

# NOBLEX

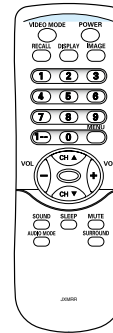
FILE NO.

## SERVICE MANUAL Colour Television

Model No. 21TC677U

(Argentina)

Service Ref. No. 21TC677U-00



### Specifications

Power Source . . . . . AC220V, 50Hz / 60Hz  
Receiving System . . . . . PAL (M/M, N/N), NTSC (M/M)  
Channel Coverage  
    Antenna mode VHF: CH02-CH13, UHF: CH14-CH69  
    CATV mode VHF band: CH01-CH13, Mid band: CH14-CH22  
                Super band: CH23-CH36, Hyper band: CH37-CH64  
                Ultra band: CH65-CH94 and CH100-CH125  
                Low mid band: CH95-CH99  
Aerial Input Impedance . . 75Ω  
Input Terminals  
    AV1 (Video): Phono jack × 1  
    AV1 (Audio): Phono jack (R/L) × 1 set  
    AV2 (Video): Phono jack × 1  
    AV2 (Audio): Phono jack (R/L) × 1 set  
Output Terminals  
    Video Monitor Output: Phono jack × 1  
    Audio Monitor Output: Phono jack (R/L) × 1  
    Headphone Jack: Mini stereo jack × 1  
Sound Output (RMS) . . . . 3W + 3W  
Speakers . . . . . 5cm x 9cm x 2 pcs.  
Dimensions . . . . . 597(W) X 464.5(H) X 335(D) mm  
Weight . . . . . approx. 20Kg

Specifications subject to change without notice.

BE2A

Product Code: 13015400

Original Version

Chassis Series: LA8-A

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.

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## Safety Notice

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### SAFETY PRECAUTIONS

- 1: An isolation transformer should be connected in the power line between the receiver and the AC line when a service is performed on the primary of the converter transformer of the set.

2: Comply with all caution and safety-related notes provided on the cabinet back, inside the cabinet, on the chassis or the picture tube.
- 3: When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as, control knobs, adjustment covers or shields, barriers, isolation resistor-capacitor networks etc.. Before returning any television to the customer, the service technician must be sure that it is completely safe to operate without danger of electrical shock.

### X-RADIATION PRECAUTION

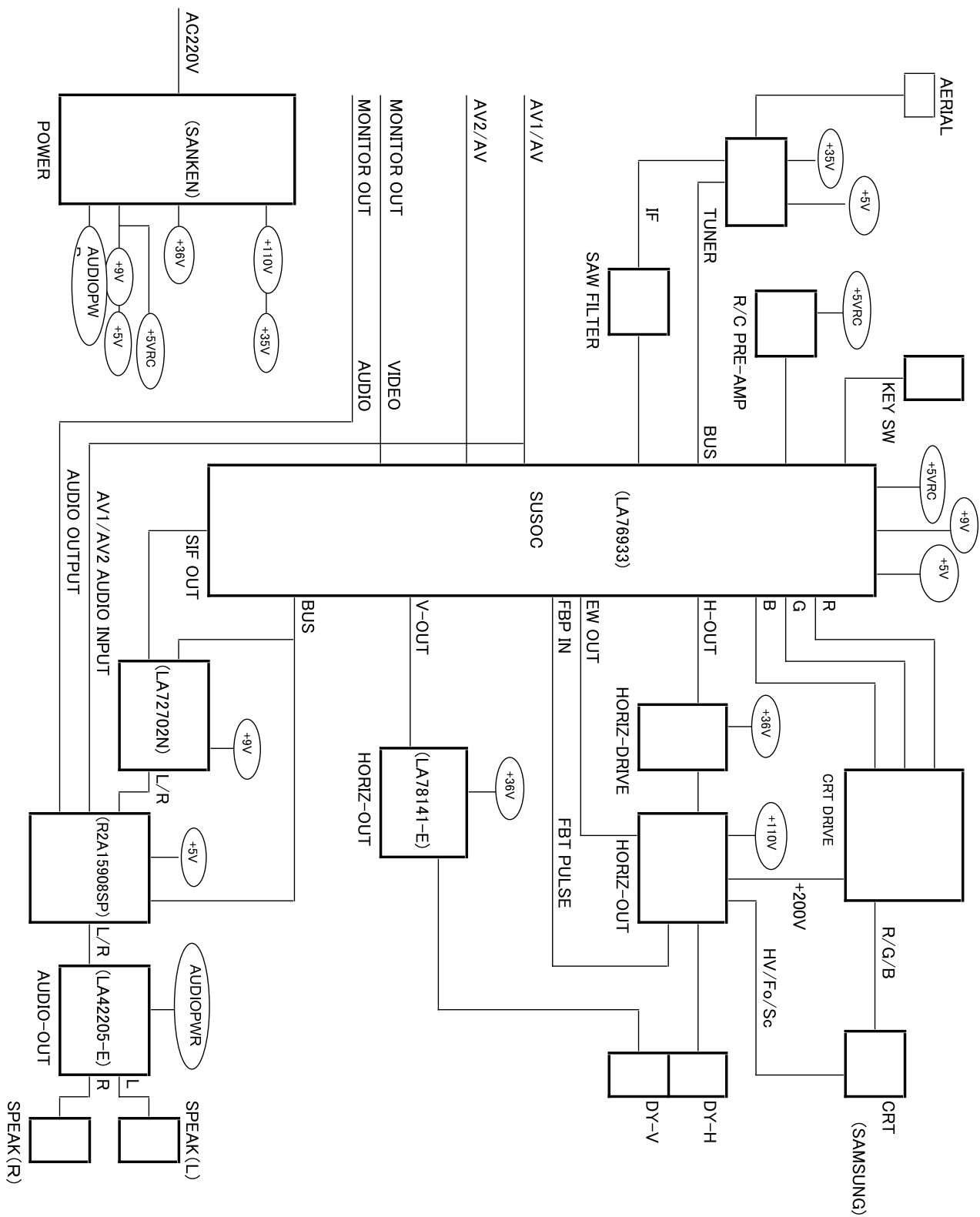
The primary source of X-RADIATION in television receiver is the picture tube. The picture tube is specially constructed to limit X-RADIATION emissions. For continued X-RADIATION protection, the replacement tube must be the same type as the original including suffix letter. Excessive high voltage may produce potentially hazardous X - RADIATION. To avoid such hazards, the high voltage must be maintained within specified limit. Refer to this service manual, high voltage adjustment for specific high voltage limit. 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.

### PRODUCT SAFETY NOTICE

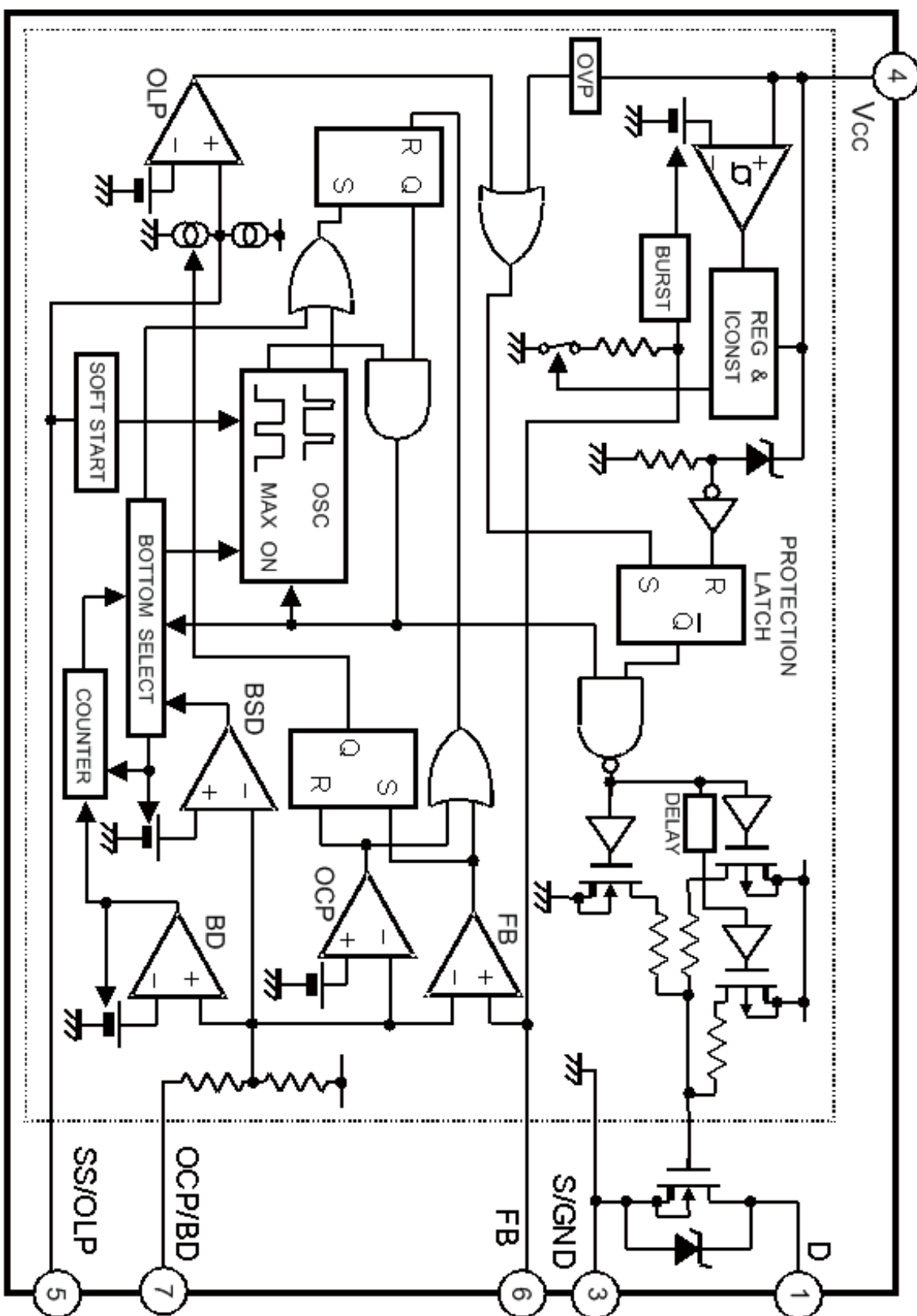
Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by mark ⚠ in the parts list and the schematic diagram designate components in which safety can be of special significance. It is particularly recommended that only parts designated on the parts list in this manual be used for component replacement designated by mark ⚠ . No deviations from resistance wattage or voltage ratings may be made for replacement items designated by mark ⚠ .

# Chassis Block Diagrams

## MAIN SIGNAL PROCESSING CIRCUIT



## POWER SUPPLY IC601 (STRW6754)

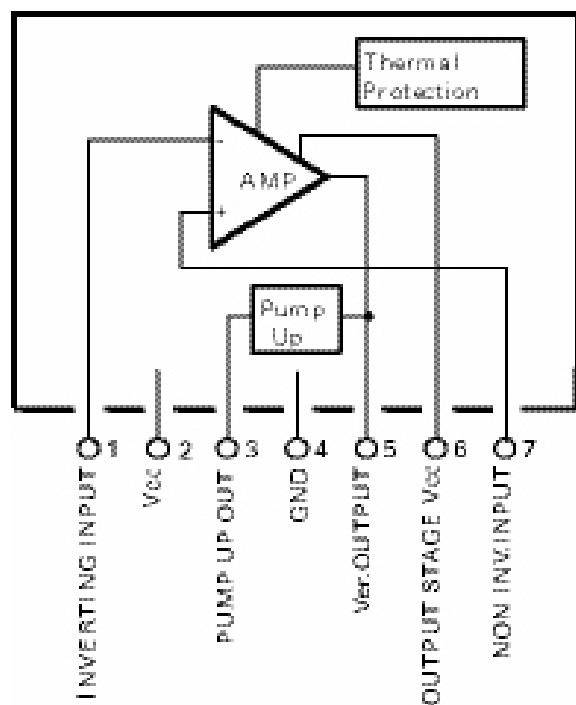


**IC201** < IF/Video/Chroma/Def./CPU > LA76933

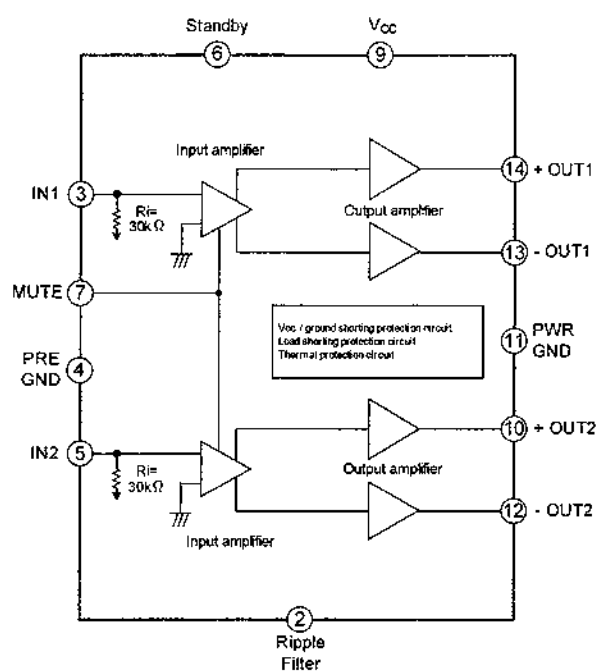


# IC Block Diagrams

## IC501<Vertical.Output> LA78141

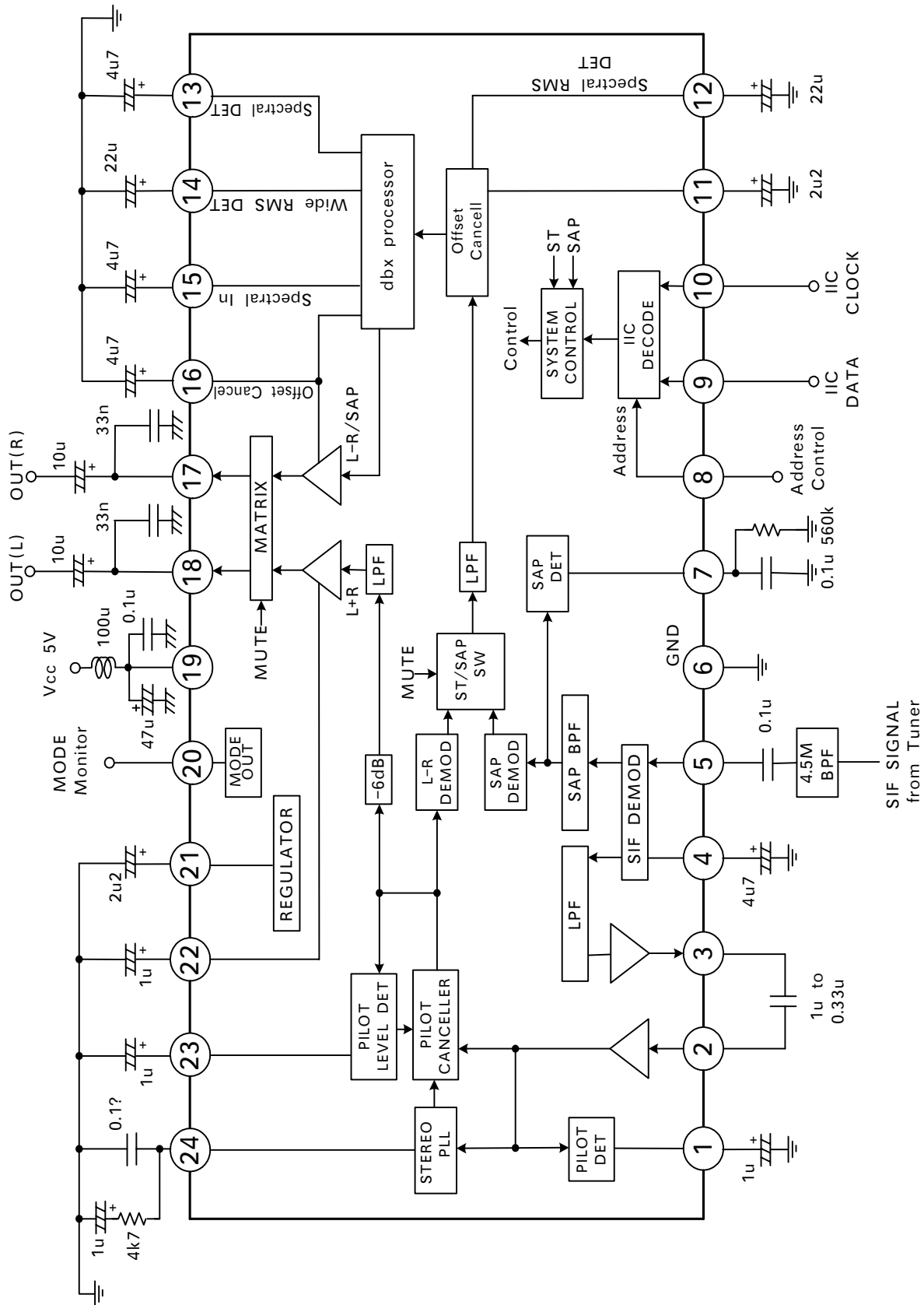


## IC001<AUDIO AMP> LA42205



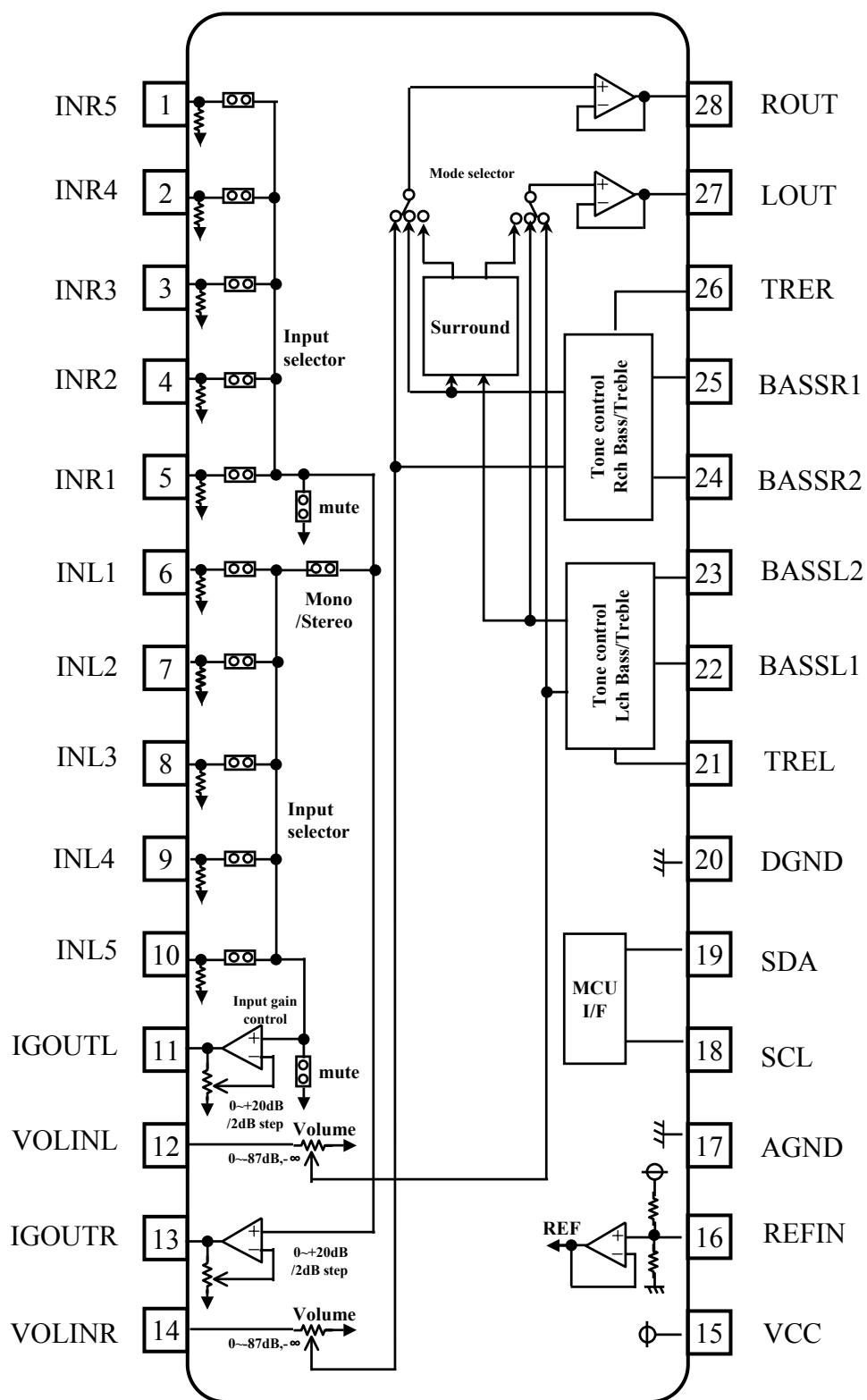
# IC Block Diagrams

IC3401 LA72703



# IC Block Diagrams

IC3402 R2S15908SP





# Service Adjustments

## General

This set has an On-screen Service Menu system included in the CPU that allows remote operation for most of the service adjustments.

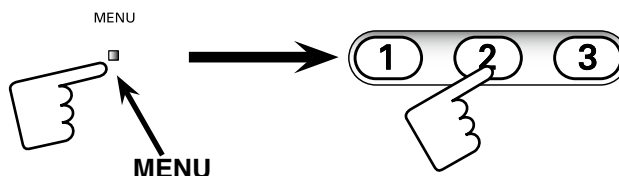
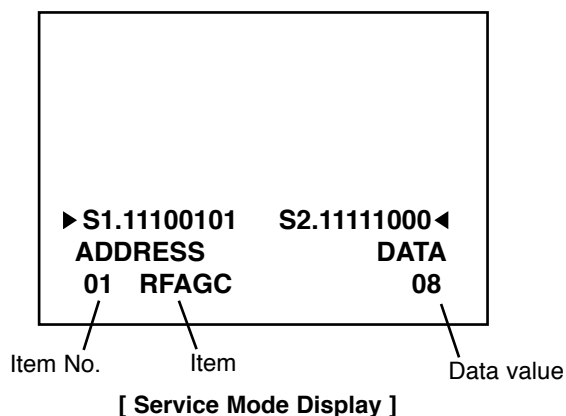
### IC802 (EEPROM) Replacement

When IC802 (EEPROM) is replaced, IC801 (CPU) will automatically write the initial reference data into IC802 for basic TV operation. However, the bus data should be checked and some bus data should be set up before attempting the service adjustments. (See pages 9 ~ 10 for detailed information.)

## Service Adjustment-1

### 1. Enter the Service Menu

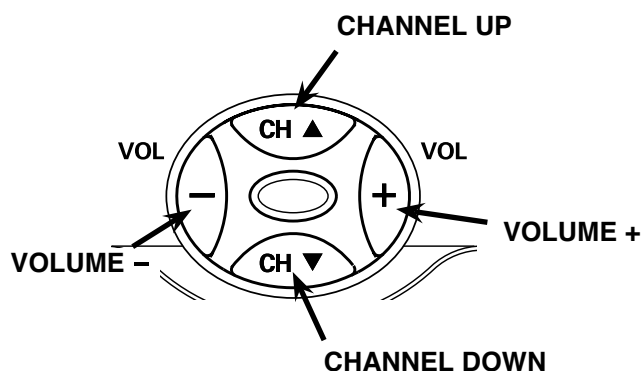
While pressing the **MENU** button on the television, press the Number Key **2** on the remote control unit.  
The Service Menu now appear.



### 2. Service Adjustments:

Press the **CHANNEL UP** or **CHANNEL DOWN** button on the remote control handset to select the desired service menu item you want to adjust.

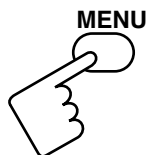
Use the **VOLUME +** or **-** to adjust the data. The **+** or **-** button will increase or decrease the data sequentially.



### 3. Exit from the Service Menu

Press the **MENU** button to turn off the Service Menu display.

The data which is set in the service mode is stored into the memory IC automatically.



# Service Adjustments

## On-screen Service Menu

Following table shows the initial values which have been stored in the CPU ROM, and items for the service adjustments.

When IC802 (EEPROM) is replaced, check the bus data to confirm they are the same as below. The shaded menu should be checked and be set up or readjusted according to the procedures described in the following pages.

Initial Setup Data marked with an \* should be changed from Initial Value Data.

No	Item	Description	Initial Value	Range
1	RFAGC	RF AGC adj.	21	00~63
2	H-PHA	H-PHASE adj.(50Hz)	13	00~31
3	V-DC	V-POSITION adj.(50Hz)	40	00~63
4	V-SIZ	V-SIZE adj.(50Hz)	113	00~127
5	V-SCO	Vertical-S compensation(50Hz)	16	00~31
6	V-LIN	Vertical linearity adj.(50Hz)	14	00~31
7	H-P60	Difference Value for H-PHASE adj.(60Hz)	+4	-16~+15
8	V-P60	Difference Value for V-POSITION adj.(60Hz)	-3	-32~+31
9	V-S60	Difference Value for V-SIZE adj.(60Hz)	0	-64~+63
10	VSC60	Difference Value for Vertical-S compensation (60Hz)	0	-16~+15
11	VLI60	Vertical linearity adjustment(60Hz)	0	-16~+15
12	OSDHP	OSD horizontal remark position	38	01~255
13	OSDC	OSD Contrast	04	00~07
14	V-SCP	V-SIZE COMP	03	0~7
15	VSHIFT	V.SHIFT	06	0~15
16	EWDC	EW DC(50Hz)	21	00~63
17	EWAMP	EW Amp(50Hz)	15	00~63
18	EWTL	EW Tilt(50Hz)	27	00~63
19	EWCTP	EW Corner Top(50Hz)	08	00~15
20	EWCBM	EW Corner Bottom(50Hz)	05	00~15
21	EWDCN	Difference Value for EW DC(60Hz)	0	-32~+31
22	EWAMN	Difference Value for EW Amp(60Hz)	0	-32~+31
23	EWTLN	Difference Value for EW Tilt(60Hz)	0	-32~+31
24	EWCTPN	Difference Value for EW Corner Top(60Hz)	0	-8~+7
25	EWCBN	Difference Value for EW Corner Bottom(60Hz)	0	-8~+7
26	EWCOR	EW COR SW	01	0,1
27	SBIAS	Sub Bias adj.	31	00~127
28	RBIAS	Red Bias adj.	00	00~255
29	GBIAS	Green Bias adj.	00	00~255
30	BBIAS	Blue Bias adj.	00	00~255
31	RDRIV	Red Drive adj.	64	00~127
32	GDRIV	Green Drive adj.	08	00~15
33	BDRIV	Blue Drive adj.	64	00~127
34		White balance (a lateral line)		
35	DRV	Bright and Dark of White balance adjustment		
36	B-YD	B-Y DC Level	11	00~15
37	R-YD	R-Y DC Level	11	00~15
38	B-YDN	Difference value of NTSC B-Y DC Level	0	-16~+15

# Service Adjustments

No	Item	Description	Initial Value	Range
39	R-YDN	Difference value of NTSC R-Y DC Level	0	-16~+15
40	G-YA	G-Y Angle	00	00~01
41	RBGB	R-Y/ B-Y Gain Balance	10	00~15
42	RBAG	R-Y/ B-Y Angle	08	00~15
43	G-YAN	NTSC G-Y Angle	00	00~01
44	RBGBN	Difference value of NTSC R-Y/B-Y Gain Balance	+7	-8~+7
45	RBAGN	Difference value of NTSC R-Y/ B-Y Angle	+4	-8~+7
46	COGV	Coring Gain	03	00~03
47	BLKS	Blk.str.start(W/Defeat)	00	00~03
48	BLKG	Blk.STR.gain	00	00~03
49	BRTA	Brt. Able. Def	00	00~01
50	BRST	Mid. Stp. Def	00	00~01
51	BRTH	Bright. Abl. Threshold	00	00~07
52	WPL	WPL Ope. Point (W/Defeat)	00	00~03
53	YGAM	Y Gamma Start	00	00~03
54	PRES	AV Mode Pre Shoot adj.	02	00~03
55	OVERS	AV Mode Over Shoot adj.	03	00~03
56	RFCO	Difference value of RF Coring Gain	+1	-2~+1
57	PRESN	RF Mode Pre Shoot adj	00	00~03
58	OVERSN	RF Mode Over Shoot adj.	01	00~03
59	TINT	Tint	-8	-16~+15
60	SHRF	Difference value of RF sharpness	+5	-16~+15
61	RFCOL	Difference value of TV color	+5	-16~+15
62	TEXC	OSD TEXT Contrast	+2	-4~+3
63	AUFL	Auto. Flesh	00	00~01
64	COOP	Color Killer opt.	07	00~07
65	VCOFRQ	VCO Freq	00	0~255
66	DEEM	De-emphasis TC	00	00~01
67	V-LVL	Video Lvel	05	00~07
68	STRAP	S.Trap Adjust	04	00~07
69	IFOM-S	OVER MODURATION SW	00	00~01
70	IFMN-S	AUDIO MONITOR SW, MONITOR OR FM	00	00~01
71	IFTRPS	IC built-in SIF TRAP SW ON-OFF	01	00~01
72	OVMLVL	OVER MOD LEVEL	08	00~15
73	VBSW	VBLK SW	00	00~01
74	FBTS	FBPBLK. SW	00	00~01
75	HBLKL	H-Blanking Control Left	05	00~07
76	HBLKR	H-Blanking Control Right	03	00~07
77	AFCRF	Adj. of AFC Gain & gate (RF)	00	00~01
78	VSURF	Adj. of Vertical Sync.Separation Sensitivity (RF)	00	00~01
79	CDMRF	Adj. of Vertical Sync.Separation Sensitivity (AV)	00	00~07
80	AFCAV	Adj. of AFC Gain & gate (AV)	01	00~01
81	VSUAV	Adj. of Vertical Sync.Separation Sensitivity (AV)	00	00~01
82	CDMAV	Vertical Count Down Loop Adj.(AV)	00	00~07
83	HLK-T	Hlock,Vdet(RF)	00	0,1
84	HLK-V	Hlock,Vdet(AV)	00	0,1
85	VCOADJ	C.VCO Adjust (NTSC, PAL-N)	04	00~07

## Service Adjustments

No	Item	Description	Initial Value	Range
86	GRAY	GRAY MODE	00	0,1
87	CROSS	CROSS B/W	00	0~3
88	HL-TON	HALF TONE LEVEL	00	0~3
89	AVNCON	AV CONTRAST (No Signal in AV)	64	00~127
90	AVNBRI	AV BRIGHT (No Signal in AV)	64	00~127
91	POMT	Power Mute Time	12	00~127
92	CHMT	Ch Mute Time	05	00~31
93	SYST	System N	03	00~255
94	RELAY	RELAT ON Time (8msec X N)	125	00~255
95	CCD	CAPTION Horizontal Remark Position	35	1~63
96	AVTVTM	FEATHER MENU AV/TV CHAGNE	01	0~255
97	FM-G	FM Gain	00	00~01
98	CTRAP	C.TRAP ADJUST	04	0~7
99	CBPF	C.BPF ADJUST	00	0~3
100	C-KILL	C_KILL ON	00	0~1
101	G-YAMP	G-Y AMP	08	0~15
102	B-YDPM	Difference value of PALM B-Y DC Level	0	-16~+15
103	R-YDPM	Difference value of PALM R-Y DC Level	0	-16~+15
104	YTH	Y TH	00	0~3
105	YGAIN	Y Gain	00	0~3
106	RWIDTH	R Width	00	0~3
107	ROFSET	R Offset	00	0~3
108	BWIDTH	B Width	00	0~3
109	BOFSET	B Offset	00	0~3
110	RGBTMP	RGB TEMP SW	00	0~1
111	VCOPLM	C.VCO Adjust (PAL-M)	02	00~07
112	OSDPIC	OSD MENU PICTURES H-POSITION	00	0~127
113	H-SCP	H-SIZE COMP	07	0~7
114	APCOFF	APC Offset	00	0~7
115	SYNCSP	SyncSepSence	02	0~7
116	OPTPOW	LAST POWER STATUS OPTION	00	0~1
117	VER	VERSION AND DATE		

# Service Adjustments

## Important Notice:

Do not attempt to adjust service adjustments not listed on below otherwise it may cause loss of performance and for correct operation.

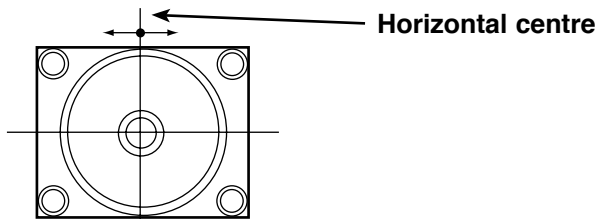
### Item 01 [RFAGC] AGC

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 to maximum. Set the colour control to minimum.
2. Select Item No. 01 [RFAGC] in the service mode.
3. Change value until the snow noise just disappears.
4. Exit from the service mode.

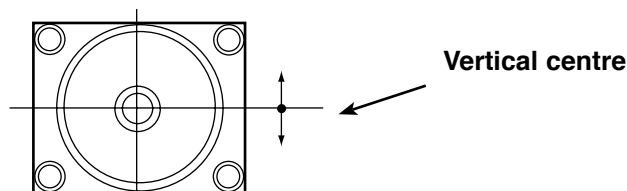
### Item 02 [H-PHA] HORIZONTAL CENTRE

1. Receive a monochrome circular pattern.
2. Set the brightness and contrast to normal.
3. Select Item No. 02 [H-PHA] in the service mode.
4. Change value to be optimum horizontal centre position.
5. Exit from the service mode.



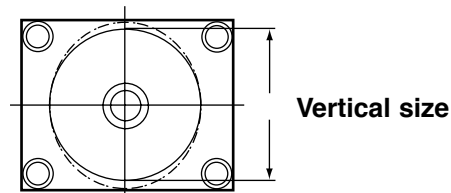
### Item 15 [VSHIFT] VERTICAL CENTRE

1. Receive a monochrome circular pattern.
2. Set the brightness and contrast to maximum.
3. Select Item No. 15 [VSHIFT] in the service mode.
4. Change value to be optimum vertical centre position.
5. Exit from the service mode.



### Item 04 [V-SIZ] VERTICAL SIZE

1. Receive a monochrome circular pattern.
2. Set the brightness and contrast to maximum.
3. Select Item No. 04 [V-SIZ] in the service mode.
4. Change value to be optimum vertical size.
5. Exit from the service mode.

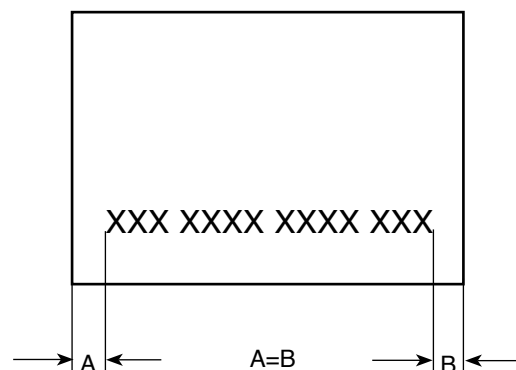


### Item 12 [OSDHP] OSD POSITION

1. Receive a monochrome circular pattern.
2. Set the brightness and contrast to normal.
3. Select Item No. 12 [OSDHP] in the service mode.
4. Change value to be proper OSD position.
5. Exit from the service mode.

### Item 95 [CCD] CAPTION H-POSITION ADJ.

1. Tune receiver to a caption channel.
2. Check that CAPTION position is in the horizontal center of the screen. If CAPTION center is too right or left, perform steps 3-6. (See figure below.)
3. Select Item No. 85 [CCD] in the service mode.
4. Adjust data with + or - key for proper horizontal center.
5. Exit from the service mode.



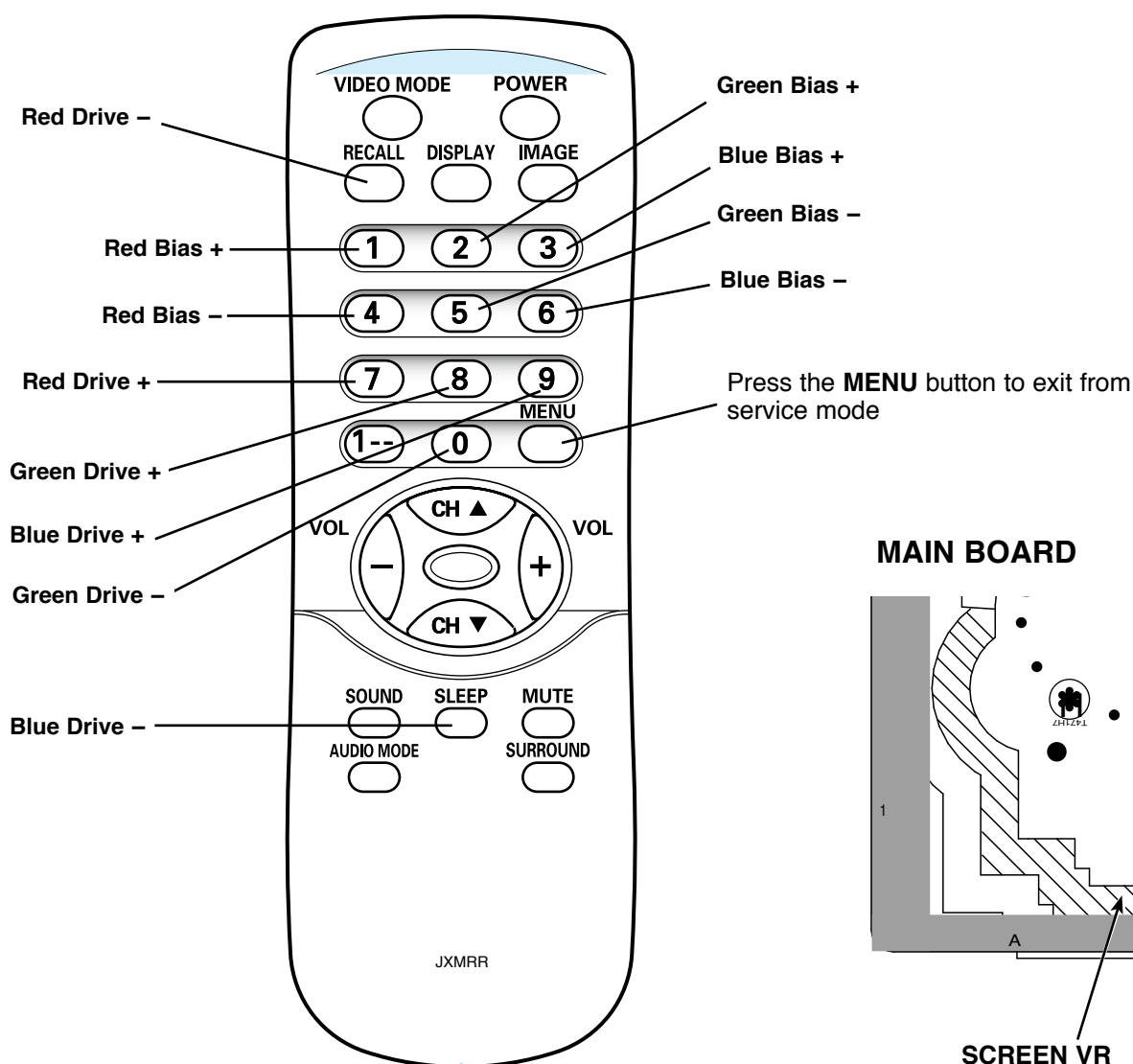
Caption H-position Adj.

# Service Adjustments

## Items 28-33 GREY SCALE

- (1) Receive a monochrome circular pattern.
- (2) Set the brightness and colour to normal, contrast to maximum.
- (3) Enter to the service mode.
- (4) Set each value of Item-28 **RBIAS**, 29 **GBIAS**, 30 **BBIAS** mode to 00. Set each value of Item-31 **RDRIV**, 33 **BDRIV** mode to 64, 32 **GDRIV** to 08.
- (5) Select Item-34 mode to be one horizontal scanning line and turn the screen volume on the FBT to obtain just visible one coloured line.
- (6) Press the **1 (Red Bias +)**, **4 (Red Bias -)**, **2 (Green Bias +)**, **5 (Green Bias -)**, **3 (Blue Bias +)** or **6 (Blue Bias -)** button to adjust the brightness of each colour until a dim white line produced. Please see the control button allocations in this mode.
- (7) Select Item-35 **DRV** mode to enter the white balance adjusting mode.
- (8) Press the **7 (Red Drive +)**, **RECALL (Red Drive -)**, **8 (Green Drive +)** or **0 (Green Drive -)** button, **9 (Blue Drive +)** or **SLEEP TIMER (Blue Drive -)** alternately to produce normal black and white picture.
- (9) Exit from the service mode.
- (10) Check for proper grey scale tracking at all brightness levels.

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



# Service Adjustments

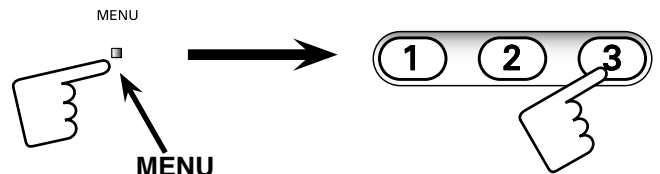
## Service Adjustment-2 (MTS Adjustment)

### 1. Enter the Service Menu

While pressing the **MENU** button on the television, press the "3" or **MENU** button on the remote control unit. The Service Menu now appear.

VOLUME	OFFSET	07
TREBLE	OFFSET	04
BASS	OFFSET	04
ADJUST: - / +		
CHOOSE: ▲ ▼		
EXIT : MENU		

[ MTS Adjustment Mode ]



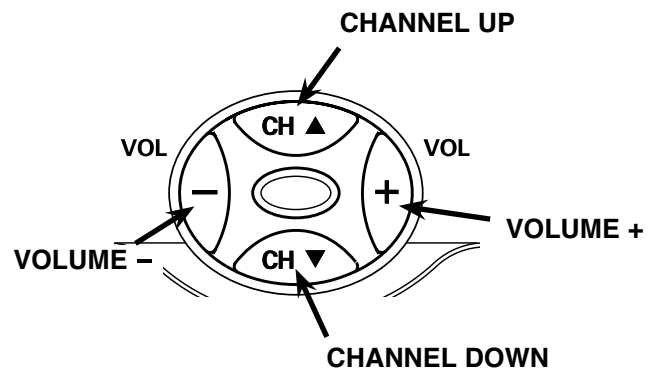
[ Entering the Service Menu ]

### 2. Service Adjustments:

Press the **CHANNEL UP** or **CHANNEL DOWN** button on the remote control handset to select the desired service menu item you want to adjust.

Use the **VOLUME +** or **-** to adjust the data. The + or - button will increase or decrease the data sequentially.

**Note:** When the TV can be received SAP signal and you select SAP in Audio Mode, the item "VOLUME" in service menu can only be active for SAP adjustment.

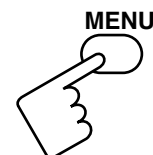


[ Service Adjustment ]

### 3. Exit from the Service Menu

Press the **MENU** button to turn off the Service Menu display.

The data which is set in the service mode is stored into the memory IC automatically.



[ Exit from the Service Menu ]

# Service Adjustments

## Service Adjustment-3

### FINE TUNING

This adjustment is used to do a fine tuning of the channels with poor reception after they have been stored by the automatic tuning.

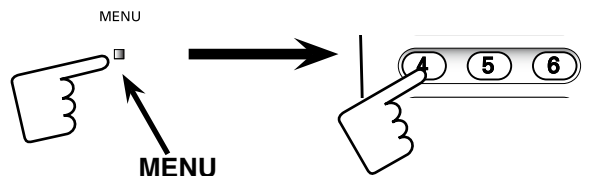
This function is available for one channel only and the fine-tuned channel is memorized into IC802 (EEPROM).

#### 1. Enter the Service Menu

While pressing the **MENU** button on the television, press the "4" or **MENU** button on the remote control unit. The Service Menu now appear.



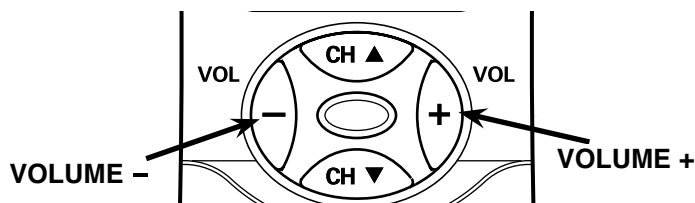
Fine tuning service mode



[ Entering the Service Menu ]

#### 2. Service Adjustments:

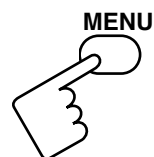
Press and hold the **VOLUME +** or **VOLUME -** button on the remote control handset or TV set to make fine tuning adjustment. Press and hold the **VOLUME +** button for higher frequency tuning, and press and hold the **VOLUME -** for lower frequency tuning.



[ Service Adjustment ]

Fine tuning data value will be automatically stored in memory.

To return to normal TV mode, press the **MENU** button on the TV set or remote control handset. (Or will automatically return to normal TV mode after 5 seconds.)



[ Exit from the Service Menu ]

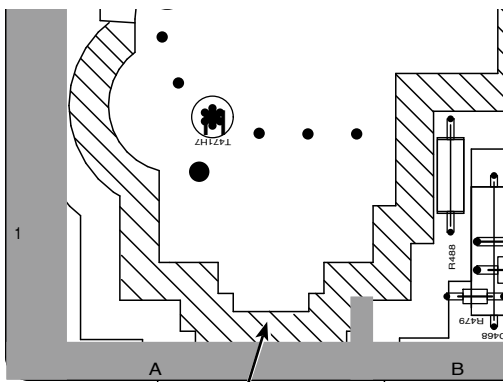


# Service Adjustments

## Service Adjustment-3

### 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 centre.



**SCREEN VR**  
(Under side)

### HIGH VOLTAGE CHECK

Note: +B (+130V) Voltage and Grayscale Adjustment must be completed before attempting High Voltage Check.

1. Connect high voltage voltmeter negative lead to ground, and connect + lead to anode of picture tube.
2. Tune receiver to an active channel and confirm TV is operating properly.
3. The high voltage must be  $25KV \pm 1KV$  and less than 28KV at 0 beam current (Brightness and contrast minimum setting).

Note: If the picture tube is replaced, check the high voltage.

## Protection Circuit

This TV set has a built-in power supply protection circuit. It is provided to protect the TV set in case of a power supply circuit malfunctions. When something abnormality occurs during TV reception, the TV set goes to the stand-by mode.

When an abnormality occurs during TV reception, it causes pin 23 of the CPU to go continually Low voltage for about one second. The CPU detects that this has occurred and outputs the signal from pin 36 to switch off the power supply lines.

### Releasing the protective circuit and restoring power supply

To release the protective circuit and restore power supply, turn the power to the TV set OFF and then ON again via either the main power switch or the ON-OFF button on the remote control. This will work only if the power supply trouble was temporary. If there is permanent trouble such as a damaged circuit, power cannot be restored and the circuit will have to be repaired.

# 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 on 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 centre the vertical green belt in the picture screen. The Purity Magnets are also adjusted to obtain vertical centring 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.

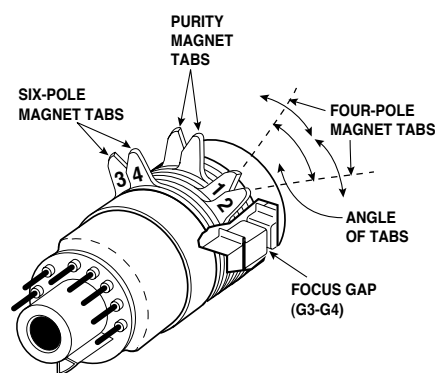


Figure 1. Purity and Convergence Magnets

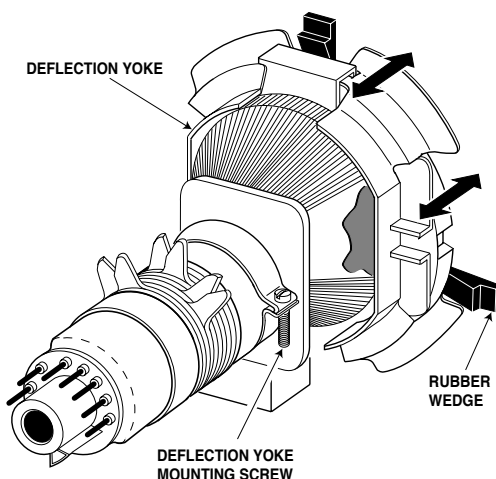


Figure 4. Deflection Yoke Movement

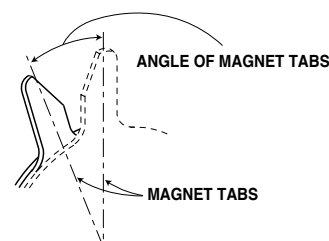


Figure 5. Adjusting Magnet

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

## CENTRE 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 centre 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 centre area of the picture screen. Refer to figure 2.
4. Turn Green gun on and adjust Six Pole Magnet 3 and 4 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.

Adjust tabs angle to superimpose blue and red vertical line.

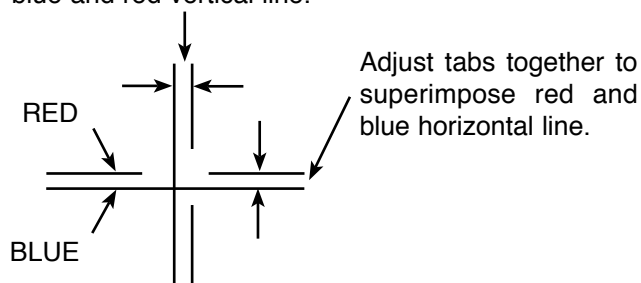


Figure- 2 BLUE AND RED LINE MOVEMENT

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

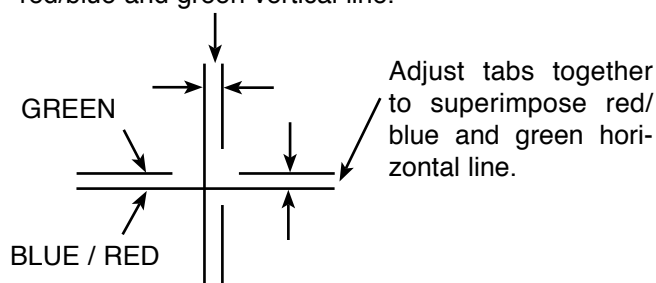
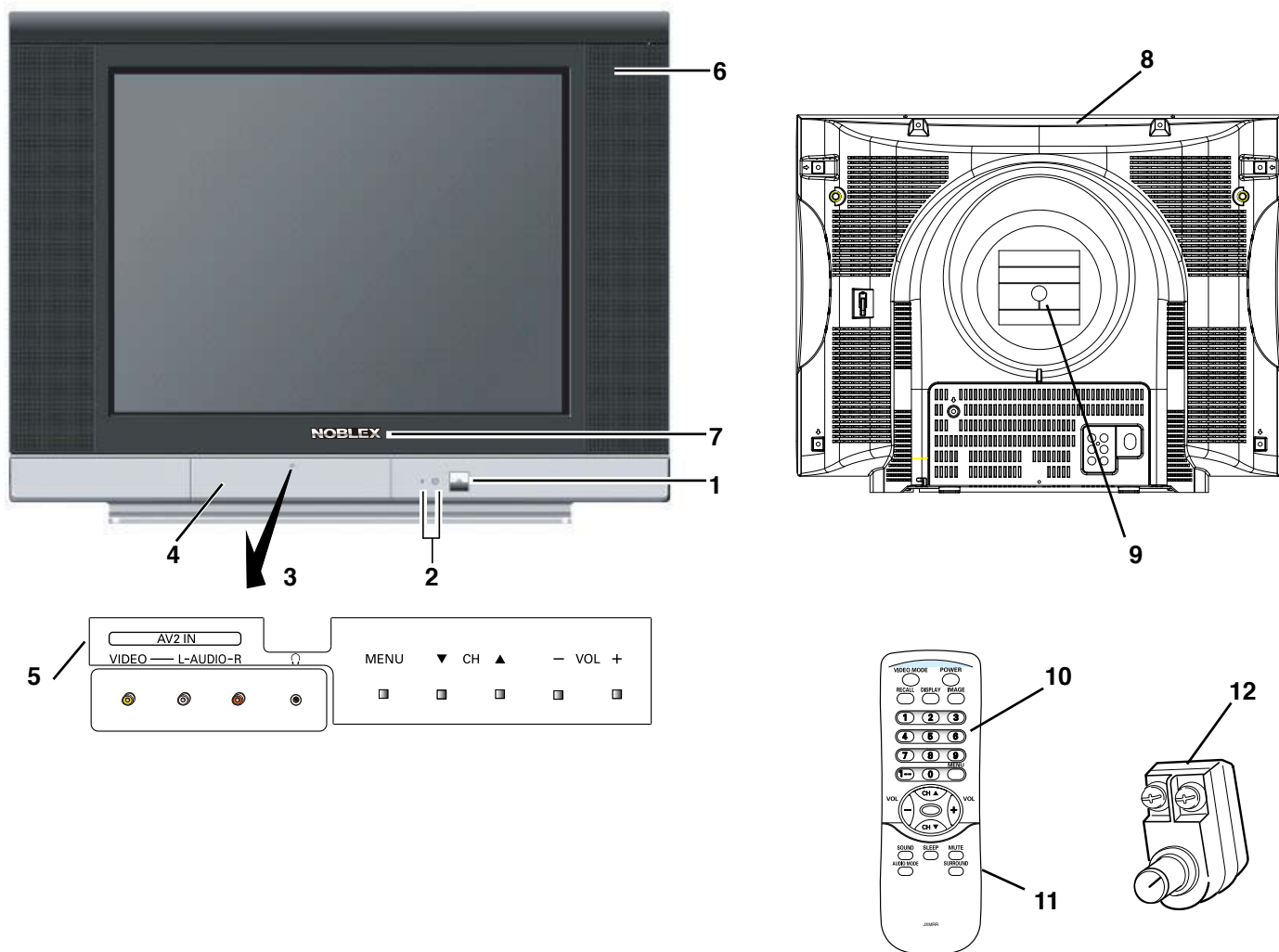


Figure- 3 BLUE/RED AND GREEN MOVEMENT

# Cabinet Parts List

Note: Parts order must contain Service Ref. No., Part No., and descriptions.



Key No.	Part No.	Description	Key No.	Part No.	Description
1	1AA2BUM0580--	BUTTON POWER-BE2A			
	1S00620	COIL SPRING-D8HA			
2	1AA2DEM0480--	DEC IND-BE2A			
3	1AA2DDM204--	DOOR-BE2A			
4	1AV2LA9FA01--	LATCH PUSH			
or	1LG2LA9FA01--	LATCH PUSH			
5	1AA2DES0964--	DEC SHEET			
6	1AA2CAM0653--	CABINET FRONT-BE2A			
7	1AA2BAA0021-A	BADGE NOBLEX-C4CA			
8	1AA2CBM0466--	CABINET BACK			
9	1AA6P4S3450--	LABEL RATING-BE2A			
11	1AV0U10B28601	ASSY,REMOCON JXMRR			
12	1AA2RCM0223--	RC-BATTERY LID-JXMRA			
13	1AV4U19B00700	ANTENNA CONVERTER			
	1AV4U19B00701	ANTENNA CONVERTER			
	1LG6P1P0343--	INSTRUCTION MANUAL-BE2A			

# Chassis Electrical Parts List

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a  $\Delta$  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: Parts 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.

### NOTES:

Read description in the Capacitor and Resistor as follows:

#### CAPACITOR

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

# Chassis Electrical Parts List

Location	Part No.	Description	Safety	Location	Part No.	Description	Safety
A013	013BE2E	ELECTRICAL PARTS		C227	CK1H103KGQBNZ	CERAMIC 0.01U K 50V	
L901	1LB4L81B02600	COIL,DEGAUSSING	⚠	C228	CK1E104KGQBNZ	CERAMIC 0.1U K 25V	
L901	1LB4L81B03100	COIL,DEGAUSSING	⚠	C231	CGXLB1J474ZAN	MT-POLYEST 0.47U J 63V	
Q901	BXXAVB578SFQ-CRT-AS A51QGV991X003(D)		⚠	C232	CK1H103KGQBNZ	CERAMIC 0.01U K 50V	
SP901	1LB4A10B05600	SPEAKER,8		C233	CEXLB1C470VDN	ELECT 47U M 16V	
SP902	1LB4A10B05600	SPEAKER,8		C234	CK1H103KGQBNZ	CERAMIC 0.01U K 50V	
W901	1LB4W10B02300	CORD,POWER-2400MK	⚠	C240	CK1E104KGQBNZ	CERAMIC 0.1U K 25V	
W902	1LB4W30B11200	ASSY,WIRE GND CONNECTOR BD2A		C243	CK1H103KGQBNZ	CERAMIC 0.01U K 50V	
W902	1LB4W30B11201	ASSY,WIRE GND CONNECTOR BD2A		C244	CEXLB1A331VDN	ELECT 330U M 10V	
W902	1LB4W30B11202	ASSY,WIRE GND CONNECTOR BE2E		C245	CEXLB1H1R0VDN	ELECT 1U M 50V	
A100	1LG0B10Y02600	ASSY,PWB,CTV BE2E		C246	CEXLB1HR47VDN	ELECT 0.47 U M 50V	
A101	1LG0B10Y0260A	ASSY,PWB,MAIN BE2E		C247	CEXLB1H2R2VDN	ELECT 2.2 U M 50V	
A101	1LB4F1BGZ0010	TUNERU/V		C273	CK1E104KGQBNZ	CERAMIC 0.1U K 25V	
A1901	1AV4U20B40500	UNIT,REMOCON RECEIVER		C291	CEXLB1C470VDN	ELECT 47U M 16V	
A1901	1AV4U20B98500	UNIT,REMOCON RECEIVER		C3401	CEXLB1H1R0VDN	ELECT 1U M 50V	
C001	CEXLB1E102VEN	ELECT 1000U M 25V		C3402	CK1C334KGQBNG	CERAMIC 0.33U K 16V	
C002	CEXLB1E101VEN	ELECT 100U M 25V		C3403	CEXLB1H4R7VDN	ELECT 4.7 U M 50V	
C003	CK1H392KGQBNZ	CERAMIC 3900P K 50V		C3405	CK1E104KGQBNZ	CERAMIC 0.1U K 25V	
C004	CK1C105ZGAFNG	CERAMIC 1U Z 16V		C3406	CK1E104KGQBNZ	CERAMIC 0.1U K 25V	
C004	CK1C105ZGMFNG	CERAMIC 1U Z 16V		C3408	CEXLB1H2R2VDN	ELECT 2.2 U M 50V	
C005	CK1C105ZGAFNG	CERAMIC 1U Z 16V		C3409	CEXLB1H220VDN	ELECT 22 U M 50V	
C005	CK1C105ZGMFNG	CERAMIC 1U Z 16V		C3410	CEXLB1H1R0VDN	ELECT 1U M 50V	
C006	CK1H392KGQBNZ	CERAMIC 3900P K 50V		C3411	CK1E104KGQBNZ	CERAMIC 0.1U K 25V	
C011	CEXLB1H100VDN	ELECT 10U M 50V		C3412	CEXLB1H1R0VDN	ELECT 1U M 50V	
C013	CEXLB1C101VDN	ELECT 100U M 16V		C3413	CEXLB1H1R0VDN	ELECT 1U M 50V	
C019	CK1H103KGQBNZ	CERAMIC 0.01U K 50V		C3414	CEXLB1H2R2VDN	ELECT 2.2 U M 50V	
C1001	CEXLB1H1R0VDN	ELECT 1U M 50V		C3415	CK1E104KGQBNZ	CERAMIC 0.1U K 25V	
C1002	CEXLB1H100VDN	ELECT 10U M 50V		C3416	CEXLB1C470VDN	ELECT 47U M 16V	
C1004	CEXLB1H100VDN	ELECT 10U M 50V		C3417	CK1H333KLZBNG	CERAMIC 0.033U K 50V	
C101	CEXLB1C471VDN	ELECT 470U M 16V		C3418	CEXLB1H100VDN	ELECT 10U M 50V	
C1023	CEXLB1C101VDN	ELECT 100U M 16V		C3419	CK1H333KLZBNG	CERAMIC 0.033U K 50V	
C1024	CEXLB1H100VDN	ELECT 10U M 50V		C3420	CEXLB1H100VDN	ELECT 10U M 50V	
C1025	CEXLB1H100VDN	ELECT 10U M 50V		C3421	CEXLB1H4R7VDN	ELECT 4.7 U M 50V	
C104	CEXLB1H330VDN	ELECT 33U M 50V		C3422	CEXLB1H4R7VEN	ELECT 4.7U M 50V	
C106	CEXLB1H220VDN	ELECT 22 U M 50V		C3423	CEXLB1H4R7VDN	ELECT 4.7 U M 50V	
C1101	CEXLB1H1R0VDN	ELECT 1U M 50V		C3424	CEXLB1H4R7VDN	ELECT 4.7 U M 50V	
C1102	CEXLB1H100VDN	ELECT 10U M 50V		C3436	CEXLB1H2R2VDN	ELECT 2.2 U M 50V	
C1103	CEXLB1H100VDN	ELECT 10U M 50V		C3439	CEXLB1H2R2VDN	ELECT 2.2 U M 50V	
C111	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W		C3442	CK1E104KGQBNZ	CERAMIC 0.1U K 25V	
C1111	CPXLB1C100YAN	NP-ELECT 10U M 16V		C3443	CEXLB1C470VDN	ELECT 47U M 16V	
C1111	CPXLB1C100ZAN	NP-ELECT 10U M 16V		C3445	CEXLB1H100VDN	ELECT 10U M 50V	
C1112	CPXLB1C100YAN	NP-ELECT 10U M 16V		C3446	CKXLB1H822YAG	CERAMIC 8200P K 50V	
C1112	CPXLB1C100ZAN	NP-ELECT 10U M 16V		C3446	CK1H822KGQBNG	CERAMIC 8200P K 50V	
C114	CK1H103KGQBNZ	CERAMIC 0.01U K 50V		C3446	CK1H822KLZBNG	CERAMIC 8200P K 50V	
C121	CK1H103KGQBNZ	CERAMIC 0.01U K 50V		C3447	CK1H683KGQBNG	CERAMIC 0.068U K 50V	
C122	CEXLB1C470VDN	ELECT 47U M 16V		C3448	CK1H683KGQBNG	CERAMIC 0.068U K 50V	
C138	CK1H223KGQBNZ	CERAMIC 0.022U K 50V		C3449	CK1H683KGQBNG	CERAMIC 0.068U K 50V	
C171	CK1H152KGQBNZ	CERAMIC 1500P K 50V		C3450	CK1H683KGQBNG	CERAMIC 0.068U K 50V	
C172	CK1H103KGQBNZ	CERAMIC 0.01U K 50V		C3451	CKXLB1H822YAG	CERAMIC 8200P K 50V	
C1902	CEXLB1H220VDN	ELECT 22 U M 50V		C3451	CK1H822KGQBNG	CERAMIC 8200P K 50V	
C1903	CEXLB1H100VDN	ELECT 10U M 50V		C3451	CK1H822KLZBNG	CERAMIC 8200P K 50V	
C202	CH1H153JAGANN	MT-COMPO 0.015U J 50V		C3452	CEXLB1H4R7VDN	ELECT 4.7 U M 50V	
C203	CK1H103KGQBNZ	CERAMIC 0.01U K 50V		C3453	CEXLB1H4R7VDN	ELECT 4.7 U M 50V	
C204	CEXLB1H100VDN	ELECT 10U M 50V		C356	CXCLB1H101ZBG	CERAMIC 100P J 50V	
C210	CEXLB1C470VDN	ELECT 47U M 16V		C425	CN2G273JBEAQN	POLYPRO 0.027U J 400V	
C212	CC1H150JGQCNCZ	CERAMIC 15P J 50V		C426	CN2G123JBEAQN	POLYPRO 0.012U J 400V	
C215	CPXLB1H1R0YAN	NP-ELECT 1U M 50V		C432	CKXLB2H102YEN	CERAMIC 1000P K 500V	
C215	CPXLB1H1R0ZAN	NP-ELECT 1U M 50V		C432	CKXLB2H102ZEN	CERAMIC 1000P K 500V	
C224	CK1E473KGQBNZ	CERAMIC 0.047U K 25V		C433	CKXLB2H102YEN	CERAMIC 1000P K 500V	
C225	CEXLB1HR47VDN	ELECT 0.47 U M 50V		C433	CKXLB2H102ZEN	CERAMIC 1000P K 500V	
C226	CEXLB1HR47VDN	ELECT 0.47 U M 50V		C434	CEXLB1H221VDN	ELECT 220U M 50V	

# Chassis Electrical Parts List

Location	Part No.	Description	Safety	Location	Part No.	Description	Safety
C435	CMXAA3Y962AKN	MT-POLYPRO 9600P H 1.5K		C624	CEXLB0J222VEN	ELECT 2200U M 6.3V	
C435	CM3Y962HANA0N	MT-POLYPRO 9600P H 1.5K		C625	CEXLB1C101VEN	ELECT 100U M 16V	
C436	CMXAA3Y982AKN	MT-POLYPRO 9800P H 1.5K		C627	CKXAA2G102ANN	CERAMIC 1000P M 400V	⚠
C436	CM3Y982HANA0N	MT-POLYPRO 9800P H 1.5K		C627	CKXLB2G102ZJN	CERAMIC 1000P M 400V	⚠
C441	CM2E304JATAQN	MT-POLYPRO 0.3U J 250V		C628	CKXAA2G102ANN	CERAMIC 1000P M 400V	⚠
C441	CM2E304JAUAPN	MT-POLYPRO 0.3U J 250V		C628	CKXLB2G102ZJN	CERAMIC 1000P M 400V	⚠
C463	CF1H472KADANN	POLYESTER 4700P K 50V		C629	CKXAA2G102ANN	CERAMIC 1000P M 400V	⚠
C465	CM2E753JATAQN	MT-POLYPRO 0.075U J 250V		C629	CKXLB2G102ZJN	CERAMIC 1000P M 400V	⚠
C465	CNXLB2G753ZAN	POLYPRO 0.075UJ 400V		C632	CEXLB1H331VEN	ELECT 330U M 50V	
C467	CGXLB1J105YAN	MT-POLYEST 1U J 63V		C646	CG2E104KAPANN	MT-POLYEST 0.1U K 250V	
C467	CH1H105JAGANN	MT-COMPO 1U J 50V		C661	CK3A471KCRDNN	CERAMIC 470P K 1K	
C468	CEXLB1H220VDN	ELECT 22 U M 50V		C662	CEXLB1E222VEN	ELECT 2200U M 25V	
C469	CEXLB1H100VDN	ELECT 10U M 50V		C801	CC1H180JGQCENZ	CERAMIC 18P J 50V	
C470	CGXLB1J103YAN	MT-POLYPRO 0.01U J 63V		C802	CC1H180JGQCENZ	CERAMIC 18P J 50V	
C470	CH1H103JAGANN	MT-COMPO 0.01U J 50V		C805	CEXLB1C101VEN	ELECT 100U M 16V	
C471	CPXAA2A2R2AAN	NP-ELECT 2.2U M 100V		C815	CK1H103KGQBNZ	CERAMIC 0.01U K 50V	
C471	CPXLB2A2R2YAN	NP-ELECT 2.2U M 100V		C842	CK1E104KGQBNZ	CERAMIC 0.1U K 25V	
C471	CPXLB2A2R2ZAN	NP-ELECT 2.2U M 100V		C843	CK1E104KGQBNZ	CERAMIC 0.1U K 25V	
C472	CGXLB2A225ZBN	MT-POLYEST 2.2 U K 100V		C863	CEXLB1H1R0VDN	ELECT 1U M 50V	
C472	CG2A225KAAANN	MT-POLYEST 2.2U K 100V		C893	CEXLB1H2R2VDN	ELECT 2.2 U M 50V	
C486	CEXLB2E220UCN	ELECT 22U M 250V		C894	CK1E333KGQBNZ	CERAMIC 0.033U K 25V	
C486	CE2E220M4VANN	ELECT 22U M 250V		D001	DDXAAED0434--	DIODE 1N4148	
C488	CG2E474JAPAAAN	MT-POLYEST 0.47U J 250V		D001	DDXLBB047---N	DIODE 1SS133ST	
C488	CG2E474JAXAQN	MT-POLYEST 0.47U J 250V		D001	DDXLBB054---N	DIODE 1N4448	
C501	CC1H101JGQCENZ	CERAMIC 100P J 50V		D001	DD1SS133----N	DIODE 1SS133	
C503	CEXLB1E102VDN	ELECT 1K U M 25V		D004	DDXLBB053---G	DIODE 1SS35	
C504	CEXLB1H100VDN	ELECT 10U M 50V		D004	DD1SS355----G	DIODE 1SS355-TE-17	
C505	CEXLB1H100VDN	ELECT 10U M 50V		D103	DZMTZJ36A---N	ZENER DIODE MTZJ36A	
C506	CEXLB1H221VEN	ELECT 220U M 50V		D103	DZRD36EB1---N	ZENER DIODE RD36EB1	
C507	CEXLB1H221VDN	ELECT 220U M 50V		D103	DZXLBXA36A--N	ZENER DIODE ZJ36AST	
C508	CK1H103KGQBNZ	CERAMIC 0.01U K 50V		D103	DZXLBZA36A--N	ZENER DIODE MTZJ36A	
C510	CH2A224JAHANN	MT-COMPO 0.22U J 100V		D108	DZUDZS12B---G	ZENER DIODE UDZS-TE-1712B	
C511	CGXLB1J224YAN	MT-POLYPRO 0.22U J 63V		D108	DZXLBB12B--G	ZENER DIODE MM3Z12B	
C511	CH1H224JAGANN	MT-COMPO 0.22U J 50V		D1111	DZUDZS12B---G	ZENER DIODE UDZS-TE-1712B	
C512	CGXLB1J224YAN	MT-POLYPRO 0.22U J 63V		D1111	DZXLBB12B--G	ZENER DIODE MM3Z12B	
C512	CH1H224JAGANN	MT-COMPO 0.22U J 50V		D1112	DZUDZS12B---G	ZENER DIODE UDZS-TE-1712B	
C601	CGXAA2E683BJN	MT-POLYEST 0.068U M 250V	⚠	D1112	DZXLBB12B--G	ZENER DIODE MM3Z12B	
C601	CGXAV27683ABC	MT-POLYEST 0.068U M 275V	⚠	D121	DZUDZS12B---G	ZENER DIODE UDZS-TE-1712B	
C601	CGXAV27683DBN	MT-POLYEST 0.068U M 275V	⚠	D121	DZXLBB12B--G	ZENER DIODE MM3Z12B	
C606	CK3A102KAHBNN	CERAMIC 1000P K 1K		D122	DZUDZS12B---G	ZENER DIODE UDZS-TE-1712B	
C606	CK3A102KCBBJN	CERAMIC 1000P K 1K		D122	DZXLBB12B--G	ZENER DIODE MM3Z12B	
C606	CK3A102KCRDNN	CERAMIC 1000P K 1K		D123	DZUDZS12B---G	ZENER DIODE UDZS-TE-1712B	
C608	CK3A102KAHBNN	CERAMIC 1000P K 1K		D123	DZXLBB12B--G	ZENER DIODE MM3Z12B	
C608	CK3A102KCBBJN	CERAMIC 1000P K 1K		D1901	DLSPR-39MVWFN	LED SPR-39MVWF	
C608	CK3A102KCRDNN	CERAMIC 1000P K 1K		D1901	DLXLBB028---N	LED BL-BEG2T1Q-AB	
C609	CEXAA2G271ABN	ELECT 270U M 400V		D352	DZMTZJ5.1A--N	ZENER DIODE MTZJ5.1A	
C609	CEXAA2G271ACN	ELECT 270U M 400V		D352	DZXLBXA5.1A-N	ZENER DIODE ZJ5.1AST	
C609	CEXLB2G271UBN	ELECT 270U M 400V		D421	DZMTZJ16A---N	ZENER DIODE MTZJ16A	
C611	CEXLB1H1R0VDN	ELECT 1U M 50V		D421	DZRD16EB1---N	ZENER DIODE RD16EB1	
C612	CF1H102JADANN	POLYESTER 1000P J 50V		D421	DZXLBXA16A--N	ZENER DIODE ZJ16AST	
C613	CH1H104JAGANN	MT-COMPO 0.1U J 50V		D421	DZXLBZA16A--N	ZENER DIODE MTZJ16A	
C614	CK3D102KCRDNN	CERAMIC 1000P K 2K		D438	DDXLBB036---N	DIODE ERD07-15	
C615	CF1H471JADANN	POLYESTER 470P J 50V		D439	DDXLBB033---N	DIODE ERB44-04	
C616	CEXLB1H220VDN	ELECT 22 U M 50V		D461	DDXAAED0434--	DIODE 1N4148	
C617	CK3D221KCRDNN	CERAMIC 220P K 2K		D461	DDXLBB047---N	DIODE 1SS133ST	
C618	CN2J103JBQAQN	POLYPRO 0.01U J 630V		D461	DD1SS133----N	DIODE 1SS133	
C619	CK3A471KCRDNN	CERAMIC 470P K 1K		D461	DD1S2076A---N	DIODE 1S2076A-E	
C620	CEXAA2C221AJN	ELECT 220U M 160V		D465	DDXAAED0434--	DIODE 1N4148	
C620	CEXLB2C221UAN	ELECT 220U M 160V		D465	DDXLBB047---N	DIODE 1SS133ST	
C622	CK3A471KCRDNN	CERAMIC 470P K 1K		D465	DD1SS133----N	DIODE 1SS133	
C623	CEXLB1E222VEN	ELECT 2200U M 25V		D465	DD1S2076A---N	DIODE 1S2076A-E	

# Chassis Electrical Parts List

Location	Part No.	Description	Safety	Location	Part No.	Description	Safety
D466	DZMTZJ20A---N	ZENER DIODE MTZJ20A		D624	DZXLBXA6.8B-N	ZENER DIODE ZJ6.8BST	
D466	DZXLBXA20A--N	ZENER DIODE ZJ20AST		D631	DDXLBB031---N	DIODE RN1Z	
D466	DZXLBZA20A--N	ZENER DIODE MTZJ20A		D667	DDXLBB053---G	DIODE 1SS35	
D467	DDXAAED0434--	DIODE 1N4148		D667	DD1SS355---G	DIODE 1SS355-TE-17	
D467	DDXLBB047---N	DIODE 1SS133ST		D681	DDXLBB058---N	DIODE GRU4YX	
D467	DD1SS133----N	DIODE 1SS133		D830	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
D467	DD1S2076A---N	DIODE 1S2076A-E		D831	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
D468	DDXAAED0434--	DIODE 1N4148		F601	F31S4R0A2HOTS	FUSE 250V 4A	⚠
D468	DDXLBB047---N	DIODE 1SS133ST		F601	F31S4R0A2LTTW	FUSE 250V 4A	⚠
D468	DD1SS133----N	DIODE 1SS133		IC001	QLA42205-E--N	IC LA42205-E	
D468	DD1S2076A---N	DIODE 1S2076A-E		IC201	QXXAVD011---N	IC LA76933DE59W4-E	
D469	DDEU1-----N	DIODE EU1		IC202	QBA178M05T--N	IC BA178M05T	
D469	DDXLBB017---N	DIODE EU1		IC202	QKIA7805API-N	IC KIA7805API	
D469	DDXLBB041---N	DIODE EU1		IC202	QL78M05CV---N	IC L78M05CV	
D476	DZRD9.1EB2--N	ZENER DIODE RD9.1EB2		IC202	QMC78M05CTG-N	IC MC78M05CTG	
D476	DZXLBXA9.1B-N	ZENER DIODE ZJ9.1BST		IC3401	QLA72703-E--N	IC LA72703-E	
D476	DZXLBZA9.1B-N	ZENER DIODE MTZJ9.1B		IC3402	QR2S15908SP-P	IC R2S15908SP	
D485	DDEU1-----N	DIODE EU1		IC501	QLA78141-E--N	IC LA78141-E	
D485	DDXLBB017---N	DIODE EU1		IC601	QXXAVC570---N	IC STR-W6754(LF2003)	
D489	DZMTZJ7.5A--N	ZENER DIODE MTZJ7.5A		IC631	QKIA78R09PI-N	IC KIA78R09PI	
D489	DZXLBXA7.5A-N	ZENER DIODE ZJ7.5AST		IC631	QPQ09RD11---N	IC PQ09RD11	
D489	DZXLBZA7.5A-N	ZENER DIODE MTZJ7.5A		IC631	QPQ09RF11---N	IC PQ09RF11J00H	
D501	DDERA15-02--N	DIODE ERA15-02		IC662	QTL431ATA---N	IC TL431ATA	
D605	DDERC05-10B-N	DIODE ERC05-10B		IC681	QBA178M05T--N	IC BA178M05T	
D605	DDRM11C-----N	DIODE RM11C		IC681	QKIA7805API-N	IC KIA7805API	
D605	DDXLBB016---N	DIODE ERC05-10B		IC681	QL78M05CV---N	IC L78M05CV	
D606	DDERC05-10B-N	DIODE ERC05-10B		IC681	QMC78M05CTG-N	IC MC78M05CTG	
D606	DDRM11C-----N	DIODE RM11C		IC802	Q24LC16B/P--N	IC 24LC16B/P	
D606	DDXLBB016---N	DIODE ERC05-10B		JF51	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
D607	DDERC05-10B-N	DIODE ERC05-10B		JF53	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
D607	DDRM11C-----N	DIODE RM11C		JG56	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
D607	DDXLBB016---N	DIODE ERC05-10B		JP804	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
D608	DDERC05-10B-N	DIODE ERC05-10B		K1002	1LB4J12B02900	JACK,RCA-3	
D608	DDRM11C-----N	DIODE RM11C		K1002	1LB4J12B12400	JACK,RCA-3	
D608	DDXLBB016---N	DIODE ERC05-10B		K1003	1AV4J12B05400	JACK,PHONE D3.6	
D609	DZMTZJ6.2B--N	ZENER DIODE MTZJ6.2B		K1003	1LB4J12B00200	JACK,PHONE D3.5	
D609	DZXLBXA6.2B-N	ZENER DIODE ZJ6.2BST		K1003	1LB4J12B05000	JACK,PHONE D3.6	
D610	DCPC123X5YFZN	PHOTO COUPLE PC123X5YFZ0F⚠		K1004	1LB4J12B08400	JACK,RCA-6	
D610	DCPC123Y52--N	PHOTO COUPLE PC123Y52J00F⚠		K1004	1LB4J12B08401	JACK,RCA-6	
D610	DCTLP421F-BLN	PC TLP421F(D4-BL)	⚠	L431	1AV4Z21B0330N	CORE,PIPE	
D611	DDXLBB047---N	DIODE 1SS133ST		L431	1LB4Z21B0160N	CORE,PIPE	
D611	DDXLBB054---N	DIODE 1N4448		L432	1AV4Z21B0330N	CORE,PIPE	
D611	DD1S2076A---N	DIODE 1S2076A-E		L432	1LB4Z21B0160N	CORE,PIPE	
D612	DZMTZJ16A---N	ZENER DIODE MTZJ16A		L441	1LB4L71B0141N	COIL,LINEARITY	
D613	DDXLBB047---N	DIODE 1SS133ST		L461	1LB4L26B0030N	INDUCTOR,2.0MH	
D613	DDXLBB054---N	DIODE 1N4448		L462	1LB4L26B0100N	INDUCTOR,438UH	
D613	DD1S2076A---N	DIODE 1S2076A-E		L463	1LB4L26B1140N	INDUCTOR,265UH	
D614	DDXLBB047---N	DIODE 1SS133ST		L601	1AV4F35B1100N	LINE FILTER	⚠
D614	DDXLBB054---N	DIODE 1N4448		L601	1LB4F35B0200N	LINE FILTER	⚠
D614	DD1S2076A---N	DIODE 1S2076A-E		L611	ZZ0122	PIPE CORE	
D615	DDES1Z-----N	DIODE ES1Z		L611	1LB4Z21B0150N	CORE,PIPE	
D615	DDXLBB041---N	DIODE EU1		PS601	DHXAAEV0070--	TH PTDCA1BF4R5Q200	⚠
D616	DDEG01C-----N	DIODE EG01C		PS601	02	NEW PART	⚠
D616	DDXLBB035---N	DIODE EG01C		Q002	TXXLBB005---P	TR MMBTSA1235F	
D619	DDXLBB053---G	DIODE 1SS35		Q002	7T210221	TR 2SA1037K(P)-6	
D619	DD1SS355---G	DIODE 1SS355-TE-17		Q1003	TXXLBB005---P	TR MMBTSA1235F	
D621	DDRU3YX-----N	DIODE RU3YX		Q1003	7T210221	TR 2SA1037K(P)-6	
D621	DDXLBB038---N	DIODE RU3YX		Q1004	TXXLBB005---P	TR MMBTSA1235F	
D622	DDRU3AM-----N	DIODE RU3AM		Q1004	7T210221	TR 2SA1037K(P)-6	
D622	DDXLBB044---N	DIODE RU3AM		Q1005	TXXLBB005---P	TR MMBTSA1235F	
D624	DZMTZJ6.8B--N	ZENER DIODE MTZJ6.8B		Q1005	7T210221	TR 2SA1037K(P)-6	

# Chassis Electrical Parts List

Location	Part No.	Description	Safety	Location	Part No.	Description	Safety
Q1902	TXXLBB001---N	TR CJA1015-Y		R1901	RGF2201JTCANZ	MT-GLAZE 2.2K JA 1/10W	
Q1902	7T200182	TR 2SA933S	⚠	R1902	RGF2701JTCANZ	MT-GLAZE 2.7K JA 1/10W	
Q1903	TXXLBB006---P	TR MMBTSC3928R	⚠	R1903	RGF4701JTCANZ	MT-GLAZE 4.7K JA 1/10W	
Q1903	7T200220	TR 2SC2412K(P)-6		R1904	RGF6801JTCANZ	MT-GLAZE 6.8K JA 1/10W	
Q1904	TXXLBB006---P	TR MMBTSC3928R		R1905	RGF1802JTCANZ	MT-GLAZE 18K JA 1/10W	
Q1904	7T200220	TR 2SC2412K(P)-6		R1910	RGF1000JTCANZ	MT-GLAZE 100 JA 1/10W	
Q3401	TXXLBB006---P	TR MMBTSC3928R		R1911	RGF2200JTCANZ	MT-GLAZE 220 JA 1/10W	
Q3401	7T200220	TR 2SC2412K(P)-6		R1912	RGF2200JTCANZ	MT-GLAZE 220 JA 1/10W	
Q431	T2SC3332-R--N	TR 2SC3332-R		R1913	RGF2200JTCANZ	MT-GLAZE 220 JA 1/10W	
Q431	T2SC3332-S--N	TR 2SC3332-S		R1921	RDD2202JPAANN	CARBON 22K JA 1/6W	
Q432	TXXGA0181753M	TR TT2190LS-YB11		R1922	RGF5600JTCANZ	MT-GLAZE 560 JA 1/10W	
Q461	T2SB1274-RRAN	TR 2SB1274-R-RA		R1924	RDD2202JPAANN	CARBON 22K JA 1/6W	
Q462	TXXLBB002---N	TR CJC1815-GR		R210	RGF3001JTCANZ	MT-GLAZE 3K JA 1/10W	
Q462	T2SC1815-GR-N	TR 2SC1815-GR		R211	RDB1200JPBANN	CARBON 120 JA 1/4W	
Q491	TXXLBB005---P	TR MMBTSA1235F		R213	RDD1500JPAANN	CARBON 150 JA 1/6W	
Q491	7T210221	TR 2SA1037K(P)-6		R219	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
Q622	TXXLBB002---N	TR CJC1815-GR		R225	RGF1202JTCANZ	MT-GLAZE 12K JA 1/10W	
Q622	T2SC1815-GR-N	TR 2SC1815-GR		R226	RGF2702JTCANZ	MT-GLAZE 27K JA 1/10W	
Q631	TXXLBB004---N	TR CJB985-S		R227	RGF3302JTCANZ	MT-GLAZE 33K JA 1/10W	
Q631	T2SB985-S---N	TR 2SB985-S		R228	RDD1803JPAANN	CARBON 180K JA 1/6W	
Q632	TXXLBB002---N	TR CJC1815-GR		R229	RGF6803JTCANZ	MT-GLAZE 680K JA 1/10W	
Q632	T2SC1815-GR-N	TR 2SC1815-GR		R230	RDD47R0JPAANN	CARBON 47 JA 1/6W	
R001	RGF8201JTCANZ	MT-GLAZE 8.2K JA 1/10W		R234	RGF1200JTCANZ	MT-GLAZE 120 JA 1/10W	
R002	RGF8201JTCANZ	MT-GLAZE 8.2K JA 1/10W	⚠	R235	RGF1200JTCANZ	MT-GLAZE 120 JA 1/10W	
R003	RGF3301JTCANZ	MT-GLAZE 3.3K JA 1/10W	⚠	R236	RGF1200JTCANZ	MT-GLAZE 120 JA 1/10W	
R004	RGF3301JTCANZ	MT-GLAZE 3.3K JA 1/10W		R240	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
R005	RDD2202JPAANN	CARBON 22K JA 1/6W		R241	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
R007	RGF1002JTCANZ	MT-GLAZE 10K JA 1/10W		R242	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
R008	RGF8201JTCANZ	MT-GLAZE 8.2K JA 1/10W		R244	RGF4702JTCANZ	MT-GLAZE 47K JA 1/10W	
R014	RGF1001JTCANZ	MT-GLAZE 1K JA 1/10W		R245	RGF4702JTCANZ	MT-GLAZE 47K JA 1/10W	
R015	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W		R280	RDD1000JPAANN	CARBON 100 JA 1/6W	
R1012	RGF5600JTCANZ	MT-GLAZE 560 JA 1/10W		R285	RGF4701FTCANZ	MT-GLAZE 4.7K FA 1/10W	
R103	RSXAV1393JDAK	OXIDE-MT 39KJB 1W		R286	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
R106	RGF1000JTCANZ	MT-GLAZE 100 JA 1/10W		R290	RSXLB26R8JXAS	OXIDE-MT 6.8 JA 2W	
R1061	RGF2700JTCANZ	MT-GLAZE 270 JA 1/10W		R290	RSXLB26R8JYAS	OXIDE-MT 6.8JA 2W	
R107	RGF1000JTCANZ	MT-GLAZE 100 JA 1/10W		R290	RS26R80JGDAGN	OXIDE-MT 6.8 JA 2W	
R108	RDD1802JPAANN	CARBON 18K JA 1/6W	⚠	R3433	RGF3901JTCANZ	MT-GLAZE 3.9K JA 1/10W	
R109	RGF6802JTCANZ	MT-GLAZE 68K JA 1/10W	⚠	R3434	RGF1001JTCANZ	MT-GLAZE 1K JA 1/10W	
R1101	RGF1500JTCANZ	MT-GLAZE 150 JA 1/10W	⚠	R3435	RGF1002JTCANZ	MT-GLAZE 10K JA 1/10W	
R1101A	RGF1500JTCANZ	MT-GLAZE 150 JA 1/10W	⚠	R3436	RDD47R0JPAANN	CARBON 47 JA 1/6W	
R1103	RGF1003JTCANZ	MT-GLAZE 100K JA 1/10W	⚠	R3437	RDD47R0JPAANN	CARBON 47 JA 1/6W	
R1105	RGF1003JTCANZ	MT-GLAZE 100K JA 1/10W		R3438	RGF4701JTCANZ	MT-GLAZE 4.7K JA 1/10W	
R1112	RDB3900JPBANN	CARBON 390 JA 1/4W		R3439	RGF1001JTCANZ	MT-GLAZE 1K JA 1/10W	
R1114	RDB3900JPBANN	CARBON 390 JA 1/4W		R3445	RGF1001JTCANZ	MT-GLAZE 1K JA 1/10W	
R113	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W		R3451	RDD47R0JPAANN	CARBON 47 JA 1/6W	
R1301	RGF6800JTCANZ	MT-GLAZE 680 JA 1/10W		R3452	RDD47R0JPAANN	CARBON 47 JA 1/6W	
R1302	RGF1003JTCANZ	MT-GLAZE 100K JA 1/10W		R3453	RGF8201JTCANZ	MT-GLAZE 8.2K JA 1/10W	
R1303	RGF1001JTCANZ	MT-GLAZE 1K JA 1/10W		R3454	RGF8201JTCANZ	MT-GLAZE 8.2K JA 1/10W	
R1306	RGF6800JTCANZ	MT-GLAZE 680 JA 1/10W		R3455	RDD3300JPAANN	CARBON 330 JA 1/6W	
R1307	RGF1003JTCANZ	MT-GLAZE 100K JA 1/10W		R3457	RDD3300JPAANN	CARBON 330 JA 1/6W	
R1308	RGF1003JTCANZ	MT-GLAZE 100K JA 1/10W		R3461	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
R1309	RGF1500JTCANZ	MT-GLAZE 150 JA 1/10W		R351	RGF1802JTCANZ	MT-GLAZE 18K JA 1/10W	
R1309A	RGF1500JTCANZ	MT-GLAZE 150 JA 1/10W		R352	RDB1002JPBANN	CARBON 10K JA 1/4W	
R1310	RGF1003JTCANZ	MT-GLAZE 100K JA 1/10W		R355	RDB1002JPBANN	CARBON 10K JA 1/4W	
R1311	RGF1001JTCANZ	MT-GLAZE 1K JA 1/10W		R357	RDD1201JPAANN	CARBON 1.2K JA 1/6W	
R1314	RDD75R0JPAANN	CARBON 75 JA 1/6W		R421	RND3901FPAANN	MT-FILM 3.9K FA 1/6W	
R132	RGF4700JTCANZ	MT-GLAZE 470 JA 1/10W		R422	RDB3902JPBANN	CARBON 39K JA 1/4W	
R140	RGF4700JTCANZ	MT-GLAZE 470 JA 1/10W		R423	RDB5602JPBANN	CARBON 56K JA 1/4W	
R141	RGF5600JTCANZ	MT-GLAZE 560 JA 1/10W		R424	RDD1001JPAANN	CARBON 1K JA 1/6W	
R176	RGF3901JTCANZ	MT-GLAZE 3.9K JA 1/10W		R426	RGF1002JTCANZ	MT-GLAZE 10K JA 1/10W	
R1900	RDD2700JPAANN	CARBON 270 JA 1/6W		R433	RD41001JPCANN	CARBON 1K JA 1/2W	



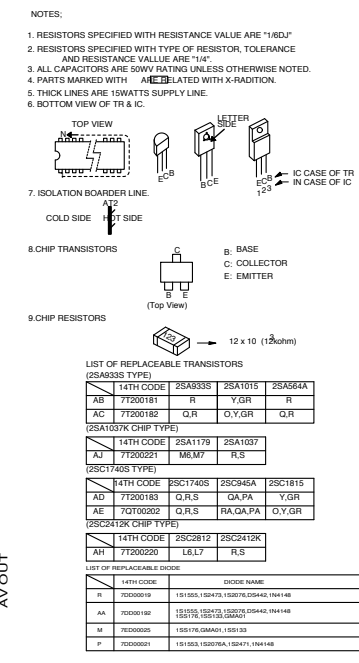
# Chassis Electrical Parts List

Location	Part No.	Description	Safety	Location	Part No.	Description	Safety
R434	RSXLB2271JXAS	OXIDE-MT 270JA 2W		R619	RDB1802JPBANN	CARBON 18K JA 1/4W	
R434	RSXLB2271JYAS	OXIDE-MT 270JA 2W		R620	RDB1001JPBANN	CARBON 1K JA 1/4W	
R434	RS22700JGDAGN	OXIDE-MT 270 JA 2W		R621	RDD10R0JPAANN	CARBON 10 JA 1/6W	
R437	RGF1001JTCANZ	MT-GLAZE 1K JA 1/10W		R628	RCXAAA5604KGN	SOLID 5.6M KA 1/2W	⚠
R441	RSXLB2102JXAS	OXIDE-MT 1KJA 2W		R628	RDXLBA565KWAB	SOLID 5.6M KA 1/2W	⚠
R441	RSXLB2102JYAS	OXIDE-MT 1KJA 2W		R629	RCXAAA5604KGN	SOLID 5.6M KA 1/2W	⚠
R441	RS21001JGDAGN	OXIDE-MT 1K JA 2W		R629	RDXLBA565KWAB	SOLID 5.6M KA 1/2W	⚠
R462	RDD2202JPAANN	CARBON 22K JA 1/6W		R631	RDD1002JPAANN	CARBON 10K JA 1/6W	
R470	RGF1203JTCANZ	MT-GLAZE 120K JA 1/10W		R632	RDA3901JPCANN	CARBON 3.9K JA 1/2W	
R471	RND1501FPAANN	MT-FILM 1.5K FA 1/6W		R633	RGF5603JTCANZ	MT-GLAZE 560K JA 1/10W	
R473	RGF6800JTCANZ	MT-GLAZE 680 JA 1/10W		R634	RGF2202JTCANZ	MT-GLAZE 22K JA 1/10W	
R474	RDA1001JPCANN	CARBON 1K JA 1/2W		R635	RSXLB2R47JXAS	OXIDE-MT 0.47JA 2W	
R475	RDA3300JPCANN	CARBON 330 JA 1/2W		R635	RSXLB2R47JYAS	OXIDE-MT 0.47JA 2W	
R479	RDD3901JPAANN	CARBON 3.9K JA 1/6W		R635	RS2R470JGDAGN	OXIDE-MT 0.47 JA 2W	
R481	RSXLB21R8JXAS	OXIDE-MT 1.8JA 2W		R636	RDD1003JPAANN	CARBON 100K JA 1/6W	
R481	RSXLB21R8JYAS	OXIDE-MT 1.8JA 2W		R637	RDD1002JPAANN	CARBON 10K JA 1/6W	
R481	RS21R80JGDAGN	OXIDE-MT 1.8 JA 2W		R638	RSXLB23R9JXAS	OXIDE-MT 3.9JA 2W	
R483	RGF6803JTCANZ	MT-GLAZE 680K JA 1/10W		R638	RSXLB23R9JYAS	OXIDE-MT 3.9JA 2W	
R491	RGF1202JTCANZ	MT-GLAZE 12K JA 1/10W		R638	RS23R90JGDAGN	OXIDE-MT 3.9 JA 2W	
R492	RGF1202JTCANZ	MT-GLAZE 12K JA 1/10W		R639	RSXLB21R0JXAS	OXIDE-MT 1.0 JA 2W	
R493	RGF4700JTCANZ	MT-GLAZE 470 JA 1/10W		R639	RSXLB21R0JYAS	OXIDE-MT 1JA 2W	
R494	RGF4700JTCANZ	MT-GLAZE 470 JA 1/10W		R639	RS21R00JGDAGN	OXIDE-MT 1 JA 2W	
R495	RGF1000JTCANZ	MT-GLAZE 100 JA 1/10W		R640	RDD4701JPAANN	CARBON 4.7K JA 1/6W	
R502	RDD2202JPAANN	CARBON 22K JA 1/6W		R641	1AV4S30FA1R5N	PROTECTOR,1.5A 125V	
R503	RDD4701JPAANN	CARBON 4.7K JA 1/6W		R645	RND1203FPAANN	MT-FILM 120K FA 1/6W	
R504	RDD2700JPAANN	CARBON 270 JA 1/6W		R646	RND8202FPAANN	MT-FILM 82K FA 1/6W	
R505	RSXAV11R0JDAK	OXIDE-MT 1.0JB 1W		R647	RND4701FPAANN	MT-FILM 4.7K FA 1/6W	
R506	RSXLB21R0JXAS	OXIDE-MT 1.0 JA 2W		R648	RDD1002JPAANN	CARBON 10K JA 1/6W	
R506	RSXLB21R0JYAS	OXIDE-MT 1JA 2W		R661	RDA1003JPCANN	CARBON 100K JA 1/2W	
R506	RS21R00JGDAGN	OXIDE-MT 1 JA 2W		R698	RDB1001JPBANN	CARBON 1K JA 1/4W	
R507	RGF5602JTCANZ	MT-GLAZE 56K JA 1/10W		R801	RGF2703JTCANZ	MT-GLAZE 270K JA 1/10W	
R508	RDD2201JPAANN	CARBON 2.2K JA 1/6W		R803	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
R509	RDB4700JPBANN	CARBON 470 JA 1/4W		R804	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W	
R510	RDD2701JPAANN	CARBON 2.7K JA 1/6W		R813	RGF1002JTCANZ	MT-GLAZE 10K JA 1/10W	
R512	RDD3901JPAANN	CARBON 3.9K JA 1/6W		R818	RDD1000JPAANN	CARBON 100 JA 1/6W	
R513	RSXAV11R0JDAK	OXIDE-MT 1.0JB 1W		R820	RDD1000JPAANN	CARBON 100 JA 1/6W	
R514	RSXLB2151JXAS	OXIDE-MT 150JA 2W		R821	RDD1000JPAANN	CARBON 100 JA 1/6W	
R514	RSXLB2151JYAS	OXIDE-MT 150JA 2W		R822	RDD1002JPAANN	CARBON 10K JA 1/6W	
R514	RS21500JGDAGN	OXIDE-MT 150 JA 2W		R830	RDD1001JPAANN	CARBON 1K JA 1/6W	
R515	RSXLB2151JXAS	OXIDE-MT 150JA 2W		R834	RGF1002JTCANZ	MT-GLAZE 10K JA 1/10W	
R515	RSXLB2151JYAS	OXIDE-MT 150JA 2W		R837	RGF1002JTCANZ	MT-GLAZE 10K JA 1/10W	
R515	RS21500JGDAGN	OXIDE-MT 150 JA 2W		R838	RGF1002JTCANZ	MT-GLAZE 10K JA 1/10W	
R516	RSXLB2561JXAS	OXIDE-MT 560 JA 2W		R839	RDD1000JPAANN	CARBON 100 JA 1/6W	
R516	RSXLB2561JYAS	OXIDE-MT 560JA 2W		R840	RDD1000JPAANN	CARBON 100 JA 1/6W	
R516	RS25600JGDAGN	OXIDE-MT 560 JA 2W		R841	RGF4701JTCANZ	MT-GLAZE 4.7K JA 1/10W	
R601	RDA2203JPCANN	CARBON 220K JA 1/2W		R842	RGF4701JTCANZ	MT-GLAZE 4.7K JA 1/10W	
R609	RSXLB2104JXAS	OXIDE-MT 100KJA 2W		R844	RDD1000JPAANN	CARBON 100 JA 1/6W	
R609	RSXLB2104JYAS	OXIDE-MT 100KJA 2W		R859	RGF1002JTCANZ	MT-GLAZE 10K JA 1/10W	
R609	RS21003JGDAGN	OXIDE-MT 100K JA 2W		R863	RGF4702JTCANZ	MT-GLAZE 47K JA 1/10W	
R610	RSXLB2104JXAS	OXIDE-MT 100KJA 2W		R864	RGF1002JTCANZ	MT-GLAZE 10K JA 1/10W	
R610	RSXLB2104JYAS	OXIDE-MT 100KJA 2W		R893	RGF1004JTCANZ	MT-GLAZE 1M JA 1/10W	
R610	RS21003JGDAGN	OXIDE-MT 100K JA 2W		R894	RGF1000JTCANZ	MT-GLAZE 100 JA 1/10W	
R612	RDD1001JPAANN	CARBON 1K JA 1/6W		SW1901	1AV4S10B0450J	SWITCH,PUSH 1P-1TX1	
R613	RFXLB101JZAN	FUSIBLE RES 100 J 1/4W		SW1901	1AV4S10B2790J	SWITCH,PUSH 1P-1TX1	
R616	RSXLB2R56JXAS	OXIDE-MT 0.56JA 2W		SW1901	1LB4S10B0200J	SWITCH,PUSH 1P-1TX1	
R616	RSXLB2R56JYAS	OXIDE-MT 0.56JA 2W		SW1902	1AV4S10B0450J	SWITCH,PUSH 1P-1TX1	
R616	RS2R560JGDAGN	OXIDE-MT 0.56 JA 2W		SW1902	1AV4S10B2790J	SWITCH,PUSH 1P-1TX1	
R617	RSXLB2R47JXAS	OXIDE-MT 0.47JA 2W		SW1902	1LB4S10B0200J	SWITCH,PUSH 1P-1TX1	
R617	RSXLB2R47JYAS	OXIDE-MT 0.47JA 2W		SW1903	1AV4S10B0450J	SWITCH,PUSH 1P-1TX1	
R617	RS2R470JGDAGN	OXIDE-MT 0.47 JA 2W		SW1903	1AV4S10B2790J	SWITCH,PUSH 1P-1TX1	
R618	RDB2200JPBANN	CARBON 220 JA 1/4W		SW1903	1LB4S10B0200J	SWITCH,PUSH 1P-1TX1	

# Chassis Electrical Parts List

Location	Part No.	Description	Safety	Location	Part No.	Description	Safety
SW1904	1AV4S10B0450J	SWITCH,PUSH 1P-1TX1		Q721A	T2SC2621-ERAN	TR 2SC2621-E-RA	
SW1904	1AV4S10B2790J	SWITCH,PUSH 1P-1TX1		Q721A	T2SC2688(1)KN	TR 2SC2688(1)-K	
SW1904	1LB4S10B0200J	SWITCH,PUSH 1P-1TX1		Q721A	T2SC2688(1)LN	TR 2SC2688(1)-L	
SW1905	1AV4S10B0450J	SWITCH,PUSH 1P-1TX1		Q721A	T2SC2688(1)MN	TR 2SC2688(1)-M	
SW1905	1AV4S10B2790J	SWITCH,PUSH 1P-1TX1		Q741	TXXLBB005---P	TR MMBTSA1235F	
SW1905	1LB4S10B0200J	SWITCH,PUSH 1P-1TX1		Q741	7T210221	TR 2SA1037K(P)-6	
SW601	1AV4S10B5560N	SWITCH,PUSH POWER 2P-2T	⚠	Q742	TXXLBB005---P	TR MMBTSA1235F	
SW601	1AV4S10B5750N	SWITCH,PUSH POWER 2P-2T	⚠	Q742	7T210221	TR 2SA1037K(P)-6	
SW601	1LB4S10B0090N	SWITCH,PUSH POWER 2P-2T	⚠	R701	RGF2200JTCANZ	MT-GLAZE 220 JA 1/10W	
SW601	1LB4S10B01600	SWITCH,PUSH POWER 2P-2T	⚠	R703	RDD2200JPAANN	CARBON 220 JA 1/6W	
T431	1LB4L18B0160N	TRANS,PULSE	⚠	R704	RSXLB2123JXAS	OXIDE-MT 12KJA 2 W	
T471	1LB4L40B10600	TRANS,FLYBACK	⚠	R704	RSXLB2123JYASOXIDE-MT	12KJA 2W	
T471	1LB4L40B10800	TRANS,FLYBACK	⚠	R704	RS21202JGDAGN	OXIDE-MT 12K JA 2W	
T611	1LB4L51B1460N	TRANS,POWER,PULSE	⚠	R711	RGF2200JTCANZ	MT-GLAZE 220 JA 1/10W	
VA601	DVENE621D14AN	VARISTOR ENE621D-14A	⚠	R713	RDD2200JPAANN	CARBON 220 JA 1/6W	
VA601	DVMYG314K385N	VARISTOR	⚠	R714	RSXLB2123JXAS	OXIDE-MT 12KJA 2 W	
VA601	DVS14K385E2-N	VARISTOR	⚠	R714	RSXLB2123JYASOXIDE-MT	12KJA 2W	
X161	WFSTSF5235PL-	SAW F TSF5235PL		R714	RS21202JGDAGN	OXIDE-MT 12K JA 2W	
X211	1AV4V10B2930J	OSC,CRYSTAL 4.433619MHZ		R715	RDA2701JPCANN	CARBON 2.7K JA 1/2W	
X211	1LB4V10B0040N	OSC,CRYSTAL 4.433619MHZ		R716	RDA2701JPCANN	CARBON 2.7K JA 1/2W	
X211	1LB4V10B0180N	OSC,CRYSTAL 4.433619MHZ		R717	RDA2701JPCANN	CARBON 2.7K JA 1/2W	
X3401	1AV4F31B0540N	CERAMIC FILTER 4.5MHZ		R721	RGF2200JTCANZ	MT-GLAZE 220 JA 1/10W	
X801	1AV4V10B0560N	OSC,CRYSTAL 32.768KHZ		R723	RDD2200JPAANN	CARBON 220 JA 1/6W	
X801	1LB4V10B0190N	OSC,CRYSTAL 32.768KHZ		R724	RSXLB2123JXAS	OXIDE-MT 12KJA 2 W	
A701	1LG0B10Y0260B	ASSY,PWB,CRT BE2E		R724	RSXLB2123JYASOXIDE-MT	12KJA 2W	
C701	CK1H681KGQBNZ	CERAMIC 680P K 50V		R724	RS21202JGDAGN	OXIDE-MT 12K JA 2W	
C711	CK1H681KGQBNZ	CERAMIC 680P K 50V		R732	RDD10R0JPAANN	CARBON 10 JA 1/6W	
C721	CK1H681KGQBNZ	CERAMIC 680P K 50V		R741	RDB4700JPBANN	CARBON 470 JA 1/4W	
C731	CK3D102ZAHENN	CERAMIC 1000P Z 2K		R742	RGF1501JTCANZ	MT-GLAZE 1.5K JA 1/10W	
C741	CEXLB1C100VEN	ELECT 10U M 16V		R744	RGF1500JTCANZ	MT-GLAZE 150 JA 1/10W	
C742	CEXLB1C221VEN	ELECT 220U M 16V		R745	RGF2201JTCANZ	MT-GLAZE 2.2K JA 1/10W	
D741	DDXLBB047---N	DIODE 1SS133ST					
D741	DDXLBB054---N	DIODE 1N4448					
D741	DD1SS133---N	DIODE 1SS133					
D742	DDXLBB047---N	DIODE 1SS133ST					
D742	DDXLBB054---N	DIODE 1N4448					
D742	DD1SS133---N	DIODE 1SS133					
D743	DD1SS355---G	DIODE 1SS355-TE-17					
D744	DD1SS355---G	DIODE 1SS355-TE-17					
J702	RGFR000ZTCANZ	MT-GLAZE 0.000 ZA 1/10W					
K701	1LB4J11B0070N	SOCKET,CRT 8P	⚠				
K701	1LB4J11B0170N	SOCKET,CRT 12P	⚠				
K701	1LB4J11B0350N	SOCKET,CRT 8P	⚠				
L701	1AV4L2C1331KN	INDUCTOR,330U K					
L702A	1LB4Z21B0090N	CORE,PIPE					
L711	1AV4L2C1331KN	INDUCTOR,330U K					
L721	1AV4L2C1331KN	INDUCTOR,330U K					
Q701A	TXXAAQT0229Z-	TR 2SC3620(LB-SAN-1)					
Q701A	T2SC2621-DRAN	TR 2SC2621-D-RA					
Q701A	T2SC2621-ERAN	TR 2SC2621-E-RA					
Q701A	T2SC2688(1)KN	TR 2SC2688(1)-K					
Q701A	T2SC2688(1)LN	TR 2SC2688(1)-L					
Q701A	T2SC2688(1)MN	TR 2SC2688(1)-M					
Q711A	TXXAAQT0229Z-	TR 2SC3620(LB-SAN-1)					
Q711A	T2SC2621-DRANTR	2SC2621-D-RA					
Q711A	T2SC2621-ERANTR	2SC2621-E-RA					
Q711A	T2SC2688(1)KN	TR 2SC2688(1)-K					
Q711A	T2SC2688(1)LN	TR 2SC2688(1)-L					
Q711A	T2SC2688(1)MN	TR 2SC2688(1)-M					
Q721A	TXXAAQT0229Z-	TR 2SC3620(LB-SAN-1)					
Q721A	T2SC2621-DRANTR	2SC2621-D-RA					

















**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  $\Delta$  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.

### 11. Expression of capacitance and resistance in circuit diagrme.




### TRANSISTOR, DIODE AND INTEGRATED CIRCUIT TERMINAL GUIDE

<p><b>C: COLLECTOR</b></p> <p><b>B: BASE</b></p> <p><b>E: EMITTER</b></p>	<p><b>A: ANODE</b></p> <p><b>K: KATHODE</b></p>	<p><b>CHIP COMPONENTS</b></p> <p><b>TRANSISTOR</b></p>  <p><b>DIODE</b></p>  <p><b>RESISTOR</b></p> 
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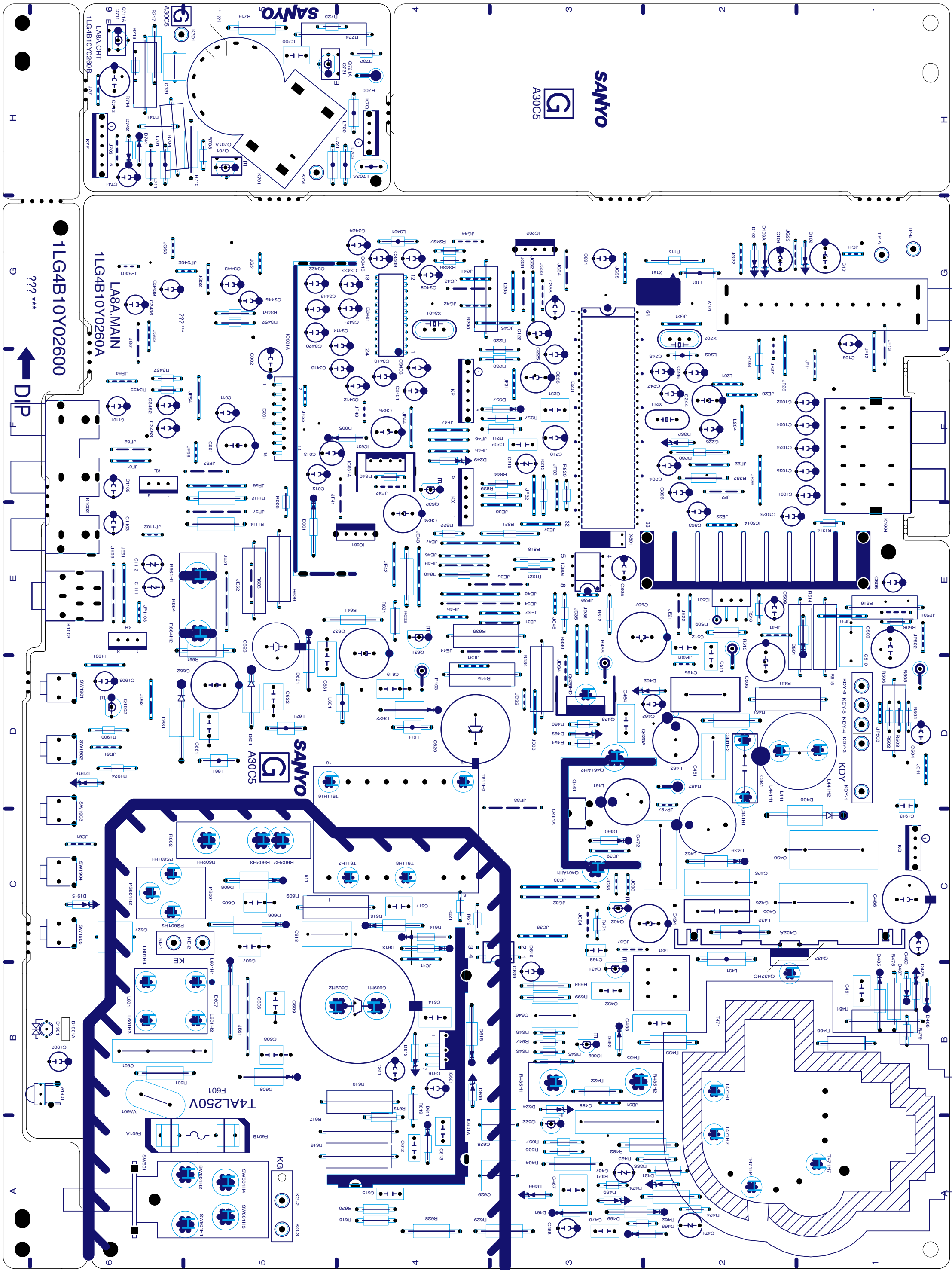
  

  	  	  
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<p><b>TRANSISTOR PARTS SYMBOL</b></p>  <p>FUSIBLE RESISTOR</p>  <p>NON POLE ELECTRIC CAPACITOR</p>  <p>POSISTOR</p>
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Component Location



Waveforms & Voltages

(On the Main Board)

IC001 (AUDIO AMP.)											
Pin-1	0V	2	11V	3	0.75V	4	0V	5	0.75V	6	2.84V
10	5.6V	11	0V	12	5.6V	13	5.6V	14	5.6V	15	0V
7	4.01V	8	0V	9	0V						

IC201 (IF/VIDEO/CHROMA/CPU)											
Pin-1	2.0V	2	2.4V	3	3.1V	4	2.2V	5	2.3V	6	2.3V
12	2.6V	13	2.5V	14	0V	15	2.4V	16	0V	17	2.3V
18	1.7V	19	5.1V	20	2.7V	21	0.7V	22	0V	23	0V
24	0V	25	5.0V	26	4.7V	27	4.6V	28	4.5V	29	5.0V
30	0V	31	5V	32	5.0V	33	1.5V	34	2.5V	35	5.0V
36	4.8V	37	0V	38	5.0V	39	0V	40	3.9V	41	3.2V
42	0V	43	4.5V	44	1.1V	45	2.5V	46	2.5V	47	0V
48	2.9V	49	2.5V	50	2.9V	51	2.5V	52	2.5V	53	3.5V
54	2.6V	55	5.0V	56	2.7V	57	2.5V	58	2.4V	59	2.6V
60	2.2V	61	4.0V	62	0V	63	2.9V	64	2.9V		

IC631 (REG.)					IC681 (REG.)		
Pin-1	12.0V	2	9.0V	3	0V	4	4.8V
Pin-1	13.7V	2	GND	3	5.0V		

IC3401											
Pin-1	2.4V	2	2.4V	3	2.5V	4	2.9V	5	2.4V	6	0V
10	3.7V	11	2.4V	12	2.8V	13	2.4V	14	2.3V	15	2.4V
19	5.0V	20	1.8V	21	2.4V	22	1.5V	23	2.4V	24	2.4V

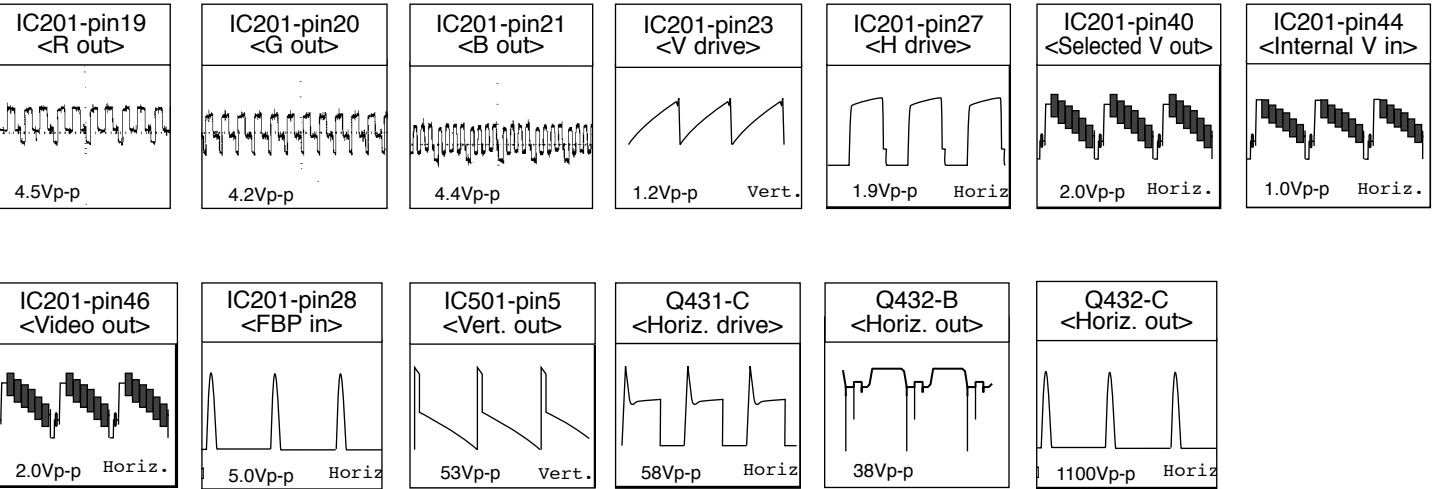
IC3402											
Pin-1	0V	2	0V	3	0V	4	4.5V	5	4.5V	6	4.5V
10	4.5V	11	4.5V	12	4.5V	13	4.5V	14	4.5V	15	9.0V
16	4.5V	17	0V	18	3.7V	19	4.2V	20	0V	21	0V
22	4.5V	23	0V	24	0V	25	4.5V	26	4.5V	27	0V

IC501 (VERT. OUT)							
Pin-1	2V	2	34V	3	17V	4	0V
5	2.3V	6	34V	7	2V		

IC802 (MEMORY)							
Pin-1	GND	2	GND	3	GND	4	GND
5	5.0V	6	5.0V	7	GND	8	5.0V

(On the Main Board)

<b>Q002</b> B 9V C 1.9V E 8.8V	<b>Q1003</b> B 2.7V C 0V E 3.2V	<b>Q1004</b> B 4.5V C 0V E 5.1V	<b>Q1005</b> B 4.5V C 0V E 5.1V	<b>Q1902</b> B 5.1V C -4.1V E 4.9V	<b>Q1903</b> B 0.7V C 0V E 0V	<b>Q1904</b> B 0V C 3.6V E 0V	<b>Q340</b> B 0V C 5.0V E 0V	<b>Q431</b> B 0.35V C 6V E 0V	<b>Q461</b> B 12.9V C 0V E 13.4V	<b>Q462</b> B 0.6V C 12.9V E 0V
<b>Q491</b> B 2.3V C 0V E 2.9V	<b>Q622</b> B 0V C 0V E 0V	<b>Q631</b> B 32.8V C 33.3V E 33.5V	<b>Q632</b> B 0V C 0.7V E 0V							



(On the CRT Board)

<b>Q701</b> B 1.8V C 172V E 1.73V	<b>Q711</b> B 1.8V C 171V E 1.7V	<b>Q721</b> B 1.8V C 170V E 1.80V	<b>Q741</b> B 0.7V C 0V E 1.4V	<b>Q742</b> B 9.0V C -3.0V E 8.8V
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