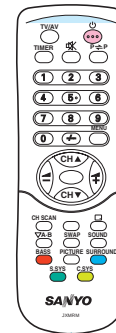


Model No. CE21KF8R

Service Ref. No. CE21KF8R-50**Product Code: 111363414**

Original Version

Chassis Series: FC3-G2

(Software: AC5-G2)

Sound Output (RMS) 5W + 5W

Speaker 8 cm X 13 cm X 2

Dimensions 652 (W) × 460 (H) × 490 (D)mm

Weight approx. 23.2 Kg

Specifications subject to change without notice.

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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Chassis Electrical Parts List	19-27

Safety Notice

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. | 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. |
| 2: Comply with all caution and safety-related notes provided on the cabinet back, inside the cabinet, on the chassis or the picture tube. | |

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.

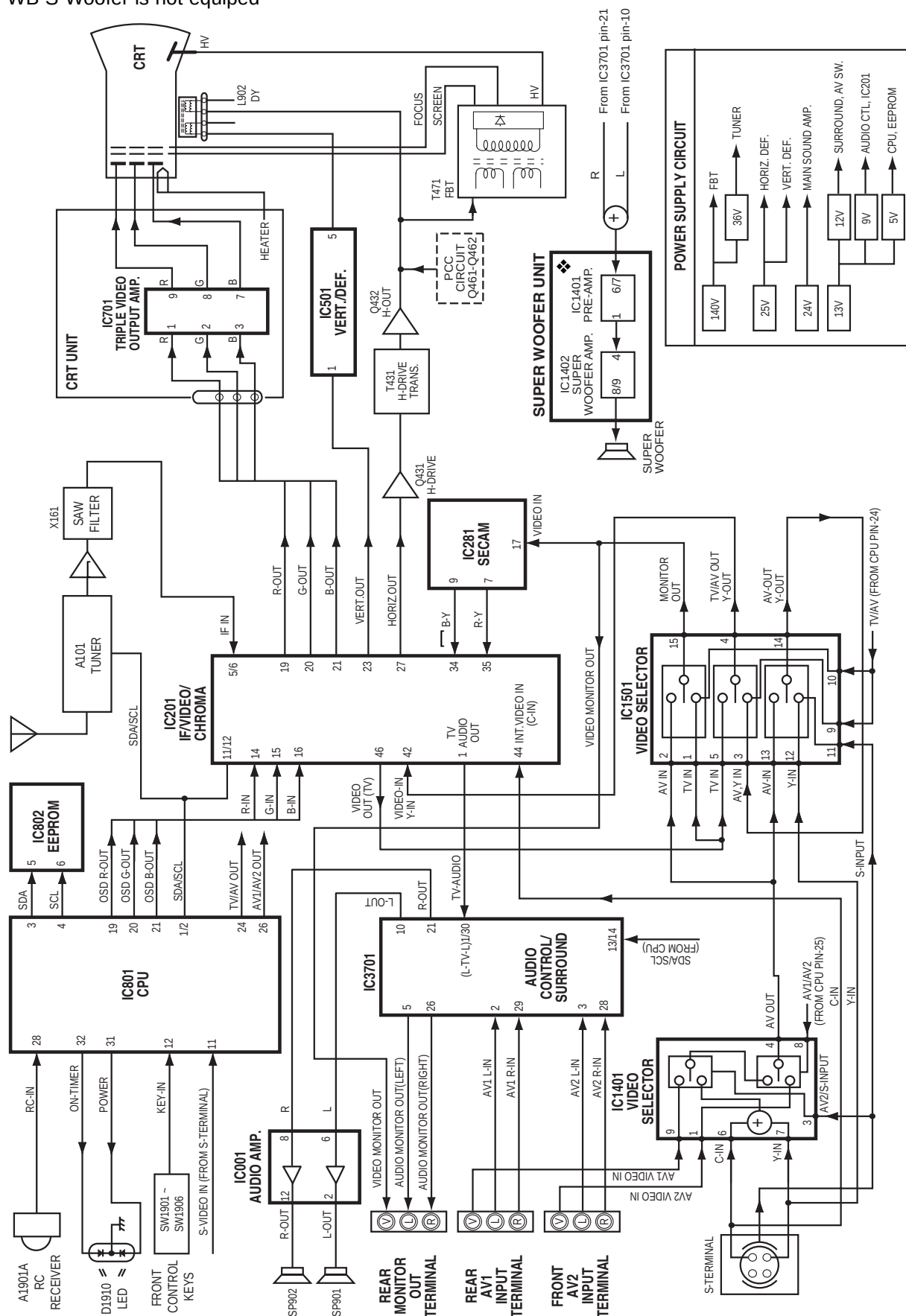
PRODUCT SAFETY NOTICE

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

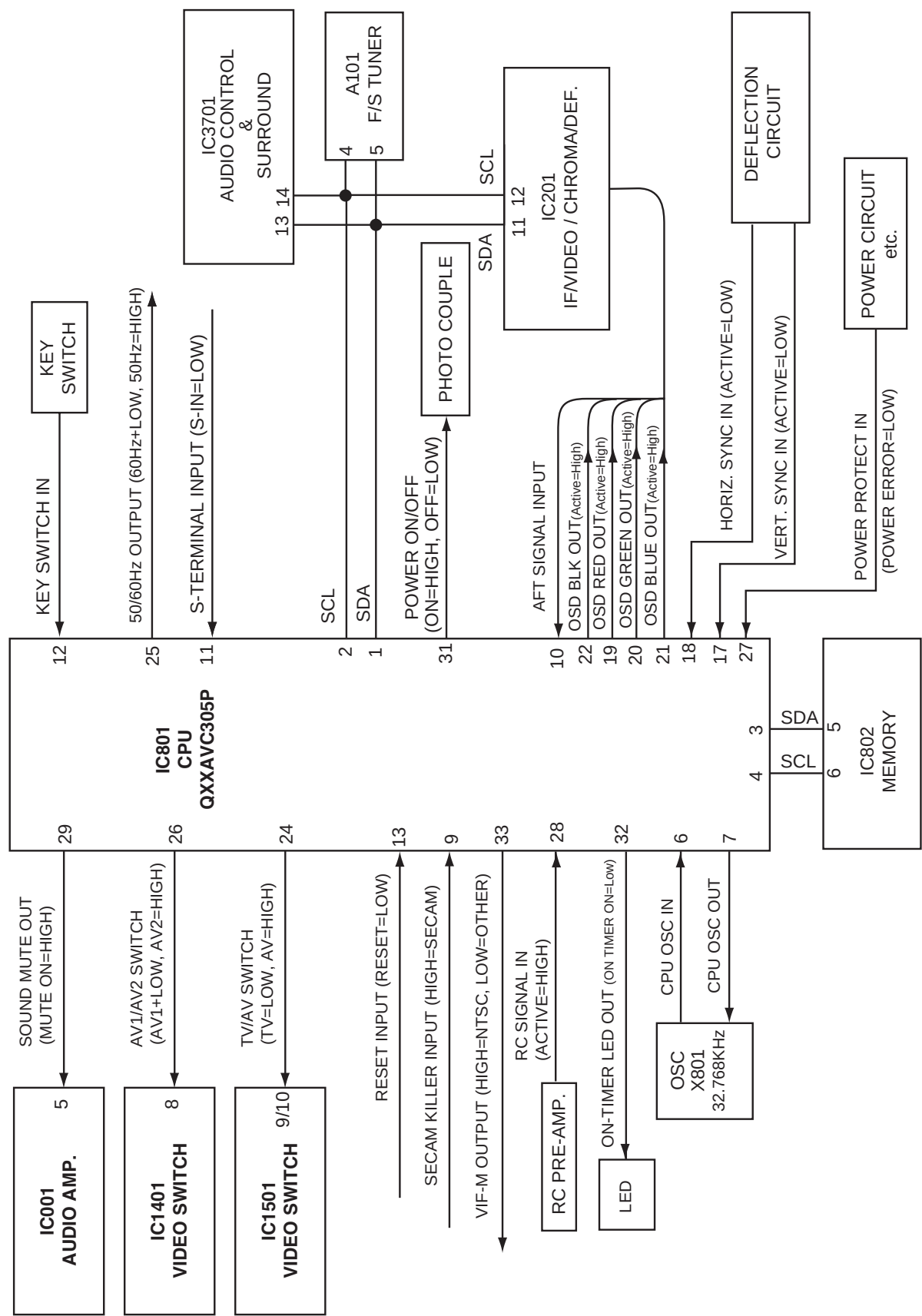
MAIN SIGNAL PROCESSING CIRCUIT

❖ PWB S-Woofer is not equipped

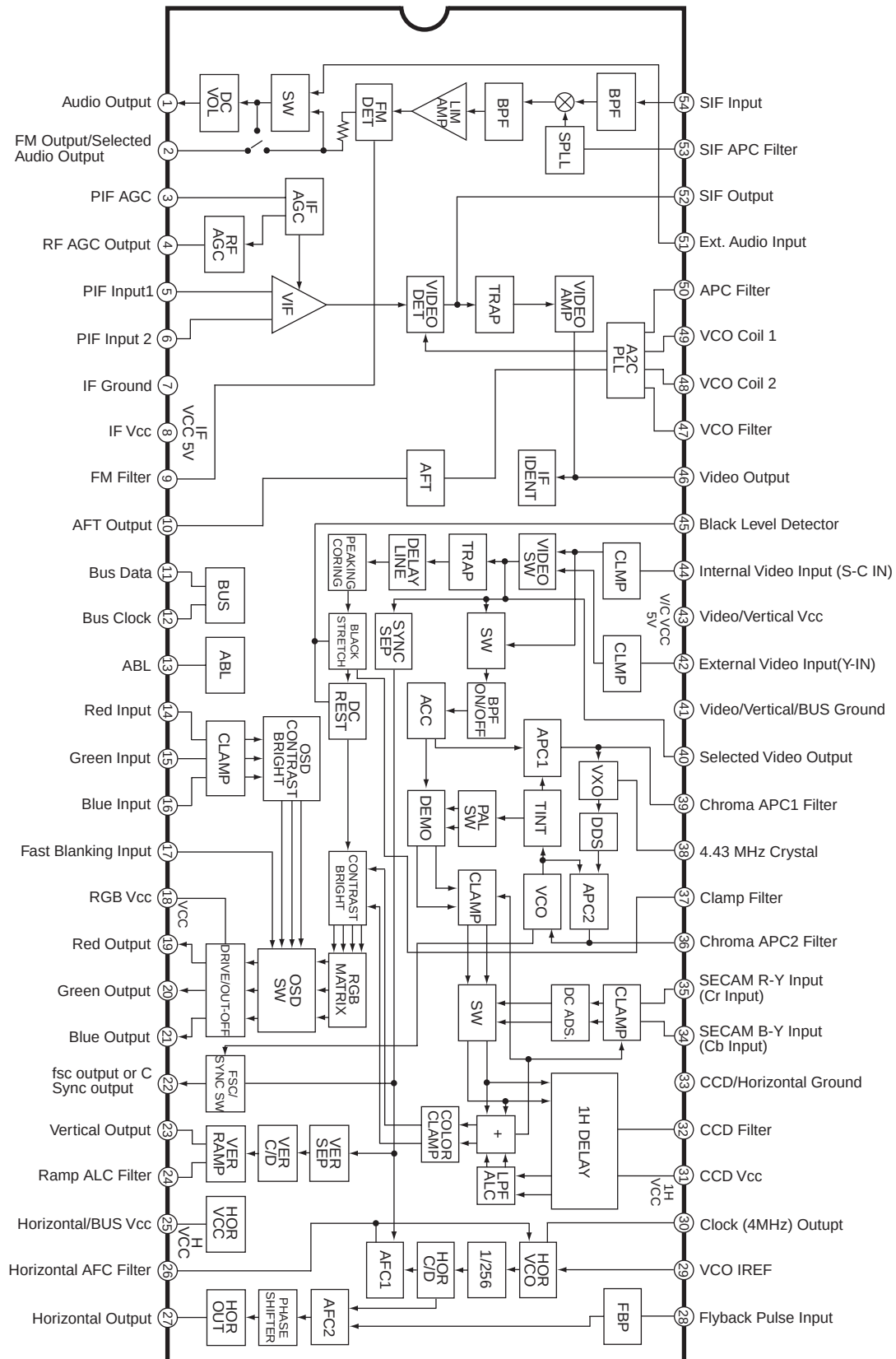


Chassis Block Diagrams

SYSTEM CONTROL

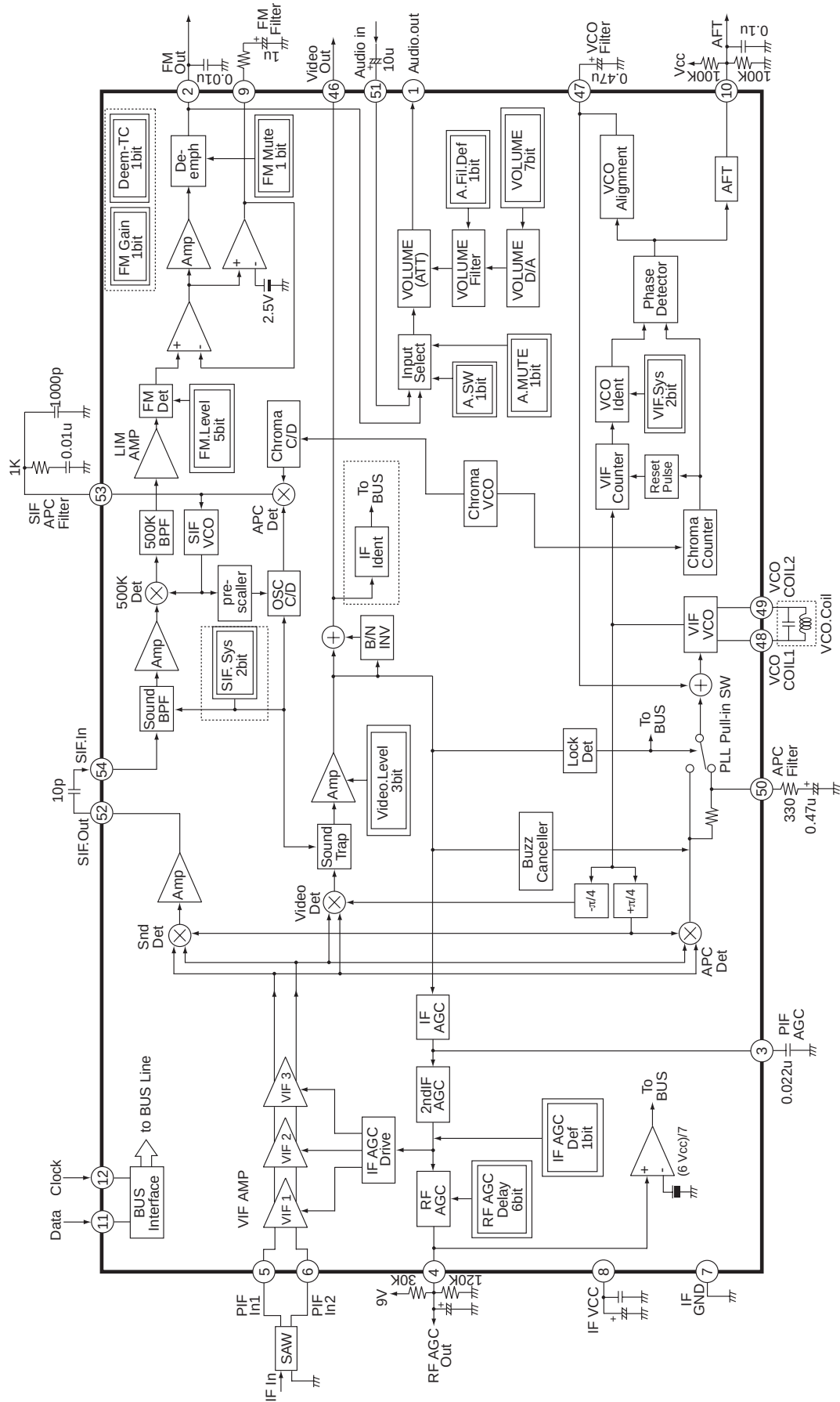


IC201 < IF/Video/Chroma/Def. > LA76818A



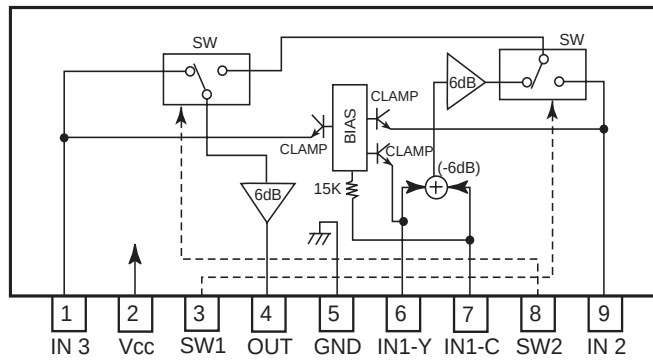
IC Block Diagrams

IC201 <IF System Block Diagram> LA76818A



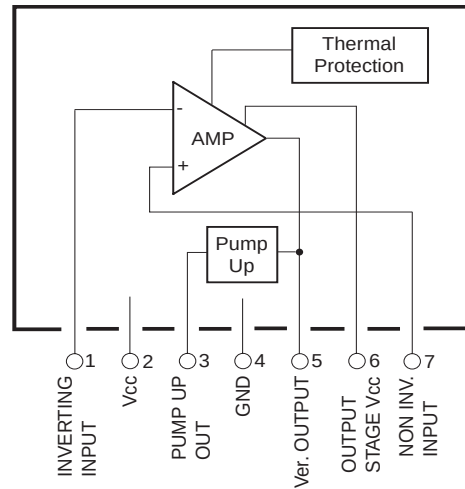
IC Block Diagrams

IC1401 < VIDEO Switch > MM1188XS

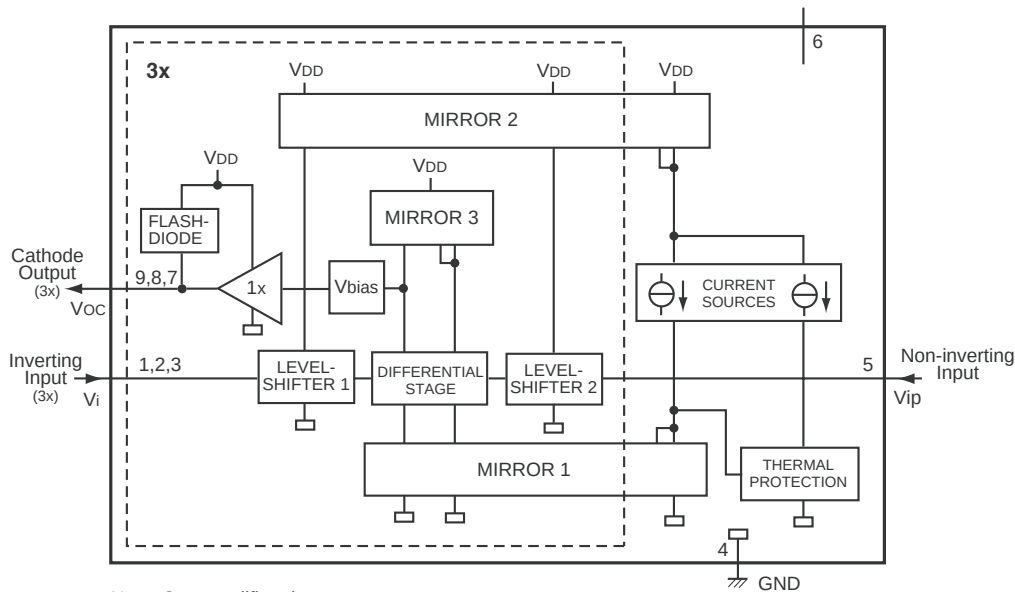


SW1	SW2	OUT
L	L	IN 1
H	L	IN 2
-	H	IN 3

IC501 < Vertical Output > TDA9302H/LA78040N

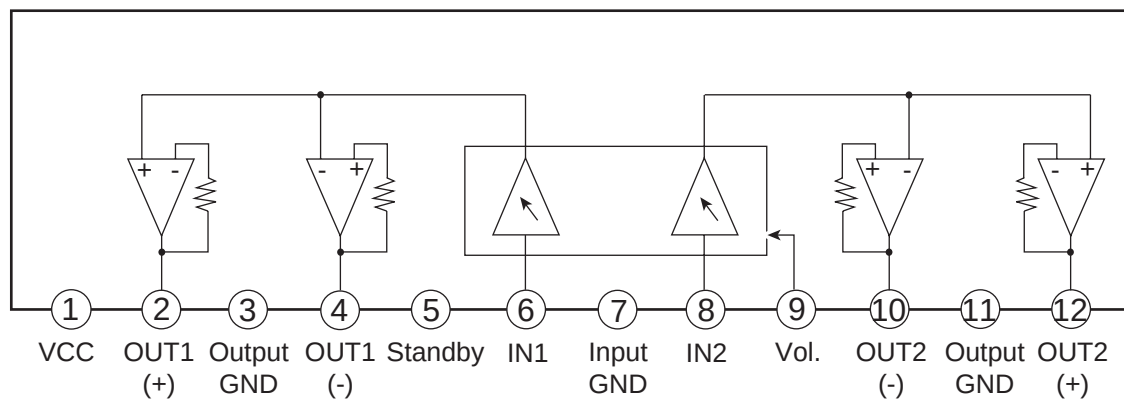


IC701 < Triple Video Output Amplifier. > TDA6103Q



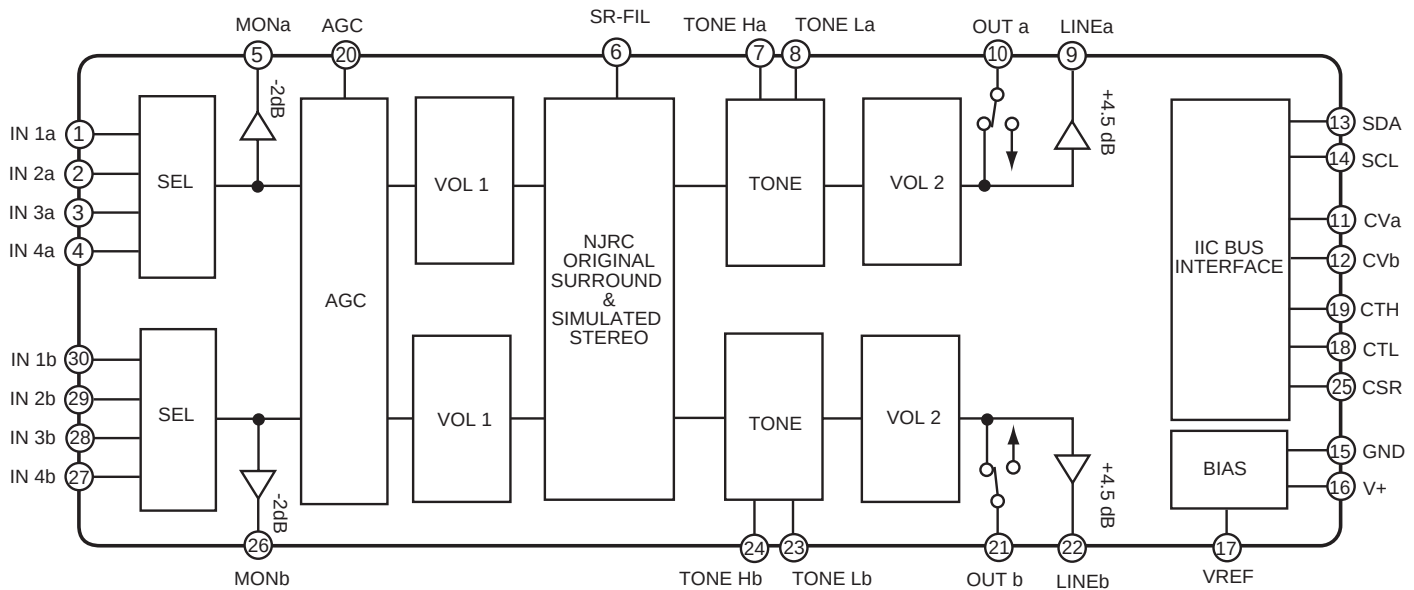
Note: One amplifier shown.

IC001 < Audio AMP.> AN17820B

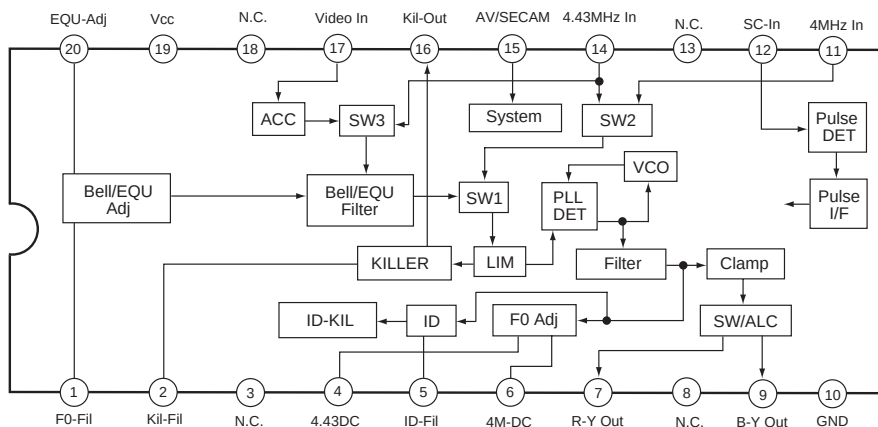


IC Block Diagrams

IC3701 < Audio Control & Surround > NJW1142M



IC281 < Secam Decoder > LA7642NM-TLM-E



Service Information

■ 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 27 of the CPU to go continually Low for about one second. The CPU detects that this has occurred and outputs the signal from pin 31 to switch off the power supply lines.

Releasing the protective circuit and restoring power supply

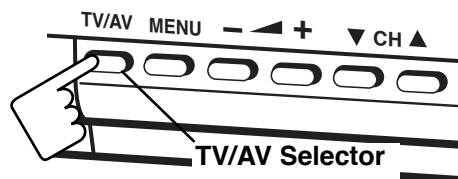
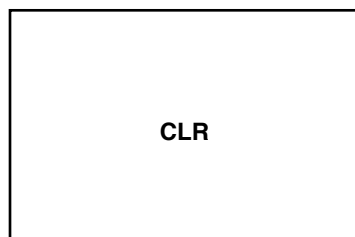
To release the protective circuit and restore power supply, turn the power to the TV set OFF and then ON again via either the main power switch or the ON-OFF button on the remote control. This will work only if the power supply trouble was temporary. If there is permanent trouble such as a damaged circuit,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

Service Adjustments with Replacing Memory IC(IC802)

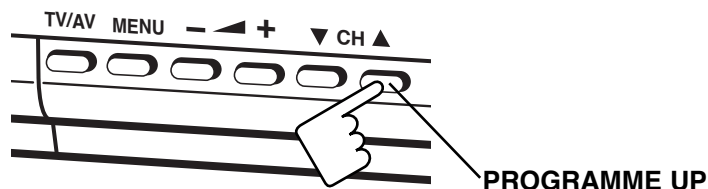
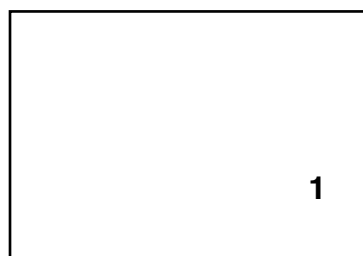
Note: The CPU (IC801) and memory IC (IC802) store the service adjustments data and controls data for each circuit. When the Memory IC (IC802) is replaced, some of the service adjustments should be readjusted to obtain the best performance. The necessary service adjustments are carried out by using the RC handset. Please set up the TV set with following steps [1] to [2].

[1] Initializing Procedure

1. Put a new memory IC.
2. Turn on the TV set.
3. Press and hold the **TV/AV Selector** on the TV set for more than 2 seconds. The following picture appears on the screen.



4. Press the **PROGRAMME UP** on the TV set while the above On-Screen Display is still on the screen. The following picture appears on the screen.



This completes the initialization of memory IC.

Following shows the initialized contents of memory data by this procedure.

- | | |
|---------------------|----------------|
| - Plug & Play | : No executed |
| - Inhibit Data | : Cancelled |
| - Ch Skip Data | : Cancelled |
| - Sound Volume Data | : 10/63 steps. |
| - Volume Lock | : OFF |
| - Tuning Lock | : OFF |
| - Music Mode | : OFF |
| - AV Start | : OFF |
| - Colour System | : AUTO |

[2] Required Service Adjustments

Readjust the following service adjustments.

<u>Adjustments</u>	<u>Service Mode No. & Item</u>
RF AGC	Item 01, RF AGC
Horizontal centre	Item 02, H-PHA
Vertical size	Item 04, V-SIZ
Vertical-S correction	Item 05, V-SCO
Vertical linearity	Item 06, V-LIN
Gray scale	Item 14-17, 19-21

Further adjustment please refer to page 12 and 13.

Service Adjustments with Replacing Memory IC(IC802)

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

Service mode adjustments table in CPU ROM

No.	ITEM	DATA RANGE	INITIAL SETUP DATA	DESCRIPTION
01	RFAGC	0~63	30	RF AGC Adj.
02	H-PHA	0~31	8	H-Phase (H-Centering) Adj. (50Hz)
03	V-POS	0~63	40	V-Position (V-Centering) Adj. (50Hz)Fixed.
04	V-SIZ	0~127	70	V-Size Adj. (50Hz)
05	V-SCO	0~31	19	V-S Correction (50Hz)
06	V-LIN	0~31	17	V-Linearity Adj. (50Hz)
07	H-P60	-16~+15	+2	H-PHASE Adj. (60Hz)
08	V-S60	-64~+32	0	V-Size Adj. (60Hz)
09	OSDHP	0~255	33	OSD H-Position Adj.
10	OSDC	0~127	45	OSD Contrast Adj.
11	V-SCP	0~7	7	Correction of the V-size accompanying brightness change.
12	H-SCP	0~7	7	Correction of the H-size accompanying brightness change.
13	SBIAS	0~127	105	Sub Bias Adj. (Do not change)
14	RBIAS	0~255	0	Red Bias Adj.
15	GBIAS	0~255	0	Green Bias Adj.
16	BBIAS	0~255	0	Blue Bias Adj.
17	RDRIV	0~127	64	Red Drive Adj.
18	GDRIV	0~15	8	Green Drive Adj.
19	BDRIV	00~127	64	Blue Drive Adj.
20	1-LINE APPEAR			White Balance Adj.
21	DRV			White Balance Adj.
22	B-YD	0~15	9	B-Y DC level Adj.
23	R-YD	0~15	10	R-Y DC level Adj.
24	B-YDN	-16~+15	0	NTSC B-Y DC level Adj.
25	R-YDN	-16~+15	0	NTSC R-Y DC level Adj.
26	SBDC	-16~+15	-8	SECAM B-Y DC level Adj.
27	SRDC	-16~+15	-5	SECAM R-Y DC level Adj.
28	G-YA	0,1	0	G-Y angle Adj.
29	RBGB	0~15	8	R-Y, B-Y Gain Balance Adj. (Do not change.)
30	RBAG	0~15	8	R-Y, B-Y Angle Adj. (Do not change.)
31	G-YAN	0,1	0	NTSC G-Y Angle Adj.
32	RBGBN	-16~+15	0	NTSC R-Y, B-Y Gain Balance Adj.
33	RBAGN	-16~+15	0	NTSC G-Y, B-Y Angle Adj.
34	COGV	0~3	0	Coring Gain Adj.
35	BLKS	0~3	3	Setting of Black stretch start.
36	BLKG	0~3	3	Setting of Black stretch gain.
37	BRTA	0,1	0	On and off of ABL.
38	BRST	0,1	0	Setting of ABL.
39	BRTH	0~7	0	Setting of ABL.
40	WPL	0~3	3	White peak limiter.
41	YGAM	0~3	0	Y Gamma setting.
42	PORW	0,1	0	Switching of Pre-shoot and Over shoot in AV mode.

No.	ITEM	DATA RANGE	INITIAL SETUP DATA	SCRIPTION
43	PORS	0~3	2	Pre-shoot/Over shoot Adj. in AV mode.
44	RFCO	0~3	3	RF Coring Gain Adj.
45	PORWN	0,1	0	Switching of RF Pre-shoot and Over shoot.
46	PORSN	0~3	0	RF Pre-shoot/Over shoot Adj.
47	TINT	-16~+15	0	RF Tint Adj.
48	TINT443	-16~+15	-12	NTSC 4.43 Tint Adj.
49	SHRF	-32~+31	0	RF Sharpness Adj.
50	TEXTC	-128~+127	0	OSD TEXT Contrast.
51	VOLUM	0~255	127	Volume Control Adj.
52	DEEM	0~1	0	De emphasis TC.
53	VIFSW	0~3	0	VIF System Switch.
54	SIFSW	0~3	1	SIF System Switch.
55	V-LVL	0~7	4	Video Level Adj.
56	FMLVL	0~31	16	FM Level Adj.
57	IFOM-S	0,1	0	Over Modulation Switch
58	IFMN-S	0,1	1	Audio Monitor Switch
59	IFTRAPS	0,1	1	SIF Trap Switch ON/OFF
60	IFMLVL	0~255	136	Video Level & Modulation
61	TRAP-T	0~7	4	Trap Test
62	H-FRQ	0~63	34	Horizontal Frequency
63	FBTS	0,1	0	FBT Blanking Switch
64	COOP	0~7	7	Color Killer Option
65	HBLKL	0~7	7	H-Blanking Control. (Left)
66	HBLKR	0~7	3	H-Blanking Control. (Right)
67	AFCRF	0,1	0	RF AFC gain & Gate Adj.
68	VSRF	0,1	0	RF Vert. Sync. Separation Adj.
69	CDMRF	0~7	0	RF Vert. Count-Down Circuit Adj.
70	AFCV	0,1	1	AV AFC Gain & Gate Adj.
71	VSUAV	0,1	0	AV Vert Sync. Separation Adj.
72	CDMAV	0~7	0	AV Vert Count-Down Circuit Adj.
73	HLVDRF	0,1	1	H Lock, V Detect RF
74	HLVDAV	0,1	1	H Lock, V Detect AV
75	VCO-SW	0,1	0	C-VCO Adj. Switch
76	VCO-ADJ	0~3	3	C-VCO Adj.
77	CROSS-BW	0~3	0	Output Pattern Picture
78	AVNCON	0~127	64	AV Blue Back Signal Contrast
79	AVNBRI	0~127	64	AV Blue Back Signal Brightness
80	POMT	0~127	25	Power Mute Time Adj.
81	CHMT	0~31	10	Channel Change Mute time Agj.
82	SYST	0~15	5	The number of times that a colour system AUTO is judged.
83	S-STE	0~3	2	Stereo/Mono Option. 0=MONO, 1=SIMPLE AV STEREO, 2,3=AV STEREO
84	VOLTBL	0~1	1	Volume Table
85	MPP	0,1	0	Multi Personal Preference function on/off 0=without M.P.P., 1=with M.P.P.

Service Adjustments with Replacing Memory IC(IC802)

No.	ITEM	DATA RANGE	INITIAL SETUP DATA	DESCRIPTION
86	TUNER	0,1	0	Tuner Option
87	AV123	0~3	1	AV1/AV2/AV3 Option, 0=AV only, 1=AV1, AV2, 2~3=AV1, AV2,AV3
88	OPT POS	0,1	1	Programme number Option, Position No. Option, 0=100 pos., 1=256 pos.
89	GAME	0,1	1	GAME Option, 0=without GAE, 1=with GAME
90	LANGUAGE	0,1	1	Language Option, 0=without Language, 1=with Language
91	OPT COL	0~7	5	Colour System Option, 0~1=PAL only, 2=VMT, 3=China/Indonesia, 4=3 System,5~7=Multi
92	OPT SIF	0~7	3	SIF System Option
93	OPT BASS	0~3	2	Bass Expander Option, 0=without BASS, 1~2=BASS EXPANDER,3=WOOFER
94	OPT SURR	0,1	1	Surround Option, 0=without SURROUND, 1=with SURROUND
95	SUB-BT	0,1,2	0	Audio IC (NJW1142)Sub Bass Treble adj.
96	A-AGC	0,1,2	0	Audio IC (NJW1142) AGC adj.
300	R00	0~255	154	ROM Correction
301	R01	0~255	242	ROM Correction
302	R02	0~255	166	ROM Correction
303	R03	0~255	246	ROM Correction
304	R04	0~255	3	ROM Correction
305	R05	0~255	0	ROM Correction
306	R06	0~255	0	ROM Correction
307	R07	0~255	0	ROM Correction
308	R08	0~255	2	ROM Correction
309	R09	0~255	229	ROM Correction
310	R10	0~255	144	ROM Correction
311	R11	0~255	13	ROM Correction
312	R12	0~255	239	ROM Correction
313	R13	0~255	141	ROM Correction
314	R14	0~255	238	ROM Correction
315	R15	0~255	141	ROM Correction
316	R16	0~255	237	ROM Correction
317	R17	0~255	141	ROM Correction
318	R18	0~255	236	ROM Correction
319	R19	0~255	141	ROM Correction
320	R20	0~255	235	ROM Correction
321	R21	0~255	141	ROM Correction
322	R22	0~255	33	ROM Correction
323	R23	0~255	155	ROM Correction
324	R24	0~255	6	ROM Correction
325	R25	0~255	33	ROM Correction

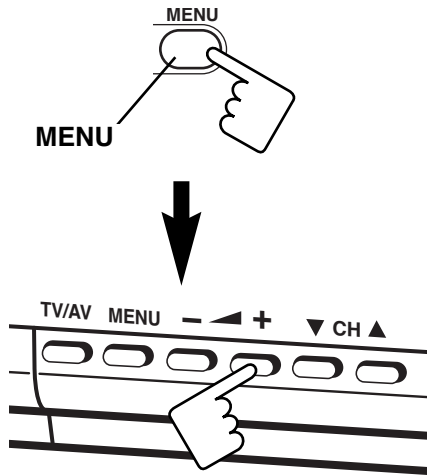
No.	ITEM	DATA RANGE	INITIAL SETUP DATA	DESCRIPTION
326	R26	0~255	154	ROM Correction
327	R27	0~255	246	ROM Correction
328	R28	0~255	0	ROM Correction
329	R29	0~255	0	ROM Correction
330	R30	0~255	0	ROM Correction
331	R31	0~255	0	ROM Correction
332	R32	0~255	0	ROM Correction
333	R33	0~255	0	ROM Correction
334	R34	0~255	0	ROM Correction
335	R35	0~255	0	ROM Correction
336	R36	0~255	0	ROM Correction
337	R37	0~255	0	ROM Correction
338	R38	0~255	0	ROM Correction
339	R39	0~255	0	ROM Correction
340	R40	0~255	107	ROM Correction
341	R41	0~255	127	ROM Correction
342	R42	0~255	7	ROM Correction
343	R43	0~255	3	ROM Correction
344	R44	0~255	234	ROM Correction
345	R45	0~255	144	ROM Correction
346	R46	0~255	3	ROM Correction
347	R47	0~255	33	ROM Correction
348	R48	0~255	166	ROM Correction
349	R49	0~255	249	ROM Correction
350	R50	0~255	33	ROM Correction
351	R51	0~255	167	ROM Correction
352	R52	0~255	34	ROM Correction
353	R53	0~255	0	ROM Correction
354	R54	0~255	0	ROM Correction
355	R55	0~255	0	ROM Correction
366	R12	0~255	0	ROM Correction
367	R13	0~255	0	ROM Correction
368	R68	0~255	0	ROM Correction
369	R69	0~255	0	ROM Correction
370	R70	0~255	0	ROM Correction
371	R71	0~255	0	ROM Correction
372	R72	0~255	160	ROM Correction

Notes: The initial value that the CPU writes down the CPU ROM data to the memory when replaced the memory IC. TV set may not operate correctly with this initial value. It is required to set up the fine adjustment for service adjustments described in the above.

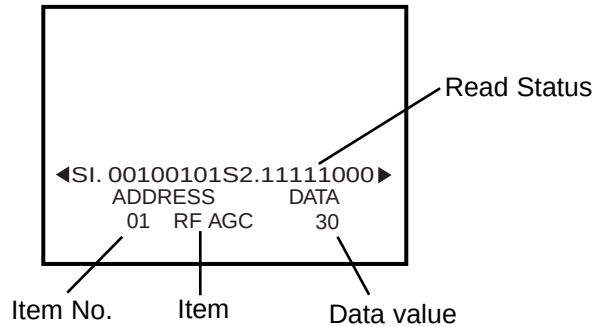
Service Adjustments with Replacing Memory IC(IC802)

[Entering to Service Mode]

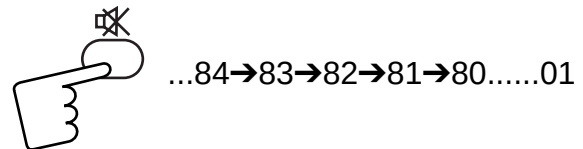
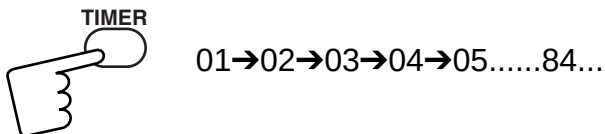
1. Press and hold the **MENU** button on the Remote Control and press the **VOLUME (+)** button on the TV set.
Following setting items appears on the screen.



Display for [RF AGC] RF AGC adjustment

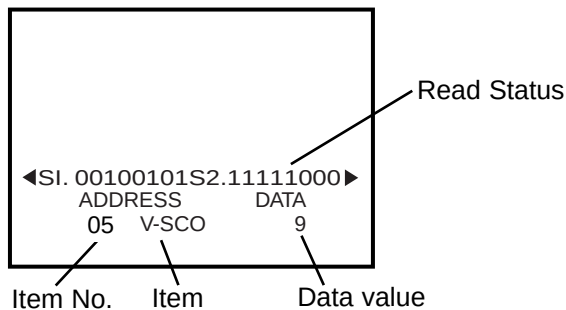


2. Select item by pressing the **TIMER** (Item No. UP) or **SOUND MUTE** (Item No. DOWN) button on the remote control handset.

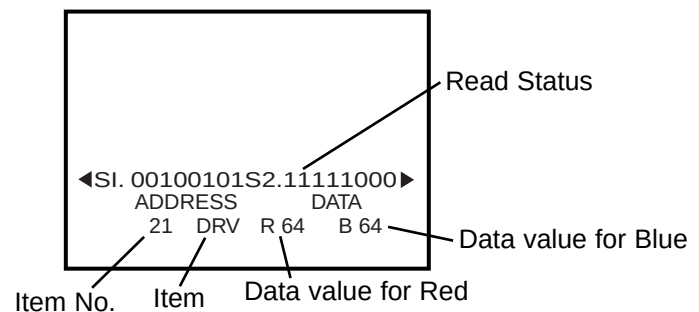


Example

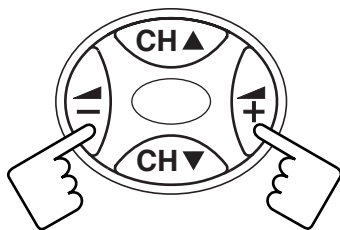
Display for [V-SCO] V-S Correction adjustment



Display for [DRV] White balance adjustment



3. Adjust data value by pressing the **VOLUME +** or **VOLUME -** button on the remote control handset.



To return to normal TV mode, press the **MENU** button on the TV set or the remote control handset.

Service Mode Adjustments

Following adjustments should be carried out when the memory IC is replaced. How to enter the service mode and adjust values, please refer to "Entering to Service mode" on page 11.

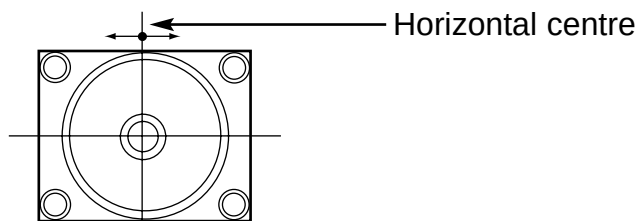
Item 01 [RF AGC] AGC

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 controls to maximum. Set the colour control to minimum.
- (2) Select [RF AGC] in the service mode.
- (3) Change value until the snow noise just disappears.
- (4) Exit from service mode.

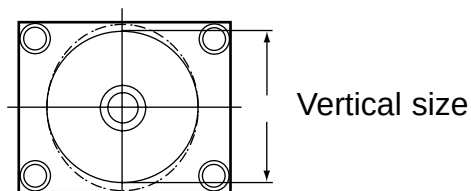
Item 02 [H-PHA] HORIZONTAL CENTRE

- (1) Receive a monochrome circular pattern.
- (2) Set the brightness and contrast to normal.
- (3) Select [H-PHA] in the service mode.
- (4) Change value to be optimum horizontal centre position.
- (5) Exit from service mode.



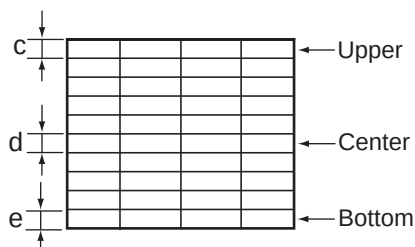
Item 04 [V-SIZ] VERTICAL SIZE

- (1) Receive a monochrome circular pattern.
- (2) Set the lever of SW501 (Vertical Center SW) as the position of a center.
- (3) Set the brightness and contrast to maximum.
- (4) Select [V-SIZ] in the service mode.
- (5) Change value to be optimum vertical size.
- (6) Exit from service mode.



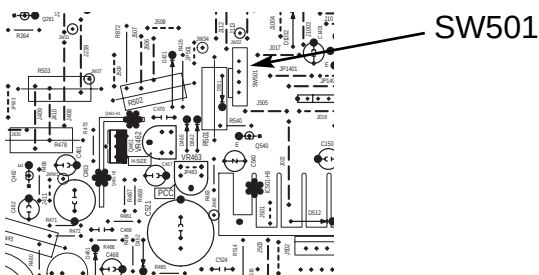
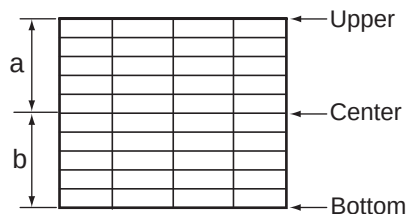
Item 05 [V-SCO] V-S CORRECTION

- (1) Receive a crosshatch pattern.
- (2) Set the lever of SW501 (Vertical Center SW) as the position of a center.
- (3) Select a picture mode of NATURAL by pressing the PICTURE MODE button.
- (4) Select [V-SCO] in the service mode.
- (5) Adjust Vertical S-letter Correction so that the difference of "c", "d" and "e" becomes less than 2 mm by pressing the VOLUME + or - button.
- (6) Confirm Vertical Linearity and adjust Vertical Center then Vertical Size.
- (7) Exit from service mode.



Item 06 [V-LIN] VERTICAL LINEARITY

- (1) Receive a crosshatch pattern.
- (2) Set the lever of SW501 (Vertical Center SW) as the position of a center.
- (3) Select a picture mode of NATURAL by pressing the PICTURE MODE button.
- (4) Select [V-LIN] in the service mode.
- (5) Adjust Vertical Linearity so that the difference of "a" and "b" becomes less than 3mm by pressing VOLUME + or - button.
- (6) Exit from service mode.

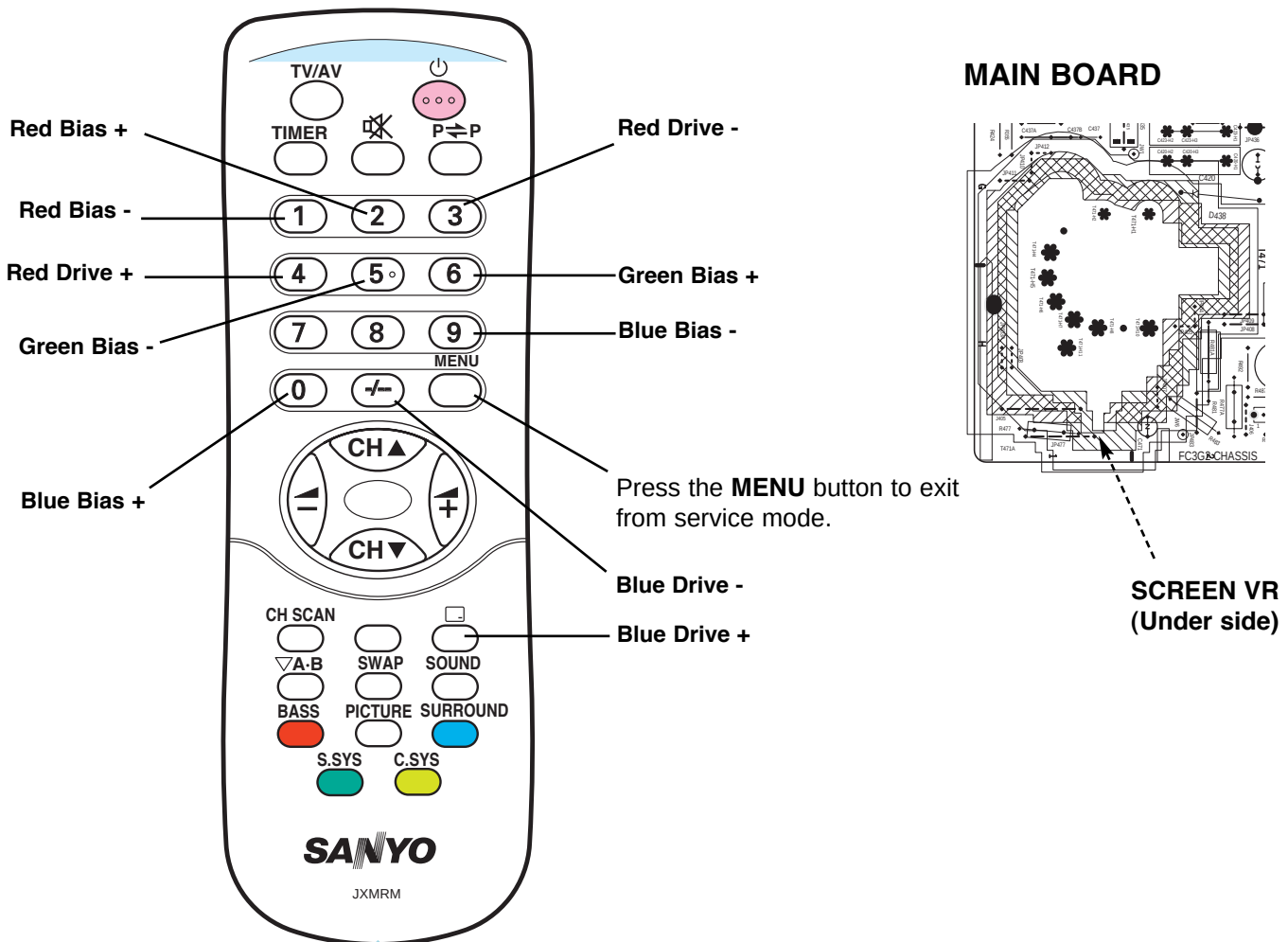


Service Mode Adjustments

Items 14-17, 19-21 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) Select No. 14 RBIAS (Red Bias), No. 15 GBIAS (Green Bias), and No. 16 BBIAS (Blue Bias) and set each data to 0 by pressing the VOLUME + or - key.
- (5) Select No. 17 RDRIV (Red Drive) and No. 19 BDRIV (Blue Drive) and set each data to 64 by pressing the VOLUME + or - key.
- (6) Turn Screen Control on the FBT (T471) to minimum (fully counter-clock-wise).
- (7) Select No. 20 (1-line appear).
- (8) Advance Screen Control clockwise to obtain just visible one colour line. If line does not appear, place this control to maximum (fully clockwise).
- (9) Raise each Bias Level with 1, 2, 5, 6, 9 and 0 keys to obtain just visible white line.
- (10) Select No. 21 DRV (Drive Adjustments).
- (11) Adjust Red and Blue Drive Levels alternately with 3, 4, -/-- or RECALL key to produce normal black and white picture in highlight areas.
- (12) Check for proper grayscale at all brightness levels. To turn off the TV Service Menu display, press the MENU key.

Note: If the Grayscale adjustment is made after picture tube replacement, check the High Voltage



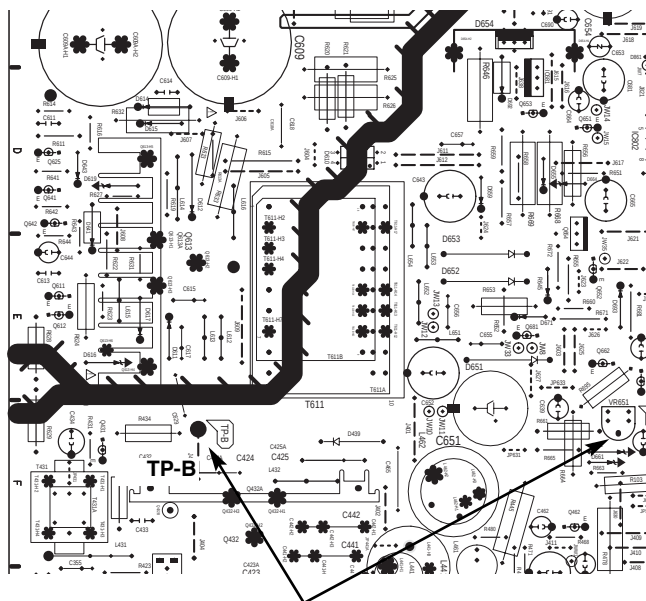
Service Adjustments

Following adjustments are not required to readjust when replacing the memory IC.

B-VOLTAGE SUPPLY CHECKING

- (1) Connect DC meter to TP-B and the ground.
- (2) Tune the receiver to an active channel and synchronized picture. Select NATURAL picture mode by pressing the **PICTURE MODE** button on the remote control.
- (3) Adjust B-voltage to be $130 \pm 1V$ DC by using VR651.

MAIN BOARD

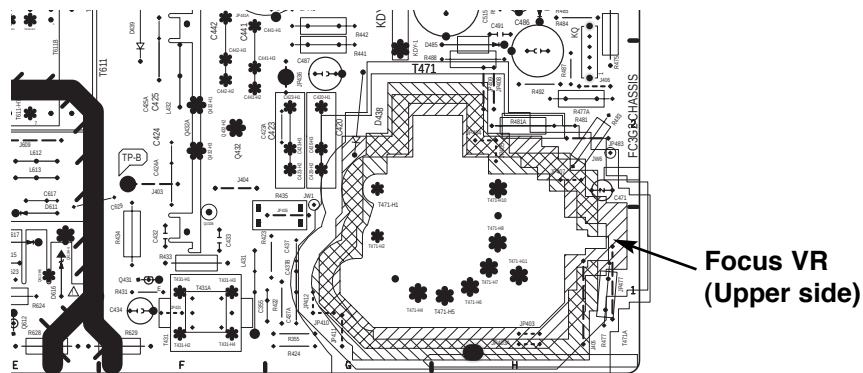


B-Voltage Supply Adjustment

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.

MAIN BOARD



HIGH VOLTAGE CHECK

Note: +B (+130V) Voltage Check 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) Maximize the beam current by adjusting the contrast and brightness controls to maximum. Confirm high voltage is within 23.0 KV and 25.0 KV at maximum beam current.
- (4) Eliminate the beam current by adjusting the contrast and brightness controls to minimum. Confirm high voltage does not exceed 26.5 KV at zero beam current.

If reading is not within range, check horizontal circuit.

No high-voltage adjustment is provided on this chassis.

Special Function

The following special functions can be set up on this TV set.

(1) Volume Lock setting

With this function, a maximum sound volume limit can be set at any level.



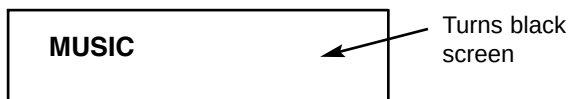
(2) Tuning Lock setting

Once TUNING LOCK is switched on, further channel tuning (Pre-set) is not possible. The Channel Swapping function also is not possible.



(3) Music Mode setting

When Music Mode is ON, Programme position from "247" to "255" and "0" are set Music Mode. Only sound is provided and no picture is on the screen under Music Mode.



(4) AV Start setting

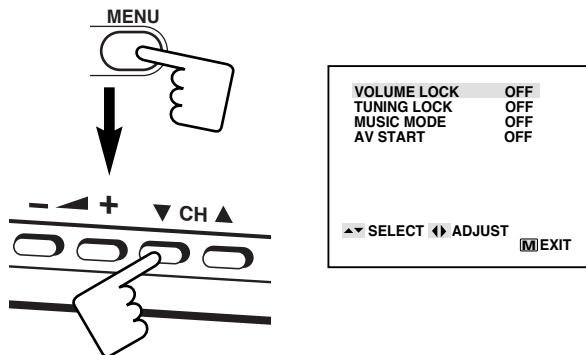
Set AV-START to ON and every time the TV set is switched on, AV position will be the initial programme position.



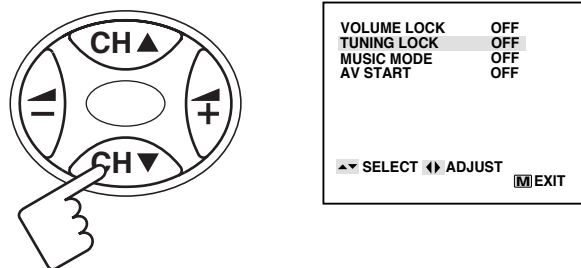
How to set the special function:

Note: When making the VOLUME LOCK setting, set the desired maximum sound volume by pressing the **VOLUME +** or **-** button before entering Special Function setting mode.

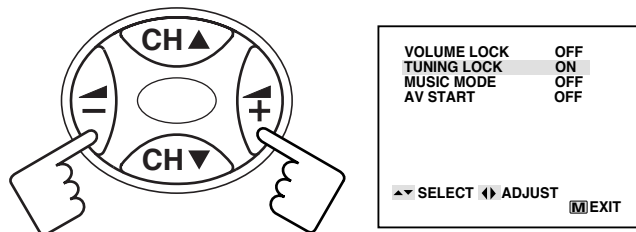
- 1 To enter into the special function setting mode, press and hold the **MENU** button of the remote control, then press the **PROGRAMME DOWN** button on the TV set.



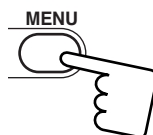
- 2 Select an item of the special functions by pressing the **PROGRAMME UP** or **DOWN** button on the remote control or the TV set.



- 3 Set the selected special function "ON" by pressing the **VOLUME +** or **-** button. To cancel, set to "OFF".



- 4 Press the **MENU** button of the remote control to return to the normal TV mode.



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 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.

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.

Note: The form of deflection yoke changes with models.

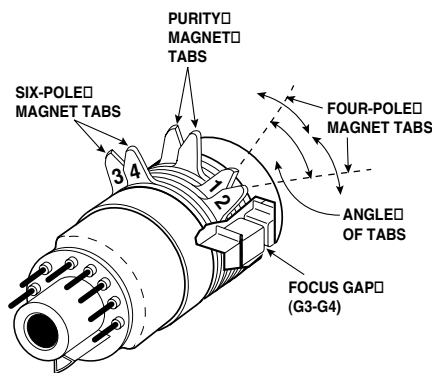


Figure 1. Purity and Convergence Magnets

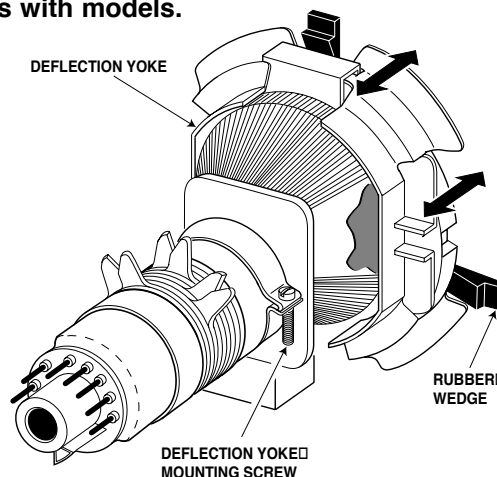


Figure 4. Deflection Yoke Movement

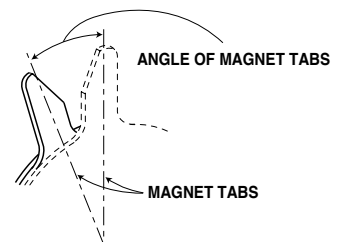


Figure 5. Adjusting Magnet

Adjust tabs angle to superimpose blue and red vertical line.

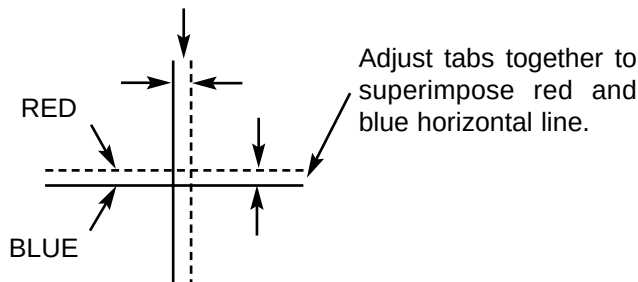


Figure- 2 BLUE AND RED LINE MOVEMENT

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

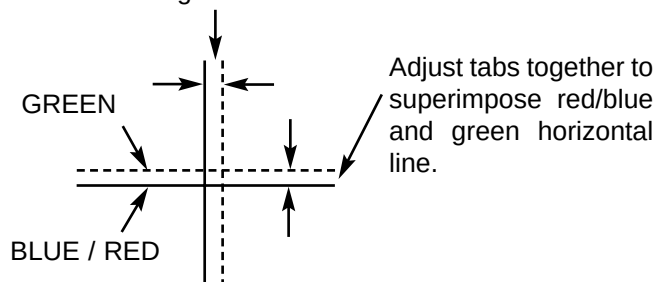
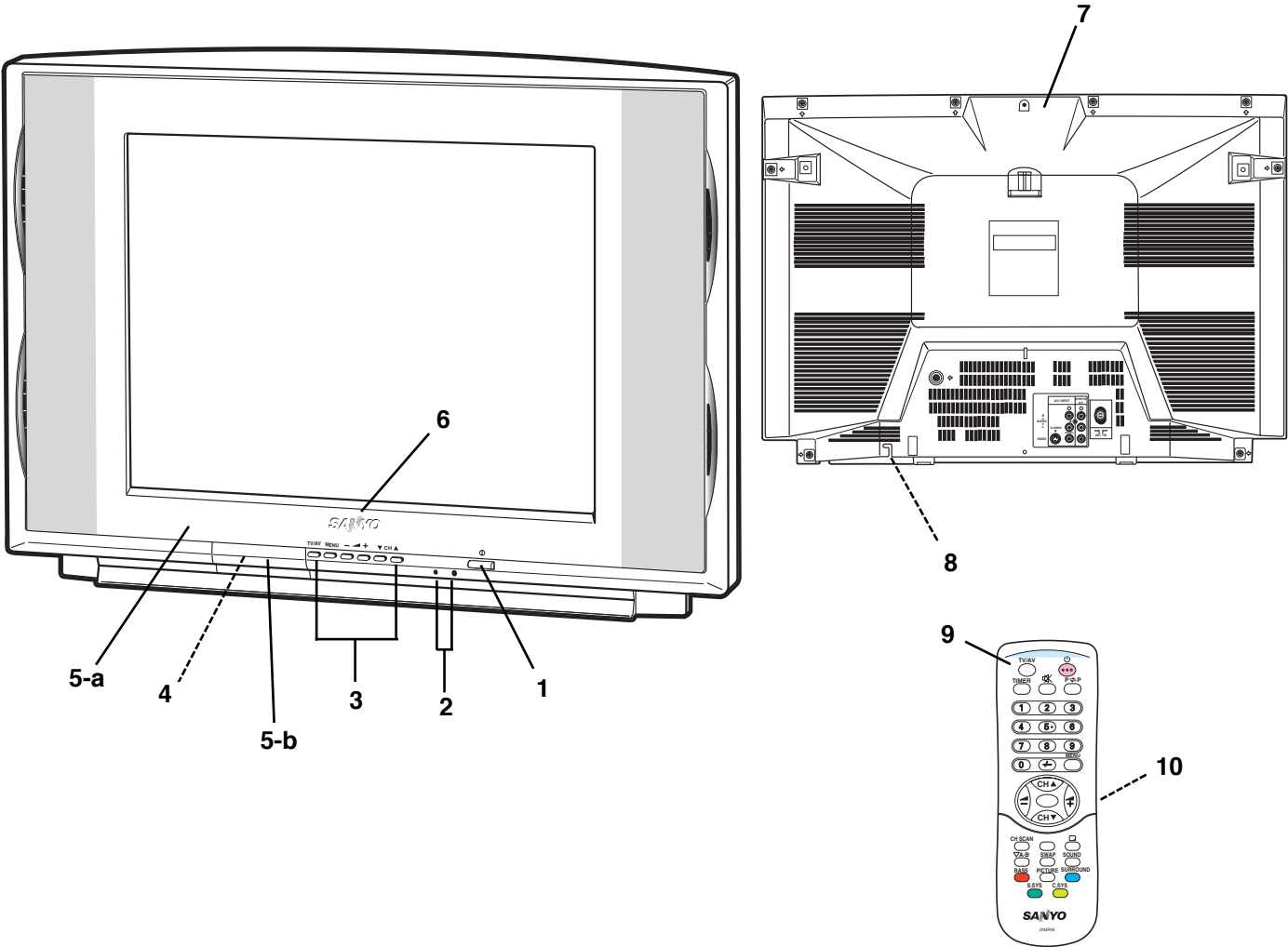


Figure- 3 BLUE/RED AND GREEN MOVEMENT

Cabinet Parts List

C5GSH

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



Key No.	Part No.	Description	Key No.	Part No.	Description
1	610 299 9051	BUTTON POWER-C5GA			
	610 229 8406	SPRING-E3HA			
2	610 299 9136	DEC.IND-C5GA			
3	610 299 9068	BUTTON UNITED-C5GA			
4	610 104 2505	LATCH PUSH,7.9X6.9BK			
or	645 019 2449	LATCH PUSH,7.9X6.9BK			
5	610 311 2206	ASSY,CABINET FR-C5GE			
5-a	610 311 2251	CABINET FRONT-C5GE			
5-b	610 307 0292	DOOR-C5GT			
6	645 041 7269	BADGE,SANYO*43.5X10L43.5			
7	610 316 2454	CABINET BACK-C5GSH			
8	610 256 7670	HOLDER AC CORD-SGP-D4VA			
9	645 067 5089	ASSY,REMOCON JXMRM			
10	610 297 3723	RC-BATTERY LID-JXMRA			
	610 315 8853	INSTRUCTIONS MANUAL-C5GSH			

Chassis Electrical Parts List

C5GSH

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: 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.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
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			OUT OF CIRCUIT BOARD PICTURE TUBE Δ Q901 4140130108 CRT A51QDJ470X17NSCR COIL Δ L901 6450515514 COIL, DEGAUSSING 6450515521 COIL, DEGAUSSING MISCELLANEOUS SP901 6450553653 SPEAKER, 8 SP902 6450553653 SPEAKER, 8 Δ W901 6450399251 CORD, POWER-2.0MK-A5003 W902 6103081281 ASSY, WIRE GND CONNECTOR C		
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			6103179018 ASSY,PWB,MAIN C5GSH 1AA0B10S130FA TRANSISTOR Q1003 4050144519 TR 2SC2412K T146 R 4050144618 TR 2SC2412K T146 S 4050158724 TR 2SC2812-L6-TB 4050158922 TR 2SC2812-L7-TB 4051739813 TR 2SC3928A1R 4051739912 TR 2SC3928A1S Q1004 4050144519 TR 2SC2412K T146 R 4050144618 TR 2SC2412K T146 S 4050158724 TR 2SC2812-L6-TB 4050158922 TR 2SC2812-L7-TB 4051739813 TR 2SC3928A1R 4051739912 TR 2SC3928A1S Q1005 4050144519 TR 2SC2412K T146 R 4050144618 TR 2SC2412K T146 S 4050158724 TR 2SC2812-L6-TB 4050158922 TR 2SC2812-L7-TB 4051739813 TR 2SC3928A1R 4051739912 TR 2SC3928A1S Q1006 4050144519 TR 2SC2412K T146 R 4050144618 TR 2SC2412K T146 S 4050158724 TR 2SC2812-L6-TB 4050158922 TR 2SC2812-L7-TB 4051739813 TR 2SC3928A1R 4051739912 TR 2SC3928A1S Q111 4050159721 TR 2SC2814-F4-TB Q122 4050144519 TR 2SC2412K T146 R 4050144618 TR 2SC2412K T146 S 4050158724 TR 2SC2812-L6-TB 4050158922 TR 2SC2812-L7-TB 4051739813 TR 2SC3928A1R 4051739912 TR 2SC3928A1S 4051843411 TR 2SD0601A-R-TX Q1401 4051345925 TR 2SA1037AK-T146-R 4051472215 TR 2SA1037AK-S-T146 4050020318 TR 2SA1037K T146 R 4050020417 TR 2SA1037K T146 S		

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	
Q1402	4050026726	TR 2SA1179-M6-TB	Q611	4051631612	TR 2SC2812N-L6-TB0	
	4050026924	TR 2SA1179-M7-TB		4051631711	TR 2SC2812N-L7-TB0	
	4051631513	TR 2SA1179N-M6-TB		4051739813	TR 2SC3928A1R	
	4051632718	TR 2SA1179N-M7-TB		4051739912	TR 2SC3928A1S	
	4060087407	TR 2SA1015-G(SAN)-TPE2		4051843411	TR 2SD0601A-R-TX	
	4050017417	TR 2SA1015-O(SAN)		4050136712	TR 2SC2274-D	
	4050017615	TR 2SA1015-Y(SAN)		4050136811	TR 2SC2274-E	
	4050043119	TR 2SA564A-Q(CU)		4050137016	TR 2SC2274-F	
Q1501	4050043218	TR 2SA564A-R(CU)	Q612	4050066514	TR 2SA984-E	
	4050061717	TR 2SA933S-Q		4050066712	TR 2SA984-F	
	4050061816	TR 2SA933S-R		Q613	4051726803	TR 2SK3102
	4050144519	TR 2SC2412K T146 R		Q625	4050136811	TR 2SC2274-E
	4050144618	TR 2SC2412K T146 S		4050137016	TR 2SC2274-F	
	4050158724	TR 2SC2812-L6-TB		Q641	4060087407	TR 2SA1015-G(SAN)-TPE2
	4050158922	TR 2SC2812-L7-TB		4050017615	TR 2SA1015-Y(SAN)	
	4051631612	TR 2SC2812N-L6-TB0		4050043218	TR 2SA564A-R(CU)	
Q1503	4051631711	TR 2SC2812N-L7-TB0	Q642	4050061816	TR 2SA933S-R	
	4051739813	TR 2SC3928A1R		4050118411	TR 2SC1740S-Q	
	4051739912	TR 2SC3928A1S		4050118510	TR 2SC1740S-R	
	4051843411	TR 2SD0601A-R-TX		4050118619	TR 2SC1740S-S	
	4050144519	TR 2SC2412K T146 R		4050122012	TR 2SC1815-GR	
	4050144618	TR 2SC2412K T146 S		4050122319	TR 2SC1815-Y	
	4050158724	TR 2SC2812-L6-TB		4050207511	TR 2SC945A-PA	
	4050158922	TR 2SC2812-L7-TB		4050207719	TR 2SC945A-QA	
Q1504	4051631612	TR 2SC2812N-L6-TB0	Q651	4050118411	TR 2SC1740S-Q	
	4051631711	TR 2SC2812N-L7-TB0		4050118510	TR 2SC1740S-R	
	4051739813	TR 2SC3928A1R		4050118619	TR 2SC1740S-S	
	4051739912	TR 2SC3928A1S		4050122012	TR 2SC1815-GR	
	4051843411	TR 2SD0601A-R-TX		4050122319	TR 2SC1815-Y	
	4050144519	TR 2SC2412K T146 R		4050207511	TR 2SC945A-PA	
	4050144618	TR 2SC2412K T146 S		4050207719	TR 2SC945A-QA	
	4050158724	TR 2SC2812-L6-TB		Q652	4050890010	TR 2SA1707-S
4050158922	TR 2SC2812-L7-TB	4050890119	TR 2SA1707-T			
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4051739813	TR 2SC3928A1R	Q654	4050599804		TR 2SD1913-Q-RA	
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4051345925	TR 2SA1037AK-T146-R	4050144618	TR 2SC2412K T146 S			
Q190	4051472215	TR 2SA1037AK-S-T146	4050158724	TR 2SC2812-L6-TB		
	4050020318	TR 2SA1037K T146 R	4050158922	TR 2SC2812-L7-TB		
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	4050026726	TR 2SA1179-M6-TB	4051739912	TR 2SC3928A1S		
	4050026924	TR 2SA1179-M7-TB	4051843411	TR 2SD0601A-R-TX		
	4051631513	TR 2SA1179N-M6-TB	Q662	4060087407	TR 2SA1015-G(SAN)-TPE2	
	4051632718	TR 2SA1179N-M7-TB	4050017417	TR 2SA1015-O(SAN)		
	4060087407	TR 2SA1015-G(SAN)-TPE2	4050017615	TR 2SA1015-Y(SAN)		
Q1902	4050017417	TR 2SA1015-O(SAN)	4050043119	TR 2SA564A-Q(CU)		
	4050017615	TR 2SA1015-Y(SAN)	4050043218	TR 2SA564A-R(CU)		
	4050043119	TR 2SA564A-Q(CU)	4050061717	TR 2SA933S-Q		
	4050043218	TR 2SA564A-R(CU)	4050061816	TR 2SA933S-R		
	4050061717	TR 2SA933S-Q	Q663	4050144519	TR 2SC2412K T146 R	
	4050061816	TR 2SA933S-R	4050144618	TR 2SC2412K T146 S		
	4060087407	TR 2SA1015-G(SAN)-TPE2	4050158724	TR 2SC2812-L6-TB		
	4050017417	TR 2SA1015-O(SAN)	4050158922	TR 2SC2812-L7-TB		
Q261	4050017615	TR 2SA1015-Y(SAN)	4051739813	TR 2SC3928A1R		
	4050043119	TR 2SA564A-Q(CU)	4051739912	TR 2SC3928A1S		
	4050043218	TR 2SA564A-R(CU)	4051843411	TR 2SD0601A-R-TX		
	4050061717	TR 2SA933S-Q	Q681	4050118411	TR 2SC1740S-Q	
	4050061816	TR 2SA933S-R	4050118510	TR 2SC1740S-R		
	4050180517	TR 2SC3332-R	4050118619	TR 2SC1740S-S		
	4050180616	TR 2SC3332-S	4050122012	TR 2SC1815-GR		
	4051571304	TR 2SD2634-YB	4050122111	TR 2SC1815-O		
Q432	4050144519	TR 2SC2412K T146 R	4050122319	TR 2SC1815-Y		
	4050144618	TR 2SC2412K T146 S	4050207511	TR 2SC945A-PA		
Q527	4050158724	TR 2SC2812-L6-TB	4050207719	TR 2SC945A-QA		
	4050158922	TR 2SC2812-L7-TB	4050207917	TR 2SC945A-RA		

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
Q690	4050144519	TR 2SC2412K T146 R	IC1401	4094793216	IC MM1188XS
	4050144618	TR 2SC2412K T146 S	IC1501	4090512910	IC TC4053BF-TP1
	4050158724	TR 2SC2812-L6-TB	IC201	4095175912	IC LA76818A
	4050158922	TR 2SC2812-L7-TB	IC202	4092415407	IC BA178M05T
	4051631612	TR 2SC2812N-L6-TB0		4091245302	IC L78M05T
	4051631711	TR 2SC2812N-L7-TB0		4091721509	IC MC78M05CT
	4051739813	TR 2SC3928A1R	IC281	4095646115	IC LA7642NM-TLM-E
	4051739912	TR 2SC3928A1S	IC3701	4095644319	IC NJW1142M
	4051843411	TR 2SD0601A-R-TX	IC501	4095070900	IC LA78040N
				4095101109	IC TDA9302H
Q693	4050118411	TR 2SC1740S-Q	IC681	4092415407	IC BA178M05T
	4050118510	TR 2SC1740S-R		4092654806	IC L78M05CV
	4050118619	TR 2SC1740S-S		4091721509	IC MC78M05CT
	4050122012	TR 2SC1815-GR		4093205700	IC UPC78M05AHF
	4050122319	TR 2SC1815-Y	IC801	4104862007	IC LC863448W-XXXX-TLM
	4050207511	TR 2SC945A-PA	IC802	4104958007	IC AT24C16A-10PI-2.7
	4050207719	TR 2SC945A-QA		4094594506	IC 24LC16B/P
Q818	4050144519	TR 2SC2412K T146 R	CAPACITOR		
	4050144618	TR 2SC2412K T146 S	C001	4040886600	ELECT 2200U M 25V
	4050158724	TR 2SC2812-L6-TB		4030459867	ELECT 2200U M 25V
	4050158922	TR 2SC2812-L7-TB	C011	4040848806	ELECT 1U M 50V
	4051739813	TR 2SC3928A1R		4030490018	ELECT 1U M 50V
	4051739912	TR 2SC3928A1S	C021	4040848806	ELECT 1U M 50V
	4051843411	TR 2SD0601A-R-TX		4030490018	ELECT 1U M 50V
	4051345925	TR 2SA1037AK-T146-R	C031	4040849308	ELECT 47U M 50V
	4051472215	TR 2SA1037AK-S-T146		4030513123	ELECT 47U M 50V
	4050020318	TR 2SA1037K T146 R	C1000	4040847700	ELECT 10U M 16V
Q861	4050020417	TR 2SA1037K T146 S		4030418824	ELECT 10U M 16V
	4050026726	TR 2SA1179-M6-TB	C1001	4040847700	ELECT 10U M 16V
	4050026924	TR 2SA1179-M7-TB		4030418824	ELECT 10U M 16V
	4051631513	TR 2SA1179N-M6-TB	C1002	4040847700	ELECT 10U M 16V
	4051632718	TR 2SA1179N-M7-TB		4030418824	ELECT 10U M 16V
	4050144519	TR 2SC2412K T146 R	C101	4040848301	ELECT 470U M 16V
	4050144618	TR 2SC2412K T146 S		4030441743	ELECT 470U M 16V
	4050158724	TR 2SC2812-L6-TB	C1030	4040847700	ELECT 10U M 16V
	4050158922	TR 2SC2812-L7-TB		4030418824	ELECT 10U M 16V
	4051631612	TR 2SC2812N-L6-TB0	C1031	4040847700	ELECT 10U M 16V
Q871	4051631711	TR 2SC2812N-L7-TB0		4030418824	ELECT 10U M 16V
	4051739813	TR 2SC3928A1R	C1032	4040847700	ELECT 10U M 16V
	4051739912	TR 2SC3928A1S		4030418824	ELECT 10U M 16V
	4050144519	TR 2SC2412K T146 R	C106	4040849308	ELECT 47U M 50V
	4050144618	TR 2SC2412K T146 S		4030513123	ELECT 47U M 50V
	4050158724	TR 2SC2812-L6-TB	C1060	4040847700	ELECT 10U M 16V
	4050158922	TR 2SC2812-L7-TB		4030418824	ELECT 10U M 16V
	4051631612	TR 2SC2812N-L6-TB0	C1061	4040847700	ELECT 10U M 16V
	4051631711	TR 2SC2812N-L7-TB0		4030418824	ELECT 10U M 16V
	4051739813	TR 2SC3928A1R	C1062	4040848004	ELECT 220U M 16V
Q881	4051739912	TR 2SC3928A1S		4030430222	ELECT 220U M 16V
	4050144519	TR 2SC2412K T146 R	C1063	4040848905	ELECT 10U M 50V
	4050144618	TR 2SC2412K T146 S		4030494224	ELECT 10U M 50V
	4050158724	TR 2SC2812-L6-TB	C1064	4040848905	ELECT 10U M 50V
	4050158922	TR 2SC2812-L7-TB		4030494224	ELECT 10U M 50V
	4051631612	TR 2SC2812N-L6-TB0	C1065	4040848905	ELECT 10U M 50V
	4051631711	TR 2SC2812N-L7-TB0		4030494224	ELECT 10U M 50V
	4051739813	TR 2SC3928A1R	C1066	4040848905	ELECT 10U M 50V
	4051739912	TR 2SC3928A1S		4030494224	ELECT 10U M 50V
	4050144519	TR 2SC2412K T146 R	C107	4040849308	ELECT 47U M 50V
Q882	4050144618	TR 2SC2412K T146 S		4030513123	ELECT 47U M 50V
	4050158724	TR 2SC2812-L6-TB	C1081	4032152211	CERAMIC 0.01U K 50V
	4050158922	TR 2SC2812-L7-TB	C1082	4040847700	ELECT 10U M 16V
	4051631612	TR 2SC2812N-L6-TB0		4030418824	ELECT 10U M 16V
	4051631711	TR 2SC2812N-L7-TB0	C1084	4032152211	CERAMIC 0.01U K 50V
	4051739813	TR 2SC3928A1R	C111	4032152211	CERAMIC 0.01U K 50V
	4051739912	TR 2SC3928A1S	C112	4032152211	CERAMIC 0.01U K 50V
	4050144519	TR 2SC2412K T146 R	C113	4032152211	CERAMIC 0.01U K 50V
	4050144618	TR 2SC2412K T146 S	C120	4032844314	CERAMIC 0.022U K 50V
	4050158724	TR 2SC2812-L6-TB			
Q886	4050158922	TR 2SC2812-L7-TB			
	4051631612	TR 2SC2812N-L6-TB0			
	4051631711	TR 2SC2812N-L7-TB0			
	4051739813	TR 2SC3928A1R			
	4051739912	TR 2SC3928A1S			
	4051843411	TR 2SD0601A-R-TX			
INTEGRATED CIRCUIT					
IC001	4095752202	IC AN17820B			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C121	4032152211	CERAMIC 0.01U K 50V	C277	4040871606	ELECT 0.1U M 50V
C122	4040847809	ELECT 100U M 16V		4030478422	ELECT 0.1U M 50V
	4030422425	ELECT 100U M 16V	C278	4033053517	CERAMIC 0.1U Z 50V
C123	4011057919	MT-GLAZE 0.000 ZA 1/16W	C280	4032152211	CERAMIC 0.01U K 50V
C124	4032152211	CERAMIC 0.01U K 50V	C281	4040848806	ELECT 1U M 50V
C132	4040848707	ELECT 0.47U M 50V		4030490018	ELECT 1U M 50V
	4030486328	ELECT 0.47U M 50V	C282	4032152211	CERAMIC 0.01U K 50V
C135	4040848707	ELECT 0.47U M 50V	C283	4032152211	CERAMIC 0.01U K 50V
	4030486328	ELECT 0.47U M 50V	C284	4040848806	ELECT 1U M 50V
C138	4032844314	CERAMIC 0.022U K 50V		4030490018	ELECT 1U M 50V
C1401	4040847809	ELECT 100U M 16V	C285	4040849803	NP-ELECT 1U M 50V
	4030422425	ELECT 100U M 16V		4030862310	NP-ELECT 1U M 50V
C1402	4032152211	CERAMIC 0.01U K 50V	C286	4040848806	ELECT 1U M 50V
C1501	4032152211	CERAMIC 0.01U K 50V		4030490018	ELECT 1U M 50V
C1502	4040848905	ELECT 10U M 50V	C287	4040849803	NP-ELECT 1U M 50V
	4030494224	ELECT 10U M 50V		4030862310	NP-ELECT 1U M 50V
C171	4031552111	CERAMIC 1500P K 50V	C288	4030608433	POLYESTER 0.033U K 50V
C172	4032152211	CERAMIC 0.01U K 50V		4031791619	POLYESTER 0.033U K 50V
C174	4031571914	CERAMIC 10P D 50V	C289	4040848905	ELECT 10U M 50V
C1902	4040875406	ELECT 22U M 50V		4030494224	ELECT 10U M 50V
	4030502810	ELECT 22U M 50V	C291	4031818217	POLYESTER 0.1U K 50V
C201	4040849803	NP-ELECT 1U M 50V	C302	4031133815	CERAMIC 1000P K 50V
	4030862310	NP-ELECT 1U M 50V	C358	4040848806	ELECT 1U M 50V
C202	4032499039	MT-COMPO 0.015U J 50V	C358	4030490018	ELECT 1U M 50V
C203	4032152211	CERAMIC 0.01U K 50V	C3701	4040847908	ELECT 1000U M 16V
C204	4040848905	ELECT 10U M 50V		4030424875	ELECT 1000U M 16V
	4030494224	ELECT 10U M 50V	C3702	4033423310	CERAMIC 0.1U K 25V
C205	4040848905	ELECT 10U M 50V	C3710	4040849209	ELECT 4.7U M 50V
	4030494224	ELECT 10U M 50V		4030510627	ELECT 4.7U M 50V
C206	4033053517	CERAMIC 0.1U Z 50V	C3711	4040849209	ELECT 4.7U M 50V
C207	4033053517	CERAMIC 0.1U Z 50V		4030510627	ELECT 4.7U M 50V
C208	4031133815	CERAMIC 1000P K 50V	C3712	4040849209	ELECT 4.7U M 50V
C209	4040848707	ELECT 0.47U M 50V		4030510627	ELECT 4.7U M 50V
	4030486328	ELECT 0.47U M 50V	C3714	4031134119	CERAMIC 2200P K 50V
C210	4032188111	ELECT 1000U M 25V	C3715	4033423310	CERAMIC 0.1U K 25V
C212	4031554214	CERAMIC 15P J 50V	C3717	4040848806	ELECT 1U M 50V
C218	4011057919	MT-GLAZE 0.000 ZA 1/16W		4030490018	ELECT 1U M 50V
C219	4032152211	CERAMIC 0.01U K 50V	C3720	4040849209	ELECT 4.7U M 50V
C221	4033053517	CERAMIC 0.1U Z 50V		4030510627	ELECT 4.7U M 50V
C222	4033053517	CERAMIC 0.1U Z 50V	C3721	4040849209	ELECT 4.7U M 50V
C223	4033053517	CERAMIC 0.1U Z 50V		4030510627	ELECT 4.7U M 50V
C224	4033670417	CERAMIC 0.1U K 50V	C3722	4040849209	ELECT 4.7U M 50V
C225	4040848806	ELECT 1U M 50V		4030510627	ELECT 4.7U M 50V
	4030490018	ELECT 1U M 50V	C3724	4031134119	CERAMIC 2200P K 50V
C226	4040848806	ELECT 1U M 50V	C3725	4033423310	CERAMIC 0.1U K 25V
	4030490018	ELECT 1U M 50V	C3727	4040848806	ELECT 1U M 50V
C227	4040849803	NP-ELECT 1U M 50V		4030490018	ELECT 1U M 50V
	4030862310	NP-ELECT 1U M 50V	C3730	4032844314	CERAMIC 0.022U K 50V
C231	4032602944	MT-COMPO 0.33U J 50V	C3731	4032789615	CERAMIC 1U Z 16V
C232	4032602944	MT-COMPO 0.33U J 50V	C3732	4032794312	CERAMIC 0.33U K 16V
C233	4040848905	ELECT 10U M 50V	C3733	4040848806	ELECT 1U M 50V
	4030494224	ELECT 10U M 50V		4030490018	ELECT 1U M 50V
C240	4032152211	CERAMIC 0.01U K 50V	C3734	4040848806	ELECT 1U M 50V
C243	4032152211	CERAMIC 0.01U K 50V		4030490018	ELECT 1U M 50V
C244	4040849308	ELECT 47U M 50V	C3735	4040848806	ELECT 1U M 50V
	4030513123	ELECT 47U M 50V		4030490018	ELECT 1U M 50V
C245	4040849803	NP-ELECT 1U M 50V	C420	4040806608	MT-POLYPRO 6800P H 1.5K
	4030862310	NP-ELECT 1U M 50V		4033480610	MT-POLYPRO 6800P H 1.5K
C246	4040848806	ELECT 1U M 50V	C423A	4032690416	CERAMIC 270P K 3K
	4030490018	ELECT 1U M 50V	C432	4030757121	CERAMIC 1000P K 500V
C247	4040849001	ELECT 2.2U M 50V	C433	4030763122	CERAMIC 3900P K 500V
	4030499823	ELECT 2.2U M 50V	C434	4040876007	ELECT 47U M 35V
C273	4033053517	CERAMIC 0.1U Z 50V		4030540713	ELECT 47U M 35V
C275	4040849308	ELECT 47U M 50V	C437	4030666106	MT-POLYEST 0.47U J 250V
	4030513123	ELECT 47U M 50V	C441	4030789914	MT-POLYPRO 0.27U J 200V
C276	4040849308	ELECT 47U M 50V		4033467126	MT-POLYPRO 0.27U J 250V
	4030513123	ELECT 47U M 50V	C469	4040848905	ELECT 10U M 50V

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C471	4030494224	ELECT 10U M 50V	C664	4030481917	ELECT 0.22U M 50V
	4040565208	NP-ELECT 2.2U M 100V		4040848004	ELECT 220U M 16V
	4040849902	NP-ELECT 2.2U M 100V		4030430222	ELECT 220U M 16V
C486	4032600722	ELECT 33U M 250V	C665	4040848301	ELECT 470U M 16V
C491	4030765324	CERAMIC 680P K 500V		4030441773	ELECT 470U M 16V
C510	4040887300	ELECT 22U M 16V	C681	4040847601	ELECT 470U M 10V
	4030427727	ELECT 22U M 16V		4030414529	ELECT 470U M 10V
C511	4032152211	CERAMIC 0.01U K 50V	C690		ELECT 2.2U M 50V
C514	4040848905	ELECT 10U M 50V	C691	4040876007	ELECT 47U M 35V
	4030494224	ELECT 10U M 50V		4030540713	ELECT 47U M 35V
C515	4040886600	ELECT 2200U M 25V	C693	4040848202	ELECT 47U M 16V
	4030459867	ELECT 2200U M 25V		4030439136	ELECT 47U M 16V
C517	4040849407	ELECT 220U M 35V	C801	4031554214	CERAMIC 15P J 50V
	4030532134	ELECT 220U M 35V	C802	4031572515	CERAMIC 27P J 50V
C520	4030641212	POLYESTER 0.1U K 100V	C803	4032152211	CERAMIC 0.01U K 50V
	4032769726	POLYESTER 0.1U K 100V	C804	4032247016	CERAMIC 0.047U Z 50V
C521	4040873709	ELECT 2200U M 35V	C805	4040847700	ELECT 10U M 16V
	4030533606	ELECT 2200U M 35V	C805	4030418824	ELECT 10U M 16V
C524	4032769726	POLYESTER 0.1U K 100V	C806	4031640214	CERAMIC 0.1U Z 25V
C527	4040848905	ELECT 10U M 50V	C811	4032152211	CERAMIC 0.01U K 50V
	4030494224	ELECT 10U M 50V	C816	4032152211	CERAMIC 0.01U K 50V
△ C601	4040712107	MT-POLYEST 0.1U K 250V	C823	4031640214	CERAMIC 0.1U Z 25V
	4040725602	MT-POLYEST 0.1U M 250V	C824	4033053517	CERAMIC 0.1U Z 50V
	4040607205	MT-POLYEST 0.1U M 250V	C829	4031640214	CERAMIC 0.1U Z 25V
	4040661702	MT-POLYEST 0.1U M 275V	C835	4040848806	ELECT 1U M 50V
4040936107	MT-POLYEST 0.1U M 275V	4030490018		ELECT 1U M 50V	
△ C602	4040712107	MT-POLYEST 0.1U K 250V	C836	4031573116	CERAMIC 56P J 50V
	4040725602	MT-POLYEST 0.1U M 250V	C837	4031573116	CERAMIC 56P J 50V
	4040607205	MT-POLYEST 0.1U M 250V	C851	4031573116	CERAMIC 56P J 50V
	4040661702	MT-POLYEST 0.1U M 275V	C852	4031573116	CERAMIC 56P J 50V
C608	4040936107	MT-POLYEST 0.1U M 275V	C853	4031573116	CERAMIC 56P J 50V
	4030766707	CERAMIC 1000P K 1K	C854	4040848905	ELECT 10U M 50V
C609		CERAMIC 1000P K 1K		4030494224	ELECT 10U M 50V
	4032719622	CERAMIC 1000P K 1K	C856	4031133815	CERAMIC 1000P K 50V
	4040518105	ELECT 270U M 400V	C861	4040848806	ELECT 1U M 50V
C610	4040787600	ELECT 270U M 400V		4030490018	ELECT 1U M 50V
	4040731900	CERAMIC 1000P M 250V	C862	4031640214	CERAMIC 0.1U Z 25V
C611	4040732006	CERAMIC 1000P M 250V	C880	4031552210	CERAMIC 3300P K 50V
	4040713401	CERAMIC 1000P M 400V	C890	4031573611	CERAMIC 100P J 50V
	4030569734	POLYESTER 0.01U J 50V	C892	4031640214	CERAMIC 0.1U Z 25V
C613	4031789319	POLYESTER 0.01U J 50V	C893	4040849001	ELECT 2.2U M 50V
	4030573137	POLYESTER 0.1U K 50V		4030499823	ELECT 2.2U M 50V
C614	4031818217	POLYESTER 0.1U K 50V	C894	4033335118	CERAMIC 0.033U K 50V
	4032377941	MT-COMPO 0.22U J 50V			
C615	4032454424	CERAMIC 470P K 2K			
C617		CERAMIC 220P K 2K			
C618	4033145103	MT-POLYEST 0.047U K 630V			
△ C629	4040732709	CERAMIC 2200P M 250V			
	4040732808	CERAMIC 2200P M 250V			
	4040714200	CERAMIC 2200P M 400V			
C643	4031480424	ELECT 1000U M 25V			
C644	4030461612	ELECT 3.3U M 25V			
C651	4040739005	ELECT 220U M 160V			
C652	4031482012	ELECT 470U M 35V			
C653	4040849803	NP-ELECT 1U M 50V			
	4030862310	NP-ELECT 1U M 50V			
C654	4030468007	ELECT 3300U M 25V			
C655		CERAMIC 680P K 1K			
		CERAMIC 680P K 1K			
C656	4032719820	CERAMIC 680P K 1K			
	4032475023	CERAMIC 470P K 1K			
C657	4032691829	CERAMIC 470P K 1K			
	4032475023	CERAMIC 470P K 1K			
C658	4032691829	CERAMIC 470P K 1K			
	4032475023	CERAMIC 470P K 1K			
C663	4040871606	ELECT 0.22U M 50V			

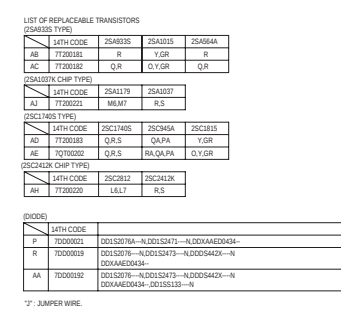
Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R1060	4010276638	CARBON 75 JA 1/6W	R212	4010251338	CARBON 150 JA 1/6W
R1061	4011056615	MT-GLAZE 6.8K JA 1/16W	R221	4011050514	MT-GLAZE 1K JA 1/16W
R1062	4011056615	MT-GLAZE 6.8K JA 1/16W	R222	4011050514	MT-GLAZE 1K JA 1/16W
R1063	4011055915	MT-GLAZE 560 JA 1/16W	R223	4011050514	MT-GLAZE 1K JA 1/16W
R1064	4011050712	MT-GLAZE 100K JA 1/16W	R224	4011055311	MT-GLAZE 4.7K JA 1/16W
R1065	4011055915	MT-GLAZE 560 JA 1/16W	R225	4011055311	MT-GLAZE 4.7K JA 1/16W
R1066	4011050712	MT-GLAZE 100K JA 1/16W	R226	4011052914	MT-GLAZE 22K JA 1/16W
R1067	4011054611	MT-GLAZE 3.9K JA 1/16W	R227	4011054215	MT-GLAZE 33K JA 1/16W
R1068	4011050514	MT-GLAZE 1K JA 1/16W	R228	4010252335	CARBON 150K JA 1/6W
R1069	4011056615	MT-GLAZE 6.8K JA 1/16W	R229	4011056714	MT-GLAZE 680K JA 1/16W
R107	4010246730	CARBON 100 JA 1/6W	R230	4010269333	CARBON 47 JA 1/6W
R1070	4011056615	MT-GLAZE 6.8K JA 1/16W	R234	4011055816	MT-GLAZE 56 JA 1/16W
R1071	4011054611	MT-GLAZE 3.9K JA 1/16W	R235	4011055816	MT-GLAZE 56 JA 1/16W
R1072	4011050514	MT-GLAZE 1K JA 1/16W	R236	4011055816	MT-GLAZE 56 JA 1/16W
R1073	4011056615	MT-GLAZE 6.8K JA 1/16W	R237	4011057414	MT-GLAZE 8.2K JA 1/16W
R1074	4011051610	MT-GLAZE 15K JA 1/16W	R244	4011055410	MT-GLAZE 47K JA 1/16W
R1075	4011051412	MT-GLAZE 150 JA 1/16W	R245	4011055410	MT-GLAZE 47K JA 1/16W
R1076	4011051412	MT-GLAZE 150 JA 1/16W	R264	4010260637	CARBON 270 JA 1/6W
R1077	4011054215	MT-GLAZE 33K JA 1/16W	R265	4011057919	MT-GLAZE 0.000 ZA 1/16W
R1078	4011056615	MT-GLAZE 6.8K JA 1/16W	R267	4010260637	CARBON 270 JA 1/6W
R1079	4011054215	MT-GLAZE 33K JA 1/16W	R271	4011050415	MT-GLAZE 100 JA 1/16W
R108	4010254636	CARBON 18K JA 1/6W	R272	4011050415	MT-GLAZE 100 JA 1/16W
R1080	4011054215	MT-GLAZE 33K JA 1/16W	R280	4011050415	MT-GLAZE 100 JA 1/16W
R1081	4011134412	MT-GLAZE 75 JA 1/16W	R281	4011053416	MT-GLAZE 27K JA 1/16W
R1082	4011134412	MT-GLAZE 75 JA 1/16W	R282	4011054116	MT-GLAZE 3.3K JA 1/16W
R1083	4011051610	MT-GLAZE 15K JA 1/16W	R283	4011055311	MT-GLAZE 4.7K JA 1/16W
R109	4011058213	MT-GLAZE 68K JA 1/16W	R284	4011054116	MT-GLAZE 3.3K JA 1/16W
R111	4011050514	MT-GLAZE 1K JA 1/16W	R285	4010269333	CARBON 47 JA 1/6W
R112	4011056011	MT-GLAZE 5.6K JA 1/16W	R286	4012039914	MT-GLAZE 4.7K FA 1/16W
R114	4011054017	MT-GLAZE 330 JA 1/16W	R287	4011057919	MT-GLAZE 0.000 ZA 1/16W
R115	4010272135	CARBON 56 JA 1/6W	R291	4010681600	OXIDE-MT 4.7 JA 2W
R116	4011055816	MT-GLAZE 56 JA 1/16W	R352	4010127059	CARBON 10K JA 1/4W
R121	4011056615	MT-GLAZE 6.8K JA 1/16W	R354	4010258238	CARBON 22K JA 1/6W
R122	4011052815	MT-GLAZE 2.2K JA 1/16W	R355	4010127059	CARBON 10K JA 1/4W
R124	4011050613	MT-GLAZE 10K JA 1/16W	R356	4011050613	MT-GLAZE 10K JA 1/16W
R125	4010261337	CARBON 27K JA 1/6W	R357	4010267032	CARBON 3.9K JA 1/6W
R130	4011057919	MT-GLAZE 0.000 ZA 1/16W	R358	4011057919	MT-GLAZE 0.000 ZA 1/16W
R132	4011055212	MT-GLAZE 470 JA 1/16W	R359	4010279035	CARBON 82K JA 1/6W
R140	4011057919	MT-GLAZE 0.000 ZA 1/16W	R3731	4011050415	MT-GLAZE 100 JA 1/16W
R1401	4011055212	MT-GLAZE 470 JA 1/16W	R3732	4011050415	MT-GLAZE 100 JA 1/16W
R1402	4011055212	MT-GLAZE 470 JA 1/16W	R422	4010202954	CARBON 47K JA 1/4W
R1403	4011050613	MT-GLAZE 10K JA 1/16W	R423	4010224154	CARBON 68K JA 1/4W
R1405	4011050613	MT-GLAZE 10K JA 1/16W	R424	4010247034	CARBON 1K JA 1/6W
R1406	4011050613	MT-GLAZE 10K JA 1/16W	R426	4010247440	CARBON 10K JA 1/6W
R141	4011055915	MT-GLAZE 560 JA 1/16W	R432	4011050514	MT-GLAZE 1K JA 1/16W
R1501	4011050514	MT-GLAZE 1K JA 1/16W	R433	4010071134	CARBON 1K JA 1/2W
R1503	4011057919	MT-GLAZE 0.000 ZA 1/16W	R434	4010612505	OXIDE-MT 330 JA 1W
R1504	4011053416	MT-GLAZE 27K JA 1/16W	R435	4020837202	OXIDE-MT 15 JB 7W
R1505	4011055410	MT-GLAZE 47K JA 1/16W	R441	4010583706	OXIDE-MT 1K JA 1W
R1507	4011054215	MT-GLAZE 33K JA 1/16W	R445	4010653706	OXIDE-MT 1.2K JA 2W
R1508	4011056011	MT-GLAZE 5.6K JA 1/16W	R475	4010095843	CARBON 330 JA 1/2W
R176	4011050613	MT-GLAZE 10K JA 1/16W	R479	4011052815	MT-GLAZE 2.2K JA 1/16W
R1901	4011053416	MT-GLAZE 27K JA 1/16W	R481	4010673100	OXIDE-MT 3.9 JA 2W
R1902	4011051115	MT-GLAZE 12K JA 1/16W	R488	4020222008	FUSIBLE RES 1.0 J- 1/2W
R1903	4011056011	MT-GLAZE 5.6K JA 1/16W	R501	4010697304	OXIDE-MT 820 JA 2W
R1904	4011054611	MT-GLAZE 3.9K JA 1/16W	R502	4010648702	OXIDE-MT 1K JA 2W
R1905	4011052815	MT-GLAZE 2.2K JA 1/16W	R510	4010247440	CARBON 10K JA 1/6W
R1906	4011052013	MT-GLAZE 1.8K JA 1/16W	R511	4010247440	CARBON 10K JA 1/6W
R1907	4010246730	CARBON 100 JA 1/6W	R512	4010200851	CARBON 470 JA 1/4W
R1911	4010257439	CARBON 220 JA 1/6W	R514	4010249731	CARBON 12K JA 1/6W
R1912	4010257439	CARBON 220 JA 1/6W	R515	4010267438	CARBON 39K JA 1/6W
R1913	4010257439	CARBON 220 JA 1/6W	R516	4010249731	CARBON 12K JA 1/6W
R194	4011055212	MT-GLAZE 470 JA 1/16W	R518	4010083711	CARBON 2.2 JA 1/2W
R195	4011055212	MT-GLAZE 470 JA 1/16W	R519	4010246730	CARBON 100 JA 1/6W
R208	4011057919	MT-GLAZE 0.000 ZA 1/16W	R522	4010275235	CARBON 680 JA 1/6W
R210	4011053713	MT-GLAZE 3K JA 1/16W	R525	4010588107	OXIDE-MT 120 JA 1W
R211	4010251338	CARBON 150 JA 1/6W	R527	4011058114	MT-GLAZE 56K JA 1/16W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R602A	4020825605	WIRE WOUND 1.8 KA 10W	R838	4011051610	MT-GLAZE 15K JA 1/16W
R611	4010200851	CARBON 470 JA 1/4W	R839	4010263935	CARBON 330 JA 1/6W
△ R613	4020965202	FUSIBLE RES 1.2K J- 1/2W	R840	4010263935	CARBON 330 JA 1/6W
R614	4010258238	CARBON 22K JA 1/6W	R841	4011055311	MT-GLAZE 4.7K JA 1/16W
R615	4010247034	CARBON 1K JA 1/6W	R842	4010269937	CARBON 4.7K JA 1/6W
R616	4010251932	CARBON 15K JA 1/6W	R851	4010251635	CARBON 1.5K JA 1/6W
R619	4010161548	CARBON 22 JA 1/4W	R852	4010247440	CARBON 10K JA 1/6W
R620	4010109213	CARBON 560K JA 1/2W	R853	4010278632	CARBON 8.2K JA 1/6W
R621	4010109213	CARBON 560K JA 1/2W	R854	4011057919	MT-GLAZE 0.000 ZA 1/16W
R622	4010199650	CARBON 47 JA 1/4W	R855	4010278632	CARBON 8.2K JA 1/6W
R623	4010270537	CARBON 470K JA 1/6W	R857	4010278632	CARBON 8.2K JA 1/6W
△ R624	4020018502	FUSIBLE RES 10 J- 1/2W	R859	4011054611	MT-GLAZE 3.9K JA 1/16W
R625	4010694501	OXIDE-MT 68K JA 2W	R861	4011051511	MT-GLAZE 1.5K JA 1/16W
R626	4010694501	OXIDE-MT 68K JA 2W	R862	4011057414	MT-GLAZE 8.2K JA 1/16W
R627	4010258238	CARBON 22K JA 1/6W	R863	4011055410	MT-GLAZE 47K JA 1/16W
△ R628	4020008602	SOLID 5.6M KA 1/2W	R866	4010246730	CARBON 100 JA 1/6W
△ R629	4020008602	SOLID 5.6M KA 1/2W	R869	4010246730	CARBON 100 JA 1/6W
R631	4010270339	CARBON 47K JA 1/6W	R870	4011052914	MT-GLAZE 22K JA 1/16W
R632	4011007706	OXIDE-MT 0.22 JA 2W	R871	4011050613	MT-GLAZE 10K JA 1/16W
R641	4010247440	CARBON 10K JA 1/6W	R872	4010261337	CARBON 27K JA 1/6W
R642	4010270339	CARBON 47K JA 1/6W	R873	4011054215	MT-GLAZE 33K JA 1/16W
R643	4010254636	CARBON 18K JA 1/6W	R874	4011050613	MT-GLAZE 10K JA 1/16W
R644	4010258238	CARBON 22K JA 1/6W	R875	4011055410	MT-GLAZE 47K JA 1/16W
R651	4010247034	CARBON 1K JA 1/6W	R877	4030729425	CERAMIC 3300P K 50V
R653	4020222008	FUSIBLE RES 1.0 J- 1/2W	R879	4011135914	MT-GLAZE 1.3K JA 1/16W
R655	4010127059	CARBON 10K JA 1/4W	R880	4011055311	MT-GLAZE 4.7K JA 1/16W
R656	4010607402	OXIDE-MT 270 JA 1W	R881	4011054116	MT-GLAZE 3.3K JA 1/16W
R657	4010191951	CARBON 3.9K JA 1/4W	R882	4011054116	MT-GLAZE 3.3K JA 1/16W
R661	4010128155	CARBON 100K JA 1/4W	R883	4011054215	MT-GLAZE 33K JA 1/16W
R662	4011055311	MT-GLAZE 4.7K JA 1/16W	R886	4011052914	MT-GLAZE 22K JA 1/16W
R663	4010252335	CARBON 150K JA 1/6W	R887	4011052914	MT-GLAZE 22K JA 1/16W
R664	4010614400	OXIDE-MT 33K JA 1W	R888	4010272333	CARBON 560 JA 1/6W
R665	4010136457	CARBON 12K JA 1/4W	R892	4011055519	MT-GLAZE 470K JA 1/16W
R666	4011052914	MT-GLAZE 22K JA 1/16W	R893	4011058015	MT-GLAZE 1M JA 1/16W
R667	4011050613	MT-GLAZE 10K JA 1/16W	R894	4011050415	MT-GLAZE 100 JA 1/16W
R668	4010651801	OXIDE-MT 12 JA 2W			
R669	4010651801	OXIDE-MT 12 JA 2W			
R671	4010258238	CARBON 22K JA 1/6W			
R672	4010249731	CARBON 12K JA 1/6W			
R673	4011056110	MT-GLAZE 560K JA 1/16W			
R681	4010258238	CARBON 22K JA 1/6W			
R682	4011056110	MT-GLAZE 560K JA 1/16W			
R690	4011055410	MT-GLAZE 47K JA 1/16W			
R691	4011055410	MT-GLAZE 47K JA 1/16W			
R692	4011053416	MT-GLAZE 27K JA 1/16W			
R693	4011057414	MT-GLAZE 8.2K JA 1/16W			
R694	4010272630	CARBON 5.6K JA 1/6W			
R695	4010632008	OXIDE-MT 6.8K JA 1W			
R696	4011055311	MT-GLAZE 4.7K JA 1/16W			
R697	4011055410	MT-GLAZE 47K JA 1/16W			
R801	4011053515	MT-GLAZE 270K JA 1/16W			
R811	4011050613	MT-GLAZE 10K JA 1/16W			
R813	4011050613	MT-GLAZE 10K JA 1/16W			
R814	4011050613	MT-GLAZE 10K JA 1/16W			
R815	4011050613	MT-GLAZE 10K JA 1/16W			
R816	4011050613	MT-GLAZE 10K JA 1/16W			
R817	4010247034	CARBON 1K JA 1/6W			
R818	4010247034	CARBON 1K JA 1/6W			
R819	4011050613	MT-GLAZE 10K JA 1/16W			
R820	4010247440	CARBON 10K JA 1/6W			
R830	4011050514	MT-GLAZE 1K JA 1/16W			
R831	4011055212	MT-GLAZE 470 JA 1/16W			
R833	4010247440	CARBON 10K JA 1/6W			
R834	4011050613	MT-GLAZE 10K JA 1/16W			
R835	4011050613	MT-GLAZE 10K JA 1/16W			
R836	4011050613	MT-GLAZE 10K JA 1/16W			
R837	4011051610	MT-GLAZE 15K JA 1/16W			
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Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
D1001	4080480301	ZENER DIODE MTZJ9.1C-52	D1910A	6102737929	HOLDER LED-S4KF
	4070639722	ZENER DIODE MTZJ9.1C		6103039954	HOLDER LED-C4LA
	4070579820	ZENER DIODE RD9.1EB3	D280	4070995828	ZENER DIODE MTZJ7.5A
D1002	4080480301	ZENER DIODE MTZJ9.1C-52		4070576324	ZENER DIODE RD7.5EB1
	4070639722	ZENER DIODE MTZJ9.1C	D352	4070568012	ZENER DIODE RD5.1EB2
	4070579820	ZENER DIODE RD9.1EB3	D357	4070124426	DIODE 1SS133
D103	4080480301	ZENER DIODE MTZJ9.1C-52	D3701	4070054525	DIODE DS442X
	4071000224	ZENER DIODE MTZJ36A		4080093204	DIODE 1N4148
	4070562317	ZENER DIODE RD36EB1		4070124426	DIODE 1SS133
D1030	4070710015	ZENER DIODE DZD12X-TA		4070134336	DIODE 1S2076A
	4070710114	ZENER DIODE DZD12Y-TA		4070137129	DIODE 1S2473
	4070710213	ZENER DIODE DZD12Z-TA	D421	4070997228	ZENER DIODE MTZJ16A
	4070544115	ZENER DIODE RD12M-T2BB1		4070547027	ZENER DIODE RD16EB1
	4070544214	ZENER DIODE RD12M-T2BB2	D441	4070066310	DIODE ERC05-10BV1
	4070544313	ZENER DIODE RD12M-T2BB3		4070096921	DIODE RM11C
	4071996210	ZD 02CZ12X(TE85R)	D467	4080093204	DIODE 1N4148
	4071752816	ZD 02CZ12Y(TE85R)		4070134336	DIODE 1S2076A
	4071752915	ZD 02CZ12Z(TE85R)		4070136528	DIODE 1S2471
D1031	4070639722	ZENER DIODE MTZJ9.1C	D468	4080093204	DIODE 1N4148
	4070579820	ZENER DIODE RD9.1EB3		4070124426	DIODE 1SS133
	4080480301	ZENER DIODE MTZJ9.1C-52		4070134336	DIODE 1S2076A
D1032	4070639722	ZENER DIODE MTZJ9.1C		4070137129	DIODE 1S2473
	4070579820	ZENER DIODE RD9.1EB3	D476	4070638329	ZENER DIODE MTZJ11C
	4080480301	ZENER DIODE MTZJ9.1C-52		4070541827	ZENER DIODE RD11EB3
D1060	4070710015	ZENER DIODE DZD12X-TA	D485	4070077415	DIODE EU1
	4070710114	ZENER DIODE DZD12Y-TA	D512	4070057328	DIODE EM01Z
	4070710213	ZENER DIODE DZD12Z-TA		4070058632	DIODE ERA15-02-V1
	4070544115	ZENER DIODE RD12M-T2BB1		4080100506	DIODE BYD33D
	4070544214	ZENER DIODE RD12M-T2BB2	D605	4070066310	DIODE ERC05-10BV1
	4070544313	ZENER DIODE RD12M-T2BB3		4070096921	DIODE RM11C
	4071996210	ZD 02CZ12X(TE85R)	D606	4070066310	DIODE ERC05-10BV1
	4071752816	ZD 02CZ12Y(TE85R)		4070096921	DIODE RM11C
	4071752915	ZD 02CZ12Z(TE85R)	D607	4070066310	DIODE ERC05-10BV1
D1081	4070710015	ZENER DIODE DZD12X-TA		4070096921	DIODE RM11C
	4070710114	ZENER DIODE DZD12Y-TA	D608	4070066310	DIODE ERC05-10BV1
	4070710213	ZENER DIODE DZD12Z-TA		4070096921	DIODE RM11C
	4070544115	ZENER DIODE RD12M-T2BB1	△ D610		PHOTO COUPLE PC123X5YFZ
	4070544214	ZENER DIODE RD12M-T2BB2		4072303908	PHOTO COUPLE PC123Y52
	4070544313	ZENER DIODE RD12M-T2BB3		4072317707	PC TLP421F(D4-BL)
	4071996210	ZD 02CZ12X(TE85R)	D611	4071468113	DIODE EG01C
	4071752816	ZD 02CZ12Y(TE85R)	D612	4070124426	DIODE 1SS133
	4071752915	ZD 02CZ12Z(TE85R)	D614	4070076616	DIODE ES1
D1082	4070710015	ZENER DIODE DZD12X-TA	D616	4070997921	ZENER DIODE MTZJ20B
	4070710114	ZENER DIODE DZD12Y-TA		4070551816	ZENER DIODE RD20EB2
	4070710213	ZENER DIODE DZD12Z-TA	D617	4080093204	DIODE 1N4148
	4070544115	ZENER DIODE RD12M-T2BB1		4070124426	DIODE 1SS133
	4070544214	ZENER DIODE RD12M-T2BB2		4070134336	DIODE 1S2076A
	4070544313	ZENER DIODE RD12M-T2BB3		4070137129	DIODE 1S2473
	4071996210	ZD 02CZ12X(TE85R)	D619	4070995937	ZENER DIODE MTZJ8.2C
	4071752816	ZD 02CZ12Y(TE85R)		4070578417	ZENER DIODE RD8.2EB3
	4071752915	ZD 02CZ12Z(TE85R)	D643	4070124426	DIODE 1SS133
D122	4071661118	DIODE 1SS356-TW11	D651	4070098816	DIODE RU3AM
D1401	4080093204	DIODE 1N4148	D652	4072105700	DIODE RN1Z
	4070124426	DIODE 1SS133	D653	4072116102	DIODE FE301-1L43
	4070134336	DIODE 1S2076A		4071296706	DIODE RU4YX LF-L1
D1402	4070137129	DIODE 1S2473	D654	4071542704	DIODE YG901C2-LB
	4080093204	DIODE 1N4148	D655	4080093204	DIODE 1N4148
	4070124426	DIODE 1SS133		4070124426	DIODE 1SS133
	4070134336	DIODE 1S2076A		4070134336	DIODE 1S2076A
	4070137129	DIODE 1S2473		4070137129	DIODE 1S2473
D1902	4071490817	DIODE 1SS355-TE-17	D661	4070995521	ZENER DIODE MTZJ6.2C
D1903	4070054525	DIODE DS442X		4070572831	ZENER DIODE RD6.2EB3
	4080093204	DIODE 1N4148		4080478209	ZENER DIODE MTZJ6.2C-52
	4070124426	DIODE 1SS133	D662	4070995620	ZENER DIODE MTZJ6.8A
	4070134336	DIODE 1S2076A	D664	4070996122	ZENER DIODE MTZJ10B
	4070137129	DIODE 1S2473		4070540018	ZENER DIODE RD10EB2
D1910	4071589204	LED SPR-39MVWF		4080472207	ZENER DIODE MTZJ10B-52

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
D671	4080093204	DIODE 1N4148		4050043119	TR 2SA564A-Q(CU)
	4070124426	DIODE 1SS133		4050043218	TR 2SA564A-R(CU)
	4070134336	DIODE 1S2076A		4051513324	TR 2SA608NF-NPA
	4070137129	DIODE 1S2473		4050061717	TR 2SA933S-Q
D690	4071490817	DIODE 1SS355-TE-17		4050061816	TR 2SA933S-R
D691	4080093204	DIODE 1N4148	INTEGRATED CIRCUIT		
	4070124426	DIODE 1SS133	IC701	4094688403	IC TDA6103Q/N3
	4070134336	DIODE 1S2076A	CAPACITOR		
	4070137129	DIODE 1S2473	C710	4030558401	ELECT 22U M 250V
D692	4070077415	DIODE EU1		4032600405	ELECT 22U M 250V
D693	4070054525	DIODE DS442X	C731	4030772728	CERAMIC 1000P P 2K
	4080093204	DIODE 1N4148		4033128334	CERAMIC 1000P Z 2K
	4070124426	DIODE 1SS133	C751	4030422425	ELECT 100U M 16V
	4070134336	DIODE 1S2076A	C761	4031597409	MT-POLYEST 0.1U K 250V
	4070137129	DIODE 1S2473	C762	4030676719	MT-COMPO 0.22U J 50V
D861	4070557917	ZENER DIODE RD3.6EL		4032377941	MT-COMPO 0.22U J 50V
		ZENER DIODE RD3.6EL	RESISTOR		
MISCELLANEOUS			R704	4010650804	OXIDE-MT 100K JA 2W
△ F601	4230288603	FUSE 250V 4A	R705	4010078440	CARBON 1.5K JA 1/2W
	4230248409	FUSE 250V 4A	R706	4010254230	CARBON 1.8K JA 1/6W
F601A	6450403576	HOLDER, FUSE	R714	4010650804	OXIDE-MT 100K JA 2W
F601B	6450403576	HOLDER, FUSE	R715L	4010078440	CARBON 1.5K JA 1/2W
A101	6450614132	TUNER, U/V	R716	4010254230	CARBON 1.8K JA 1/6W
A1901	6450411519	UNIT, REMOCON RECEIVER	R718	4010078440	CARBON 1.5K JA 1/2W
	6450440519	UNIT, REMOCON RECEIVER	R724	4010650804	OXIDE-MT 100K JA 2W
	6450440519	UNIT, REMOCON RECEIVER	R725L	4010078440	CARBON 1.5K JA 1/2W
K1002	6450332708	JACK, RCA-6	R726	4010254230	CARBON 1.8K JA 1/6W
K1003A	6520012981	JACK, RCA-3	R752	4010247440	CARBON 10K JA 1/6W
K1004	6450071584	SOCKET, DIN 4P	R753	4010247440	CARBON 10K JA 1/6W
△ PS601	4080465407	TH PTDCA1BF4R5Q200	R761	4010165853	CARBON 220K JA 1/4W
SW1901	6450034701	SWITCH, PUSH 1P-1TX1	R762	4010163859	CARBON 2.2K JA 1/4W
	6450194887	SWITCH, PUSH 1P-1TX1	DIODE		
	6450277382	SWITCH, PUSH 1P-1TX1	D731	4010249335	CARBON 1.2K JA 1/6W
SW1902	6450034701	SWITCH, PUSH 1P-1TX1	D732	4010249335	CARBON 1.2K JA 1/6W
	6450194887	SWITCH, PUSH 1P-1TX1	D733	4010249335	CARBON 1.2K JA 1/6W
	6450277382	SWITCH, PUSH 1P-1TX1	D751	4070054525	DIODE DS442X
SW1903	6450034701	SWITCH, PUSH 1P-1TX1		4080093204	DIODE 1N4148
	6450194887	SWITCH, PUSH 1P-1TX1		4070131236	DIODE 1S1555
	6450277382	SWITCH, PUSH 1P-1TX1		4070134227	DIODE 1S2076
SW1904	6450034701	SWITCH, PUSH 1P-1TX1		4070137129	DIODE 1S2473
	6450194887	SWITCH, PUSH 1P-1TX1	D752	4070054525	DIODE DS442X
	6450277382	SWITCH, PUSH 1P-1TX1		4080093204	DIODE 1N4148
SW1905	6450034701	SWITCH, PUSH 1P-1TX1		4070131236	DIODE 1S1555
	6450194887	SWITCH, PUSH 1P-1TX1		4070134227	DIODE 1S2076
	6450277382	SWITCH, PUSH 1P-1TX1		4070137129	DIODE 1S2473
SW1906	6450034701	SWITCH, PUSH 1P-1TX1	D753	4070054525	DIODE DS442X
	6450194887	SWITCH, PUSH 1P-1TX1		4080093204	DIODE 1N4148
	6450277382	SWITCH, PUSH 1P-1TX1		4070131236	DIODE 1S1555
SW501	6100112728	SWITCH, LEVER 1P-3T		4070134227	DIODE 1S2076
	6520000049	SWITCH, LEVER		4070137129	DIODE 1S2473
△ SW601	6450590061	SWITCH, POWER 1P-1TX1	D754	4070054525	DIODE DS442X
△ VA601	4071712008	VARISTOR ERZV14D471		4080093204	DIODE 1N4148
X161	4210094705	SAW F TSF6376U		4070131236	DIODE 1S1555
X211	6450248818	OSC, CRYSTAL 4.433619MHZ		4070134227	DIODE 1S2076
X801	6450041938	OSC, CRYSTAL 32.768KHZ		4070137129	DIODE 1S2473
	6450041945	OSC, CRYSTAL 32.768KHZ	MISCELLANEOUS		
6103179087 ASSY, PWB, CRT C5GSH			△ K701L	6450262005	SOCKET, CRT 8P
1AA4B10S15100					
TRANSISTOR					
Q751	4060087407	TR 2SA1015-G(SAN)-TPE2			
	4050017417	TR 2SA1015-O(SAN)			
	4050017615	TR 2SA1015-Y(SAN)			





The area enclosed by this line(III) 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 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.

1. All resistance value are in ohms, K=1,000, M=1,000,000.
2. All resistance rated wattages are 1/6W unless otherwise noted.
3. Excepting electrolytic capacitors, all capacitance values of less than 1 are expressed in μ F and more than 1 are pF.
4. All capacitance rated voltages are 50V unless otherwise noted.
5. All inductance values are in μ H.
6. Voltage readings take with a "VTVM" are from point indicated chassis ground. Voltage readings taken by using PAL colour bar signal are with all controls at normal position. Some voltage may vary with signal strength.
7. Waveform were taken with PAL colour bar and controls adjusted for normal use. Waveforms were taken by using a wide band oscilloscope and a low capacity probe.
8. This circuit diagram covers a basic or representative chassis only. There may be some components or partial circuit differences between the actual chassis and the circuit diagram.
9. Parts specified with "X" are not installed in this model.
10. Parts specified with "J" are just jumper wires.

11. Expression of capacitance and resistance in circuit diagrme

Figure 1 is a hierarchical clustering dendrogram showing the relationship between various product specifications. The dendrogram is rooted at the top and branches downwards. The left side of the dendrogram represents a cluster of specifications related to resistance and power, while the right side represents a cluster of specifications related to capacity, voltage, and material types. The dendrogram is labeled with various attributes and their values, such as 'Resistance (Example)', 'Resistance value (1.2Ω)', 'Allowable error (±5%)', 'Kind (M.carbon)', and 'Rated wattage (1/2W)' on the left, and 'Capacity value (220pF)', 'Allowable error (±20%)', 'Kind (Ceramic)', 'Rated voltage (1,000V)', and various material types (D, C, M, N, S, W) on the right. The dendrogram is labeled with 'J=±5%', 'K=±10%', 'M=±20%', and 'T, A, U, D: Electrolytic', 'C, K, B: Ceramic', 'F: Mylar film', 'M, N, Polypropylene', and 'Z: Metalized paper' on the right side.

TRANSISTOR, DIODE AND INTEGRATED CIRCUIT TERMINAL GUIDE

C: COLLECTOR
B: BASE
E: EMITTER

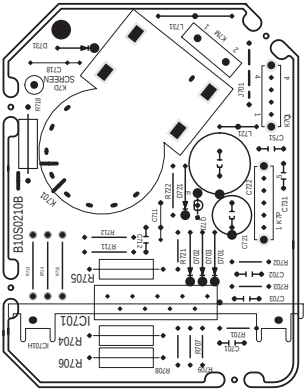
A: ANODE
K: KATHODE

- CHIP
- COMPONENTS
- TRANSISTOR

PARTICULAR
PARTS SYMBOL
↓
FURNISHING

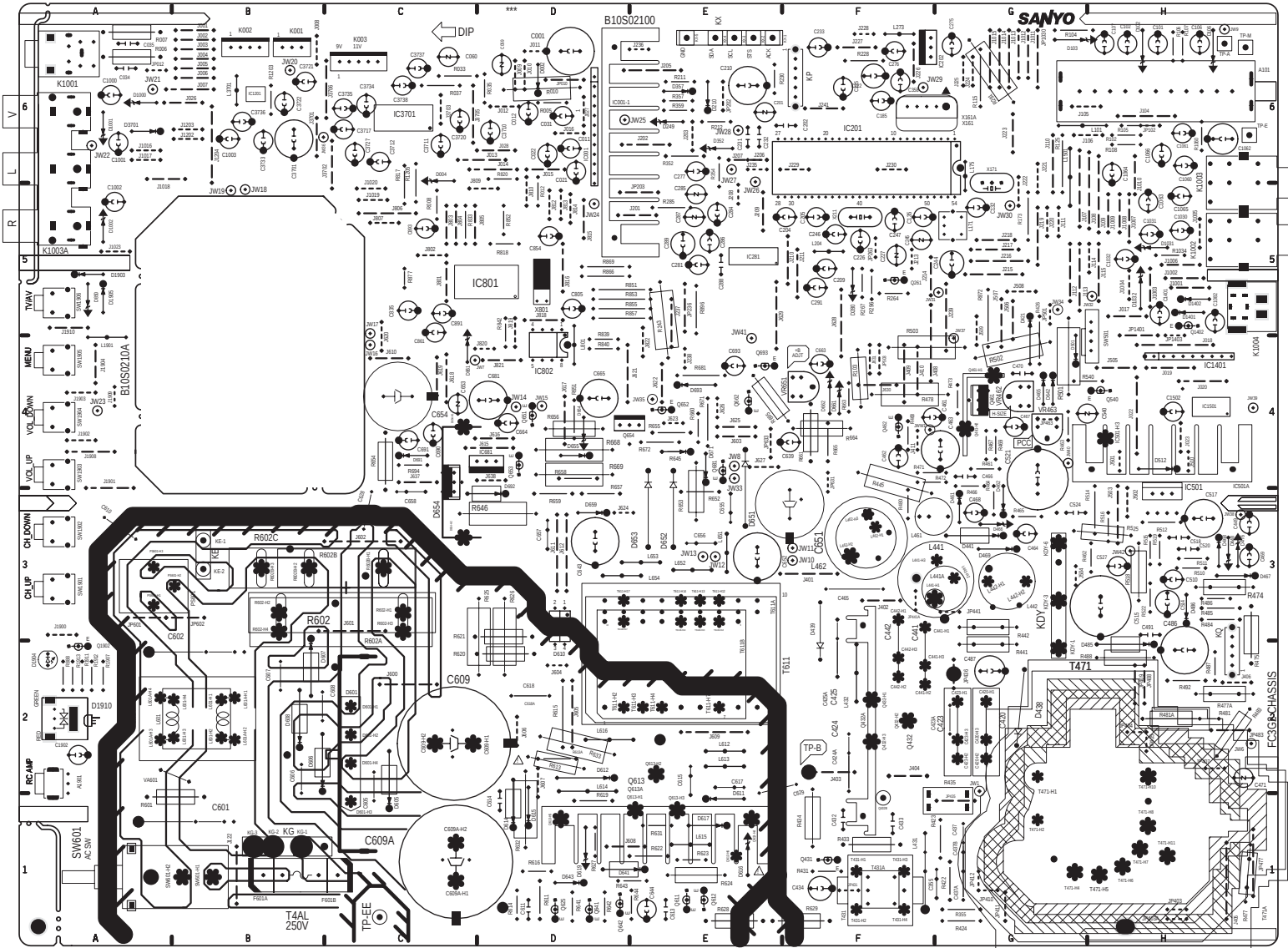
 FUSIBLE RESISTOR
 NON POLE ELECTRIC CAPACITOR
 POSISTER

CRT BOARD (Component Location)



(C5GJ)

MAIN BOARD (Component Location)



(C5GJ)

Waveforms & Voltages

(On the Main Board)

IC001 (AUDIO AMP.)									
Pin-1	7.1V	2	0V	3	GND	4	1V	5	1.5V
10	0V	11	GND	12	15V	6	0V	7	GND
8	5.2V	9	6.9V						

IC1501 (VIDEO SWITCH)									
Pin-1	3.7V	2	2.8V	3	6.4V	4	5.9V	5	5.9V
10	0V	11	4.8V	12	3.5V	13	6.4V	14	6.4V
15	2.8V	16	9V	8	GND	9	0V		

IC1401 (VIDEO SWITCH)									
Pin-1	3.6V	2	9V	3	4.8V	4	3.1V	5	GND
6	3.5V	7	3.3V	8	0.7V	9	3.5V		

IC201 (IF/VIDEO/CHROMA)									
Pin-1	2.4V	2	2.3V	3	2.4V	4	3.9V	5	2.8V
10	1.6V	11	3.7V	12	3.4V	13	3.1V	14	1.6V
15	1.6V	16	1.6V	17	0V	18	8.2V	19	2.4V
20	2.4V	21	2.4V	22	2.0V	23	2.5V	24	2.6V
25	5.0V	26	2.6V	27	0.8V	28	1.0V	29	1.6V
30	0.9V	31	4.5V	32	8.2V	33	GND	34	2.4V
35	2.4V	36	3.1V	37	1.8V	38	2.8V	39	3.5V
40	2.5V	41	GND	42	2.8V	43	4.9V	44	2.5V
45	2.5V	46	2.4V	47	3.7V	48	4.2V	49	4.2V
50	2.4V	51	2.2V	52	1.9V	53	2.1V	54	3.1V

IC202					IC681						
Pin-1	7.5V	2	GND	3	5.0V	Pin-1	12.6V	2	GND	3	4.9V

IC281 (SECAM)																		
Pin-1	3.8V	2	4.0V	3	N.C.	4	6.0V	5	6.4V	6	5.1V	7	5.1V	8	4.0V	9	4.0V	
10	GND	11	4.0V	12	1.1V	13	N.C.	14	4.0V	15	0V	16	0.2V	17	4.0V	18	N.C.	
19	7.7V	20	0.2V															

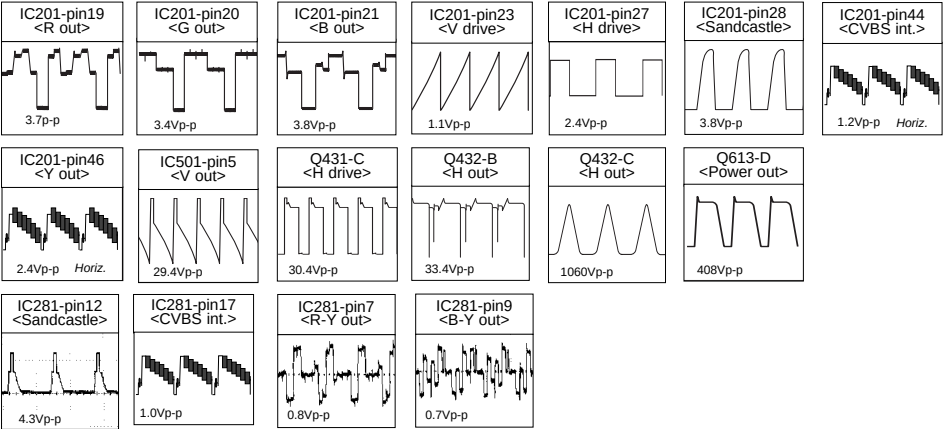
IC3701 (AUDIO CONTROL / SURROUND)									
Pin-1	4.2V	2	4.2V	3	4.2V	4	4.2V	5	4.4V
6	4.2V	7	4.2V	8	4.2V	9	4.2V	10	4.2V
11	0V	12	0V	13	4.9V	14	3.4V	15	GND
16	8.4V	17	4.1V	18	3.9V	19	3.9V	20	0.6V
21	4.2V	22	4.2V	23	4.2V	24	4.2V	25	0.5V
26	4.3V	27	4.2V	28	4.2V	29	4.2V	30	4.2V

IC501 (VERT. OUT)									
Pin-1	2.5V	2	26.7V	3	1.4V	4	GND	5	11.3V
6	26V	7	2.5V						

IC802 (MEMORY)									
Pin-1	GND	2	GND	3	GND	4	GND	5	4.9V
6	4.9V	7	GND	8	4.9V				

IC801 (CPU)									
Pin-1	3.8V	2	3.3V	3	4.9V	4	4.9V	5	GND
6	2.6V	7	2.6V	8	4.9V	9	0V	10	1.6V
11	5V	12	0V	13	4.9V	14	3.4V	15	4.9V
16	0V	17	4.7V	18	4.0V	19	0V	20	0V
21	0V	22	0V	23	4.9V	24	0V	25	4.9V
26	0V	27	3.0V	28	4.8V	29	0V	30	3.7V
31	4.8V	32	4.9V	33	4.9V	34	4.9V	35	4.9V
36	4.9V								

Q1003 B 1.4V C 6V E 0.8V	Q1004 B 3.5V C 4.3V E 2.8V	Q1005 B 0.8V C 6.1V E 0.8V	Q1006 B 3.3V C 4.3V E 2.7V	Q111 B 1.2V C 5.5V E 0.4V	Q122 B 0.6V C 0V E 0V	Q1401 B 3.1V C 0V E 3.7V	Q1402 B 4.3V C 0V E 4.8V	Q1501 B 1.2V C 9V E 0.7V	Q1503 B 0.6V C 0V E 0V	Q1504 B 0V C 0.6V E 0V	Q190 B 2.2V C 0V E 2.8V	Q1902 B 4.9V C 1.0V E 4.9V
Q261 B 2.8V C 0V E 3.5V	Q431 B 0V C 3.6V E 0V	Q432 B 1.1V C 321V E 1.6V	Q527 B 0.6V C 2.9V E 0V	Q611 B 3V C 29V E 3.6V	Q612 B 3.5V C 0V E 3.6V	Q613 G 3.6V D 16.3V S 0V	Q625 B 0V C 3.5V E 0V	Q641 B 0V C 0.3V E 0V	Q642 B 0.6V C 0V E 0V	Q651 B 0V C 9.8V E 0V	Q652 B 26.1V C 26.7V E 26.8V	Q654 B 9.8V C 9.9V E 9.1V
Q661 B 6.9V C 25.2V E 6.3V	Q662 B 25.9V C 0V E 25.2V	Q663 B 0.6V C 24V E 0.5V	Q681 B 0.6V C 0V E 0V	Q690 B 0.6V C 12.5V E 0V	Q693 B 10.8V C 25.2V E 10.7V	Q818 B 0V C 7.1V E 0V	Q861 B 4.3V C 4.9V E 4.9V	Q871 B -8V C 4.7V E 0V	Q881 B -0.4V C 4V E 0V	Q881 B -0.4V C 4V E 0V	Q882 B -0.4V C 4V E 0V	Q886 B 0V C 0.1V E 0.7V



(On the CRT Board)

IC701 (Triple Video Output Amp.)									
Pin-1	2.0V	2	2.0V	3	2.0V	4	GND	5	2.0V
6	199.7V	7	129.5V	8	132.3	9	129.2		

Q721									
B	9.1V	C	0V	E	8.9V				

IC701 PIN-7 <B-out>									
 89.6Vp-p									

IC701 PIN-8 <G-out>									
 83.4Vp-p									

IC701 PIN-9 <R-out>									
 82.9Vp-p									