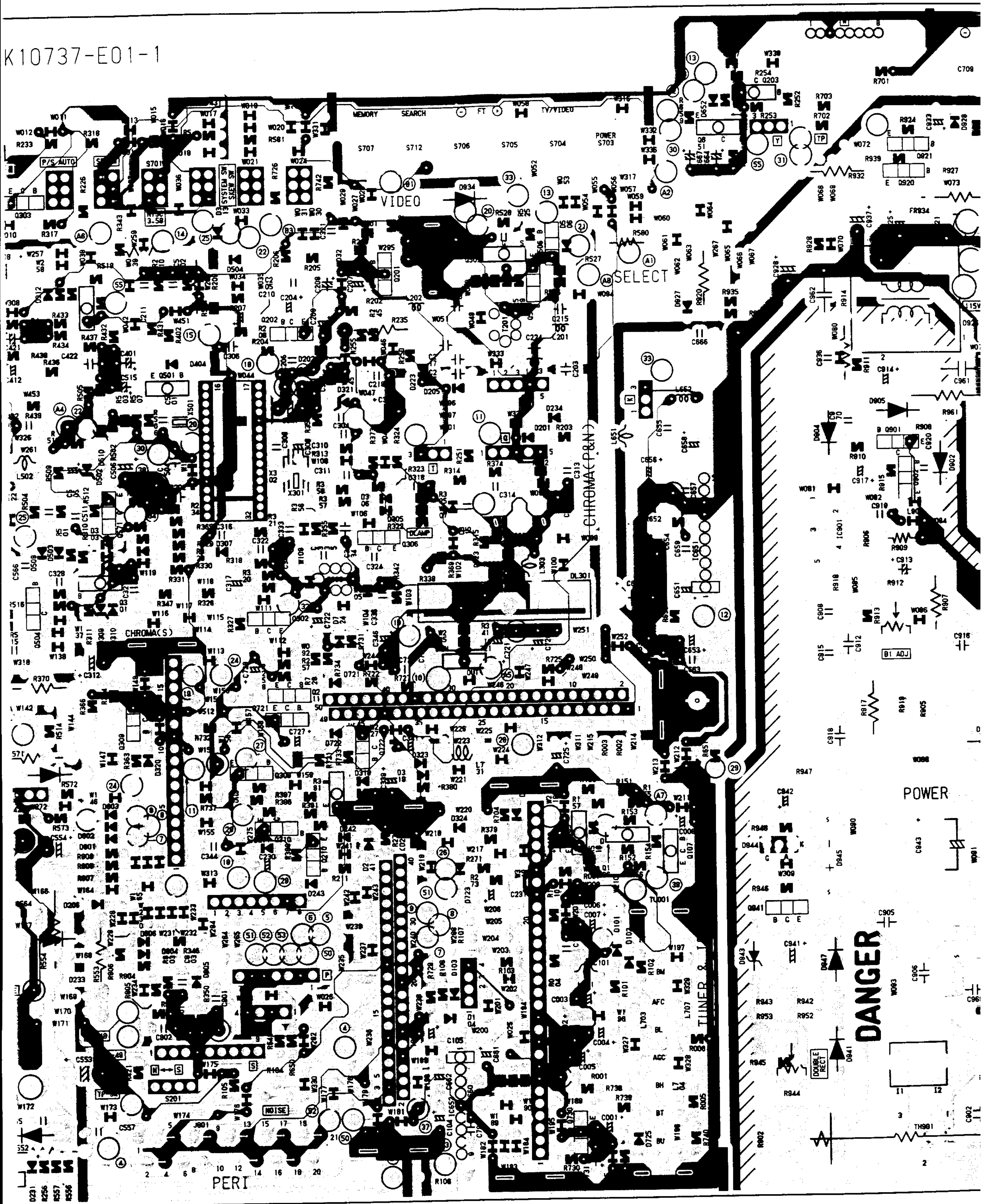
(WAVEFORM VOLTAGE WAS MEASURED BY USING AC 220V)

③ ④

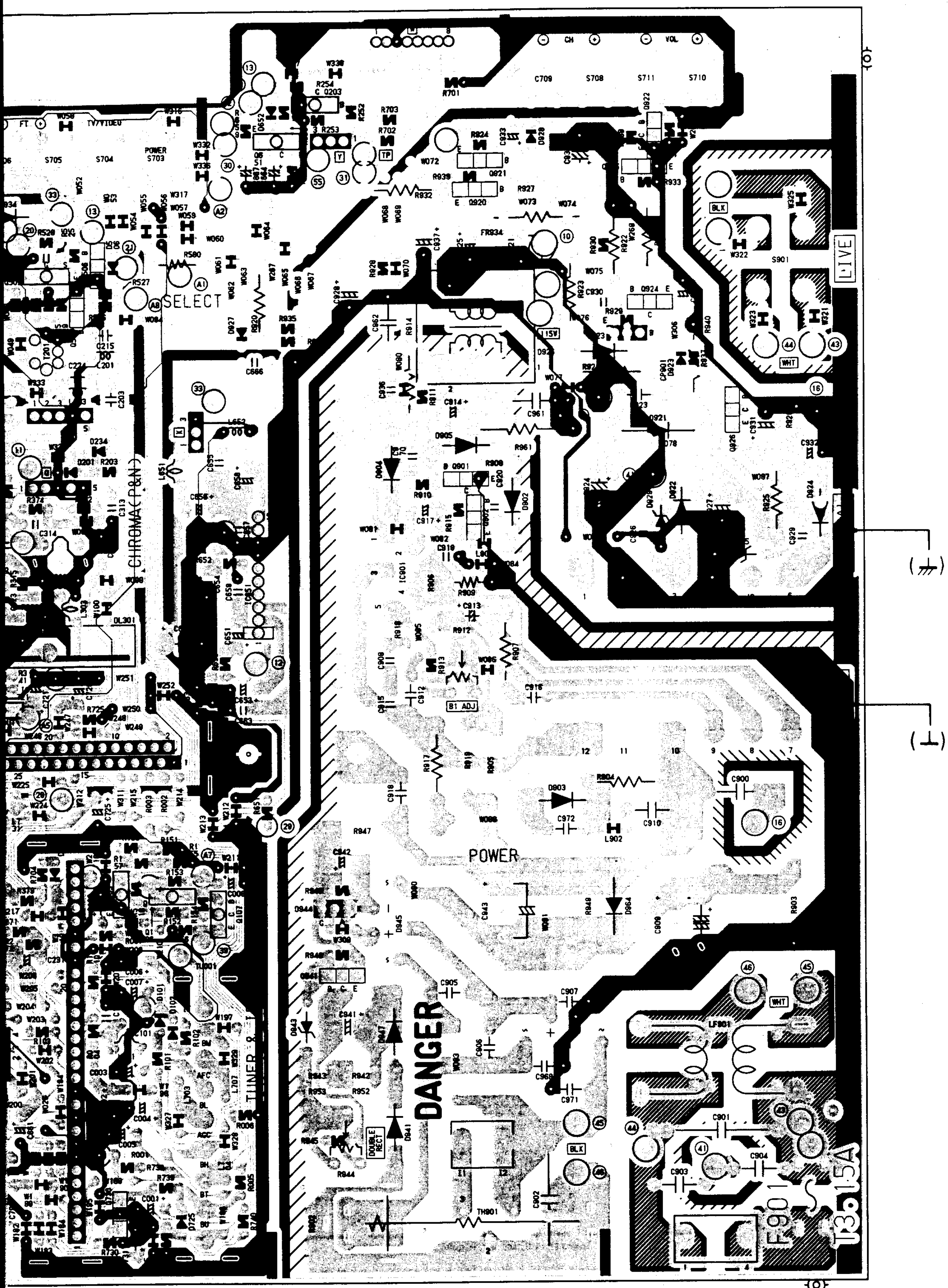

SBX-S904A SECAM MODULE
SBX-3903A
CRT SOCKET PCB ASS'Y
CHROMA BAND PASS BLOCK
ON SCREEN DRIVE BLOCK
IC201 M52016SP
PAL/NTSC VIDEO PROCESSING & V·H OSC.
IC401 μPC1488H VERT OUT
Q571 2SC1815(Y,GR) X-RAY PROTECTOR
Q551 2SD1427 H.OUT
Q502 2SC1627A H.DRIVE
Q591 2SC1815(Y,GR) BEAM LIMITER
Q505 2SK301(P) MUTE
AUTO SEARCH PCB ASS'Y
DEF. YOKE
PAL/NTSC

MAIN PCB BACK PATTERN



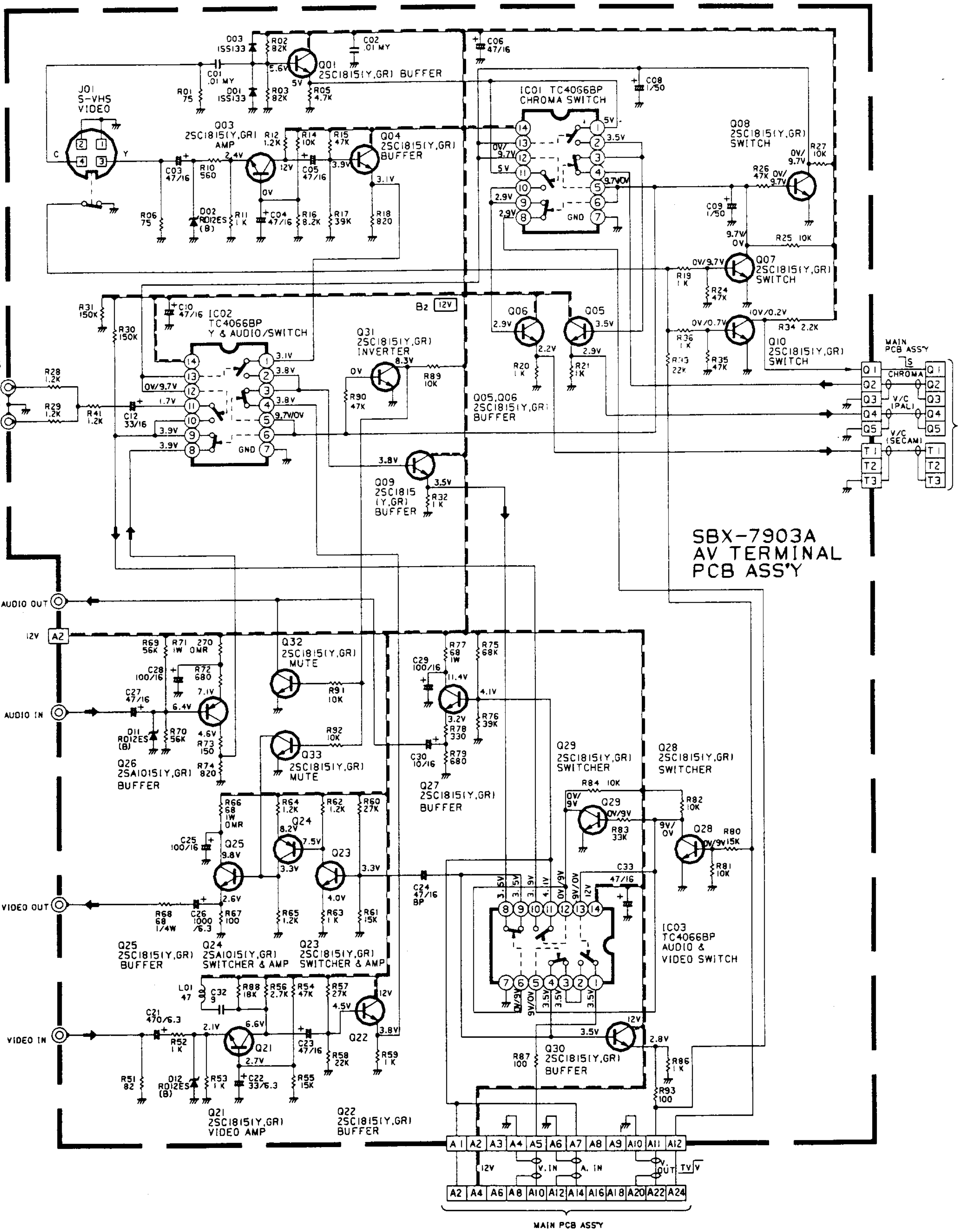

K10737-E01-1
MEMORY
SEARCH
FT
TV/VIDEO
POWER S703
VIDEO
SELECT
CHROMA(P&N)
CHROMA(S)
POWER
DANGER
PERI
NOISE
B1 ADJ
DOUBLE RECT

⑤ ⑥

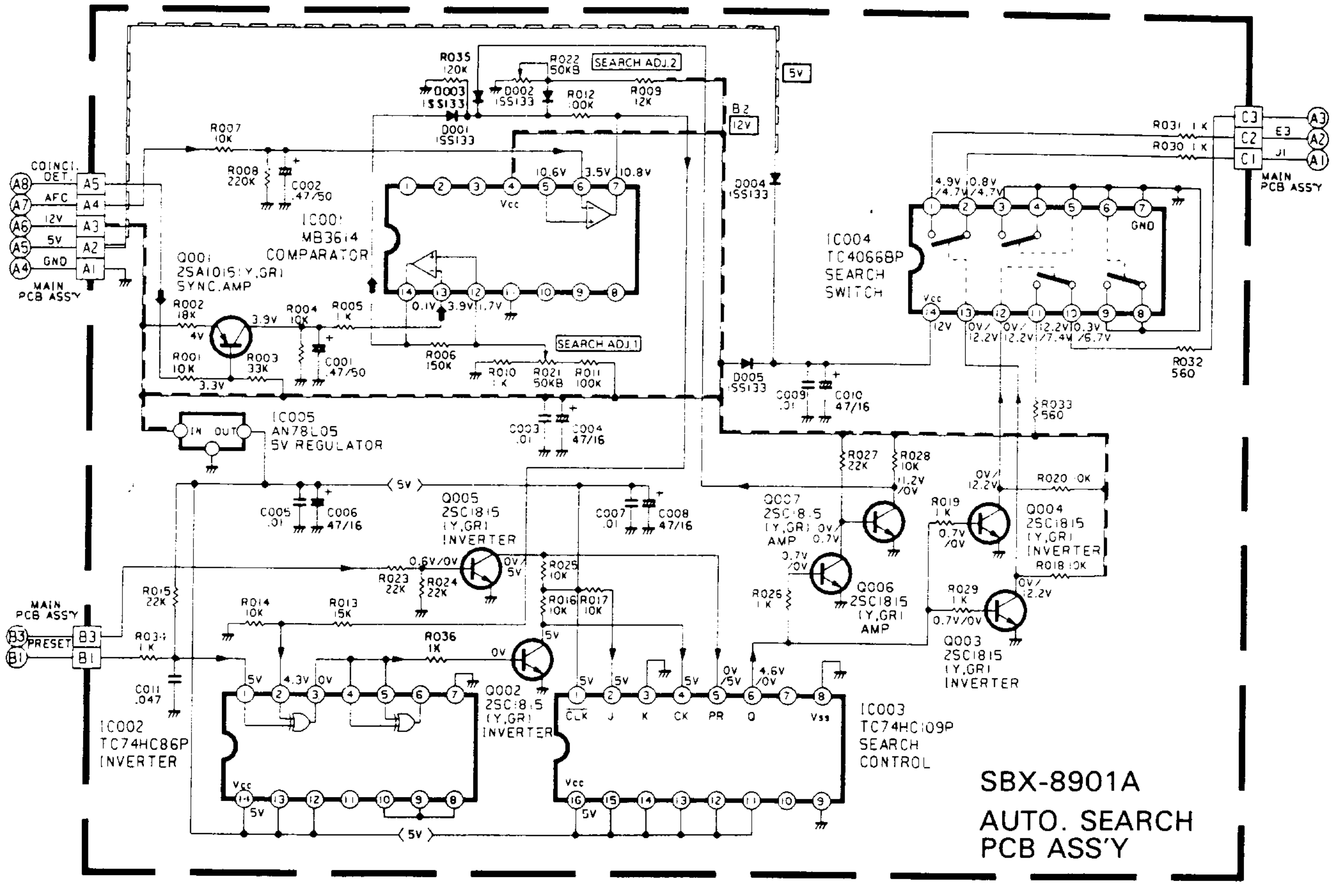

LIVE
SELECT
CHROMA(P&N)
POWER
DANGER
B1 ADJ
DOUBLE RECT
BLK
WHT
S901
LF901
C901
TH901
D903
C900
S705
S704
POWER S703
C709
S708
S711
S710
CH
VOL
TV/VIDEO

⑥

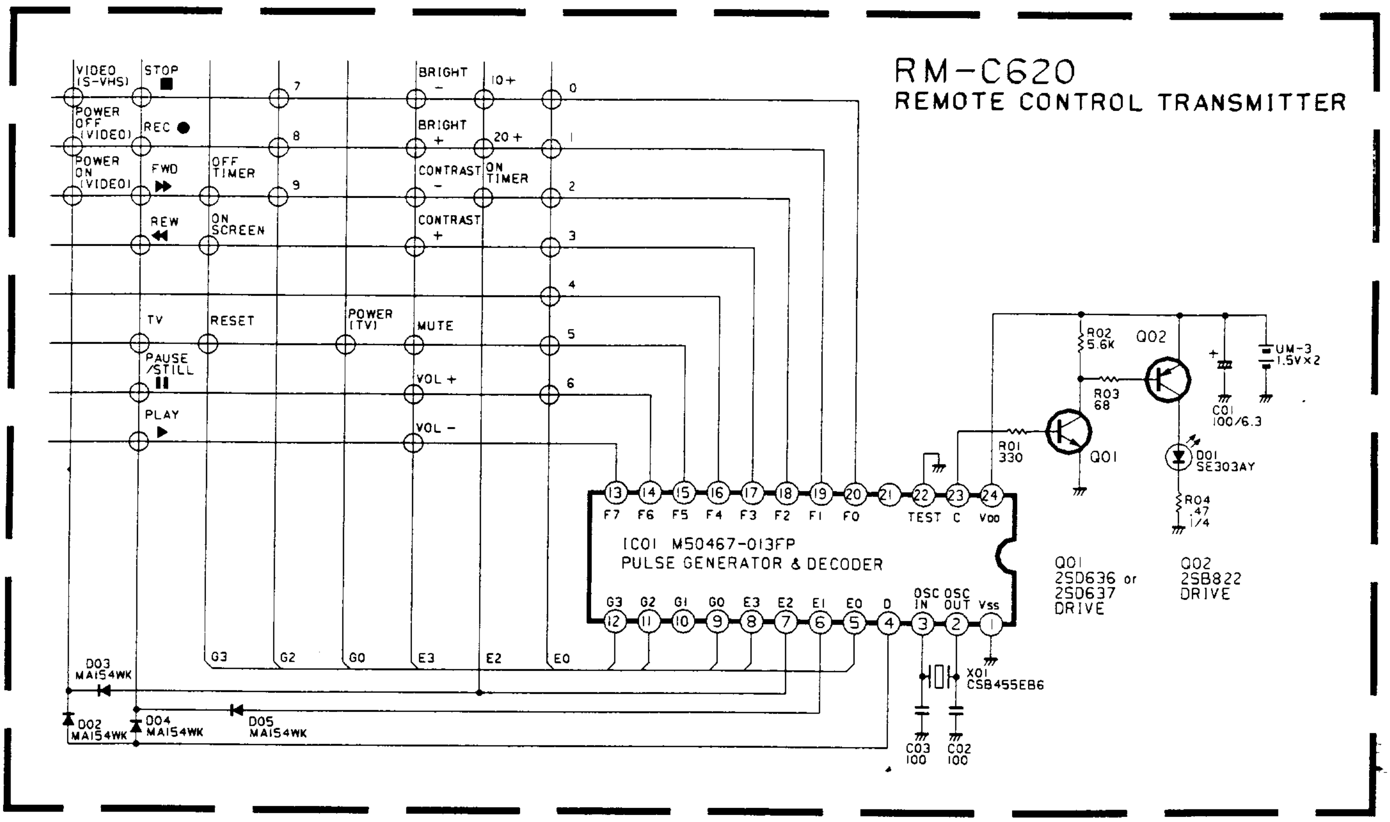
AV TERMINAL SCHEMATIC DIAGRAM



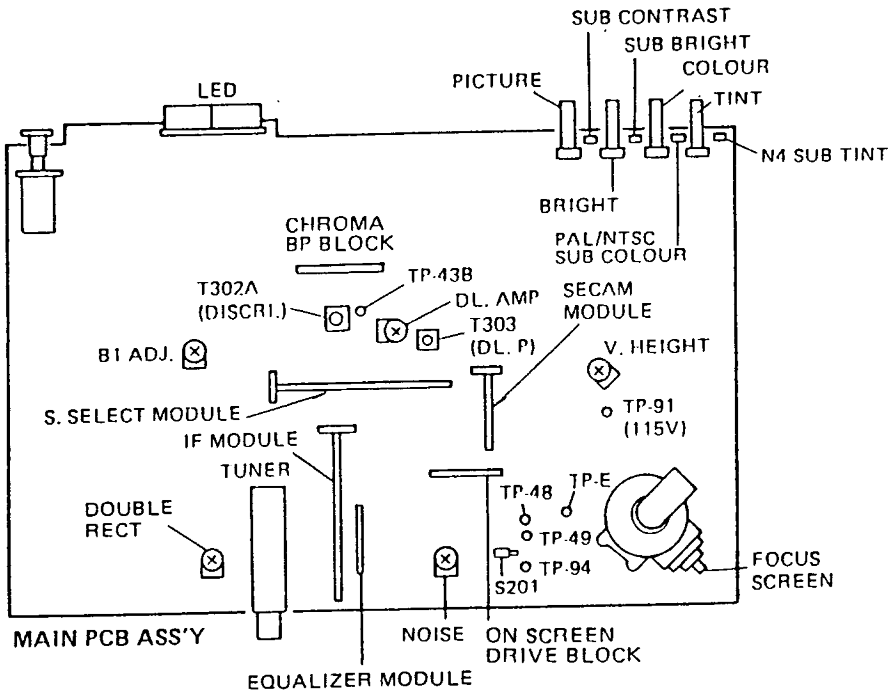
AUTO SEARCH SCHEMATIC DIAGRAM



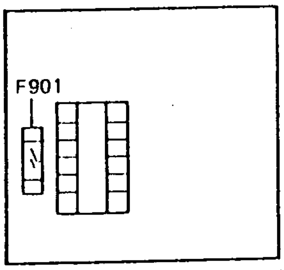
REMOTE CONTROL TRANSMITTER SCHEMATIC DIAGRAM



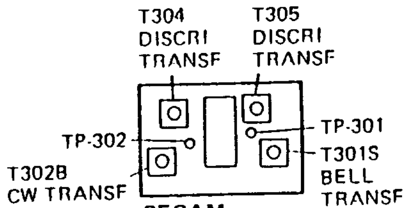
■ AJUSTMENT LOCATION



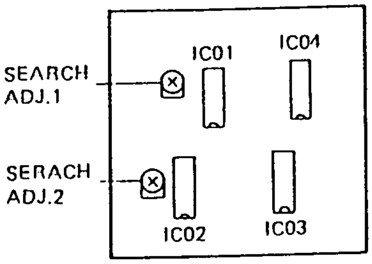
MAIN PCB ASS'Y



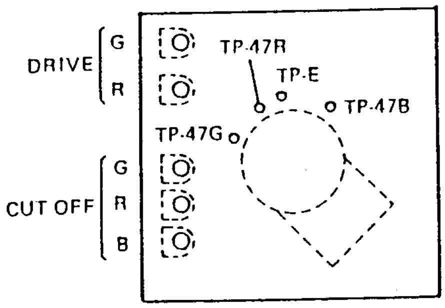
LINE FILTER PCB ASS'Y



SECAM MODULE PCB ASS'Y

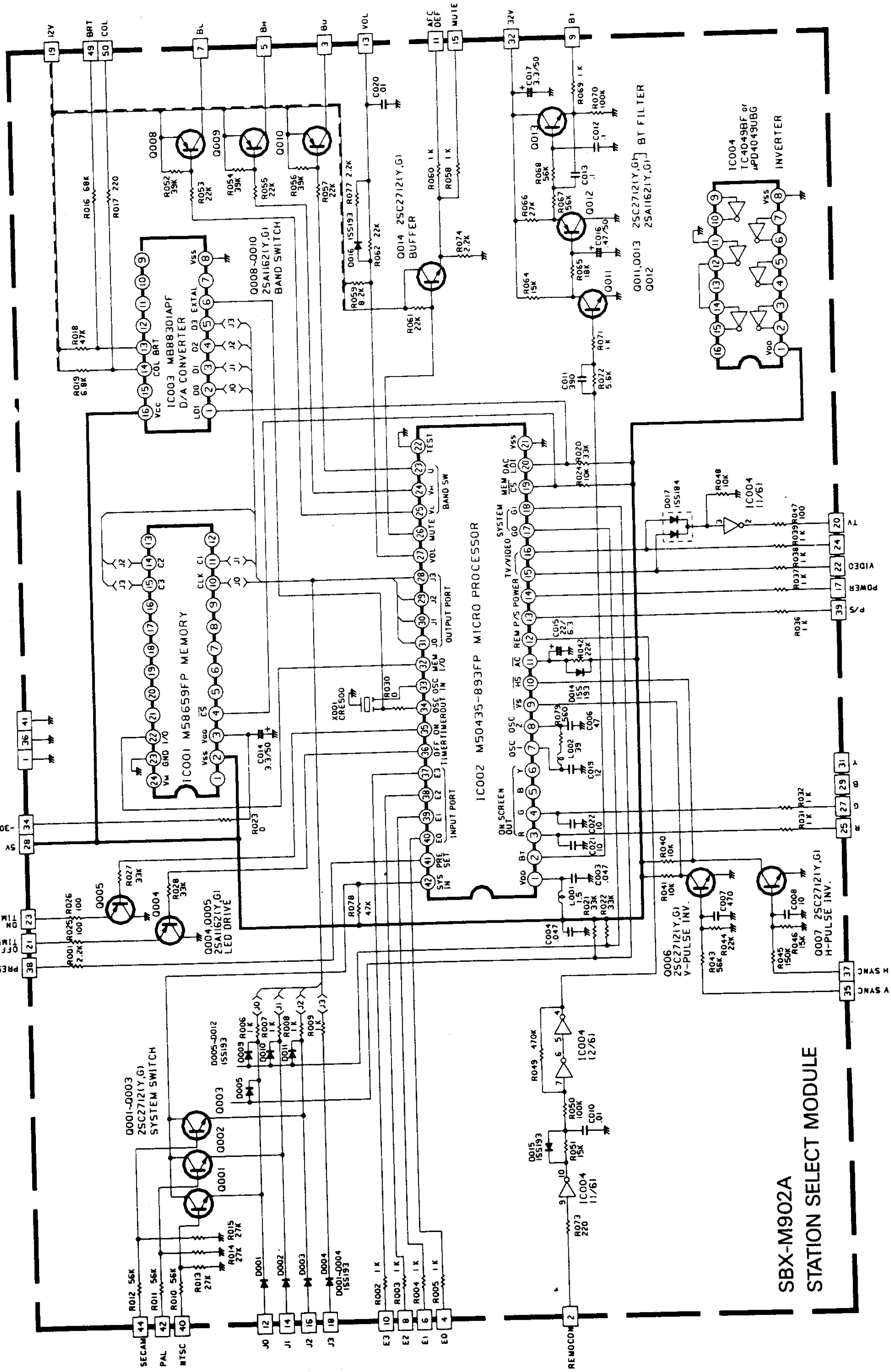


AUTO SEARCH PCB ASS'Y

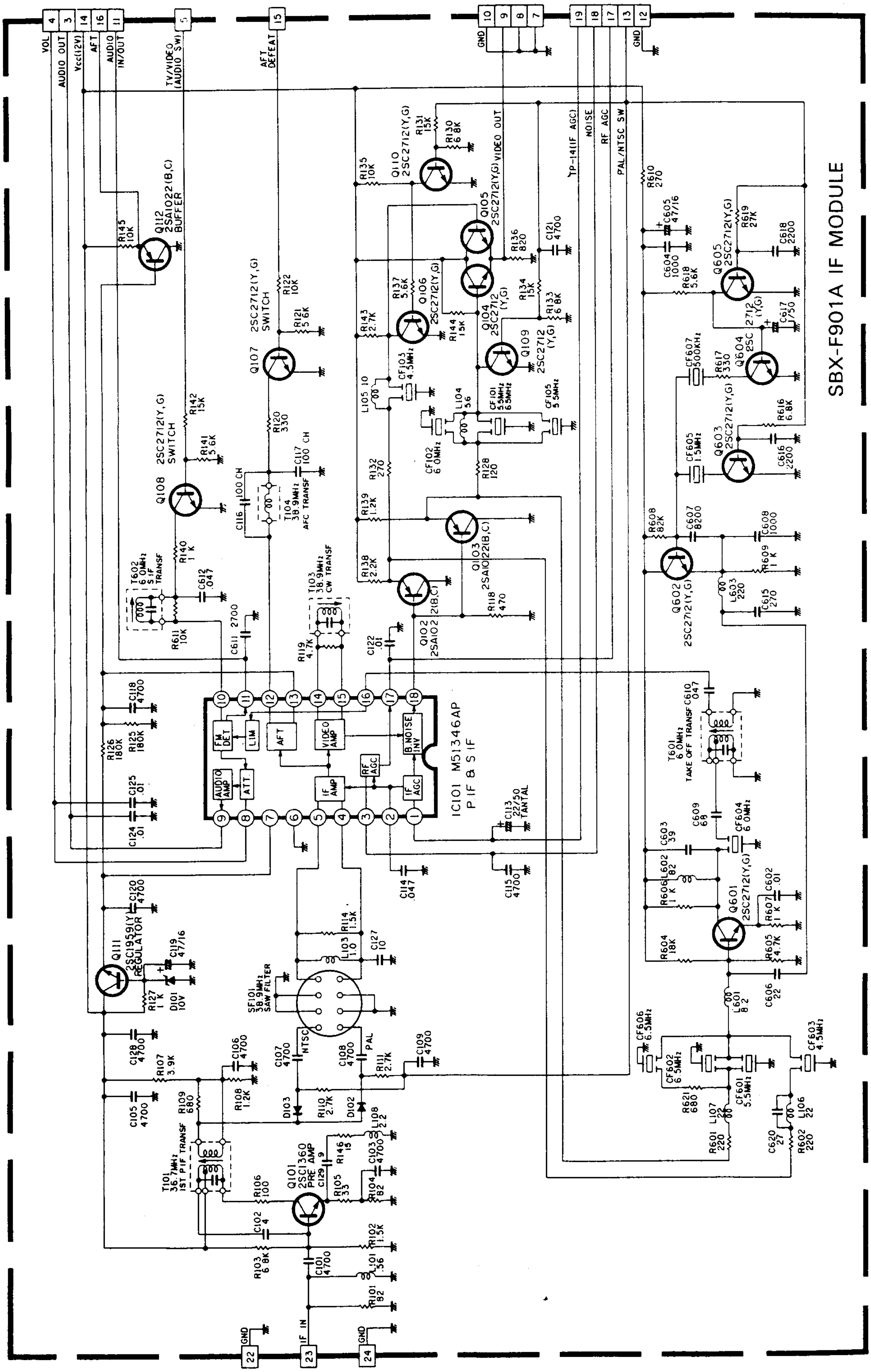


CRT SOCKET PCB ASS'Y

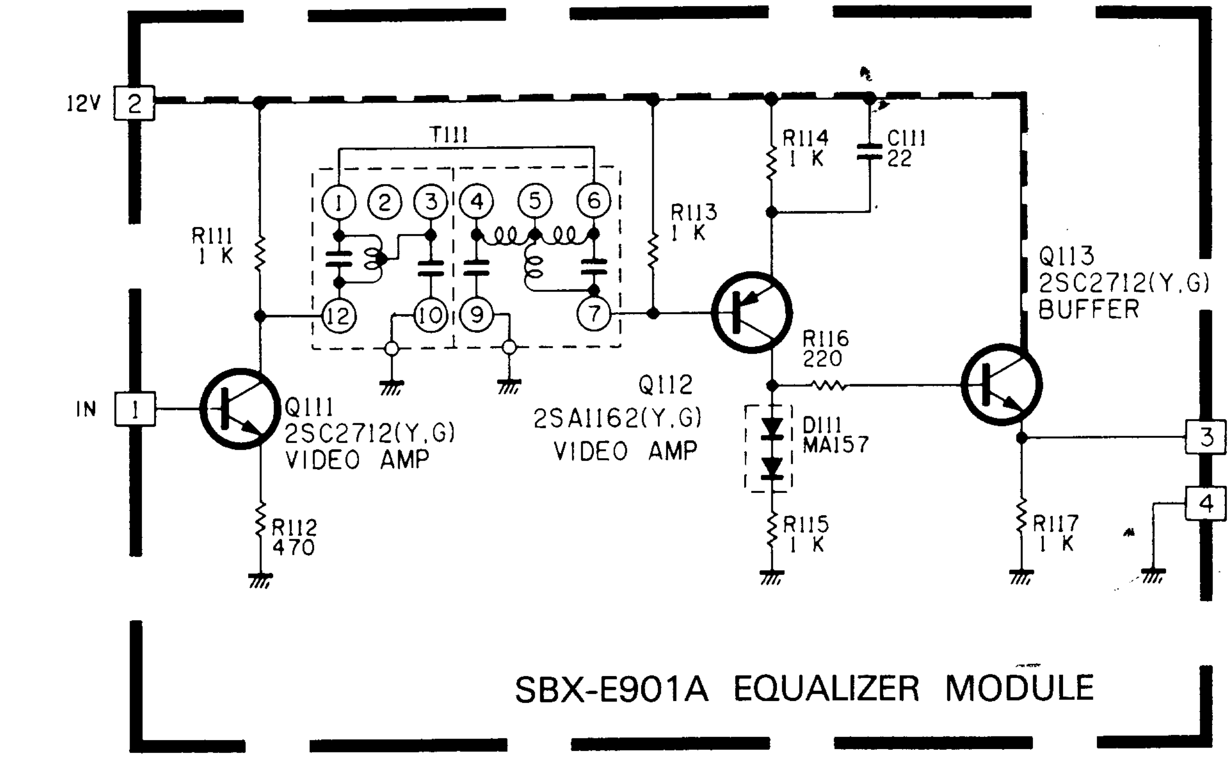
S. SELECT MODULE SCHEMATIC DIAGRAM



IF MODULE SCHEMATIC DIAGRAM



EQ. MODULE SCHEMATIC DIAGRAM



SECAM MODULE SCHEMATIC DIAGRAM