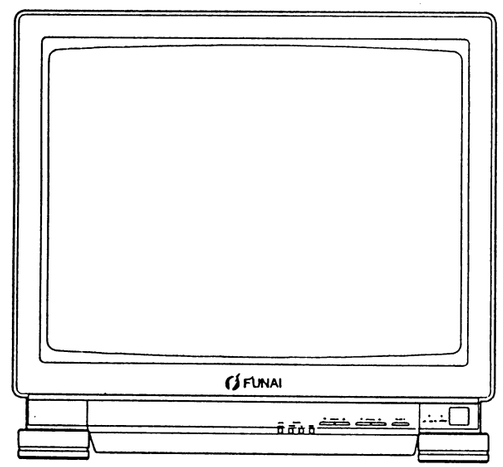
FUNAI

SERVICE MANUAL

20 Inch Color Television

TV-2010 HC



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CONTENTS

GENERAL SPECIFICATIONS

A)System

1)CRT	: 20"(19V), Inline gun, 90° Def.
	: ITC adjusted for Northern Hemisphere magnetic field.
2)Color system	: PAL-D/I, SECAM-D/K, NTSC 4.43MHz, NTSC 3.58MHz (Automatic Swithing)
3)Receiving channel	
	: [VHF low] ···· 1~ 5ch
– CHINA ch(PAL D/D) –	[VHF high]····6~12ch
	: [UHF] ····· 13~57ch
– UK ch(PAL 1) –	: [UHF] ····· 21~69ch
– DIRT ch(SECAM D/K) –	: [VHF low] ··R1~R5ch
	: [VHF hige]·R6~R12ch
	: [UHF low] ·· 21~69ch
	(Can be memory 60 stations)
4)Tuning system	: Voltage synthesizer system
5)Control	
∗ Channel selector	: 2-Push switch (up/down)
∗ Sound volume	: 2-Push switch (up/down)
∗ Power	: Push switch
∗ Tuning	: 2-Push switch (up/down)
∗ Program	: Push switch
∗ Auto memory	: Push switch
6)Connector	
∗ Antenna	: 75ohm ····· IEC jack
∗ Vedio in/out	: BNC jack
∗ Aideo in/out	: RCA jack

7)Onscreen Display
- ∗ Channel
- ∗ Volume
- ∗ Brightness
- ∗ Contrast
- ∗ Color
- ∗ Clock
- ∗ Timer ON/OFF
- ∗ Band position
- ∗ Sleep timer (10~90 Minute)
- ∗ Tuning Indicator

8)Indicator	
∗ On Timer	: LED (RED)
∗ Stand by	: LED (RED)
9)Degauss	: Automatic Degaussing
10)Speaker	: Oval 2" × 3.5"

B)IR Remote Control : 30 keys

1)Power
2)Channel 15keys
3)Channel up
4)Channel down
5)Volume up
6)Volume down
7)Mute
8)Sleep
9)Display
10)Channel recall
11)Time select (Clock/Timer On/Off)
12)Picture select (Bright/Cont/Color)
13)Up/Down Control (Picture control/Hour/Minute)
14)Timer set
15)TV/VIDEO

C)Mechanical

1)Dimension	: (W)480 × (D)458 × (H)450mm
2)Cabinet	: All plastic cabinet
3)Weight	: 19.5kg
4)Packing weight	: 21.5kg

D)Power supply

1)Rating	: AC 220V/50Hz
2)AC cord	: 6 ft PVC cord with IEC type C PLUG

E)Others

1)Regulations	: IEC-65 passable

F)Accessaries

1)Remote control handset
2)2-AAA batteries for remote control/handset
3)Instruction booklet
4)Matching Adaptor
5)VHF Antenna

PERFORMANCE SPECIFICATIONS

<Tuner>

*ANT input ····· 75 ohm unbal.IEC connector.

*Reference level ····· 300mVp-p at Video output.

*Test input signal ····· 400Hz, 30% modulation.

	Description	Condition	Unit	Nominal	Limit
1.	Peak picture sens.	VHF	dBμV	20	30
		UHF	dBμV	30	40
2.	AFT pull in range *input 80dBμ		MHz	± 1.0	± 0.7
3.	Intermediate freq.	Picture	MHz	38.0	
		Sound	MHz	31.5(D/K)	
			MHz	32.0(I)	
4.	Intercarrier freq.		MHz	6.5(D/K)	
			MHz	6.0(I)	

<Deflection>

	Description	Condition	Unit	Nominal	Limit
1.	Deflection freq	Horizontal (PAL/SECAM)	kHz	15.625	
		Horizontal (NTSC)		15.75	
		Vertical (PAL/SECAM)	Hz	50	
		Vertical (NTSC)		60	
2.	Linearity	Horizontal	%		± 15
		Vertical	%		± 15
3.	High voltage		KV	25	

<Video & Chroma>

	Description	Condition	Unit	Nominal	Limit
1.	Misconvergence	Center	mm		0.4
		Corner	mm		2.0
		Side	mm		1.5
2.	Over scan	Horizontal	%	10	
		Vertical	%	10	
3.	Color temperrature		° k	8500	
4.	Resolution	Horizontal	Line	300	
		Vertical	Line	300	
5.	Brightness	APL 100%	ft-L	35	25

<Audio>

*All items are measured across 8 ohm resistor at speaker output terminal.

	Description	Condition	Unit	Nominal	Limit
1.	Audio output power	10%THD	W	1.5	0.8
2.	Audio distortion	500mW	%	2	5
3.	Audio freq. response	– 6dB	Hz		100-6K

SAFETY PRECAUTIONS

1. **Before returning a product to the customer,** always make a safety check of the entire product, including, but not limited to, the following items.

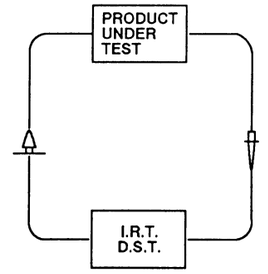
a. Be sure that no built-in protective devices are defective and/or have been defeated during servicing.
(1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience.
(2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this product or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features of fail to perform safety checks may be liable for any resulting damage.**

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their finger(s) and contact a hazardous voltage. Such opening(s) include, but no limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slot(s), and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

C-1. Insulation Resistance Check - With the product AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs tied together and touch the Insulation Resistance Tester(I.R.T.) lead. Other I.R.T. lead contact accessible metal parts (antenna, handle bracket, metal cabinet, screw heads, metallic overlays, control shafts, etc.) If the measured resistance is less than **10.0 megohm,** an abnormality exists that must be corrected before the product is returned to the customer. Repeat this test with the product AC switch in the off. Position, if applicable.

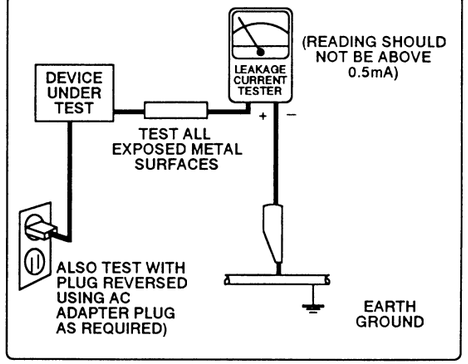
C-2. Dielectric Strength Test - With the product AC plug removed from AC source, connect an electrical jumper across the two AC plug prongs tied together and touch the Dielectric Strength tester (D.S.T.) lead. Other D.S.T. lead contact accessible metal parts (antenna, handle bracket, metal cabinet, screw heads, metallic overlays, control shafts, etc.) If the product does not withstand dielectric strength test under condition **AC 3,000V, 1 min., cutoff current max 10 milli-ampere,** an abnormality exists that must be corrected before the product is returned to the customer. Repeat this test with the product AC switch in the off position, if applicable.

Insulation Resistance Check or Dielectric Strength Test



d. Leakage Current Hot Check - With the product completely reassembled, plug the AC line cord directly into an AC outlet.(Do not use an isolation transformer during this test.) Use a leakage current tester or an appropriate metering system. With the product AC switch first in the on position and then in the off position, measure from live polarity side to all exposed metal parts of the product (antenna, handle bracket, metal cabinet, screw heads,metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milli-ampere. Reverse the product power cord plug in the outlet and repeat this test.

AC Leakage Test



ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE PRODUCT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSARIES.

e. **X-Radiation and High Voltage Limits** - Because the picture tube is the primary potential source of X-radiation in solid-state TV receiver, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as specified parts list in this manual.Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place. High voltage must be measured each time servicing is performed that involves B+, horizontal deflection or high voltage. Correct operation of the X-radiation protection circuits also must be reconfirmed each time they are serviced. (X-radiation protection circuits also may be called "horizontal disable" or "hold-down".) Read and apply the high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications given on product labels and in the Product Safety & X-Radiation Warning note on the service data chassis schematic.High voltage is maintained within specified limits by close-tolerance safety-related components/adjustments in the high voltage circuit. If high voltage exceeds specified limits, check each component specified on the chassis schematic and take corrective action.

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.

3. **Design Alteration Warning** – Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions may void the manufacturer's warranty and may make you, the servicer responsible for personal injury or property damage resulting therefrom.

4. **Picture Tube Implosion Protection Warning** – The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.

5. **Hot Chassis Warning** – a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and may be safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.
b. Some TV receiver chassis normally have 85V AC(RS) between chassis and earth ground regardless of the AC plug polarity. These chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.
c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not Isolated from the AC power line. The two ground systems are electrically separated by insulating material that must not be defeated or altered.

6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges. b. near thermally hot parts-be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and e. antenna wiring. Always inspect in all areas for pinched, out of place, or trayed wiring. Do not change spacing between components, and between components and the printed-circuit board. Check AC power cord for damage.

7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

8. **PRODUCT SAFETY NOTICE** – Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a (⚠) on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. Products Safety is under review continuously and new instructions are issued whenever appropriate.

Prior to shipment from the factory, our products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

1. Parts identified by the ⚠ symbol are critical for safety.
   Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.
   Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulators for transistors.
5. When replacing AC primary side components (transformers, power cords. etc.), wrap ends of wires securely about the terminals before soldering.
6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. When a power cord has been replaced, check that 10 – 15 kg of force in any direction will not loosen it.
9. Also check areas surrounding repaired locations.
10. Use care that foreign objects (screws, solder droplets. etc.) do not remain inside the set.
11. Crimp type wire connector
    When replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, in order to prevent shock hazards, perform carefully and precisely the following steps.
    Replacement procedure
    1) Remove the old connector by cutting the wires at a point close to the connector.
       Important: Do not re-use a connector (discard it).
    2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
    3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
    4) Use the crimping tool to crimp the metal sleeve at the center position.
       Be sure to crimp fully to the complete closure of the tool.
12. When connecting or disconnecting the VCR connectors; First, disconnection the AC plug from AC supply socket.

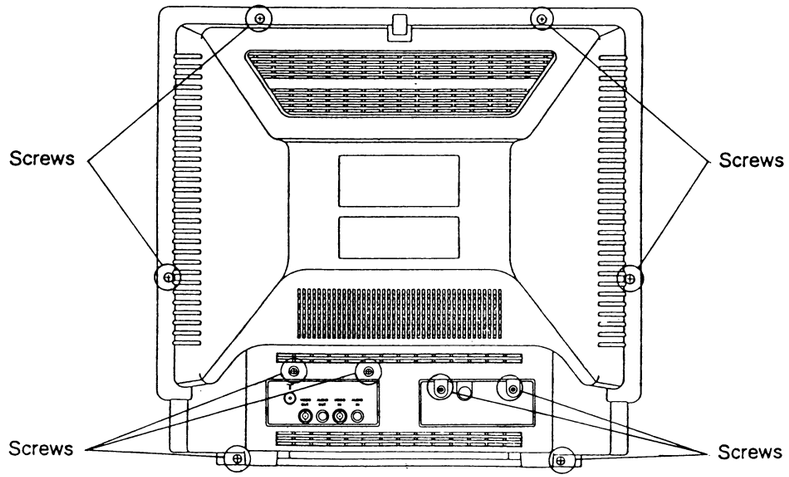
Safety Check after Servicing

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, video and audio output terminals, etc.).
2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio output terminals, etc.).
3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance.
4. **Leakage current test**
   Confirm specified or lower leakage ccurrent between power cord plug prongs (earth ground) and externally exposed parts (RF terminal, video and audio input and output terminals, etc.).

DISASSEMBLY INSTRUCTIONS

1. REAR CABINET REMOVAL

1-1. Dis connect the AC power cord.
1-2. Remove 10 screws from the rear cabinet.
1-3. To re-install, reverse the above procedure.



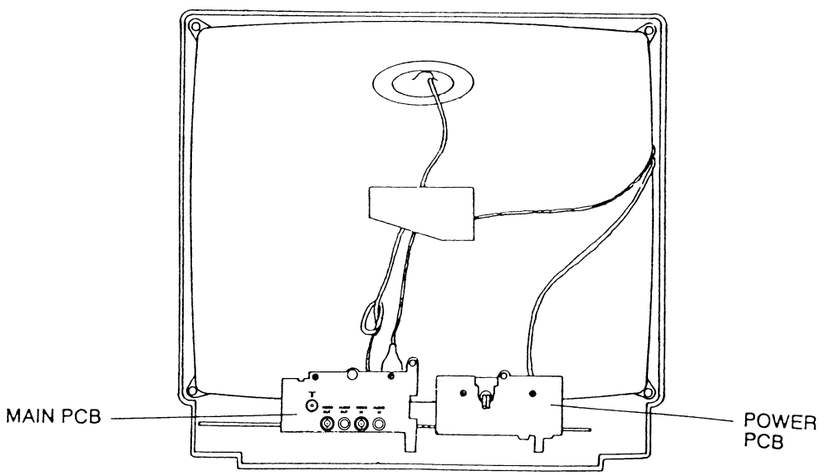
2. MAIN PCB/POWER PCB ASS'Y REMOVAL

2-1. Unplug the AC power cord, remove the rear cabinet.

2-2. Disconnect all connectors from the MAIN PCB to POWER PCB.

2-3. Pull the MAIN PCB and POWER PCB to backward.

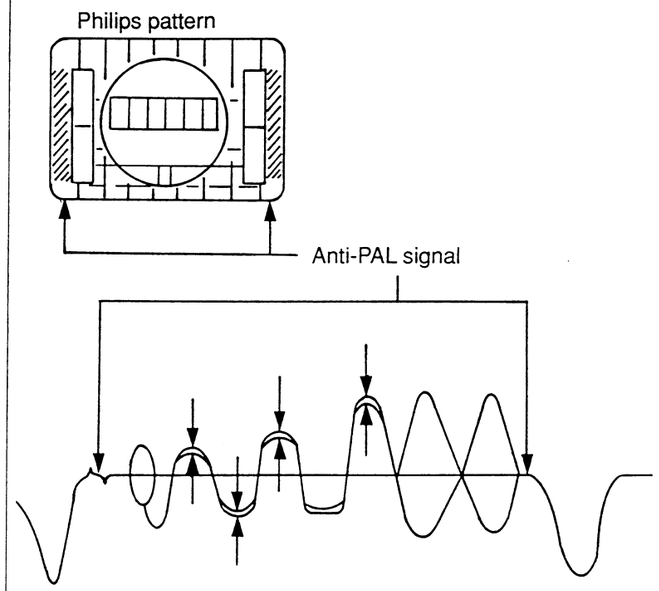
2-4. To re-install, reverse the above procedure.

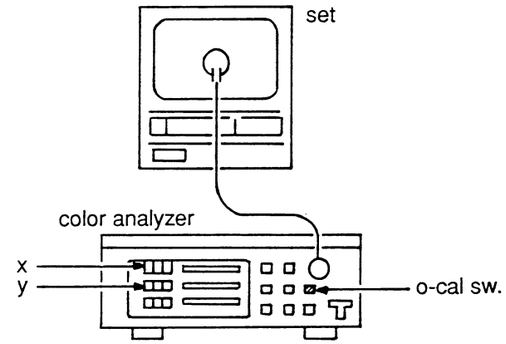


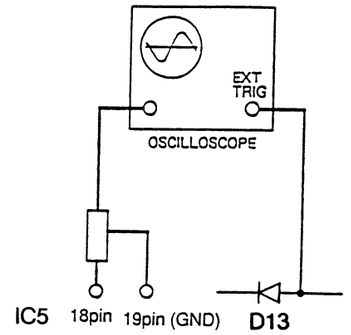
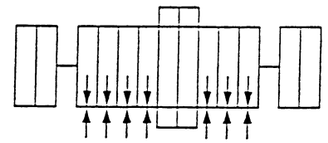
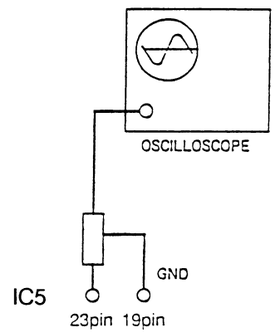
ELECTRICAL ADJUSTMENT

Alignment Item	Alignment Points	Alignment Method
1. Focus	FOCUS VR.	1. Input monoscope-pattern. 2. Align the focus while using the figure 325 (indicating number of the resolution) at the upper left of the monoscope pattern as reference, and check to ensure that no fading is detected in the center and all four corners. (Set the CONTRAST/BRIGHT control to cen ter.) Align the focus with this figure serving as a standard. → 325
2. Cut Off	VR1, VR3, VR4 SCREEN VR.	1. Input APL 100% white. 2. Set the SCREEN (counterclockwise), VR1, and VR4 (counter - clockwise) to min. 3. Turn the Service switch ON. 4. Adjust the SCREEN to a point where the horizontal GREEN line starts flashing. 5. Adjust VR1(blue) and VR4(red) till the horizontal line turn white. 6. Turn the service switch OFF. **Note:** At this time,each VOL. of R.DRIVE(VR2) and B.DRive(VR5) should be in center.
3. V.size	VR11	1. Input monoscope pattern. 2. Adjust VR11 so that the monoscope V.SIZE display becomes 90% . Align horizontal/vertical balance, and then adjust so that the circle in the monoscope pattern center becomes truly round. 90 90 90 90
4. Sub Bright	VR12	1. Input the gray scale. 2. Set CONT.BRIGHT to center. 3. Adjust VR12 to point where the level one step higher than the black level starts flashing. This level starts flashing.

Note: The COLOR/CONTRAST/BRIGHT CONTROL, unless otherwise specified, should all be set to center.

Alignment Item	Alignment Points	Alignment Method
5. 1H delay line	VR9 , L14	1. Input the Philips pattern. 2. Connect the oscilloscope to IC5 pin 62. (Synchronize the os - cilloscope externally through the D13 anode.) 3. Adjust VR9, L14 so that the amplitude at Anti-PAL signal part becomes minimal(no color) and the wavefrom at the color bar part is not seen in double("Venetian Blind" does not appear at the color bar signal part). 

Alignment Item	Alignment Points	Alignment Method
6. White Balance	VR5 VR2 VR1,VR4	1. Input APL 100% white. 2. After aging for 20-30 minutes, demagnetize the tube (CRT) surface with a demagnetizer. 3. Set the color analyzer to the CHROMA mode, and after zero point calibration, bring the optical receptor into close contact with the center on the tube surface(CRT), and adjust R.DRIVE(VR5) and B.DRIVE(VR2) so that the respective chroma temperatures become 8,500° K (X:0.290 /Y:0.300). 4. Turn the service switch ON. 5. At this time, check that the horizontal line is white. If the horizontal line is not white, adjust the CUT-OFF VR, VR1(blue), VR4 (red) until proper alignment is reached. 6. Turn the service switch OFF, and using the color analyzer, check that the chroma temperatures read the preset values. 7. Repeat steps 3, 4, 5, 6 above, and adjust so that the settings of chroma temperature and horizontal line are at their best.  **Note 1:** Be sure the tube surface faces east. **Note 2:** Make this adjustment under European magnetic field. (Vertical : 0.4G/Horizontal : 0.2G) **Note 3:** Always adjust SUB-BRIGHT, V-SIZE, OUT-OFF, and PAL. **Note 4:** The allowable range during chroma temperature adjustment should be ±5% Max. x: 0.275 to 0.305 y: 0.285 to 0.315

Alignment Item	Alignment Points	Alignment Method
7. SECAM Chroma Bell Filter	L12	1. Input the SECAM color bar signal. 2. Turn the CONTRAST, BRIGHT, COLOR control to max. 3. Connect the oscilloscope as foloowing drawing.  4. Adjust L12 with core driver to flat wave from at arrow marked on following drawing. 
8. IDENT Coil	L10	1. Input the SECAM color bar signal. 2. Turn the CONTRAST, BRIGHT, COLOR control to max. 3. Connect the oscilloscope as following drawing.  4. Adjust L10 with core driver to peak DC voltage.

VOLTAGE CHART

Input Signal : Color bar signal
Tone Volume : MAX.

(Unit : Volt)

		E	C	B
Q1		4.83	11.94	5.48
Q2		6.08	11.94	6.53
Q3		508m	6.66	1.26
Q4		3.68	11.94	4.3
Q5		0	11.25	59m
Q6		0	12m	660m
Q8		3.12	11.94	3.77
Q9		0	4.68	134m
Q12		0	55	421m
Q13		0	113.7	-118m
Q14		3.04	163.6	3.46
Q15		2.87	157.4	3.35
Q16		2.89	160.5	3.36
Q17		0	4.69	315m
Q18		0	4.33	-125m
Q19		0	2.32	247m
Q20		0	1.65	488m
Q21		3.80	0	3.13
Q22		0	1.36	487m
Q23		0	23	104m
Q24		9.22	9.12	8.48m
Q25		9.22	0	9.14
Q26		9.23	0	9.14
Q27		0	9.11	0
Q28		0	9.11	0
Q29		0	13m	634m
Q30		0	104m	789m
Q34		5.49	0	4.82
Q35		663m	0	27m
Q36		664m	0	29m
Q37	P/S	0	0	0
	NTSC	0	0	0.6
Q38	P/S	0	6.0	0
	NTSC	0	0	0.6
Q39	P/S	5.0	0	6.0
	NTSC	6.5	0.9	6.0
Q40	P/S	5.0	0	4.5
	NTSC	6.5	0	7.4
Q42		3.88	0	3.21
Q43		0	9.98	68m
Q44	P/S	0	4.7	0
	NTSC	0	0	0.6

NOTES :
P/S ·····PAL or SECAM system
NTSC·····NTSC system

(Unit : Volt)

	IC1	IC2	IC3	IC4
1	5.63	5.19	984m	-
2	4.62	3.47	2.84	-
3	4.27	3.47	2.84	5.86
4	7.43	3.47	1.30	5.90
5	7.02	0	82m	5.89
6	4.36	5.20	5.20	0
7	4.36	5.20	2m	0
8	0	5.20	2m	0
9	1.52		2.84	15m
10	8.53		3.48	15m
11	6.90		3.48	15m
12	3.89		3.48	3.77
13	8.48		5.11	4.38
14	8.47		5.13	3.77
15	3.89		5.12	723m
16	5.47		5.12	11.94
17	11.96		5.09	
18	0		5.13	
19	2.94		5.19	
20	2.95		5.19	
21			0	
22			5.05	
23			1m	
24			1m	
25			1m	
26			4.34	
27			4.70	
28			3.04	
29			3.05	
30			0	

(Unit : Volt)

	IC3
31	(2.28)
32	2.57
33	5.03
34	0
35	5.18
36	4.68
37	68m
38	0
39	0
40	0
41	0
42	5.22

(Unit : Volt)

	IC 5	
	PAL/SECAM	NTSC
1	8.7	8.7
2	8.0	8.0
3	8.7	8.7
4	6.5	6.5
5	6.5	6.5
6	12.0	12.0
7	4.1	4.1
8	6.5	6.5
9	6.5	6.5
10	6.0	0
11	6.0	6.0
12	5.2	5.2
13	5.2	5.2
14	8.0	8.0
15	8.9	8.9
16	10.5	10.5
17	3.4	3.4
18	4.5	7.4
19	0	0
20	5.9	5.9
21	3.7	3.7
22	11.5	11.5
23	5.3	5.3
24	5.7	5.7
25	5.9	5.9
26	3.2	3.2
27	9.7	9.7
28	3.2	3.2
29	0.9	0.9
30	9.1	9.1
31	6.4	6.4
32	6.3	6.3

(Unit : Volt)

	IC 5	
	PAL/SECAM	NTSC
33	6.6	6.6
34	3.7	3.7
35	0.7	0.7
36	7.4	7.4
37	-	-
38	6.8	6.8
39	2.2	2.2
40	9.0	9.0
41	3.2	3.2
42	3.2	3.2
43	3.2	3.2
44	3.2	3.2
45	3.3	3.3
46	3.2	3.2
47	6.7	6.7
48	3.4	3.4
49	6.9	6.9
50	0	0
51	6.6	6.6
52	0	0
53	0	0
54	0	0
55	5.6	5.6
56	3.2	3.2
57	5.5	5.5
58	4.8	4.8
59	3.3	3.3
60	6.2	6.2
61	12.0	12.0
62	6.2	6.2
63	12.0	12.0
64	8.0	8.0

(Unit : Volt)

	IC6	IC7	IC8	IC9
1	11.21	3.98	11.94	15.95
2	0	491m	5.31	0
3	5.96	-168m	49m	11.98
4		3.28	11.39	
5		-1.06	5.52	
6		0	5.67	
7		252m	0	
8		328m	5.73	
9		-	12.15	
10		298		

(Unit : Volt)

	IC10	IC11	IC12
1	-1.39	5.23	11.95
2	13.93	0	0
3	24.9	5.04	9.23
4	-548m		
5	-564m		
6	24.4		
7	230m		
8			
9			
10			

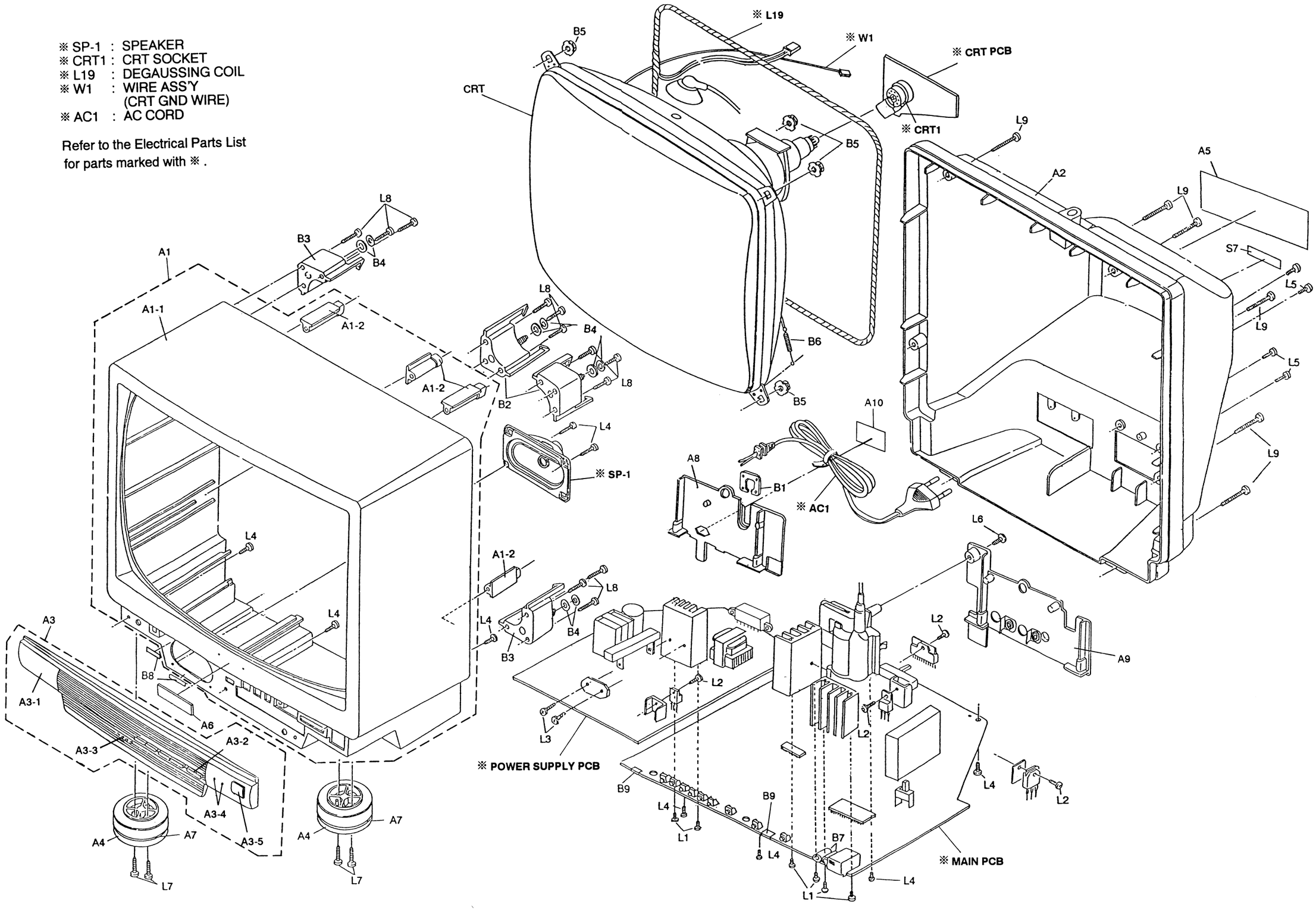
(Unit : Volt)

	IC14
1	0
2	32

EXPLODED VIEW(CABINET)

※ SP-1 : SPEAKER
※ CRT1 : CRT SOCKET
※ L19 : DEGAUSSING COIL
※ W1 : WIRE ASS'Y (CRT GND WIRE)
※ AC1 : AC CORD

Refer to the Electrical Parts List for parts marked with ※ .

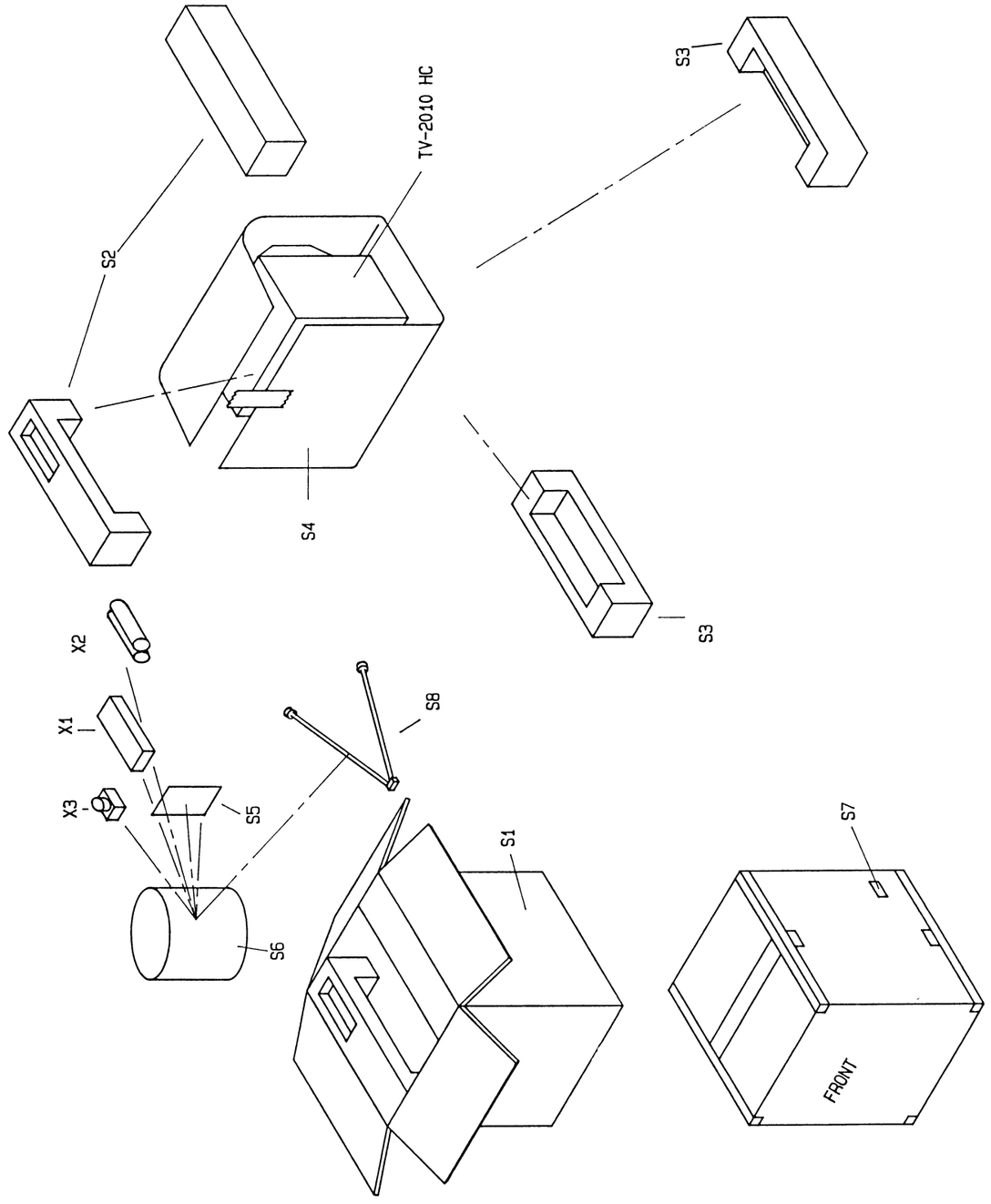


MECHANICAL PARTS LIST

Ref. No.	Description	Parts No.
	Cabinet Parts	
A1	Front Cabinet Ass'y	21CH204X
A1-1	Front Cabinet	21CH204
A1-2	Rear Cabinet Mounting Boss	21WH071
A2	Rear Cabinet	21CH200
A3	Control Case Ass'y	0EMN00221
A3-1	Control Case	0EM200077
A3-2	Control Knob	21NH270
A3-3	Memory Knob	21NH271
A3-4	Indicator Window	21WH076
A3-5	Sensor Window	21WH072
A4	Cabinet Foot	21WH066
A5	Rating Label	0EM400477
A6	Brand Badge	0EM400231
A7	Decoration Tape	24TH008
A8	AC Cord Holder	21WH085
A9	ANT. Jack Holder	21WH084
A10	Cover Plate	0EM400479
B1	Stopper Holder	23WH089
B2	CRT Mounting Boss LU,RD Ass'y	21WH067X
B3	CRT Mounting Boss LD, RU Ass'y	21WH068X
B4	CRT Spacer (A)	23WE079
B5	M6 Nut	27WH001
B6	Tension Spring	26WH006
B7	LED Holder	21WH065
B8	Cloth	24WH030
B9	Cloth B	0EM400076
L1	Tap Tight Screw M3 × 6	GBMS306
L2	Tap Tight Screw M3 × 10	GBMB310
L3	Tap Tight Screw M3 × 14	GBMB314
L4	Tap Tight Screw M3 × 10	GBMP310
L5	Tap Tight Screw M3 × 12	GBKP312
L6	Tap Tight Screw M4 × 10	GBMP410
L7	Tap Tight Screw M4 × 12	GBMP412
L8	Tap Tight Screw M4 × 16	GBMP416
L9	Tap Tight Screw M4 × 20	GBKP420

Ref. No.	Description		Parts No.
	Accessories		
X1	Remote Control Unit		1813502
X2	Battery	or	1790741
			1790902
X3	Matching Adaptor		1780283
		or	1780213
	Packing Materials		
S1	Carton		0EM400478
S2	Set Pad (Top)		0EM100069
S3	Set Pad (Bottom)		0EM100068
S4	Set Sheet		32EH014
S5	Owner's Manual		0EMN00222
S6	Polyethylene Bag		Z221350
S7	Serial No. Label		24LH033
S8	VHF Antenna		27AH011
		or	27AH012

COMPONENT PACKING



ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special charactoeristics important to safety. Before replacing any of these compornents, read carefully the product safety notice of this service manual. Don't degrade the safety of the product through improper servicing.

REF.NO.	DESCRIPTION			PART NO.
	ASS'Y, PCB, MAIN CONSISTS OF THE FOLLLOWING:			**BL5458F01001-A**
	CAPACITORS			
C1	Electrolytic Cap	47uF/16V		126C476
C2	Electrolytic Cap	0.01uF/50V	FZ	32F3103
	Electorlytic Cap	0.01uF/25V	FZ	3F45103
C3	Ceramic Cap	39pF/50V	SL	3270390
	Ceramic Cap	39pF/50V	SL	3S41390
C4	Ceramic Cap	39pF/50V	SL	3270390
	Ceramic Cap	39pF/50V	SL	3S41390
C5	Electrolytic Cap	0.01uF/50V	FZ	32F3103
	Electorlytic Cap	0.01uF/25V	FZ	3F45103
C6	Ceramic Cap	27pF/50V	SL	3270270
	Ceramic Cap	27pF/50V	SL	3S41270
C8	Ceramic Cap	130pF	NPO	12CH131
C9	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C10	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C11	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C12	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C13	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C14	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C15	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C16	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C17	Ceramic Cap	0.001uF/50V	BK	32B3102
	Ceramic Cap	0.001uF/50V	BK	3B42102
C18	Polyestel Film Cap	0.068uF/50V	K	1250683
	M-Cap	AMZ50V683K-5FT		2250683
C19	Ceramic Cap	10pF/50V	SL	3270100
	Ceramic Cap	10pF/50V	SL	3S41100
C20	Ceramic Cap	15pF/50V	SL	3270100
	Ceramic Cap	15pF/50V	SL	3S41150
C21	Mylar Cap	0.01uF/50V	K	1250103
	Mylar Cap	0.01uF/50V	K ±10%	2250103
C22	Electrolytic Cap	0.47uF/50V	M	126F474
C23	Electrolytic Cap	4.7uF/50V	M	126F475
C24	Ceramic Cap	0.001uF/50V	BK	32B3102
	Ceramic Cap	0.001uF/50V	BK	3B42102
C26	Electrolytic Cap	4.7uF/50V	M	126F475
C27	Semi Conduct Cap	0.018uF/25V	SR K	12Y2183
C30	Electrolytic Cap	470uF/16V	M	126C477
	Electrolytic Cap	470uF/16V	M	626C477
C31	Electrolytic Cap	4.7uF/50V	M	126F475
C33	Mylar Cap	0.0012uF/50V	K	1250122
	Mylar Cap	0.0012uF/50V	K	2250122
C34	Ceramic Cap	47pF/50V	SL	3270470
	Ceramic Cap	47pF/50V	SL	3S41470
C35	Ceramic Cap	0.001uF/50V	BK	32B3102
	Ceramic Cap	0.001uF/50V	BK	3B42102

REF.NO.	DESCRIPTION			PART NO.
C36	Mylar Cap	0.1uF/50V	K	1250104
	Mylar Cap	0.1uF/50V	K	2250104
C37	Ceramic Cap	100pF/50V	BK	32B3101
	Ceramic Cap	100pF/50V	BK	3B42101
C39	Mylar Cap	0.0022uF/50V	K	1250222
	Mylar Cap	0.0022uF/50V	K	2250222
C40	Ceramic Cap	0.001uF/1kV		6220574
C41	Electrolytic Cap	100uF/35V	M	126E107
	Electrolytic Cap	100uF/35V	M	626E107
C42	Electrolytic Cap	100uF/35V	M	126E107
	Electrolytic Cap	100uF/35V	M	626E107
C43	P.P. Film Cap	0.0047uF/1.6kV		122Z183
	P.P. Film Cap	0.0047uF/1.6kV		1220496
C44	P.P. Film Cap.	0.0047uF/1.6kV		122Z183
	[for SAM and CPT Types CRT]			
	P.P. Film Cap.	0.0047uF/1.6kV		1220496
	[for SAM and CPT Types CRT]			
	P.P. Film Cap.	0.0033uF/1.6kV		1220494
	[for HT and GS Types CRT]			
	P.P. Film Cap.	0.0033uF/1.6kV		122Z280
	[for HT and GS Types CRT]			
C46	Electrolytic Cap	4.7uF/50V	M	126F475
C48	Semi Conduct Cap	0.01uF/25V	SR K	12Y2103
C50	Electrolytic Cap	100uF/25V	M	126D107
	Electrolytic Cap	100uF/25V	M	626D107
C51	Electrolytic Cap	330uF/35V	M	6220599
	Electrolytic Cap	330uF/35V	M	626E337
C53	Electrolytic Cap	4.7uF/250V	M	6220691
	Electrolytic Cap	4.7uF/250V	M	122Z343
C55	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C56	Electrolytic Cap	1uF/50V	M	126F105
C57	Ceramic Cap	0.0039uF/25V	BK	32B3392
	Ceramic Cap	0.0039uF/25V	BK	3X4D392
C58	Electrolytic Cap	2.2uF/50V	M	126F225
C59	Electrolytic Cap	10uF/16V	M	626C106
C60	Electrolytic Cap	10uF/16V	M	126C106
C61	Mylar Cap	0.047uF/50V	K	1250473
	Mylar Cap	0.047uF/50V	K	2250473
C62	Electrolytic Cap	1000uF/16V	M	126C108
	Electrolytic Cap	1000uF/16V	M	626C108
C63	Electrolytic Cap	100uF/16V	M	126C107
C64	Electrolytic Cap	100uF/16V	M	126C107
C65	Tantal Cap.	2.2uF/25V		122F259
	Tantal Cap.	2.2uF/25V		1220259
C66	Electrolytic Cap	10uF/16V	M	126C106
C67	Electrolytic Cap	1000uF/25V	M	126D108
	Electrolytic Cap	1000uF/25V	M	626D108
C68	Mylar Cap	0.18uF/100V	K	1251184
	Mylar Cap	0.18uF/100V	K	6251184
C69	P.P. Film Cap	0.47uF/200V		122Z256
	P.P. Film Cap	0.47uF/200V		1220511
C73	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/50V	FZ	3F45103
C74	Electrolytic Cap	1uF/50V	M	126F105
C75	Ceramic Cap	15pF/50V	SL	3270150
	Ceramic Cap	15pF/50V	SL	3S41150

REF.NO.	DESCRIPTION			PART NO.
C76	Ceramic Cap	30pF/50V	SL	3270300
	Ceramic Cap	30pF/50V	SL	3S41300
C77	M-Cap 92WS	0.027uF/50V	K	2250273
	M-Cap 92GW	0.027uF/50V	K	1250273
C78	Ceramic Cap	20pF/50V	SL	3270200
	Ceramic Cap	20pF/50V	SL	3S41200
C79	Ceramic Cap	33pF/50V	SL	3270330
	Ceramic Cap	33pF/50V	SL	3S41330
C80	Electrolytic Cap	2.2uF/50V	M NP	126X225
C81	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C82	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C83	Semi Conduct Cap	0.1uF/25V	SR K	12Y2104
C84	M-Cap 92WG	0.056uF/50V		1250563
	M-Cap 92WG	0.056uF/50V		2250563
C86	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C87	Ceramic Cap	18pF/50V	SL	3270180
	Ceramic Cap	18pF/50V	SL	3S41180
C88	Ceramic Cap	10pF/50V	SL	3270100
	Ceramic Cap	10pF/50V	SL	3S41100
C90	Electrolytic Cap	1uF/250V	M	6220690
	Electrolytic Cap	1uF/250V		122Z340
C91	Electrolytic Cap	4.7uF/50V	M	126F475
C92	Ceramic Cap	180pF/50V	BK	32B3181
	Ceramic Cap	180pF/50V	BK	3B42181
C93	Electrolytic Cap	0.47uF/50V	M	126F474
C94	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C95	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C96	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C97	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C98	Electrolytic Cap	470uF/16V	M	126C477
	Electrolytic Cap	470uF/16V	M	626C477
C100	Ceramic Cap	8pF/50V	CH D	32CH809
C101	Electrolytic Cap	10uF/16V	M	126C106
C102	Electrolytic Cap	470uF/16V	M	126C477
	Electrolytic Cap	470uF/16V	M	626C477
C103	Ceramic Cap	0.056uF/25V	SR	12Y2563
C104	Ceramic Cap	22pF/50V	SL	3270220
	Ceramic Cap	22pF/50V	SL	3S41220
C106	Ceramic Cap	7pF/50V	CH D	32CH709
C107	Ceramic Cap	180pF/50V	CH J	12CH181
C108	Ceramic Cap	180pF/50V	CH J	12CH181
C109	Electrolytic Cap	4.7uF/50V	M	126F475
C111	Ceramic Cap	180pF/50V	CH J	12CH181
C112	Ceramic Cap	180pF/50V	CH J	12CH181
C113	Semi Conduct Cap	0.1uF/25V	SR K	12Y2104
C114	Semi Conduct Cap	0.1uF/25V	SR K	12Y2104
C115	Electrolytic Cap	22uF/16V	M	126C226
C120	Electrolytic Cap	10uF/16V	M	126C106
C121	Electrolytic Cap	1uF/50V	M	126F105
C122	Semi Conduct Cap	0.1uF/25V	SR K	12Y2104
C123	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C124	Electrolytic Cap	0.47uF/50V	M	126F474

REF.NO.	DESCRIPTION			PART NO.
C127	Film Cap	0.47uF/50V		625U474
C128	Film Cap	0.47uF/50V		625U474
C129	Film Cap	0.47uF/50V		625U474
C130	Electrolytic Cap	10uF/16V	M	126C106
C131	Electrolytic Cap	4.7uF/50V	M	126F475
C133	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C134	Electrolytic Cap	100uF/16V	M	126C107
C135	Semi Conduct Cap	0.022uF/25V	SR K	12Y2223
C136	Semi Conduct Cap	0.022uF/25V	SR K	12Y2223
C138	Mylar Cap	0.01uF/50V	K	1250103
	Mylar Cap	0.01uF/50V K	+/ − 10%	2250103
C139	Ceramic Cap	240pF	NPO	12CH241
C140	Ceramic Cap	0.0027uF/25V	BK	32B3272
	Ceramic Cap	0.0027uF/25V	BK	3X4D272
C141	Electrolytic Cap	2.2uF/50V	M	126F225
C142	Ceramic Cap	0.001uF/50V	BK	32B3102
	Ceramic Cap	0.001uF/50V	BK	3B42102
C143	Torimar Cap	60pF		1280137
C144	Ceramic Cap	20pF/50V	SL J	3270200
	Ceramic Cap	20pF/50V	SL J	3S41200
C147	Ceramic Cap	100pF/50V	BK	32B3101
	Ceramic Cap	100pF/50V	BK	3B42101
C148	Ceramic Cap	100pF/50V	BK	32B3101
	Ceramic Cap	100pF/50V	BK	3B42101
C149	Ceramic Cap	100pF/50V	BK	32B3101
	Ceramic Cap	100pF/50V	BK	3B42101
C150	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C151	Electrolytic Cap	10uF/16V	M	126C106
C152	Electrolytic Cap	2.2uF/50V	M	126F225
C153	Ceramic Cap	120pF/50V	BK	32B3121
	Ceramic Cap	120pF/50V	BK	3F42121
C155	M-Cap 92GW	0.22uF/50V		1250224
	M-Cap 92WS	0.22uF/50V		2250224
C158	Electrolytic Cap	10uF/16V	M	126C106
C159	Electrolytic Cap	10uF/16V	M	126C106
C160	Electrolytic Cap	10uF/16V	M	126C106
C179	Electrolytic Cap	1uF/50V	M	126F105
C201	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C202	Electrolytic Cap	10uF/16V	M	126C106
C203	Electrolytic Cap	3.3uF/50V	M	126F335
C204	Ceramic Cap	0.01uF/50V	FZ	32F3103
	Ceramic Cap	0.01uF/25V	FZ	3F45103
C209	Electrolytic Cap	1uF/160V		1220618
	Electrolytic Cap	1uF/160V		122Z329
C210	Electrolytic Cap	22uF/160V		122Z334
	Electrolytic Cap	22uF/160V	M	6220758
C212	Ceramic Cap	0.022uF/25V	SRK	32F3223
C216	Electrolytic Cap	2200uF/6.3V	M	126A228
	Electrolytic Cap	2200uF/6.3V	M W/F	626A228
C217	Ceramic Cap	47pF/500V		122Z684
C218	Electrolytic Cap	0.47uF/50V	M	126F474
C223	Ceramic Cap	56pF		1270560
	DIODES			
D1	Diode	1SS176		1SS176
	Diode	1SS133		1SS133

REF.NO.	DESCRIPTION		PART NO.
D2	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D3	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D4	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D6	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D7	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D8	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D9	Diode	ERB44-08L3	AERB4408L300
	Diode	RGP15KL5001	RGP15KL5001
D10	LED	SLR-55VC3 (Red)	1401273
D13	Diode	ERB44-08L3	AERB4408L300
	Diode	RGP15KL5001	RGP15KL5001
D14	Diode	ERB44-08L3	AERB4408L300
	Diode	RGP15KL5001	RGP15KL5001
D15	Diode	ERB44-08L3	AERB4408L300
	Diode	RGP15KL5001	RGP15KL5001
D16	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D19	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D20	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D21	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D22	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D24	Diode	ERB12-02L3	AERB1202L300
	Diode	GP10-4003	MPL5209
D26	Zener Diode	MTZ12B	MTZ12B
D27	Zener Diode	MTZ9.1B	MTZ9.1B
D30	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D31	LED	SLR-55VC3 (Red)	1401273
D32	Zener Diode	MTZ7.5B-T77	MTZ7.5B
D35	Zener Diode	MTZ6.2B	MTZ6.2B
D47	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D49	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D50	Diode	1SS176	1SS176
	Diode	1SS133	1SS133
D51	Diode		1SS176
	Diode		1SS133
D52	Diode		1SS176
	Diode		1SS133
D60	Diode		1SS176
	Diode		1SS133

COILS

L1	Micro Inductor	18uH	2165180
	Micro Inductor	18uH-K-5FT	2162180
L2	Casing Coil		LFA07V*MM001
L3	Casing Coil		LFA07V*MM002
L4	Micro Inductor	8.2uH	2165829
	Micro Inductor	8.2uH	2162829

REF.NO.	DESCRIPTION		PART NO.
L5	Micro Inductor	3.9uH	2165399
	Micro Inductor	3.9uH	2162399
L6	Micro Inductor	2.7uH	2165279
	Micro Inductor	2.7uH	2162279
L8	Pot Type Coil	47uH	LLBD**DMM001
	Pot Type Coil	47uH	117M511
L10	Casing Coil		113M871
L11	Micro Inductor	33uH	2165330
	Micro Inductor	33uH	2162330
L12	Casing Coil		113M873
L13	Micro Inductor	10uH	2165100
	Micro Inductor	10uH	2162100
L14	Casing Coil		113M855
L15	Casing Coil		113M872
L16	Casing Coil		113M872
L22	Casing Coil		113M862
L25	Pot Type Coil	4.7mH	117M957
L27	Coil **[for SAM Type]**		1140097
L29	Micro Inductor	33uH	2165330
	Micro Inductor	33uH	2162330

ICS

IC1	IC	LA7530N	14LQ162
IC2	IC	TC89101P	GTC89101P
IC3	IC	TMP47C634N2458	GCTS150
IC4	IC	BU4053B	14LF166
	IC		TC4053BP
	IC		MC14053BCP
	IC	4053B	14LO436
IC5	IC	TA8659AN	GTA8659AN
IC8	IC	AN5265	14LN160
IC9	IC		AN78M12
	IC	NJM78M12FA	14LO242
IC10	IC	LA7830	14LQ163
IC11	IC	PST523C	14LO174
IC12	IC	78M09	AN78M09
	IC	78M09	L78M09
IC14	IC	L5631	L5631

TRANSISTORS

Q1	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q2	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q3	Transistor	2SC3000(E)	2SC3000EZ
Q4	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ

REF.NO.	DESCRIPTION		PART NO.
Q5	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q6	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q8	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q9	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q12	Transistor	2SC2271(D)-AEMP	2SC2271DZ
	Transistor	2SC2271(E)-AEMP	2SC2271EZ
Q13	Transistor	2SD1398-CA	2SD1398Z
Q17	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q18	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q19	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q20	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q21	Transistor	2SA933(R)	2SA933RZ
	Transistor	2SA933(S)	2SA933SZ
	Transistor	2SA1318(T)-AANP	2SA1318TZ
	Transistor	2SA1318(U)-AANP	2SA1318UZ
Q22	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q23	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q24	Transistor	2SA933(R)	2SA933RZ
	Transistor	2SA933(S)	2SA933SZ
	Transistor	2SA1318(T)-AANP	2SA1318TZ

REF.NO.	DESCRIPTION		PART NO.
	Transistor	2SA1318(U)-AANP	2SA1318UZ
Q25	Transistor	2SA933(R)	2SA933RZ
	Transistor	2SA933(S)	2SA933SZ
	Transistor	2SA1318(T)-AANP	2SA1318TZ
	Transistor	2SA1318(U)-AANP	2SA1318UZ
Q26	Transistor	2SA933(R)	2SA933RZ
	Transistor	2SA933(S)	2SA933SZ
	Transistor	2SA1318(T)-AANP	2SA1318TZ
	Transistor	2SA1318(U)-AANP	2SA1318UZ
Q27	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q28	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q29	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q34	Transistor	2SA933(R)	2SA933RZ
	Transistor	2SA933(S)	2SA933SZ
	Transistor	2SA1318(T)-AANP	2SA1318TZ
	Transistor	2SA1318(U)-AANP	2SA1318UZ
Q37	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q38	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q39	Transistor	2SA933(R)	2SA933RZ
	Transistor	2SA933(S)	2SA933SZ
	Transistor	2SA1318(T)-AANP	2SA1318TZ
	Transistor	2SA1318(U)-AANP	2SA1318UZ
Q40	Transistor	2SA933(R)	2SA933RZ
	Transistor	2SA933(S)	2SA933SZ
	Transistor	2SA1318(T)-AANP	2SA1318TZ
	Transistor	2SA1318(U)-AANP	2SA1318UZ
Q42	Transistor	2SA933(R)	2SA933RZ
	Transistor	2SA933(S)	2SA933SZ
	Transistor	2SA1318(T)-AANP	2SA1318TZ
	Transistor	2SA1318(U)-AANP	2SA1318UZ
Q43	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ
Q44	Transistor	2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor	2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor	2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor	2SC3331(T)-AANP	2SC3331TZ
	Transistor	2SC3331(U)-AANP	2SC3331UZ

REF.NO.	DESCRIPTION	PART NO.
Q52	Transistor DTC-114WS	QDTC114WSTP0
Q53	Transistor 2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor 2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor 2SC1815(GR)-TPE2	2SC1815GRZ
	Transistor 2SC3331(T)-AANP	2SC3331TZ
	Transistor 2SC3331(U)-AANP	2SC3331UZ
	RESISTORS	
R2	Carbon Res. 1k ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R3	Carbon Res. 180 ohm 1/5W J	1324181
	Carbon Res. 180 ohm 1/6W J	132A181
R4	Carbon Res. 1K ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R5	Carbon Res. 1.5k ohm 1/5W J	1324152
	Carbon Res. 1.5k ohm 1/6W J	132A152
R6	Carbon Res. 3.9k ohm 1/5W J	1324392
	Carbon Res. 3.9k ohm 1/6W J	132A392
R7	Carbon Res. 120k ohm 1/5W J	1324124
	Carbon Res. 120k ohm 1/6W J	132A124
R8	Carbon Res. 1K ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R10	Carbon Res. 100k ohm 1/5W J	1324104
	Carbon Res. 100k ohm 1/6W J	132A104
R11	Carbon Res. 68k ohm 1/5W J	1324683
	Carbon Res. 68k ohm 1/6W J	132A683
R12	Carbon Res. 4.7k ohm 1/5W J	1324472
	Carbon Res. 4.7k ohm 1/6W J	132A472
R13	Carbon Res. 3.9k ohm 1/5W J	1324392
	Carbon Res. 3.9k ohm 1/6W J	132A392
R14	Carbon Res. 6.8k ohm 1/5W J	1324682
	Carbon Res. 6.8k ohm 1/6W J	132A682
R15	Carbon Res. 5.6k ohm 1/5W J	1324562
	Carbon Res. 5.6k ohm 1/6W J	132A562
R16	Carbon Res. 3.3k ohm 1/5W J	1324332
	Carbon Res. 3.3k ohm 1/6W J	132A332
R17	Carbon Res. 6.8k ohm 1/5W J	1324682
	Carbon Res. 6.8k ohm 1/6W J	132A682
R18	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R19	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R20	Carbon Res. 100k ohm 1/5W J	1324104
	Carbon Res. 100k ohm 1/6W J	132A104
R21	Carbon Res. 100k ohm 1/5W J	1324104
	Carbon Res. 100k ohm 1/6W J	132A104
R22	Carbon Res. 100k ohm 1/5W J	1324104
	Carbon Res. 100k ohm 1/6W J	132A104
R23	Carbon Res. 4.7k ohm 1/5W J	1324472
	Carbon Res. 4.7k ohm 1/6W J	132A472
R26	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R28	Carbon Res. 1k ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R29	Carbon Res. 680 ohm 1/5W J	1324681
	Carbon Res. 680 ohm 1/6W J	132A681
R30	Carbon Res. 68 ohm 1/5W J	1324680
	Carbon Res. 68 ohm 1/6W J	132A680
R31	Carbon Res. 100k ohm 1/5W J	1324104
	Carbon Res. 100k ohm 1/6W J	132A104

REF.NO.	DESCRIPTION	PART NO.
R36	Carbon Res. 3.3k ohm 1/5W J	1324332
	Carbon Res. 3.3k ohm 1/6W J	132A332
R37	Carbon Res. 1k ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R38	Carbon Res. 4.7k ohm 1/5W J	1324472
	Carbon Res. 4.7k ohm 1/6W J	132A472
R39	Carbon Res. 22k ohm 1/5W J	1324223
	Carbon Res. 22k ohm 1/6W J	132A223
R40	Carbon Res. 100k ohm 1/5W J	1324104
	Carbon Res. 100k ohm 1/6W J	132A104
R41	Carbon Res. 15k ohm 1/5W J	1324153
	Carbon Res 15k ohm. 1/6W J	132A153
R42	Carbon Res. 1.5k ohm 1/5W J	1324152
	Carbon Res. 1.5k ohm 1/6W J	132A152
R43	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R44	Carbon Res. 4.7 ohm 1/5W J	1324479
	Carbon Res. 4.7 ohm 1/6W J	132A479
R45	Carbon Res. 680 ohm 1W	534A681
R46	Carbon Res. 2.2k ohm 1/4W J	1345222
	Carbon Res. 2.2k ohm 1/5W J	1324222
R47	Carbon Res. 68k ohm 1/5W J	1324683
	Carbon Res. 68k ohm 1/6W J	132A683
R48	Carbon Res. 3.3k ohm 1/5W J	1324332
	Carbon Res. 3.3k ohm 1/6W J	132A332
R49	Carbon Res.	1345109
	Carbon Res. 1 ohm 1/5W J	1324109
R50	Carbon Res. 68k ohm 1/5W J	1324683
	Carbon Res. 68k ohm 1/6W J	132A683
R58	Carbon Res. 820 ohm 1/6W J	132A821
R61	Carbon Res. 820 ohm 1/6W J	132A821
R64	Carbon Res. 820 ohm 1/6W J	132A821
R66	Fuse Res. 2.2 ohm 1W J	5363229
	Fuse Res. 2.2 ohm 1W J	5368229
R67	Fuse Res. 2.2 ohm 1W J	5363229
	Fuse Res. 2.2 ohm 1W J	5368229
R68	Fuse Res. 1 ohm 1/2W J	5362109
	Fuse Res. 1 ohm 1/2W J	5367109
R69	Cement Res. 3.9 ohm 5W	1330734
	Cement Res. 3.9 ohm 5W	1330900
R70	Metal Res. 3.3k ohm 3W	5330879
	Metal Res. 3.3k ohm 3W	5330667
R71	Metal Res. 3.9k ohm 3W	5330880
	Metal Res. 3.9k ohm 3W	5330668
R72	Carbon Res. 1.5k ohm 1/4W J	1345152
	Carbon Res. 1.5k ohm 1/5W J	1324152
R73	Carbon Res. 56k ohm 1/5W J	1324563
	Carbon Res. 56k ohm 1/6W J	132A563
R74	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R75	Carbon Res. 82k ohm 1/5W J	1324823
	Carbon Res. 82k ohm 1/6W J	132A823
R78	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R79	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R80	Carbon Res. 180 ohm 1/5W J	1324181
	Carbon Res. 180 ohm 1/6W J	132A181
R82	Carbon Res. 330 ohm 1/5W J	1324331
	Carbon Res. 330 ohm 1/6W J	132A331

REF.NO.	DESCRIPTION	PART NO.
R83	Carbon Res. 680 ohm 1/5W J	1324681
	Carbon Res. 680 ohm 1/6W J	132A681
R84	Carbon Res. 5.6k ohm 1/5W J	1324562
	Carbon Res. 5.6k ohm 1/6W J	132A562
R85	Carbon Res. 180k ohm 1/5W J	1324184
	Carbon Res 180k ohm. 1/6W J	132A184
R86	Carbon Res. 27 ohm 1/5W J	1324270
	Carbon Res. 27 ohm 1/6W J	132A270
R87	Carbon Res. 1.5k ohm 1/5W J	1324152
	Carbon Res. 1.5k ohm 1/6W J	132A152
R88	Carbon Res. 68 ohm 1/5W J	1324680
	Carbon Res. 68 ohm 1/6W J	132A680
R90	Carbon Res. 82k ohm 1/5W J	1324823
	Carbon Res. 82k ohm 1/6W J	132A823
R91	Carbon Res. 1.8k ohm 1/6W J	132A182
	Carbon Res. 1.8k ohm 1/5W J	1324182
R93	Carbon Res. 5.6k ohm 1/5W J	1324562
	Carbon Res. 5.6k ohm 1/6W J	132A562
R94	Carbon Res. 390 ohm 1/5W J	1324391
	Carbon Res. 390 ohm 1/6W J	132A391
R95	Carbon Res. 270 ohm 1/5W J	1324271
	Carbon Res. 270 ohm 1/6W J	132A271
R96	Carbon Res. 470 ohm 1/5W J	1324471
	Carbon Res. 470 ohm 1/6W J	132A471
R97	Carbon Res. 470 ohm 1/5W J	1324471
	Carbon Res. 470 ohm 1/6W J	132A471
R98	Carbon Res. 1K ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R100	Carbon Res. 1K ohm 1/5W J	1324102
	Carbon Res 1k ohm. 1/6W J	132A102
R101	Carbon Res. 560k ohm 1/5W J	1324564
	Carbon Res. 560k ohm 1/6W J	132A564
R102	Carbon Res. 470k ohm 1/5W J	1324474
	Carbon Res. 470k ohm 1/6W J	132A474
R103	Carbon Res. 15k ohm 1/5W J	1324153
	Carbon Res 15k ohm. 1/6W J	132A153
R104	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res 10k ohm. 1/6W J	132A103
R105	Carbon Res. 15k ohm 1/5W J	1324153
	Carbon Res. 15k ohm 1/6W J	132A153
R106	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R107	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res 10k ohm. 1/6W J	132A103
R108	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R109	Carbon Res 15k ohm. 1/5W J	1324153
	Carbon Res. 15k ohm 1/6W J	132A153
R110	Carbon Res. 47k ohm 1/5W J	1324473
	Carbon Res. 47k ohm 1/6W J	132A473
R111	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R112	Carbon Res. 15k ohm 1/5W J	1324153
	Carbon Res. 15k ohm 1/6W J	132A153
R113	Carbon Res. 47k ohm 1/5W J	1324473
	Carbon Res. 47k ohm 1/6W J	132A473
R114	Carbon Res. 47k ohm 1/5W J	1324473
	Carbon Res. 47k ohm 1/6W J	132A473
R115	Metal Res. 15k ohm 1W J	534A153
R116	Carbon Res. 15k ohm 1/5W J	1324153

REF.NO.	DESCRIPTION	PART NO.
	Carbon Res 15k ohm. 1/6W J	132A153
R117	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res 33k ohm. 1/6W J	132A333
R118	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R119	Carbon Res. 2.4k ohm 1/5W J	1324242
	Carbon Res. 2.4k ohm 1/6W J	132A242
R120	Carbon Res. 68k ohm 1/5W J	1324683
	Carbon Res. 68k ohm 1/6W J	132A683
R121	Carbon Res. 68k ohm 1/5W J	1324683
	Carbon Res. 68k ohm 1/6W J	132A683
R122	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R123	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R124	Carbon Res. 220 ohm 1/5W J	1324221
	Carbon Res. 220 ohm 1/6W J	132A221
R125	Carbon Res. 68k ohm 1/5W J	1324683
	Carbon Res. 68k ohm 1/6W J	132A683
R126	Carbon Res. 100 ohm 1/5W J	1324101
	Carbon Res. 100 ohm 1/6W J	132A101
R127	Carbon Res. 100 ohm 1/5W J	1324101
	Carbon Res. 100 ohm 1/6W J	132A101
R128	Carbon Res. 100 ohm 1/5W J	1324101
	Carbon Res. 100 ohm 1/6W J	132A101
R142	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R143	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R144	Carbon Res. 3.3k ohm 1/5W J	1324332
	Carbon Res. 3.3k ohm 1/6W J	132A332
R145	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R147	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R148	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R149	Carbon Res. 18k ohm 1/5W J	1324183
	Carbon Res. 18k ohm 1/6W J	132A183
R150	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R151	Carbon Res. 8.2k ohm 1/5W J	1324822
	Carbon Res. 8.2k ohm 1/6W J	132A822
R152	Carbon Res. 1.2k ohm 1/5W J	1324122
	Carbon Res. 1.2k ohm 1/6W J	132A122
R153	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R154	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R155	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R156	Carbon Res. 1K ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R157	Carbon Res. 100k ohm 1/5W J	1324104
	Carbon Res. 100k ohm 1/6W J	132A104
R158	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R159	Carbon Res. 180k ohm 1/5W J	1324184
	Carbon Res. 180k ohm 1/6W J	132A184

REF.NO.	DESCRIPTION	PART NO.
R160	Carbon Res. 39k ohm 1/5W J	1324393
	Carbon Res. 39k ohm 1/6W J	132A393
R161	Carbon Res. 68k ohm 1/5W J	1324683
	Carbon Res. 68k ohm 1/6W J	132A683
R162	Carbon Res. 6.8k ohm 1/5W J	1324682
	Carbon Res. 6.8k ohm 1/6W J	132A682
R163	Metal Res. 8.2k ohm 3W	534C822
	Metal Res. 8.2k ohm 3W	5330672
R164	Carbon Res. 10k ohm 1/2W	1327103
	Carbon Res. 10k ohm 1/2W	1322103
R165	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R166	Carbon Res. 150 ohm 1/5W J	1324151
	Carbon Res 150 ohm. 1/6W J	132A151
R167	Carbon Res. 120 ohm 1/5W J	1324121
	Carbon Res. 120 ohm 1/6W J	132A121
R168	Carbon Res. 270k ohm 1/5W J	1324274
	Carbon Res 270k ohm. 1/6W J	132A274
R169	Carbon Res. 27k ohm 1/5W J	1324273
	Carbon Res. 27k ohm 1/6W J	132A273
R170	Carbon Res. 3.3k ohm 1/5W J	1324332
	Carbon Res. 3.3k ohm 1/6W J	132A332
R171	Carbon Res. 470 ohm 1/5W J	1324471
	Carbon Res. 470 ohm 1/6W J	132A471
R173	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R174	Carbon Res. 56 ohm 1/5W J	1324560
	[for CPT Type CRT]	
	Carbon Res. 56 ohm 1/6W J	132A560
	[for CPT Type CRT]	
	Carbon Res. 82 ohm 1/5W J	1324820
	[for HT, GS and SAM Type CRT]	
	Carbon Res. 82 ohm 1/6W J	132A820
	[for HT, GS and SAM Type CRT]	
	Carbon Res. 82 ohm 1/5W J	1324820
	[for HT, GS and SAM Type CRT]	
	Carbon Res. 82 ohm 1/6W J	132A820
	[for HT, GS and SAM Type CRT]	
R176	Carbon Res. 1.5k ohm 1/5W J	1324152
	Carbon Res. 1.5k ohm 1/6W J	132A152
R177	Carbon Res. 270 ohm 1/5W J	1324271
	Carbon Res. 270 ohm 1/6W J	132A271
R178	Carbon Res. 270 ohm 1/5W J	1324271
	Carbon Res. 270 ohm 1/6W J	132A271
R179	Carbon Res. 270 ohm 1/5W J	1324271
	Carbon Res. 270 ohm 1/6W J	132A271
R186	Carbon Res. 390 ohm 1/5W J	1324391
	Carbon Res. 390 ohm 1/6W J	132A391
R188	Carbon Res. 390 ohm 1/5W J	1324391
	Carbon Res. 390 ohm 1/6W J	132A391
R192	Carbon Res. 1K ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R193	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R201	Carbon Res. 1.5k ohm 1/5W J	1324152
	Carbon Res. 1.5k ohm 1/6W J	132A152
R203	Carbon Res. 560 ohm 1/5W J	1324561
	Carbon Res. 560 ohm 1/6W J	132A561
R204	Carbon Res. 8.2k ohm 1/5W J	1324822
	Carbon Res. 8.2k ohm 1/6W J	132A822

REF.NO.	DESCRIPTION	PART NO.
R205	Carbon Res. 8.2k ohm 1/5W J	1324822
	Carbon Res. 8.2k ohm 1/6W J	132A822
R206	Carbon Res. 560 ohm 1/5W J	1324561
	Carbon Res. 560 ohm 1/6W J	132A561
R207	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R210	Carbon Res. 4.7k ohm 1/5W J	1324472
	Carbon Res. 4.7k ohm 1/6W J	132A472
R212	Carbon Res. 390 ohm 1/5W J	1324391
	Carbon Res. 390 ohm 1/6W J	132A391
R214	Carbon Res. 15k ohm 1/5W J	1324153
	Carbon Res. 15k ohm 1/6W J	132A153
R215	Carbon Res. 330k ohm 1/5W J	1324334
	Carbon Res. 330k ohm 1/6W J	132A334
R216	Carbon Res. 33k ohm 1/5W J	1324333
	Carbon Res. 33k ohm 1/6W J	132A333
R217	Carbon Res. 820 ohm 1/5W J	1324821
	Carbon Res. 820 ohm 1/6W J	132A821
R218	Carbon Res. 820 ohm 1/5W J	1324821
	Carbon Res. 820 ohm 1/6W J	132A821
R219	Carbon Res. 1.5k ohm 1/5W J	1324152
	Carbon Res. 1.5k ohm 1/6W J	132A152
R220	Carbon Res. 1.5k ohm 1/5W J	1324152
	Carbon Res. 1.5k ohm 1/6W J	132A152
R221	Carbon Res. 27k ohm 1/5W J	1324273
	Carbon Res. 27k ohm 1/6W J	132A273
R222	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R223	Carbon Res. 10k ohm 1/5W J	1324103
	Carbon Res. 10k ohm 1/6W J	132A103
R224	Carbon Res. 8.2k ohm 1/5W J	1324822
	Carbon Res. 8.2k ohm 1/6W J	132A822
R225	Carbon Res. 1k ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R226	Carbon Res. 3.3k ohm 1/5W J	1324332
	Carbon Res. 3.3k ohm 1/6W J	132A332
R227	Carbon Res. 470k ohm 1/5W J	1324474
	Carbon Res. 470k ohm 1/6W J	132A474
R228	Carbon Res. 68k ohm 1/5W J	1324683
	Carbon Res. 68k ohm 1/6W J	132A683
R229	Carbon Res. 1k ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R230	Carbon Res. 1k ohm 1/5W J	1324102
	Carbon Res. 1k ohm 1/6W J	132A102
R231	Fuses Res. 68 ohm 1/2W	5362680
	Fuses Res. 68 ohm 1/2W	5367680
R235	Carbon Res. 1.8k ohm 1/4W J	1345182
	Carbon Res. 1.8k ohm 1/5W J	1324182
R240	Fuse Res. 1 ohm 1/2W J	5362109
	Fuse Res. 1 ohm 1/2W J	5367109
R250	Metal Res. 8.2k ohm 3W	534C822
	Metal Res. 8.2k ohm 3W	5330672
R251	Carbon Res. 4.7M ohm 1/5W J	1324475
	Carbon Res. 4.7M ohm 1/6W J	132A475
R253	Carbon Res. 1.5k ohm 1/5W J	1324152
	Carbon Res. 1.5k ohm 1/6W J	132A152
R254	Carbon Res. 220 ohm 1/5W J	1324221
	Carbon Res. 220 ohm 1/6W J	132A221
R255	Carbon Res. 100k ohm 1/5W J	1324104
	Carbon Res. 100k ohm 1/6W J	132A104

F.NO.	DESCRIPTION				PART NO.
58	Carbon Res.	33k ohm	1/5W	J	1324333
	Carbon Res.	33k ohm	1/6W	J	132A333
59	Carbon Res.	82k ohm	1/5W	J	1324823
	Carbon Res.	82k ohm	1/6W	J	132A823
60	Carbon Res.	6.8k ohm	1/5W	J	1324682
	Carbon Res.	6.8k ohm	1/6W	J	132A682
61	Carbon Res.	3.3k ohm	1/5W	J	1324332
	Carbon Res.	3.3k ohm	1/6W	J	132A332
62	Carbon Res.	3.3k ohm	1/5W	J	1324332
	Carbon Res.	3.3k ohm	1/6W	J	132A332
66	Carbon Res.	10k ohm	1/5W	J	1324103
	Carbon Res.	10k ohm	1/6W	J	132A103
70	Carbon Res.	1.2 ohm	1/4W	J	1345129
	Carbon Res.	1.2 ohm	1/5W	J	1324129
71	Carbon Res.	1k ohm	1/5W	J	1324102
	Carbon Res.	1k ohm	1/6W	J	132A102
77	Carbon Res.				1345272
	Carbon Res.	2.7k ohm	1/5W	J	1324272
85	Carbon Res.	4.7k ohm	1/5W	J	1324472
	Carbon Res.	4.7k ohm	1/6W	J	132A472
86	Carbon Res.	5.6k ohm	1/5W	J	1324562
	Carbon Res.	5.6k ohm	1/6W	J	132A562
01	Carbon Res.	1k ohm	1/5W	J	1324102
	Carbon Res.	1k ohm	1/6W	J	132A102
02	Carbon Res.	10k ohm	1/5W	J	1324103
	Carbon Res.	10k ohm	1/6W	J	132A103
03	Carbon Res.	10k ohm	1/5W	J	1324103
	Carbon Res.	10k ohm	1/6W	J	132A103
04	Carbon Res.	1.2M ohm	1/5W	J	1324125
	Carbon Res.	1.2M ohm	1/6W	J	132A125
06	Carbon Res.	680k ohm	1/5W	J	1324684
	Carbon Res.	680k ohm	1/6W	J	132A684
10	Carbon Res.	33k ohm	1/5W	J	1324333
	Carbon Res.	33k ohm	1/6W	J	132A333
11	Carbon Res.	15k ohm	1/5W	J	1324153
	Carbon Res.	15k ohm	1/6W	J	132A153
	SWITCHES				
V1	Slide Switch				1621654
	Slide Switch				SSS0202WM001
V2	Tact Switch				5622172
V3	Tact Switch				5622172
V4	Tact Switch				5622172
V5	Tact Switch				5622172
V6	Tact Switch				5622172
V7	Tact Switch				5622172
V8	Tact Switch				5622172
V9	Tact Switch				5622172
V10	Tact Switch				5622172
	VOLUMES				
9	Semifixed Res.	1k ohm	B		638A102
	P.O.T	1k ohm	B		1380706
11	Semifixed Res.	100k ohm	B		638A104
	P.O.T	100k ohm	B		1380716
12	Semifixed Res.	20k ohm	B		638A223
	P.O.T	20k ohm	B		1380709
13	Semifixed Res.	10k ohm	B		638A103
	Semifixed Res.	10k ohm	B		1380707

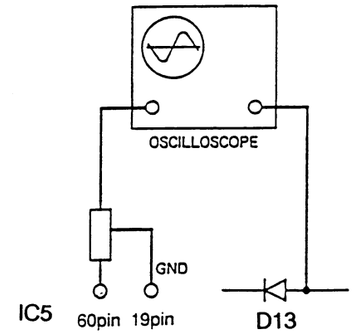
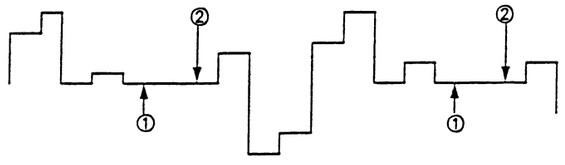
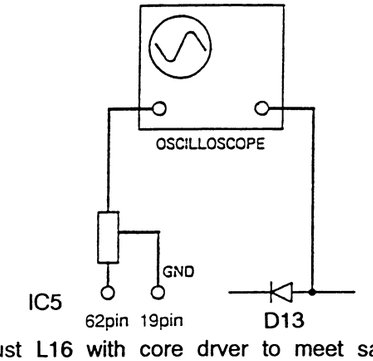
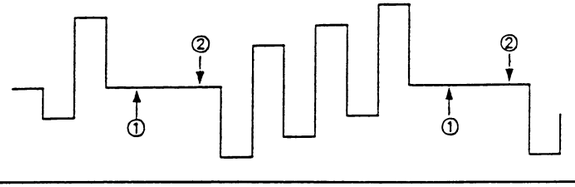
REF.NO.	DESCRIPTION			PART NO.
	MISCELLANEOUS			
CF1	Ceramic Filter	SFE6.5MB		1813595
CF2	Ceramic Filter	SFE6.0MBF		1812047
CF3	Ceramic Discre	CDA6.5MC26		1813594
CF4	Ceramic Discre	CDA6.0MC26		1812049
CF5	Ceramic Trap	TPW02B		1813593
CF6	Saw Filter	SAF38.0MZ70Z		1813592
CF7	X' tal	4.194304MHz		1811369
	X' tal	4.194304MHz		1811214
CF8	X' tal	4.43MHz		1811387
CF9	X' tal	3.579545MHz		1811291
CF10	Ceramic Resonator	CSB503F2		1813552
	Wire ASS'Y	(From CN13 To Main PCB (CN5))		CE5400-01
	Wire ASS'Y	(From CN14 To Main PCB (CN4))		CE5400-02
	Heat Sink A	(For 2SD1398)		OEM400378
	Heat Sink B	(For 78M12) or		K42428
	Heat Sink B	(For 78M12)		8S00362
	Heat Sink D	(For LA7830)		OEM400380
	Wire Lead	(From Ⓕ to Ⓕ)		WX3901A6FF06
	Wire ASS'Y	(From Ⓘ to Ⓘ)		WX1L5402-001
	Test Pin			1740354
JA1	Ant Jack			
	Ant Jack			1780284
JA2	BNC Jack			1780202
JA3	RCA Jack			1780237
JA4	BNC Jack			1780202
JA5	RCA Jack			1780237
CN1	Connector Base	2P		5700107
CN2	Connector Base	5P		1730812
		or		1780168
		or		1730813
CN9	Connector Base	6P		5700108
CN11	Pin Plug Cord			1760613
CN21	Connector Base	21P		1630367
T2 ⚠	FBT			1813481
DE1	Delay Line			113N852
DE2	Glass Delay			1813554
	Glass Delay			1812056
U1	Remocon Receive Unit			USESJRSKK001
	Remocon Receive Unit			1813042
U2	Tuner Unit			1813591
	ASS'Y, PCB, CRT CONSISTS OF THE FOLLOWING:			BL5458F01001-B
	CAPACITORS			
C54	Ceramic Cap	0.01/2kV		6220602
C70	Ceramic Cap	220pF/50V	BK	32B3221
	Ceramic Cap	220pF/50V	BK	3B42221
C71	Ceramic Cap	270pF/50V	BK	32B3271
	Ceramic Cap	270pF	BK	3B42271

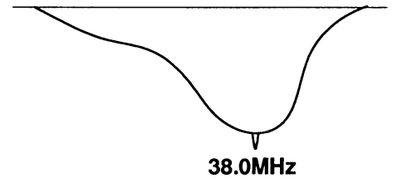
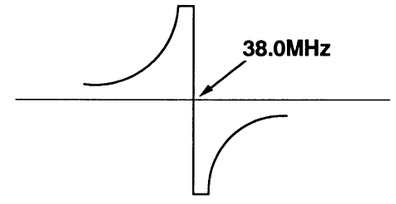
REF.NO.	DESCRIPTION				PART NO.
C72	Ceramic Cap	220pF/50V	BK		32B3221
	Ceramic Cap	220pF			3B42221
C205	Ceramic Cap	10uF/16V	M		126C106
	COIL				
L9	Micro Inductor	100uH-K-5FT			2165101
	Micro Inductor	100uH			2162101
	TRANSISTORS				
Q14	Transistor	2SC2621 (D)			2SC2621D
	Transistor	2SC2621 (E)			2SC2621E
Q15	Transistor	2SC2621 (D)			2SD2621D
	Transistor	2SC2621 (E)			2SC2621E
Q16	Transistor	2SC2621 (D)			2SD2621D
	Transistor	2SC2621 (E)			2SC2621E
	RESISTORS				
R52	Carbon Res.	1.5k ohm	1/4W	J	1345152
	Carbon Res.	1.5k ohm	1/5W	J	1324152
R53	Carbon Res.	1.5k ohm	1/4W	J	1345152
	Carbon Res.	1.5k ohm	1/5W	J	1324152
R54	Carbon Res.	1.5k ohm	1/4W	J	1345152
	Carbon Res.	1.5k ohm	1/5W	J	1324152
R55	Metal Res.	15k ohm	1W	J	534A153
R56	Metal Res.	15k ohm	1W	J	534A153
R57	Metal Res.	15k ohm	1W	J	534A153
R58	Carbon Res.	820 ohm	1/6W	J	132A821
R59	Carbon Res.	820 ohm	1/5W	J	1324821
R61	Carbon Res.	820 ohm	1/6W	J	132A821
R63	Carbon Res.	820 ohm	1/5W	J	1324821
R64	Carbon Res.	820 ohm	1/6W	J	132A821
R65	Carbon Res.	820 ohm	1/5W	J	1324821
R232	Carbon Res.	1.8k ohm	1/4W	J	1345182
	Carbon Res.	1.8k ohm	1/5W	J	1324182
R233	Carbon Res.	1.8k ohm	1/4W	J	1345182
	Carbon Res.	1.8k ohm	1/5W	J	1324182
R234	Carbon Res.	1.8k ohm	1/4W	J	1345182
	Carbon Res.	1.8k ohm	1/5W	J	1324182
R279	Carbon Res.	220 ohm	1/5W	J	1324221
	Carbon Res.	220 ohm	1/6W	J	132A221
	VOLUMES				
VR1	Semifixed Res.	5k ohm	B		1380851
	Carbon Res.	4.7k ohm	B	1/6W J	132A957
VR2	Semifixed Res.	500 ohm	B		1380849
	Carbon Res.	470 ohm	B	1/6W J	132A951
VR3	Semifixed Res.	5k ohm	B		1380851
	Carbon Res.	4.7k ohm	B	1/6W J	132A957
VR4	Semifixed Res.	5kB ohm	B		1380851
	Carbon Res.	4.7k ohm	B	1/6W J	132A957
VR5	Semifixed Res.	500 ohm	B		1380849
	Carbon Res.	470 ohm	B	1/6W J	132A951
	MISCELLANEOUS				
CRT1	CRT Socket				1780124
	CRT Socket				1780246
CN3	Connector Pin	1P	LV		1700576
	Connector Pin	1P	RT-01N-2.3A		1730688

REF.NO.	DESCRIPTION			PART NO.
	ASS'Y, PCB, POWER SSPPLY CONSISTS OF THE FOLLOWING:			BL5458F01002
	CAPACITORS			
C161	Electrolytic Cap.	1000uF/6.3V		626A108
C162	Electrolytic Cap.	1000uF/16V		626C108
C163	Electrolytic Cap.	10uF/160V		122Z333
	Electrolytic Cap.	10uF/160V		6220759
C164	Ceramic Cap.	0.0047uF/AC125V	F	6220353
C165	Ceramic Cap.	0.0047uF/AC125V	F	6220353
C166	Ceramic Cap.	0.0047uF/AC125V	F	6220353
C167	Ceramic Cap.	0.0047uF/AC125V	F	6220353
C168	Electrolytic Cap.	220uF/200V		622Z081
	Electrolytic Cap/	220uF/200V		1220616
	Electrolytic Cap/	220uF/200V		1220890
C169	Electrolytic Cap.	1uF/50V		126F105
C170	Ceramic Cap.	470pF/1kV		6220487
C171	Ceramic Cap.	0.0033uF/1kV		6220577
C172	Electrolytic Cap.	22uF/160V		122Z334
	Electrolytic Cap.	22uF/160V	M	6220758
C173	Ceramic Cap.	0.001uF/1kV		6220574
C174	Electrolytic Cap.	100uF/160V		122Z337
	Electrolytic Cap.	100uF/160V		1220601
C175	Ceramic Cap.	0.001uF/1kV		6220574
C176⚠	Ceramic Cap.	0.0047/4kV		122Z013
C177	Electrolytic Cap.	470uF/16V		626C477
C178⚠	Line Across Cap.	0.1uF/250V		1220756
⚠	Line Across Cap.	0.1uF/250V		622Z631
⚠	Line Across Cap.	0.1uF/250V		122Z181
	DIODESS			
D36	Diode	ERD28-06L		AERD2806L000
	Diode	RGP30G5001L		RGP30G5001L
D37	Diode	ERB44-08L3		AERB4408L300
	Diode	RGP15KL5001		RGP15KL5001
D38	Diode	ERC05-10L3		AERC0510L300
	Diode	RGP15ML5014		RGP15ML5014
D39	Diode	ERC05-10L3		AERC0510L300
	Diode	RGP15ML5014		RGP15ML5014
D40	Diode	ERC05-10L3		AERC0510L300
	Diode	RGP15ML5014		RGP15ML5014
D41	Diode	ERC05-10L3		AERB1202L300
	Diode	RGP15ML5014		RGP15ML5014
D42	Diode	ERB15-02PNRB		AERB1502PNRB
	Diode	GP104003EG16		GP104003EG16
D43	Diode	ERB15-02PNRB		AERB1502PNRB
	Diode	GP104003EG16		GP104003EG16
D44	Diode	ERB15-02PNRB		AERB1502PNRB
	Diode	GP104003EG16		GP104003EG16
D45	Diode	ERB15-02PNRB		AERB1502PNRB
	Diode	GP104003EG16		GP104003EG16
D46	Diode	ERB15-02PNRB		AERB1502PNRB
	Diode	GP104003EG16		GP104003EG16
	COILS			
L20	Pot Type Coil	47uH		LLBD**DMM001
L23 ⚠	Line Filter			1812745
⚠	Line Filter			LLBG000TE002

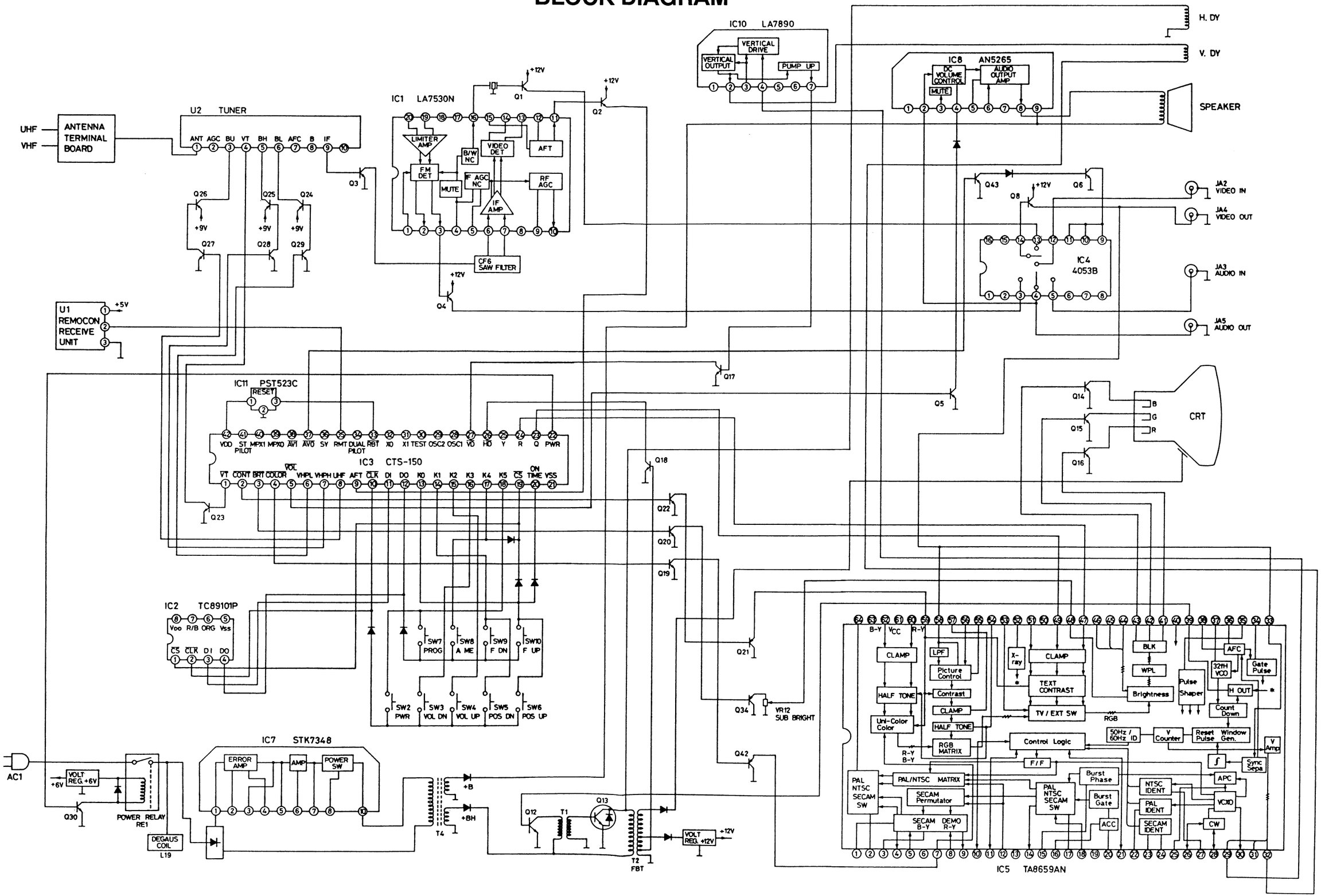
REF.NO.	DESCRIPTION	PART NO.
	ICS	
IC6	IC	AN78M06
	IC	L78M06
IC7 ⚠	IC	14LQ203
⚠	IC	STK7348
	TRANSISTORS	
Q30	Transistor 2SC1740SLNTP (R)	QC1740SLNTPR
	Transistor 2SC1740SLNTP (S)	QC1740SLNTPS
	Transistor 2SC1815 (GR)-TPE2	2SC1815GRZ
	Transostor 2SC3331(T)-AANP	2SC3331TZ
	Transostor 2SC3331(U)-AANP	2SC3331UZ
	RESISTORS	
R129	Carbon Res. 3.3k ohm 1/4W J	1345332
	Carbon Res. 3.3k ohm 1/5W J	1324332
R130	Cement Res. 3.9 ohm 7W	1330954
R131	Carbon Res. 56k ohm 1/4W J	1345563
	[for CPT Type CRT]	
	Carbon Res. 56k ohm 1/5W J	1324563
	[for CPT Type CRT]	
	Carbon Res. 33k ohm 1/6W J	1355333
	[for SAM Type CRT]	
R132	Carbon Res. 1k ohm 1/4W J	1345102
	Carbon Res. 1k ohm 1/5W J	1324102
R133	Cement Res. 27 ohm 3W	1330703
R134	Cement Res. 1.5 ohm 3W	1330702
R135	Metal Res. 33 ohm 1W	534A330
R136	Cement Res. 33 ohm 10W	1330955
R139	Metal Res. 15 ohm 2W	534B150
R140	Fuse Res. 15 ohm 1/4W J	5366150
R141	Metal Res. 2.2 ohm 1W	534A229
	MISCELLANEOUS	
	Wire ASS'Y (From to MAIN (CN4))	CE5400-03
	Heat Sink B	8S00362
	Heat Sink C	OEM400379
CN8	Connector Base 2P	1780165
T1	H. Drive Trans	1150325
T3 ⚠	Back Up Trans	115M984
⚠	Back Up Trans	LTT35EPSB007
T4 ⚠	Switing Power Trans	115E542
⚠	Switing Power Trans	115N977
F1 ⚠	Fuse T4.00A/250V	1790998
⚠	Fuse T4.00A/250V	1790487
RE1 ⚠	Power Relay	1680167
⚠	Power Relay OMIT-SS-109LM	1680178
⚠	Power Relay OMIT-SS-109LM	MRPDC9ZQN001
AC1 ⚠	AC Cord	5750112
PS1 ⚠	Posistor	5790117
⚠	Cord Stopper	1790173
	Fuse Holder	1790424

REF.NO.	DESCRIPTION	PART NO.
	CHASSIS ELECTRICAL PARTS	
L19	Decaussing coil TAC26379	1120174
SP1	Speaker	1520612
CRT	CRT **[for HT Type CRT]**	1833133
	CRT **[for GS Type CRT]**	TCRT190GS004
	CRT **[for SAM Type CRT]**	TCRT190SM003
	CRT **[for CPT Type CRT]**	UMNT020CP001
	Wire Ass'y (From Main PCB (CN1) Speaker)	CE5400-05
	Wire Ass'y (CRT GND Wire)	CE5201-03

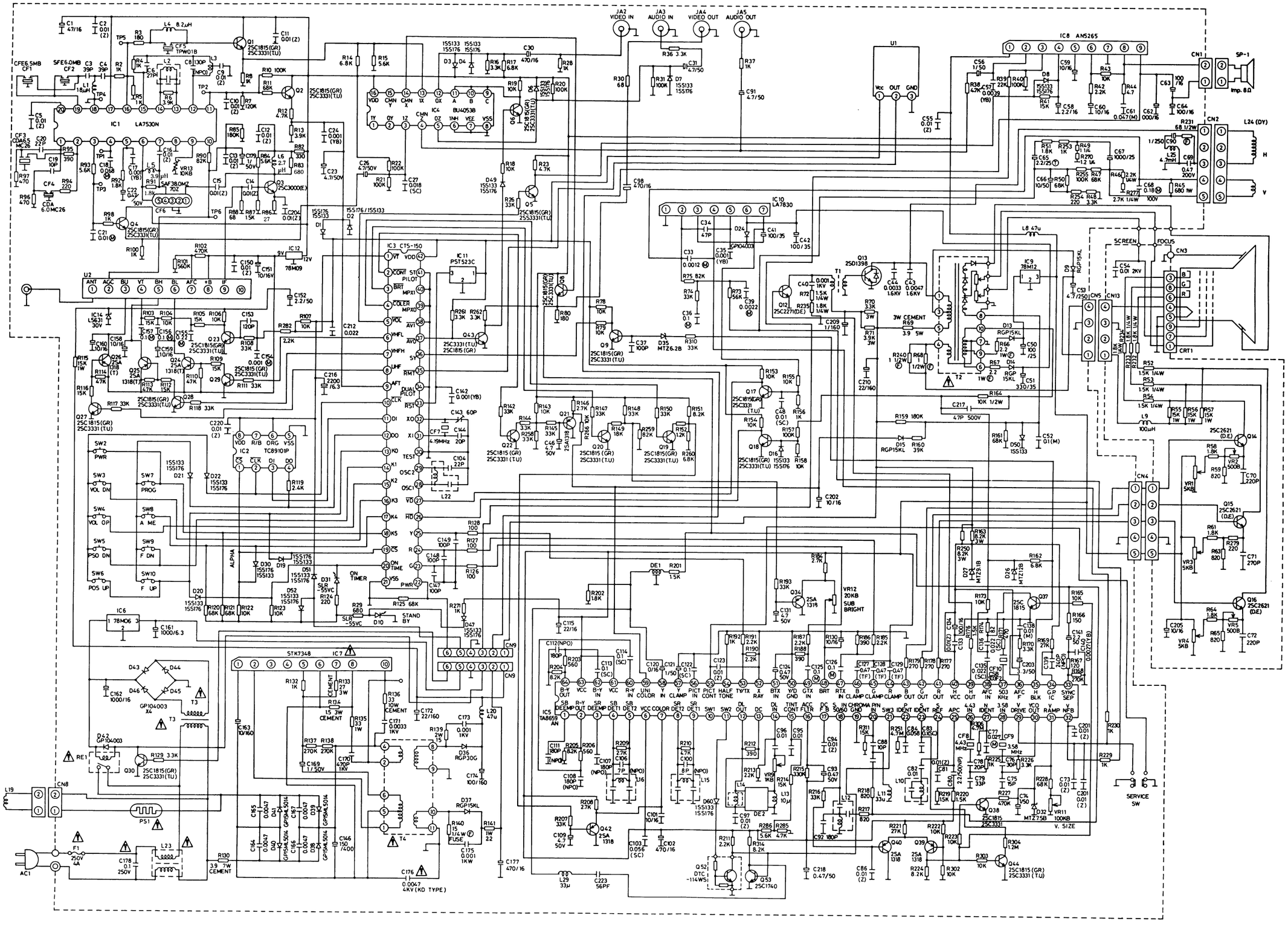
Alignment Item	Alignment Points	Alignment Method
9. R-Y Demodulate Coil	L15	1. Input the SECAM color bar signal. 2. Turn the CONTRAST, BRIGHT, COLOR control to max. 3. Connect the oscilloscope as following drawing.  4. Adjust L15 with core drver to meet same level with a(blank-ing) and i(white) as following drawing. 
10. B-Y Demodulate Coil	L16	1. Input the SECAM color bar signal. 2. Turn the CONTRAST, BRIGHT, COLOR control to max. 3. Connect the oscilloscope as following drawing.  4. Adjust L16 with core drver to meet same level with a(blank-ing) and i(white) as following drawing. 

ITEM	ADJUSTMENT POINT	ADJUSTMENT METHOD
11. 38.0MHz PEAK ADJUSTM-ENT	L2	1. Connect "OUTPUT" of sweeper to "the 6th PIN" of "IC 1". Frequency set of swecper are below; (1)31.5MHz (2)32.4MHz (3)33.57MHz (4)35.8MHz (5)38.0MHz (6)39.45MHz 2. Connect the ocilloscope to "the 10th PIN" of "IC 1". 3. Load DC voltage to "the 4th PIN" of "IC 1", as the wave of ocilloscope not to clip. 4. Adjust "L 2", as the marker for 38.0MHz to be peak. 
12. AFT CURVE ADJUSTM-ENT	L3	1. Connect the sweeper to "TEST POINT" of inside of "TUNER". Frequency set is same in case of adjustment for peak. 2. Connect ocilloscope to "the 11th PIN" of "IC 1". 3. Adjust "L 3", as the marker for 38.0MHz to come to the center of "AFT" curve. 
13. RF AGC ADJUSTM-ENT	VR13	1. Receive the signal for 2ch (48.25MHz) 2. Set "the level of input" of "RF" to 80dBμ with color-bar. 3. Connect the digital voltmeter to the AGC terminal of "TUNER". 4. Adjust "VR 13", as indication of the digital voltmeter to be 4.0V.
14. ON SCREEN POINT ADJUSTM-ENT	L22	1. Input color-bar. 2. Indicate "ON SCREEN" as to be a bar, with "PICTURE SELECT KEY". 3. Adjust "L 22" as the distance between both the ends of "ON
15. CLOCK ADJUSTM-ENT	C143	1. Short between "the 17th PIN and the 20th PIN of IC 3" with diode. (17) —▷— (20) *** Connect AC-code and remove diode off.** 2. Connect F-counter to from the 17th PIN to the 20th PIN. 3. Adjust "C 143" as the frequency to be 87381.3334 ± 0.5Hz.

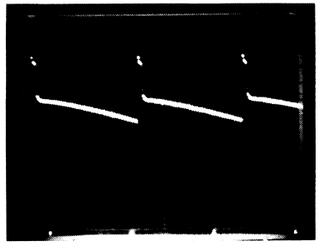
BLOCK DIAGRAM



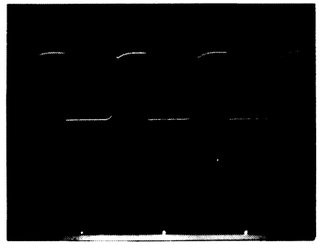
SCHEMATIC DIAGRAM



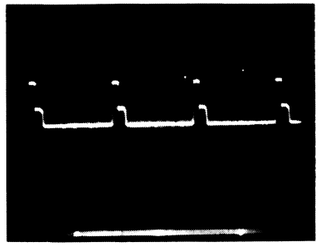
WAVEFORMS



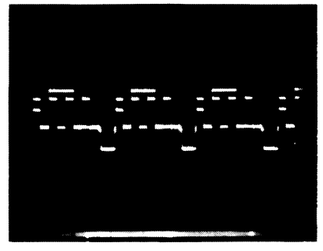
Point : A
1Div = 5ms
1Div = 20V



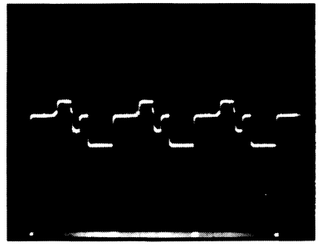
Point : E
1Div = 20us
1Div = 50V



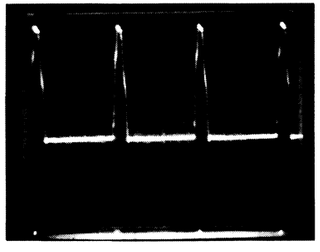
Point : I
1Div = 20us
1Div = 2V



Point : M
1Div = 20us
1Div = 2V

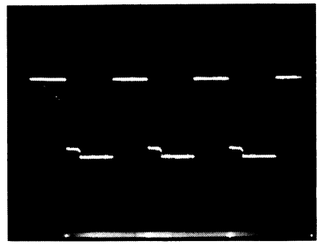


Point : Q
1Div = 20us
1Div = 50V

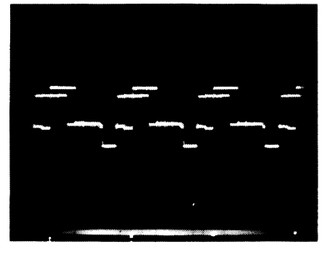


Point : B
1Div = 20us
1Div = 5V

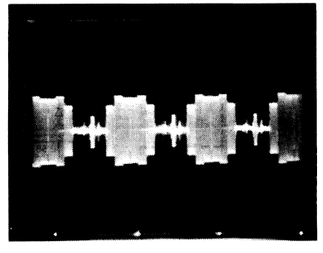
Point : F
1Div = 10us
1Div = 100V



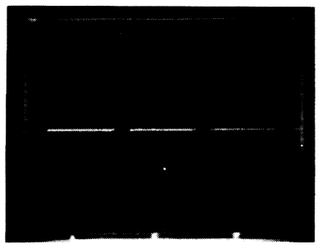
Point : J
1Div = 20us
1Div = 2V



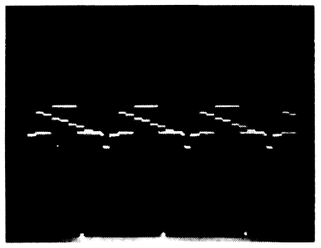
Point : N
1Div = 20us
1Div = 2V



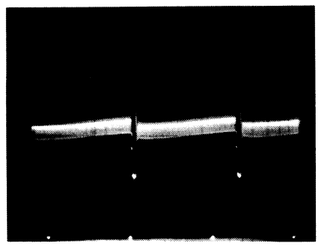
Point : R
1Div = 20us
1Div = 0.1V



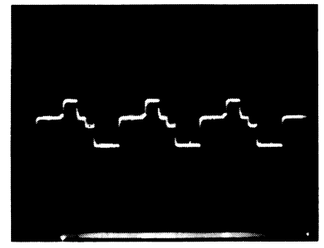
Point : C
1Div = 20us
1Div = 250V



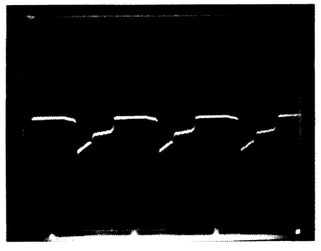
Point : G
1Div = 20us
1Div = 0.5V



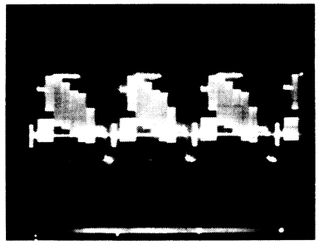
Point : K
1Div = 5ms
1Div = 0.5V



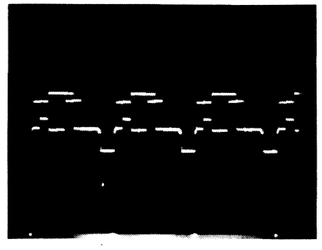
Point : O
1Div = 20us
1Div = 50V



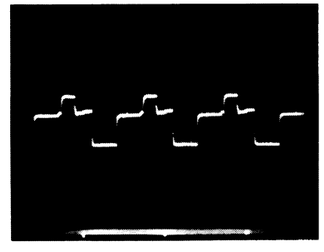
Point : D
1Div = 20us
1Div = 2V



Point : H
1Div = 20us
1Div = 0.5V



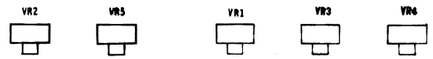
Point : L
1Div = 20us
1Div = 2V



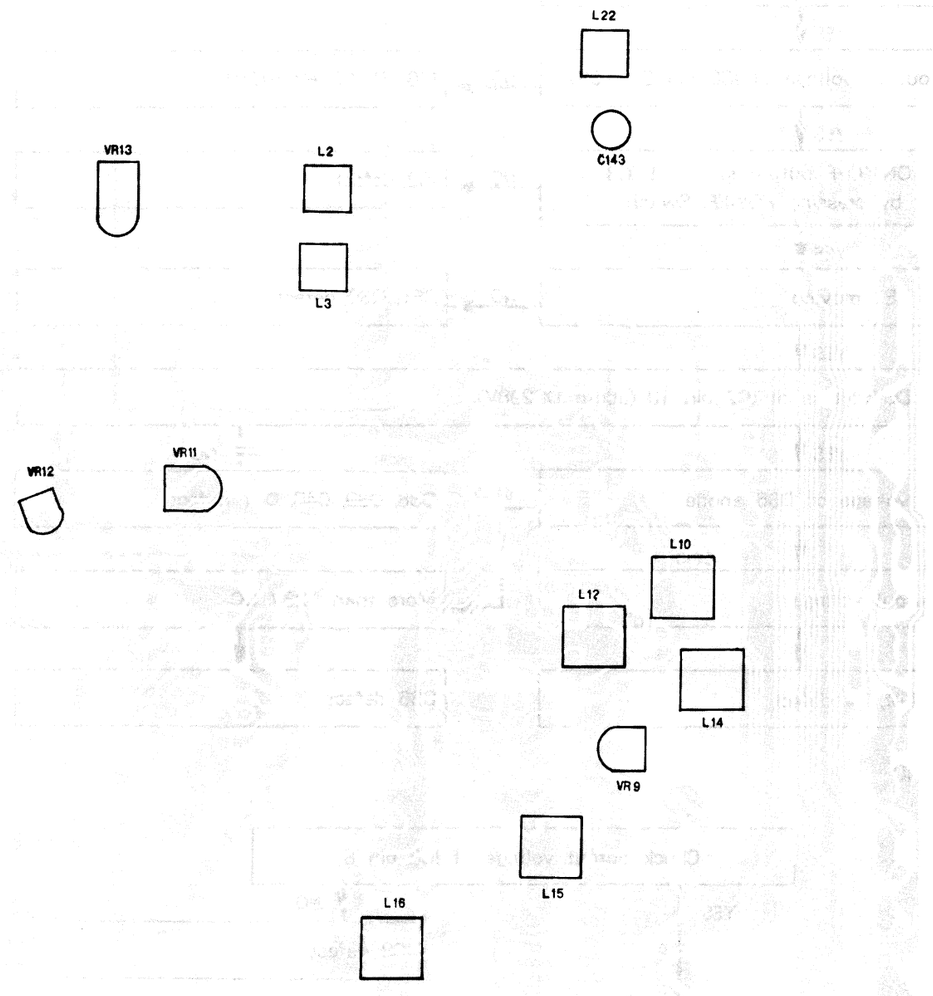
Point : P
1Div = 20us
1Div = 50V

ADJUSTMENT POINTS

CRT PCB(Top View)

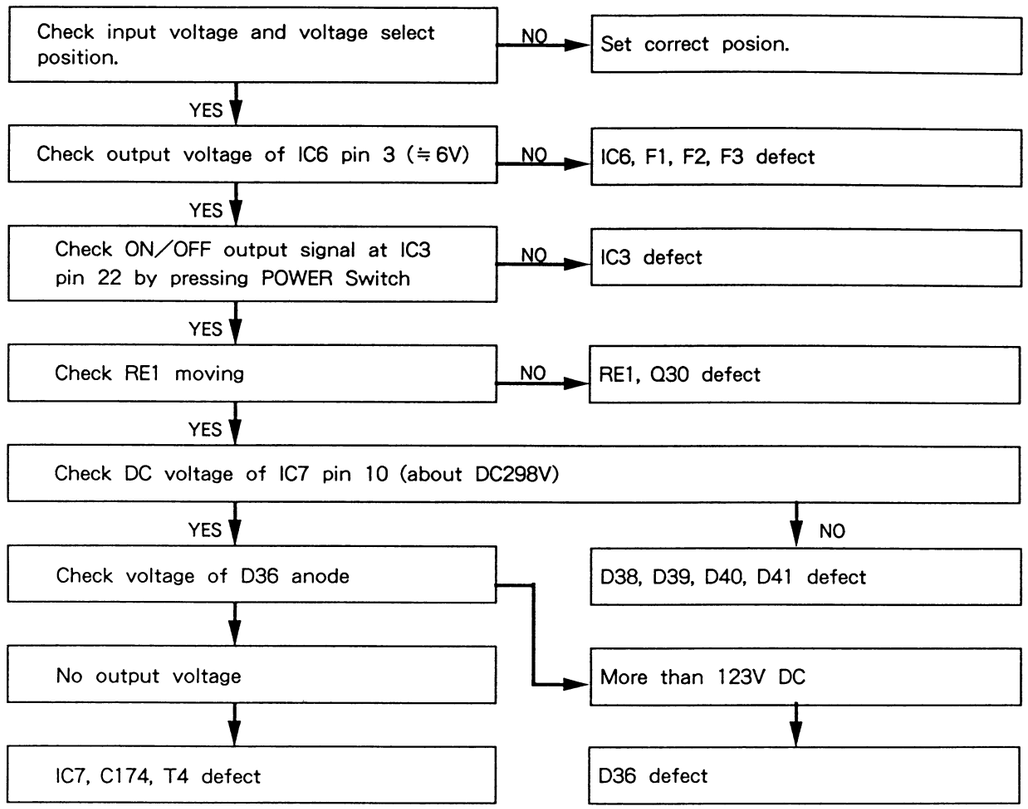


Main PCB(Top View)

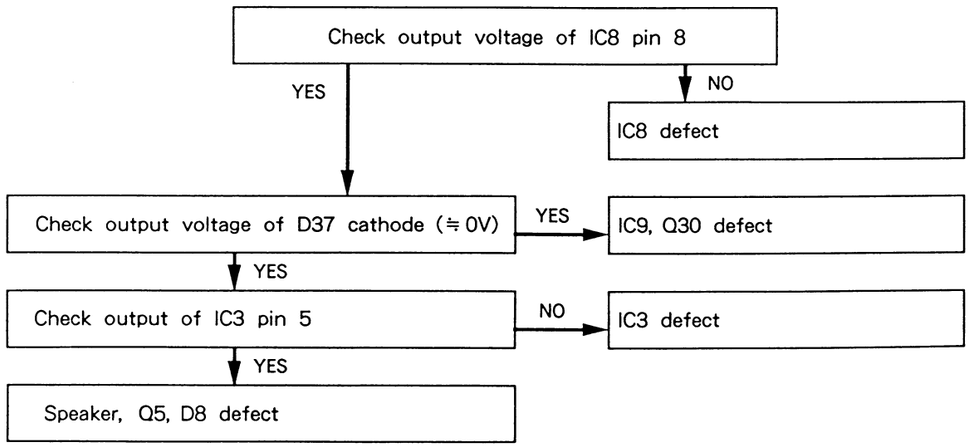


TROUBLESHOOTING GUIDE

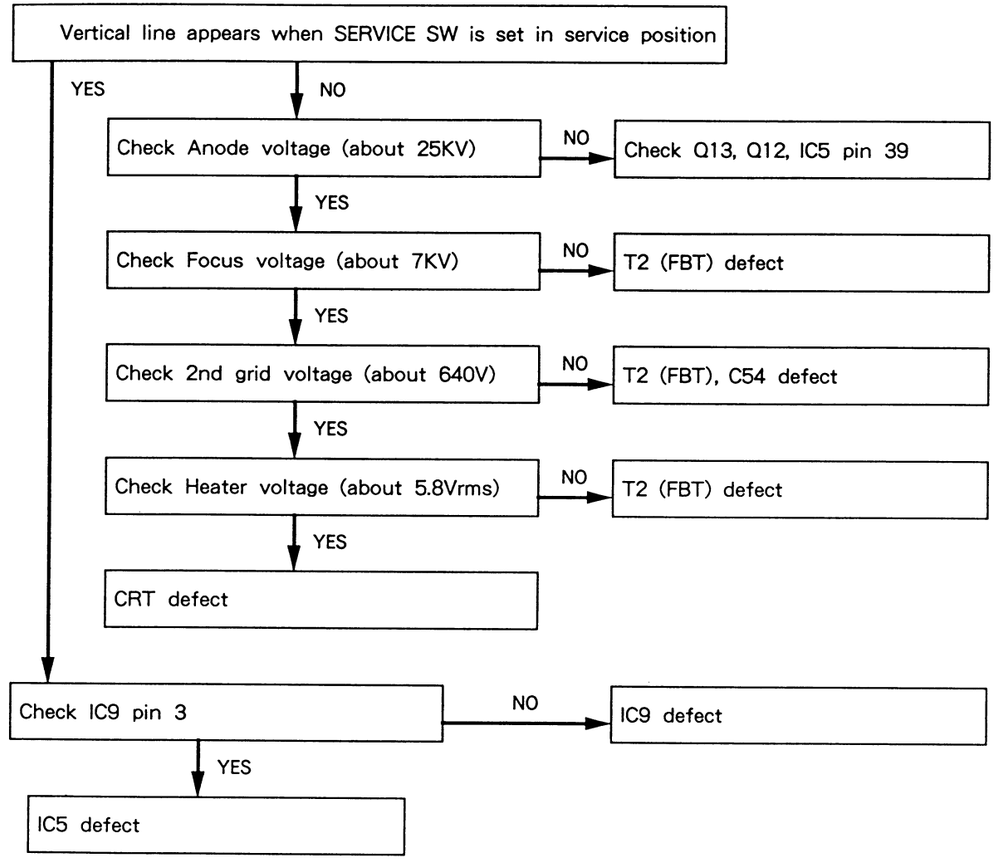
(1) NO POWER OUTPUT



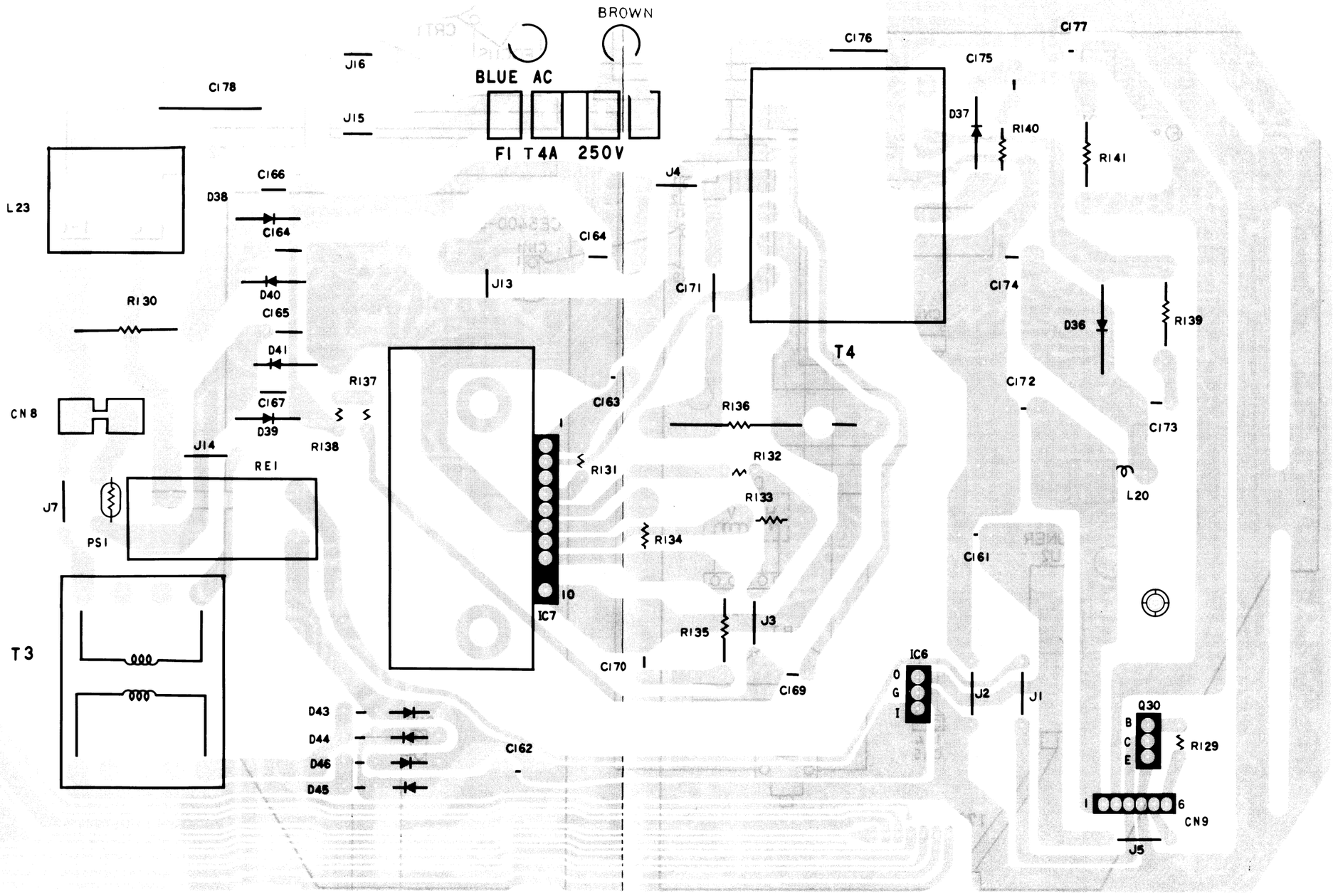
(2) NO SOUND



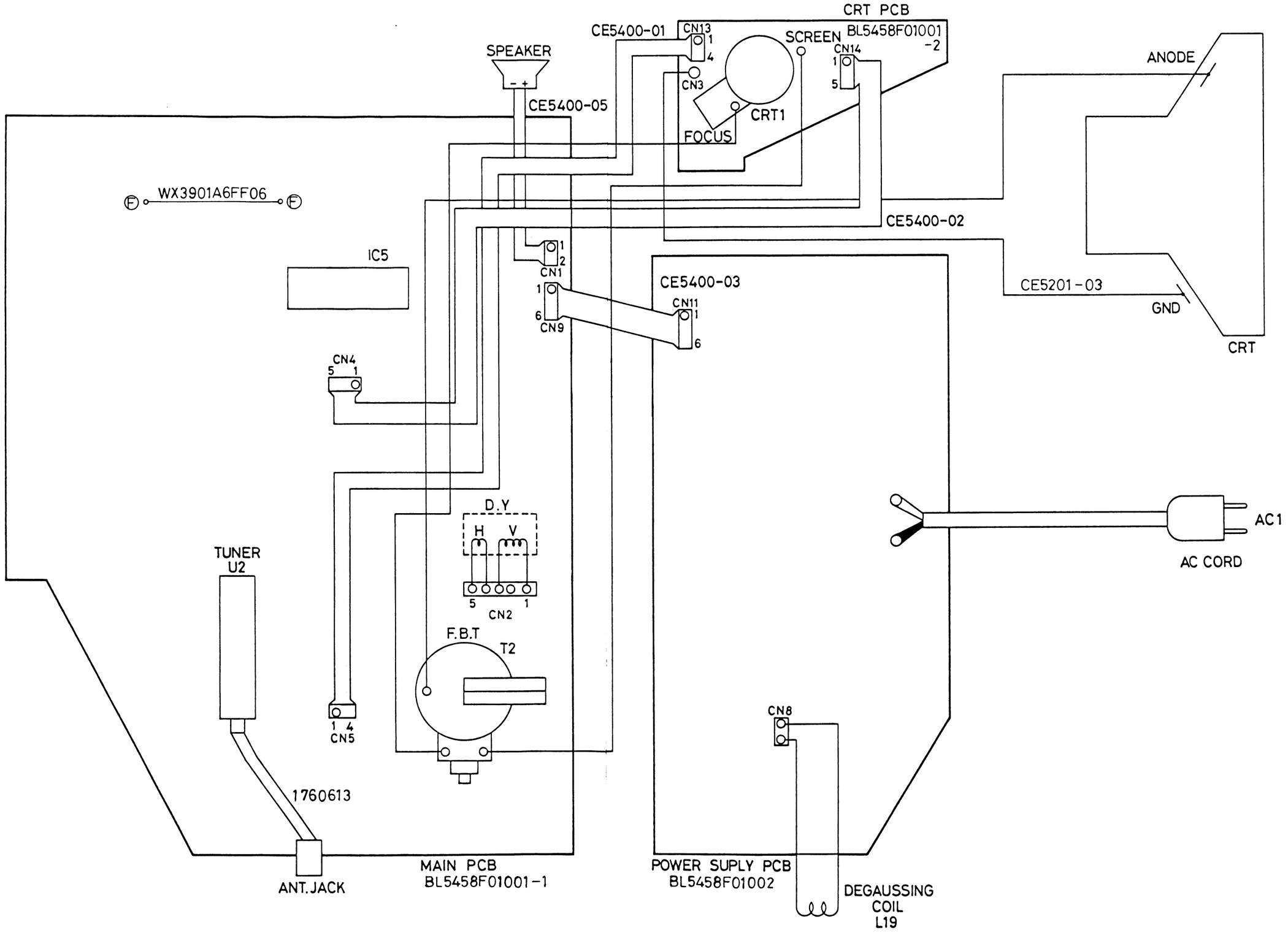
(3) NO RASTER WITH SOUND



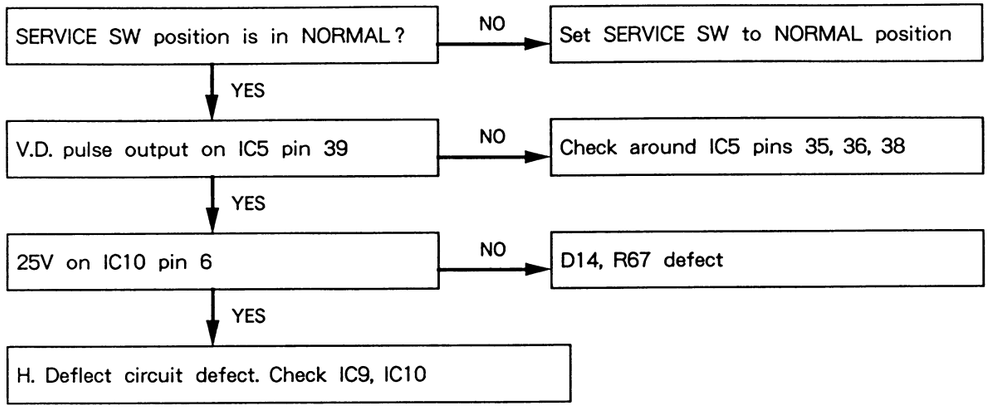
Power Supply PCB(Bottom View)



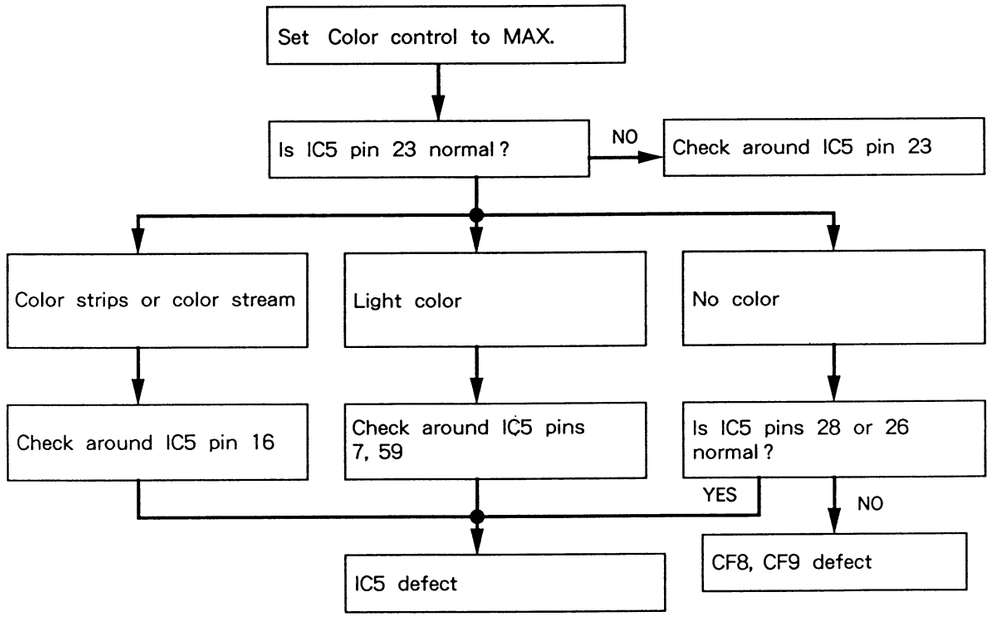
WIRING DIAGRAM



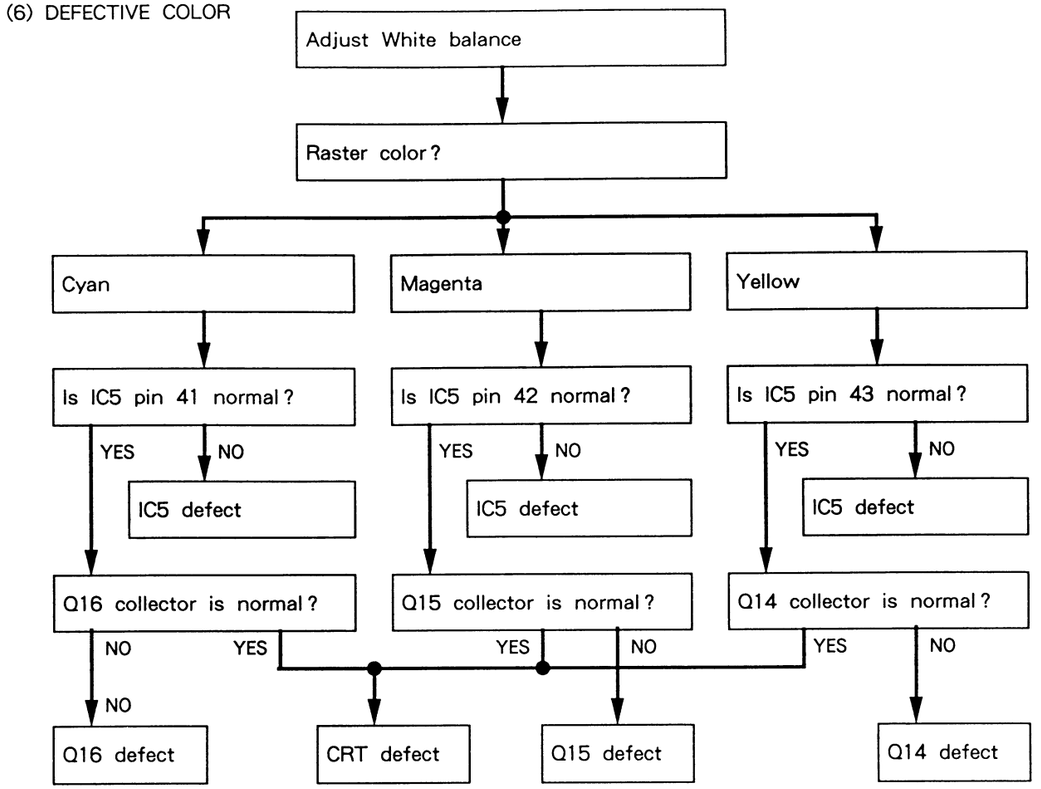
(4) NO HORIZ. DEFLECT (ONLY V. LINE)



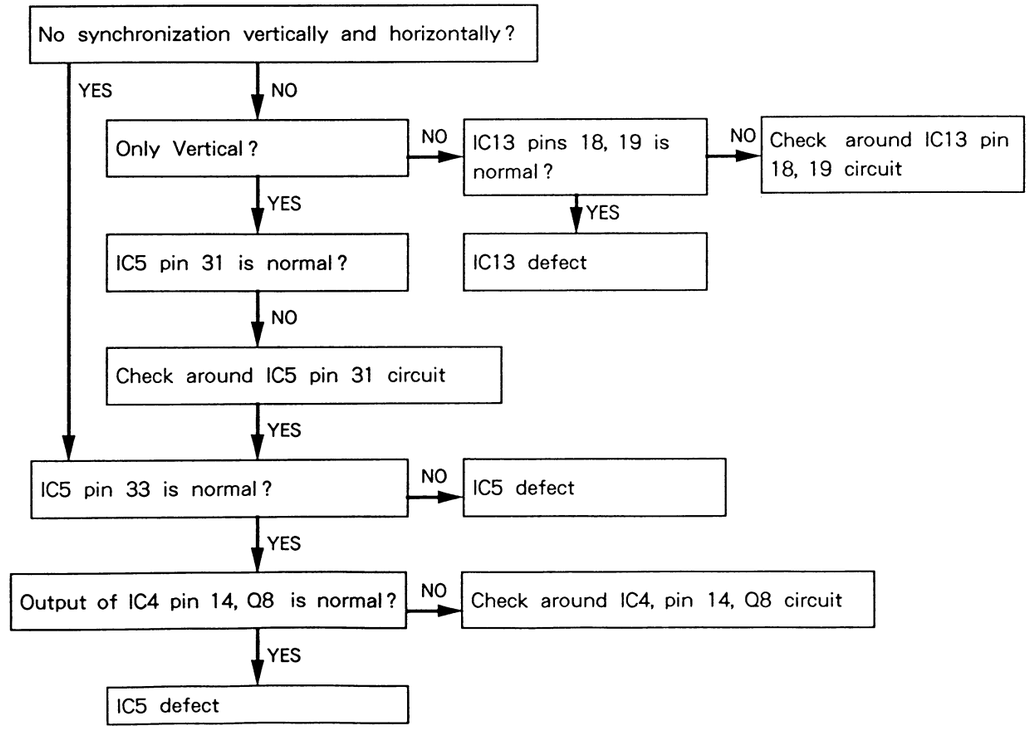
(5) NO COLOR



(6) DEFECTIVE COLOR

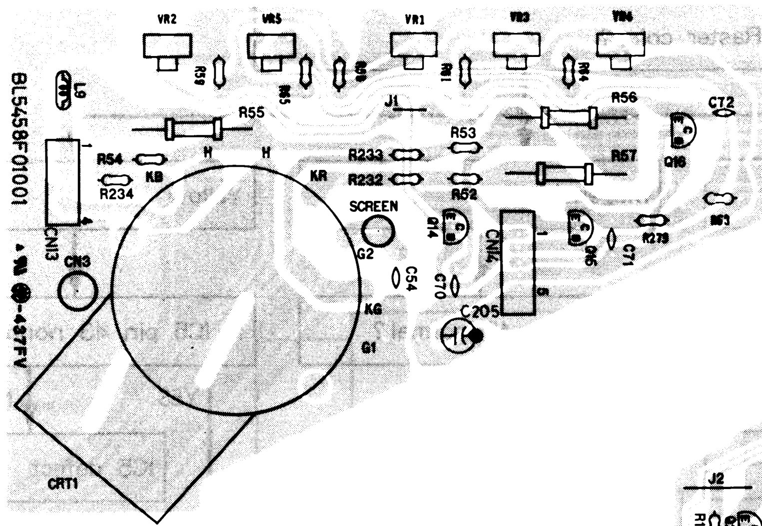


(7) NO SYNCHRONIZATION

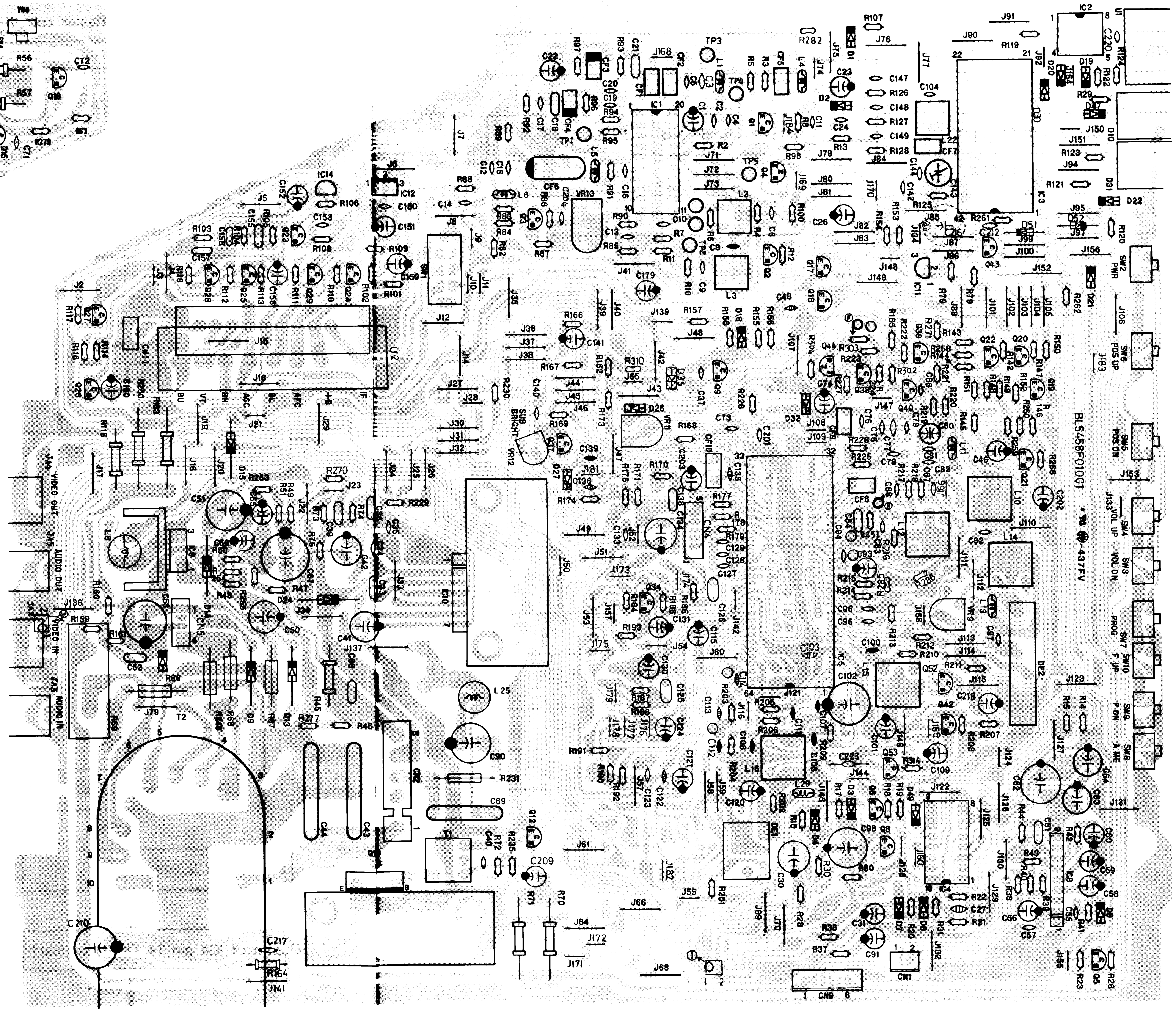


P.C.BOARD

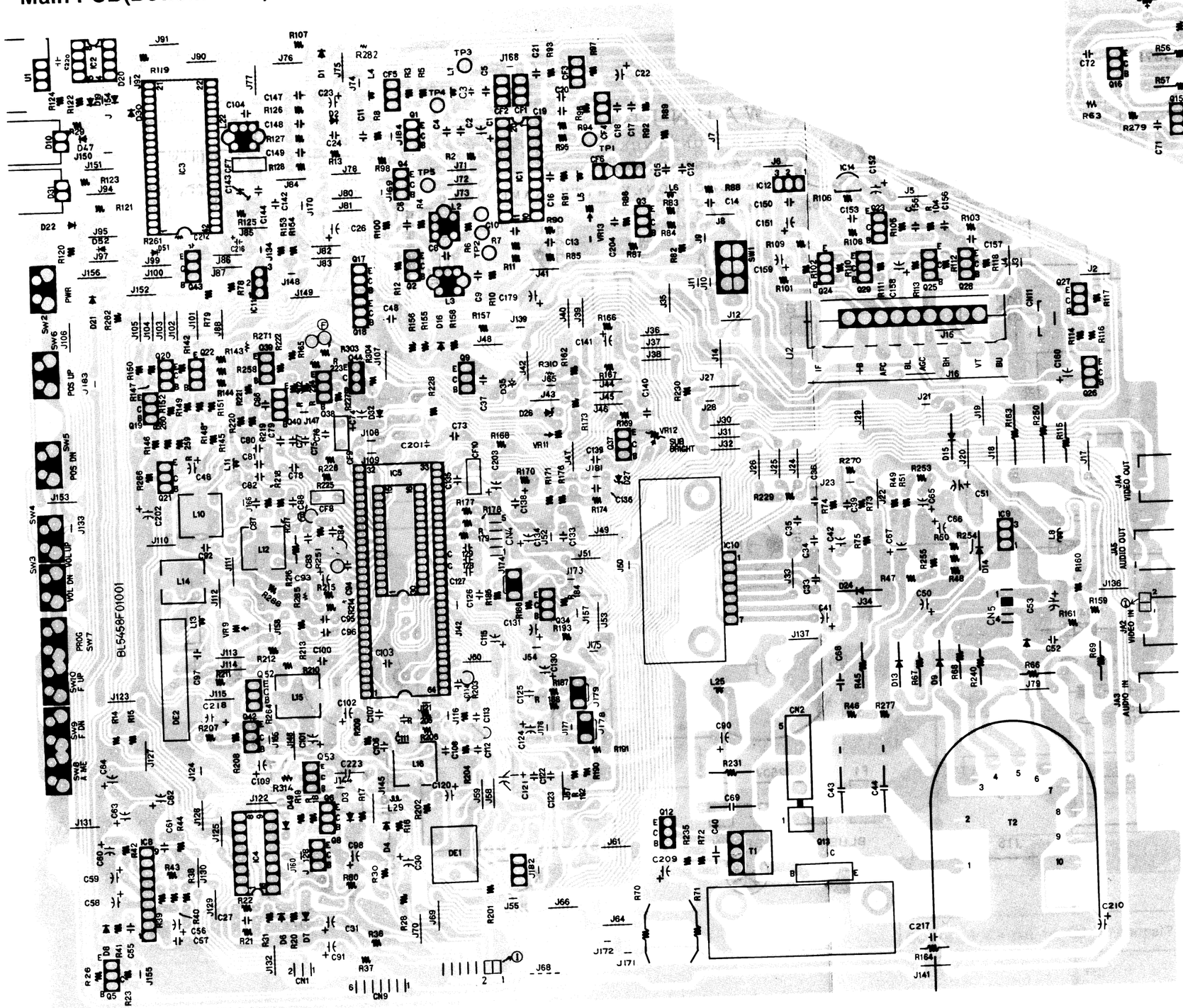
CRT PCB(Top View)



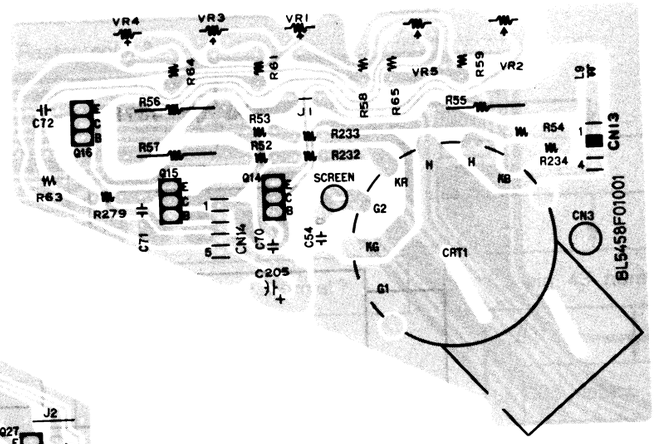
Main PCB(Top View)



Main PCB(Bottom View)



CRT PCB(Bottom View)



Power Supply PCB(Top View)