

FILE NO.

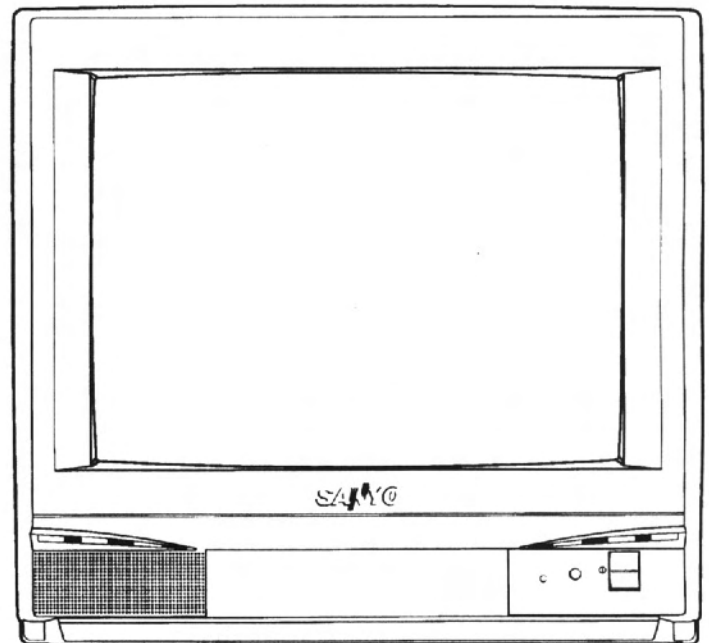
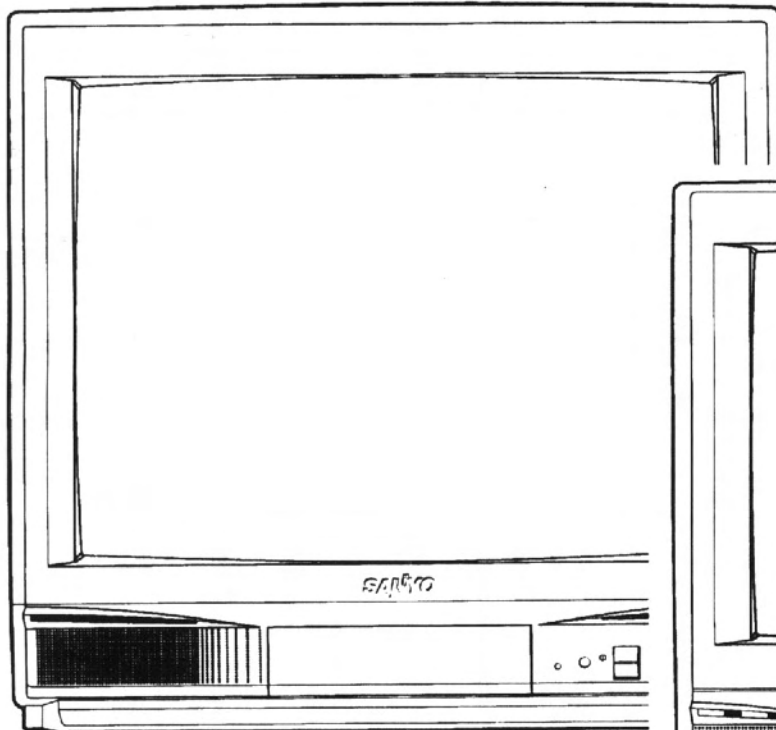
SERVICE MANUAL

Colour Television

**Model No. C14LT83M
C20LB93M**

(Argentina)

**Service Ref. No. C14LT83M - 00
C20LB93M - 00
C20LB93M - 01
C20LB93M - 02**



Specifications

Power Source..... AC 110-240V, 50/60Hz.
Receiving System..... PAL(N/N, M/M) NTSC(M/M)
Channel Coverage
 Antenna mode VHF:02-13, UHF: 14-69
 CATV mode VHF band: 02-13, MID band: 14-22,
 SUPER band: 23-36, HYPER band: 37-94
 ULTRA band: 100-125
 Low MID band: 01 and 95-99

Video IF..... 45.75MHz
Sound IF..... 41.25MHz
Aerial Input Impedance..... 75 Ω
Ext. Terminals..... Video inputs: Phono jack \times 2
 Audio inputs: Phono jack \times 2
 Headphone jack: Mini. jack \times 1

Sound Output 3.0W
Dimensions..... C14LT83M: 380(W) \times 356(H) \times 383.5(D)mm
 C20LB93M: 496(W) \times 464(H) \times 472(D)mm
Weight (approx.) C14LT83M: 9.4Kg
 C20LB93M: 16.7Kg

Specifications subject to change without notice.

**Product Code: 1 113 420 02 (C14LT83M)
1 113 421 02 (C20LB93M)**

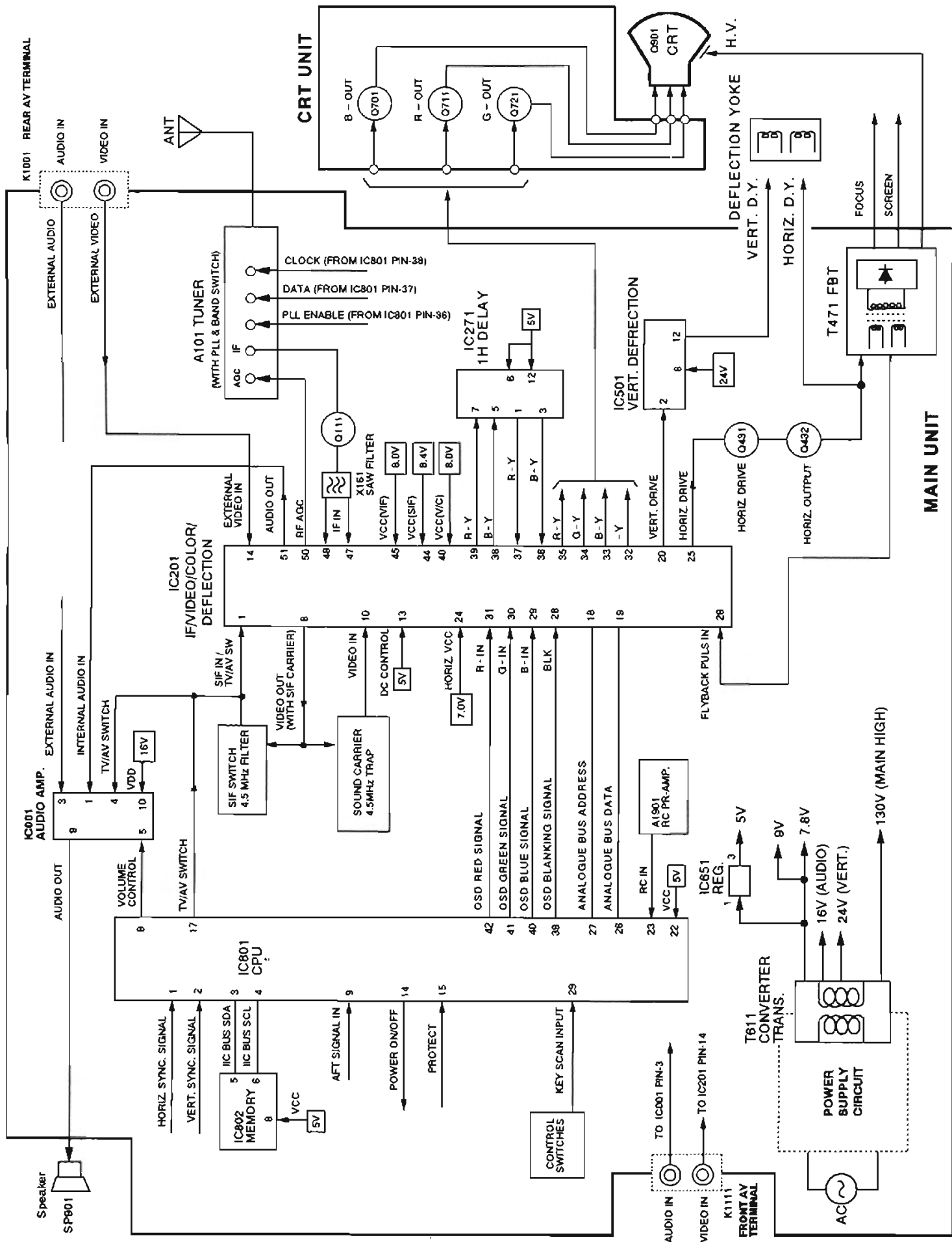
Original Version

Chassis Series: LA3-D

Give complete "SERVICE REF. No." for parts order or servicing. It is shown on the rating plate at the cabinet back of the unit.

This T.V. receiver will not work properly in foreign countries where the television transmission system and power source differ from the design specifications. Refer to the specification table.

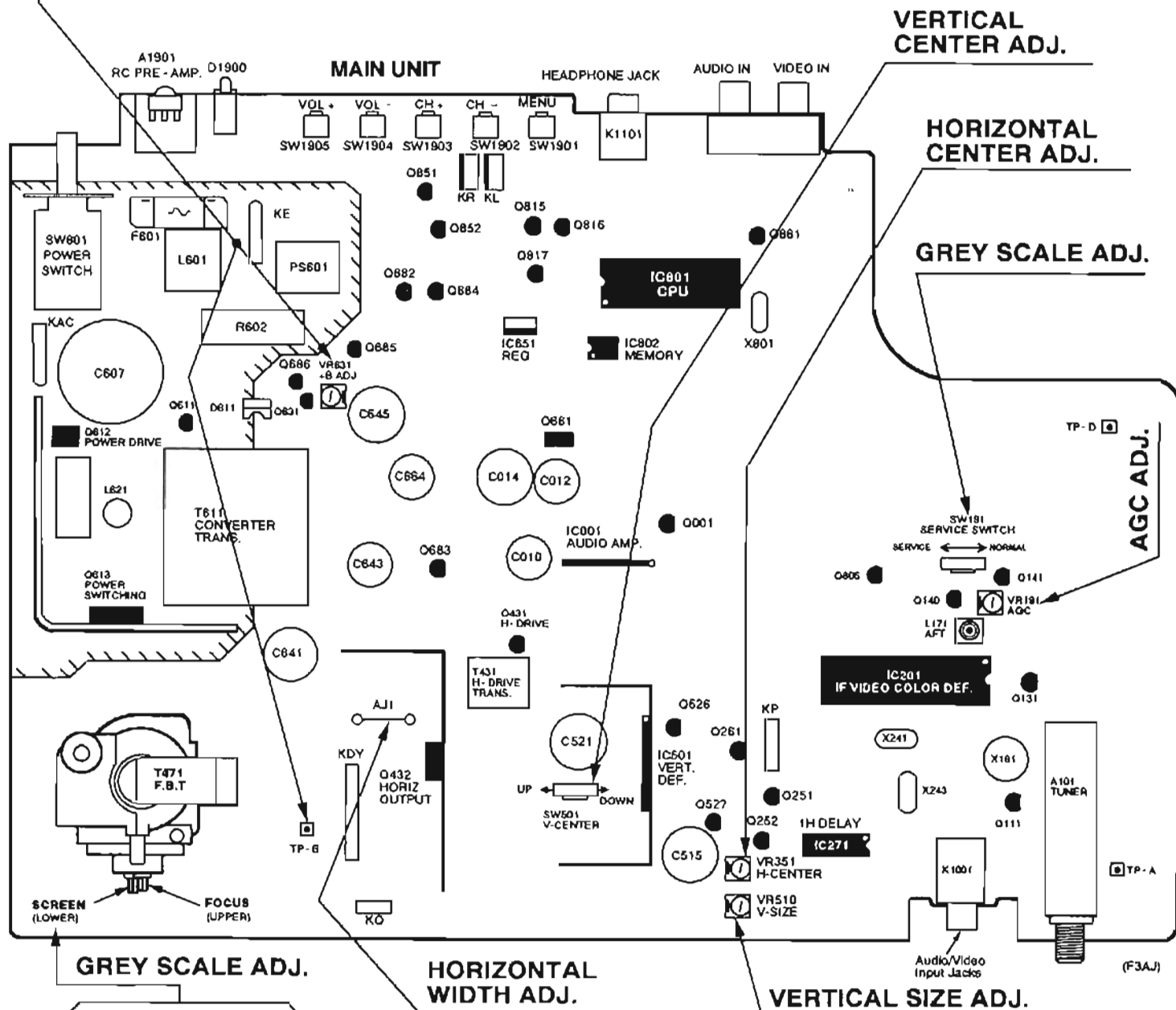
Block Diagram



Service Adjustments

+B POWER SUPPLY ADJ.

- (1) Connect DC meter to "TP - B" and the ground. Set the +B adjustment control (VR631) to mid-range.
- (2) Set brightness and contrast to minimum. Tune the receiver to an active channel and synchronized picture.
- (3) Adjust +B adjustment control for 130 ± 1.0 volt DC.



Service Adjustments

SAFETY PRECAUTIONS : An isolation transformer should be connected in the power line between the receiver and the AC line before any service is performed on the receiver.

X-RADIATION PRECAUTION The primary source of X-RADIATION in television receiver is the picture tube. The picture tube is specially constructed to limit X-RADIATION emission. For continued X-RADIATION protection, the replacement tube must be the same type as the original including suffix letter. Excessive high voltage may produce potentially hazardous X-RADIATION. To avoid such hazards, the high voltage must be maintained within specified limit. Refer to this service manual for specific high voltage limits. If high voltage exceeds specified limits, take necessary corrective action. Carefully follow the instructions for + B1 volt power supply adjustment, and high voltage check to maintain the high voltage within the specified limits.

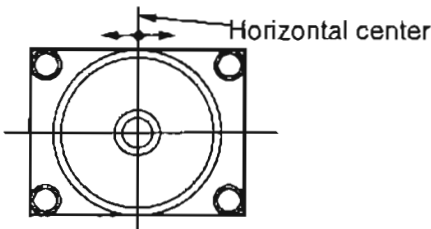
AGC ADJUSTMENT

NOTE: Do not attempt this adjustment with weak signal.

- (1) Tune the receiver to most clearest (or strongest) VHF station in your area. Set the brightness and contrast controls to maximum. Set the colour control to minimum.
- (2) Set AGC (VR191) control to mid-range.
- (3) Turn AGC control in direction which causes snow to appear, then in the opposite direction until the snow just disappears.

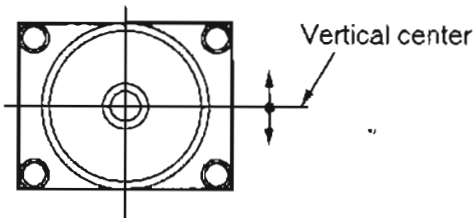
HORIZONTAL CENTER ADJUSTMENT

- (1) Receive the monochrome circular pattern.
- (2) Set the brightness and contrast to maximum.
- (3) Adjust VR351 for optimum horizontal center position.



VERTICAL CENTER ADJUSTMENT

- (1) Receive the monochrome circular pattern.
- (2) Set the brightness to center and contrast to maximum.
- (3) Adjust SW501 for optimum vertical position.



FOCUS ADJUSTMENT

- (1) Receive the monochrome circular pattern.
- (2) Set the brightness to normal and contrast to maximum.
- (3) Adjust the focus control on the F.B.T for the best focus on the screen center.

GREY SCALE ADJUSTMENT

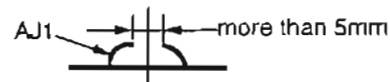
- (1) Receive the monochrome circular pattern.
- (2) Set the brightness and colour to center, contrast to maximum.
- (3) Set the service switch (SW191) to the service side.
- (4) Set the drive volume (VR702 and VR712) at their mechanical center.
- (5) Set the bias volume (VR701, VR721 and VR711) to minimum (fully counter clockwise).
- (6) Turn the screen volume on the FBT to obtain just visible one coloured line.
- (7) Adjust each bias volume (VR701 - blue, VR721 - green and VR711 - red) alternately until a dim white line produced.
- (8) Set the service switch (SW191) at the normal side.
- (9) Adjust the drive volume (VR702 - blue and VR712 - red) alternately to produce normal black and white picture.
- (10) Check for proper grey scale tracking at all brightness levels.

NOTE : If the grey scale adjustment is performed after picture tube replacement, check the high voltage.

H-WIDTH & HIGH VOLTAGE CHECK

- (1) Receive the monochrome circular pattern.
- (2) Set the brightness and contrast to maximum.
- (3) If the picture is too wide or narrow, cut or short the "AJ1" on the main unit. When AJ1 is shorted, the horiz. width increase. When AJ1 is cut, the horiz. width decrease.

Important Note: If AJ1 is cut, its gap must be more than 5mm to prevent sparks.



- (4) Connect a high voltage probe to anode lead of the picture tube.
- (5) The high voltage must be between 20- 22KV (14"), 24- 26KV (20").

NOTE: If the picture tube is replaced, check the high voltage. The horiz. width adjustment affects the high voltage. Therefore, recheck and the high voltage.

PURITY AND CONVERGENCE ADJUSTMENT

CAUTION: The Convergence and Purity adjustments have been made at the factory. Readjustment should be made only after picture tube or deflection yoke replacement, following the steps below:

PURITY ADJUSTMENT

1. Demagnetize the picture tube and receiver using an external degaussing coil. When replacing picture tube or deflection yoke, mount deflection yoke and purity - convergence magnets assembly properly, see figures 1 and 4.
2. Turn Red and Blue guns off and provide only Green raster. Rotate Screen control to fully counterclockwise. Rotate Red and Blue Bias controls fully counterclockwise. Slowly rotate Green Bias control clockwise to produce Green raster.
3. Loosen the screw holding the Deflection Yoke and remove the 3 Rubber Wedges, and slide the Deflection Yoke fully forward.
4. Rotate and spread the Tabs of the two Purity Magnets to center the vertical green belt in the picture screen. The Purity Magnets are also adjusted to obtain vertical centering of the raster.
5. Slowly slide the Deflection Yoke backward until a uniform green screen is obtained.
6. Check the purity of the red and blue screens for uniformity, turn off other colours to check this (use bias controls). Readjust the yoke position if necessary until all screens are pure.
7. Adjust each Bias control and screen control to obtain white raster. Refer to Gray Scale Adjustment. If part of the picture screen is coloured, adjust the Deflection Yoke position forward or backward slightly.

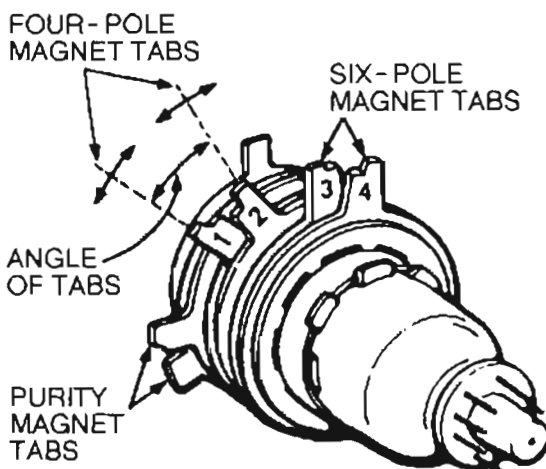


Figure- 1. PURITY AND CONVERGENCE MAGNETS

8. Tighten the mounting screw of the Deflection Yoke. Adjust Convergence next.

CENTER CONVERGENCE ADJUSTMENT

1. Use a dot crosshatch pattern signal.
2. Turn Red and Blue guns on and turn off Green gun. Adjust the angle between the Tabs of the Four Pole Magnet 1 and 2, and superimpose the Red and Blue vertical lines in the center area of the picture screen. Refer to figure 2.
3. Keeping the mutual angle of the Tabs of the Four Pole Magnet turn them together to superimpose the Blue and Red horizontal lines in the center area of the picture screen. Refer to figure 2.
4. Turn Green gun on and adjust Six Pole Magnet 3 and 4 so that the Green line superimposed on the Red/Blue lines. This is the same procedure used in steps 2 and 3. Refer to figure 3.

OUTER AREA CONVERGENCE ADJUSTMENT

Slightly loosen the screw holding the Deflection Yoke. Adjust the Deflection Yoke to converge the detail in the outer area (left side and right side) of the picture screen by orbital movement of the front of the Yoke, then secure the Deflection Yoke in appropriate position by putting the wedges as illustrated. Tighten screw holding the Deflection Yoke.

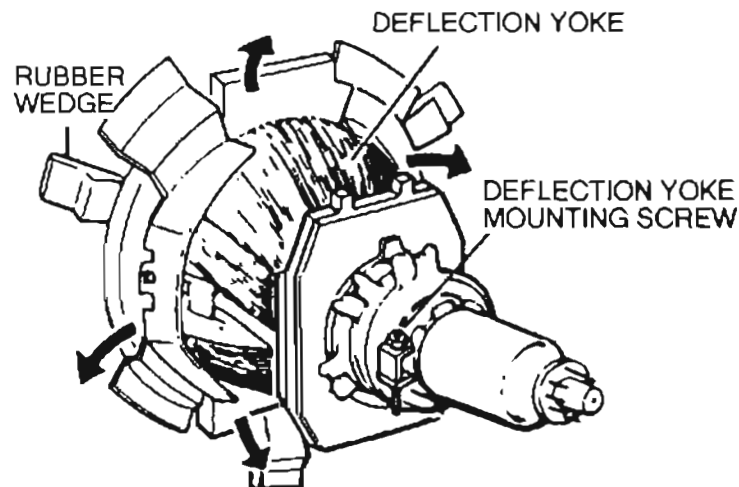


Figure- 4. ADJUSTMENT DEFLECTION YOKE

Adjust tabs angle to superimpose blue and red vertical line

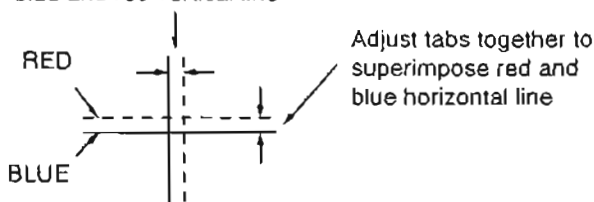


Figure- 2 BLUE AND RED LINE MOVEMENT

Adjust tabs angle to superimpose red/blue and green vertical line

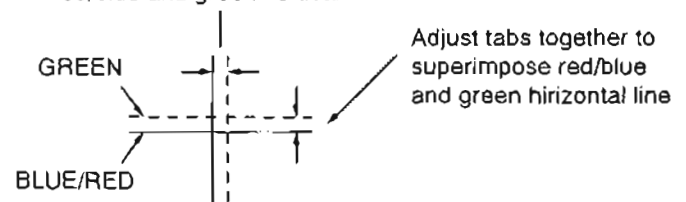
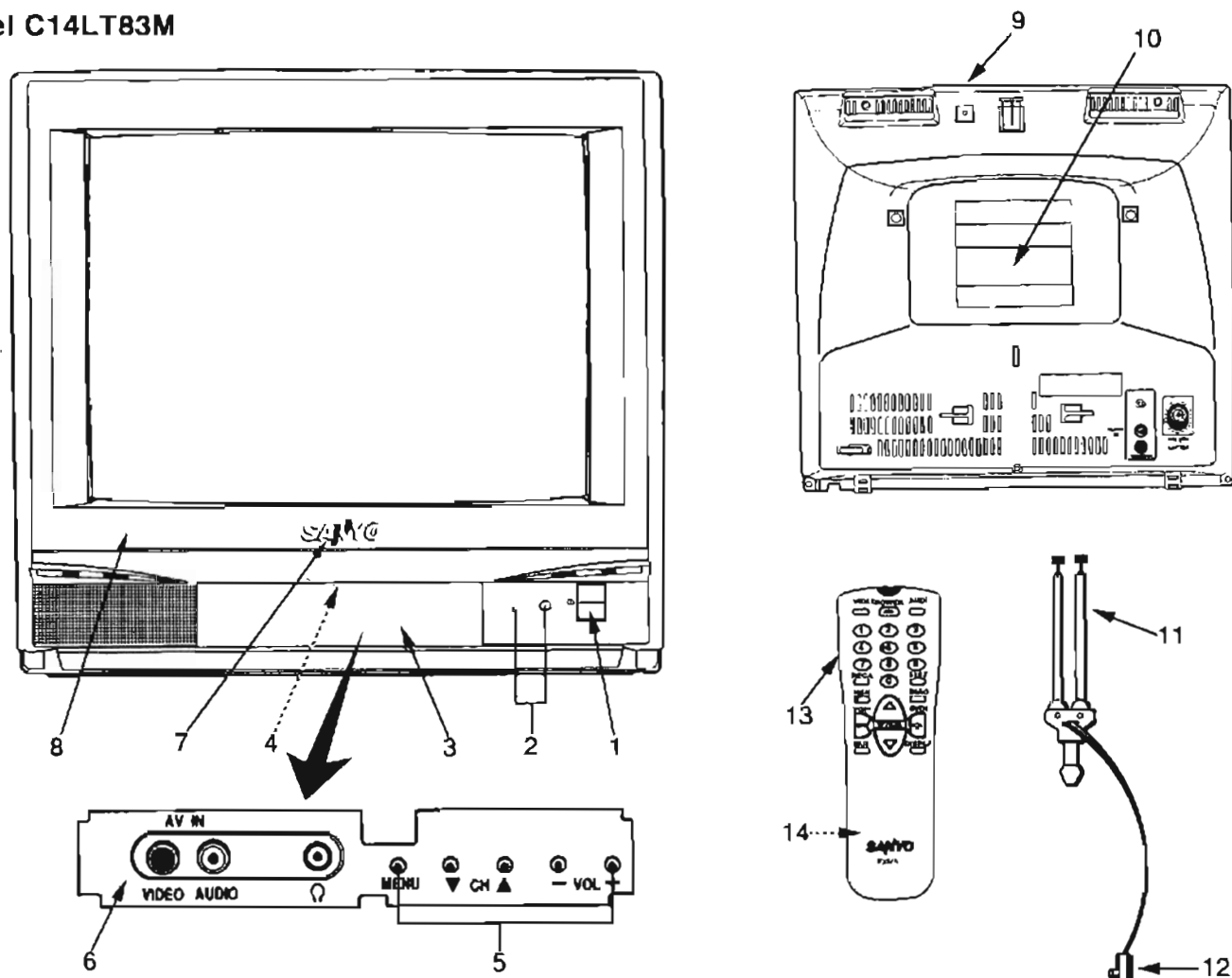


Figure- 3 BLUE/RED AND GREEN LINE MOVEMENT

CABINET PARTS LIST

Note : Parts order must contain Service Ref. No.,Key No.,Parts No., and Description.

Model C14LT83M

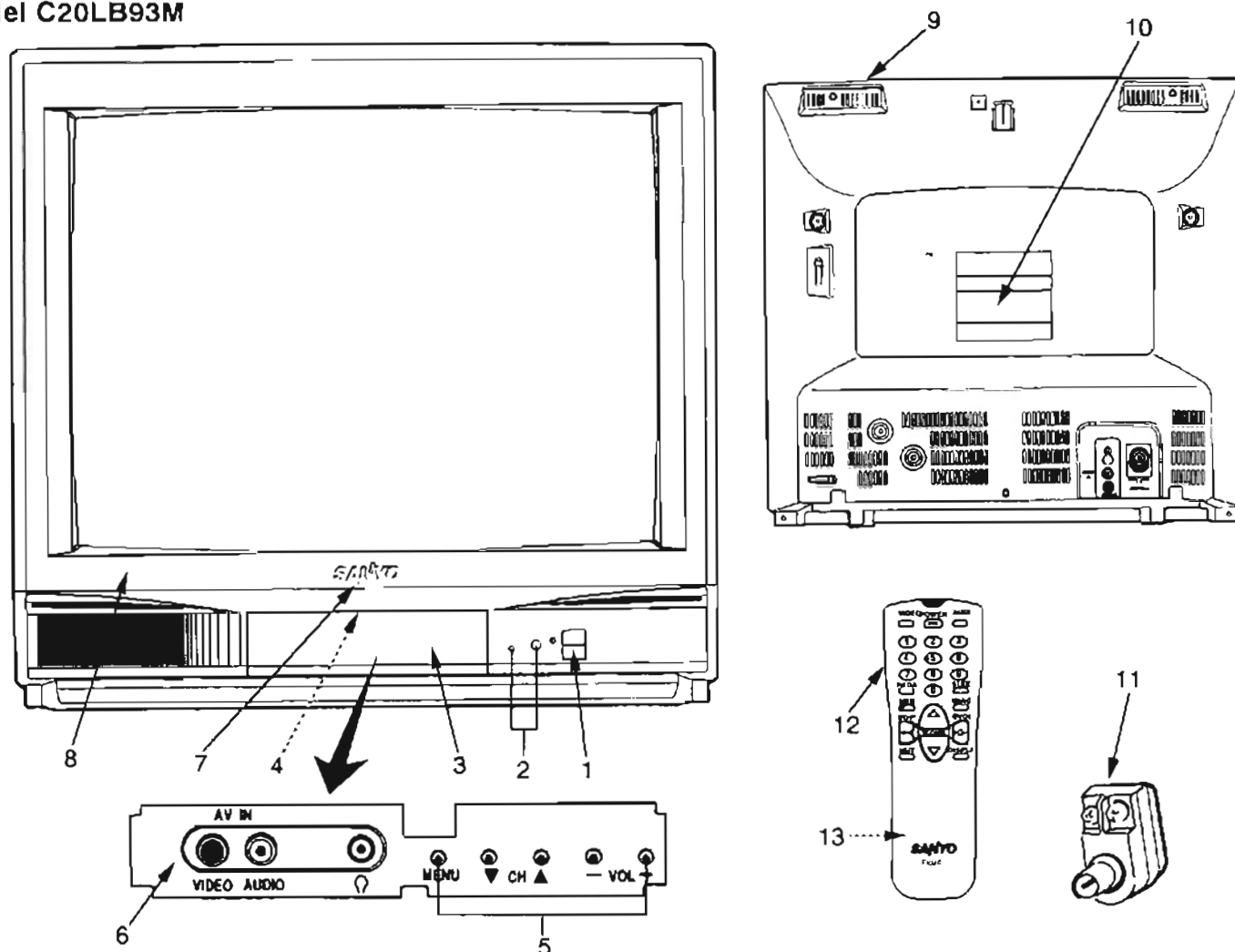


Key No.	Part No.	Description	Key No.	Part No.	Description
1.	610 278 1489	BUTTON POWER	11.	610 217 1006	ROD ANTENNA ASSY
	610 270 5591	SPRING	or	645 012 0428	ROD ANTENNA ASSY
2.	610 278 1595	DEC IND	12.	645 004 3925	ANT MATCHING BOX
3.	610 278 1571	DOOR	or	645 005 0251	ANT MATCHING BOX
4.	610 104 2505	LATCH PUSH	13.	645 029 2590	ASSY, REMOCON FXMR
5.	610 277 8403	BUTTON UNITED	14.	610 273 0173	RC-BATTERY LID
6.	610 277 9455	DEC CONTROL SHEET			
7.	645 030 7348	BADGE, SANYO		610 278 3308	INSTRUCTIONS MANUAL
8.	610 278 1526	CABINET FRONT			
9.	610 277 7352	CABINET BACK			
10.	610 278 4220	LABEL RATING			

CABINET PARTS LIST

Note : Parts order must contain Service Ref. No.,Key No.,Parts No., and Description.

Model C20LB93M



Key No.	Part No.	Description	Key No.	Part No.	Description
1.	610 278 1496	BUTTON POWER	11.	645 004 3925	ANT MATCHING BOX
	610 270 5591	SPRING	or	645 005 0251	ANT MATCHING BOX
2.	610 278 1601	DEC IND	12.	645 029 2590	ASSY, REMOCON FXMR
3.	610 278 3537	DOOR	13.	610 273 0173	RC-BATTERY LID
4.	610 104 2505	LATCH PUSH			
5.	610 277 8403	BUTTON UNITED		610 278 3308	INSTRUCTIONS MANUAL
6.	610 277 9462	DEC CONTROL SHEET			
7.	645 030 7355	BADGE, SANYO			
8.	610 278 1557	CABINET FRONT			
9.	610 277 7369	CABINET BACK			
10.	610 278 4268	LABEL RATING(Service Ref. No. C20LB93M-00)			
	610 278 4305	LABEL RATING(Service Ref. No. C20LB93M-01)			
	610 278 4343	LABEL RAING (Service Ref. No. C20LB93M-02)			

CHASSIS ELECTRICAL PARTS LIST

Service Ref. No. C14LT83M-00

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a Δ mark in this parts list and the circuit diagram show components whose value have special significance to product safety. It is particularly recommended that only parts specified on the following parts list be used for components replacement pointed out by the mark.

Note: Part order must contain Service Ref. No., Part No., and descriptions. The main PCB unit will be supplied without tuner and flyback transformer. They should be ordered separately.

Read description in the Capacitor and Resistor as follows:			
CAPACITOR			
CERAMIC	100P	K	50V
<p>Rated Voltage</p> <p>Tolerance Symbols:</p> <p>Less than 10PF R: $\pm 0.25-0PF$ S: $\pm 0-0.25PF$ E: $\pm 0-1PF$</p> <p>More than 10PF A: Not specified B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$ F: $\pm 1\%$ G: $\pm 2\%$ H: $\pm 3\%$ J: $\pm 5\%$ K: $\pm 10\%$ L: $\pm 15\%$ M: $\pm 20\%$ N: $\pm 30\%$ P: $\pm 100-0\%$ Q: $\pm 30-10\%$ T: $\pm 50-10\%$ U: $\pm 75-10\%$ V: $\pm 20-10\%$ W: $\pm 100-10\%$ X: $\pm 40-20\%$ Y: $\pm 150-10\%$ Z: $\pm 80-20\%$</p> <p>Rated value: P=pico farad, U=Micro farad</p>			
Material:			
CERAMIC.....Ceramic			
MT- PAPER.....Metallized Paper			
POLYESTER.....Polyester			
MT- POLYEST.....Metallized Polyester			
POLYPRO.....Polypropylene			
MT- POLYPRO.....Metallized Polypropylene			
COMPO FILM.....Composite film			
MT- COMPO.....Metallized Composite			
STYRENE.....Styrene			
TA- SOLID.....Tantalum Solid			
AL- SOLID.....Aluminium Solid			
ELECT.....Electrolytic			
NP- ELECT.....Non- polarized Electrolytic			
OS- SOLID.....Aluminium Solid with Organic			
Semiconductive Electrolytic			
DL- ELECT.....Double Layered Electrolytic			
RESISTOR			
CARBON	4.7K	J	A 1/4W
<p>Rated Wattage</p> <p>Performance Symbols:</p> <p>A: General B: Non flammable Z: Low noise</p> <p>Other: Temperature coefficient</p> <p>Tolerance Symbols:</p> <p>A: $\pm 0.05\%$ B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$ F: $\pm 1\%$ G: $\pm 2\%$ J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$ P: $\pm 5-15\%$</p> <p>Rated value, ohms:</p> <p>K: 1,000, M: 1,000,000</p>			
Material:			
CARBON.....Carbon			
MT- FILM.....Metal Film			
OXIDE- MT.....Oxide Metal Film			
SOLID.....Composition			
MT- GLAZE.....Metal Glaze			
WIRE WOUND.....Wire Wound			
CERAMIC RES.....Ceramic			
FUSIBLE RES.....Fusible			

Ref. No.	Part No.	Description
655 000	0453	ASSY PWB MAIN F3AV 1LG0B10E025AA
TRANSISTOR		
Q001	405 011 7305	TR 2SC1740-Q
	405 011 7404	TR 2SC1740-R
	405 011 7503	TR 2SC1740-S
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
Q111	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 013 3305	TR 2SC2216(SAN)
Q131	405 011 7305	TR 2SC1740-Q
	405 011 7404	TR 2SC1740-R
	405 011 7503	TR 2SC1740-S
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
Q140	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 011 7305	TR 2SC1740-Q
	405 011 7404	TR 2SC1740-R
	405 011 7503	TR 2SC1740-S
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
Q141	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-O(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1103	TR 2SA933-Q
Q242	405 006 1202	TR 2SA933-R
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 011 7305	TR 2SC1740-Q
	405 011 7404	TR 2SC1740-R
	405 011 7503	TR 2SC1740-S
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	
0243	405 011 7305	TR 2SC1740-Q		405 001 7407	TR 2SA1015-Q(SAN)	
	405 011 7404	TR 2SC1740-R		405 001 7605	TR 2SA1015-Y(SAN)	
	405 011 7503	TR 2SC1740-S		405 004 3109	TR 2SA564A-Q(CU)	
	405 011 8401	TR 2SC1740S-Q		405 004 3208	TR 2SA564A-R(CU)	
	405 011 8500	TR 2SC1740S-R		405 006 1103	TR 2SA933-Q	
	405 011 8609	TR 2SC1740S-S		405 006 1202	TR 2SA933-R	
	405 012 2002	TR 2SC1815-GR		405 006 1707	TR 2SA933S-Q	
	405 012 2101	TR 2SC1815-O		405 006 1806	TR 2SA933S-R	
	405 012 2309	TR 2SC1815-Y		0612	405 058 0208	TR 2SC3807-R-CTV-YA
	405 020 7501	TR 2SC945A-PA		0613	405 022 8506	TR 2SD1710-CTV-YB
	405 020 7709	TR 2SC945A-QA		0631	405 012 2002	TR 2SC1815-GR
	405 020 7907	TR 2SC945A-RA			405 019 2708	TR 2SC536-F-NP
0251	405 011 7305	TR 2SC1740-Q		405 019 3804	TR 2SC536-G-NP	
	405 011 7404	TR 2SC1740-R		405 020 7501	TR 2SC945A-PA	
	405 011 7503	TR 2SC1740-S	0661	405 059 9804	TR 2SD1913-Q-RA	
	405 011 8401	TR 2SC1740S-Q		405 059 9903	TR 2SD1913-R-RA	
	405 011 8500	TR 2SC1740S-R	0682	405 011 7305	TR 2SC1740-Q	
	405 011 8609	TR 2SC1740S-S		405 011 7404	TR 2SC1740-R	
	405 012 2002	TR 2SC1815-GR		405 011 7503	TR 2SC1740-S	
	405 012 2101	TR 2SC1815-O		405 011 8401	TR 2SC1740S-Q	
	405 012 2309	TR 2SC1815-Y		405 011 8500	TR 2SC1740S-R	
	405 020 7501	TR 2SC945A-PA		405 011 8609	TR 2SC1740S-S	
	405 020 7709	TR 2SC945A-QA		405 012 2002	TR 2SC1815-GR	
	405 020 7907	TR 2SC945A-RA		405 012 2101	TR 2SC1815-O	
0252	406 000 6804	TR 2SA1015-GR(SAN)		405 012 2309	TR 2SC1815-Y	
	405 001 7407	TR 2SA1015-Q(SAN)		405 020 7501	TR 2SC945A-PA	
	405 001 7605	TR 2SA1015-Y(SAN)		405 020 7709	TR 2SC945A-QA	
	405 004 3109	TR 2SA564A-Q(CU)		405 020 7907	TR 2SC945A-RA	
	405 004 3208	TR 2SA564A-R(CU)	0683	405 089 0000	TR 2SA1707-S	
	405 006 1103	TR 2SA933-Q		405 089 0109	TR 2SA1707-T	
	405 006 1202	TR 2SA933-R		405 009 6907	TR 2SB985-S	
	405 006 1707	TR 2SA933S-Q		405 009 7003	TR 2SB985-T	
	405 006 1806	TR 2SA933S-R	0684	405 011 7305	TR 2SC1740-Q	
	406 000 6804	TR 2SA1015-GR(SAN)		405 011 7404	TR 2SC1740-R	
	405 001 7407	TR 2SA1015-Q(SAN)		405 011 7503	TR 2SC1740-S	
	405 001 7605	TR 2SA1015-Y(SAN)		405 011 8401	TR 2SC1740S-Q	
0261	405 004 3109	TR 2SA564A-Q(CU)		405 011 8500	TR 2SC1740S-R	
	405 004 3208	TR 2SA564A-R(CU)		405 011 8609	TR 2SC1740S-S	
	405 006 1103	TR 2SA933-Q		405 012 2002	TR 2SC1815-GR	
	405 006 1202	TR 2SA933-R		405 012 2101	TR 2SC1815-O	
	405 006 1707	TR 2SA933S-Q		405 012 2309	TR 2SC1815-Y	
	405 006 1806	TR 2SA933S-R		405 020 7501	TR 2SC945A-PA	
	405 013 6801	TR 2SC2274-E		405 020 7709	TR 2SC945A-QA	
	405 013 7006	TR 2SC2274-F		405 020 7907	TR 2SC945A-RA	
	405 022 6601	TR 2SD1649-CTV-YB	0685	405 012 2002	TR 2SC1815-GR	
	405 011 7305	TR 2SC1740-Q		405 019 2708	TR 2SC536-F-NP	
	405 011 7404	TR 2SC1740-R		405 019 3804	TR 2SC536-G-NP	
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0431	405 011 8401	TR 2SC1740S-Q	0686	406 000 6804	TR 2SA1015-GR(SAN)	
	405 011 8500	TR 2SC1740S-R		405 001 7605	TR 2SA1015-Y(SAN)	
	405 011 8609	TR 2SC1740S-S		405 004 3208	TR 2SA564A-R(CU)	
	405 012 2002	TR 2SC1815-GR		405 004 4809	TR 2SA608-F-CTV-NP	
	405 012 2101	TR 2SC1815-O	0806	406 000 6804	TR 2SA1015-GR(SAN)	
	405 012 2309	TR 2SC1815-Y		405 001 7407	TR 2SA1015-Q(SAN)	
	405 020 7501	TR 2SC945A-PA		405 001 7605	TR 2SA1015-Y(SAN)	
	405 020 7709	TR 2SC945A-QA		405 004 3109	TR 2SA564A-Q(CU)	
	405 020 7907	TR 2SC945A-RA		405 004 3208	TR 2SA564A-R(CU)	
	405 011 7305	TR 2SC1740-Q		405 006 1103	TR 2SA933-Q	
	405 011 7404	TR 2SC1740-R		405 006 1202	TR 2SA933-R	
	405 011 7503	TR 2SC1740-S		405 006 1707	TR 2SA933S-Q	
0526	405 011 8401	TR 2SC1740S-Q		405 006 1806	TR 2SA933S-R	
	405 011 8500	TR 2SC1740S-R	0815	406 000 6804	TR 2SA1015-GR(SAN)	
	405 011 8609	TR 2SC1740S-S		405 001 7407	TR 2SA1015-Q(SAN)	
	405 012 2002	TR 2SC1815-GR		405 001 7605	TR 2SA1015-Y(SAN)	
	405 012 2101	TR 2SC1815-O		405 004 3109	TR 2SA564A-Q(CU)	
	405 012 2309	TR 2SC1815-Y		405 004 3208	TR 2SA564A-R(CU)	
	405 020 7501	TR 2SC945A-PA		405 006 1103	TR 2SA933-Q	
	405 020 7709	TR 2SC945A-QA		405 006 1202	TR 2SA933-R	
	405 020 7907	TR 2SC945A-RA		405 006 1707	TR 2SA933S-Q	
	406 000 6804	TR 2SA1015-GR(SAN)		405 006 1806	TR 2SA933S-R	
	0527	405 011 7305	TR 2SC1740-Q			
		405 011 7404	TR 2SC1740-R			
405 011 7503		TR 2SC1740-S				
405 011 8401		TR 2SC1740S-Q				
405 011 8500		TR 2SC1740S-R				
405 011 8609		TR 2SC1740S-S				
405 012 2002		TR 2SC1815-GR				
405 012 2101		TR 2SC1815-O				
405 012 2309		TR 2SC1815-Y				
405 020 7501		TR 2SC945A-PA				
405 020 7709		TR 2SC945A-QA				
405 020 7907		TR 2SC945A-RA				
0611	406 000 6804	TR 2SA1015-GR(SAN)				

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
0816	405 011 7305	TR 2SC1740-Q	C103	403 051 0607	ELECT 4.7U M 50V
	405 011 7404	TR 2SC1740-R	C106	403 050 6600	ELECT 3.3U M 50V
	405 011 7503	TR 2SC1740-S	C111	403 069 9500	CERAMIC 0.01U Z 50V
	405 011 8401	TR 2SC1740S-Q	C112	403 069 9500	CERAMIC 0.01U Z 50V
	405 011 8500	TR 2SC1740S-R	C113	403 069 9500	CERAMIC 0.01U Z 50V
	405 011 8609	TR 2SC1740S-S	C131	403 026 2902	CERAMIC 47P J 50V
	405 012 2002	TR 2SC1815-GR	C132	403 026 2902	CERAMIC 47P J 50V
	405 012 2101	TR 2SC1815-O	C162	403 048 6308	ELECT 0.47U M 50V
	405 012 2309	TR 2SC1815-Y	C164	403 069 9500	CERAMIC 0.01U Z 50V
	405 020 7501	TR 2SC945A-PA	C166	403 069 9500	CERAMIC 0.01U Z 50V
	405 020 7709	TR 2SC945A-QA	C167	403 041 8804	ELECT 10U M 16V
	405 020 7907	TR 2SC945A-RA	C168	403 069 9500	CERAMIC 0.01U Z 50V
0817	405 011 7305	TR 2SC1740-Q	C171	403 049 0008	ELECT 1U M 50V
	405 011 7404	TR 2SC1740-R	C172	403 057 0601	POLYESTER 0.01U K 50V
	405 011 7503	TR 2SC1740-S	C173	403 069 9500	CERAMIC 0.01U Z 50V
	405 011 8401	TR 2SC1740S-Q	C175	403 071 8102	CERAMIC 2200P K 50V
	405 011 8500	TR 2SC1740S-R	C176	403 050 6600	ELECT 3.3U M 50V
	405 011 8609	TR 2SC1740S-S	C177	403 069 1702	CERAMIC 1000P K 50V
	405 012 2002	TR 2SC1815-GR	C178	403 062 7107	POLYESTER 0.056U K 50V
	405 012 2101	TR 2SC1815-O	C179	403 070 2606	CERAMIC 0.1U Z 50V
	405 012 2309	TR 2SC1815-Y	C191	403 022 8304	CERAMIC 33P J 50V
	405 020 7501	TR 2SC945A-PA	C210	403 086 2300	NP-ELECT 1U M 50V
	405 020 7709	TR 2SC945A-QA	C211	403 049 0008	ELECT 1U M 50V
	405 020 7907	TR 2SC945A-RA	C212	403 069 9500	CERAMIC 0.01U Z 50V
0852	405 011 7305	TR 2SC1740-Q	C213	403 049 0008	ELECT 1U M 50V
	405 011 7404	TR 2SC1740-R	C216	403 049 0008	ELECT 1U M 50V
	405 011 7503	TR 2SC1740-S	C218	403 013 3103	CERAMIC 150P J 50V
	405 011 8401	TR 2SC1740S-Q	C219	403 072 5001	CERAMIC 270P K 50V
	405 011 8500	TR 2SC1740S-R	C222	404 056 5307	NP-ELECT 2.2U M 100V
	405 011 8609	TR 2SC1740S-S	C229	403 048 6308	ELECT 0.47U M 50V
	405 012 2002	TR 2SC1815-GR	C230	403 048 6308	ELECT 0.47U M 50V
	405 012 2101	TR 2SC1815-O	C231	403 048 6308	ELECT 0.47U M 50V
	405 012 2309	TR 2SC1815-Y	C232	403 011 5000	CERAMIC 120P J 50V
	405 020 7501	TR 2SC945A-PA	C233	403 011 5000	CERAMIC 120P J 50V
	405 020 7709	TR 2SC945A-QA	C236	403 049 0008	ELECT 1U M 50V
	405 020 7907	TR 2SC945A-RA	C237	403 049 0008	ELECT 1U M 50V
0861	406 000 6804	TR 2SA1015-GR(SAN)	C241	403 069 9500	CERAMIC 0.01U Z 50V
	405 001 7407	TR 2SA1015-O(SAN)	C242	403 069 5601	CERAMIC 0.01U K 50V
	405 001 7605	TR 2SA1015-Y(SAN)	C243	403 048 6308	ELECT 0.47U M 50V
	405 004 3109	TR 2SA564A-O(CU)	C244	403 067 5603	MT-COMPO 0.1U J 50V
	405 004 3208	TR 2SA564A-R(CU)	C245	403 043 9106	ELECT 47U M 16V
	405 006 1103	TR 2SA933-O	C251	403 042 2405	ELECT 100U M 16V
	405 006 1202	TR 2SA933-R	C262	403 026 2902	CERAMIC 47P J 50V
	405 006 1707	TR 2SA933S-O	C263	403 026 2902	CERAMIC 47P J 50V
	405 006 1806	TR 2SA933S-R	C264	403 026 2902	CERAMIC 47P J 50V
			C271	403 069 9500	CERAMIC 0.01U Z 50V
			C272	403 069 9500	CERAMIC 0.01U Z 50V
			C273	403 069 9500	CERAMIC 0.01U Z 50V
			C274	403 049 0008	ELECT 1U M 50V
			C275	403 069 1702	CERAMIC 1000P K 50V
			C276	403 070 2606	CERAMIC 0.1U Z 50V
			C278	403 041 2109	ELECT 47U M 10V
INTEGRATED CIRCUIT			C351	403 074 8901	CERAMIC 680P K 50V
IC001	409 365 3006	IC LA4285	C363	403 069 9500	CERAMIC 0.01U Z 50V
IC201	409 382 3201	IC LA7687N	C364	403 050 6600	ELECT 3.3U M 50V
IC271	409 351 6905	IC LC89950	C365	403 060 8403	POLYESTER 0.033U K 50V
IC501	409 173 2703	IC LA7837	C366	403 042 7707	ELECT 22U M 16V
IC651	409 241 5407	IC BA178M05T	C432	403 075 7101	CERAMIC 1000P K 500V
	409 265 4806	IC L78M05CV	C433	403 076 3102	CERAMIC 3900P K 500V
	409 172 1509	~IC MC78M05CT	C434	403 054 0703	ELECT 47U M 35V
	409 320 5700	IC UPC78M05AHF	C435	404 030 5903	MT-POLYPRO 5400P J 1.5K
IC801	410 300 5108	IC M37224M3-050SP		404 046 8905	MT-POLYPRO 5400P J 1.5K
IC802	409 247 7702	IC ST24C02A81		404 030 5408	MT-POLYPRO 6500P J 1.5K
	409 281 8307	IC 24C02A/P		404 046 8707	MT-POLYPRO 6500P J 1.5K
	409 333 3700	IC 24LC02B/P	C436	403 165 7004	CERAMIC 470P K 3K
CAPACITOR				403 324 2604	CERAMIC 470P K 3K
C001	403 049 0008	ELECT 1U M 50V		403 264 4300	CERAMIC 470P K 3K
C003	403 049 0008	ELECT 1U M 50V		403 232 3205	CERAMIC 470P K 3K
C006	403 042 2405	ELECT 100U M 16V	C437	403 067 7805	MT-COMPO 0.47U J 50V
C008	403 042 2405	ELECT 100U M 16V	C441	403 082 9006	POLYPRO 0.27U J 200V
C011	403 067 5603	MT-COMPO 0.1U J 50V			
C012	403 047 5005	ELECT 470U M 25V			
C014	403 045 1504	ELECT 1000U M 25V			
C101	403 044 1703	ELECT 470U M 16V			
C102	403 038 8602	ELECT 33U M 6.3V			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C445	403 049 4204	ELECT 10U M 50V	R102	401 011 1206	CARBON 68 JB 1/2W
C501	403 044 1703	ELECT 470U M 16V	R103	401 061 8101	OXIDE-MT 39K JA 1W
C511	403 071 5606	CERAMIC 220P K 50V	R104	401 024 9701	CARBON 12K JA 1/6W
C512	403 057 0601	POLYESTER 0.01U K 50V	R1101	401 007 7601	CARBON 150 JA 1/2W
C513	403 204 6104	ELECT 1U M 50V	R1102	401 007 7601	CARBON 150 JA 1/2W
C514	403 049 4204	ELECT 10U M 50V	R111	401 037 5400	MT-GLAZE 1K JA 1/10W
C515	403 045 1504	ELECT 1000U M 25V	R112	401 038 7700	MT-GLAZE 5.6K JA 1/10W
C517	403 052 7308	ELECT 100U M 35V	R113	401 037 5202	MT-GLAZE 100 JA 1/10W
C518	403 072 4400	CERAMIC 270P K 50V	R114	401 038 0602	MT-GLAZE 220 JA 1/10W
C521	403 052 8503	ELECT 1000U M 35V	R116	401 038 4907	MT-GLAZE 39 JA 1/10W
C524	403 060 8403	POLYESTER 0.033U K 50V	R131	401 037 5400	MT-GLAZE 1K JA 1/10W
C527	403 049 0008	ELECT 1U M 50V	R132	401 038 3504	MT-GLAZE 330 JA 1/10W
C601	404 071 2305	MT-POLYEST 0.15U K 250V	R133	401 038 3603	MT-GLAZE 3.3K JA 1/10W
	404 072 7408	MT-POLYEST 0.15U M 250V	R140	401 038 7601	MT-GLAZE 560 JA 1/10W
	404 064 1001	MT-POLYEST 0.15U M 250V	R141	401 037 5400	MT-GLAZE 1K JA 1/10W
C607	404 072 8306	ELECT 220U M 400V	R142	401 038 2002	MT-GLAZE 270 JA 1/10W
	404 044 5005	ELECT 220U M 400V	R143	401 037 5400	MT-GLAZE 1K JA 1/10W
	404 043 4405	ELECT 220U M 400V	R144	401 038 6307	MT-GLAZE 470 JA 1/10W
C614	403 067 5603	MT-COMPO 0.1U J 50V	R145	401 038 6307	MT-GLAZE 470 JA 1/10W
C615	403 058 2604	POLYESTER 0.015U J 50V	R146	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C616	403 165 8407	CERAMIC 680P K 2K	R160	401 038 8905	MT-GLAZE 68 JA 1/10W
	403 247 6604	CERAMIC 680P K 2K	R162	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
	403 275 8205	CERAMIC 680P K 2K	R164	401 038 0800	MT-GLAZE 22K JA 1/10W
	403 232 2109	CERAMIC 680P K 2K	R165	401 038 9308	MT-GLAZE 68K JA 1/10W
C617	403 059 6205	POLYESTER 0.022U K 50V	R166	401 037 7909	MT-GLAZE 1.5K JA 1/10W
△C621	404 073 5106	CERAMIC 470P K 250V	R170	401 038 7601	MT-GLAZE 560 JA 1/10W
	404 073 3102	CERAMIC 470P K 250V	R171	401 024 7004	CARBON 1K JA 1/6W
	404 044 2806	CERAMIC 470P K 400V	R172	401 038 6208	MT-GLAZE 47 JA 1/10W
	404 044 2707	CERAMIC 470P M 400V	R173	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
	404 071 4507	CERAMIC 470P K 400V	R175	401 037 8104	MT-GLAZE 150K JA 1/10W
	404 071 4606	CERAMIC 470P K 400V	R176	401 027 5908	CARBON 68K JA 1/6W
C631	403 165 6106	CERAMIC 470P K 1K	R177	401 038 0909	MT-GLAZE 220K JA 1/10W
	403 247 5003	CERAMIC 470P K 1K	R181	401 038 3702	MT-GLAZE 33K JA 1/10W
	403 269 1809	CERAMIC 470P K 1K	R182	401 038 3702	MT-GLAZE 33K JA 1/10W
	403 232 0501	CERAMIC 470P K 1K	R1902	401 037 6803	MT-GLAZE 12K JA 1/10W
C634	403 165 6106	CERAMIC 470P K 1K	R1903	401 038 7700	MT-GLAZE 5.6K JA 1/10W
	403 247 5003	CERAMIC 470P K 1K	R1904	401 038 5102	MT-GLAZE 3.9K JA 1/10W
	403 269 1809	CERAMIC 470P K 1K	R1905	401 038 0701	MT-GLAZE 2.2K JA 1/10W
	403 232 0501	CERAMIC 470P K 1K	R1906	401 025 4200	CARBON 1.8K JA 1/6W
C635	403 165 6106	CERAMIC 470P K 1K	R1907	401 037 5400	MT-GLAZE 1K JA 1/10W
	403 247 5003	CERAMIC 470P K 1K	R1908	401 037 5608	MT-GLAZE 10K JA 1/10W
	403 269 1809	CERAMIC 470P K 1K	R191	401 037 5400	MT-GLAZE 1K JA 1/10W
	403 232 0501	CERAMIC 470P K 1K	R198A	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C641	404 042 4505	ELECT 220U M 160V	R211	401 038 3801	MT-GLAZE 330K JA 1/10W
C643	403 148 1906	ELECT 330U M 35V	R213	401 027 2600	CARBON 5.6K JA 1/6W
C644	403 148 0404	ELECT 1000U M 25V	R214	401 037 5202	MT-GLAZE 100 JA 1/10W
C645	403 148 0701	ELECT 2200U M 25V	R218	401 037 5400	MT-GLAZE 1K JA 1/10W
C651	403 040 3701	ELECT 220U M 10V	R219	401 038 0602	MT-GLAZE 220 JA 1/10W
C661	403 042 2405	ELECT 100U M 16V	R222	401 016 5803	CARBON 220K JA 1/4W
C662	403 043 6006	ELECT 330U M 16V	R223	401 023 3700	CARBON 82K JA 1/4W
C663	403 039 6508	ELECT 100U M 10V	R224	401 024 7004	CARBON 1K JA 1/6W
C685	403 049 0008	ELECT 1U M 50V	R226	401 024 7004	CARBON 1K JA 1/6W
C801	403 043 9106	ELECT 47U M 16V	R229	401 037 5400	MT-GLAZE 1K JA 1/10W
C804	403 043 9106	ELECT 47U M 16V	R230	401 037 5400	MT-GLAZE 1K JA 1/10W
C806	403 049 0008	ELECT 1U M 50V	R231	401 037 5400	MT-GLAZE 1K JA 1/10W
C814	403 049 0008	ELECT 1U M 50V	R232	401 024 6700	CARBON 100 JA 1/6W
C831	403 069 9500	CERAMIC 0.01U Z 50V	R233	401 026 3905	CARBON 330 JA 1/6W
C871	403 069 9500	CERAMIC 0.01U Z 50V	R234	401 026 3905	CARBON 330 JA 1/6W
C881	403 041 8804	ELECT 10U M 16V	R235	401 026 3905	CARBON 330 JA 1/6W
			R236	401 038 2408	MT-GLAZE 2.7M JA 1/10W
			R237	401 038 2408	MT-GLAZE 2.7M JA 1/10W
RESISTOR			R241	401 025 1902	CARBON 15K JA 1/6W
R002	401 026 4605	CARBON 33K JA 1/6W	R242	401 025 1902	CARBON 15K JA 1/6W
R005	401 027 5205	CARBON 680 JA 1/6W	R243	401 037 6803	MT-GLAZE 12K JA 1/10W
R010	401 027 5502	CARBON 6.8K JA 1/6W	R246	401 037 6803	MT-GLAZE 12K JA 1/10W
R031	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	R247	401 038 0503	MT-GLAZE 22 JA 1/10W
R034	401 037 5004	MT-GLAZE 0.000 ZA 1/10W	R248	401 038 7809	MT-GLAZE 56K JA 1/10W
R1001	401 022 6801	CARBON 75 JA 1/4W	R249	401 038 7809	MT-GLAZE 56K JA 1/10W
R1006	401 037 5400	MT-GLAZE 1K JA 1/10W	R251	401 038 5003	MT-GLAZE 390 JA 1/10W
R1007	401 037 5707	MT-GLAZE 100K JA 1/10W	R252	401 037 5400	MT-GLAZE 1K JA 1/10W
R101	401 015 6603	CARBON 2.2 JB 1/4W			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
VR631	645 006 5347	VR, SEMI, 47K N	D351	407 012 4406	DIODE 1SS133
	610 232 8479	VR, SEMI, 50K N		407 012 6004	DIODE 1SS178
	645 023 5207	VR, SEMI, 50K N	D352	407 099 5907	ZENER DIODE MTZJ8. 2C
	645 006 5514	VR, SEMI, 2. 2K N		407 057 8407	ZENER DIODE R08. 2EB3
	645 003 5579	VR, SEMI, 2. 2K N	D442	408 008 2406	DIODE 1N4148
	645 023 5160	VR, SEMI, 2K N		407 013 4306	DIODE 1S2076A
	610 239 7574	VR B-2K		407 013 6508	DIODE 1S2471
TRANSFORMER			D445	408 008 2406	DIODE 1N4148
T431	652 000 0698	TRANS. DRIVE		407 013 4306	DIODE 1S2076A
	610 000 1053	DRIVE TRANS		407 013 6508	DIODE 1S2471
	610 000 1060	DRIVE TRANS	D510	408 008 2406	DIODE 1N4148
△T471	645 000 0089	TRANS. FLYBACK		407 013 4306	DIODE 1S2076A
	652 000 0766	TRANS. FRYBACK		407 013 6508	DIODE 1S2471
△T611	652 000 0728	TRANS. POWER, PULSE	D511	408 008 2406	DIODE 1N4148
	645 015 6694	TRANS. POWER, PULSE		407 013 4306	DIODE 1S2076A
	645 023 8918	TRANS. POWER, PULSE		407 013 6508	DIODE 1S2471
COIL			D521	407 005 7308	DIODE EM01Z
L131	645 003 9812	INDUCTOR, 33U K		407 005 8602	DIODE ERA15-02
L141	645 008 2733	INDUCTOR, 12U K		408 009 9008	DIODE BYD33D
L171	645 024 5879	TRANS. OSC, 45. 75MHZ	D603	407 006 6300	DIODE ERC05-10B
L191	645 003 9874	INDUCTOR, 68U K		407 009 6901	DIODE RM11C
L241	645 001 4567	INDUCTOR, 10U K	D604	407 006 6300	DIODE ERC05-10B
L431	610 032 5852	FILTER COIL		407 009 6901	DIODE RM11C
	610 032 5869	FILTER COIL		407 006 6300	DIODE ERC05-10B
	645 021 2734	INDUCTOR, 5. 6U, FILTER	D606	407 006 6300	DIODE ERC05-10B
L432	610 031 9998	PIPE CORE		407 009 6901	DIODE RM11C
L433	610 031 9998	PIPE CORE	△D611	407 104 2402	PHOTO COUPLE PC817C
L443	610 238 8305	COIL		407 106 6101	PHOTO COUPLE PC817D
L521	610 210 3809	PEAKING COIL 18UHK		407 175 9904	PHOTO COUPLE TLP621-1-BL
	645 001 4901	INDUCTOR, 18U K		407 002 9602	PHOTO COUPLE TLP621-1-GB
L601	610 031 5938	LINE FILTER	D614	408 008 2406	DIODE 1N4148
	645 017 6159	LINE FILTER		407 013 4306	DIODE 1S2076A
	645 007 8262	INDUCTOR, 27U K		407 013 6508	DIODE 1S2471
L621	610 031 1701	INDUCTOR, 27U K	D616	408 008 2406	DIODE 1N4148
	645 005 5539	INDUCTOR, 27U K		407 013 4306	DIODE 1S2076A
	645 008 2894	INDUCTOR, 5. 6U K		407 013 6508	DIODE 1S2471
L801	645 008 2894	INDUCTOR, 5. 6U K	D617	407 007 6606	DIODE ES1
L802	645 008 2894	INDUCTOR, 5. 6U K		407 007 6903	DIODE ES1Z
L803	645 008 2894	INDUCTOR, 5. 6U K		408 009 9008	DIODE BYD33D
L807	645 008 2894	INDUCTOR, 5. 6U K	D618	408 008 2406	DIODE 1N4148
L814	401 024 7004	CARBON 1K JA 1/6W		407 013 4306	DIODE 1S2076A
L816	401 024 7004	CARBON 1K JA 1/6W		407 013 6508	DIODE 1S2471
L817	401 024 7004	CARBON 1K JA 1/6W	D619	407 063 9405	ZENER DIODE MTZJ8. 2A
DIODE				407 057 8209	ZENER DIODE R08. 2EB1
D010	408 008 2406	DIODE 1N4148	D631A	407 007 7702	DIODE EU2A
	407 013 4306	DIODE 1S2076A	D633	407 007 6606	DIODE ES1
	407 013 6508	DIODE 1S2471		407 007 6903	DIODE ES1Z
D102	407 063 8606	ZENER DIODE MTZJ5. 1A	D634	407 009 8905	DIODE RU3M
	407 099 5204	ZENER DIODE MTZJ5. 1B	D635A	407 007 7603	DIODE EU2
	407 056 7906	ZENER DIODE R05. 1EB1		407 007 7801	DIODE EU2Z
D160	407 056 8002	ZENER DIODE R05. 1EB2	D641	407 099 5600	ZENER DIODE MTZJ6. 8A
	407 099 5907	ZENER DIODE MTZJ8. 2C		407 057 4003	ZENER DIODE R06. 8EB1
	407 057 8407	ZENER DIODE R08. 2EB3	D661	407 099 6201	ZENER DIODE MTZJ10C
D1900	407 116 6504	LED SLP-1818-51		407 054 0107	ZENER DIODE RD10EB3
D222	408 008 2406	DIODE 1N4148	D664	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A		407 013 4306	DIODE 1S2076A
	407 013 6508	DIODE 1S2471		407 013 6508	DIODE 1S2471
D251	408 008 2406	DIODE 1N4148	D666	407 005 8602	DIODE ERA15-02
	407 013 4306	DIODE 1S2076A	D667	407 005 8602	DIODE ERA15-02
	407 013 6508	DIODE 1S2471	D683	408 008 2406	DIODE 1N4148
D252	408 008 2406	DIODE 1N4148		407 013 4306	DIODE 1S2076A
	407 013 4306	DIODE 1S2076A		407 013 6508	DIODE 1S2471
	407 013 6508	DIODE 1S2471	D685	407 099 5600	ZENER DIODE MTZJ6. 8A
D261	408 008 2406	DIODE 1N4148		407 057 4003	ZENER DIODE R06. 8EB1
	407 013 4306	DIODE 1S2076A	D861	407 055 7907	ZENER DIODE RD3. 6EL
	407 013 6508	DIODE 1S2471	MISCELLANEOUS		
D278	407 063 8606	ZENER DIODE MTZJ5. 1A	△F601	423 024 8409	FUSE 250V 4A
	407 056 8002	ZENER DIODE R05. 1EB2	F601-A1	645 000 5077	HOLDER, FUSE

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
F601-A2	645 000 5077	HOLDER, FUSE	VARIABLE RESISTOR		
F641	645 017 6937	PROTECTOR, 0. 5A 125V	VR701	645 018 0347	VR, SEMI, 5K N
A101	645 027 5210	TUNER, U/V	VR702	645 018 0330	VR, SEMI, 200 N
	645 030 5689	TUNER, U/V	VR711	645 018 0347	VR, SEMI, 5K N
A1901	645 028 1044	UNIT, REMOCON RECEIVER	VR712	645 018 0330	VR, SEMI, 200 N
	645 021 1041	UNIT, REMOCON RECEIVER	VR721	645 018 0347	VR, SEMI, 5K N
K1001	645 015 7462	JACK, RCA-2	MISCELLANEOUS		
K1101	645 006 4708	JACK, PHONE D3. 6	△K701-M	610 010 4938	CRT SOCKET
PS601	408 003 6805	THERMISTOR 902P44E180MR14	OUT OF CIRCUIT BOARD		
SW1901	610 011 2698	SWITCH, PUSH	PICTURE TUBE		
	645 020 9239	SWITCH, PUSH 1P-1TX1	△Q901	414 007 5508	CRT A34E0J01X21
SW1902	610 011 2698	SWITCH, PUSH	COIL		
	645 020 9239	SWITCH, PUSH 1P-1TX1	△L901	645 000 5367	COIL, DEGAUSSING
SW1903	610 011 2698	SWITCH, PUSH		645 004 8302	COIL, DEGAUSSING
	645 020 9239	SWITCH, PUSH 1P-1TX1	MISCELLANEOUS		
SW1904	610 011 2698	SWITCH, PUSH	SP901	652 000 0667	SPEAKER, 8
	645 020 9239	SWITCH, PUSH 1P-1TX1	△W901	645 019 5020	CORD, POWER-2. 4MK-A5102
SW1905	610 011 2698	SWITCH, PUSH	W902	610 024 2081	GROUNDING CONNECTOR
	645 020 9239	SWITCH, PUSH 1P-1TX1			
SW191	652 000 0049	SWITCH, LEVER			
	610 011 2728	SWITCH, LEVER 1P-3T			
△SW601	645 017 0928	SWITCH, PUSH POWER 2P-2T			
	645 003 6811	SWITCH, PUSH POWER 2P-2T			
X131	610 015 2946	CERAMIC FILTER 4. 5MHZ			
X141	610 015 3066	CERAMIC TRAP			
	610 015 3059	TRAP, CERAMIC 4. 5MHZ			
X161	421 006 8904	SAW F OFWM1862M			
	421 006 3206	SAW F TSF5221P			
X241	610 012 0655	CRYSTAL OSCILLATOR			
X242	610 012 1294	CRYSTAL OSCILLATOR			
X243	645 001 6172	OSC, CRYSTAL 3575. 611KHZ			
X361	645 001 5380	OSC, CERAMIC 500KHZ			
X801	645 000 6692	OSC, CERAMIC 8. 00MHZ			
	645 021 5483	OSC, CERAMIC 8. 00MHZ			
655 000 0460 ASSY, PWB, CRT F3AV					
1LG0B10E025AB					
TRANSISTOR					
Q701	406 000 5104	TR 2SC2229-0(SAN-2)			
	406 000 5203	TR 2SC2229-Y(SAN-2)			
	405 040 5600	TR 2SC2228-D			
	405 029 6901	TR 2SC2228-E			
Q711	406 000 5104	TR 2SC2229-0(SAN-2)			
	406 000 5203	TR 2SC2229-Y(SAN-2)			
	405 040 5600	TR 2SC2228-D			
	405 029 6901	TR 2SC2228-E			
Q721	406 000 5104	TR 2SC2229-0(SAN-2)			
	406 000 5203	TR 2SC2229-Y(SAN-2)			
	405 040 5600	TR 2SC2228-D			
	405 029 6901	TR 2SC2228-E			
CAPACITOR					
C703	403 070 8400	CERAMIC 1500P K 50V			
C713	403 070 8400	CERAMIC 1500P K 50V			
C723	403 070 8400	CERAMIC 1500P K 50V			
C731	403 077 2708	CERAMIC 1000P P 2K			
	403 077 2807	CERAMIC 1000P Z 2K			
RESISTOR					
R701	401 065 4604	OXIDE-MT 12K JA 2W			
R702	401 009 6602	CARBON 3. 3K JA 1/2W			
R704	401 019 9600	CARBON 47 JA 1/4W			
R711	401 065 4604	OXIDE-MT 12K JA 2W			
R712-M	401 009 6602	CARBON 3. 3K JA 1/2W			
R714	401 019 9600	CARBON 47 JA 1/4W			
R721	401 065 4604	OXIDE-MT 12K JA 2W			
R722	401 014 2903	CARBON 150 JA 1/4W			
R722-M	401 009 6602	CARBON 3. 3K JA 1/2W			

CHASSIS ELECTRICAL PARTS LIST

Service Ref. No. C20LB93M-00

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a Δ mark in this parts list and the circuit diagram show components whose value have special significance to product safety. It is particularly recommended that only parts specified on the following parts list be used for components replacement pointed out by the mark.

Note: Part order must contain Service Ref. No., Part No., and descriptions. The main PCB unit will be supplied without tuner and flyback transformer. They should be ordered separately.

Read description in the Capacitor and Resistor as follows:

CAPACITOR

CERAMIC 100P K 50V

Rated Voltage

Tolerance Symbols:

Less than 10PF

R: $\pm 0.25 - 0PF$

More than 10PF

A: Not specified

D: $\pm 0.5\%$ H: $\pm 3\%$ L: $\pm 15\%$ P: $\pm 100 - 0\%$ U: $\pm 75 - 10\%$ X: $\pm 40 - 20\%$ S: $\pm 0 - 0.25PF$ B: $\pm 0.1\%$ F: $\pm 1\%$ J: $\pm 5\%$ M: $\pm 20\%$ Q: $\pm 30 - 10\%$ V: $\pm 20 - 10\%$ Y: $\pm 150 - 10\%$ E: $\pm 0 - 1PF$ C: $\pm 0.25\%$ G: $\pm 2\%$ K: $\pm 10\%$ N: $\pm 30\%$ T: $\pm 50 - 10\%$ W: $\pm 100 - 10\%$ Z: $\pm 80 - 20\%$

Rated value: P=pico farad, U=Micro farad

Material:

CERAMIC.....Ceramic
 MT - PAPER.....Metalized Paper
 POLYESTER.....Polyester
 MT - POLYEST.....Metalized Polyester
 POLYPRO.....Polypropylene
 MT - POLYPRO.....Metalized Polypropylene
 COMPO FILM.....Composite film
 MT - COMPO.....Metalized Composite
 STYRENE.....Styrene
 TA - SOLID.....Tantalum Solid
 AL - SOLID.....Aluminium Solid
 ELECT.....Electrolytic
 NP - ELECT.....Non - polarized Electrolytic
 OS - SOLID.....Aluminium Solid with Organic
 DL - ELECT.....Semiconductive Electrolytic
 DL - ELECT.....Double Layered Electrolytic

RESISTOR

CARBON 4.7K J A 1/4W

Rated Wattage

Performance Symbols:

A: General B: Non flammable Z: Low noise

Other: Temperature coefficient

Tolerance Symbols:

A: $\pm 0.05\%$ B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$ F: $\pm 1\%$ G: $\pm 2\%$ J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$ P: $\pm 5 - 15\%$

Rated value, ohms:

K: 1,000, M: 1,000,000

Material:

CARBON.....Carbon
 MT - FILM.....Metal Film
 OXIDE - MT.....Oxide Metal Film
 SOLID.....Composition
 MT - GLAZE.....Metal Glaze
 WIRE WOUND.....Wire Wound
 CERAMIC RES.....Ceramic
 FUSIBLE RES.....Fusible

Ref. No.	Part No.	Description
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655 000	0484	ASSY. PWB MAIN F3BV 1LG0B10E026AA
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TRANSISTOR

0001

405 011 7305	TR 2SC1740-Q
405 011 7404	TR 2SC1740-R
405 011 7503	TR 2SC1740-S
405 011 8401	TR 2SC1740S-Q
405 011 8500	TR 2SC1740S-R
405 011 8609	TR 2SC1740S-S
405 012 2002	TR 2SC1815-GR
405 012 2101	TR 2SC1815-O
405 012 2309	TR 2SC1815-Y
405 020 7501	TR 2SC945A-PA
405 020 7709	TR 2SC945A-QA
405 020 7907	TR 2SC945A-RA

0111

0131

405 013 3305	TR 2SC2216 (SAN)
405 011 7305	TR 2SC1740-Q
405 011 7404	TR 2SC1740-R
405 011 7503	TR 2SC1740-S
405 011 8401	TR 2SC1740S-Q
405 011 8500	TR 2SC1740S-R
405 011 8609	TR 2SC1740S-S
405 012 2002	TR 2SC1815-GR
405 012 2101	TR 2SC1815-O
405 012 2309	TR 2SC1815-Y
405 020 7501	TR 2SC945A-PA
405 020 7709	TR 2SC945A-QA
405 020 7907	TR 2SC945A-RA

0140

0141

405 011 7305	TR 2SC1740-Q
405 011 7404	TR 2SC1740-R
405 011 7503	TR 2SC1740-S
405 011 8401	TR 2SC1740S-Q
405 011 8500	TR 2SC1740S-R
405 011 8609	TR 2SC1740S-S
405 012 2002	TR 2SC1815-GR
405 012 2101	TR 2SC1815-O
405 012 2309	TR 2SC1815-Y
405 020 7501	TR 2SC945A-PA
405 020 7709	TR 2SC945A-QA
405 020 7907	TR 2SC945A-RA

406 000 6804	TR 2SA1015-GR (SAN)
405 001 7407	TR 2SA1015-O (SAN)
405 001 7605	TR 2SA1015-Y (SAN)
405 004 3109	TR 2SA564A-Q (CU)
405 004 3208	TR 2SA564A-R (CU)
405 006 1103	TR 2SA933-Q
405 006 1202	TR 2SA933-R
405 006 1707	TR 2SA933S-Q
405 006 1806	TR 2SA933S-R

0242

405 011 7305	TR 2SC1740-Q
405 011 7404	TR 2SC1740-R
405 011 7503	TR 2SC1740-S
405 011 8401	TR 2SC1740S-Q
405 011 8500	TR 2SC1740S-R
405 011 8609	TR 2SC1740S-S
405 012 2002	TR 2SC1815-GR
405 012 2101	TR 2SC1815-O
405 012 2309	TR 2SC1815-Y
405 020 7501	TR 2SC945A-PA
405 020 7709	TR 2SC945A-QA
405 020 7907	TR 2SC945A-RA

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
Q243	405 011 7305	TR 2SC1740-Q	0612	405 001 7407	TR 2SA1015-Q(SAN)
	405 011 7404	TR 2SC1740-R		405 001 7605	TR 2SA1015-Y(SAN)
	405 011 7503	TR 2SC1740-S		405 004 3109	TR 2SA564A-Q(CU)
	405 011 8401	TR 2SC1740S-Q		405 004 3208	TR 2SA564A-R(CU)
	405 011 8500	TR 2SC1740S-R		405 006 1103	TR 2SA933-Q
	405 011 8609	TR 2SC1740S-S		405 006 1202	TR 2SA933-R
	405 012 2002	TR 2SC1815-GR		405 006 1707	TR 2SA933S-Q
	405 012 2101	TR 2SC1815-O		405 006 1806	TR 2SA933S-R
	405 012 2309	TR 2SC1815-Y		405 058 0208	TR 2SC3807-R-CTV-YA
	405 020 7501	TR 2SC945A-PA		405 095 0407	TR 2SC4429-L-YB
	405 020 7709	TR 2SC945A-QA		405 095 0308	TR 2SC4429-M-YB
	405 020 7907	TR 2SC945A-RA		405 012 2002	TR 2SC1815-GR
Q251	405 011 7305	TR 2SC1740-Q		405 019 2708	TR 2SC536-F-NP
	405 011 7404	TR 2SC1740-R		405 019 3804	TR 2SC536-G-NP
	405 011 7503	TR 2SC1740-S		405 020 7501	TR 2SC945A-PA
	405 011 8401	TR 2SC1740S-Q	0661	405 059 9804	TR 2SD1913-Q-RA
	405 011 8500	TR 2SC1740S-R		405 059 9903	TR 2SD1913-R-RA
	405 011 8609	TR 2SC1740S-S		405 011 7305	TR 2SC1740-Q
	405 012 2002	TR 2SC1815-GR		405 011 7404	TR 2SC1740-R
	405 012 2101	TR 2SC1815-O		405 011 7503	TR 2SC1740-S
	405 012 2309	TR 2SC1815-Y		405 011 8401	TR 2SC1740S-Q
	405 020 7501	TR 2SC945A-PA		405 011 8500	TR 2SC1740S-R
	405 020 7709	TR 2SC945A-QA		405 011 8609	TR 2SC1740S-S
	405 020 7907	TR 2SC945A-RA		405 012 2002	TR 2SC1815-GR
Q252	406 000 6804	TR 2SA1015-GR(SAN)		405 012 2101	TR 2SC1815-O
	405 001 7407	TR 2SA1015-Q(SAN)		405 012 2309	TR 2SC1815-Y
	405 001 7605	TR 2SA1015-Y(SAN)		405 020 7501	TR 2SC945A-PA
	405 004 3109	TR 2SA564A-Q(CU)		405 020 7709	TR 2SC945A-QA
	405 004 3208	TR 2SA564A-R(CU)		405 020 7907	TR 2SC945A-RA
	405 006 1103	TR 2SA933-Q	0683	405 089 0000	TR 2SA1707-S
	405 006 1202	TR 2SA933-R		405 089 0109	TR 2SA1707-T
	405 006 1707	TR 2SA933S-Q		405 009 6907	TR 2SB985-S
	405 006 1806	TR 2SA933S-R		405 009 7003	TR 2SB985-T
Q261	406 000 6804	TR 2SA1015-GR(SAN)		405 011 7305	TR 2SC1740-Q
	405 001 7407	TR 2SA1015-Q(SAN)		405 011 7404	TR 2SC1740-R
	405 001 7605	TR 2SA1015-Y(SAN)		405 011 7503	TR 2SC1740-S
	405 004 3109	TR 2SA564A-Q(CU)		405 011 8401	TR 2SC1740S-Q
	405 004 3208	TR 2SA564A-R(CU)		405 011 8500	TR 2SC1740S-R
	405 006 1103	TR 2SA933-Q		405 011 8609	TR 2SC1740S-S
	405 006 1202	TR 2SA933-R		405 012 2002	TR 2SC1815-GR
	405 006 1707	TR 2SA933S-Q		405 012 2101	TR 2SC1815-O
	405 006 1806	TR 2SA933S-R		405 012 2309	TR 2SC1815-Y
Q431	405 018 0507	TR 2SC3332-R		405 020 7501	TR 2SC945A-PA
	405 018 0606	TR 2SC3332-S		405 020 7709	TR 2SC945A-QA
Q432	405 022 6809	TR 2SD1651-CTV-YB		405 020 7907	TR 2SC945A-RA
	405 011 7305	TR 2SC1740-Q	0685	405 012 2002	TR 2SC1815-GR
	405 011 7404	TR 2SC1740-R		405 019 2708	TR 2SC536-F-NP
	405 011 7503	TR 2SC1740-S		405 019 3804	TR 2SC536-G-NP
	405 011 8401	TR 2SC1740S-Q		405 020 7501	TR 2SC945A-PA
	405 011 8500	TR 2SC1740S-R		406 000 6804	TR 2SA1015-GR(SAN)
	405 011 8609	TR 2SC1740S-S		405 001 7605	TR 2SA1015-Y(SAN)
	405 012 2002	TR 2SC1815-GR		405 004 3208	TR 2SA564A-R(CU)
	405 012 2101	TR 2SC1815-O		405 004 4809	TR 2SA608-F-CTV-NP
	405 012 2309	TR 2SC1815-Y		406 000 6804	TR 2SA1015-GR(SAN)
	405 020 7501	TR 2SC945A-PA	0806	405 001 7407	TR 2SA1015-Q(SAN)
	405 020 7709	TR 2SC945A-QA		405 001 7605	TR 2SA1015-Y(SAN)
	405 020 7907	TR 2SC945A-RA		405 004 3109	TR 2SA564A-Q(CU)
Q526	405 011 7305	TR 2SC1740-Q		405 004 3208	TR 2SA564A-R(CU)
	405 011 7404	TR 2SC1740-R		405 006 1103	TR 2SA933-Q
	405 011 7503	TR 2SC1740-S		405 006 1202	TR 2SA933-R
	405 011 8401	TR 2SC1740S-Q		405 006 1707	TR 2SA933S-Q
	405 011 8500	TR 2SC1740S-R		405 006 1806	TR 2SA933S-R
	405 011 8609	TR 2SC1740S-S	0815	406 000 6804	TR 2SA1015-GR(SAN)
	405 012 2002	TR 2SC1815-GR		405 001 7407	TR 2SA1015-Q(SAN)
	405 012 2101	TR 2SC1815-O		405 001 7605	TR 2SA1015-Y(SAN)
	405 012 2309	TR 2SC1815-Y		405 004 3109	TR 2SA564A-Q(CU)
	405 020 7501	TR 2SC945A-PA		405 004 3208	TR 2SA564A-R(CU)
	405 020 7709	TR 2SC945A-QA		405 006 1103	TR 2SA933-Q
	405 020 7907	TR 2SC945A-RA		405 006 1202	TR 2SA933-R
Q527	405 011 7305	TR 2SC1740-Q		405 006 1707	TR 2SA933S-Q
	405 011 7404	TR 2SC1740-R		405 006 1806	TR 2SA933S-R
	405 011 7503	TR 2SC1740-S		406 000 6804	TR 2SA1015-GR(SAN)
	405 011 8401	TR 2SC1740S-Q		405 001 7407	TR 2SA1015-Q(SAN)
	405 011 8500	TR 2SC1740S-R		405 001 7605	TR 2SA1015-Y(SAN)
	405 011 8609	TR 2SC1740S-S		405 004 3109	TR 2SA564A-Q(CU)
	405 012 2002	TR 2SC1815-GR		405 004 3208	TR 2SA564A-R(CU)
	405 012 2101	TR 2SC1815-O		405 006 1103	TR 2SA933-Q
	405 012 2309	TR 2SC1815-Y		405 006 1202	TR 2SA933-R
	405 020 7501	TR 2SC945A-PA		405 006 1707	TR 2SA933S-Q
	405 020 7709	TR 2SC945A-QA		405 006 1806	TR 2SA933S-R
	405 020 7907	TR 2SC945A-RA		406 000 6804	TR 2SA1015-GR(SAN)
Q611	406 000 6804	TR 2SA1015-GR(SAN)		405 001 7407	TR 2SA1015-Q(SAN)
				405 001 7605	TR 2SA1015-Y(SAN)
				405 004 3109	TR 2SA564A-Q(CU)
				405 004 3208	TR 2SA564A-R(CU)
				405 006 1103	TR 2SA933-Q
				405 006 1202	TR 2SA933-R
				405 006 1707	TR 2SA933S-Q
				405 006 1806	TR 2SA933S-R
				406 000 6804	TR 2SA1015-GR(SAN)
				405 001 7407	TR 2SA1015-Q(SAN)
				405 001 7605	TR 2SA1015-Y(SAN)
				405 004 3109	TR 2SA564A-Q(CU)
				405 004 3208	TR 2SA564A-R(CU)
				405 006 1103	TR 2SA933-Q
				405 006 1202	TR 2SA933-R
				405 006 1707	TR 2SA933S-Q
				405 006 1806	TR 2SA933S-R

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C441	403 083 0606	POLYPRO 0.43U J 200V	R102	401 011 1206	CARBON 68 JB 1/2W
C445	403 049 4204	ELECT 10U M 50V	R103	401 061 8101	OXIDE-MT 39K JA 1W
C491	403 076 5304	CERAMIC 680P K 500V	R104	401 024 9701	CARBON 12K JA 1/6W
C492	403 115 0802	ELECT 22U M 100V	R1101	401 007 7601	CARBON 150 JA 1/2W
C501	403 044 1703	ELECT 470U M 16V	R1102	401 007 7601	CARBON 150 JA 1/2W
C511	403 071 5606	CERAMIC 220P K 50V	R111	401 037 5400	MT-GLAZE 1K JA 1/10W
C512	403 057 0601	POLYESTER 0.01U K 50V	R112	401 038 7700	MT-GLAZE 5.6K JA 1/10W
C513	403 204 6104	ELECT 1U M 50V	R113	401 037 5202	MT-GLAZE 100 JA 1/10W
C514	403 049 4204	ELECT 10U M 50V	R114	401 038 0602	MT-GLAZE 220 JA 1/10W
C515	403 045 1504	ELECT 1000U M 25V	R116	401 038 4907	MT-GLAZE 39 JA 1/10W
C517	403 052 7308	ELECT 100U M 35V	R131	401 037 5400	MT-GLAZE 1K JA 1/10W
C518	403 072 4400	CERAMIC 270P K 50V	R132	401 038 3504	MT-GLAZE 330 JA 1/10W
C521	403 052 8503	ELECT 1000U M 35V	R133	401 038 3603	MT-GLAZE 3.3K JA 1/10W
C524	403 060 8403	POLYESTER 0.033U K 50V	R140	401 038 7601	MT-GLAZE 560 JA 1/10W
C527	403 049 0008	ELECT 1U M 50V	R141	401 037 5400	MT-GLAZE 1K JA 1/10W
C601	404 071 2305	MT-POLYEST 0.15U K 250V	R142	401 038 2002	MT-GLAZE 270 JA 1/10W
	404 072 7408	MT-POLYEST 0.15U M 250V	R143	401 037 5400	MT-GLAZE 1K JA 1/10W
	404 064 1001	MT-POLYEST 0.15U M 250V	R144	401 038 6307	MT-GLAZE 470 JA 1/10W
C607	404 072 8405	ELECT 270U M 400V	R145	401 038 6307	MT-GLAZE 470 JA 1/10W
C614	403 067 5603	MT-COMPO 0.1U J 50V	R146	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C615	403 058 2604	POLYESTER 0.015U J 50V	R160	401 038 8905	MT-GLAZE 68 JA 1/10W
C616	403 165 9008	CERAMIC 1500P K 2K	R162	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
	403 247 0008	CERAMIC 1500P K 2K	R164	401 038 0800	MT-GLAZE 22K JA 1/10W
	403 263 6602	CERAMIC 1500P K 2K	R165	401 038 9308	MT-GLAZE 68K JA 1/10W
	403 232 1300	CERAMIC 1500P K 2K	R166	401 037 7909	MT-GLAZE 1.5K JA 1/10W
C617	403 060 8403	POLYESTER 0.033U K 50V	R170	401 038 7601	MT-GLAZE 560 JA 1/10W
△C621	404 073 5106	CERAMIC 470P K 250V	R171	401 024 7004	CARBON 1K JA 1/6W
	404 073 3102	CERAMIC 470P K 250V	R172	401 038 6208	MT-GLAZE 47 JA 1/10W
	404 044 2806	CERAMIC 470P K 400V	R173	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
	404 071 4507	CERAMIC 470P K 400V	R175	401 037 8104	MT-GLAZE 150K JA 1/10W
	404 071 4606	CERAMIC 470P K 400V	R176	401 027 5908	CARBON 68K JA 1/6W
C631	403 165 6106	CERAMIC 470P K 1K	R177	401 038 0909	MT-GLAZE 220K JA 1/10W
	403 247 5003	CERAMIC 470P K 1K	R181	401 038 3702	MT-GLAZE 33K JA 1/10W
	403 269 1809	CERAMIC 470P K 1K	R182	401 038 3702	MT-GLAZE 33K JA 1/10W
	403 232 0501	CERAMIC 470P K 1K	R1902	401 037 6803	MT-GLAZE 12K JA 1/10W
C634	403 165 6106	CERAMIC 470P K 1K	R1903	401 038 7700	MT-GLAZE 5.6K JA 1/10W
	403 247 5003	CERAMIC 470P K 1K	R1904	401 038 5102	MT-GLAZE 3.9K JA 1/10W
	403 269 1809	CERAMIC 470P K 1K	R1905	401 038 0701	MT-GLAZE 2.2K JA 1/10W
	403 232 0501	CERAMIC 470P K 1K	R1906	401 025 4200	CARBON 1.8K JA 1/6W
C635	403 165 6106	CERAMIC 470P K 1K	R1907	401 037 5400	MT-GLAZE 1K JA 1/10W
	403 247 5003	CERAMIC 470P K 1K	R1908	401 037 5608	MT-GLAZE 10K JA 1/10W
	403 269 1809	CERAMIC 470P K 1K	R191	401 037 5400	MT-GLAZE 1K JA 1/10W
	403 232 0501	CERAMIC 470P K 1K	R198A	401 037 5004	MT-GLAZE 0.000 ZA 1/10W
C641	404 042 4505	ELECT 220U M 160V	R211	401 037 5707	MT-GLAZE 100K JA 1/10W
C643	403 148 2002	ELECT 470U M 35V	R213	401 027 2600	CARBON 5.6K JA 1/6W
C644	403 148 0404	ELECT 1000U M 25V	R214	401 037 5202	MT-GLAZE 100 JA 1/10W
C645	403 148 0701	ELECT 2200U M 25V	R218	401 037 5400	MT-GLAZE 1K JA 1/10W
C651	403 040 3701	ELECT 220U M 10V	R219	401 038 0602	MT-GLAZE 220 JA 1/10W
C661	403 042 2405	ELECT 100U M 16V	R222	401 014 6109	CARBON 150K JA 1/4W
C662	403 043 6006	ELECT 330U M 16V	R224	401 024 7004	CARBON 1K JA 1/6W
C663	403 039 6508	ELECT 100U M 10V	R226	401 024 7004	CARBON 1K JA 1/6W
C685	403 049 0008	ELECT 1U M 50V	R229	401 037 5400	MT-GLAZE 1K JA 1/10W
C801	403 043 9106	ELECT 47U M 16V	R230	401 037 5400	MT-GLAZE 1K JA 1/10W
C804	403 043 9106	ELECT 47U M 16V	R231	401 037 5400	MT-GLAZE 1K JA 1/10W
C806	403 049 0008	ELECT 1U M 50V	R232	401 024 6700	CARBON 100 JA 1/6W
C814	403 049 0008	ELECT 1U M 50V	R233	401 026 3905	CARBON 330 JA 1/6W
C831	403 069 9500	CERAMIC 0.01U Z 50V	R234	401 026 3905	CARBON 330 JA 1/6W
C871	403 069 9500	CERAMIC 0.01U Z 50V	R235	401 026 3905	CARBON 330 JA 1/6W
C881	403 041 8804	ELECT 10U M 16V	R236	401 038 2408	MT-GLAZE 2.7M JA 1/10W
			R237	401 038 2408	MT-GLAZE 2.7M JA 1/10W
			R241	401 025 1902	CARBON 15K JA 1/6W
			R242	401 025 1902	CARBON 15K JA 1/6W
			R243	401 037 6803	MT-GLAZE 12K JA 1/10W
			R246	401 037 6803	MT-GLAZE 12K JA 1/10W
			R247	401 038 0503	MT-GLAZE 22 JA 1/10W
			R248	401 038 7809	MT-GLAZE 56K JA 1/10W
			R249	401 038 7809	MT-GLAZE 56K JA 1/10W
			R251	401 038 5003	MT-GLAZE 390 JA 1/10W
			R252	401 037 5400	MT-GLAZE 1K JA 1/10W
			R253	401 037 5608	MT-GLAZE 10K JA 1/10W
RESISTOR					
R002	401 026 4605	CARBON 33K JA 1/6W			
R005	401 027 5205	CARBON 680 JA 1/6W			
R010	401 027 5502	CARBON 6.8K JA 1/6W			
R031	401 037 5004	MT-GLAZE 0.000 ZA 1/10W			
R034	401 037 5004	MT-GLAZE 0.000 ZA 1/10W			
R1001	401 022 6801	CARBON 75 JA 1/4W			
R1006	401 037 5400	MT-GLAZE 1K JA 1/10W			
R1007	401 037 5707	MT-GLAZE 100K JA 1/10W			
R101	401 015 6603	CARBON 2.2 JB 1/4W			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
VR631	610 232 8479	VR, SEMI, 50K N	D442	407 057 8407	ZENER DIODE RD8. 2EB3
	645 023 5207	VR, SEMI, 50K N		408 008 2406	DIODE 1N4148
	645 006 5514	VR, SEMI, 2. 2K N		407 013 4306	DIODE 1S2076A
	645 003 5579	VR, SEMI, 2. 2K N	D445	407 013 6508	DIODE 1S2471
	645 023 5160	VR, SEMI, 2K N		408 008 2406	DIODE 1N4148
	610 239 7574	VR B-2K		407 013 4306	DIODE 1S2076A
TRANSFORMER			D491	407 013 6508	DIODE 1S2471
T431	652 000 0698	TRANS, DRIVE		407 124 6404	DIODE ERA18-04
	610 000 1053	DRIVE TRANS		407 007 6606	DIODE ES1
△T471	610 000 1060	DRIVE TRANS	D510	407 124 5506	DIODE RMPG06G
	645 014 2987	TRANS, FLYBACK		408 008 2406	DIODE 1N4148
△T611	652 000 0711	TRANS, FRYBACK		407 013 4306	DIODE 1S2076A
	652 000 0735	TRANS, POWER, PULSE	D511	407 013 6508	DIODE 1S2471
	645 015 6700	TRANS, POWER, PULSE		408 008 2406	DIODE 1N4148
	645 023 8925	TRANS, POWER, PULSE		407 013 4306	DIODE 1S2076A
COIL			D521	407 013 6508	DIODE 1S2471
L131	645 003 9812	INDUCTOR, 33U K		407 005 7308	DIODE EM01Z
	645 008 2733	INDUCTOR, 12U K		407 005 8602	DIODE ERA15-02
L171	645 024 5879	TRANS, OSC, 45. 75MHZ	D603	408 009 9008	DIODE 8YD33D
	645 003 9874	INDUCTOR, 68U K		407 006 6300	DIODE ERC05-10B
	645 001 4567	INDUCTOR, 10U K	D604	407 009 6901	DIODE RM11C
L431	610 032 5852	FILTER COIL		407 006 6300	DIODE ERC05-10B
	610 032 5869	FILTER COIL		407 009 6901	DIODE RM11C
L432	645 021 2734	INDUCTOR, 5. 6U, FILTER	D606	407 006 6300	DIODE ERC05-10B
	610 031 9998	PIPE CORE		407 009 6901	DIODE RM11C
	610 031 9998	PIPE CORE	△D611	407 104 2402	PHOTO COUPLE PC817C
L444	610 000 0612	LINEARITY COIL		407 106 6101	PHOTO COUPLE PC817D
	610 210 6183	LINEARITY COIL		407 175 9904	PHOTO COUPLE TLP621-1-BL
L445	610 000 0278	COIL	D614	407 002 9602	PHOTO COUPLE TLP621-1-G8
	610 205 1117	COIL		408 008 2406	DIODE 1N4148
	610 210 3809	PEAKING COIL 18UHK		407 013 4306	DIODE 1S2076A
L521	645 001 4901	INDUCTOR, 18U K	D616	407 013 6508	DIODE 1S2471
	610 031 5938	LINE FILTER		408 008 2406	DIODE 1N4148
	645 017 6159	LINE FILTER	D617	407 013 4306	DIODE 1S2076A
L621	645 007 8262	INDUCTOR, 27U K		407 013 6508	DIODE 1S2471
	610 031 1701	INDUCTOR, 27U K		407 007 6606	DIODE ES1
	645 005 5539	INDUCTOR, 27U K	D618	407 007 6903	DIODE ES1Z
L801	645 008 2894	INDUCTOR, 5. 6U K		408 009 9008	DIODE BYD33D
	645 008 2894	INDUCTOR, 5. 6U K		408 008 2406	DIODE 1N4148
	645 008 2894	INDUCTOR, 5. 6U K	D619	407 013 4306	DIODE 1S2076A
L807	645 008 2894	INDUCTOR, 5. 6U K		407 013 6508	DIODE 1S2471
	401 024 7004	CARBON 1K JA 1/6W		407 099 6300	ZENER DIODE MTZJ11A
L814	401 024 7004	CARBON 1K JA 1/6W	D631A	407 054 1609	ZENER DIODE RD11EB1
	401 024 7004	CARBON 1K JA 1/6W		407 007 7702	DIODE EU2A
	401 024 7004	CARBON 1K JA 1/6W		407 007 7603	DIODE EU2
DIODE			D633	407 007 7801	DIODE EU2Z
D010	408 008 2406	DIODE 1N4148		407 009 8905	DIODE RU3M
	407 013 4306	DIODE 1S2076A		407 009 8905	DIODE RU3M
	407 013 6508	DIODE 1S2471	D641	407 099 5600	ZENER DIODE MTZJ6. 8A
D102	407 063 8606	ZENER DIODE MTZJ5. 1A		407 057 4003	ZENER DIODE RD6. 8EB1
	407 099 5204	ZENER DIODE MTZJ5. 1B		407 099 6201	ZENER DIODE MTZJ10C
D160	407 056 7906	ZENER DIODE RD5. 1EB1	D661	407 054 0107	ZENER DIODE RD10EB3
	407 056 8002	ZENER DIODE RD5. 1EB2		408 008 2406	DIODE 1N4148
	407 099 5907	ZENER DIODE MTZJ8. 2C		407 013 4306	DIODE 1S2076A
D1900	407 057 8407	ZENER DIODE RD8. 2EB3	D664	407 013 6508	DIODE 1S2471
	407 116 6504	LED SLP-1818-51		407 005 8602	DIODE ERA15-02
	408 008 2406	DIODE 1N4148		407 005 8602	DIODE ERA15-02
D222	407 013 4306	DIODE 1S2076A	D683	408 008 2406	DIODE 1N4148
	407 013 6508	DIODE 1S2471		407 013 4306	DIODE 1S2076A
	408 008 2406	DIODE 1N4148		407 013 6508	DIODE 1S2471
D251	407 013 4306	DIODE 1S2076A	D685	407 099 5600	ZENER DIODE MTZJ6. 8A
	407 013 6508	DIODE 1S2471		407 057 4003	ZENER DIODE RD6. 8EB1
	408 008 2406	DIODE 1N4148		407 055 7907	ZENER DIODE RD3. 6EL
D252	407 013 4306	DIODE 1S2076A	D861		
	407 013 6508	DIODE 1S2471			
	407 013 6508	DIODE 1S2471			
D278	407 063 8606	ZENER DIODE MTZJ5. 1A	MISCELLANEOUS		
	407 056 8002	ZENER DIODE RD5. 1EB2	△F601	423 024 8409	FUSE 250V 4A
	407 099 5907	ZENER DIODE MTZJ8. 2C	F601-A1	645 000 5077	HOLDER, FUSE
D352			F601-A2	645 000 5077	HOLDER, FUSE

CHASSIS ELECTRICAL PARTS LIST

Service Ref. No. C20LB93M-01

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a Δ mark in this parts list and the circuit diagram show components whose value have special significance to product safety. It is particularly recommended that only parts specified on the following parts list be used for components replacement pointed out by the mark.

Note: Part order must contain Service Ref. No., Part No., and descriptions. The main PCB unit will be supplied without tuner and flyback transformer. They should be ordered separately.

Read description in the capacitor and Resistor as follows:

CAPACITOR

CERAMIC 100P K 50V

Rated Voltage

Tolerance Symbols:

Less than 10PF

R: $\pm 0.25-0PF$

More than 10PF

A: Not specified

D: $\pm 0.5\%$ H: $\pm 3\%$ L: $\pm 15\%$ P: $\pm 100-0\%$ U: $\pm 75-10\%$ X: $\pm 40-20\%$ S: $\pm 0-0.25PF$ B: $\pm 0.1\%$ F: $\pm 1\%$ J: $\pm 5\%$ M: $\pm 20\%$ Q: $\pm 30-10\%$ V: $\pm 20-10\%$ Y: $\pm 150-10\%$ E: $\pm 0-1PF$ G: $\pm 2\%$ K: $\pm 10\%$ N: $\pm 30\%$ T: $\pm 50-10\%$ W: $\pm 100-10\%$ Z: $\pm 80-20\%$

Rated value: P=pico farad, U=Micro farad

Material:

CERAMIC.....Ceramic
MT- PAPER.....Metallized Paper
POLYESTER.....Polyester
MT- POLYEST.....Metallized Polyester
POLYPRO.....Polypropylene
MT- POLYPRO.....Metallized Polypropylene
COMPO FILM.....Composite film
MT- COMPO.....Metallized Composite
STYRENE.....Styrene
TA- SOLID.....Tantalum Solid
AL- SOLID.....Aluminium Solid
ELECT.....Electrolytic
NP- ELECT.....Non- polarized Electrolytic
OS- SOLID.....Aluminium Solid with Organic
Semiconductive Electrolytic
DL- ELECT.....Double Layered Electrolytic

RESISTOR

CARBON 4.7K J A 1/4W

Rated Wattage

Performance Symbols:

A: General B: Non flammable Z: Low noise

Other: Temperature coefficient

Tolerance Symbols:

A: $\pm 0.05\%$ B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$ F: $\pm 1\%$ G: $\pm 2\%$ J: $\pm 5\%$ K: $\pm 10\%$ M: $\pm 20\%$ P: $\pm 5-15\%$

Rated value, ohms:

K: 1,000, M: 1,000,000

Material:

CARBON.....Carbon
MT- FILM.....Metal Film
OXIDE- MT.....Oxide Metal Film
SOLID.....Composition
MT- GLAZE.....Metal Glaze
WIRE WOUND.....Wire Wound
CERAMIC RES.....Ceramic
FUSIBLE RES.....Fusible

Ref. No.	Part No.	Description
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610 277 5402 ASSY, PWB, MAIN F3BVS
1AA0B10E543AA

Refer to page 15-21.

Difference between "610 277 5402 ASSY, PWB, MAIN F3BVS" and
"655 000 0484 ASSY, PWB, MAIN F3BV" are as follows:

CAPACITOR

C435	404 074 4207	MT-POLYPRO	8900P J	1.5K
	404 070 4805	MT-POLYPRO	8900P J	1.5K
	404 030 6702	MT-POLYPRO	8200P J	1.5K
	404 046 8400	MT-POLYPRO	8200P J	1.5K
C436	403 165 7004	CERAMIC	470P K	3K
	403 324 2604	CERAMIC	470P K	3K
	403 264 4300	CERAMIC	470P K	3K
	403 232 3205	CERAMIC	470P K	3K
	403 165 6908	CERAMIC	560P K	3K
	403 324 2901	CERAMIC	560P K	3K
	403 287 3700	CERAMIC	560P K	3K
	403 262 4302	CERAMIC	560P K	3K
C441	403 083 0309	POLYPRO	0.39U J	200V

RESISTOR

R435	402 057 3209	WIRE WOUND	8.2 KA	8W
	402 076 9305	WIRE WOUND	8.2 KA	7W
R481	401 064 5701	OXIDE-MT	1.8 JA	2W
R516	401 026 7002	CARBON	3.9K JA	1/8W
R517	401 026 0607	CARBON	270 JA	1/8W

COIL

L445 Not used

MISCELLANEOUS

JS445 CUTTING WIRE

610 277 5419 ASSY, PWB, CRT F3BVS
1AA0B10E543AB

Refer to page 21.

Difference between "610 277 5419 ASSY, PWB, CRT F3BVS" and
"655 000 1491 ASSY, PWB, CRT F3BV" are as follows;

MISCELLANEOUS

 Δ X701-L 610 010 3634 CRT SOCKET

OUT OF CIRCUIT BOARD

PICTURE TUBE

 Δ O901 414 010 1504 CRT A48KD89X02

COIL

Δ L901 645 004 5691 COIL, DEGAUSSING
610 238 2105 DEGAUSSING COIL

MISCELLANEOUS

SP901 652 000 0667 SPEAKER, 8
 Δ W901 645 019 5020 CORD, POWER-2. 4MK-A5102
W902 610 210 5520 GROUNDING CONNECTOR

CHASSIS ELECTRICAL PARTS LIST

Service Ref. No. C20LB93M-02

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a Δ mark in this parts list and the circuit diagram show components whose value have special significance to product safety. It is particularly recommended that only parts specified on the following parts list be used for components replacement pointed out by the mark.

Note: Part order must contain Service Ref. No., Part No., and descriptions. The main PCB unit will be supplied without tuner and flyback transformer. They should be ordered separately.

Read description in the Capacitor and Resistor as follows:
CAPACITOR

CERAMIC 100P K 50V
Rated Voltage
Tolerance Symbols:
Less than 10PF
R: $\pm 0.25 - 0PF$ S: $\pm 0.25PF$ E: $\pm 0.1PF$
More than 10PF
A: Not specified B: $\pm 0.1\%$ C: $\pm 0.25\%$
D: $\pm 0.5\%$ F: $\pm 1\%$ G: $\pm 2\%$
H: $\pm 3\%$ J: $\pm 5\%$ K: $\pm 10\%$
L: $\pm 15\%$ M: $\pm 20\%$ N: $\pm 30\%$
P: $\pm 100 - 0\%$ Q: $\pm 30 - 10\%$ T: $\pm 50 - 10\%$
U: $\pm 75 - 10\%$ V: $\pm 20 - 10\%$ W: $\pm 100 - 10\%$
X: $\pm 40 - 20\%$ Y: $\pm 150 - 10\%$ Z: $\pm 80 - 20\%$

Rated value: P=pico farad, U=Micro farad

Material:

CERAMIC.....Ceramic
MT-PAPER.....Metallized Paper
POLYESTER.....Polyester
MT-POLYEST.....Metallized Polyester
POLYPRO.....Polypropylene
MT-POLYPRO.....Metallized Polypropylene
COMPO FILM.....Composite film
MT-COMPO.....Metallized Composite
STYRENE.....Styrene
TA-SOLID.....Tantalum Solid
AL-SOLID.....Aluminium Solid
ELECT.....Electrolytic
NP-ELECT.....Non-polarized Electrolytic
OS-SOLID.....Aluminium Solid with Organic
DL-ELECT.....Double Layered Electrolytic

RESISTOR

CARBON 4.7K J A 1/4W

Rated Wattage

Performance Symbols:
A: General B: Non flammable Z: Low noise
Other: Temperature coefficient

Tolerance Symbols:
A: $\pm 0.05\%$ B: $\pm 0.1\%$ C: $\pm 0.25\%$ D: $\pm 0.5\%$
F: $\pm 1\%$ G: $\pm 2\%$ J: $\pm 5\%$ K: $\pm 10\%$
M: $\pm 20\%$ P: $\pm 5 - 15\%$

Rated value, ohms:
K: 1,000, M: 1,000,000

Material:

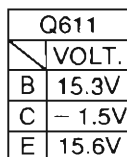
CARBON.....Carbon
MT-FILM.....Metal Film
OXIDE-MT.....Oxide Metal Film
SOLID.....Composition
MT-GLAZE.....Metal Glaze
WIRE WOUND.....Wire Wound
CERAMIC RES.....Ceramic
FUSIBLE RES.....Fusible



Ref. No.	Part No.	Description
655 000 2143	ASSY PWB MAIN F3BVV 1AA0B10ED26EA	
Refer to page 15-21.		
Difference between "655 000 2143 ASSY, PWB, MAIN F3BVV" and "655 000 0484 ASSY, PWB, MAIN F3BV" are as follows:		
CAPACITOR		
C435	404 074 4207	MT-POLYPRO 8900P J 1.5K
	404 070 4805	MT-POLYPRO 8900P J 1.5K
	404 030 6702	MT-POLYPRO 8200P J 1.5K
	404 046 8400	MT-POLYPRO 8200P J 1.5K
C441	403 083 0309	POLYPRO 0.39U J 200V
RESISTOR		
R211	401 037 8104	MT-GLAZE 150K JA 1/10W
R222	401 012 8105	CARBON 100K JA 1/4W
R223	401 026 4605	CARBON 33K JA 1/6W
R435	402 057 3209	WIRE WOUND 8.2 KA 8W
	402 076 9305	WIRE WOUND 8.2 KA 7W
R481	401 064 5701	OXIDE-MT 1.8 JA 2W
	401 066 3002	OXIDE-MT 2.2 JA 2W
R514	401 026 7002	CARBON 3.9K JA 1/6W
R515	401 026 1000	CARBON 2.7K JA 1/6W
R516	401 027 2600	CARBON 5.6K JA 1/6W
R517	401 026 6609	CARBON 390 JA 1/6W
COIL		
L444	610 000 0889	LINEARITY COIL
	610 000 0902	LINEARITY COIL
L445	610 221 3348	COIL
655 000 2150	ASSY PWB CRT F3BVV 1AA0B10ED26EB	
Refer to page 21. (Same as ASSY, PWB, CRT F3BV "655 000 0491")		
OUT OF CIRCUIT BOARD		
PICTURE TUBE		
Δ 0901	414 009 2307	CRT A48AF266X471
COIL		
Δ L901	645 004 5691	COIL, DEGAUSSING
	610 238 2105	DEGAUSSING COIL
MISCELLANEOUS		
SP901	652 000 0667	SPEAKER, 8
Δ W901	645 019 5020	CORD, POWER-2, 4MK-A5102
W902	610 210 5520	GROUNDING CONNECTOR





NEWSAN S. A. Una empresa del grupo SANYO Electric C
Printed in Japan

Q817	
	VOLT.
B	0.1V
C	4.0V
E	0V



Q612		
	VOLT.	WAVEFORM
B	-1.5V	 4.0Vp-p
C	-1.3V	 4.5Vp-p
E	0V	-----

Q813		
	VOLT.	WAVEFORM
B	-1.4V	 4.5Vp-p
C	325V	 458Vp-p
E	0V	-----

The area enclosed by this line() is directly connected with AC mains voltage. When servicing the area, connect an isolating transformer between TV receiver and AC line to eliminate hazard of electric shock.

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a mark \triangle in this circuit diagram show components whose values have special significance to product safety. It is particularly recommended that only parts specified on the part service manual be used for components replacement pointed out by the mark.

1. All resistance value are in Ω
2. All resistance rated wattage
3. Excepting electrolytic capacitor expressed in μF and more
4. All capacitance rated voltage
5. All inductance values are in mH
6. Voltage readings taken with ground. Voltage readings of controls at normal position.
7. Waveforms were taken with picture. Waveforms were to low capacity probe.
8. This circuit diagram covers may be some components chassis and the circuit diagram

SANYO

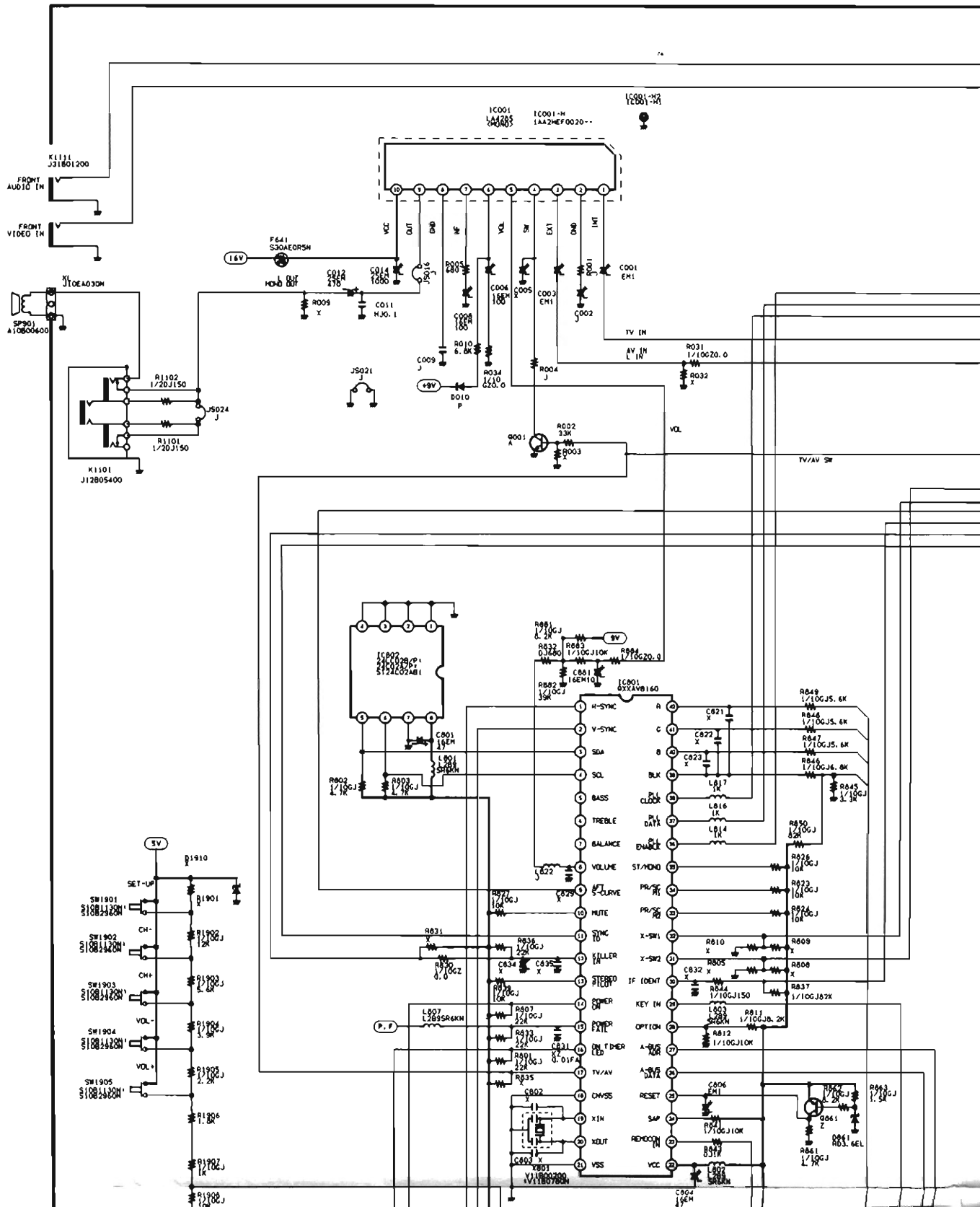
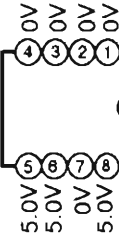
COLOUR TELEVISION

LA3-D CHASSIS SERIES

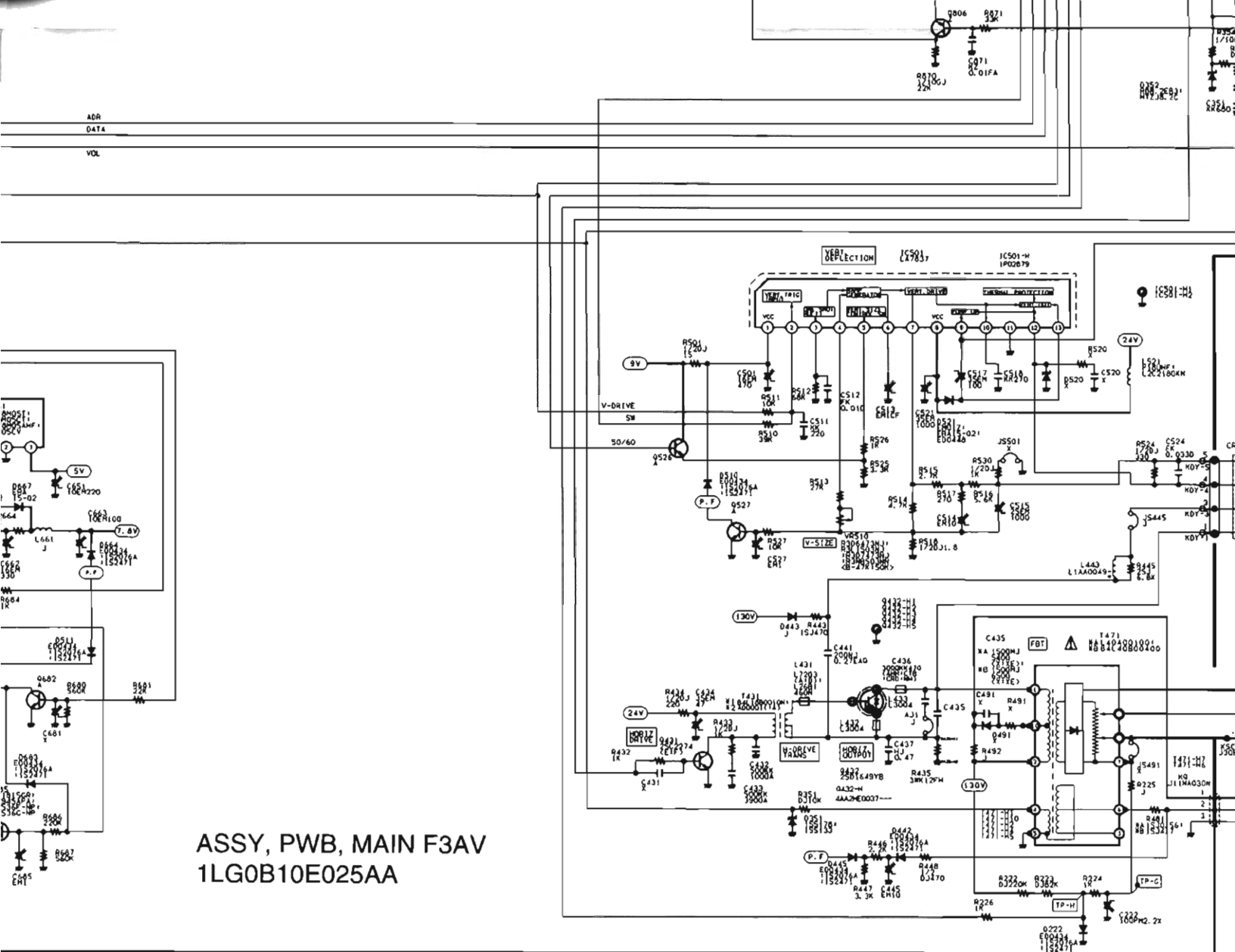
SERVICE REF. NO. **C14LT83M- 00**

Part No. 1AA6P2P0952 - - F8FC

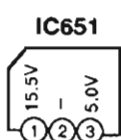
19.1V	9.1V	0V	8.9V	8.9V	0.8V	0.7V	6.3V	-	6.3V
10	9	8	7	6	5	4	3	2	1



Q852	
	VOLT.
B	0.7V
C	0V
E	0V



ASSY, PWB, MAIN F3AV
1LG0B10E025AA



Q631	VOLT.
B	6.9V
C	35.5V
E	6.3V

Q682	VOLT.
B	0.7V
C	0V
E	0V

Q683	VOLT.
B	24.2V
C	24.9V
E	25.0V

Q685	VOLT.
B	0.5V
C	35.5V
E	1.5V

Q686	VOLT.
B	35.5V
C	0V
E	35.5V

Q661	VOLT.
B	10.5V
C	10.8V
E	9.7V

Q684	VOLT.
B	0V
C	10.4V
E	0V

Q526	VOLT.
B	4.0V
C	9.7V
E	3.4V

Q527	VOLT.
B	0V
C	5.0V
E	0V

Q431	Volt.	Waveform
B	0.4V	0.7Vp-p HORIZ.
C	19.7V	43.8 Vp-p HORIZ.
E	0V	---

TICE:

ohms, K=1,000, M=1,000,000.
res are 1/8W unless otherwise noted.
acitors, all capacitance values of less than 1 are
re than 1 are pF.
ages are 50V unless otherwise noted.
in μ H.
with a "VTVM" are from point indicated chassis
s taken by using colour bar signal are with all
n. Some voltages may vary with signal strength.
with colour bar and controls adjusted for normal
taken by using a wide band oscilloscope and a

9. Expression of capacitance and resistance in circuit diagram.

Capacitance(Example)

1000 C M 2000 D

- Characteristic
- Capacitance value(220pF)
- Allowable error ($\pm 20\%$)
- Kind (Ceramic)
- Rated voltage (1.000V)

Resistance(Example)

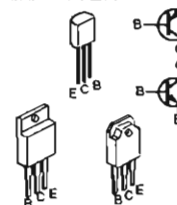
1/2 N J 1.2

- Resistance value(1.2 Ω)
- Allowable error ($\pm 5\%$)
- Kind(M.carbon)
- Rated wattage(1/2W)

- J= $\pm 5\%$
- K= $\pm 10\%$
- M= $\pm 20\%$
- T,A,U,D: Electrolytic
- C,K,B,Ceramic
- F: Mylar film
- M,N: Polypropylene
- Z: Metalized paper
- D: Carbon
- N: Metalz carbon
- S: Oxide metalized
- W: Wire wounding
- C: Solid

TRANSISTOR, DIODE AND INTEGRATED C

C:COLLECTOR
B:BASE
E:EMITTER



A:ANODE
K:KATHODE



IC802 MEMORY

Q001	
	VOLT.
B	0V
C	0.8V
E	0V

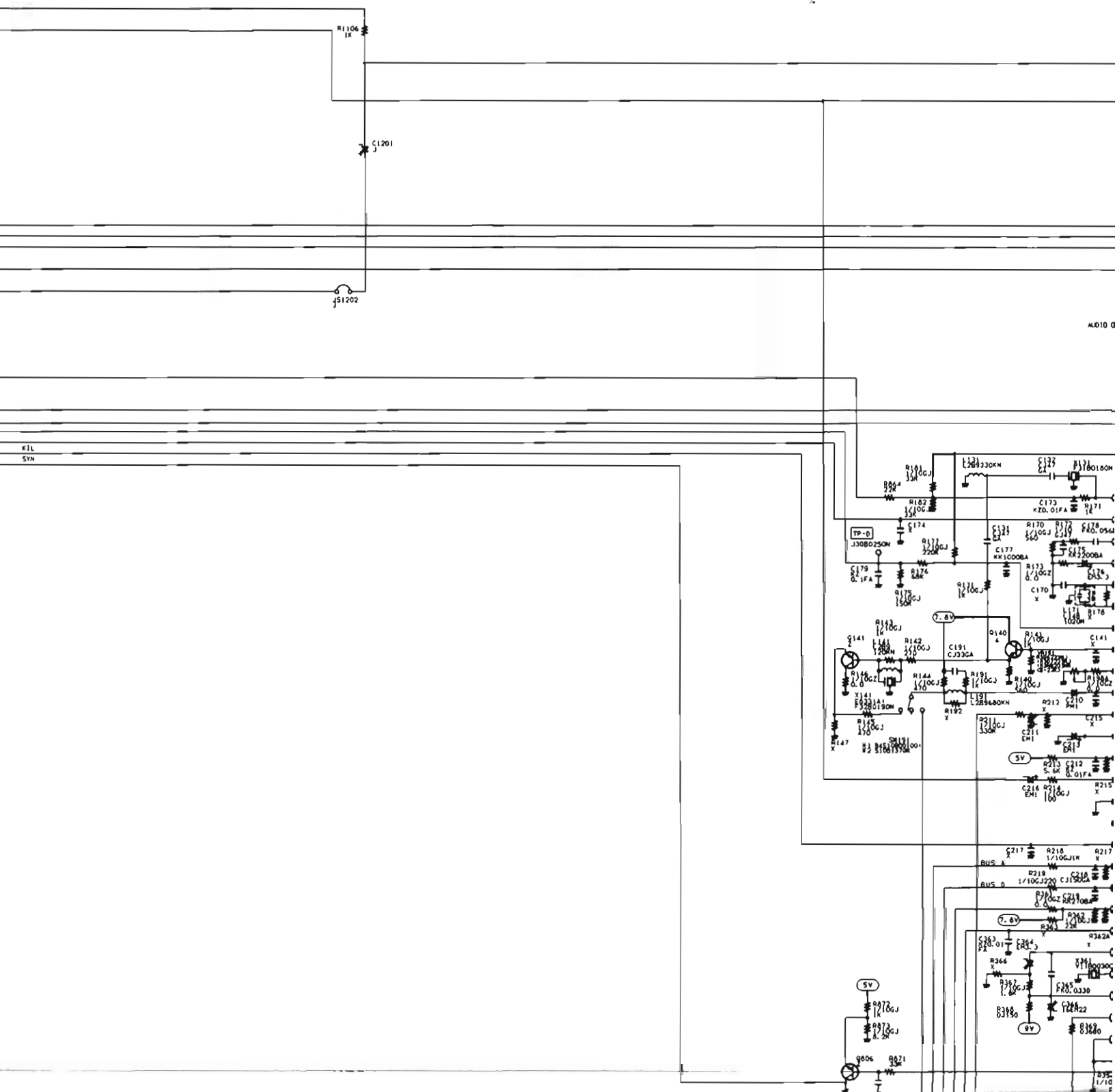
Q131	
	VOLT.
B	3.0V
C	8.1V
E	2.4V

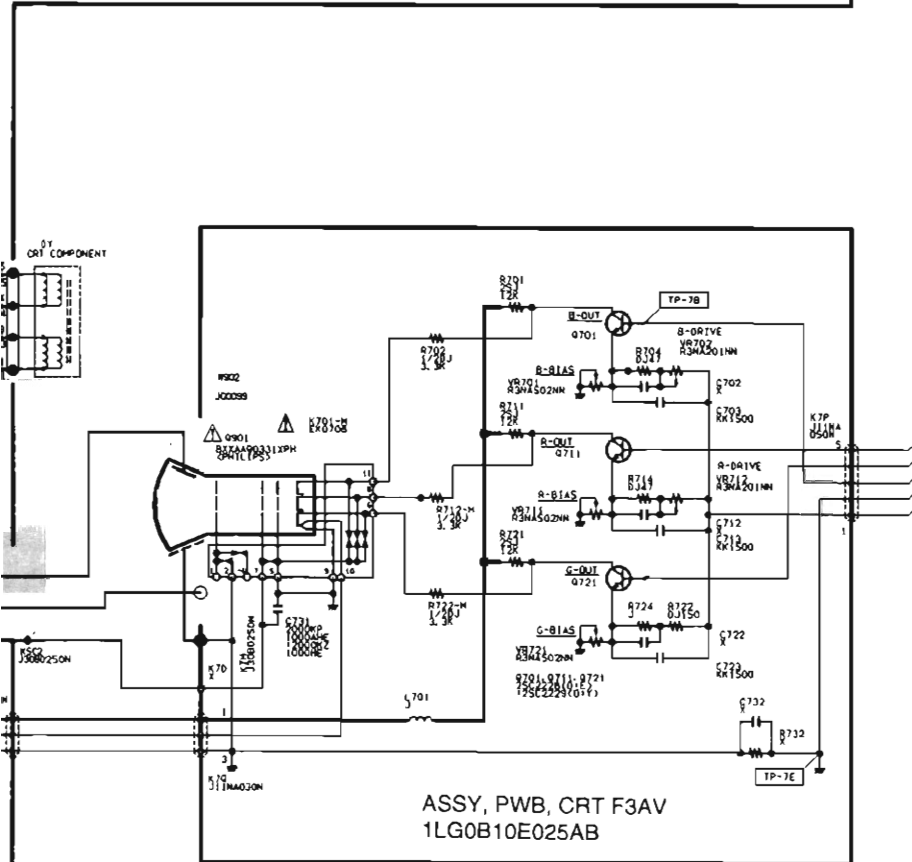
Q141	
	VOLT.
B	2.8V
C	0V
E	3.5V

Q140	
	VOLT.
B	3.5V
C	8.1V
E	2.8V



Q806	
	VOLT.
B	5.2V
C	0V
E	4.5V

B
C
E









IC801 CPU		
HORIZ. SYNC. SIGNAL IN(ACTIVE=L)	1 4.0V	0V 42 OSD RED OUT(ACTIVE=H)
VERT. SYNC. SIGNAL IN(ACTIVE=H)	2 0.2V	0V 41 OSD GREEN OUT(ACTIVE=H)
IIC BUS SDA	3 5.0V	0V 40 OSD BLUE OUT(ACTIVE=H)
IIC BUS SCL	4 5.0V	0V 39 OSD BLANKING OUT (ACTIVE=H)
BASS CONTROL OUT	5 0V	0V 38 CLOCK OUTPUT(PLL)
TREBLE CONTROL OUT	6 0V	0V 37 DATA OUTPUT(PLL)
BALANCE CONTROL OUT	7 0V	0.1V 36 PLL ENABLE OUT(ENABLE=H)
VOLUME CONTROL OUT	8 4.3V	V 35 STEREO/MONO. OUT(ST=L)
AFT INPUT	9 0.2V	0V 34 PR/SC-M1 OUT(SAP=L)
MUTE OUT(MUTE ON=H)	10 0V	0V 33 PR/SC-M2 OUTPUT
SYNC. ID IN(ID=L)	11 0V	5.0V 32 X ⁺ TAL SWITCH-1 OUTPUT (ON=H)
COLOUR KILLER IN(ID=H)	12 5.0V	0V 31 X ⁻ TAL SWITCH-2 OUTPUT (ON=H)
ST. PILOT SIGNAL IN	13 5.0V	5.0V 30 IF ID INPUT(ID=H)
POWER ON/OFF OUT(ON=H)	14 5.0V	0V 29 KEY SCAN INPUT
POWER PROTECT IN(ERROR=L)	15 5.0V	0.9V 28 OPTION SWITCH INPUT
ON TIMER LED OUT(ON TIMER=L)	16 5.0V	2.4V 27 ANALOG BUS ADDRESS
TV/AV SWITCH OUT (TV=L)	17 0V	2.8V 26 ANALOG BUS DATA
GND	18 0V	5.0V 25 CPU RESET INPUT (ACTIVE=L)
CPU OSCILLATOR (8MHz)	IN 19 2.2V	5.0V 24 SAP INPUT(SAP=L)
	OUT 20 2.3V	4.9V 23 RC IN (ACTIVE=L)
GND	21 0V	5.0V 22 +5V SUPPLY



Q432		
	Volt.	Waveform
B	2.4V	 13.8V _{p-p} HORIZ.
C	133.3V	 962 V _{p-p} HORIZ.
E	2.5V	— — —

IC501
VRT. DEF.

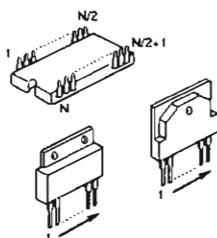
Pin	Voltage Level	Waveform Description
1	9.6V	
2	4.4V	
3	4.8V	
4	4.9V	
5	3.3V	
6	4.7V	
7	4.5V	
8	24.8V	24.9 Vp-p VERT.
9	1.8V	
10	1.4V	
11	0V	
12	12.5V	47.4 Vp-p VERT.
13	25.0V	

Q701		
	VOLT.	WAVEFORM
B	5.0V	 1.7 Vp-p(HORIZ.)
C	105.9V	 77 Vp-p(HORIZ.)
E	5.0V	— — — —

Q711		
	VOLT.	WAVEFORM
B	4.9V	 2.0 Vp-p(HORIZ.)
C	100.9V	 87.4Vp-p(HORIZ.)
E	4.9V	— — — .

Q721		
	VOLT.	WAVEFORM
B	5.0V	 0.7Vp-p(HORIZ.)
C	101.9V	 83 Vp-p(HORIZ.)
E	5.0V	— — — —

LED CIRCUIT TERMINAL GUIDE

PARTICULAR
PARTS SYMBOL

FUSIBLE
RESISTER



NON POLE
ELECTRIC
CAPACITOR



POSISTER

10. Parts specified with " X " are not installed in this model.
11. Parts specified with " J " are just jumper wires.
12. List of replaceable transistors and diodes.

(PNP. TR)

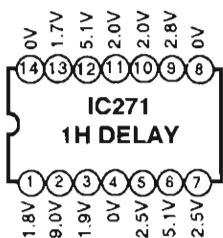
	2SA608	2SA564A	2SA1015	2SA833	2SA833S	KSA733C
Z	E, F	Q, R	O, Y, G	O, R	Q, R	
Y	E, F	Q, R	O, Y, G	O, R		
W	F	R	Y, G	R		
V	E, F	Q, R	O, Y, G	O, R		Y, G
U	F	R	Y, G	R		G

{DIODE}

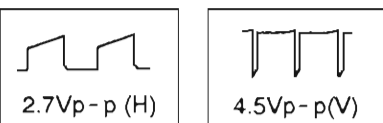
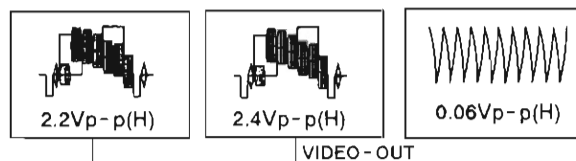
	DIODE
M	1S5176, 1S5133, OMA01
P	1S1563, 1S2076A, 1S2471, 1N4148
R	1S1565, 1S2473, 1S2076, DS442, 1N4148

(NPN. TR)

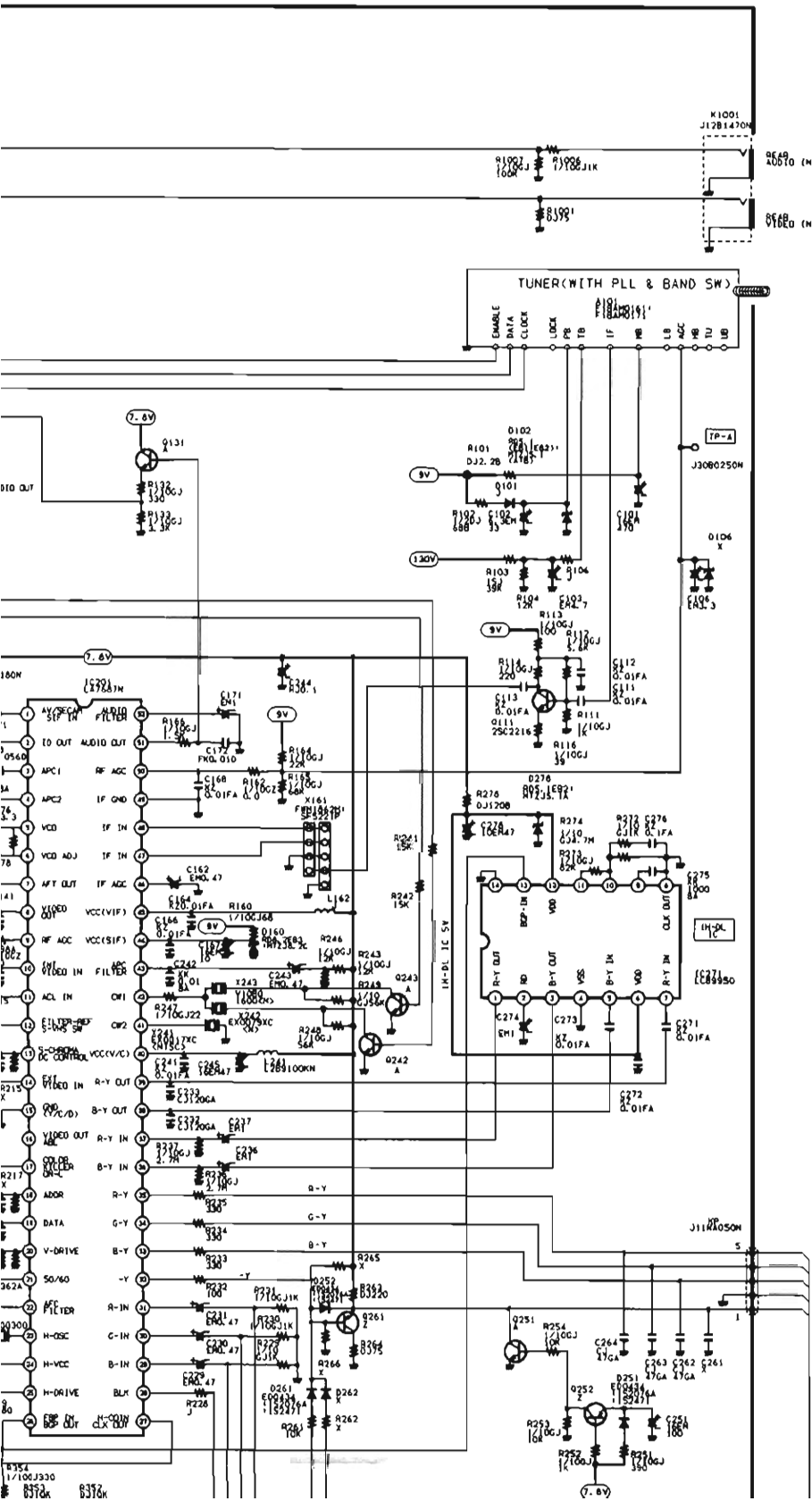
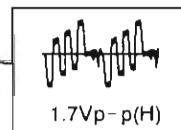
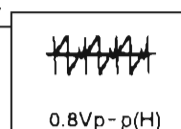
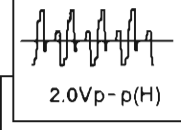
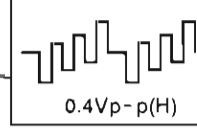
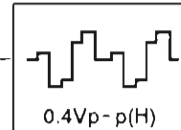
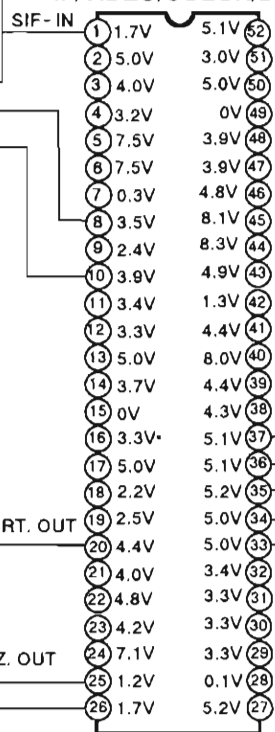
	2SC536	2SC945A	2SC1815	2SC1740	2SC1740S	KSC945C
A	E, F, G	P, Q, R	O, Y, G	Q, R, S	Q, R, S	
B	E, F, G	P, Q, R	O, Y, G	Q, R, S		
D	F, G	P, Q	Y, G	Q, R, S		
F	F, G	P	Q	R, S		
H	F, G	P, Q	Y, G	Q, R, S		Y, G
I	E, F, G	P, Q, R	O, Y, G	Q, R, S		Y, G
G	F, G	P	Q	R, S		G



Q111	VOLT.
B	6.2V
C	0.4V
E	1.2V



IC201 IF/VIDEO/COLOR/DEF.



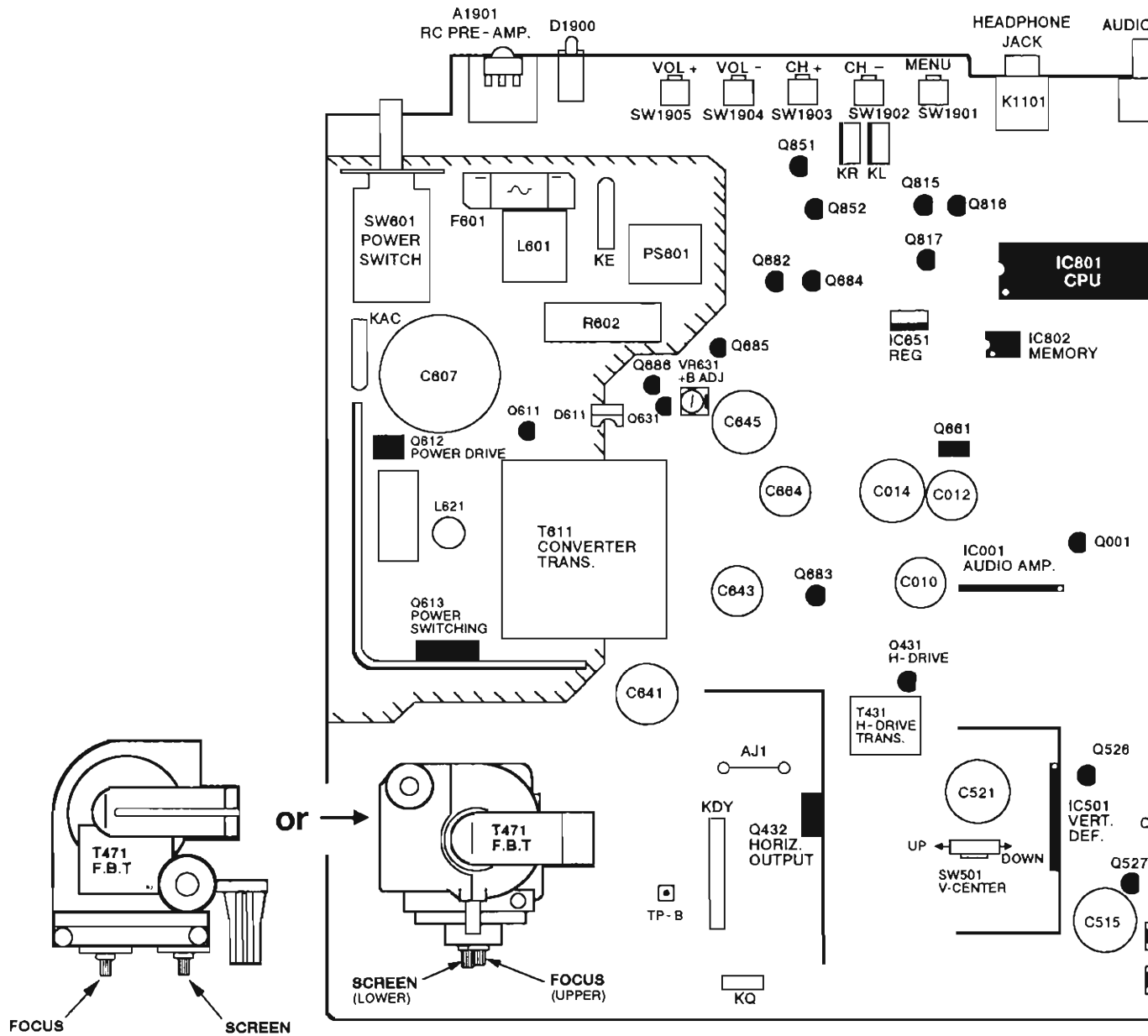
Q251	VOLT.
B	0V
C	4.8V
E	0V

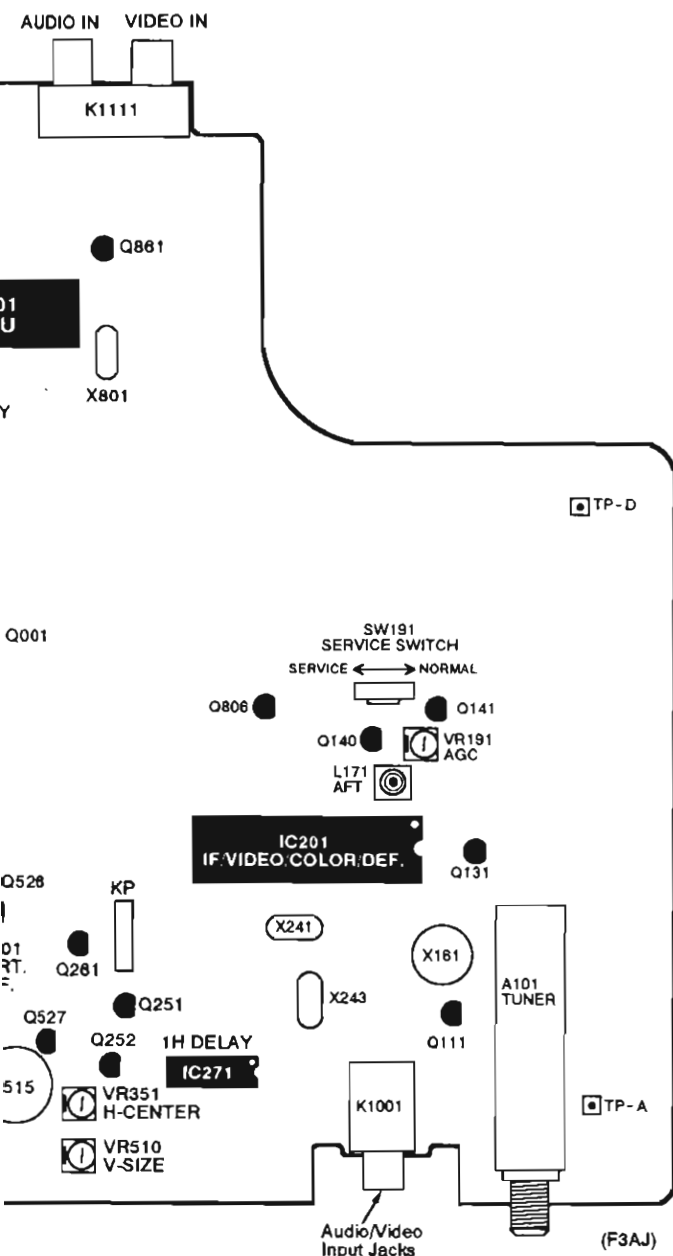
Q252	VOLT.
B	8.1V
C	0V
E	8.0V

Q261	VOLT.
B	4.4V
C	1.3V
E	4.8V

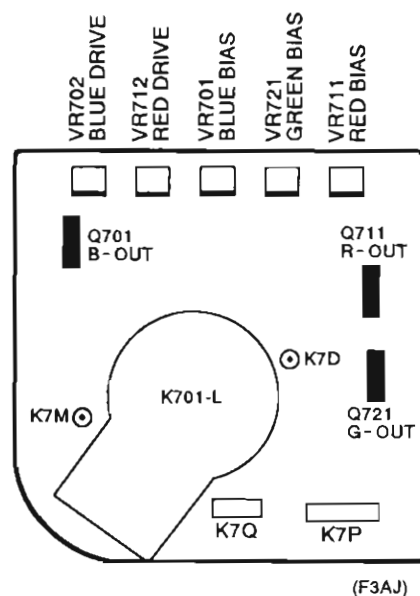
COMPONENT LOCATION

MAIN UNIT





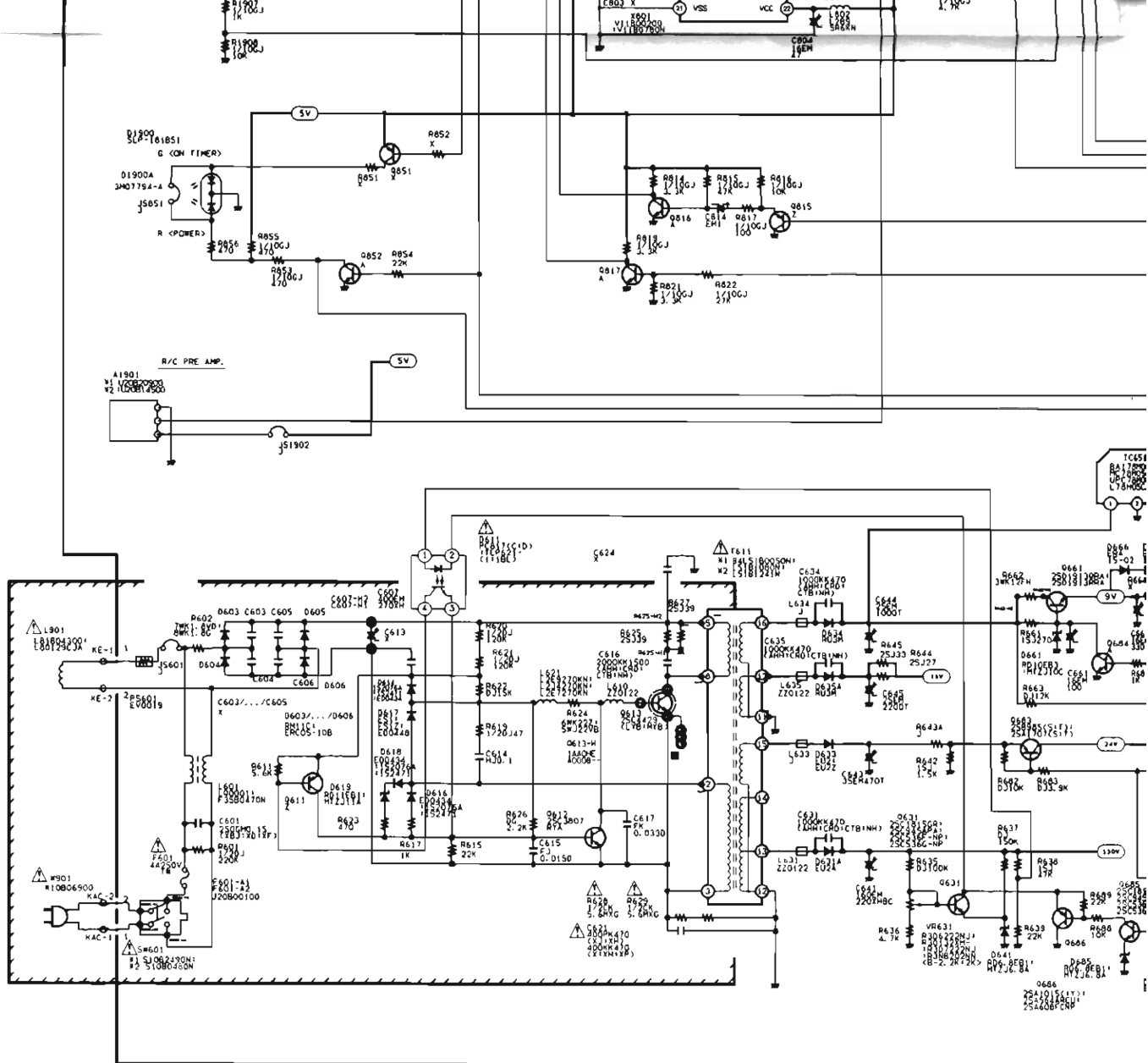
CRT UNIT



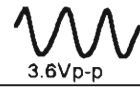

Q815	
	VOLT.
B	4.4V
C	0V
E	4.8V

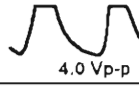

Q816	
	VOLT.
B	0.5V
C	0.2V
E	0V

Q817	
	VOLT.
B	- 0.5V
C	4.0V
E	0V



Q611	
	VOLT.
B	14.2V
C	1.0V
E	13.8V

Q612	
	VOLT. WAVEFORM
B	- 1.0V  3.6Vp-p
C	- 1.0V  3.4Vp-p
E	0V -----

Q613	
	VOLT. WAVEFORM
B	- 1.0V  4.0Vp-p
C	319V  450Vp-p
E	0V -----

THE SERVICE PRECAUTION:

The area enclosed by this line () is directly connected with AC mains voltage. When servicing the area, connect an isolating transformer between TV receiver and AC line to eliminate hazard of electric shock.

COLOUR TELEVISION

LA3-D CHASSIS SERIES

SERVICE REF. NO.

C20LB93M - 00
C20LB93M - 01
C20LB93M - 02

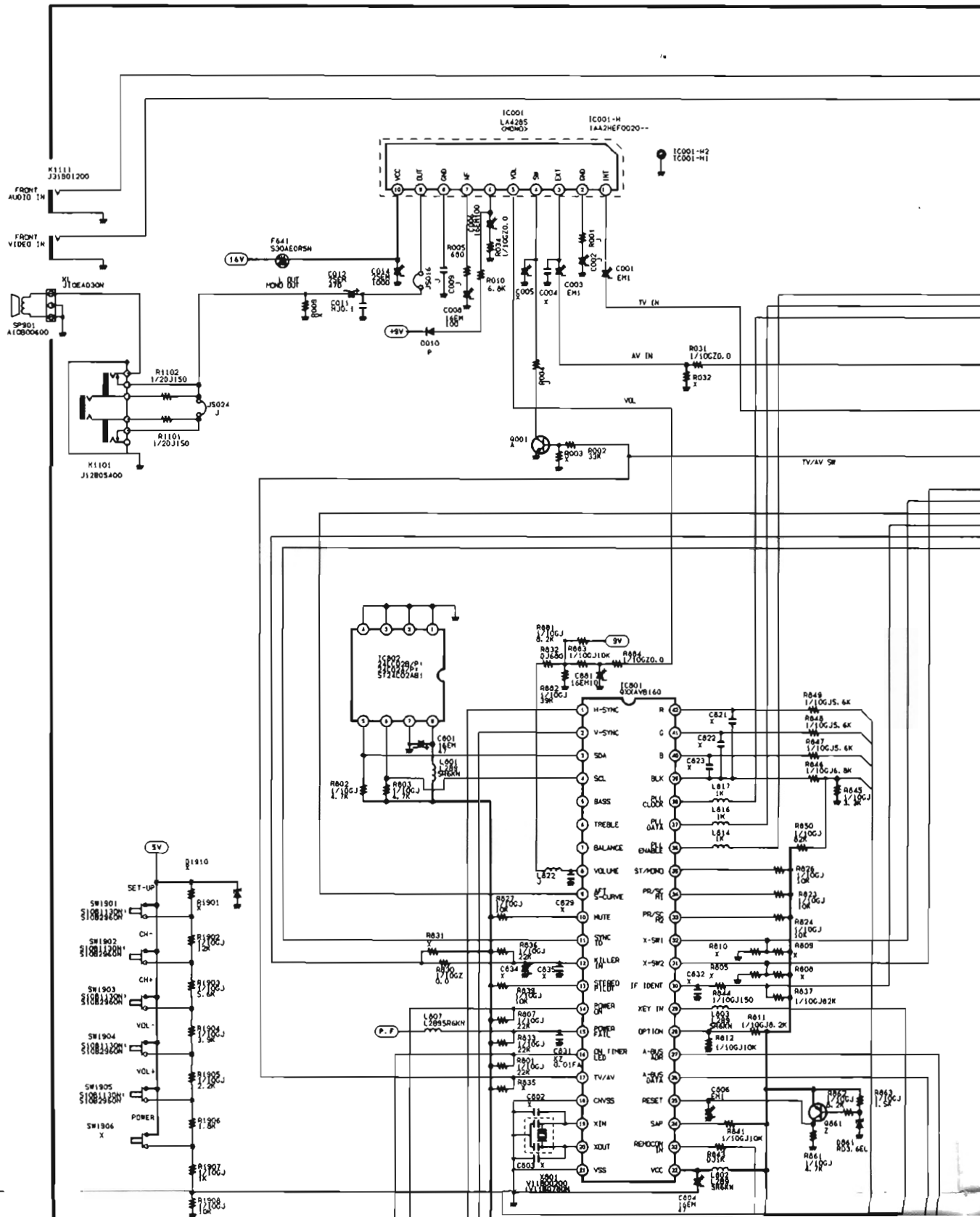
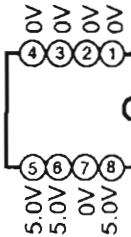
SANYO

PRODUCT SAFETY NOTICE:

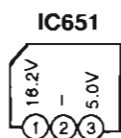
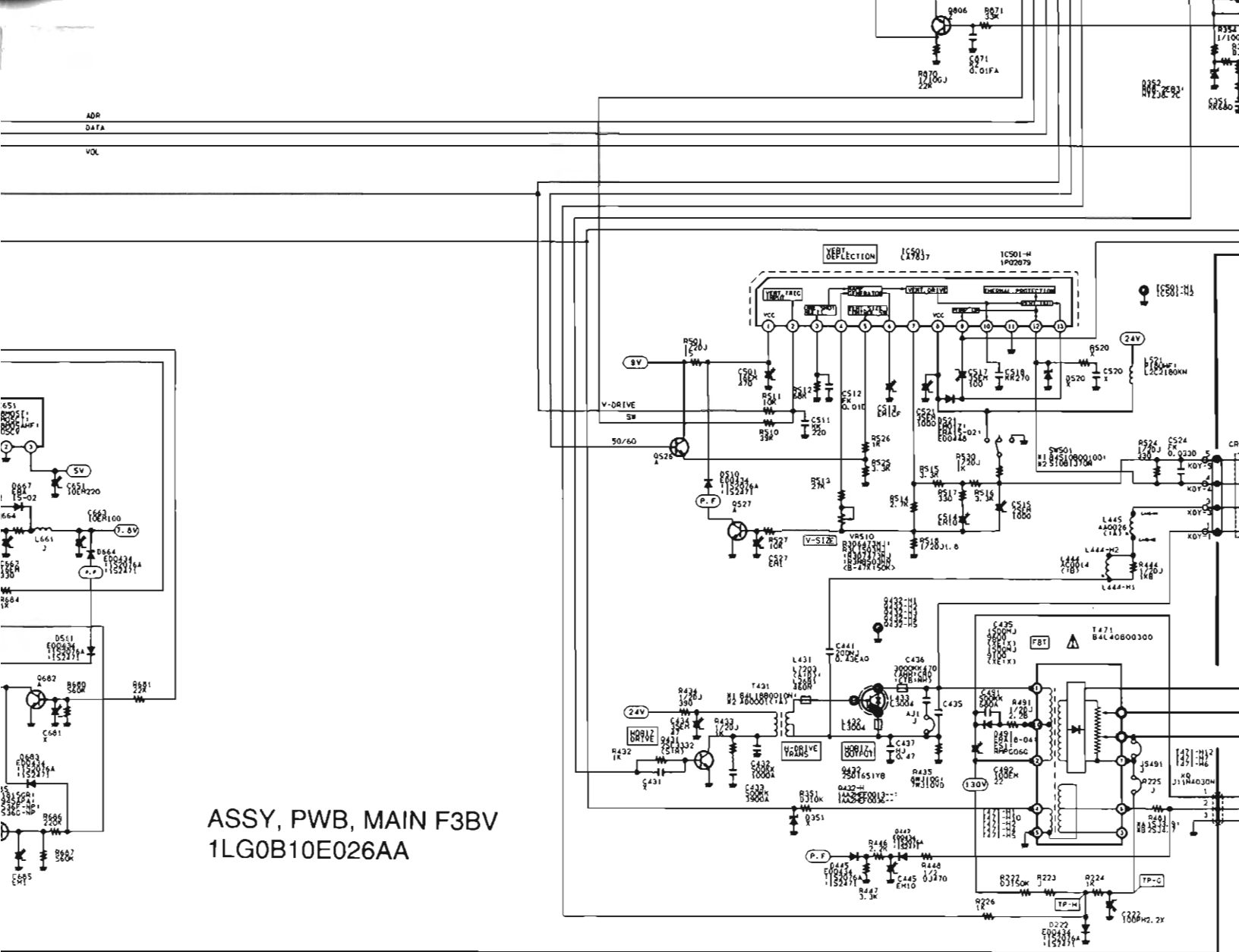
Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a mark Δ in this circuit diagram show components whose values have special significance to product safety. It is particularly recommended that only parts specified on the part service manual be used for components replacement pointed out by the mark.

CIRCUIT DIAGRAM NOTI

1. All resistance value are in c
2. All resistance rated wattage
3. Excepting electrolytic capar expressed in μ F and more
4. All capacitance rated voltag
5. All inductance values are in
6. Voltage readings taken wi ground. Voltage readings controls at normal position.
7. Waveforms were taken wil picture. Waveforms were t low capacity probe.
8. This circuit diagram covers may be some components chassis and the circuit diag



Q852	
	VOLT.
B	0.7V
C	0V
E	0V



Q631	VOLT.
B	6.9V
C	35.2V
E	6.3V

Q682	VOLT.
B	0.7V
C	0V
E	0V

Q683	VOLT.
B	24.4V
C	25.0V
E	25.1V

Q685	VOLT.
B	0.4V
C	35.1V
E	1.0

Q686	VOLT.
B	35.1V
C	0V
E	35.2V

Q526	VOLT.
B	4.0V
C	9.7V
E	3.4V

Q431	Volt.	Waveform
B	0.4V	0.7Vp-p HORIZ.
C	14.3V	54.4Vp-p HORIZ.
E	0V	---

Q661	VOLT.
B	10.4V
C	11.9V
E	9.7V

Q684	VOLT.
B	0V
C	10.4V
E	0V

Q527	VOLT.
B	0V
C	5.0V
E	0V

TICE:

ohms, K=1,000, M=1,000,000.
res are 1/6W unless otherwise noted.
capacitors, all capacitance values of less than 1 are
are than 1 are pF.
ages are 50V unless otherwise noted.
in μ H.
with a "VTVM" are from point indicated chassis
s taken by using colour bar signal are with all
n. Some voltages may vary with signal strength.
with colour bar and controls adjusted for normal
taken by using a wide band oscilloscope and a

9. Expression of capacitance and resistance in circuit diagram.

Capacitance(Example)

1000 C M 2000 D

Characteristic
Capacitance value(220pF)
Allowable error ($\pm 20\%$)
Kind (Ceramic)
Rated voltage (1,000V)

Resistance(Example)

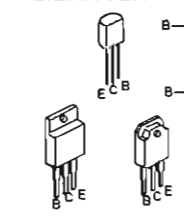
1/2 N J 1.2

Resistance value(1.2 Ω)
Allowable error ($\pm 5\%$)
Kind(M.carbon)
Rated wattage(1/2W)

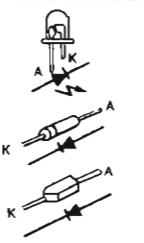
J= $\pm 5\%$
K= $\pm 10\%$
M= $\pm 20\%$
T,A,U,D:
Electrolytic
C,K,B,Ceramic
F: Mylar film
M,N: Polypropylene
Z: Metalized paper
D: Carbon
N: Metalized carbon
S: Oxide metalized
W: Wirewinding
C: Solid

TRANSISTOR, DIODE AND INTEGRATED C

C: COLLECTOR
B: BASE
E: EMITTER



A: ANODE
K: KATHODE



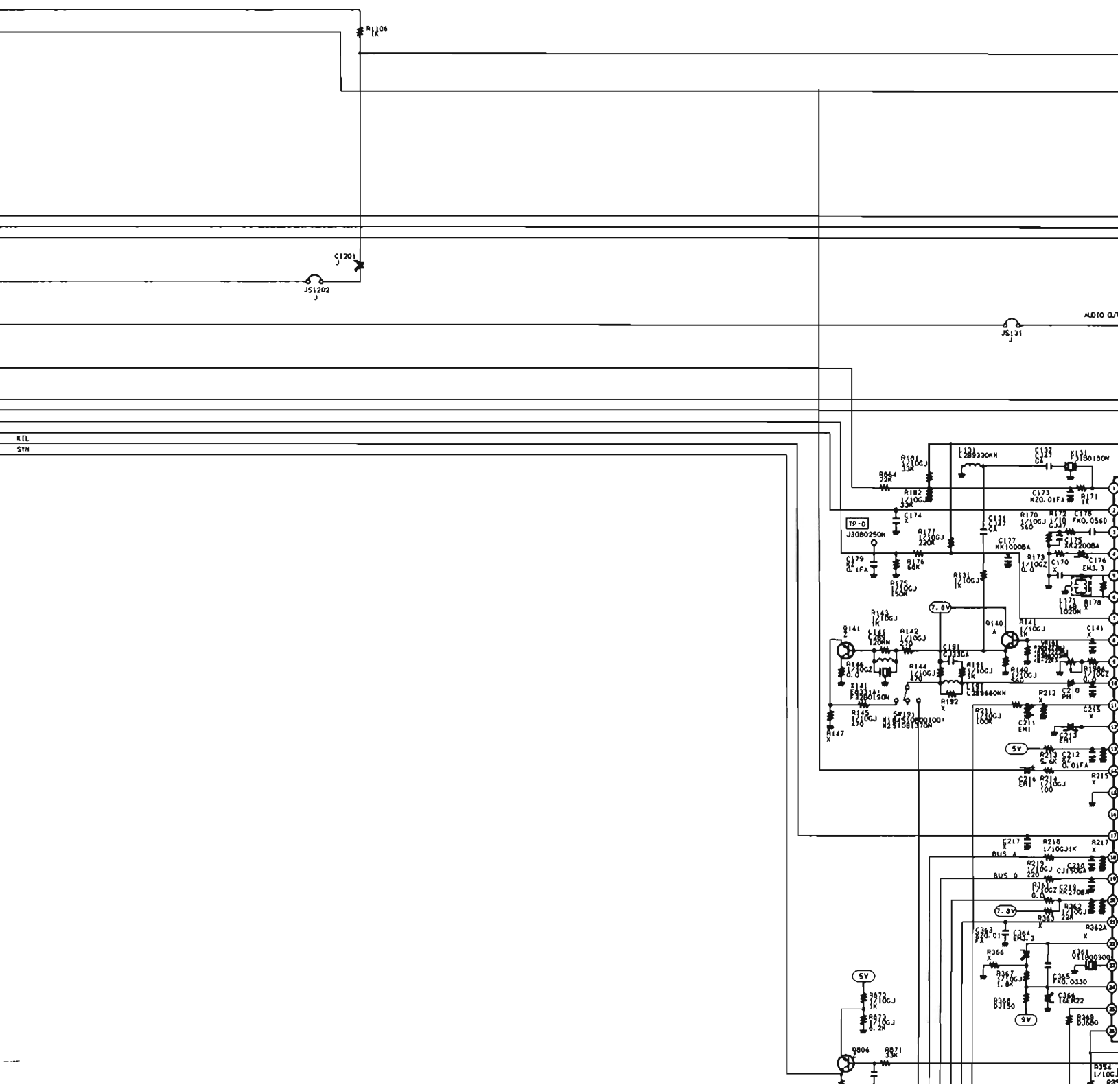
Q001	
	VOLT.
B	0V
C	10.3V
E	0V

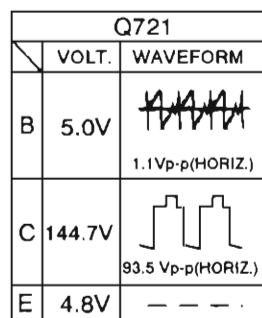
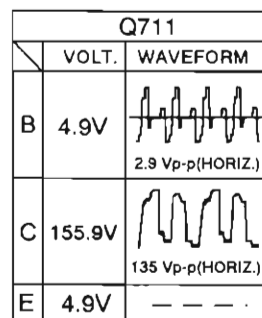
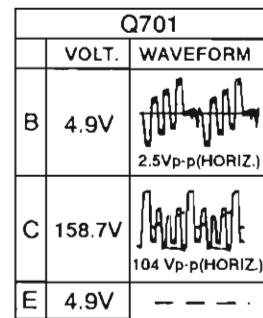
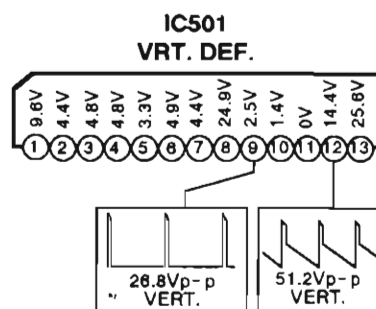
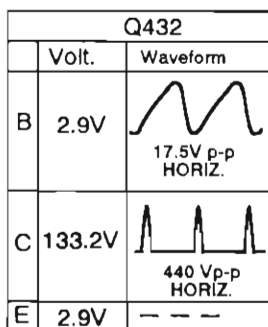
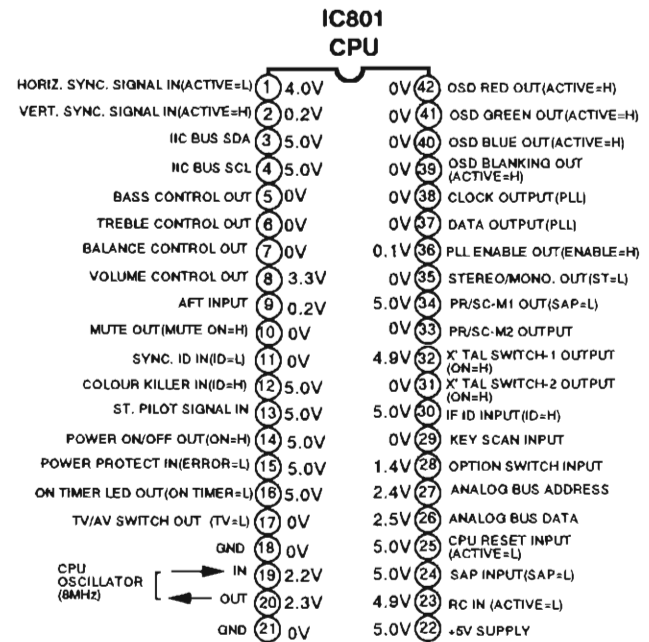
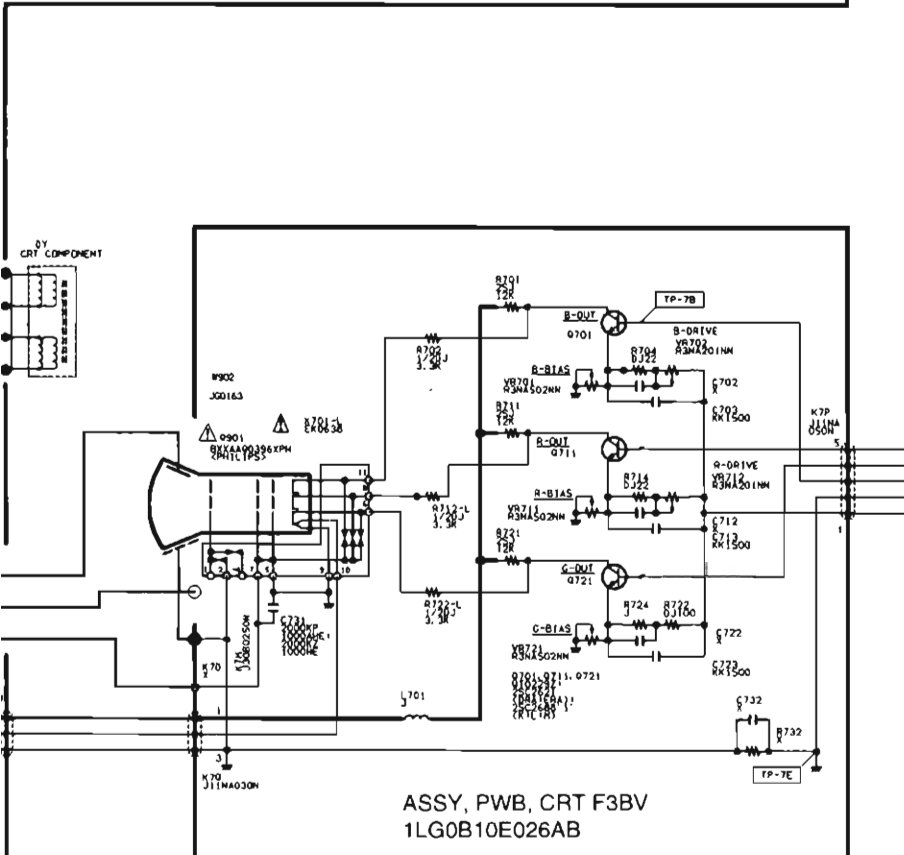
Q131	
	VOLT
B	3.0V
C	8.1V
E	2.4V

Q141	
	VOLT.
B	2.4V
C	0V
E	3.1V

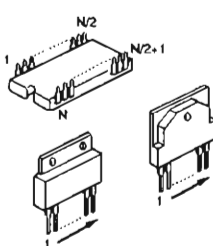
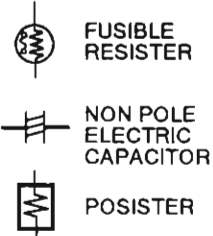
Q140	
	VOLT
B	3.1V
C	8.1V
E	2.4V

Q806	
	VOLT.
B	5.1V
C	0V
E	4.5V





LED CIRCUIT TERMINAL GUIDE

PARTICULAR
PARTS SYMBOL

10. Parts specified with " X " are not installed in this model.

11. Parts specified with "J " are just jumper wires.

12. List of replaceable transistors and diodes

(PNP, TR)

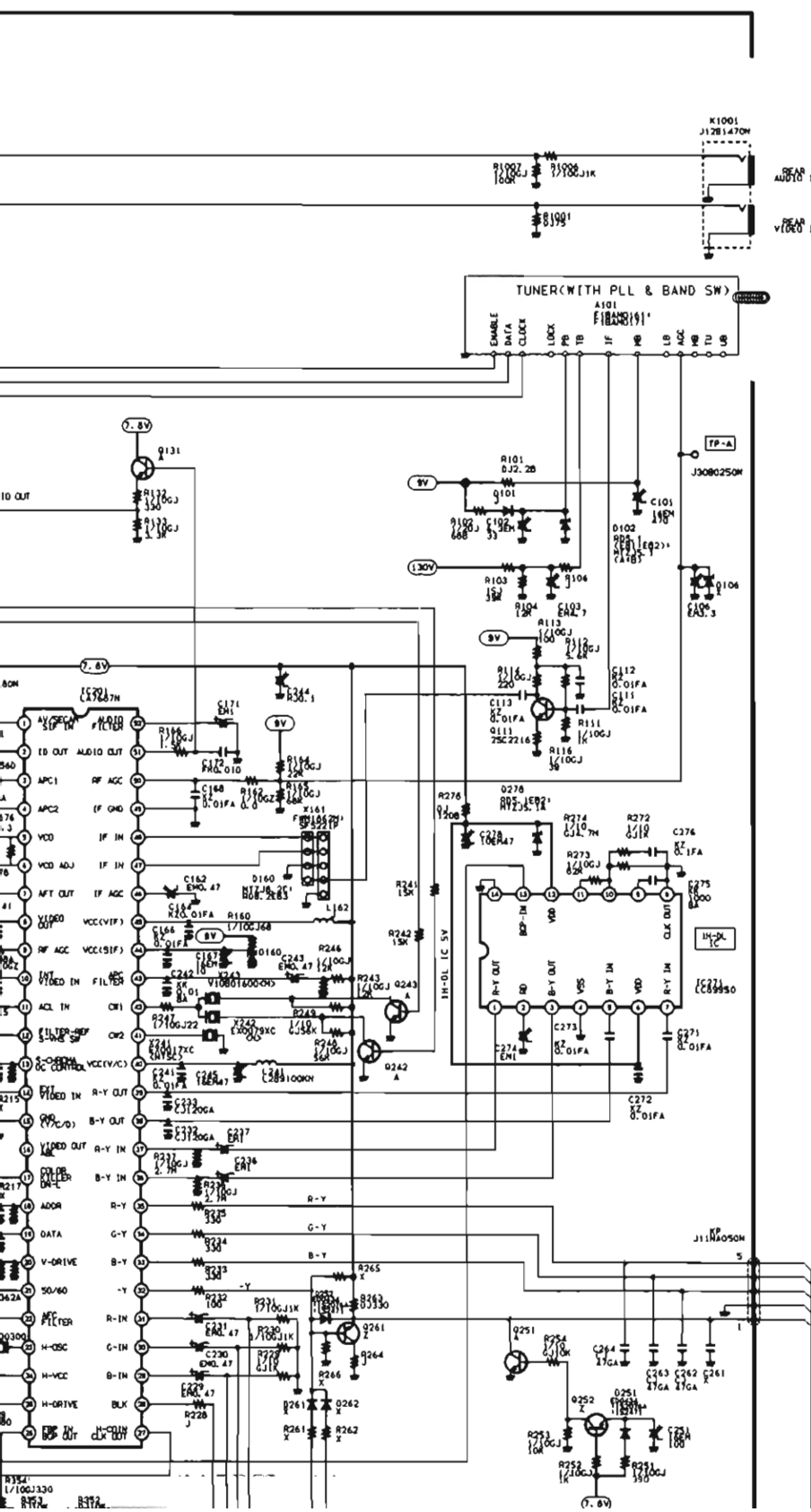
	2SA608	2SA564A	2SA1015	2SA933	2SA933S	KSAT733C
Z	E, F	Q, R	O, Y, G	Q, R	Q, R	
Y	E, F	Q, R	O, Y, G	Q, R		
W	F	R	Y, G	R		
V	E, F	Q, R	O, Y, G	O, R		Y, G
U	F	R	Y, G	R		G

(DIODE)

	DIODE
M	1S176, 1S133, GMA01
P	1S1553, 1S2076A, 1S2471, 1N4148
R	1S1555, 1S2473, 1S2076, DS442, 1N4148

(NPN. TR)

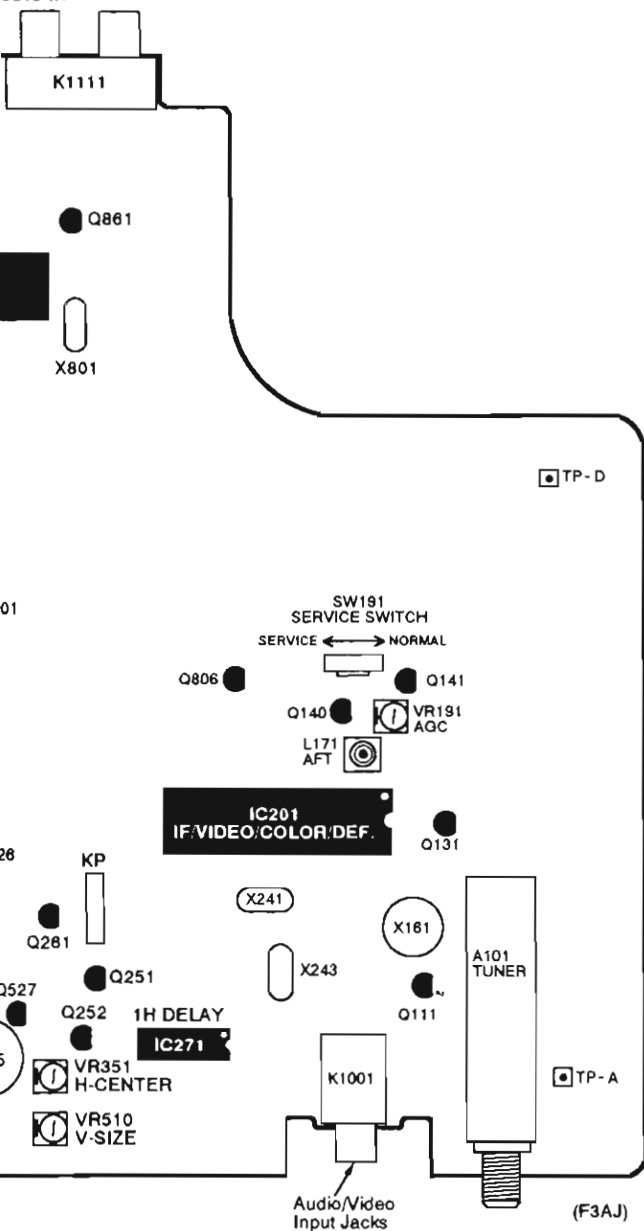
	2SC536	2SC945A	2SC1815	2SC1740	2SC1740S	KSC945C
A	E, F, G	P, Q, R	O, Y, G	Q, R, S	Q, R, S	
B	E, F, G	P, Q, R	O, Y, G	Q, R, S		
D	F, G	P, Q	Y, G	Q, R, S		
F	F, G	P	G	R, S		
H	F, G	P, Q	Y, G	Q, R, S		Y, G
I	E, F, G	P, Q, R	O, Y, G	Q, R, S		Y, G
Q	F, G	P	G	R, S		G



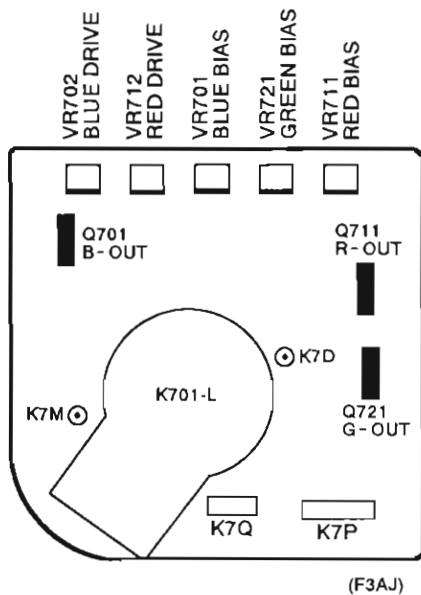
Q261	
	VOLT.
B	4.2V
C	0V
E	4.7V

MAIN UNIT

AUDIO IN VIDEO IN



CRT UNIT



DIFFERENCE PARTS LIST

LOCATION NO.	SERVICE REF. NO.		
	C20LB93M-00	C20LB93M-01	C20LB93M-02
	ASSY,PWB, MAIN F3BV 1LG0B10E026AA	ASSY,PWB, MAIN F3BVS 1AA0B10E543AA	ASSY,PWB, MAIN F3BVV 1LG0B10E026EA
C435	1500MJ9600X; (XE)	1500MJ8900X; (XE)	1500MJ8900X; (XE)
C436	3000KK470AHH; (NH;CRD;CTB)	3000KK470AHH; (NH;CRD;CTB)	3000KK470AHH; (NH;CRD;CTB)
C441	200NJ0.43EAQ	200NJ0.39EAQ	200NJ0.39EAQ
R211	1/10GJ100K	1/10GJ100K	1/10GJ150K
R222	DJ150K	DJ150K	DJ100K
R223	CUTTING WIRE	CUTTING WIRE	33K
R435	7WJ10VD; 8WJ10G	8WK8.2G; 7WK8.2VD	8WK8.2G; 7WK8.2VD
R481	1SJ3.9; 2SJ4.7	2SJ1.8	2SJ1.8; 2SJ2.2
R514	2.7K	2.7K	3.9K
R515	3.3K	3.3K	2.7K
R516	3.3K	3.9K	5.6K
R517	330	270	390
L444	AC0014; AC0014B	AC0014; AC0014B	AC0034; AC0034B
L445	AA0026; AA0026A	Not used	L1AA0041-
JS445	Not used	CUTTING WIRE	Not used
	ASSY,PWB,CRT F3BV 1LG0B10E026AB	ASSY,PWB,CRT F3BVS 1AA0B10E543AA	ASSY,PWB,CRT F3BVV 1LG0B10E026EB
K701-L	EK0638	EK0585	EK0638
Q901	BXXAAQ0396XPH	BXXAVB122SCH-	BXXAVB032RCH-