SANYO

FILE NO.

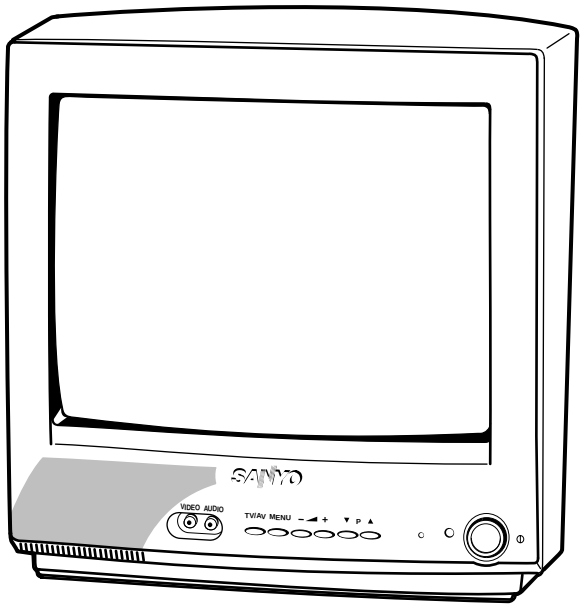
SERVICE MANUAL Colour Television

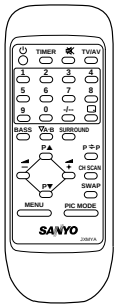
Model No. CP14SA1(G)

(Australia/New Zealand)

Service Ref. No. CP14SA1-50
(Australia)

CP14SA1-60
(New Zealand)





Specifications

Power Source . . . . . AC220-240V, 50Hz/60Hz.
Colour System . . . . . PAL (AV input: PAL/NTSC4.43/NTSC/PAL-60Hz)
Television System . . . . . B/G
Channel Coverage . . . . .Australia
VHF: 0-11, 5A
UHF: 28-69
CATV: S1-S41, X, Y, Z, Z+1, Z+2
New Zealand
VHF: 1-11
UHF: 21-69
CATV: S1-S41, X, Y, Z, Z+1, Z+2
Video IF 38.0MHz
Aerial Input Impedance . . 75Ω
Ext. Terminals
Video inputs: Phono jack × 2 (1Vp - p, 75Ω)
Audio inputs: Phono jack × 2 (436mVrms, more than 40KΩ)
Video monitor outputs: Phono jack × 1(1Vp - p, 75Ω)
Audio monitor outputs: Phono jack × 1(436mVrms, less than 600Ω)
Sound Output (RMS) . . . . 2 W
Speaker . . . . . Diameter 8cm × 1 pc.
Dimensions . . . . . 364.5 (W) × 361.7 (H) × 375.8 (D)mm
Weight . . . . . approx. 8.6 Kg

Specifications subject to change without notice.

Product Code: 111361917

Original Version

Chassis Series: AC5-G

– NOTE –
Service Ref. No. CP14SA1-60 is electrically the same as Service Ref. No. CP14SA1-50.
The difference between Service Ref. No. CP14SA1-50 and CP14SA1-60 are as follows:
1) Destination CP14SA1-50...Australia
CP14SA1-60...New Zealand
2) The difference in a parts list is only a rated label.

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.

REFERENCE NO. SM5110466

Contents

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.

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.

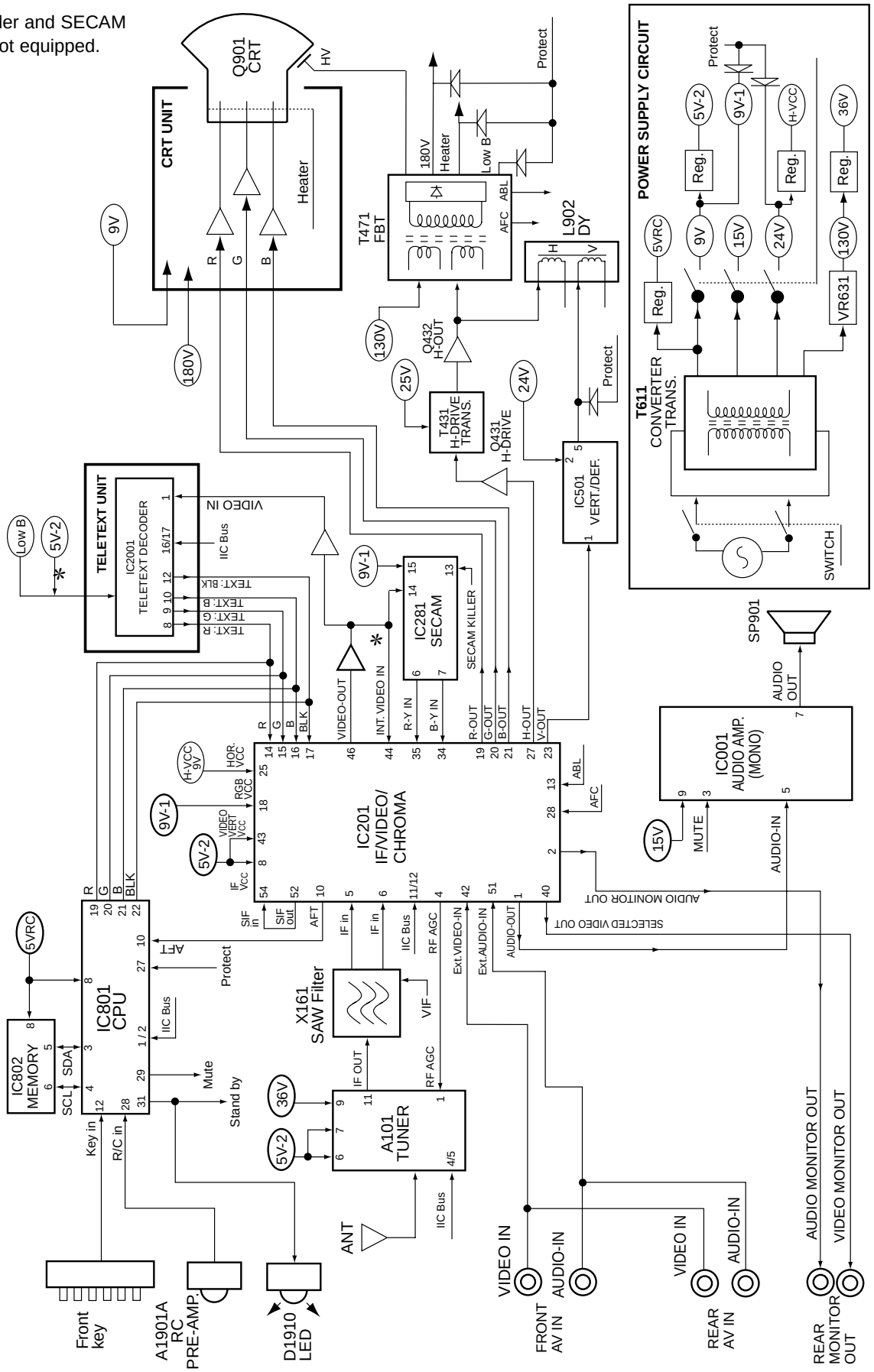
PRODUCT SAFETY NOTICE

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

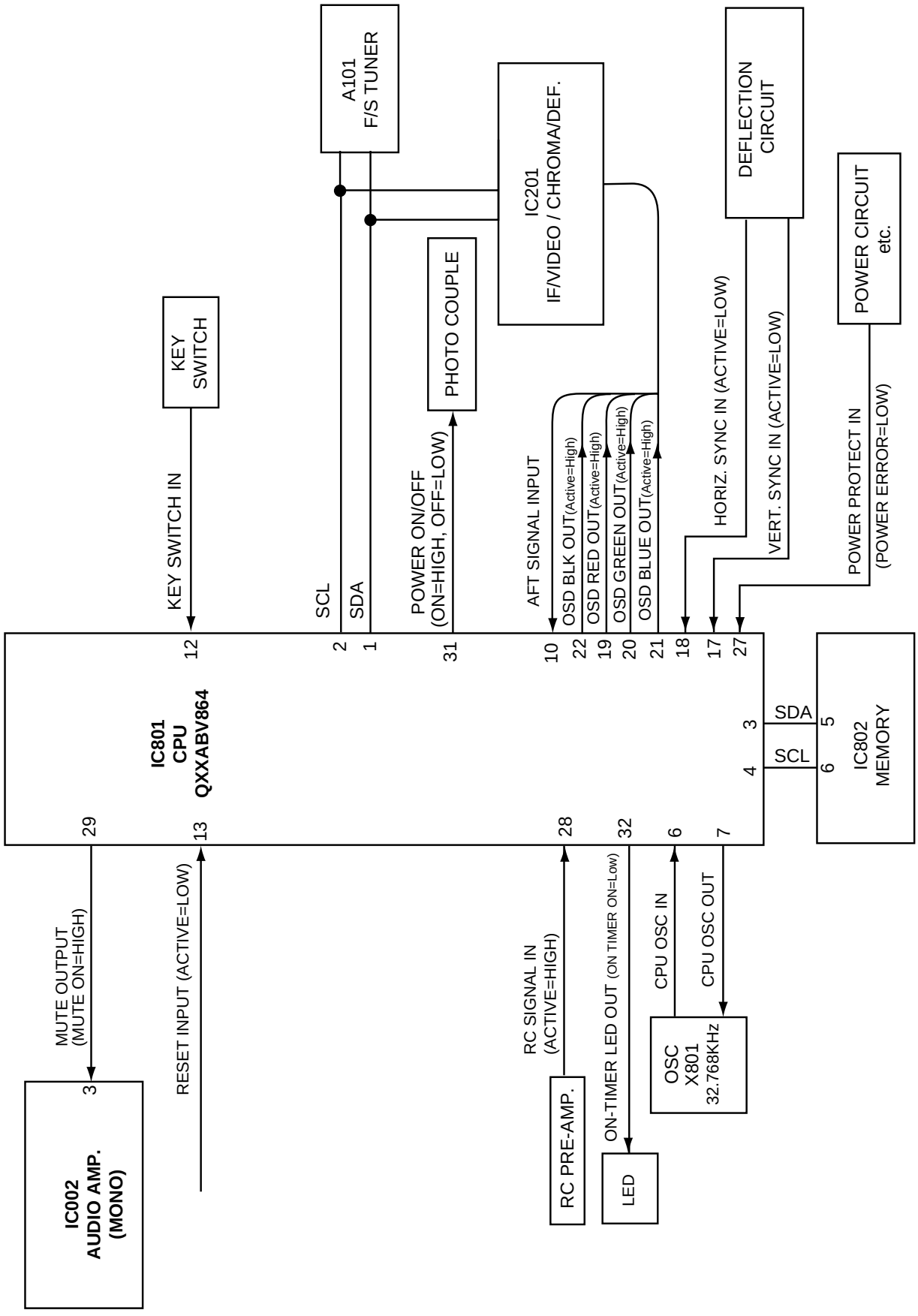
MAIN SIGNAL PROCESSING CIRCUIT

* Teletext decoder and SECAM decoder are not equipped.



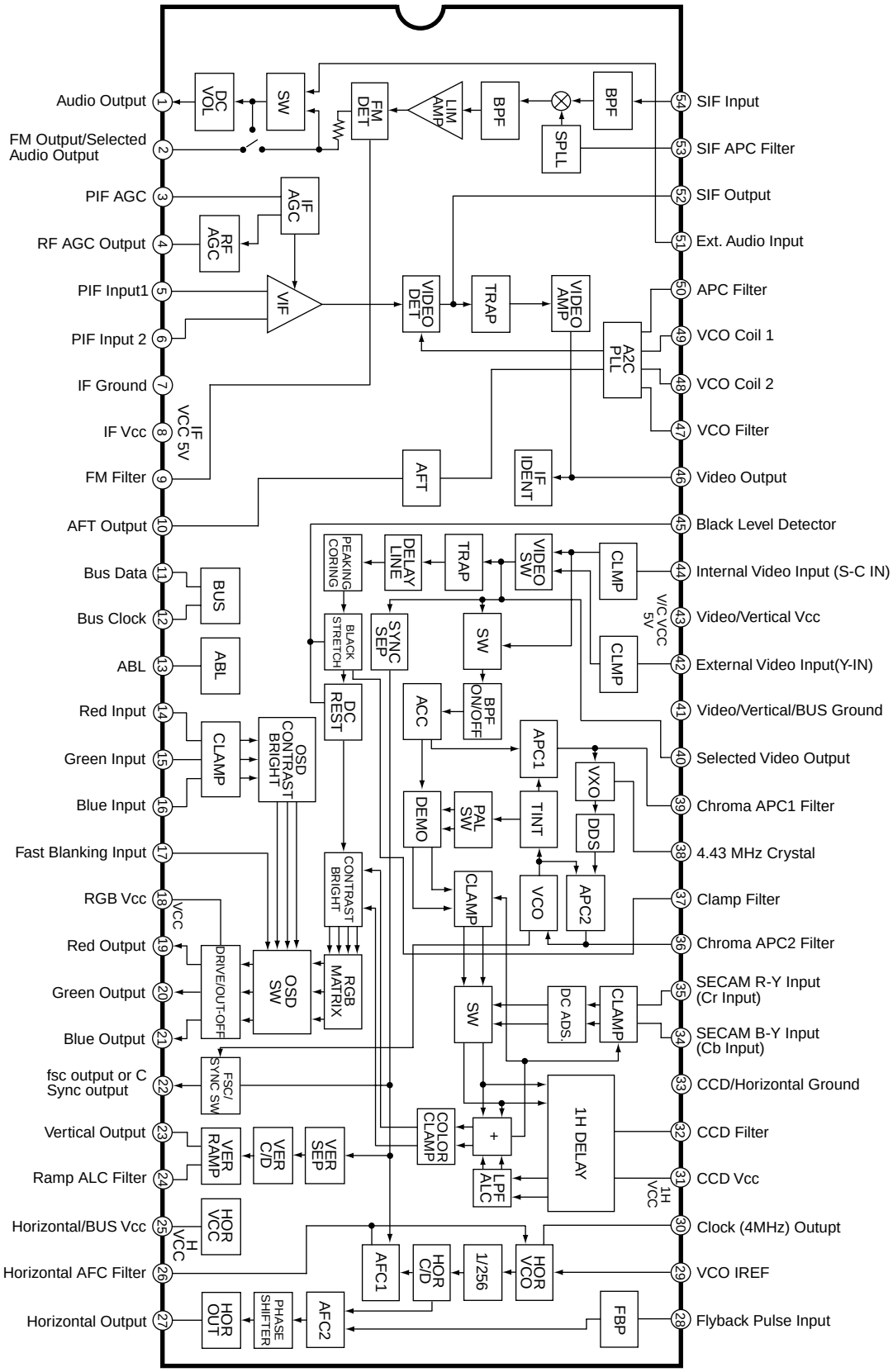
Chassis Block Diagrams

SYSTEM CONTROL



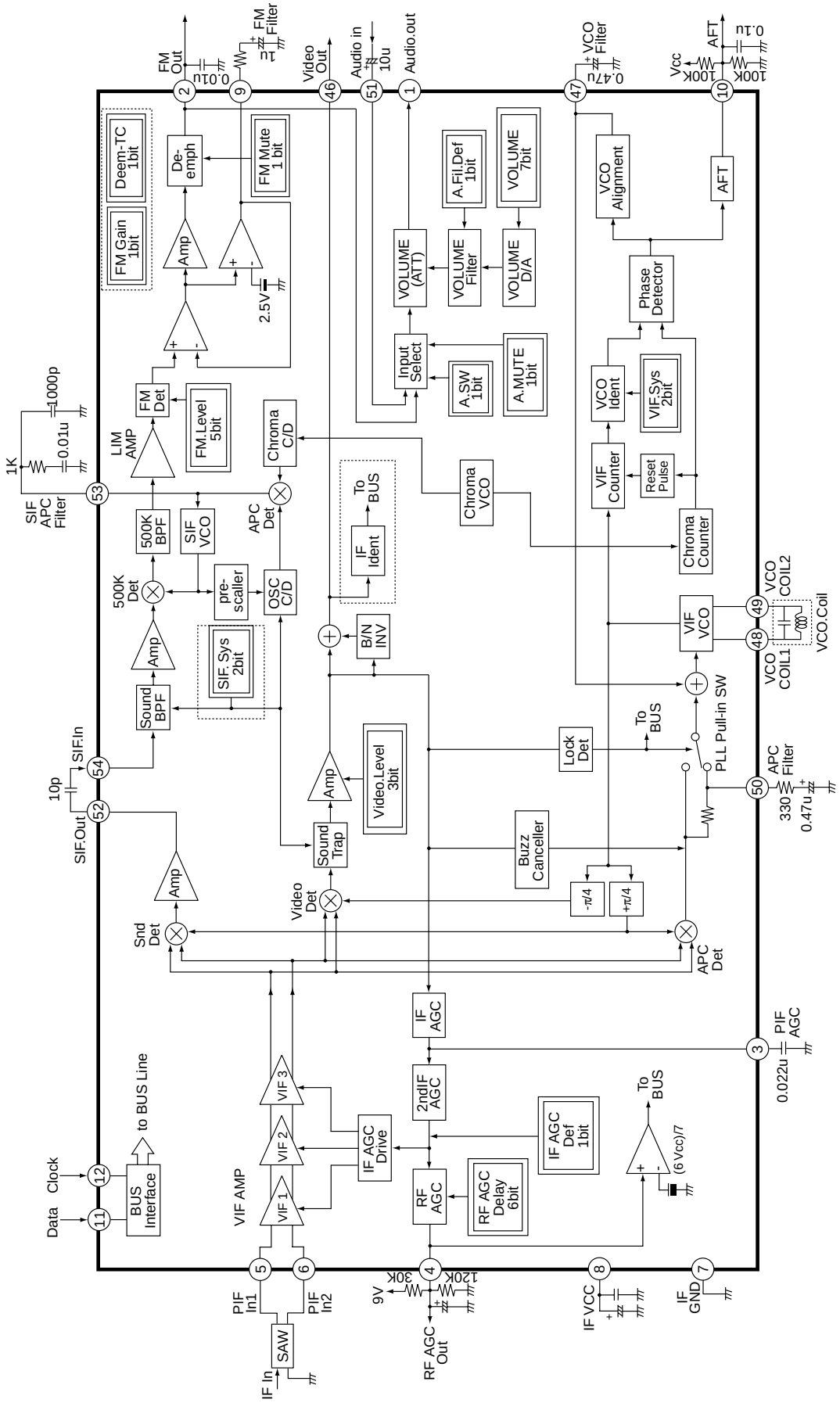
IC Block Diagrams

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



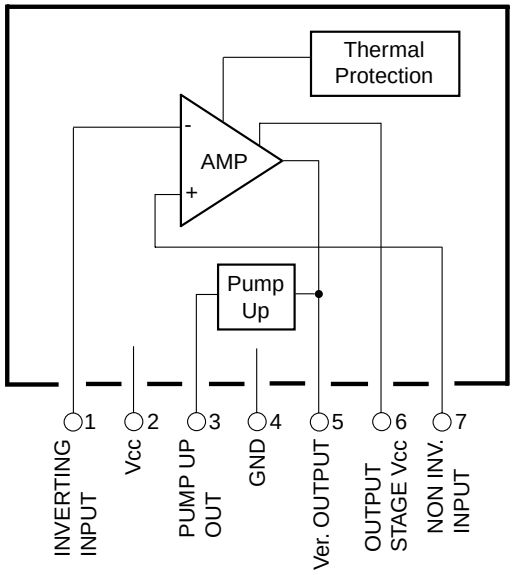
IC Block Diagrams

IC201 <IF System Block Diagram> LA76818A

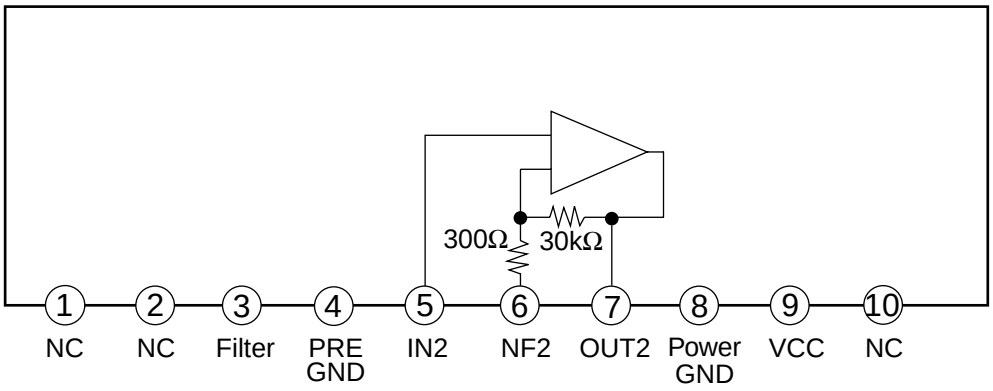


IC Block Diagrams

IC501 < Vertical Output > LA78040/LA78040N



IC001 < Audio AMP.> LA4266



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(less than 0.75V) 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

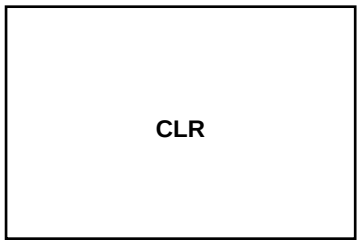
To release the protective circuit and restore power supply, turn the power to the TV set OFF and then ON again via either the main power switch or the ON-OFF button on the remote control. This will work only if the power supply trouble was temporary. If there is permanent trouble such as a damaged circuit,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

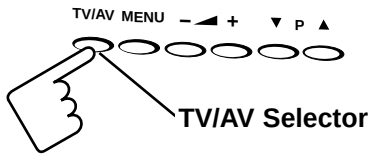
Service Adjustments with Replacing Memory IC(IC802)

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].

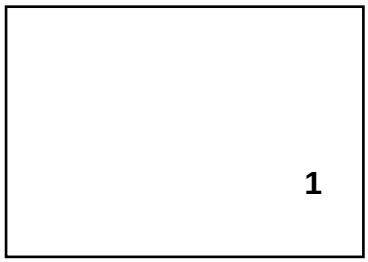
[1] Initializing Procedure

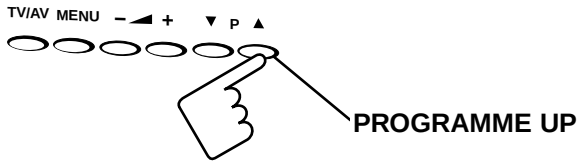
1. Put a new memory IC.
2. Turn on the TV set.
3. Press and hold the **TV/AV Selector button** on the TV set for more than 2 seconds. The following picture appears on the screen.





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

Service Adjustments with Replacing Memory IC(IC802)

[2] Required Service Adjustments

Readjust the following service adjustments.

Adjustments	**Service Mode No. & Item**
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.

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 DATA	DESCRIPTION
01	RF AGC	00~63	30	RF AGC Adj.
02	H-PHA	00~31	9	H-Phase (H-Centering) Adj. (50Hz)
03	V-POS	00~63	40	V-Position (V-Centering) Adj. (50Hz) Fixed.
04	V-SIZ	00~127	59	V-Size Adj. (50Hz)
05	V-SCO	00~31	7	V-S Correction (50Hz)
06	V-LIN	00~31	19	V-Linearity Adj. (50Hz)
07	H-P60	-80~+70	+5	H-Centering Adj. (60Hz)
08	V-S60	-32~+31	0	V-Size Adj. (60Hz)
09	OSDHP	00~255	29	OSD H-Position Adj.
10	OSDC	00~127	45	OSD Contrast Adj.
11	V-SCP	00~07	7	Correction of the V-size accompanying brightness change.
12	H-SCP	00~07	7	Correction of the H-size accompanying brightness change.
13	SBIAS	00~127	105	Sub Bias Adj. (Do not change)
14	RBIAS	00~255	0	Red Bias Adj.
15	GBIAS	00~255	0	Green Bias Adj.
16	BBIAS	00~255	0	Blue Bias Adj.
17	RDRIV	00~127	64	Red Drive Adj.
18	GDRIV	00~15	8	Green Drive Adj.
19	BDRIV	00~127	64	Blue Drive Adj.
20	1-LINE APPEAR			
21	DRV			White Balance Adj.
22	B-YD	00~15	10	B-Y DC level Adj.. Colour compensation (PAL)
23	R-YD	00~15	10	R-Y DC level Adj.. Colour compensation (PAL)
24	B-YDN	-08~+07	0	NTSC B-Y DC level Adj. (Difference value over PAL.)
25	R-YDN	-08~+07	0	NTSC R-Y DC level Adj. (Difference value over PAL.)
26	SBDC	-08~+07	-8	SECAM B-Y DC level Adj. (Difference value over PAL.)
27	SRDC	-08~+07	-5	SECAM R-Y DC level Adj. (Difference value over PAL.)
28	G-YA	0,1	0	G-Y angle Adj. (The reproducibility of a colour is changed.)
29	RBGB	00~15	8	R-Y, B-Y Gain Blance Adj. (Do not change.)
30	RBAG	00~15	8	R-Y, B-Y Angle Adj. (Do not change.)
31	G-YAN	0,1	0	NTSC G-Y Angle Adj. (Difference value over PAL.)
32	RBGBN	-08~+07	0	NTSC R-Y, B-Y Gain Balance Adj. (Difference value over PAL.)
33	RBAGN	-08~+07	0	NTSC G-Y, B-Y Angle Adj. (Difference value over PAL)
34	COGV	00~03	0	Coring Adj.
35	BLKS	00~03	3	Setting of Black stretch start.
36	BLKG	00~03	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	00~07	0	Setting of ABL.
40	WPL	00~03	2	White peak limitter.
41	YGAM	00~03	0	Y Gamma setting.
42	PORW	0,1	0	Switching of Pre-shoot and Over shoot in AV mode.
43	PORS	00~03	2	Pre-shoot/Over shoot Adj. in AV mode.
44	RFCO	00~03	0	RF Coring Gain Adj.

Service Adjustments with Replacing Memory IC(IC802)

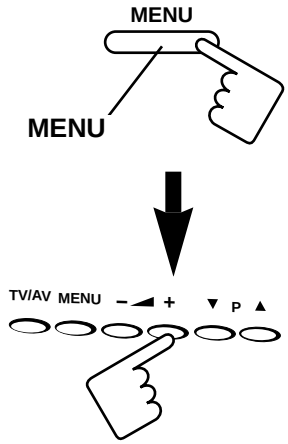
NO.	ITEM	DATA RANGE	INITIAL DATA	DESCRIPTION
45	PORWN	0,1	0	Switching of RF Pre-shoot and Over shoot.
46	PORSN	00~03	0	RF Pre-shoot/Over shoot Adj.
47	TINT	-16~+15	0	RF Tint Adj.
48	TINT 443	-16~+15	-12	NTSC 4.43 Tint Adj.
49	SHRF	-32~+31	0	RF Sharpness Adj.
50	TEXTC	-128~+127	0	OSD TEXT Contrast.
51	VOLUM	00~255	127	Volume Control Adj.
52	DEEM	0,1	0	De emphasis TC.
53	VIFSW	00~03	0	VIF System Switch.
54	SIFSW	00~03	1	SIF System Switch.
55	V-LVL	00~07	4	Video Level Adj.
56	FMLVL	00~31	16	FM Level Adj.
57	IF-TE	0,1	0	IF Test.
58	IF-T1	0,1	1	IF Test-1.
59	IF-T2	0,1	1	IF Test-2
60	IF-T3	00~255	136	IF Test-3
61	H-FRQ	00~63	34	Correction of Horizontal Frequency.
62	FBTS	0,1	0	Switching of H-blanking and Flyback Pulse.
63	COOP	00~07	7	Setting of Colour Killer Level.
64	HBLKL	00~07	7	H-Blanking Control. (Left)
65	HBLKR	00~07	3	H-Blanking Control. (Right)
66	AFCRF	0,1	0	RF AFC Gain & Gate Adj.
67	VSURF	0,1	0	RF V-Sync. Separation Adj.
68	CDMRF	00~07	0	RF V-Countdown Circuit Adj.
69	AFCAV	0,1	1	AV AFC Gain & Gate Adj.
70	VSUAV	0,1	0	AV V-Sync. Separation Adj.
71	CDMAV	00~07	0	AV V-Countdown Circuit Adj.
72	HLVDRF	0,1	1	Incorrect operation prevention at the time of a special signal (RF mode)
73	HLVDAV	0,1	1	Incorrecr operation prevention at the time of a special signal (AV mode)
74	VCO-SW	0,1	0	C-VCO Adj. Switch.
75	VCO-ADJ	00~03	3	C-VCO Adj.
76	CROSS-BW	00~03	0	Pattern Output.
77	AVNCON	00~127	64	Contrast Adj. of the blue back in AV mode.
78	AVNBRI	00~127	64	Brightness Adj. of the blue back in AV mode.
79	POMT	00~255	25	Power Mute Time Adj.
80	CHMT	00~255	10	Channel Change Mute time Agj.
81	SYST	00~15	5	Selection of the number of times of a Colour system judgment.
82	S-STE	0,1	0	Stereo/Mono Option. STEREO=1, MONO=0
83	VOLTBL	00~03	0	Selection of the change characteristic of volume.
84	CHIP818	0,1	0	Option of 818(1:TINT Control reversal)/828(2:TINT through control) selection.
300	R00	00~255	112	CPU Debug Date.
301	R01	00~255	64	CPU Debug Date.
302	R02	00~255	0	CPU Debug Date.
303	R03	00~255	0	CPU Debug Date.
304	R04	00~255	1	CPU Debug Date.
305	R05	00~255	0	CPU Debug Date.
306	R06	00~255	0	CPU Debug Date.
307	R07	00~255	0	CPU Debug Date.
308	R08	00~255	33	CPU Debug Date.
309	R09	00~255	112	CPU Debug Date.
310	R10	00~255	68	CPU Debug Date.
311	R11	00~255	0	CPU Debug Date.
¦	¦	¦	¦	¦
371	R71	00~255	0	CPU Debug Date.
372	R72	00~255	177	CPU Debug Date.

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.

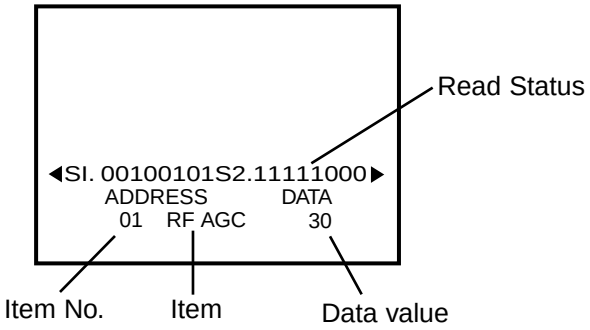
Service Adjustments with Replacing Memory IC(IC802)

[Entering to Service Mode]

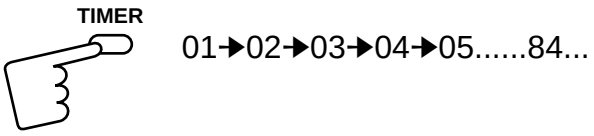
1. Press and hold the **MENU** button on the Remote Control and press the **VOLUME (+)** button on the TV set. Following setting items appears on the screen.

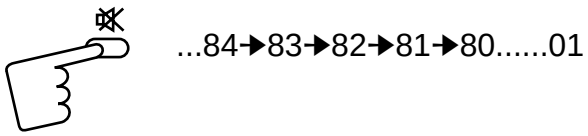


Display for [RF AGC] RF AGC adjustment



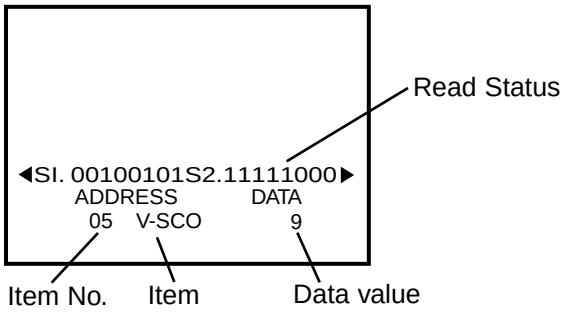
2. Select item by pressing the **TIMER** (Item No. UP) or **SOUND MUTE** (Item No. DOWN) button on the remote control handset.



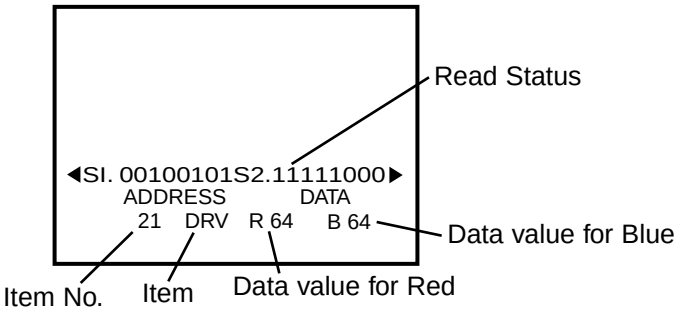


Example

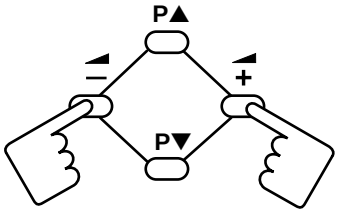
Display for [V-SCO] V-S Correction adjustment



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

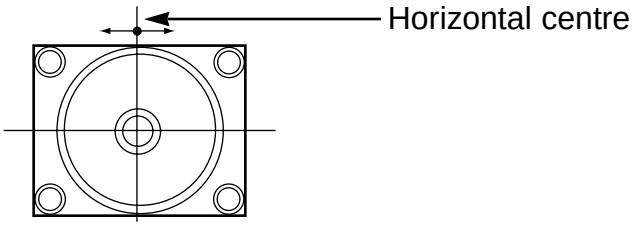
Following adjustments should be carried out when the memory IC is replaced. How to enter the service mode and adjust values, please refer to " Entering to Service mode" on page 11.

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.

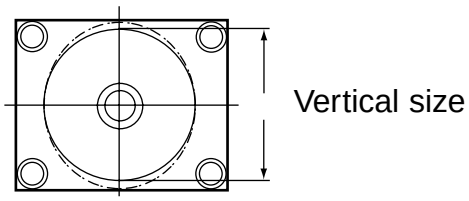
Item 02 [H-PHA] HORIZONTAL CENTRE

(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.



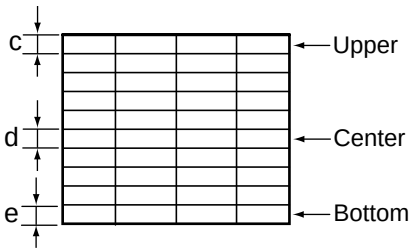
Item 04 [V-SIZ] VERTICAL SIZE

(1) Receive a monochrome circular pattern.
(2) Set the brightness and contrast to maximum.
(3) Select [V-SIZ] in the service mode.
(4) Change value to be optimum vertical size.
(5) Exit from service mode.



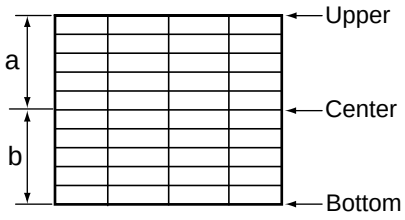
Item 05 [V-SCO] V-S CORRECTION

(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

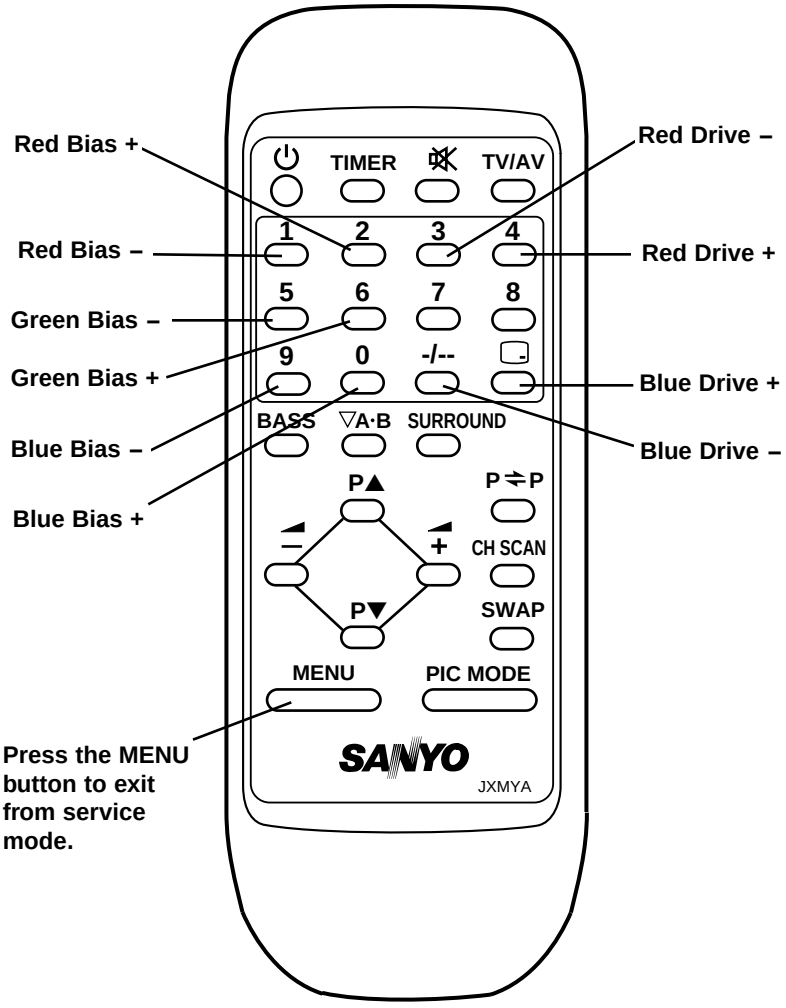
(1) Receive a crosshatch pattern.
(2) Set the lever of SW501 (Vertical Center SW) as the position of a center.
(3) Select a picture mode of NATURAL by pressing the PICTURE MODE button.
(4) Select [V-LIN] in the service mode.
(5) Adjust Vertical Linearity so that the difference of "a" and "b" becomes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



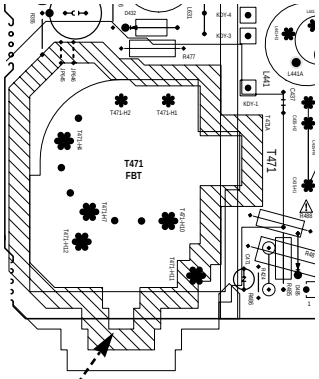
Items 14-17, 19-21 GREY SCALE

(1) Receive the 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-**14 RBIAS, 15 GBIAS, 16 BBIAS, 17 RDRIV** and **19 BDRIV** mode to 64.
(5) Select Item-**20** 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 –)**, **2 (Red Bias +)**, **5 (Green Bias –)**, **6 (Green Bias +)**, **9 (Blue Bias –)** or **0 (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-**21 DRV** mode to enter the white balance adjusting mode.
(8) Press the **3 (Red Drive –)**, **4 (Red Drive +)**, **-/-- (Blue Drive –)** or **RECALL (Blue Drive +) button** 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.



MAIN BOARD



SCREEN VR (Under side)

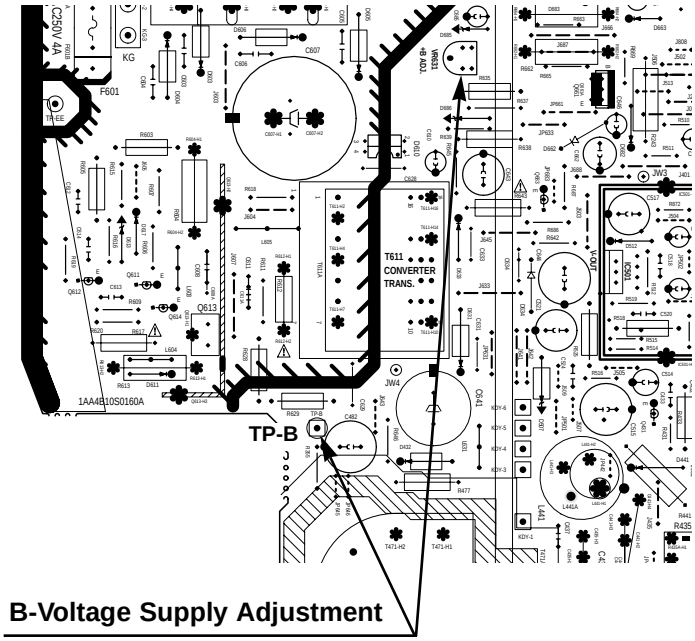
Service Adjustments

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 ± 1V DC by using VR631.

MAIN BOARD

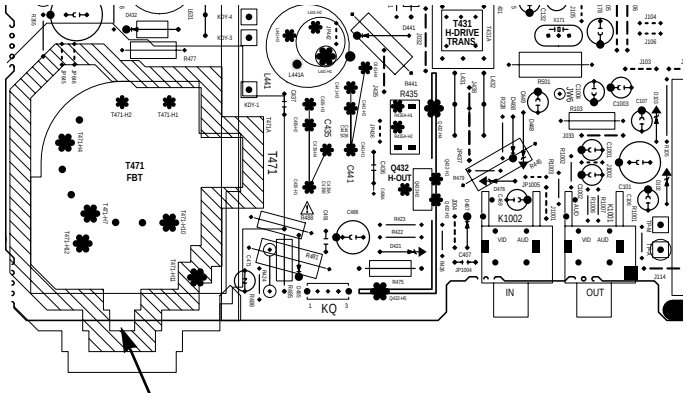


B-Voltage Supply Adjustment

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



Focus VR
(Upper side)

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 20.0 KV and 22.0 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 23.5 KV at zero beam current.

If reading is not within range, check horizontal circuit.

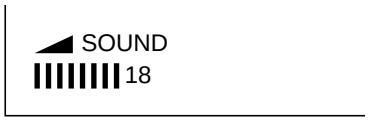
No high-voltage adjustment is provided on this chassis.

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.

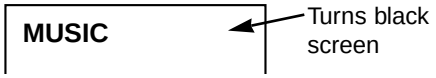


(2) Tuning Lock setting

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

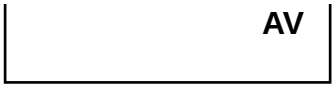
(3) Music Mode setting

When Music Mode is ON, Programme position from “91” to “99” and “0” are set Music Mode. Only sound is provided and any picture is not on the screen under Music Mode.



(4) AV Start setting

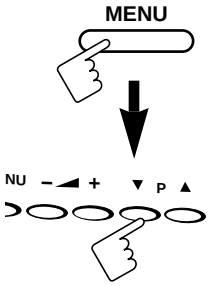
Set AV-START to ON and every time the TV set is switched on, AV position will be the initial programme position.

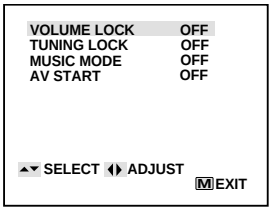


How to set the special function:

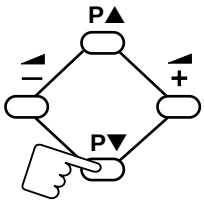
Note: When making the VOLUME LOCK setting, set the desired maximum sound volume by pressing the **VOLUME +** or **–** button before entering Special Function setting mode.

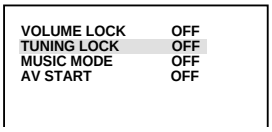
1 To enter into the special function setting mode, press and hold the **MENU** button of the remote control, then press the **PROGRAMME DOWN** button on the TV set.



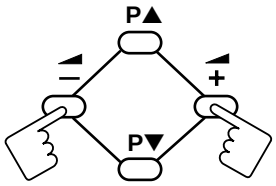


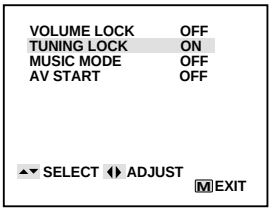
2 Select an item of the special functions by pressing the **PROGRAMME UP** or **DOWN** button on the remote control or the TV set.



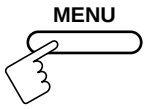


3 Set the selected special function “ ON “ by pressing the **VOLUME + or –** button. To cancel, set to “ OFF”.





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.

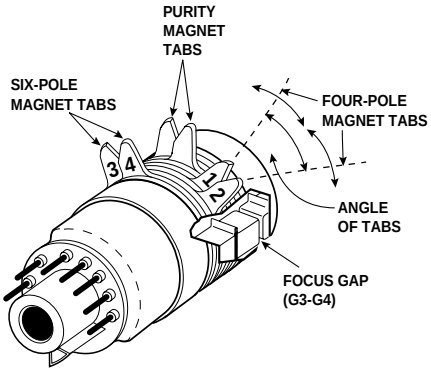


Figure 1. Purity and Convergence Magnets

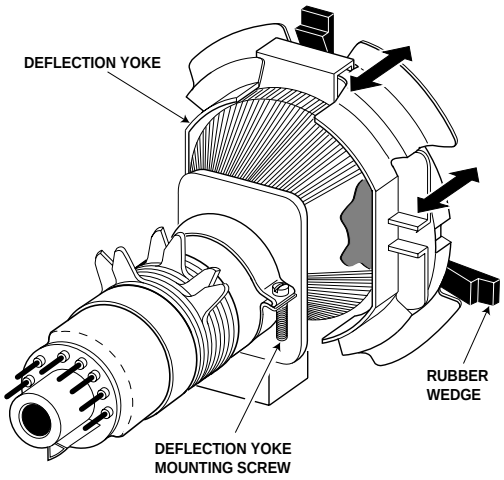


Figure 4. Deflection Yoke Movement

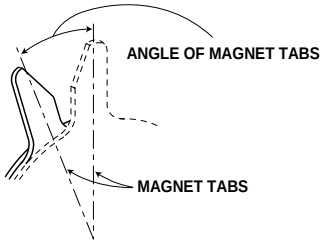


Figure 5. Adjusting Magnet

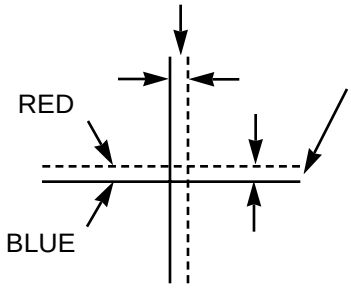


Figure- 2 BLUE AND RED LINE MOVEMENT

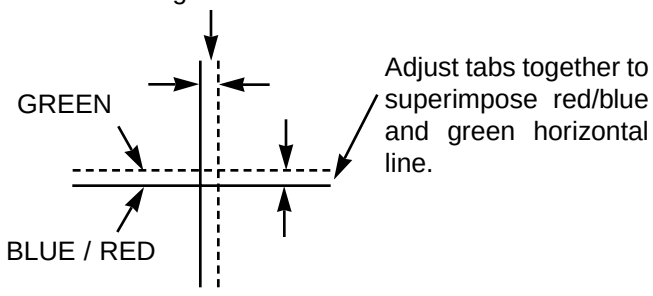
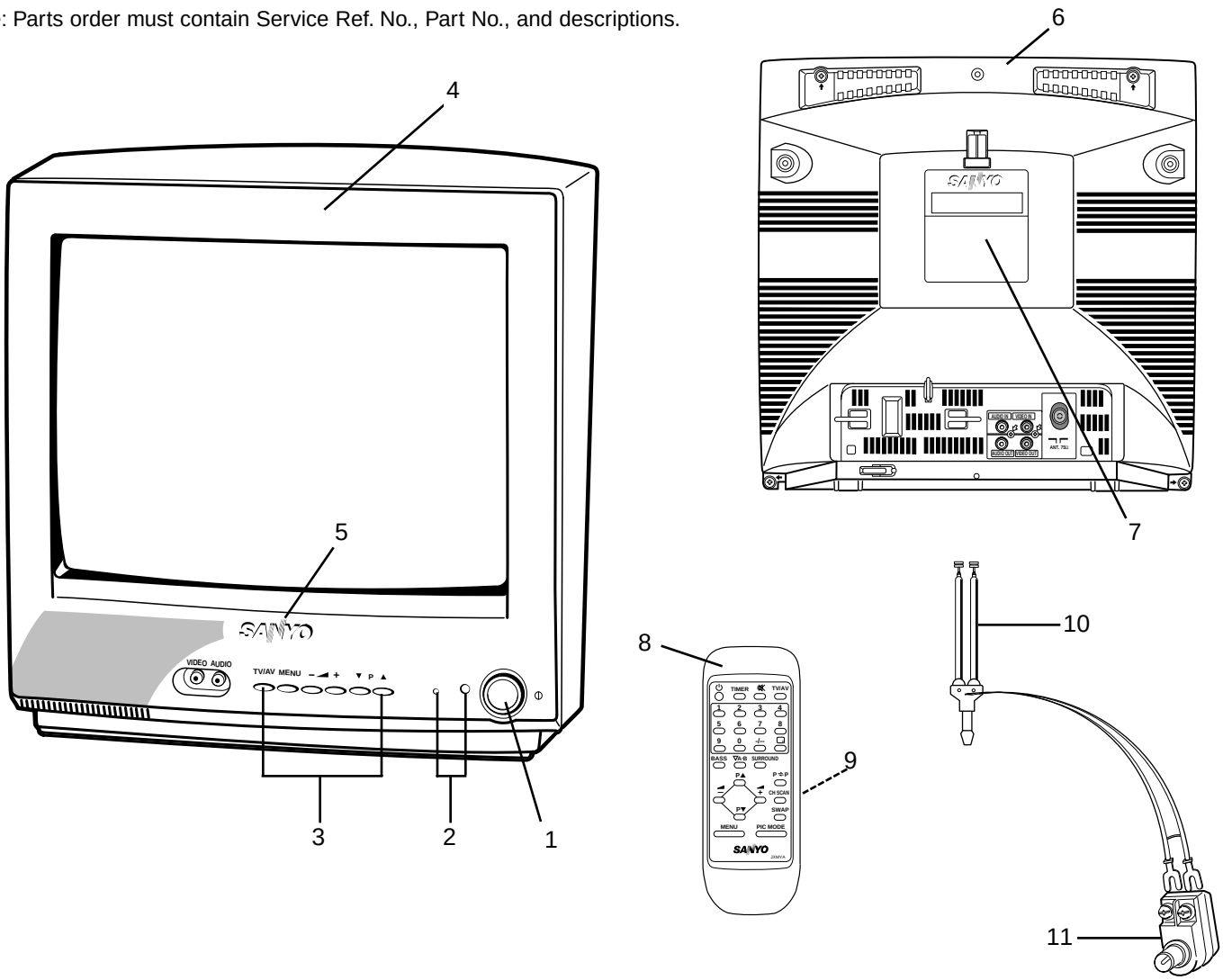


Figure- 3 BLUE/RED AND GREEN MOVEMENT

Cabinet Parts List

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



Key No.	Part No.	Description
1	610 300 4686	BUTTON POWER-C5SA
	610 229 8406	SPRING-E3HA
2	610 293 3741	DEC IND-C4SA
3	610 299 0430	BUTTON UNITED-C5TA
4	610 306 8800	CABINET FRONT-C5SW
5	645 039 1866	BADGE,SANYO
6	610 305 4889	CABINET BACK-C5SW
7	610 305 5251	LABEL RATING-C5SW (CP14SA1-50)
	610 306 1801	LABEL RATING-C5SV (CP14SA1-60)
8	645 054 3579	ASSY,REMOCON JXMYA
9	610 300 5102	RC-BATTERY LID
10	610 011 6405	ROD ANTENNA ASSY
or	610 216 4886	ROD ANTENNA ASSY
or	610 217 1006	ROD ANTENNA ASSY
or	645 012 0428	ROD ANTENNA ASSY
or	645 042 4519	ROD ANTENNA ASSY

Key No.	Part No.	Description
11	645 003 2837	ANT MATCHING BOX
or	610 230 3216	ANT MATCHING BOX
	610 305 3547	INSTRUCTIONS MANUAL-C4EY

Chassis Electrical Parts List (Service Ref. No. CP14SA1-50, CP14SA1-60)

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a ⚠ 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

NOTES:

Read description in the Capacitor and Resistor as follows:

CAPACITOR

CERAMIC 100P K 50V

- 50V: Rated Voltage
- K: Tolerance Symbols:

Less than 10pF

A : Not specified	B : ±0.1pF	C : ±0.25pF
D : ±0.5pF	F : ±1PF	G : ±2pF
R : ±0.25-0pF	S : ±0-0.25pF	E : +0-1pF

More than 10pF

A : Not specified	B : ±0.1%	C : ±0.25%
D : ±0.5%	F : ±1%	G : ±2%
H : ±3%	J : ±5%	K : ±10%
L : ±15%	M : ±20%	N : ±30%
P : +100-0%	Q : +30-10%	T : +50-10%
U : +75-10%	V : +20-10%	W : +100-10%
X : +40-20%	Y : +150-10%	Z : +80-20%

- 100P: Rated value: P=pico farad, U=micro farad
- CERAMIC: 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

- 1/4W: Rated Wattage
- A: Performance Symbols:
  A: General B: Non flammable Z: Low noise
  Other: Temperature coefficient
- J: Tolerance Symbols:
  A: ±0.05% B: ±0.1% C: ±0.25% D: ±0.5%
  F: ±1% G: ±2% J: ±5% K: ±10%
  M: ±20% P: +5-15%
- 4.7K: Rated value, ohms:
  K: 1,000, M: 1,000,000
- CARBON: Material:

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

Ref. No.	Part No.	Description

OUT OF CIRCUIT BOARD

PICTURE TUBE

⚠Q901	414 010 1108	CRT A34KPU02XX

COIL

⚠L901	645 051 5477	COIL,DEGAUSSING
⚠L902	645 027 5739	DEFLECTION YOKE

MISCELLANEOUS

SP901	645 028 0870	SPEAKER, 8
	652 000 1251	SPEAKER,8
⚠W901	645 009 9991	CORD,POWER
	645 048 2106	CORD,POWER
W902	610 297 9565	ASSY,WIRE GND CONECTOR F8

610 307 2937 ASSY,PWB,MAIN C5SW 1AA0B10S114AA

TRANSISTOR

Q111	405 015 9701	TR 2SC2814-F4-TB
Q261	406 000 6804	TR 2SA1015-GR(SAN)
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
Q431	405 018 0507	TR 2SC3332-R
	405 018 0606	TR 2SC3332-S
Q432	406 017 1809	TR TT2138LS-YB11
Q611	405 013 6801	TR 2SC2274-E
	405 013 7006	TR 2SC2274-F
Q612	405 013 6801	TR 2SC2274-E
	405 013 7006	TR 2SC2274-F
Q613	405 171 4107	TR 2SK2647
Q614	405 006 6504	TR 2SA984-E
	405 006 6702	TR 2SA984-F
Q631	405 014 4509	TR 2SC2412K T146 R
	405 014 4608	TR 2SC2412K T146 S
	405 015 8704	TR 2SC2812-L6-TB
	405 015 8902	TR 2SC2812-L7-TB
	405 173 9803	TR 2SC3928A1R
	405 173 9902	TR 2SC3928A1S
Q661	405 059 9903	TR 2SD1913-R-RA
	405 060 0005	TR 2SD1913-S-RA
Q681	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q684	405 011 8401	TR 2SC1740S-Q

Ref. No.	Part No.	Description
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q685	405 014 4509	TR 2SC2412K T146 R
	405 014 4608	TR 2SC2412K T146 S
	405 015 8704	TR 2SC2812-L6-TB
	405 015 8902	TR 2SC2812-L7-TB
	405 173 9803	TR 2SC3928A1R
	405 173 9902	TR 2SC3928A1S
Q686	405 134 5905	TR 2SA1037AK T146 R
	405 147 2205	TR 2SA1037AK T146 S
	405 002 0308	TR 2SA1037K-T-96-R
	405 002 0407	TR 2SA1037K-T-96-S
	405 002 6706	TR 2SA1179-M6
	405 002 6904	TR 2SA1179-M7-TB
	405 173 9605	TR 2SA1235A1E
	405 173 9704	TR 2SA1235A1F
Q818	405 014 4509	TR 2SC2412K T146 R
	405 014 4608	TR 2SC2412K T146 S
	405 015 8704	TR 2SC2812-L6-TB
	405 015 8902	TR 2SC2812-L7-TB
	405 173 9803	TR 2SC3928A1R
	405 173 9902	TR 2SC3928A1S
Q861	405 134 5905	TR 2SA1037AK T146 R
	405 147 2205	TR 2SA1037AK T146 S
	405 002 0308	TR 2SA1037K-T-96-R
	405 002 0407	TR 2SA1037K-T-96-S
	405 002 6706	TR 2SA1179-M6
	405 002 6904	TR 2SA1179-M7-TB
	405 173 9605	TR 2SA1235A1E
	405 173 9704	TR 2SA1235A1F
Q871	405 014 4509	TR 2SC2412K T146 R
	405 014 4608	TR 2SC2412K T146 S
	405 015 8704	TR 2SC2812-L6-TB
	405 015 8902	TR 2SC2812-L7-TB
	405 173 9803	TR 2SC3928A1R
	405 173 9902	TR 2SC3928A1S
Q881	405 014 4509	TR 2SC2412K T146 R
	405 014 4608	TR 2SC2412K T146 S
	405 015 8704	TR 2SC2812-L6-TB
	405 015 8902	TR 2SC2812-L7-TB
	405 173 9803	TR 2SC3928A1R
	405 173 9902	TR 2SC3928A1S
Q886	405 014 4509	TR 2SC2412K T146 R
	405 014 4608	TR 2SC2412K T146 S
	405 015 8704	TR 2SC2812-L6-TB
	405 015 8902	TR 2SC2812-L7-TB
	405 173 9803	TR 2SC3928A1R
	405 173 9902	TR 2SC3928A1S
INTEGRATED CIRCUIT		
IC001	409 472 4408	IC LA4266
IC201	409 517 5902	IC LA76818A
IC202	409 241 5407	IC BA178M05T
	409 265 4806	IC L78M05CV
	409 172 1509	IC MC78M05CT
	409 320 5700	IC UPC78M05AHF
IC501	409 449 4103	IC LA78040
	409 507 0900	IC LA78040N
IC651	409 241 5407	IC BA178M05T
	409 265 4806	IC L78M05CV
	409 172 1509	IC MC78M05CT

Ref. No.	Part No.	Description
	409 320 5700	IC UPC78M05AHF
IC801	410 406 3305	IC LC863440V-5Y67-TLM
IC802	409 383 6805	IC 24LC08B/P
CAPACITOR		
C003	404 089 7200	ELECT 100U M 25V
	403 044 9501	ELECT 100U M 25V
C004	404 084 9209	ELECT 4.7U M 50V
	403 051 0607	ELECT 4.7U M 50V
C005	404 089 7200	ELECT 100U M 25V
	403 044 9501	ELECT 100U M 25V
C006	404 087 5109	ELECT 470U M 25V
	403 047 5005	ELECT 470U M 25V
C007	403 057 3107	POLYESTER 0.1U K 50V
	403 181 8207	POLYESTER 0.1U K 50V
C008	404 084 8400	ELECT 1000U M 25V
	403 045 1504	ELECT 1000U M 25V
C012	403 215 2201	CERAMIC 0.01U K 50V
C1001	404 084 8905	ELECT 10U M 50V
	403 049 4204	ELECT 10U M 50V
C1002	404 084 8806	ELECT 1U M 50V
	403 049 0008	ELECT 1U M 50V
C1003	403 049 4204	ELECT 10U M 50V
C1004	403 043 0202	ELECT 220U M 16V
C101	404 084 8301	ELECT 470U M 16V
	403 044 1703	ELECT 470U M 16V
C106	404 084 9308	ELECT 47U M 50V
	403 051 3103	ELECT 47U M 50V
C107	404 084 9308	ELECT 47U M 50V
	403 051 3103	ELECT 47U M 50V
C111	403 215 2201	CERAMIC 0.01U K 50V
C112	403 215 2201	CERAMIC 0.01U K 50V
C113	403 215 2201	CERAMIC 0.01U K 50V
C120	403 249 9207	MT-COMPO 0.022U J 50V
C121	403 215 2201	CERAMIC 0.01U K 50V
C122	404 084 7809	ELECT 100U M 16V
	403 042 2405	ELECT 100U M 16V
C123	401 105 7909	MT-GLAZE 0.000 ZA 1/16W
C132	404 084 8707	ELECT 0.47U M 50V
	403 048 6308	ELECT 0.47U M 50V
C135	404 084 8707	ELECT 0.47U M 50V
	403 048 6308	ELECT 0.47U M 50V
C138	403 284 4304	CERAMIC 0.022U K 50V
C171	403 113 3805	CERAMIC 1000P K 50V
C172	403 367 0407	CERAMIC 0.1U K 50V
C174	403 157 1904	CERAMIC 10P D 50V
C178	404 084 8806	ELECT 1U M 50V
	403 049 0008	ELECT 1U M 50V
C1902	404 087 5406	ELECT 22U M 50V
	403 050 2800	ELECT 22U M 50V
C201	404 084 9803	NP-ELECT 1U M 50V
	403 086 2300	NP-ELECT 1U M 50V
C202	403 058 2604	POLYESTER 0.015U J 50V
	403 179 3207	POLYESTER 0.015U J 50V
C203	403 215 2201	CERAMIC 0.01U K 50V
C204	404 084 8905	ELECT 10U M 50V
	403 049 4204	ELECT 10U M 50V
C205	404 084 8905	ELECT 10U M 50V
	403 049 4204	ELECT 10U M 50V
C208	403 367 0407	CERAMIC 0.1U K 50V
C209	404 084 8707	ELECT 0.47U M 50V
	403 048 6308	ELECT 0.47U M 50V
C210	404 084 8301	ELECT 470U M 16V
	403 051 4209	ELECT 470U M 50V
C211	403 367 0407	CERAMIC 0.1U K 50V
C212	403 155 4204	CERAMIC 15P J 50V
C221	403 305 3507	CERAMIC 0.1U Z 50V

Ref. No.	Part No.	Description
C222	403 305 3507	CERAMIC 0.1U Z 50V
C223	403 305 3507	CERAMIC 0.1U Z 50V
C224	403 367 0407	CERAMIC 0.1U K 50V
C225	404 084 8806	ELECT 1U M 50V
	403 049 0008	ELECT 1U M 50V
C226	404 084 8806	ELECT 1U M 50V
	403 049 0008	ELECT 1U M 50V
C230	403 215 2201	CERAMIC 0.01U K 50V
C231	403 260 2904	MT-COMPO 0.33U J 50V
C232	403 260 2904	MT-COMPO 0.33U J 50V
C233	404 084 8905	ELECT 10U M 50V
	403 049 4204	ELECT 10U M 50V
C234	403 215 2201	CERAMIC 0.01U K 50V
C243	403 215 2201	CERAMIC 0.01U K 50V
C244	404 084 9308	ELECT 47U M 50V
	403 051 3103	ELECT 47U M 50V
C245	404 084 9803	NP-ELECT 1U M 50V
	403 086 2300	NP-ELECT 1U M 50V
C246	404 084 8806	ELECT 1U M 50V
	403 049 0008	ELECT 1U M 50V
C247	404 084 9001	ELECT 2.2U M 50V
	403 049 9803	ELECT 2.2U M 50V
C273	403 164 0204	CERAMIC 0.1U Z 25V
C283	403 215 2201	CERAMIC 0.01U K 50V
C358	404 084 8806	ELECT 1U M 50V
	403 049 0008	ELECT 1U M 50V
C432	403 075 7101	CERAMIC 1000P K 500V
C433	403 076 3102	CERAMIC 3900P K 500V
C434	404 087 6007	ELECT 47U M 35V
	403 054 0703	ELECT 47U M 35V
C435	404 066 5106	MT-POLYPRO 5400P H 1.5K
C441	403 349 3501	MT-POLYPRO 0.36U J 200V
	403 346 7304	MT-POLYPRO 0.36U J 250V
C469	404 084 8905	ELECT 10U M 50V
	403 049 4204	ELECT 10U M 50V
C471	404 056 5307	NP-ELECT 2.2U M 100V
	404 084 9902	NP-ELECT 2.2U M 100V
C482	404 084 8400	ELECT 1000U M 25V
	403 045 1504	ELECT 1000U M 25V
C510	404 088 7300	ELECT 22U M 16V
	403 042 7707	ELECT 22U M 16V
C514	404 084 8905	ELECT 10U M 50V
	403 049 4204	ELECT 10U M 50V
C515	404 084 8400	ELECT 1000U M 25V
	403 045 1504	ELECT 1000U M 25V
C517	404 084 9407	ELECT 220U M 35V
	403 053 2104	ELECT 220U M 35V
C518	403 072 9405	CERAMIC 3300P K 50V
C521	404 084 9506	ELECT 470U M 35V
	403 054 1502	ELECT 470U M 35V
C524	403 064 1202	POLYESTER 0.1U K 100V
	403 276 9706	POLYESTER 0.1U K 100V
⚠C601	404 093 6107	MT-POLYEST 0.1U M 275V
	404 089 1505	MT-POLYEST 0.1U M 275V
C602	404 093 6107	MT-POLYEST 0.1U M 275V
	404 089 1505	MT-POLYEST 0.1U M 275V
C607	404 038 1600	ELECT 100U M 400V
	404 067 4009	ELECT 100U M 400V
C608	403 247 1609	CERAMIC 220P K 1K
	403 325 5109	CERAMIC 220P K 1K
C610	403 049 0008	ELECT 1U M 50V
C611	403 247 5003	CERAMIC 470P K 1K
C612	403 237 8007	MT-COMPO 0.1U J 50V
	403 243 6806	MT-COMPO 0.1U J 50V
C613	403 178 9408	POLYESTER 0.012U J 50V
	403 249 8903	MT-COMPO 0.012U J 50V
C614	403 056 9704	POLYESTER 0.01U J 50V
	403 178 9309	POLYESTER 0.01U J 50V
⚠C627	404 073 5106	CERAMIC 470P K 250V
	404 073 3300	CERAMIC 470P M 250V
⚠C629	404 073 3904	CERAMIC 1000P K 250V
	404 073 2105	CERAMIC 1000P M 250V
	404 088 3104	CERAMIC 1000P M 250V
C631	403 247 5003	CERAMIC 470P K 1K
	403 269 1809	CERAMIC 470P K 1K
C633	403 247 5003	CERAMIC 470P K 1K
	403 269 1809	CERAMIC 470P K 1K
C634	403 247 5003	CERAMIC 470P K 1K
	403 269 1809	CERAMIC 470P K 1K
C641	404 080 0606	ELECT 100U M 160V
C643	404 084 9506	ELECT 470U M 35V
	403 054 1502	ELECT 470U M 35V
C644	404 084 8400	ELECT 1000U M 25V
	403 045 1504	ELECT 1000U M 25V
C651	403 039 6508	ELECT 100U M 10V
C661	404 084 8004	ELECT 220U M 16V
	403 043 0202	ELECT 220U M 16V
C662	404 084 8301	ELECT 470U M 16V
	403 044 1703	ELECT 470U M 16V
C685	404 084 8806	ELECT 1U M 50V
	403 049 0008	ELECT 1U M 50V
C801	403 155 4204	CERAMIC 15P J 50V
C802	403 157 2505	CERAMIC 27P J 50V
C803	403 215 2201	CERAMIC 0.01U K 50V
C805	404 084 7700	ELECT 10U M 16V
	403 041 8804	ELECT 10U M 16V
C823	403 342 3300	CERAMIC 0.1U K 25V
C824	403 367 0407	CERAMIC 0.1U K 50V
C825	403 157 3601	CERAMIC 100P J 50V
C829	403 342 3300	CERAMIC 0.1U K 25V
C835	404 084 8806	ELECT 1U M 50V
	403 049 0008	ELECT 1U M 50V
C851	403 157 3106	CERAMIC 56P J 50V
C852	403 157 3106	CERAMIC 56P J 50V
C853	403 157 3106	CERAMIC 56P J 50V
C861	404 084 8806	ELECT 1U M 50V
	403 049 0008	ELECT 1U M 50V
C888	403 155 2200	CERAMIC 3300P K 50V
C892	403 342 3300	CERAMIC 0.1U K 25V
C893	404 084 9001	ELECT 2.2U M 50V
	403 049 9803	ELECT 2.2U M 50V
C894	403 281 5007	CERAMIC 0.033U K 25V
RESISTOR		
R003	401 113 5607	MT-GLAZE 750 JA 1/16W
R004	401 105 0702	MT-GLAZE 100K JA 1/16W
R005	401 025 1308	CARBON 150 JA 1/6W
R006	401 024 5604	CARBON 1 JA 1/6W
R010	401 105 3307	MT-GLAZE 2.7K JA 1/16W
R011	401 105 2904	MT-GLAZE 22K JA 1/16W
R1001	401 027 6608	CARBON 75 JA 1/6W
R1002	401 105 0504	MT-GLAZE 1K JA 1/16W
R1003	401 105 0702	MT-GLAZE 100K JA 1/16W
R1004	401 105 6506	MT-GLAZE 680 JA 1/16W
R1005	401 105 0702	MT-GLAZE 100K JA 1/16W
R1006	401 027 6608	CARBON 75 JA 1/6W
R1007	401 024 7707	CARBON 100K JA 1/6W
R103	401 061 8101	OXIDE-MT 39K JA 1W
R106	401 024 6700	CARBON 100 JA 1/6W
R107	401 024 6700	CARBON 100 JA 1/6W
R108	401 105 2102	MT-GLAZE 18K JA 1/16W
R109	401 105 8203	MT-GLAZE 68K JA 1/16W
R111	401 105 0504	MT-GLAZE 1K JA 1/16W
R112	401 105 6001	MT-GLAZE 5.6K JA 1/16W

Ref. No.	Part No.	Description
R114	401 105 4007	MT-GLAZE 330 JA 1/16W
R115	401 027 2105	CARBON 56 JA 1/6W
R116	401 105 5806	MT-GLAZE 56 JA 1/16W
R130	401 105 7909	MT-GLAZE 0.000 ZA 1/16W
R132	401 105 5202	MT-GLAZE 470 JA 1/16W
R140	401 105 5905	MT-GLAZE 560 JA 1/16W
R141	401 105 5905	MT-GLAZE 560 JA 1/16W
R176	401 105 0603	MT-GLAZE 10K JA 1/16W
R185	401 068 1600	OXIDE-MT 4.7 JA 2W
R1902	401 105 3406	MT-GLAZE 27K JA 1/16W
R1903	401 105 1105	MT-GLAZE 12K JA 1/16W
R1904	401 105 6001	MT-GLAZE 5.6K JA 1/16W
R1905	401 105 4601	MT-GLAZE 3.9K JA 1/16W
R1906	401 105 2805	MT-GLAZE 2.2K JA 1/16W
R1907	401 024 6700	CARBON 100 JA 1/6W
R1911	401 105 2706	MT-GLAZE 220 JA 1/16W
R1912	401 105 2706	MT-GLAZE 220 JA 1/16W
R1913	401 105 2706	MT-GLAZE 220 JA 1/16W
R209	401 113 9506	MT-GLAZE 620K JA 1/16W
R210	401 105 3703	MT-GLAZE 3K JA 1/16W
R211	401 025 1308	CARBON 150 JA 1/6W
R212	401 025 1308	CARBON 150 JA 1/6W
R221	401 105 0504	MT-GLAZE 1K JA 1/16W
R222	401 105 0504	MT-GLAZE 1K JA 1/16W
R223	401 105 0504	MT-GLAZE 1K JA 1/16W
R224	401 105 5301	MT-GLAZE 4.7K JA 1/16W
R225	401 105 5301	MT-GLAZE 4.7K JA 1/16W
R226	401 105 3406	MT-GLAZE 27K JA 1/16W
R227	401 105 4205	MT-GLAZE 33K JA 1/16W
R228	401 024 7707	CARBON 100K JA 1/6W
R229	401 105 6704	MT-GLAZE 680K JA 1/16W
R230	401 026 9303	CARBON 47 JA 1/6W
R244	401 105 5400	MT-GLAZE 47K JA 1/16W
R245	401 105 5400	MT-GLAZE 47K JA 1/16W
R263	401 105 0603	MT-GLAZE 10K JA 1/16W
R264	401 026 0607	CARBON 270 JA 1/6W
R265	401 105 3901	MT-GLAZE 33 JA 1/16W
R267	401 026 0607	CARBON 270 JA 1/6W
R271	401 105 0405	MT-GLAZE 100 JA 1/16W
R272	401 105 0405	MT-GLAZE 100 JA 1/16W
R280	401 024 6700	CARBON 100 JA 1/6W
R282	401 105 4106	MT-GLAZE 3.3K JA 1/16W
R284	401 105 4106	MT-GLAZE 3.3K JA 1/16W
R286	401 105 5301	MT-GLAZE 4.7K JA 1/16W
R340	401 105 7503	MT-GLAZE 82K JA 1/16W
R351	401 027 8602	CARBON 8.2K JA 1/6W
R352	401 012 7009	CARBON 10K JA 1/4W
R354	401 025 8208	CARBON 22K JA 1/6W
R355	401 015 3800	CARBON 18K JA 1/4W
R356	401 105 0603	MT-GLAZE 10K JA 1/16W
R357	401 026 7002	CARBON 3.9K JA 1/6W
R358	401 105 7909	MT-GLAZE 0.000 ZA 1/16W
R422	401 023 3700	CARBON 82K JA 1/4W
R423	401 023 3700	CARBON 82K JA 1/4W
R424	401 024 7004	CARBON 1K JA 1/6W
R426	401 024 7400	CARBON 10K JA 1/6W
R432	401 024 7004	CARBON 1K JA 1/6W
R433	401 007 1104	CARBON 1K JA 1/2W
R434	401 008 6702	CARBON 220 JA 1/2W
R445	401 068 7800	OXIDE-MT 560 JA 2W
R475	401 009 5803	CARBON 330 JA 1/2W
R479	401 025 7805	CARBON 2.2K JA 1/6W
R481	401 068 1600	OXIDE-MT 4.7 JA 2W
R501	401 064 8702	OXIDE-MT 1K JA 2W
R510	401 025 8208	CARBON 22K JA 1/6W
R511	401 024 7400	CARBON 10K JA 1/6W
R514	401 025 1902	CARBON 15K JA 1/6W
R515	401 026 1307	CARBON 27K JA 1/6W
R516	401 027 2600	CARBON 5.6K JA 1/6W
R518	401 009 3106	CARBON 3.3 JA 1/2W
R522	401 024 9008	CARBON 120 JA 1/6W
R525	401 008 6702	CARBON 220 JA 1/2W
R602	402 060 8109	WIRE WOUND 3.9 KA 5W
R603	401 010 9203	CARBON 560K JA 1/2W
R604	401 066 9103	OXIDE-MT 27 JA 2W
R605	401 010 9203	CARBON 560K JA 1/2W
R606	401 027 0507	CARBON 470K JA 1/6W
R607	401 019 9600	CARBON 47 JA 1/4W
R609	401 025 8208	CARBON 22K JA 1/6W
R611	401 025 8208	CARBON 22K JA 1/6W
R612	402 001 8502	FUSIBLE RES 10 J- 1/2W
R613	401 064 3806	OXIDE-MT 1.0 JA 2W
R615	401 016 1508	CARBON 22 JA 1/4W
R616	401 027 2600	CARBON 5.6K JA 1/6W
R617	402 092 1307	FUSIBLE RES 680 J- 1/2W
R618	401 024 7004	CARBON 1K JA 1/6W
R619	401 025 8208	CARBON 22K JA 1/6W
R620	401 020 0801	CARBON 470 JA 1/4W
⚠ R628	402 000 8305	SOLID 5.6M KA 1/2W
⚠ R629	402 000 8305	SOLID 5.6M KA 1/2W
R635	401 007 2309	CARBON 100K JA 1/2W
R636	401 105 5301	MT-GLAZE 4.7K JA 1/16W
R637	401 007 9308	CARBON 150K JA 1/2W
R638	401 061 4400	OXIDE-MT 33K JA 1W
R639	401 013 6407	CARBON 12K JA 1/4W
R642	401 012 7009	CARBON 10K JA 1/4W
R643	402 001 8700	FUSIBLE RES 18 J- 1/2W
R644	401 142 9508	OXIDE-MT 0.27 JA 1W
R645	401 026 3905	CARBON 330 JA 1/6W
R646	401 026 1307	CARBON 27K JA 1/6W
R661	401 060 7402	OXIDE-MT 270 JA 1W
R662	401 065 1801	OXIDE-MT 12 JA 2W
R663	401 013 6407	CARBON 12K JA 1/4W
R664	401 065 1801	OXIDE-MT 12 JA 2W
R681	401 024 7004	CARBON 1K JA 1/6W
R682	401 026 9907	CARBON 4.7K JA 1/6W
R683	401 105 6100	MT-GLAZE 560K JA 1/16W
R684	401 105 0603	MT-GLAZE 10K JA 1/16W
R685	401 105 2904	MT-GLAZE 22K JA 1/16W
R688	401 025 8208	CARBON 22K JA 1/6W
R689	401 027 3201	CARBON 560K JA 1/6W
R801	401 105 3505	MT-GLAZE 270K JA 1/16W
R804	401 105 7909	MT-GLAZE 0.000 ZA 1/16W
R805	401 105 7909	MT-GLAZE 0.000 ZA 1/16W
R811	401 105 3406	MT-GLAZE 27K JA 1/16W
R812	401 105 0603	MT-GLAZE 10K JA 1/16W
R813	401 105 0603	MT-GLAZE 10K JA 1/16W
R814	401 105 0603	MT-GLAZE 10K JA 1/16W
R815	401 105 0603	MT-GLAZE 10K JA 1/16W
R816	401 105 0603	MT-GLAZE 10K JA 1/16W
R817	401 105 3307	MT-GLAZE 2.7K JA 1/16W
R818	401 024 7004	CARBON 1K JA 1/6W
R819	401 105 0603	MT-GLAZE 10K JA 1/16W
R821	401 105 0603	MT-GLAZE 10K JA 1/16W
R822	401 105 7909	MT-GLAZE 0.000 ZA 1/16W
R830	401 105 0504	MT-GLAZE 1K JA 1/16W
R831	401 105 5202	MT-GLAZE 470 JA 1/16W
R833	401 105 0603	MT-GLAZE 10K JA 1/16W
R834	401 105 0603	MT-GLAZE 10K JA 1/16W
R835	401 105 0603	MT-GLAZE 10K JA 1/16W
R836	401 105 0603	MT-GLAZE 10K JA 1/16W
R837	401 105 1600	MT-GLAZE 15K JA 1/16W
R838	401 105 1600	MT-GLAZE 15K JA 1/16W
R839	401 105 4007	MT-GLAZE 330 JA 1/16W

Ref. No.	Part No.	Description
R840	401 105 4007	MT-GLAZE 330 JA 1/16W
R841	401 105 5301	MT-GLAZE 4.7K JA 1/16W
R842	401 105 5301	MT-GLAZE 4.7K JA 1/16W
R845	401 105 5400	MT-GLAZE 47K JA 1/16W
R851	401 025 1605	CARBON 1.5K JA 1/6W
R853	401 027 8602	CARBON 8.2K JA 1/6W
R855	401 027 8602	CARBON 8.2K JA 1/6W
R857	401 027 8602	CARBON 8.2K JA 1/6W
R861	401 105 1501	MT-GLAZE 1.5K JA 1/16W
R862	401 105 7404	MT-GLAZE 8.2K JA 1/16W
R863	401 105 5400	MT-GLAZE 47K JA 1/16W
R866	401 024 6700	CARBON 100 JA 1/6W
R869	401 024 6700	CARBON 100 JA 1/6W
R870	401 105 2904	MT-GLAZE 22K JA 1/16W
R871	401 105 0603	MT-GLAZE 10K JA 1/16W
R872	401 026 1307	CARBON 27K JA 1/6W
R873	401 105 4205	MT-GLAZE 33K JA 1/16W
R874	401 105 0603	MT-GLAZE 10K JA 1/16W
R875	401 105 0603	MT-GLAZE 10K JA 1/16W
R876	401 105 5400	MT-GLAZE 47K JA 1/16W
R877	403 157 7203	CERAMIC 3900P K 50V
R881	401 105 4106	MT-GLAZE 3.3K JA 1/16W
R882	401 105 4106	MT-GLAZE 3.3K JA 1/16W
R883	401 105 4205	MT-GLAZE 33K JA 1/16W
R886	401 105 2904	MT-GLAZE 22K JA 1/16W
R892	401 105 5509	MT-GLAZE 470K JA 1/16W
R893	401 105 8005	MT-GLAZE 1M JA 1/16W
R894	401 105 0405	MT-GLAZE 100 JA 1/16W
VARIABLE RESISTOR		
VR631	645 006 5125	VR, SEMI, 2K N
	652 000 0100	VR,SEMI,2K N
TRANSFORMER		
T431	652 001 1144	TRANS,DRIVE
⚠T471	645 056 7209	TRANS, FLYBACK
⚠T611	645 058 8051	TRANS,POWER,PULSE
COIL		
L171	645 049 3379	TRANS,OSC,38MHZ
	645 054 0271	TRANS,OSC,38MHZ
L234	401 024 9008	CARBON 120 JA 1/6W
L235	401 024 9008	CARBON 120 JA 1/6W
L236	401 024 9008	CARBON 120 JA 1/6W
L431	610 032 4381	FILTER COIL
	610 032 4404	FILTER COIL
	645 008 5642	INDUCTOR,3.3U K
L432	610 031 9998	PIPE CORE
	645 018 7025	CORE,PIPE
	652 001 0475	PIPE CORE
⚠L601	610 031 5945	LINE FILTER
	610 031 5969	LINE FILTER
	645 018 9265	LINE FILTER
L603	645 018 9722	CORE,PIPE
	652 001 0147	CORE,PIPE
L604	645 018 9722	CORE,PIPE
	652 001 0147	CORE,PIPE
L605	645 005 0763	CORE,PIPE
L631	645 018 9722	CORE,PIPE
	652 001 0147	CORE,PIPE
DIODE		
D005	407 149 0807	DIODE 1SS355-TE-17
D102	407 099 5600	ZENER DIODE MTZJ6.8A
	407 057 4003	ZENER DIODE RD6.8EB1
	408 047 8605	ZENER DIODE MTZJ6.8A
D103	407 100 0204	ZENER DIODE MTZJ36A
	407 056 2307	ZENER DIODE RD36EB1
	408 047 6205	ZENER DIODE MTZJ36A
D122	401 105 7909	MT-GLAZE 0.000 ZA 1/16W
D1910	407 116 6504	LED SLP-181B-51
D1910A	610 264 5064	HOLDER LED-S2CP
	610 273 7929	HOLDER LED-S4KF
D352	407 063 8705	ZENER DIODE MTZJ5.1C
	407 056 9801	ZENER DIODE RD5.6EB1
	408 047 7103	ZENER DIODE MTZJ5.1C-52
D357	407 005 4505	DIODE DS442X
	408 008 2406	DIODE 1N4148
	407 012 4406	DIODE 1SS133
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D421	407 099 7208	ZENER DIODE MTZJ16A
	407 054 7007	ZENER DIODE RD16EB1
	407 054 7205	ZENER DIODE RD16EB3
	408 047 5307	ZENER DIODE MTZJ16A-52
D432	407 009 8905	DIODE RU3M
D467	408 008 2406	DIODE 1N4148
	407 013 4306	DIODE 1S2076A
	407 013 6508	DIODE 1S2471
D468	407 012 4406	DIODE 1SS133
D476	407 099 5600	ZENER DIODE MTZJ6.8A
	407 057 4003	ZENER DIODE RD6.8EB1
	408 047 8605	ZENER DIODE MTZJ6.8A
D512	407 005 8602	DIODE ERA15-02
D603	407 006 6300	DIODE ERC05-10B
D604	407 006 6300	DIODE ERC05-10B
D605	407 006 6300	DIODE ERC05-10B
D606	407 006 6300	DIODE ERC05-10B
⚠D610	407 230 3908	PHOTO COUPLE PC123Y52
	407 231 7707	PC TLP421F(D4-BL)
D611	407 012 4406	DIODE 1SS133
D613	407 099 5907	ZENER DIODE MTZJ8.2C
	407 057 8407	ZENER DIODE RD8.2EB3
	408 047 9800	ZENER DIODE MTZJ8.2C
D617	407 006 0100	DIODE ERA91-02
D631	407 009 8905	DIODE RU3M
D633	407 007 7603	DIODE EU2
	407 007 7801	DIODE EU2Z
D634	407 009 8905	DIODE RU3M
D661	407 099 6102	ZENER DIODE MTZJ10B
	407 054 0008	ZENER DIODE RD10EB2
	408 047 2306	ZENER DIODE MTZJ10B
D681	407 005 4505	DIODE DS442X
	408 008 2406	DIODE 1N4148
	407 012 4406	DIODE 1SS133
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D683	407 005 4505	DIODE DS442X
	408 008 2406	DIODE 1N4148
	407 012 4406	DIODE 1SS133
	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
D685	407 099 5600	ZENER DIODE MTZJ6.8A
	407 057 4003	ZENER DIODE RD6.8EB1
	408 047 8605	ZENER DIODE MTZJ6.8A
D686	407 099 5501	ZENER DIODE MTZJ6.2C
	407 057 2801	ZENER DIODE RD6.2EB3
	408 047 8308	ZENER DIODE MTZJ6.2C-52
D861	407 055 7907	ZENER DIODE RD3.6EL
	408 041 2005	ZENER DIODE RD3.6EL
MISCELLANEOUS		
⚠F601	423 028 8603	FUSE 250V 4A
	423 024 8409	FUSE 250V 4A

Ref. No.	Part No.	Description
F601A	645 040 3576	HOLDER,FUSE
F601B	645 040 3576	HOLDER,FUSE
A101	645 051 8423	TUNER,U/V
	645 057 2753	TUNER,U/V
A1901A	645 047 6228	UNIT,REMOCON RECEIVER
K1002	645 011 2973	JACK,RCA-2
	645 002 1800	TERMINAL,BOARD
K1003	645 040 1275	JACK,RCA-2
⚠PS601	408 046 4400	THERMISTOR PTDAA1BF9R0Q20
SW1901	645 003 4701	SWITCH,PUSH 1P-1TX1
	645 019 4887	SWITCH,PUSH 1P-1TX1
	645 027 7382	SWITCH,PUSH 1P-1TX1
SW1902	645 003 4701	SWITCH,PUSH 1P-1TX1
	645 019 4887	SWITCH,PUSH 1P-1TX1
	645 027 7382	SWITCH,PUSH 1P-1TX1
SW1903	645 003 4701	SWITCH,PUSH 1P-1TX1
	645 019 4887	SWITCH,PUSH 1P-1TX1
	645 027 7382	SWITCH,PUSH 1P-1TX1
SW1904	645 003 4701	SWITCH,PUSH 1P-1TX1
	645 019 4887	SWITCH,PUSH 1P-1TX1
	645 027 7382	SWITCH,PUSH 1P-1TX1
SW1905	645 003 4701	SWITCH,PUSH 1P-1TX1
	645 019 4887	SWITCH,PUSH 1P-1TX1
	645 027 7382	SWITCH,PUSH 1P-1TX1
SW1906	645 003 4701	SWITCH,PUSH 1P-1TX1
	645 019 4887	SWITCH,PUSH 1P-1TX1
	645 027 7382	SWITCH,PUSH 1P-1TX1
⚠SW601	645 059 0061	SWITCH, POWER 1P-1TX1
X161	421 009 4606	SAW F TSF5419P
X211	645 024 8818	OSC,CRYSTAL 4.433619MHZ
	652 001 0154	OSC,CRYSTAL 4.433619MHZ
X801	645 004 1938	OSC,CRYSTAL 32.768KHZ
	645 004 1945	OSC,CRYSTAL 32.768KHZ

610 307 2951 ASSY,PWB,CRT C4EY 1AA0B10S1140B

TRANSISTOR

Q701	406 000 5104	TR 2SC2229-O(SAN-2)
	406 000 5203	TR 2SC2229-Y(SAN-2)
	405 040 5600	TR 2SC2228-D
	405 029 6901	TR 2SC2228-E
Q703	406 000 5104	TR 2SC2229-O(SAN-2)
	406 000 5203	TR 2SC2229-Y(SAN-2)
	405 040 5600	TR 2SC2228-D
	405 029 6901	TR 2SC2228-E
Q705	406 000 5104	TR 2SC2229-O(SAN-2)
	406 000 5203	TR 2SC2229-Y(SAN-2)
	405 040 5600	TR 2SC2228-D
	405 029 6901	TR 2SC2228-E
Q721	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
Q751	405 002 0308	TR 2SA1037K-T-96-R
	405 002 0407	TR 2SA1037K-T-96-S
	405 002 6706	TR 2SA1179-M6
	405 002 6904	TR 2SA1179-M7-TB
	405 173 9605	TR 2SA1235A1E
	405 173 9704	TR 2SA1235A1F

CAPACITOR

C708	404 084 6505	CERAMIC 1000P K 2K
	403 077 2708	CERAMIC 1000P P 2K
	403 077 2807	CERAMIC 1000P Z 2K
	403 312 8304	CERAMIC 1000P Z 2K
C710	403 368 8907	ELECT 4.7U M 250V
C751	404 084 7809	ELECT 100U M 16V
	403 042 2405	ELECT 100U M 16V

RESISTOR

R701	401 105 7206	MT-GLAZE 82 JA 1/16W
R702	401 026 0607	CARBON 270 JA 1/6W
R704	401 105 7206	MT-GLAZE 82 JA 1/16W
R705	401 026 0607	CARBON 270 JA 1/6W
R707	401 105 7206	MT-GLAZE 82 JA 1/16W
R708	401 026 0607	CARBON 270 JA 1/6W
R711	401 065 4604	OXIDE-MT 12K JA 2W
R712	401 065 4604	OXIDE-MT 12K JA 2W
R713	401 065 4604	OXIDE-MT 12K JA 2W
R715	401 009 1508	CARBON 2.7K JA 1/2W
R718	401 009 1508	CARBON 2.7K JA 1/2W
R719	401 009 1508	CARBON 2.7K JA 1/2W
R723	401 105 1006	MT-GLAZE 1.2K JA 1/16W
R724	401 026 9600	CARBON 470 JA 1/6W
R743	401 024 9701	CARBON 12K JA 1/6W
R751	401 105 1501	MT-GLAZE 1.5K JA 1/16W
R752	401 105 0603	MT-GLAZE 10K JA 1/16W
R753	401 105 0603	MT-GLAZE 10K JA 1/16W

COIL

L702	645 007 9337	INDUCTOR,270U K

DIODE

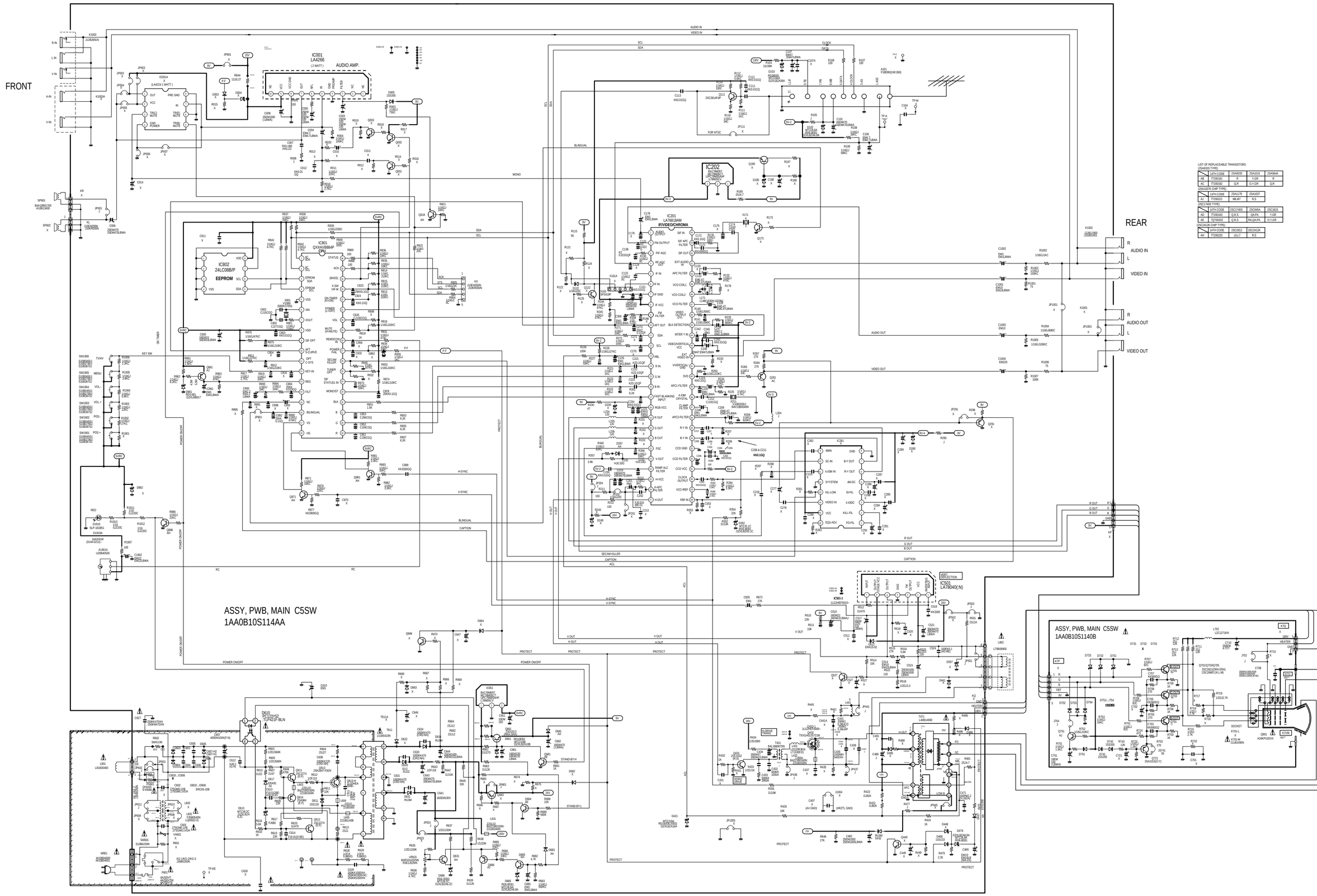
D741	407 149 0807	DIODE 1SS355-TE-17
D742	407 149 0807	DIODE 1SS355-TE-17
D751	407 149 0807	DIODE 1SS355-TE-17
D752	407 149 0807	DIODE 1SS355-TE-17
D753	407 149 0807	DIODE 1SS355-TE-17
D754	407 149 0807	DIODE 1SS355-TE-17

MISCELLANEOUS

⚠K701M	645 025 6097	SOCKET,CRT 8P

A14800/Mar./'03/30 BB

SANYO Electric Co., Ltd.
Printed in Japan



LIST OF REPLACEABLE TRANSISTORS

(2SA1015 TYPE)

	14TH CODE	2SA933S	2SA1015	2SA564A
AB	77200181	R	Y,GR	R
AC	77200182	O,R	O,Y,GR	Q,R

(2SA1007K CHIP TYPE)

	14TH CODE	2SA1179	2SA1037
A1	77200221	ML,M7	R,S

(2SC1740S TYPE)

	14TH CODE	2SC1740S	2SC945A	2SC1815
AD	77200183	O,R,S	GR,P,K	Y,GR
AE	7(700202	O,R,S	BA,QA,PA	O,Y,GR

(2SC2412K CHIP TYPE)

	14TH CODE	2SC2812	2SC2412K
AH	77200220	L6,L7	R,S

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

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 ⚠ in this circuit diagram show components whose values have special significance to product safety. It is particularly recommended that only parts specified on the part service manual be used for components replacement pointed out by the mark.

CIRCUIT DIAGRAM NOTICE:
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 picture. Waveforms were taken by using a wide band oscillo-scope 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.

Capacitance (Example)

1000 C M 2000 D
- Characteristic
- Capacitance value (220pF)
- Allowable error (±20%)
- Kind (Ceramic)
- Rated voltage (1,000V)

Allowable error: J= ± 5%, K= ±10%, M= ±20%

Kind: T, A, U, D: Electrolytic; C, K, B: Ceramic; F: Mylar film; M, N: Polypropylene; Z: Metalized paper

Resistance (Example)

1/2 N J 1.2
- Resistance value (1.2Ω)
- Allowable error (±5%)
- Kind (M.carbon)
- Rated wattage (1/2W)

Kind: D: Carbon; N: Metalized carbon; S: Oxied metalized; W: Wire wounding; C: Solid

TRANSISTOR, DIODE AND INTEGRATED CIRCUIT TERMINAL GUIDE

C: COLLECTOR
B: BASE
E: EMITTER

A: ANODE
K: KATHODE

CHIP COMPONENTS
TRANSISTOR
DIODE
RESISTOR

PARTICULAR PARTS SYMBOL
- FUSIBLE RESISTOR
- NON POLE ELECTRIC CAPACITOR
- POSISTER

SANYO

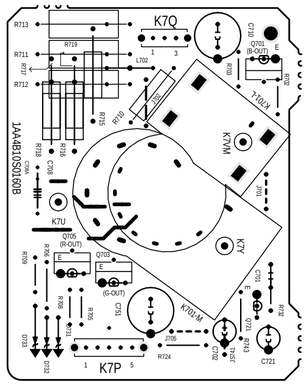
COLOUR TELEVISION

AC5-G CHASSIS SERIES

SERVICE REF. NO. **CP14SA1-50** **CP14SA1-60**

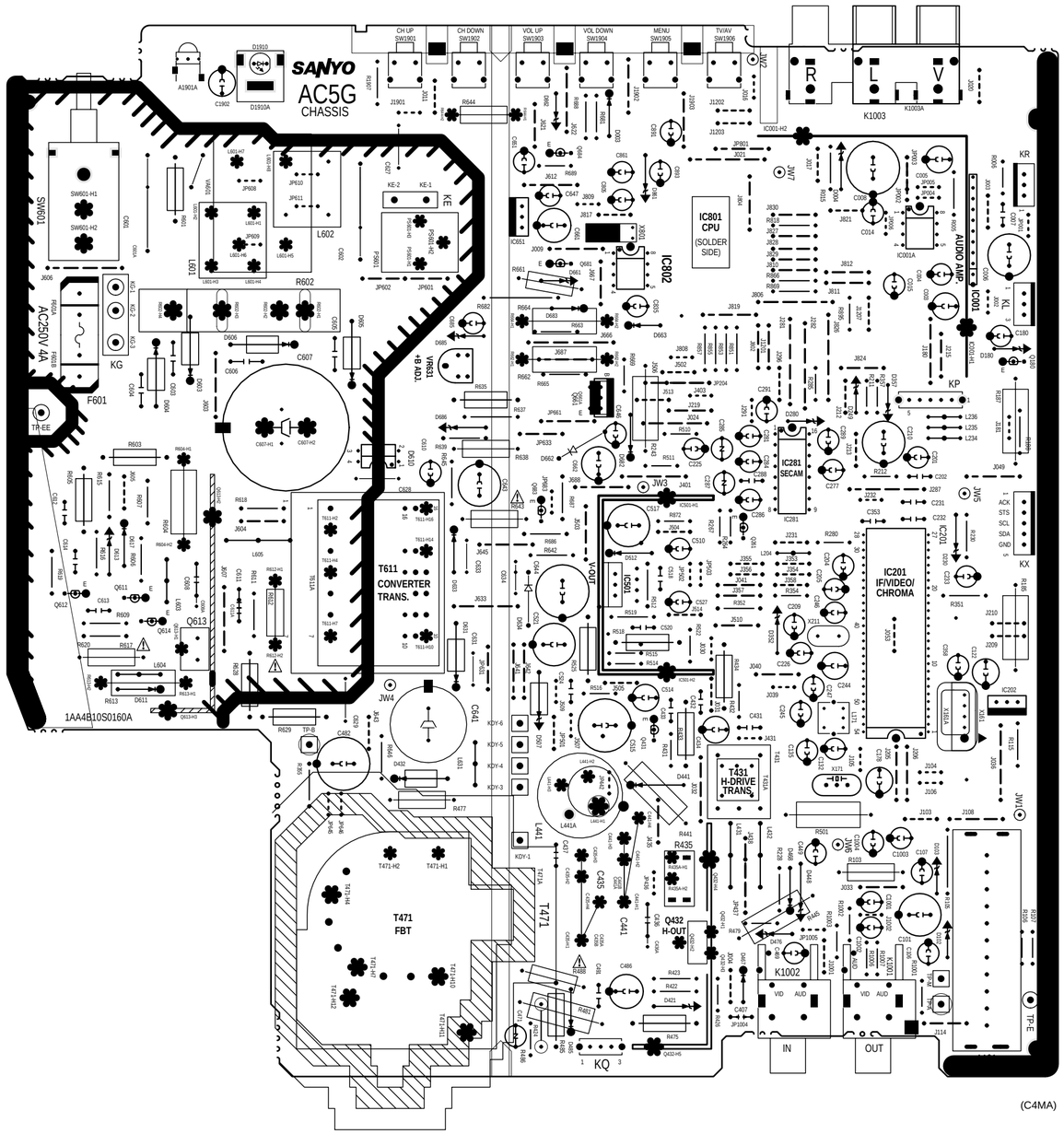
C5SW/C5SV

CRT BOARD (Component Location)



(C4MA)

MAIN BOARD (Component Location)



(C4MA)

Waveforms & Voltages

(On the Main Board)

IC201 (IF/VIDEO/CHROMA)

Pin-1	2.3V	**2**	2.2V	**3**	2.7V	**4**	3.2V	**5**	2.9V	**6**	2.9V	**7**	0V	**8**	5.0V	**9**	2.5V
10	2.3V	**11**	4.3V	**12**	4.1V	**13**	4.3V	**14**	1.6V	**15**	1.7V	**16**	1.6V	**17**	0V	**18**	8.3V
19	2.2V	**20**	2.1V	**21**	2.1V	**22**	2.0V	**23**	2.2V	**24**	2.7V	**25**	5.2V	**26**	2.6V	**27**	0.7V
28	1.3V	**29**	1.7V	**30**	0.9V	**31**	4.5V	**32**	8.4V	**33**	0V	**34**	2.5V	**35**	2.5V	**36**	2.7V
37	1.9V	**38**	2.8V	**39**	3.5V	**40**	2.5V	**41**	0V	**42**	2.5V	**43**	5.0V	**44**	2.7V	**45**	2.5V
46	2.3V	**47**	3.8V	**48**	4.1V	**49**	4.1V	**50**	2.5V	**51**	2.2V	**52**	2.0V	**53**	2.2V	**54**	3.1V

IC501 (VERT. OUT)

Pin-1	2.9V	**2**	22.7V	**3**	1.8V	**4**	0V	**5**	12.2V	**6**	22.9V	**7**	2.9V

IC001 (AUDIO AMP.)

Pin-1	N.C.	**2**	N.C.	**3**	7.1V	**4**	GND	**5**	0.7V	**6**	1.2V	**7**	6.8V	**8**	GND	**9**	14.4V
10	N.C.																

IC202

Pin-1	7.8V	**2**	GND	**3**	5.0V

IC651

Pin-1	12.5V	**2**	GND	**3**	5.0V

IC802 (MEMORY)

Pin-1	GND	**2**	GND	**3**	GND	**4**	GND	**5**	5.0V	**6**	5.0V	**7**	GND	**8**	5.0V		

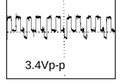
IC801 (CPU)

Pin-1	4.3V	**2**	4.1V	**3**	5.0V	**4**	5.0V	**5**	0V	**6**	1.9V	**7**	2.3V	**8**	5.0V	**9**	5.0V
10	2.3V	**11**	3.4V	**12**	0V	**13**	5.0V	**14**	3.4V	**15**	5.0V	**16**	0V	**17**	4.8V	**18**	4.2V
19	0V	**20**	0V	**21**	0V	**22**	0V	**23**	5.0V	**24**	0V	**25**	0V	**26**	0.2V	**27**	4.4V
28	5.0V	**29**	0V	**30**	5.0V	**31**	4.9V	**32**	5.0V	**33**	5.0V	**34**	0V	**35**	5.0V	**36**	5.0V

Q111	**Q261**	**Q431**	**Q432**	**Q611**	**Q612**	**Q613**	**Q631**	**Q661**	**Q681**	**Q684**	**Q685**	**Q686**
B 1.3V	B 2.3V	B 0V	B 1.0V	B 17.8V	B 0V	B −1.0V	B 0.2V	B 16.0V	B 0V	B 0.1V	B 0.3V	B 19.0V
C 6.0V	C 0V	C 14.5V	C 133V	C −1.0V	C −1.0V	C 323V	C 18.5V	C −1.0V	C 5.1V	C 0V	C 19.0V	C 0V
E 0.5V	E 3.0V	E 0V	E 1.1V	E 14.9V	E −1.0V	E 0V	E 3.3V	E 14.9V	E 0V	E 0V	E 0.2V	E 18.5V

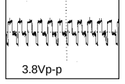
Q861	**Q871**	**Q881**	**Q886**
B 4.4V	B −8.6V	B −0.4V	B 0.7V
C 5.0V	C 4.8V	C 4.2V	C 0V
E 5.0V	E 0V	E 0V	E 0V

IC201-pin19 <R out>



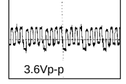
3.4Vp-p

IC201-pin20 <G out>



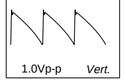
3.8Vp-p

IC201-pin21 <B out>



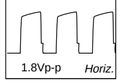
3.6Vp-p

IC201-pin23 <V drive>



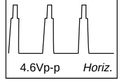
1.0Vp-p *Vert.*

IC201-pin27 <H drive>



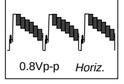
1.8Vp-p *Horiz.*

IC201-pin28 <Sandcastle>



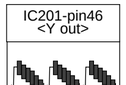
4.6Vp-p *Horiz.*

IC201-pin44 <CVBS int.>



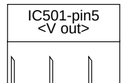
0.8Vp-p *Horiz.*

IC201-pin46 <Y out>



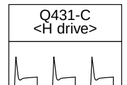
1.9Vp-p *Horiz.*

IC501-pin5 <V out>



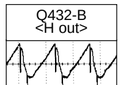
42.4Vp-p *Vert.*

Q431-C <H drive>



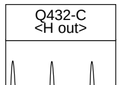
28.8Vp-p *Horiz.*

Q432-B <H out>



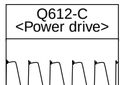
16.4Vp-p

Q432-C <H out>



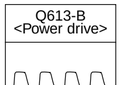
920Vp-p *Horiz.*

Q612-C <Power drive>



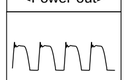
4.2Vp-p

Q613-B <Power drive>



4.3Vp-p

Q613-C <Power out>

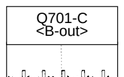


488Vp-p

(On the CRT Board)

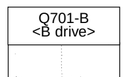
Q701	**Q705**	**Q703**	**Q721**	**Q751**
B 2.2V	B 2.3V	B 2.2V	B 0.6V	B 9.1V
C 97.4V	C 96.1V	C 99.1V	C GND	C 0V
E 2.0V	E 2.1V	E 2.0V	E 1.4V	E 8.9V

Q701-C <B-out>



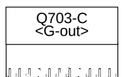
89.6Vp-p

Q701-B <B drive>



3.6Vp-p

Q703-C <G-out>

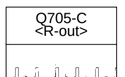


83.4Vp-p

Q703-B <G drive>

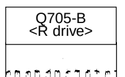
3.5Vp-p

Q705-C <R-out>



82.9Vp-p

Q705-B <R drive>



3.4Vp-p

C5SV
C5SW