

# Service Manual

# ADCOM TUNER GFT-1

ELECTRICAL ADJUSTMENT PROCEDURE

Step	SG Frequency	SG output Level	Freq. Display of set under test	Adjustment	Indication
1	98MH <sub>z</sub>	No input Signal	98.0MH <sub>z</sub>	the right side core of IFT T102	Connect the DVM between pin No.7 and 10 of IC HA12412 then adjust T102 until the DVM indicates 0 volt.
2			108MH <sub>z</sub>	Trimmer CT104	Till the tuning voltage of pin No.6 (P.C.B. No. K40316) indicates around 23VDC
3			87.5MH <sub>z</sub>	OSC Coil L106	Till the tuning voltage of pin No.6(P.C.B. No. K40316) indicates around 3VDC
4	106MH <sub>z</sub>	as low as possible	106MH <sub>z</sub>	Trimmer CT101, CT102, CT103	Maximum output reading
5	90MH <sub>z</sub>	as low as possible	90MH <sub>z</sub>	L101, L103, L104	Maximum output reading
6	Repeat step 4 and 5 until no further improvement is noticed				
7	98MH <sub>z</sub>	1000uV(60dB)	98.0MH <sub>z</sub>	the left side core of T102	To minimize distortion

(B) FM MPX AND MUTING ADJUSTMENT

1. Push the function switch to FM position.
2. Push the Mute. de switch to ON/Stereo position.
3. Set the FM Signal Generator as shown Fig. 3.
4. Set the Stereo SG to 400H<sub>z</sub>, 90% (67.5KH<sub>z</sub>). Pilot 10% (7.5KH<sub>z</sub>) modulation.

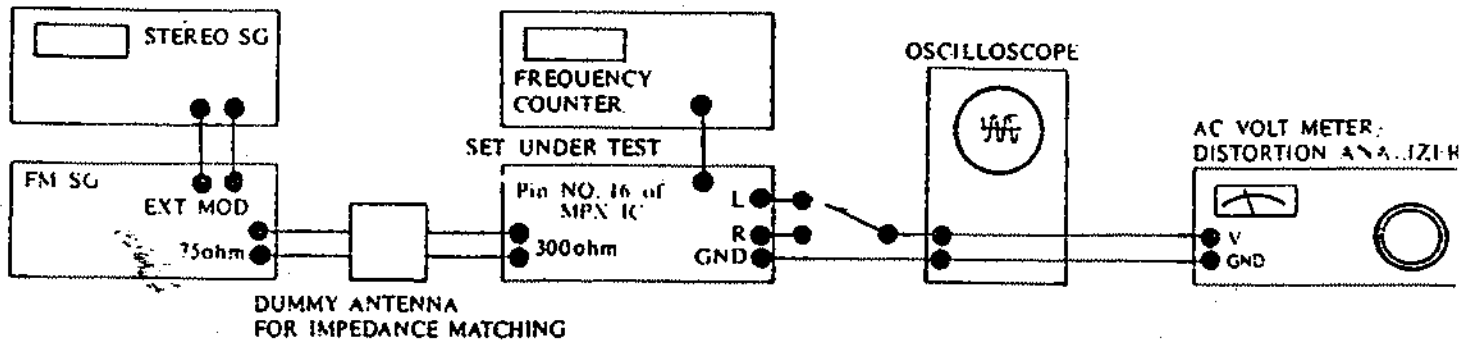


Fig.3. FM MPX and Muting Adjustment Test Set up.

ELECTRICAL ADJUSTMENT PROCEDURE

Step	SG Freq.	SG Output level	Stereo SG mode	Freq. Display of set under test	Adjustment	Indication
1	98MHz	1000uV (60dB)	CW	98 MHz	VR104	76KHz+ - 50Hz at pin No. 16 of IC HA12016
2	98MHz	1000uV (60dB)	L (or R)	98MHz	T101	To minimize distortion
3	98MHz	1000uV (60dB)	L(or R)	98MHz	VR103	To minimize output reading at R ch (or L) output
4	98MHz	10uV	L + R	98MHz	VR101	Zero output level (Muting level)

(C) AM Auto Stop Sensitivity Alignment

1. Set the AM Signal Generator as shown Fig.1.
2. Set the Signal Output at 5mV. 999KHz.
3. Align as Below.

SG Freq.	Freq. Display of Set Under test	Alignment	Indication
999KHz	999KHz	IFT Coil T203	Maximum DC Voltage at anode of D204
999KHz	999KHz	Semifixed Resistor VR201	Till the Q206 is on

(D) Record Calibration Tone Alignment

1. Set the FM Signal Generator as shown Fig. 2.
2. Set the SG to 400Hz. 100% modulation, 1mV output at 98MHz.
3. Push the Rec Cal Switch.
4. Adjust VR601 till the Rec Signal level reads - 6dB.

(E) 6.4MHz PLL Standard Frequency Adjustment.

1. Connect Frequency Counter to pin 21 of IC TC9123P.
2. Adjust CT601 till the Frequency is 6.4000xx Hz.

## PARTS LIST

## K40317A DIGITAL BOARD

Reference Number	Parts Number	Description	Quantity
IC601		IC TC9123P	1
IC602		IC TC9124AP	1
IC603		IC TC4069UBP	1
Q604		Transistor 2SC785	1
Q607,Q611,Q612		Transistor 2SC1815Y	7
Q613,Q614,Q615,Q616			
Q603		FET 2SK19Y	1
Q608,Q617		Transistor 2SA1015Y	2
Q601		Transistor 2SC1681BL	1
Q610,Q618		TR KTC732TM or 2SC1000	2
TC601	TZ03R200F	Capacitor Trimmer 20pF	1
QZ601	#31016	X-Tal 6.4 MHz	1
VR601	#16005	Semifixed Resistor 10K (B)	1
L601	#30109	Coil Inductor 1MH	1
D606,D607,D608		CDG24 or MA150	19
D609,D610,D611			
D612,D613,D614			
D616,D617,D618			
D619,D620,D621			
D622,D623,D624			
D625			
R607	60F100- $\frac{1}{2}$ -J	Resistor Carbon 10ohm $\frac{1}{2}$ W	1
R615	60F220- $\frac{1}{2}$ -J	Resistor Carbon 22ohm $\frac{1}{2}$ W	1
R603,R660	60F101- $\frac{1}{2}$ -J	Resistor Carbon 100ohm $\frac{1}{2}$ W	2
R601	60F151- $\frac{1}{2}$ -J	Resistor Carbon 150ohm $\frac{1}{2}$ W	1
R606	60F471- $\frac{1}{2}$ -J	Resistor Carbon 470ohm $\frac{1}{2}$ W	1
R642	60F821- $\frac{1}{2}$ -J	Resistor Carbon 820ohm $\frac{1}{2}$ W	1
R602	60F152- $\frac{1}{2}$ -J	Resistor Carbon 1.5Kohm $\frac{1}{2}$ W	1
R604,R611,R625	60F222- $\frac{1}{2}$ -J	Resistor Carbon 2.2Kohm $\frac{1}{2}$ W	3
R652	60F392- $\frac{1}{2}$ -J	Resistor Carbon 3.9Kohm $\frac{1}{2}$ W	1
R614,R635,R636	60F472- $\frac{1}{2}$ -J	Resistor Carbon 4.7Kohm $\frac{1}{2}$ W	6
R644,R648,R650			
R639	60F562- $\frac{1}{2}$ -J	Resistor Carbon 5.6Kohm $\frac{1}{2}$ W	1
R608	60F682- $\frac{1}{2}$ -J	Resistor Carbon 6.8Kohm $\frac{1}{2}$ W	1
R612,R616,R618	60F103- $\frac{1}{2}$ -J	Resistor Carbon 10Kohm $\frac{1}{2}$ W	10
R619,R626,R641			
R643,R649,R654			
R658			
R656,R657	60F123- $\frac{1}{2}$ -J	Resistor Carbon 12Kohm $\frac{1}{2}$ W	2
R617	60F153- $\frac{1}{2}$ -J	Resistor Carbon 15Kohm $\frac{1}{2}$ W	1
R610,R613,R627	60F223- $\frac{1}{2}$ -J	Resistor Carbon 22Kohm $\frac{1}{2}$ W	8
R631,R637,R638			
R645,R663			
R609,R662	60F333- $\frac{1}{2}$ -J	Resistor Carbon 33Kohm $\frac{1}{2}$ W	2
R640	60F393- $\frac{1}{2}$ -J	Resistor Carbon 39Kohm $\frac{1}{2}$ W	1
R620,R621,R622	60F473- $\frac{1}{2}$ -J	Resistor Carbon 47Kohm $\frac{1}{2}$ W	8
R623,R624,R646			
R655,R659			
R661	60F563- $\frac{1}{2}$ -J	Resistor Carbon 56Kohm $\frac{1}{2}$ W	1
R633,R647,R653	60F104- $\frac{1}{2}$ -J	Resistor Carbon 100Kohm $\frac{1}{2}$ W	3
R605,R634	60F154- $\frac{1}{2}$ -J	Resistor Carbon 150Kohm $\frac{1}{2}$ W	2
R632	60F224- $\frac{1}{2}$ -J	Resistor Carbon 220Kohm $\frac{1}{2}$ W	1
C606	50CE100- $\frac{1}{2}$ -J	Capacitor Ceramic 10pF/50WV(CH)	1
C607,C615	50CE101-50J	Capacitor Ceramic 100pF/50WV	2

## PARTS LIST

Reference Number	Parts Number	Description	Quantity
C149	50CE560-50J	Capacitor Ceramic 56pF/50WV	1
C103,C111,C132	50CE101-50J	Capacitor Ceramic 100pF/50WV	5
C203,C517			
C155	50CE681-50J	Capacitor Ceramic 680pF/50WV	1
C218	50CE102-50J	Capacitor Ceramic 0.001uF/50WV	1
C204,C205, C208	50CE103-50J	Capacitor Ceramic 0.01uF/50WV	12
C209,C210,C212			
C223,C226,C302			
C304,C305,C306			
C101,C104,C105	50CE203-501	Capacitor Ceramic 0.02uF/50WV	26
C106,C108,C109			
C114,C115,C120			
C123,C124,C126			
C127,C133,C134			
C138,C207,C217			
C501,C503,C504			
C506,C511,C512			
C518,C520			
C128,C129,C131	50CE473-50J	Capacitor Ceramic 0.047uF/50WV	15
C136,C137,C139			
C140,C141,C206			
C213,C214,C221			
C225,C229,C301			
C227	60AL478-50E	Capacitor Elect 0.47uF/50WV	1
C130,C135,C143	60AL109-50E	Capacitor Elect 1uF/50WV	7
C157,C215,C216			
C224			
C144R/L.C160	60AL229-16E	Capacitor Elect 2.2uF/16WV	3
C156,C159,C502	60AL339-25E	Capacitor Elect 3.3uF/25WV	4
C508			
C145R/L	60AL479-25E	Capacitor Elect 4.7uF/25WV	2
C151R/L.C219	60AL100-16E	Capacitor Elect 10uF/16WV	4
C510			
C509	60AL100-25E	Capacitor Elect 10uF/25WV	1
C152,C153	60AL220-16E	Capacitor Elect 22uF/16WV	2
C142,C211,C515	60AL470-10E	Capacitor Elect 47uF/16WV	3
C514,C516	60AL101-50E	Capacitor Elect 100uF/50WV	2
C303	60AL221-10E	Capacitor Elect 220uF/10WV	1
C125	60AL221-16E	Capacitor Elect 220uF/16WV	1
C507	60AL221-25E	Capacitor Elect 220uF/25WV	1
C513	60AL331-50E	Capacitor Elect 330uF/50WV	1
C521,C522	60AL471-10E	Capacitor Elect 470uF/10WV	2
C147	60AL471-16E	Capacitor Elect 470uF/16WV	1
C505	60AL471-25E	Capacitor Elect 470uF/25WV	1
C219	60AL102-16E	Capacitor Elect 1000uF/16 WV	1
C202	60PS431-50J	Capacitor Poly 430pF/50WV	1
C158	60PS102-50J	Capacitor Poly 1000pF/50WV	1
C146,C222	60MY153-50J	Capacitor Mylar 0.015uF/50WV	2
C154,C228	60MY473-50J	Capacitor Mylar 0.047uF/50WV	2
C148,C150	60MY102-50J	Capacitor Mylar 0.001uF/50WV	2
		De-Emp. 50uS	
	60MY152-50J	Capacitor Mylar 0.0015uF/50WV	2
		De-Emp. 75uS	

## PARTS LIST

Reference Number	Parts Number	Description	Quantity
C625	50MY252-50J	Capacitor Mylar 0.0025uF/50WV	1
C622	50MY153-50J	Capacitor Mylar 0.015uF/50WV	1
C623	50MY223-50J	Capacitor Mylar 0.022uF/50WV	1
C625	50MY473-50J	Capacitor Mylar 0.047uF/50WV	1

K40319A DISPLAY BOARD (5Digits) or K40318A (4Digits)(A) COMMON PARTS

IC701		IC TC5022BP	1
IC702		IC LB1416	1
Q706,Q708,Q710		Transistor CS9012	4
Q702			
Q703,Q705,Q707		Transistor CS9013	7
Q709,Q711,Q712			
Q713,Q701			
D701,D702,D703		CDG24 or MA150	11
D704,D705,D706			
Q707,D708,D709			
D710,D711			
R703,R704,R705	60F101- $\frac{1}{2}$ -J	Resistor Carbon 100 ohm $\frac{1}{2}$ W	12
R706,R707,R708			
R709,R723,R724			
R725,R716,R717			
R701,R702,R710	60F102- $\frac{1}{2}$ -J	Resistor Carbon 1K ohm $\frac{1}{2}$ W	10
R711,R712,R713			
R726,R727,R728			
R729			
R715	60F152- $\frac{1}{2}$ -J	Resistor Carbon 1.5K ohm $\frac{1}{2}$ W	1
R719,R720,R721	60F103- $\frac{1}{2}$ -J	Resistor Carbon 10K ohm $\frac{1}{2}$ W	5
R722,R732			
R730	60F153- $\frac{1}{2}$ -J	Resistor Carbon 15K ohm $\frac{1}{2}$ W	1
R731	60F154- $\frac{1}{2}$ -J	Resistor Carbon 150K ohm $\frac{1}{2}$ W	1
R714	60F392- $\frac{1}{2}$ -J	Resistor Carbon 3.9K ohm $\frac{1}{2}$ W	1
C701,C702,C703	50AL479-25E	Capacitor Elect 4.7uF/25WV	3
	TLR208	LED Power Indicator	1

(B) K40319A BOARD (5Digits) PARTS

DIS701,DIS702	LN524RK	LED 7-Seg Digit	2
	LN514RK	LED 7-Seg Digit	1
LD701,LD704,LD715	TLR205	LED Discrete Lamp	3
LD703,LD704,LD705	RLH316	LED Discrete Lamp	12
LD703,LD794,LD705			
LD709,LD710,LD711			
LD712,LD713,LD714			

(C) K40318A BOARD (4 Digits) PARTS

DIS701,DIS702	LN524RK	LED 7-Seg Digit	2
LD715	TLR205	LED Discrete Lamp	1
LD701,LD702	TLG205	LED Discrete Lamp	2

# ADCOM GFT - 1 SCHEMATIC DIAGRAM

