
SERVICE MANUAL



SPECIFICATIONS

GENERAL

Portable 5.5"B/W TV-CD-Radio
Stereo Entertainment System

Power Source

Battery 15.0V (UM 1x 10 "D" Size)

Weight 3 KG

CD SECTION

S/N Radio 75dB

THD 0.05%

FM SECTION

Frequency Range 88 - 108 MHz

30db S/N Sensitivity 20 db

Image Rejection 30db

S/N Ratio 50db

AM SECTION

Frequency Range 535 - 1700 KHz

20dB S/N Sensitivity 68db

Image Rejection 35db

S/N Ratio 35db

TV SECTION

CRT: 5"

Receiver System: N/A System

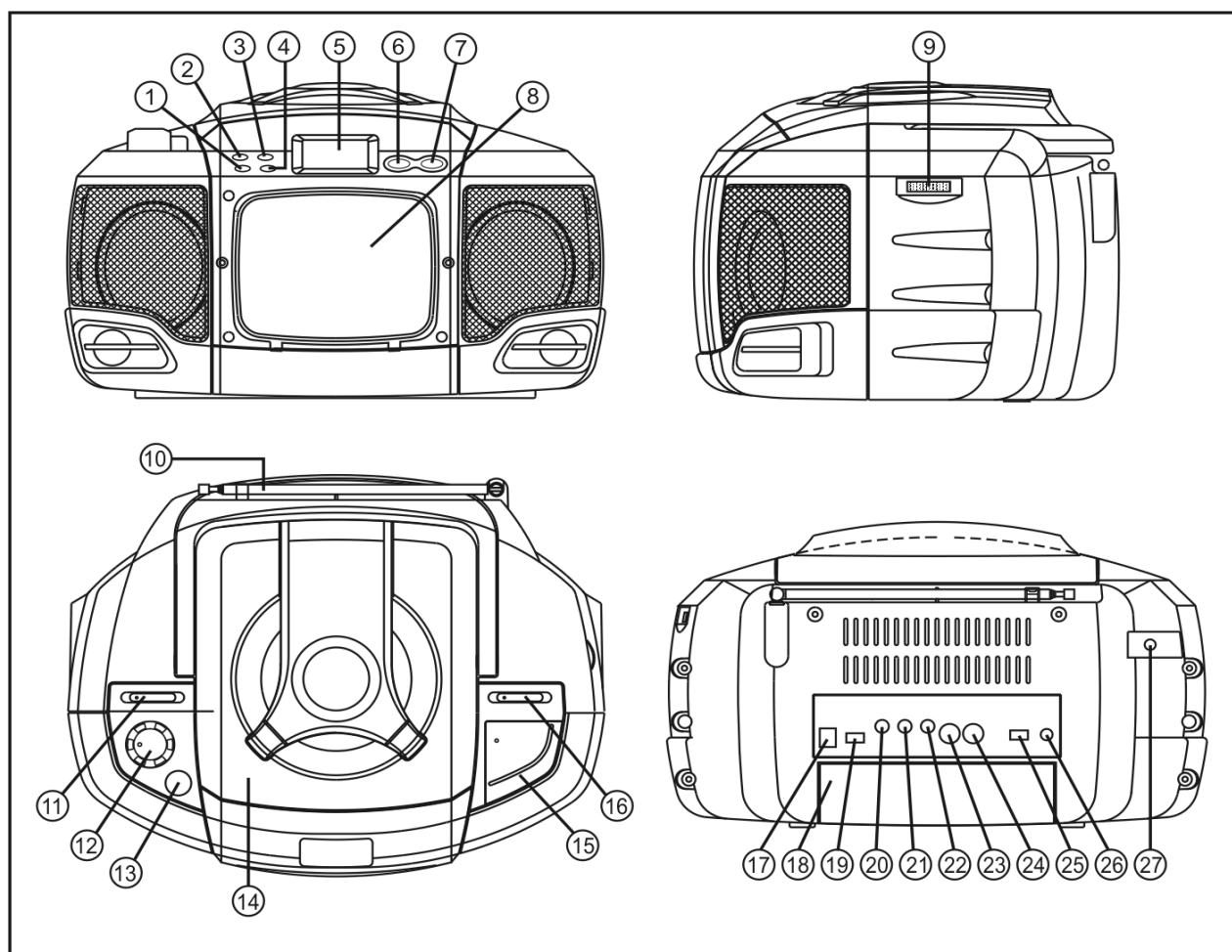
PAL-DK/I L-VHF:1-5 H-VHF:6-12 UHF:13-57

Resolution Horizontal 300

Resolution Vertical 400

Videosignal : 75 ohm INT. Telescopic ANT.

LOCATION OF CONTROLS



1. CD PROGRAM BUTTON
2. CD SKIP-BACK BUTTON
3. CD-SKIP-FORWARD BUTTON
4. CD REPEAT BUTTON
5. CD-DISPLAY
6. CD PLAY BUTTON
7. CD STOP BUTTON
8. TV DISPLAY
9. RADIO TUNING CONTROL KNOB
10. TELESCOPIC ANTENNA
11. FUNCTION (RADIO/CD/TV) SWITCH
12. VOLUME CONTROL KNOB
13. CD-DOOR OPEN BUTTON
14. CD-DOOR
15. RADIO/TV DIAL SCALE

16. RADIO/TV BAND SELECTOR SWITCH
17. DC-JACK (13V, 1300mA $\ominus$ $\oplus$)
18. BATTERY DOOR
19. SYSTEM POWER/ RE-CHARGE SWITCH
(ON/ OFF/ CHARGER)
20. TV-VERTICAL HOLD CONTROL
21. TV-BRIGHTNESS CONTROL
22. TV-CONTRAST CONTROL
23. AUDIO-IN JACK
24. VIDEO-IN JACK
25. AV-SELECTOR SWITCH
(TUNER/AV-INPUT)
26. EXTERNAL TV-ANTENNA JACK
27. HEADPHONE (EARPHONE) SOCKET

TUNER ADJUSTMENTS

AM ALIGNMENT

Step	Alignment	Frequency of signal Generator	Tuning Dial setting	Adjustment	Remarks
1	IF Calibration	455KHz	IF Calibration		Maximun output
2	Tuning Range Calibration	525KHz	Low End	AM OSC,T2	Maximun output
3		1720KHz	High End	TC1	Maximun output
4	Adjustment of Tracking	600KHz	600KHz	Bar Ant. L5	Maximun output
5		1400KHz	1400KHz	TC2	Maximun output
Repeat the above adjustment					

FM ALIGNMENT

Step	Alignment	Frequency of signal Generator	Tuning Dial setting	Adjustment	Remarks
1	IF Calibration	10.7 MHz	Low End	T1	Max gain and Symmetrical "S" Curve
2	Tuning Range Calibration	87.5 MHz	Low End	L2	Maximun output
3		108.5 MHz	High End	TC3	Maximun output
4	Adjustment of Tracking	90 MHz	90 MHz	L1	Maximun output
5		106 MHz	106 MHz	TC4	Maximun output
Repeat the above adjustment					

ALIGNMENT OF TAPE SECTION

HEAD ADJUSTMENT

1. Connect a VTVM to the Jack.
2. Use a 4 ohm dummy load when the VTN is plugged into the Headphone Jack.
3. Playback a 6.3 kHz test tape (MTT-113) and turn the Azimuth screw to obtain the maxim output of the left and the right channels. When the output level of the left and the right channels differs, adjust the screw until both channels at the same level.
4. After adjusting, fix the Azimuth Adjusting Screw with glyptal paint or "screw lock."

FM STEREO ADJUSTMENT

- 1) Connect a frequency counter to test points on the Main P.C. Board.
- 2) Band selector Switch : FM Position.
- 3) Adjust VR1 on Printed circuit board so that the Counter indicates $38.0\text{KHz} + 100\text{ Hz}$ (37.90 KHz to 38.10 KHz).

REMARKS :

- 1) When aligning FM IF , the symmetrical curve may not be obtained by setting the marker of the Sweep Generator (10.7 MHz). This is due to the ceramic filter used in the until. Regardless of the marker, align the curve as symmetrically as possible with peak output.
- 2) When aligning the Tuning Range and adjusting the Tracking , proceed with alignment in a sequence of FM - AM
- 3) Use a screwdriver with a plastic grip for all alignments .

ALIGNMENT

FM SECTION

SWEEP GENERATOR

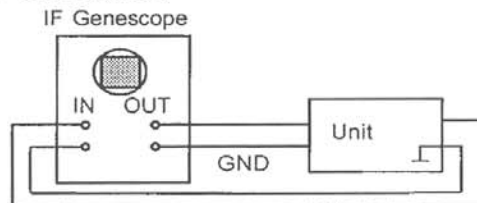


Figure 3 FM IF Adjustment Connection Diagram

IF	Adjust for	Adjustment
10.7MHz	The maximum wave 10.7MHz marker in centre	T_1

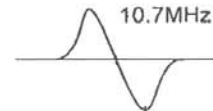


Figure 8 FM "S" Curve

STEP	ALIGNMENT FREQ	TEST EQUIPMENT	SIGNAL-IN	SIGNAL-OUT	ADJUSTMENT	REMARK
1	FM I.F. (10.7 MHz)	(1)FM IF SWEEP GENERATOR. (2)ALIGNMENT OSCILLOSCOPE (3)POWER SUPPLY.	INJECT THE IF SWEEP SIGNAL THROUGH 500PF CAPACITOR TO Q301 E-PIN	SIGNAL ARE TAKEN OUT THROUGH CAPACITOR 1uF FROM PIN 11 OF IC3	ADJUST T_1 REPEAT TO GET BEST "S" CURVE AT 10.7MHz.	(1)BAND SW. IN FM POSITION. (2)VOL. CONTROL IN MIN.POSITION (3)TUNE TO HIGH END.

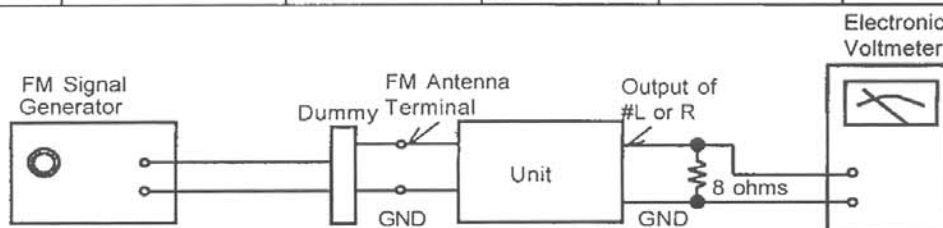
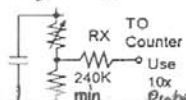


Figure 4 FM RF Coverage & Tracking Adjustment Connection Diagram

2.	FM5	(1)FM RF SWEEP GENERATOR (2)ALIGNMENT OSCILLOSCOPE (3)POWER SUPPLY	INJECT THE RF SIGNAL DIRECTLY TO FM ANTENNA TERMINAL	SAME AS STEP 1.	ADJUST PVC-TC2 TO GET OUTPUT AT FM5	(1)SAME AS STEP 1.
3.	FM1	SAME AS STEP 2.	SAME AS STEP 2.	SAME AS STEP 1.	ADJUST L_2 TO GET OUTPUT AT FM1	TUNE TO LOW END
4.	REPEAT STEP 2,3 TO UNTIL NO FURTHER IMPROVEMENT CAN BE MADE.					
5.	FM4	SAME AS STEP 2.	SAME AS STEP 2.	SAME AS STEP 1.	ADJUST PVC-TC1 TO GET MAX.OUTPUT.	TUNE TO FM4
6.	FM2	SAME AS STEP 2.	SAME AS STEP 2.	SAME AS STEP 1.	ADJUST L_1 TO GET MAX. OUTPUT.	TUNE TO FM2
7.	REPEAT STEP 5,6 UNTIL NO FURTHER IMPROVEMENT CAN BE MADE.					
8	FM3	(1)OSCILLOSCOPE (2)COUNTER.		SIGNAL ARE TAKEN OUT FROM VR_1 / R_{13}	ADJUST VR_{300} TO GET 76KHz ± 0.05 AT VR_1 / R_{13}	(1)TUNE TO FM3 AT FM STEREO MODE



ALIGNMENT

MW SECTION

SWEEP GENERATOR

IF	Adjust for	Adjustment
455/465KHz	Maximum	T_2

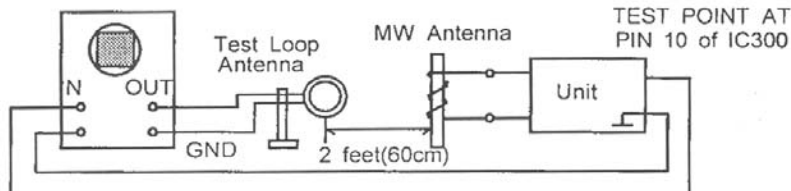


Figure 1 MW IF Adjustment Connection Diagram

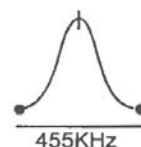


Figure 3 AM IF Curve

STEP	ALIGNMENT FREQ	TEST EQUIPMENT	SIGNAL-IN	SIGNAL-OUT	ADJUST	REMARK
1.	I.F. 455/465KHz	(1)AM IF SWEEP GEN.WITH LOOP ANTENNA (2)ALIGNMENT OSCILLOSCOPE (3)POWER SUPPLY	LET THE MW ANT COIL CLOSE TO MW GEN. ANTENNA	TAKE OUT THE SIGNAL THRO- GH CAPACITOR 1uF FROM PIN 11 of IC3	GET MAX OUTPUT AT I.F.	(1)BAND SW. IN MW POSITION (2)VOL.CONTROL AT MIN POSITION (3)TUNETO HIGH END.

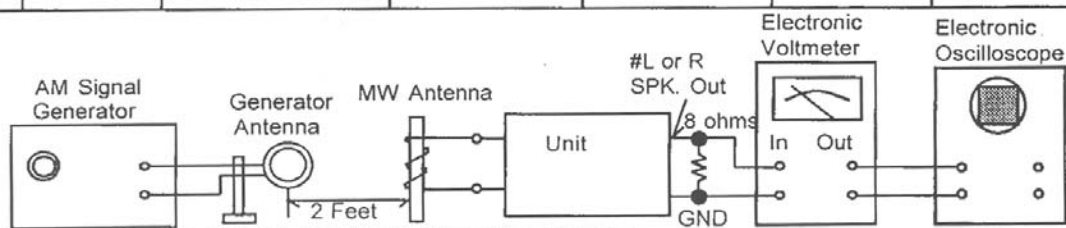
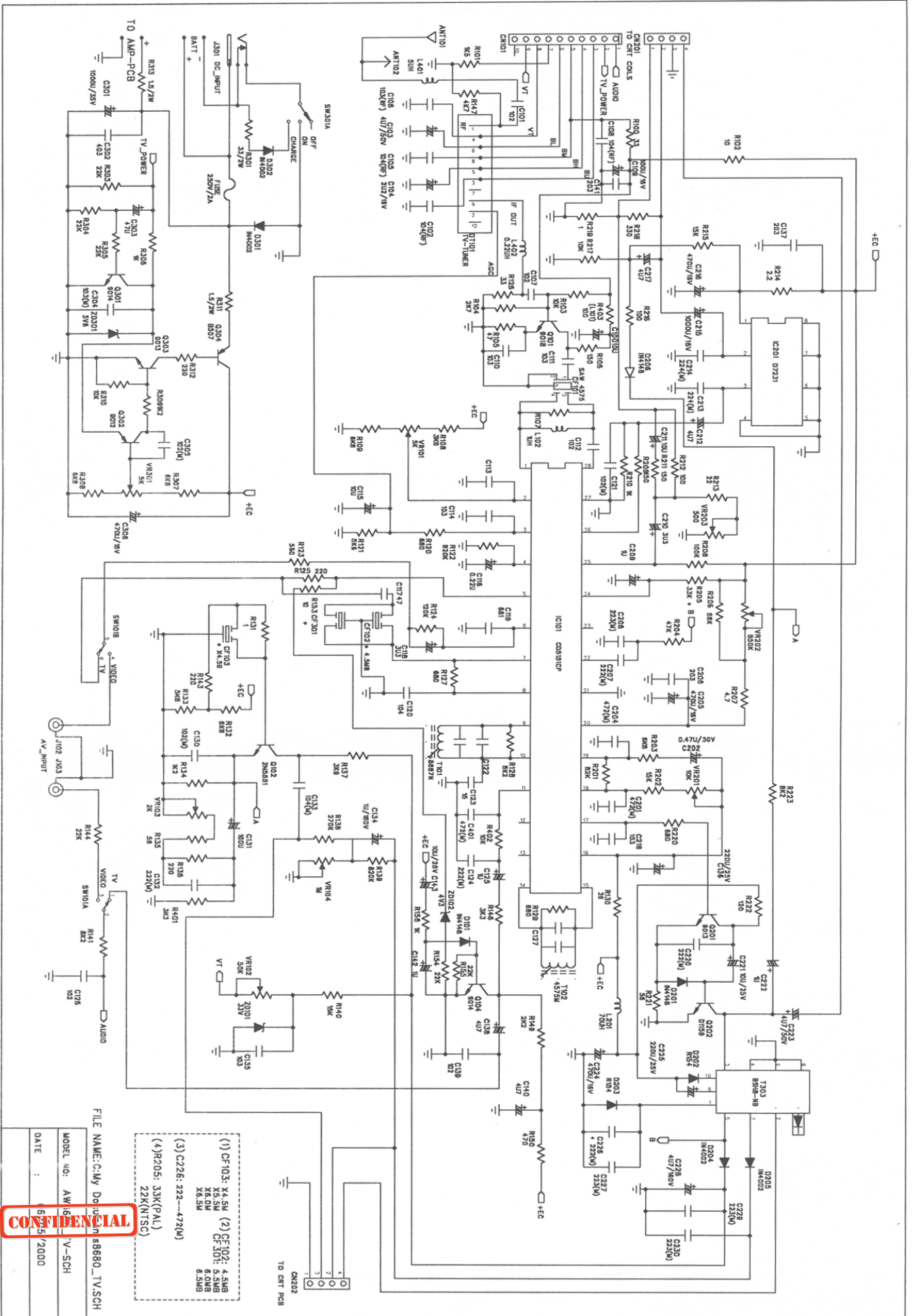


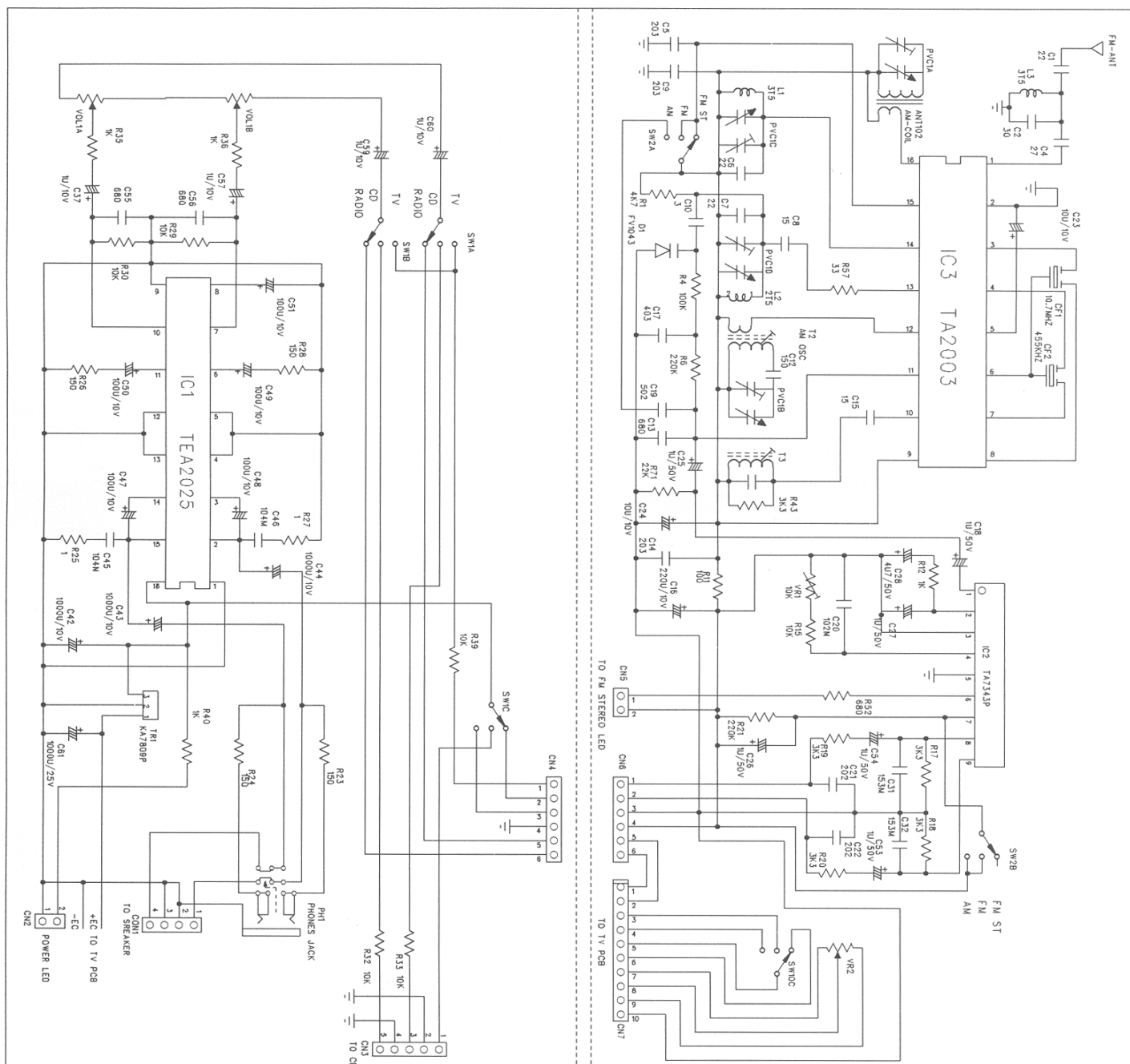
Figure 2 MW RF Adjustment Connection Diagram

2.	MW1	(1)AM SWEEP GEN. WITH ANT. (2)ALIGNMENT OSCILLOSCOPE (3)POWER SUPPLY	SAME AS STEP 1.	SAME AS STEP 1.	ADJUST T_2 TO GET MAX. OUTPUT AT MW1	TUNE TO LOW END.
3.	MW5	SAME AS STEP 2	SAME AS STEP 1.	SAME AS STEP 1.	ADJUST PVC- TC3 TO GET MAX.OUTPUT AT MW5	TUNE TO HIGH END.
4. REPEAT STEP 2,3 TO GET THE BEST PERFORMANCE.						
5.	MW4	SAME AS STEP 2	SAME AS STEP 1.	SAME AS STEP 1.	ADJUST PVC-TC4 TO GET MAX. OUTPUT AT MW4	TUNE TO MW4
6.	MW2	SAME AS STEP 2	SAME AS STEP 1.	SAME AS STEP 1.	ADJUST MW-ANT COIL POSITION FERRITE BAR TO GET MAX . OUTPUT AT	PRESS BUTTON TO MW3
7. REPEAT STEP 5,6 UNTIL NO FURTHER IMPROVEMENT CAN BE MADE.						

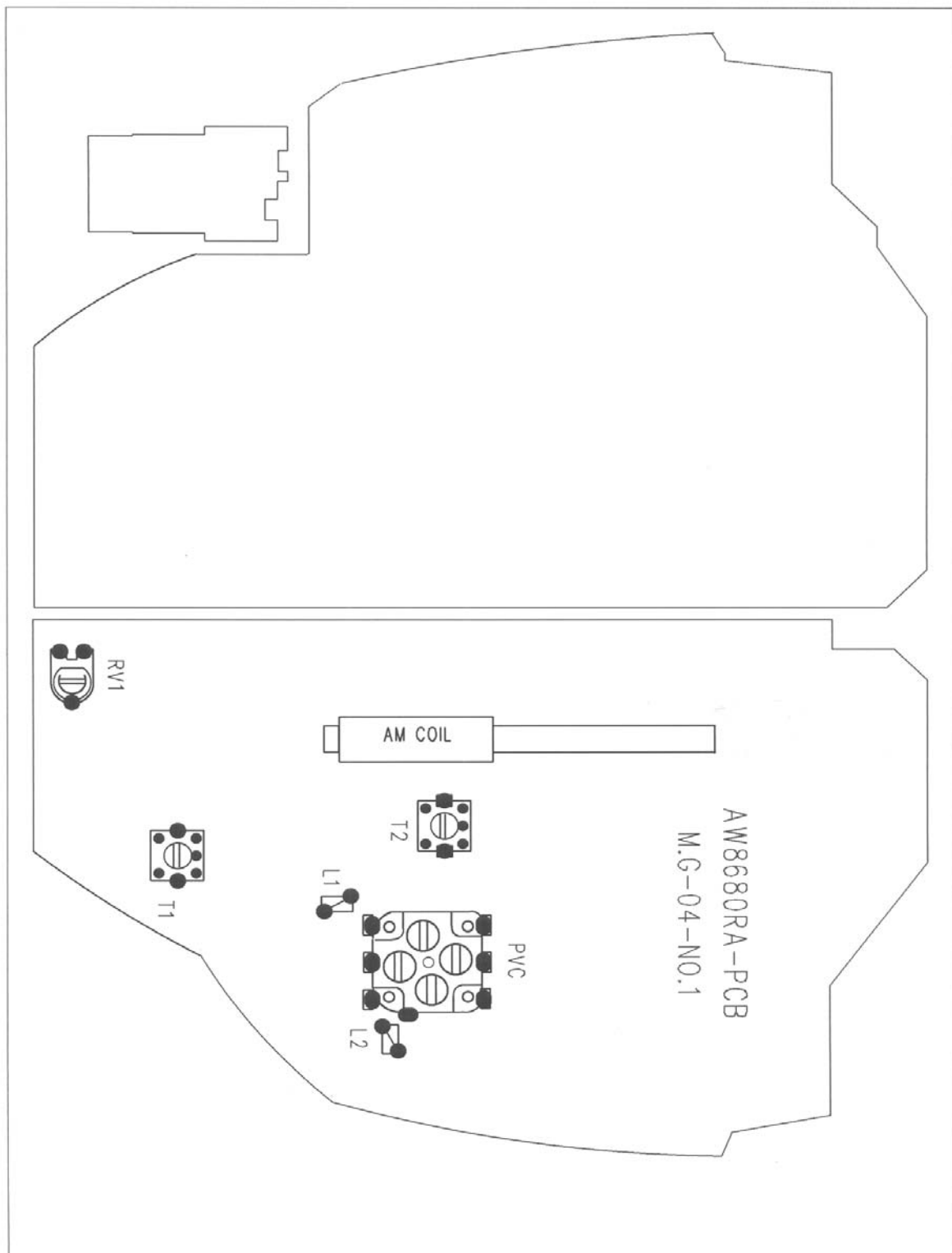
SCHEMATIC DIAGRAM



CONFIDENCIAL



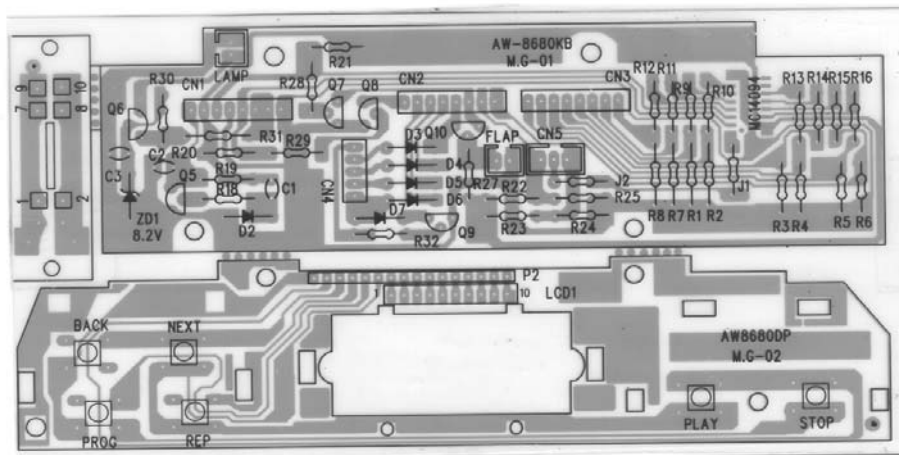
ADJUSTMENT POINTS



CONFIDENTIAL

P.C.B. DIAGRAM

CONFIDENTIAL

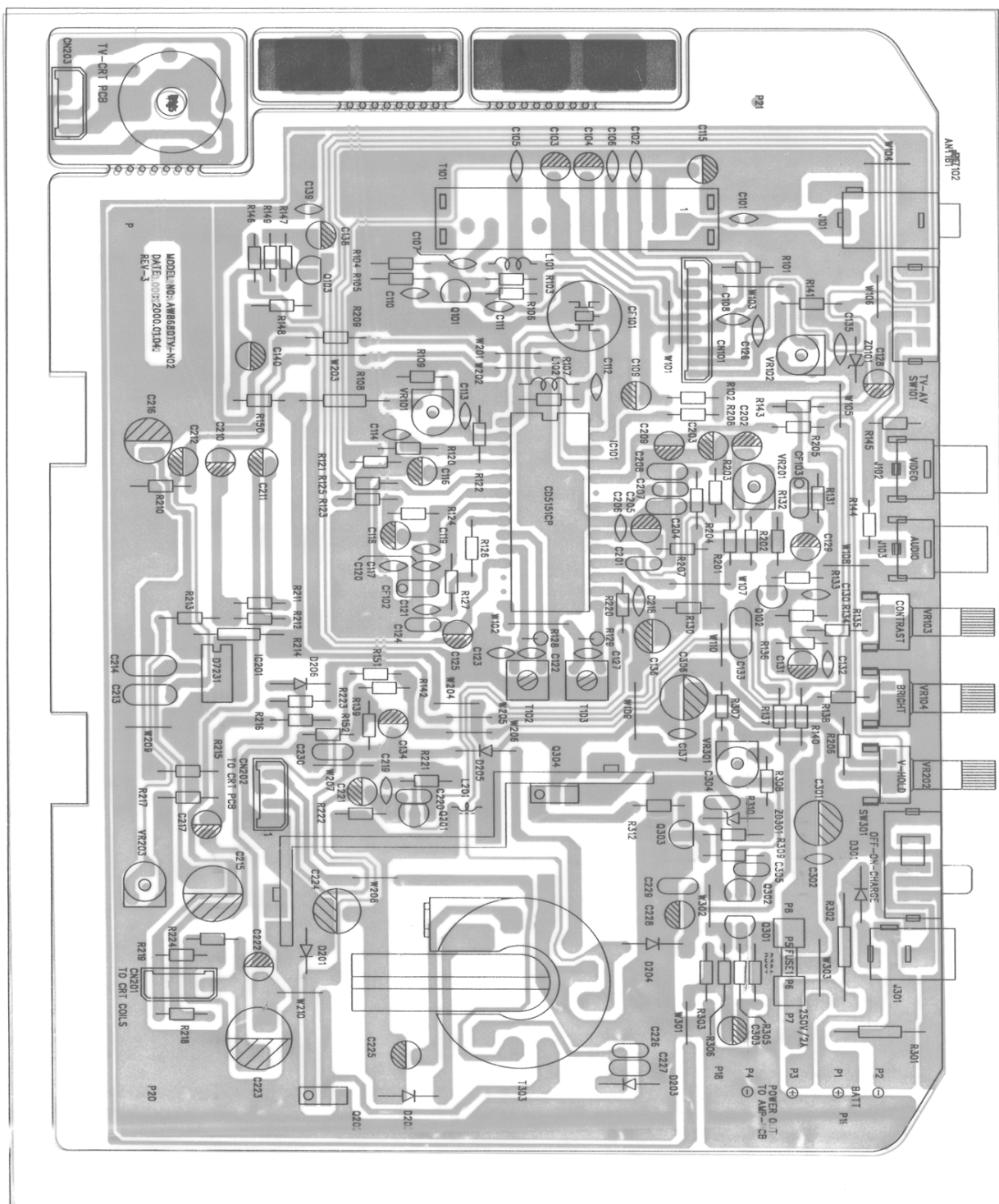


FOR MODEL TV-8680 ADJUSTMENTS INFROMATION

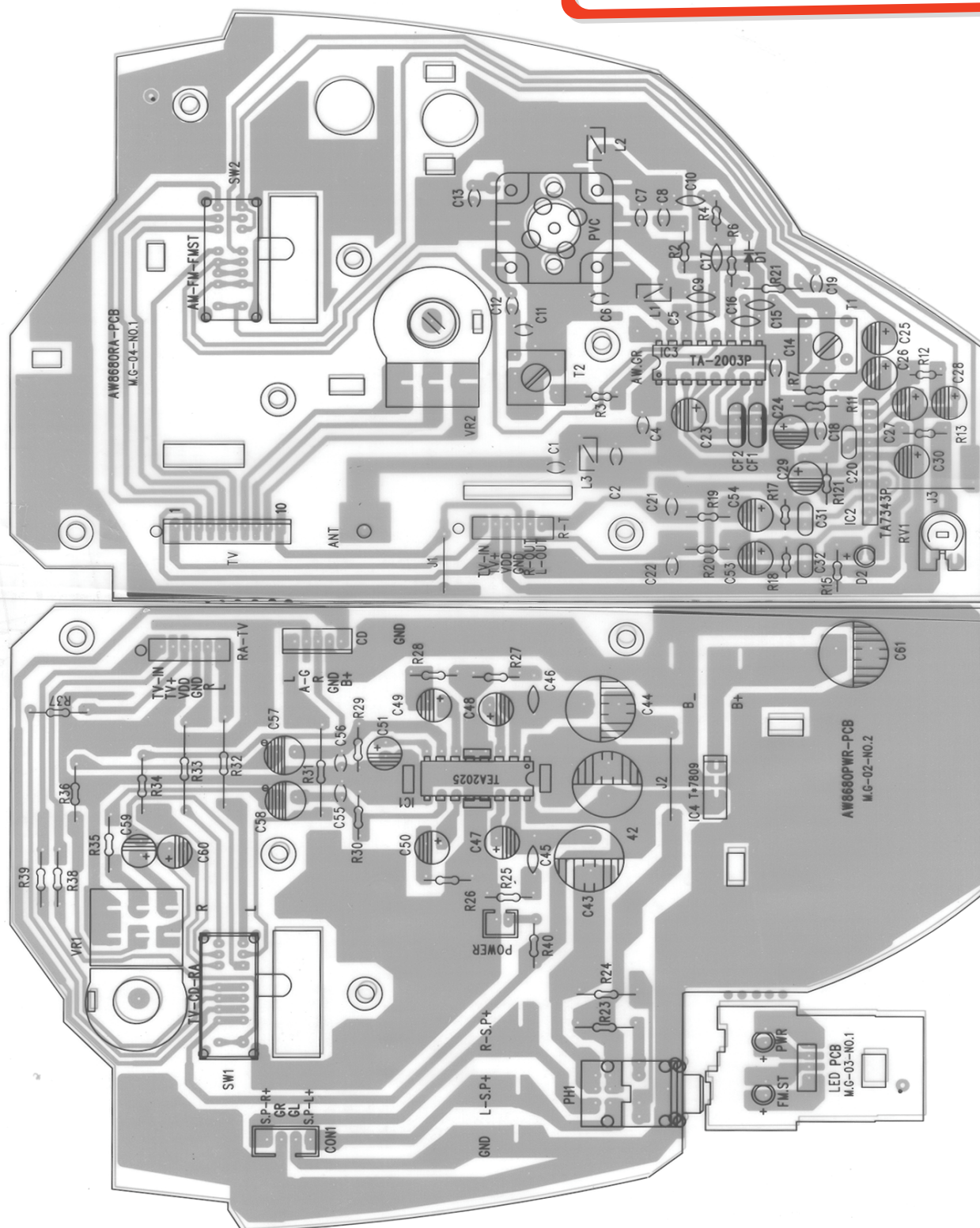
STEP	ALIGNMENT	ADJUSTMENT
1	PICTURE & SOUND CLEANING	A
2	FREQUENCY RANGE	B
3	A.G.C.	C
4	WIDE	D
5	S-IF(SOUND)	E
6	PIC-IF(PICTURE)	F

REMAKE: STEP NO:1 TO NO.4 ADJUSTMENT ON BATTERY COMPMENT

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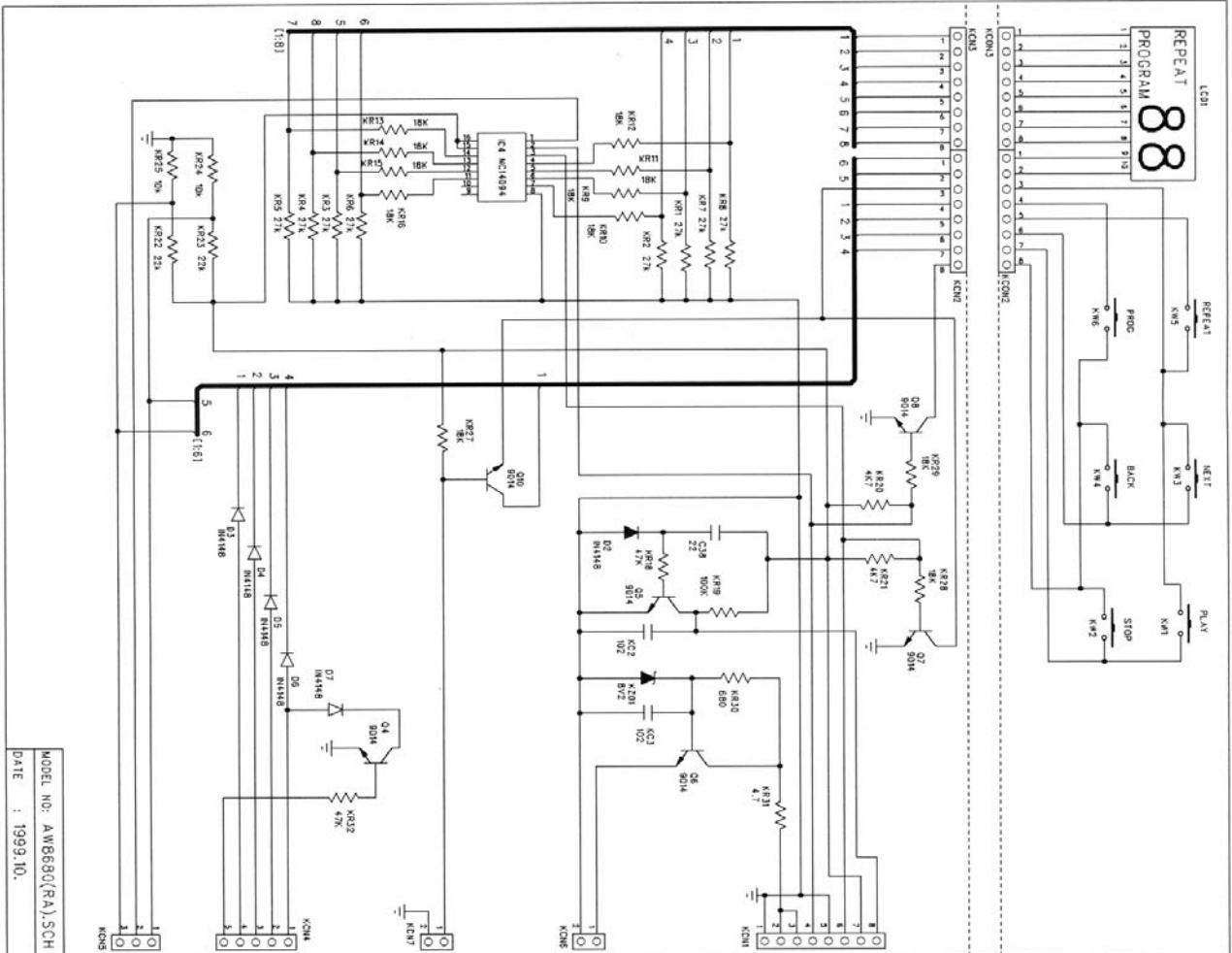


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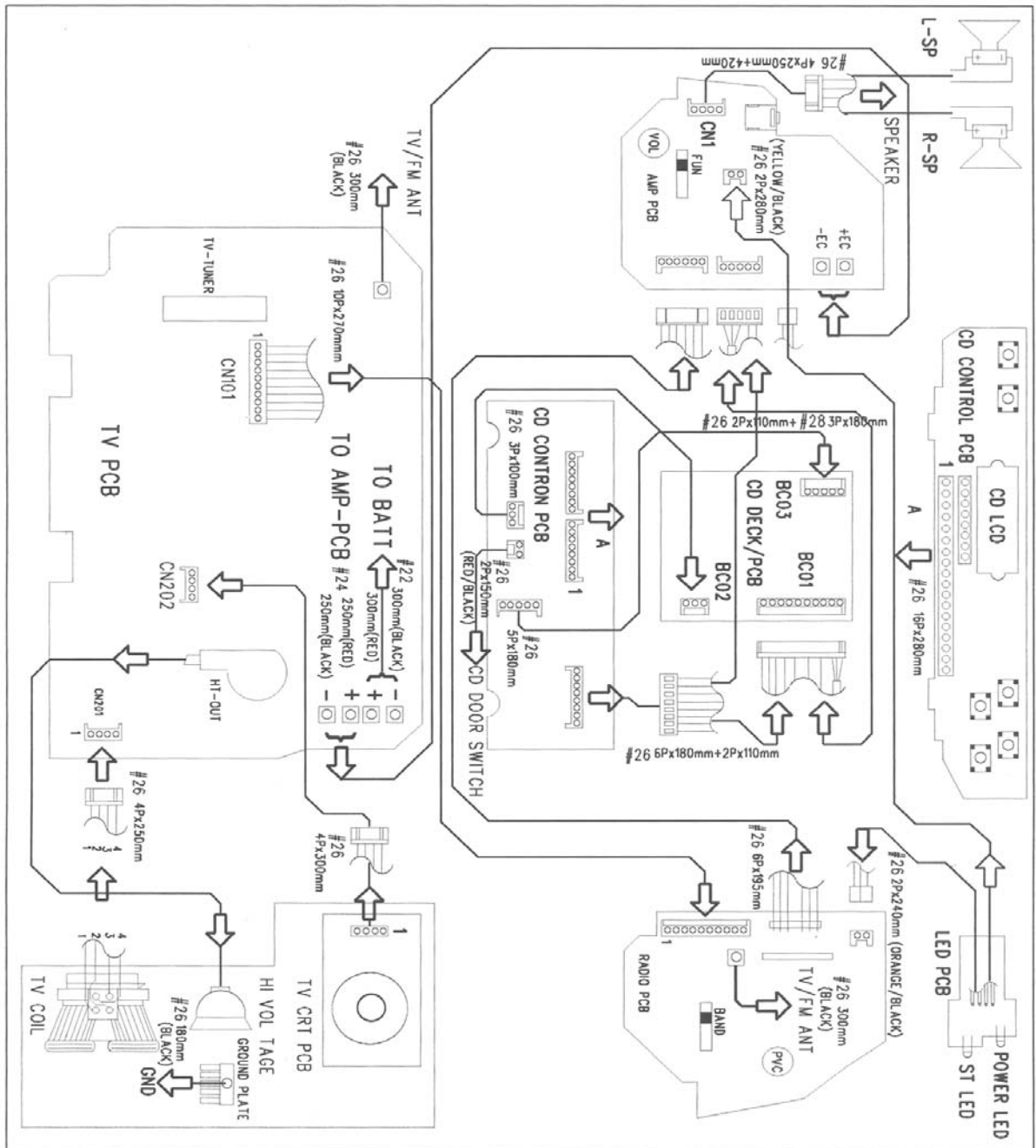


SCHEMATIC DIAGRAM

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Alignment Instruction

1. Test Equipment

- a) VIF Sweep Generator
- b) SIF Sweep Generator
- c) Color Bar Dot. Cross Hatch Generator
- d) DC Power Supply
- e) Oscilloscope
- f) Volt Ohmmeter
- g) Ampere Meter

2. VIF Alignment

A. Preparation Step

1. Disconnect the soldering pads 'H'.
2. Connect the sweep Generator to Tuner IF out and ground.
3. Connect 11+0.5V Bias Voltage to C906(+) and ground.
4. Connect AGC Bias Voltage to IC101, PIN14.
5. Connect Oscilloscope to IC101, PIN12 and ground.

B. Alignment Step

1. The output of sweep Generator should be -40dB +20dB.
2. Adjust AGC Bias to maintain the waveform achieve 1Vp-p.
3. Adjust tuner converter coil to obtain waveform as fig.3.
(BG=38.9MHz, BG.DK=38.9MHz DK/I=38.0MHz I=39.5MHz
M=45.7MHz)

4. Soldering the pads "P" to connect.

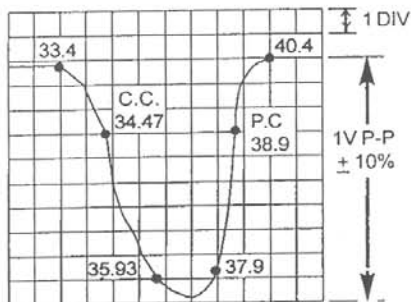
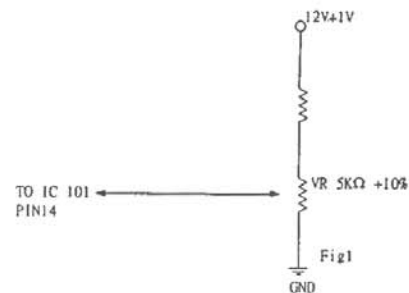
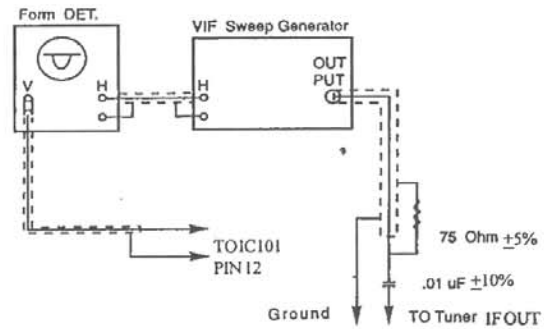


Fig.3

SYSTEM : PAL - BG
PAL - BG / DK

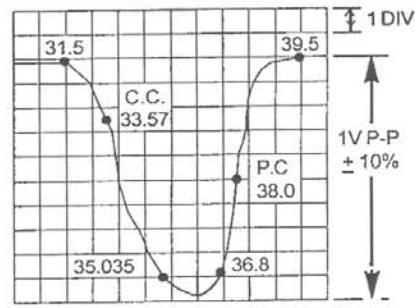


Fig.3

SYSTEM : PAL - DK
PAL - DK / I

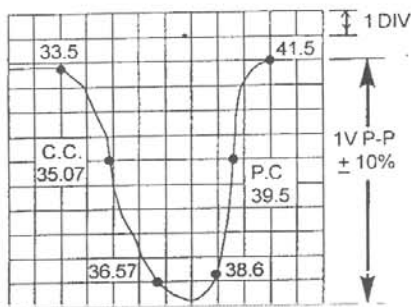
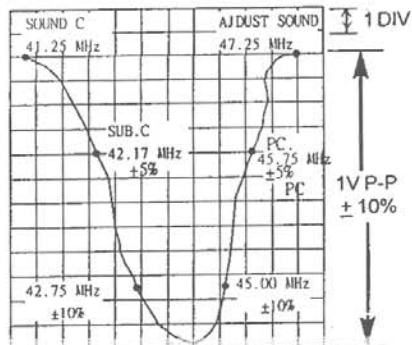


Fig.3



Alignment Instruction

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3. B+ adjustment (connect CRT)

- Connect a digital voltmeter to C906 and ground.
- Set Brightness to minimum.
- Adjust VR901 and obtain a reading of $11V \pm 0.3V$.

4. Horizontal Circuit adjustment

- Receive Monoscope pattern signal strength 70dB ± 10 dB.
- Adjust VR402 to obtain picture synchronize 3 put one temporary al E-Capacitor 10uF connected to pin15 of IC401 to ground and then adjust VR402 again to obtain the best picture synchronize as the fig.4 shown and then disconnected the temporary E-Capacitor 10uF for normal use.

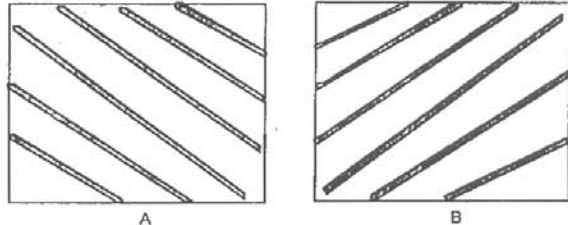


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5. AGC Alignment

- Receive CH69(UHF) input signal strength (62dB ± 1 dB)
- Connect a digital voltmeter to tuner, AGC and ground.
- Adjust AGC VR101 to maximum (clock wise) and then anti-clock wise.
- Adjust VR101 until no observable noise of the picture can be seen.
- Note: The AGC alignment hole at the battery compartment inside.

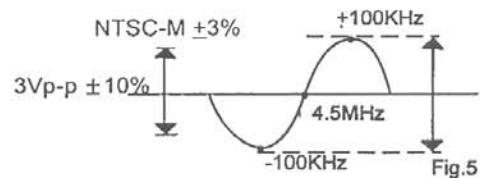


Fig.5

6. Vertical Circuit Adjustment

- Set the brightness and contrast to center position.
- Receive monoscope pattern.
- Adjust VR403 (can also adjust in the batte compartment) to normal picture.

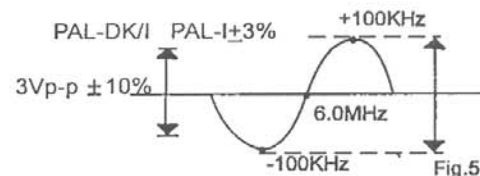


Fig.5

7. Horizontal and Vertical picture centre point alignment

- Receive Monoscope signal strength 70dB ± 10 dB.
- Adjust the first (hear CRT) to normalize to horizontal lentre.
- Adjust the second one (near crt tube base) to normalize the vertical centre
- Adjust the both dy choke coils position (move forward or backward) to get A proper horizontal width 85-95% of the picutre.
- Fixed the dy position by screw.

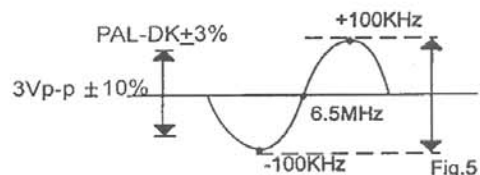


Fig.5

8. Sound Tracking Alignment

- Connect sound sweep generator to IC101, 5 and ground.
- Connect oscilloscope to IC101, 7 and ground.
- Input of sound sweep generator is -10dB ± 5 dB.
- Adjust T102 to obtain the waveform as fig 5.

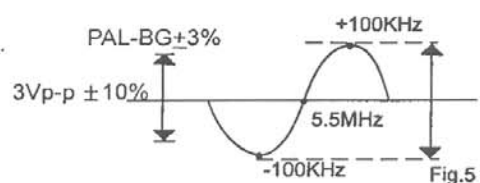


Fig.5

9. Dial Scal Alignment

- Tune to the high end.
- Adjust VR102 untic obtain the highend UHF channel.
- Tune to the low end UHF channel for connter check the dial scal error.

5" TV Specification

Supply Voltage

System	Ntsc-M	Pal-BG	Pal-I	Pal-DK/I	AI-BG/DK	Pal-I/I	Secam-L	
L-VHF : H-VHF : Channel UHF :	2-6 7-13 14-83	2-4 5-12 21-69	21-69	1-5 6-12 13-57	2-4 5-12 21-69	4-13 21-69	1-Q 21-69	CH CH CH
VIF : Frequency	45.75	38.9	39.5	38.0	38.9	38.9	38.9	MHz
SIF : Fequency Inter-Carrier Ferquency	41.25 4.5	33.4 5.5	33.5 6.0	31.5 32.0 6.5 6.0	33.4 32.4 5.5 6.5	32.9 6.0	32.4 6.5	MHz MHz
Horizontal Scan Vertical Scan Antenna Input Impedance	15625 Hz (15734 Hz) 50 Hz (60 Hz) 75 OHM							

1. CRT ITEM OF MEASURE MENT	5" STANDARD	UNIT
AT S/N 30dB L-VHF	≤57	dBuv
2. Video Sensitivity H-VHF	≤57	dBuv
UHF	≤60	dBuv
S/N 30dB L-VHF	≤42	dBuv
3. Sound Sensitivity UHF	≤48	dBuv
4. AGC Character	≥60	dB
5. Selectivity -1.5 MHz	≥15	dB
+8 MHz	≥30	dB
6. Vertical Lock-in Range	≥6	Hz
7. Horizontal Lock-in Range	≥400	Hz
8. Min.Vol Hum	≤20	Mv
9. Resolution Hovizontal	≥300	LINES
Vertical	≥400	LINES
10.Lineariry Distortion Horizontal	≤10	%
Vertical	≤15	%
11.Power Consumption	≤12	WATTS
12.Video Input Level 1.0Vp-p+3dB Audio Input Level 0.5V Rms+3dB		
13.Sound Signal Noise Ratio	≥35	dB