ADJUSTMENT

■ Safety Precautions

1. It is safe to adjust after using insulating transformer between the power supply line and chassis input to prevent the risk of electric shock and protect the instrument.
2. Never disconnect leads while the TV receiver is on.
3. Don't short any portion of circuits while power is on.
4. The adjustment must be done by the correct appliances. But this is changeable in view of productivity.
5. Unless otherwise noted, set the line voltage to 230Vac±10%, 50Hz.

■ Test Equipment required

1. RF signal generator (with pattern generator)
2. DC Power Supply
3. Multimeter (volt meter)
4. Oscilloscope
5. Color analyzer

• RF AGC (Automatic Gain Control) Adjustment

Test Point	**: AGC TP (J2)**
Adjust	**: Remote Control**

The RF AGC was aligned at the time of manufacture for optimum performance over a wide range conditions. Readjustment of RF AGC should not be necessary unless unusual local conditions exist, such as ;

1) Channel interference in a CATV system.
2) Picture bending and/or color beats, which are unusually due to excessive RF signal input when the receiver is too close to a transmitting tower or when the receiver is connected to an antenna distribution system where the RF signal has been amplified. In this case, the input signal should be attenuated (with pad or filter) to a satisfactory level.
3) Picture noise caused by "broadcast noise" or weak signal. If the broadcast is "clean" and the RF signal is at least 1mV (60dBu), the picture will be noise free in any area.

Adjusting RF AGC to one end of rotation will usually cause a relatively poor signal to noise ratio;
Adjusting to the other end of rotation will usually cause a degradation of over load capabilities resulting in color beats or adjacent channel interference.

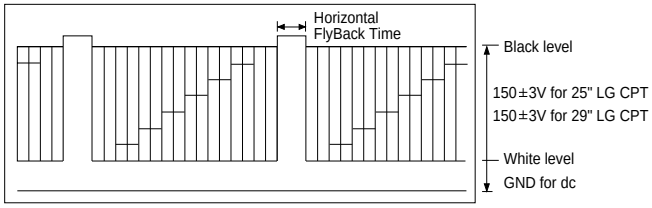
Adjustment

1. Connect RF signal (60dB±1dB) and turn on the TV.
2. Press OK buttons on TV set and Remote Controller at the same time to get into SVC mode.
3. Press Channel UP/DOWN button on the Remote Controller several times to find AGC .
4. Press Volume UP/DOWN button until the AGC Voltage is 2.5±0.1V.
5. Press OK(■) button to memorize the data.

• Screen Voltage Adjustment

Test Point	**: RK (Red Cathode of CPT Board)**
Adjust	**: Screen Control of FBT**

1) Tune the TV set to receive a color bar pattern.
2) Press PSM (RED) button on remote controller. (standard picture)
3) Connect the probe of oscilloscope to the RK (Red Cathode) of CPT Board.
4) Adjust Screen Volume of FBT so that the waveform is the same as below figure.



The waveform of RK(Red Cathode) of CPT Board

• Focus Adjustment

NOTE: This adjustment should be performed after warming up for 10 minutes.

Test Point	**: Observing Display**
Adjust	**: Focus control of FBT**

1) Tune the TV set to receive an inactive channel station.
2) Adjust the Focus control of FBT for best overall focus.

• Deflection Data Adjustment (Line SVC-1)

NOTE: To enter SVC mode, press "OK" buttons on both TV set and the Remote control at the same time.

1. Preparation for Deflection Adjustment

1) At SVC mode, press the Yellow colored button.
   If the Remote Controller doesn't have the Yellow button, you should use a Service Remote Control (105-201G) and press SVC button.
   And then, deflection data adjustment OSD (SVC1 mode) will be displayed.
2) Press Channel UP/DOWN button for desirous function Adjustment.
3) Press Volume UP/DOWN button to adjust the data.

2. Deflection Adjustment Procedure

1) Vertical Adjustment
Select VS and adjust until the mechanical center of CPT and that of screen coincides and select VA and adjust to coincide the inner circle of screen with outer frame of CPT.

2) Horizontal Adjustment
Select HS and adjust until the mechanical center of CPT and that of screen coincides.

3) Vertical S Correction Adjustment
Select SC and adjust until top-bottom side pincushion are equal.

4) Press OK(■) button to memorize the data.

3. Deflection Initial Setup Data

Status	Default	25" LG	29" LG
VL	35	34	36
VS	20	31	38
VA	43	32	30
HS	31	33	30
SC	10	13	13
EW	39	37	47
EP	22	25	25
EC	23	09	30
ET	32	30	30

• White Balance Adjustment.(LINE SVC-0)

NOTE : This adjustment should be performed after screen voltage adjustment.

1) Tune the TV set to receive an 100% white pattern.
2) Press OK(■) buttons on TV set and remote controller at the same time to get into SVC mode.
3) Press PSM (RED) button on remote controller. (Standard picture)
4) Press Channel UP/DOWN button for desirous function adjustment.
5) Adjust VOL+ or VOL- button for GG031.
6) Adjust VOL+ or VOL-button in each status of "Rg--"/"Bg--" for X=282±8, Y=289±8 with color analyzer.
7) Press OK(■) button to memorize the adjustment data.

Status	Adjustment	Initial Data	25" LG	29" LG
RG	R-Drive	35	32	32
GG	G-Drive	31	31	31
BG	B-Drive	27	27	27

• OPTION Adjustment (SVC MODE:OPTION-1, OPTION-2, OPTION-3)

NOTE: When the EEPROM has been replaced, the Option data should be restored as the function of individual system and specification.

1) Press OK buttons on both TV set and Remote Controller at the same time to get into SVC mode.
2) Press the Yellow button several times to find OPTION-1, OPTION-2 or OPTION-3.
3) Input the correspond OPTION data referring to Table below with the numeric buttons 0~9.

Table 1. OPTION 1 Function

Option	Code	Function	Remark
SYSTEM	00	BG+I+DK	W/O RF 3.58(CF-, CZ-)
	01	BG+I+DK+M	with RF3.58(CT-, CD-)
	10	BG ONLY	Single SYSTEM(CA-)
	11	BG ONLY+DUAL	South East Asian DUAL
SCART	0	PHONO JACK (AV1)	
	1	SCART JACK (AV1)	with RGB Input
AV2	0	W/O AV2 (Front)	TOOL Option
	1	with AV2 (Front)	
TILT	0	W/O TILT	Basic function for Chinese and Australian Model
	1	with TILT	
COMB FILTER	0	W/O DCF	Option
	1	with DCF	

Table 2. Specifications for OPTION-1 data

OPTION Data	COMB	TILT	AV2	SCART	SYSTEM
0	0	0	0	0	00
1	0	0	0	0	01
2	0	0	0	0	10
3	0	0	0	0	11
4	0	0	0	1	00
5	0	0	0	1	01
6	0	0	0	1	10
7	0	0	0	1	11
8	0	0	1	0	00
9	0	0	1	0	01
10	0	0	1	0	10
11	0	0	1	0	11
12	0	0	1	1	00
13	0	0	1	1	01
14	0	0	1	1	10
15	0	0	1	1	11
16	0	1	0	0	00
17	0	1	0	0	01
18	0	1	0	0	10
19	0	1	0	0	11
20	0	1	0	1	00
21	0	1	0	1	01
22	0	1	0	1	10
23	0	1	0	1	11
24	0	1	1	0	00
25	0	1	1	0	01
26	0	1	1	0	10
27	0	1	1	0	11
28	0	1	1	1	00
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37	1	0	0	1	01
38	1	0	0	1	10
39	1	0	0	1	11
40	1	0	1	0	00
41	1	0	1	0	01
42	1	0	1	0	10
43	1	0	1	0	11
44	1	0	1	1	00
45	1	0	1	1	01
46	1	0	1	1	10
47	1	0	1	1	11
48	1	1	0	0	00
49	1	1	0	0	01
50	1	1	0	0	10
51	1	1	0	0	11
52	1	1	0	1	00
53	1	1	0	1	01
54	1	1	0	1	10
55	1	1	0	1	11
56	1	1	1	0	00
57	1	1	1	0	01
58	1	1	1	0	10
59	1	1	1	0	11
60	1	1	1	1	00
61	1	1	1	1	01
62	1	1	1	1	10
63	1	1	1	1	11

Table 3. OPTION 2 Function

Option	Code		Function	Remark
FFI/CK	0	0	W/O FFI/CK	
	0	1	W/O FFI	
	1	0	W/O CK	
	1	1	With FFI/CK	
CHINA	0		W/O Chinese NICAM	
	1		Chinese NICAM	Chinese Models Only
LANG.	0		Multi Language	
	1		English Only	
HOTEL	0		W/O HOTEL option	for Buyer's request
	1		for HOTEL	
EYE	0		W/O EYE	
	1		With EYE Function	

Table 4. Specifications for OPTION-2 data

OPTION Data	HOTEL	EYE	CK	FFI	CHINA	LANG.
0	0	0	0	0	0	0
1	0	0	0	0	0	1
2	0	0	0	0	1	0
3	0	0	0	0	1	1
4	0	0	0	1	0	0
5	0	0	0	1	0	1
6	0	0	0	1	1	0
7	0	0	0	1	1	1
8	0	0	1	0	0	0
9	0	0	1	0	0	1
10	0	0	1	0	1	0
11	0	0	1	0	1	1
12	0	0	1	1	0	0
13	0	0	1	1	0	1
14	0	0	1	1	1	0
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19	0	1	0	0	1	1
20	0	1	0	1	0	0
21	0	1	0	1	0	1
22	0	1	0	1	1	0
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24	0	1	1	0	0	0
25	0	1	1	0	0	1
26	0	1	1	0	1	0
27	0	1	1	0	1	1
28	0	1	1	1	0	0
29	0	1	1	1	0	1
30	0	1	1	1	1	0
31	0	1	1	1	1	1
32	1	0	0	0	0	0
33	1	0	0	0	0	1
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35	1	0	0	0	1	1
36	1	0	0	1	0	0
37	1	0	0	1	0	1
38	1	0	0	1	1	0
39	1	0	0	1	1	1
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45	1	0	1	1	0	1
46	1	0	1	1	1	0
47	1	0	1	1	1	1
48	1	1	0	0	0	0
49	1	1	0	0	0	1
50	1	1	0	0	1	0
51	1	1	0	0	1	1
52	1	1	0	1	0	0
53	1	1	0	1	0	1
54	1	1	0	1	1	0
55	1	1	0	1	1	1
56	1	1	1	0	0	0
57	1	1	1	0	0	1
58	1	1	1	0	1	0
59	1	1	1	0	1	1
60	1	1	1	1	0	0
61	1	1	1	1	0	1
62	1	1	1	1	1	0
63	1	1	1	1	1	1

Table 5. OPTION 3 Function

Option	Code	Function
INCH.	0	25"
	1	29"
GAME	0	W/O GAME
	1	With GAME
VOL	0	Standard
	1	South East Asia

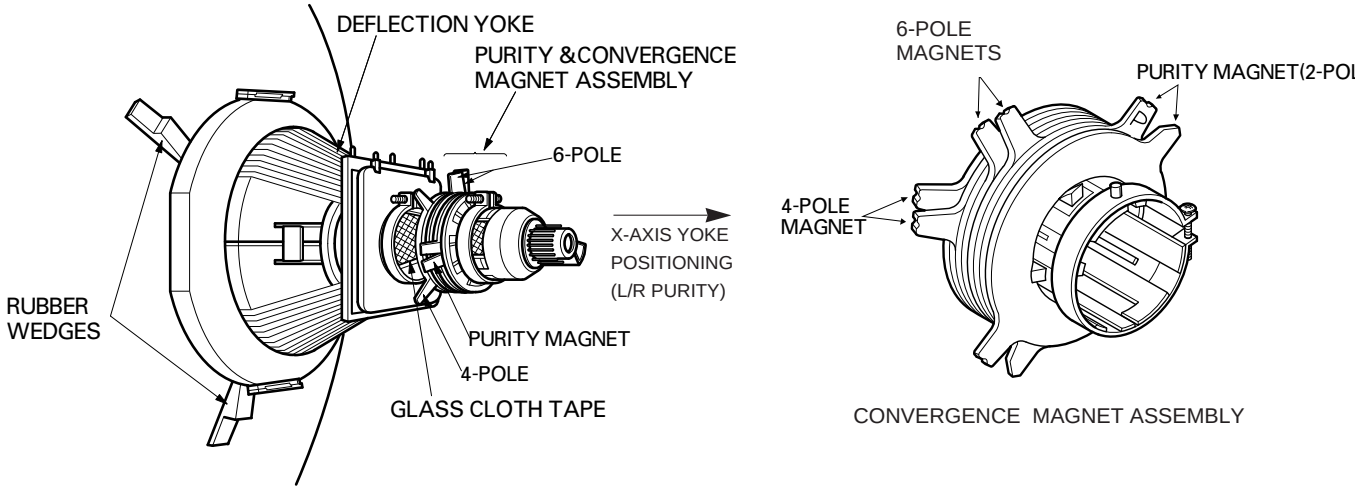
Option Data	Vol	Game	INCH.
0	0	0	0
1	0	0	1
2	0	1	0
3	0	1	1
4	1	0	0
5	1	0	1
6	1	1	0
7	1	1	1

PURITY & CONVERGENCE ADJUSTMENT

Caution:
Convergence and Purity have been factory aligned. Do not attempt to tamper with these alignments.
However, the effects of adjacent receiver components, or replacement of picture tube or deflection yoke may require the need to readjust purity any convergence.

5. Reconnect the internal degaussing coil.

6. Position the beam bender locking rings at the 9 o'clock position and the other three pairs of tabs (2,4 and 6 pole magnets) at the 12 o'clock position.



CONVERGENCE MAGNET ASSEMBLY

■ Purity Adjustment

This procedure DOES NOT apply to bonded yoke and picture tube assemblies.
The instrument should be at room temperature (60 degrees F or above) for six (6) hours and be operating at low beam current (dark background) for approximately 20 to 30 minutes before performing purity adjustments.

CAUTION: Do not remove any trim magnets that may be attached to the bell of the picture tube.

1. Remove the AC power and disconnect the internal degaussing coil.

2. Remove the yoke from the neck of the picture tube.

3. If the yoke has the tape version beam bender, remove it and replace it with a adjustable type beam bender (follow the instructions provided with the new beam bender)

4. Replace the yoke on the picture tube neck, temporarily remove the three (3) rubber wedges from the bell of the picture tube and then slide the yoke completely forward.

7. Perform the following steps, in the order given, to prepare the receiver for the purity adjustment procedure.

   a. Face the receiver in the "magnetic north" direction.

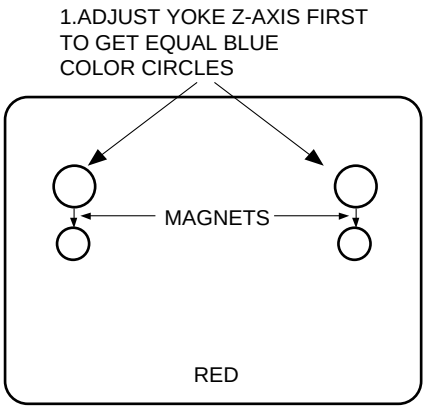
   b. Externally degauss the receiver screen with the television power turned off.

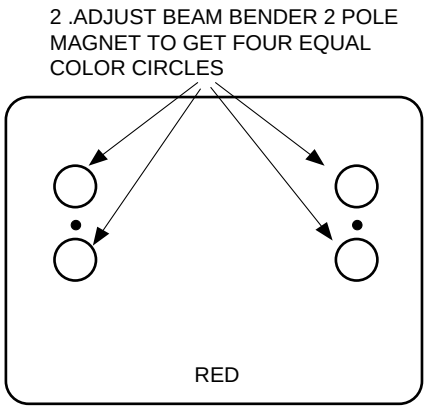
   c. Turn the television on for approximately 10 seconds to perform internal degaussing and then turn the TV off.

   d. Unplug the internal degaussing coil. This allows the thermistor to cool down while you are performing the purity adjustment. DO NOT MOVE THE RECEIVER FROM ITS "MAGNETIC NORTH" POSITION.

   e. Turn the receiver on and obtain a red raster by increasing the red bias control (CW) and decreasing the bias controls for the remaining two colors (CCW).

   f. Attach two round magnets on the picture tube screen at 3 o'clock and 9 o'clock positions, approximately one (1) inch from the edge of the mask (use double-sided tape).





8. Referring to above, perform the following two steps:
   a. Adjust the yoke Z-axis to obtain equal blue circles.
   b. Adjust the appropriate beam bender tabs to obtain correct purity (four equal circles).

9. After correct purity is set, tighten the yoke clamp screw and remove the two screen magnets.

10. Remove the AC power and rotate the receiver 180 degrees (facing "magnetic south").

11. Reconnect the internal degaussing coil.

12. Turn the receiver on for 10 seconds (make sure the receiver came on) to perform internal degaussing, and then turn the receiver off.

13. Unplug the internal degaussing coil.

14. Turn on the receiver and check the purity by holding one (1) round magnet at the 3 o'clock and a second round magnet at 9 o'clock position. If purity is not satisfactory, repeat steps 8 through 14.

15. Turn off the receiver and reconnect the internal degaussing coil.

■ Convergence Adjustment

Caution: This procedure DOES NOT apply to bonded yoke and picture tube assemblies.
Do not use screen magnets during this adjustment procedure. Use of screen magnets will cause an incorrect display.

1. Remove AC power and disconnect the internal degaussing coil.

2. Apply AC Power and set the brightness to the Picture Reset condition. Set the Color control to minimum.

3. Make horizontal line.

4. Adjust the Red, Green and Blue Bias controls to get a dim white line.

5. Restore the screen by removing the horizontal line.

6. Reconnect the internal degaussing coil and apply AC power.

7. Turn the receiver on for 10 seconds to perform internal degaussing and then turn the receiver off again.

8. Unplug the internal degaussing-coil.

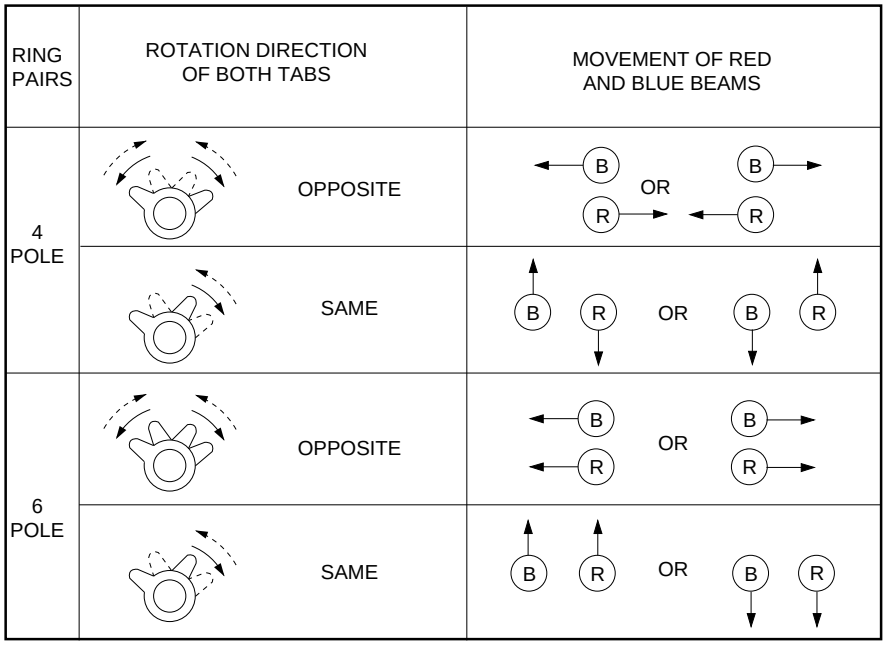
9. Turn on the receiver, connect a signal generator to the VHF antenna terminal and apply a crosshatch signal.

Caution: During the convergence adjustment procedure, be very careful not to disturb the purity adjustment tabs are accidentally move, purity should be confirmed before proceeding with the convergence adjustments.

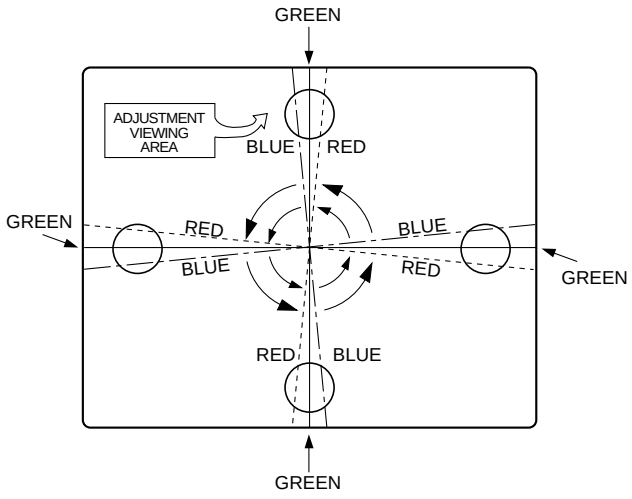
Note: Make sure the focus is set correctly on this instrument before proceeding with the following adjustment.

10. Converge the red and blue vertical lines to the green vertical line at the center of the screen by performing the following steps (below TABLE).
    a. Carefully rotate both tabs of the 4-pole ring magnet simultaneously in opposite directions from the 12 o'clock position to converge the red and blue vertical lines.
    b. Carefully rotate both tabs of the 6-pole ring magnet simultaneously in opposite directions form the 12 o'clock position to converge the red and blue (now purple) vertical lines with the green vertical line.

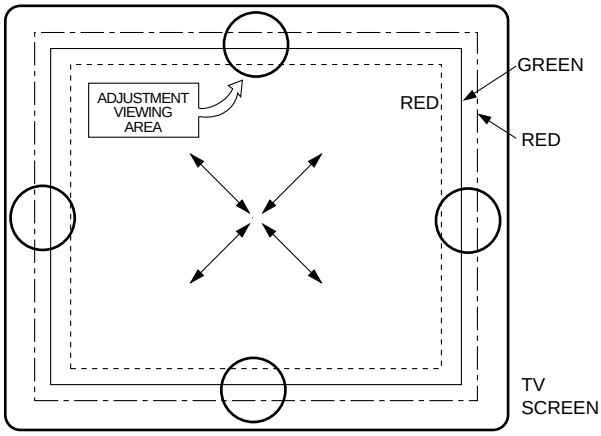
11. Converge the red and blue horizontal with the green line at the center of the screen by performing the following steps. (below TABLE)
    a. Carefully rotate both tabs of the 4-pole ring magnet simultaneously in the same direction (keep the spacing between the two tabs the same) to converge the red and blue horizontal lines.
    b. Carefully rotate both tabs of the 6-pole ring magnet simultaneously in same direction (keep the spacing between the two tabs the same) to converge the red and blue (now purple) horizontal lines with the green horizontal line.
    c. Secure the tabs previsouly adjusted by locking them in place with the locking tabs on the beam bender.



UP/DOWN ROCKING OF THE YOKE CAUSES OPPOSITE ROTATION OF RED AND BLUE RASTERS

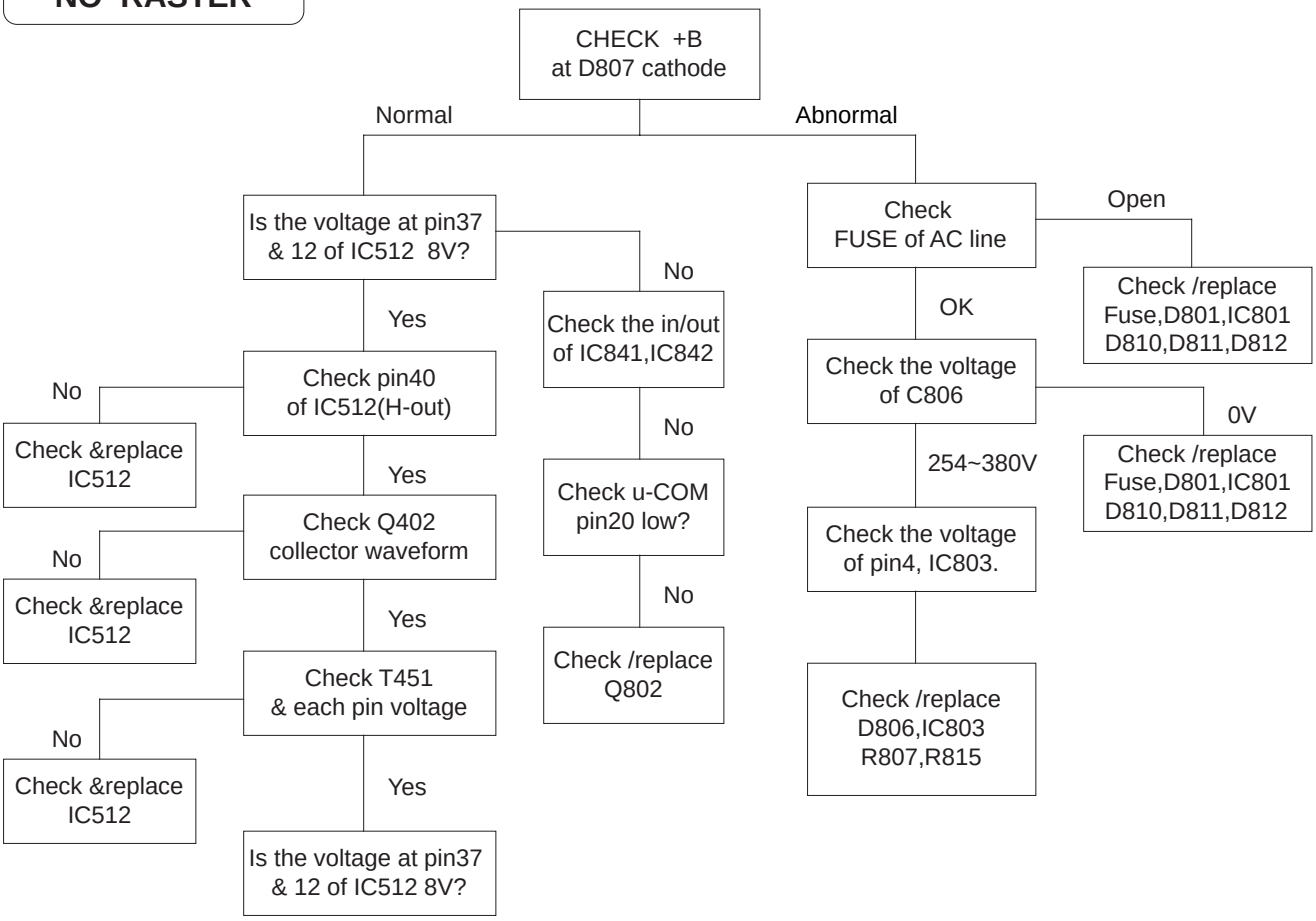


LEFT/RIGHT ROCKING OF THE YOKE CAUSES OPPOSITE SIZE CHANGE OF THE RED AND BLUE RASTERS



12. While watching the 6 o'clock positions on the screen, rock the front of the yoke in a vertical (up/down) direction to converge the red and blue vertical lines. (Fig upper left)
13. Temporarily place a rubber wedge at the 12 o'clock position to hold the vertical position or the yoke.
14. Check the 3 o'clock and 9 o'clock areas to confirm that the red and blue horizontal lines are converged.
    If the lines are not converged, slightly offset the vertical tilt of the yoke (move the rubber wedge if necessary) to equally balance the convergence error of the horizontal lines at 3 o'clock and 9 o'clock and the vertical lines at 6 o'clock and 12 o'clock.
15. Place a 1.5 inch piece of glass tape over the rubber foot at the rear of the 12 o'clock wedge.
16. While watching the 6 o'clock and 12 o'clock areas of the screen, rock the front of the yoke in the horizontal (left to right) motion to converge the red and blue horizontal lines. (Fig. upper right)
17. Temporarily place a rubber wedge at the 5 o'clock and 7 o'clock positions to hold the horizontal position of the yoke.
18. Check the 3 o'clock and 9 o'clock areas to confirm that the red and blue vertical lines are converged. If the lines are not converged, slightly offset the horizontal tilt of the yoke (move the temporary rubber wedges if necessary) to equally balance the convergence error of the horizontal lines at 6 o'clock and 12 o'clock and the vertical lines at 3 o'clock and 9 o'clock.
19. Using a round magnet confirm purity at the center, right and left sides and corners. See Purity Adjustment Procedure.
20. Reconfirm convergence and apply a 1.5 inch piece of glass tape over the rubber foot at the rear of the 5 o'clock and the 7 o'clock wedges.

NO RASTER


CHECK +B
at D807 cathode
Normal
Abnormal
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& 12 of IC512 8V?
No
Check the in/out
of IC841,IC842
No
Check u-COM
pin20 low?
No
Check /replace
Q802
Yes
Check pin40
of IC512(H-out)
No
Check &replace
IC512
Yes
Check Q402
collector waveform
No
Check &replace
IC512
Yes
Check T451
& each pin voltage
No
Check &replace
IC512
Yes
Is the voltage at pin37
& 12 of IC512 8V?
Check
FUSE of AC line
Open
Check /replace
Fuse,D801,IC801
D810,D811,D812
OK
Check the voltage
of C806
0V
Check /replace
Fuse,D801,IC801
D810,D811,D812
254~380V
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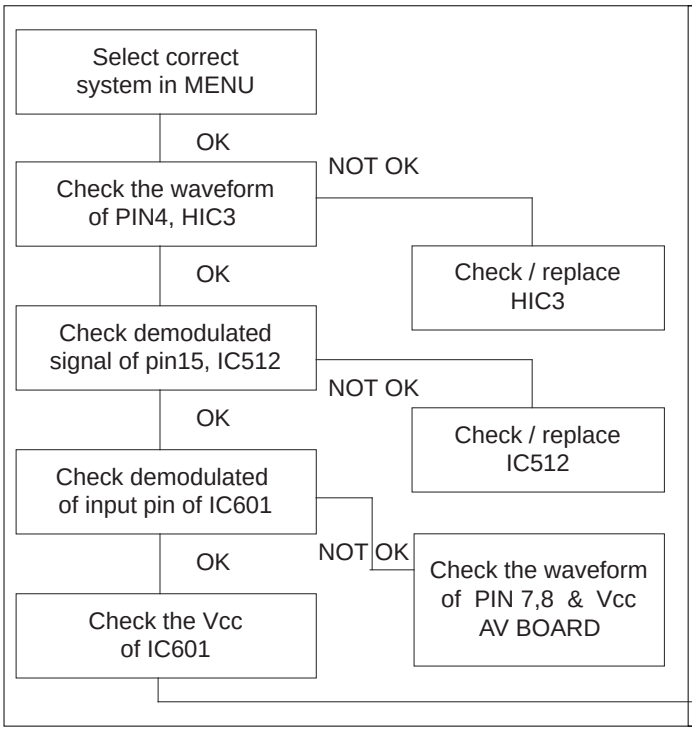
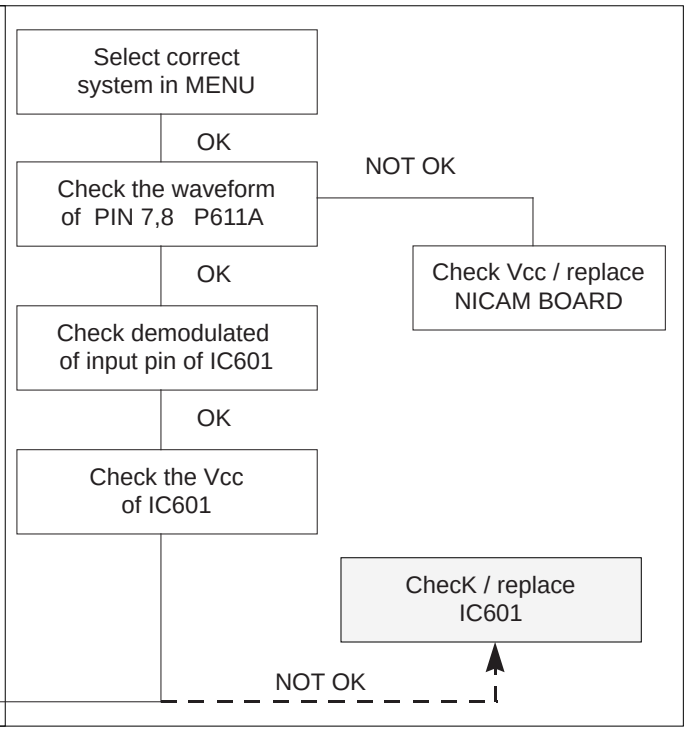
of pin4, IC803.
Check /replace
D806,IC803
R807,R815

NO SOUND / PICTURE OK

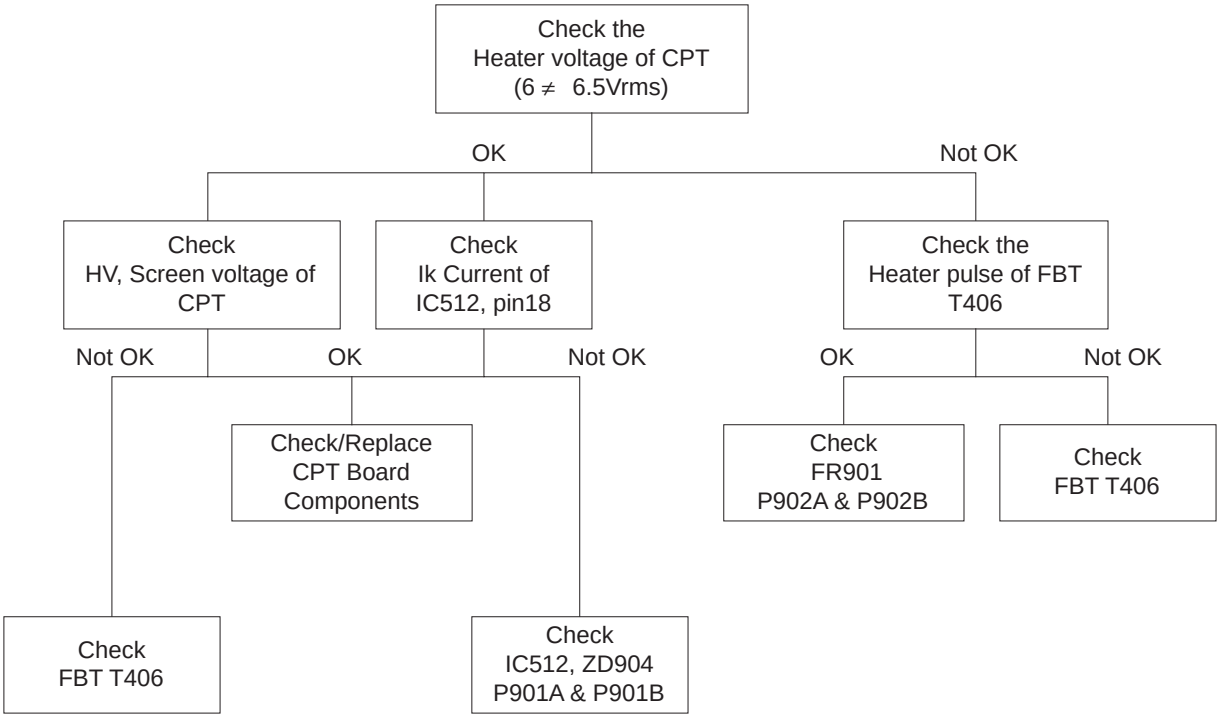
AV STEREO MODEL



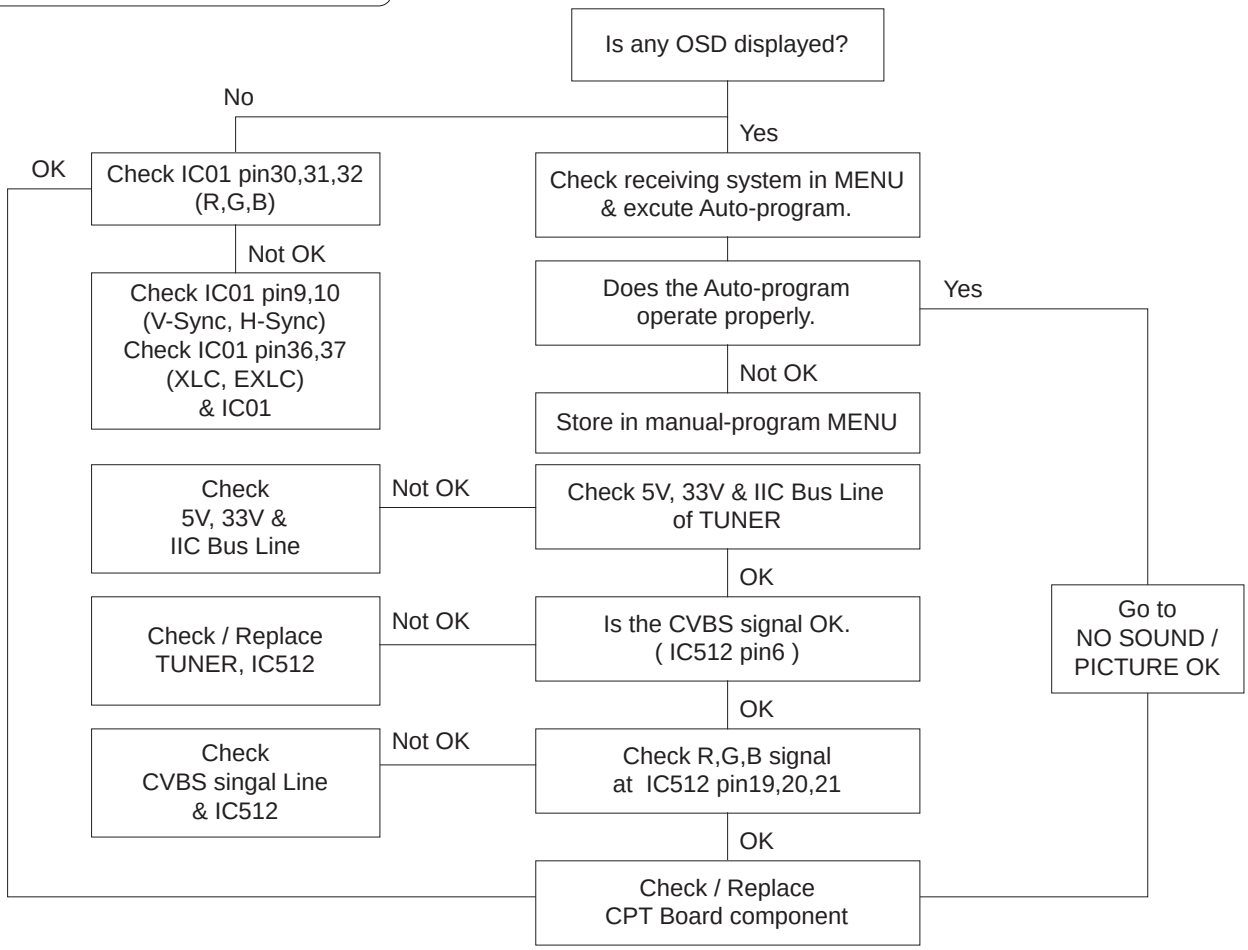
NICAM STEREO MODEL



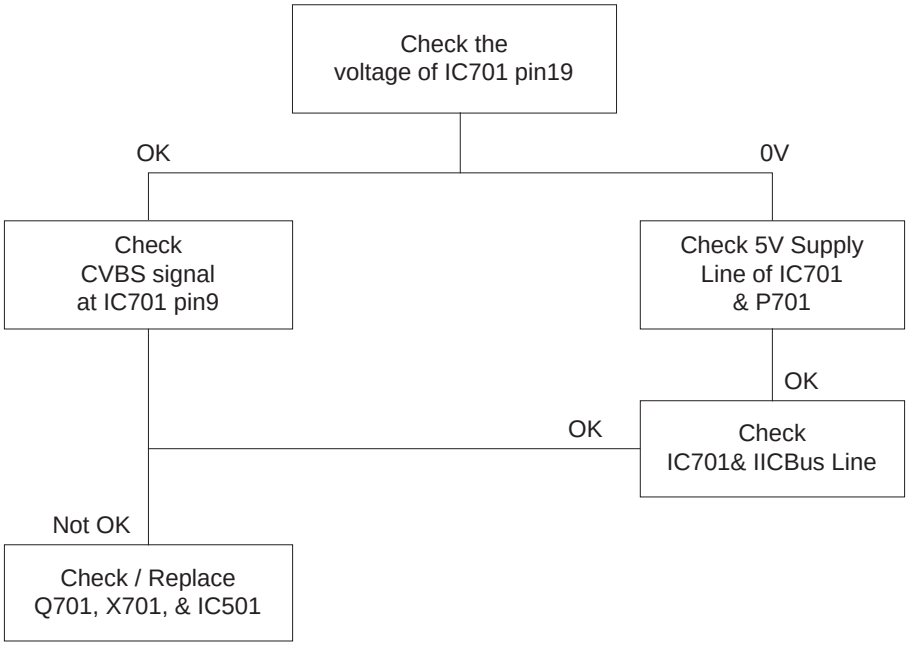
NO RASTER / SOUND OK



NO PICTURE / NO SONUD



NO TELETEXT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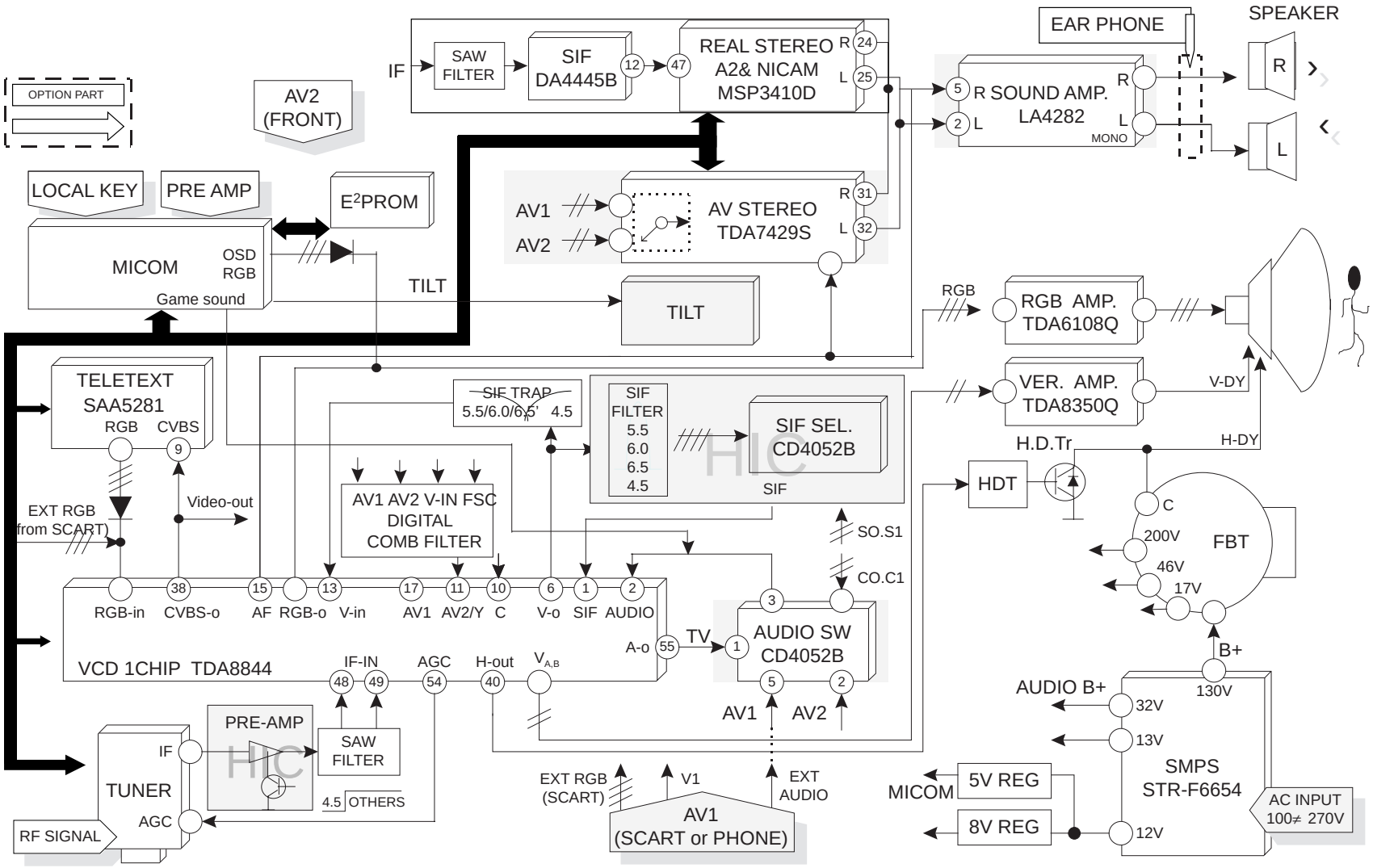
OK
0V
Check
CVBS signal
at IC701 pin9
Check 5V Supply
Line of IC701
& P701
OK
OK
Check
IC701& IICBus Line
Not OK
Check / Replace
Q701, X701, & IC501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SIF DA4445B
REAL STEREO A2& NICAM MSP3410D
EAR PHONE
SPEAKER
R SOUND AMP. LA4282
MONO
LOCAL KEY
PRE AMP
E²PROM
MICOM
OSD RGB
Game sound
TILT
AV1
AV2
AV STEREO TDA7429S
RGB
RGB AMP. TDA6108Q
VER. AMP. TDA8350Q
V-DY
H-DY
H.D.Tr
HDT
FBT
TELETEXT SAA5281
RGB CVBS
SIF TRAP 5.5/6.0/6.5' 4.5
SIF FILTER 5.5 6.0 6.5 4.5
SIF SEL. CD4052B
SIF
EXT RGB (from SCART)
Video-out
AV1 AV2 V-IN FSC DIGITAL COMB FILTER
SO.S1
CO.C1
RGB-in CVBS-o AF RGB-o V-in AV1 AV2/Y C V-o SIF AUDIO
A-o
TV
AUDIO SW CD4052B
VCD 1CHIP TDA8844
IF-IN AGC H-out V_A,B
AV1 AV2
B+
AUDIO B+
32V
13V
130V
SMPS STR-F6654
AC INPUT 100≠ 270V
PRE-AMP
SAW FILTER
TUNER
IF
AGC
RF SIGNAL
4.5 OTHERS
EXT RGB (SCART)
V1
EXT AUDIO
AV1 (SCART or PHONE)
MICOM
5V REG
8V REG
12V

Service Sheet of MC-8CB

P/No : 3854VA0050A-S1
DATE : 1999.06.07

STEREO OPTION

CIR-NO	AV STEREO	A2/NICAM
R605	240- 1/8W	100- 1/8W
R607	240- 1/8W	100- 1/8W
C601	0.01UF	0.0056UF
C604	0.01UF	0.0056UF

VALUE OF RESISTER. CAPACITOR AND INDUCTOR

1. Resistor is shown in ohm. K=1,000 M=1,000,000
2. Unless otherwise noted in schematic. all capacitor values are expressed in uF.
3. Unless otherwise noted in schematic. all inductor values are expressed in uH.

OBSERVATION OF VOLTAGE AND WAVEFORMS

1. Voltages read with VTVM from point to ground line voltages 180 ~ 270 volts color bar signal.
2. Voltages reading may vary +/- 20%.
3. The schematic shown is representative only.
4. All waveforms are taken using a wide band oscilloscope and a low capacity prove.
5. Check FINE TUNING. AGC. BRIGHTNESS. CONTRAST and COLOR controls for best picture. make sure that BRIGHTNESS and COLOR controls are in mid position and CONTRAST controls is always in maximum position.
6. Waveforms are taken using a standard color signal.

NOTICE

Since this is a basic schematic diagram.
The value of components and some partial connection are subject to be changed for improvement without notice.

The components marked ⚠ conform VED or IEC guidelines and essential for safe operation of the TV receiver.
While those marked ⚠ are required for correct operation. use specified parts only when replacing.

*** OPTION TABLE

CIRT. NO	25INCH	29INCH
L401	25UH	20UH
C430	624. 200V	504. 200V
R401	33 1W	27 1W
C410	203. 1.6KV	183. 1.6KV
L301	1.1MH	1.1MH
C405	152. 1.6KV	102. 2KV
R417	5.1K 1/6W	4.7K 1/6W
FR414	1 2W	0.47 2W
FR304	2 2W	1.2 2W
R532-533-534	1.5K	1.5K

	CIRT-NO	H30 NORMAL	H30 CISPER	K30 NORMAL	K30 CISPER
MAIN	L651	150-F06J	150-F06J	150-F06J	150-F06J
	C810	0.15UF-275V	0.15UF-275V	0.47UF-275V	0.15UF-275V
	SW801	TIN WIRE	TIN WIRE	SWITCH	
	VD801			VARISTOR	
	FB01	TIN WIRE	TIN WIRE	T4A 250V FUSE	
SUB	LP801	150-F06J	150-F06J		150-F06J
	CP801	0.22UF-275V	0.22UF-275V		0.22UF-275V
	SWP801	SWITCH	SWITCH		
	VDP801	VARISTOR	VARISTOR		
	FP801	T4A 250V FUSE	T4A 250V FUSE		

Video
Chroma
Audio

<MC-8CB MODULE & HIC CIRCUIT DIAGRAM>

HIC

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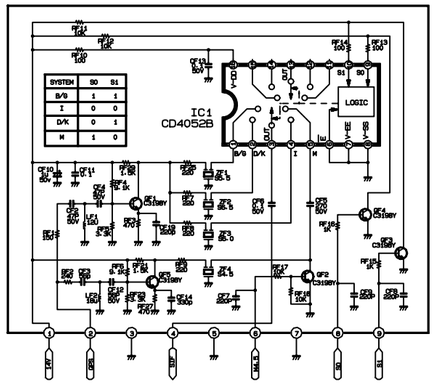

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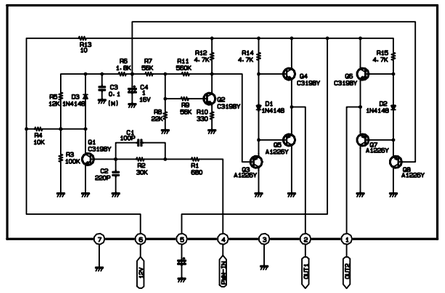

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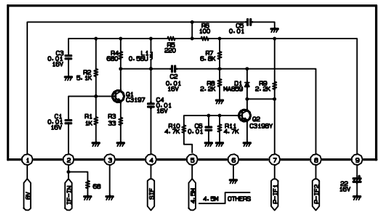

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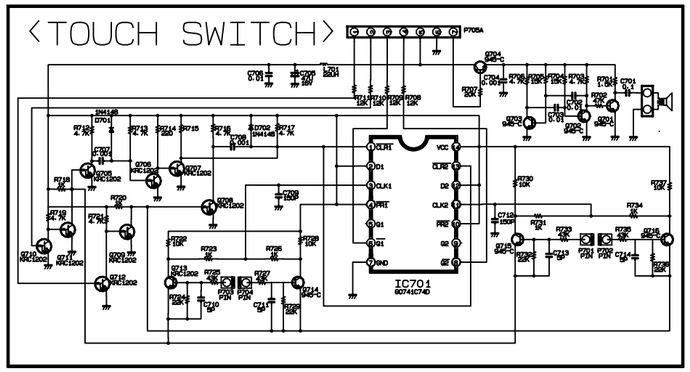

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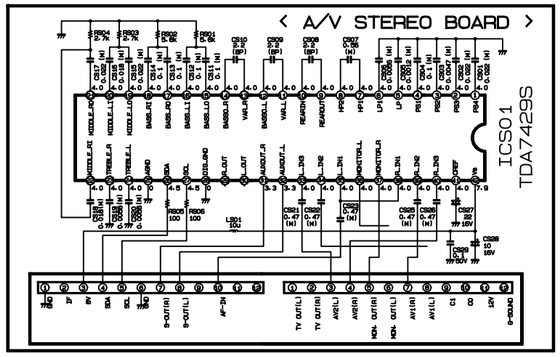

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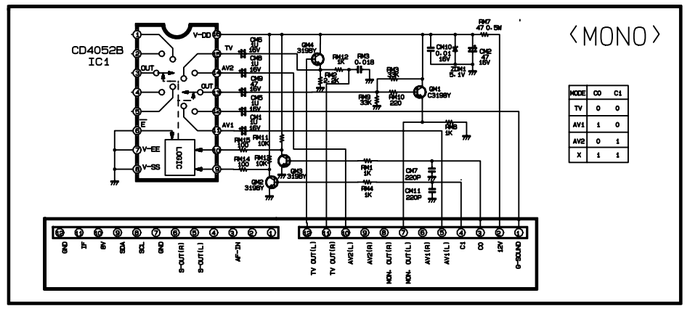

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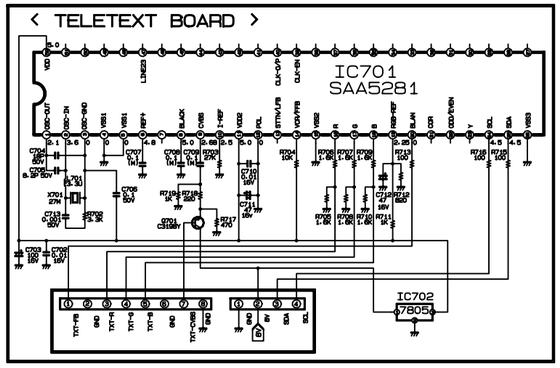

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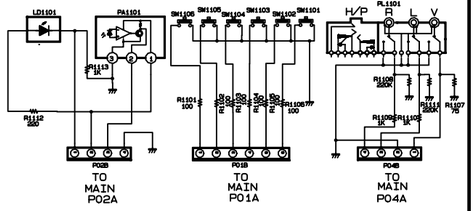
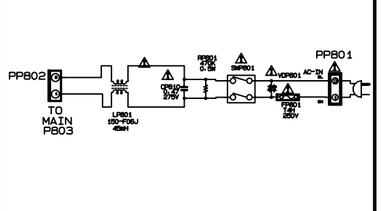


H30

SUBPOWER



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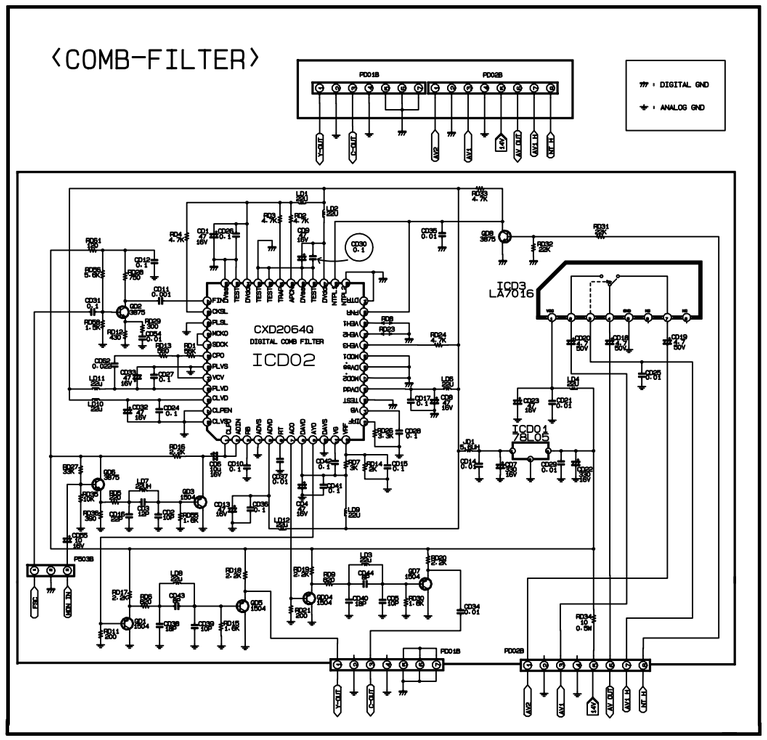

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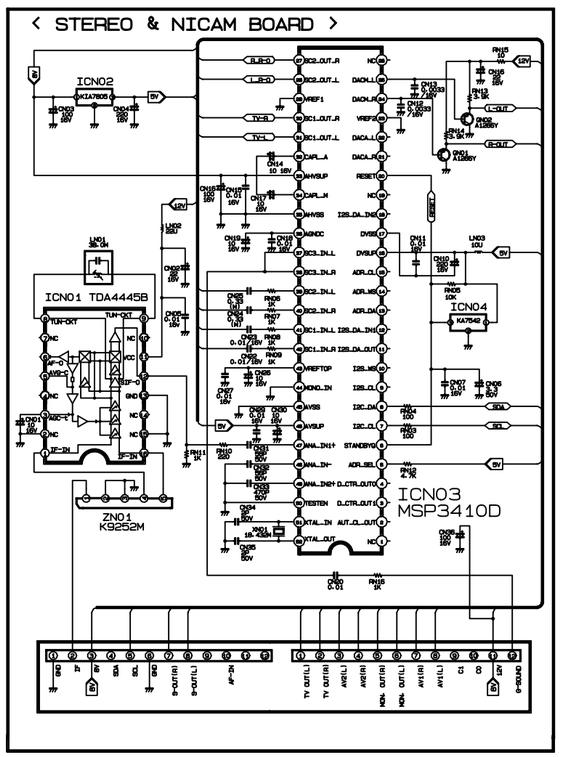
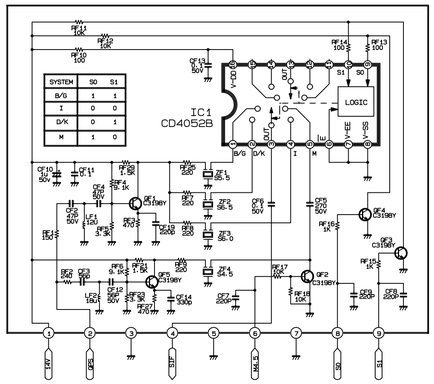


CIRCUIT DIAGRAM
MC-8CB
3854VA0050A-2

<MC-8CB MODULE & HIC CIRCUIT DIAGRAM>

P/No : 3854VA0050A-S2
DATE : 1999.06.07

HIC



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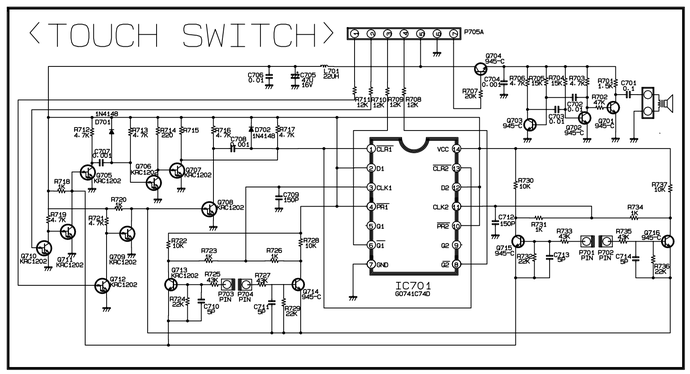

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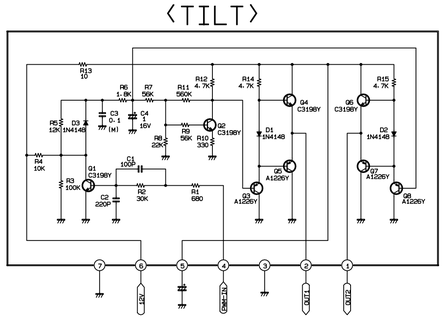

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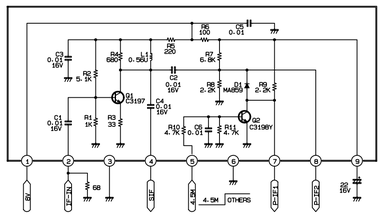

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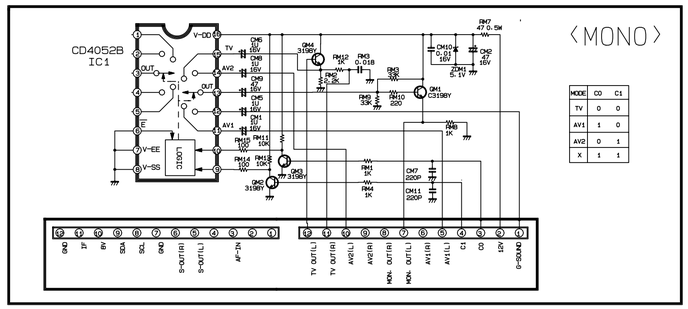
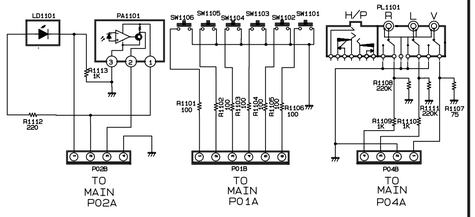


MODE	C0	C1
TV	0	0
AV1	1	0
AV2	0	1
X	1	1

CONTROL



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SUBPOWER

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