

## 4. Alignment and Adjustments

### 4-1 Service Mode Adjustments

#### 4-1-1 Service Mode Menus

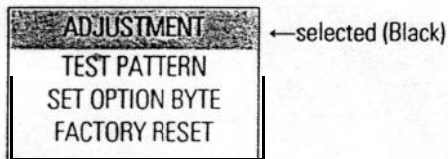
Since there are no VRs in the KG1 chassis, all adjustments after parts replacement must be done in the Service Mode. Service Mode adjustments are necessary when either the EEPROM (IC902) or the CRT is replaced.

#### 4-1-2 Entering the Service Mode

Press the following transmitter keys while in STAND-BY mode:

MUTE → 1 → 8 → 2 → POWER

"Factory Mode Menu" is displayed



Enter Service Mode using the Volume +, - keys. Service Mode Menu:

AGC	XX	SB	XX
VCO	XX	VA	XX
SC	XX	VS	XX
SR	XX	HS	XX
ST	XX		
SS	XX		
RC	xxx		
GC	XXX		
BC	XXX		
GG	XXX		
BG	XXX		
SVC: MUTE			

Select a mode to be adjusted, using the channel down key. Example: VCO.

AGC	XX	SB	XX
VCO	XX	VA	XX
SC	XX	VS	XX
SR	XX	HS	XX
ST	XX		
SS	XX		
RC	XXX		
GC	XXX		
BC	XXX		
GG	XXX		
BG	XXX		
SVC: MUTE			

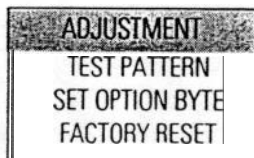
Change the data with "Volume +, -" keys.

VCO	71
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Return to the Service mode by pressing MENU.

AGC	XX	SB	XX
VCO	XX	VA	XX
SC	XX	VS	XX
SR	XX	HS	XX
ST	XX		
SS	XX		
RC	xxx		
GC	XXX		
BC	XXX		
GG	XXX		
BG	XXX		
SVC: MUTE			

Return to the Factory mode by Repressing MENU.



Press POWER to enter the Stand-by mode.

### 4-1-3 Adjustment in Option Mode

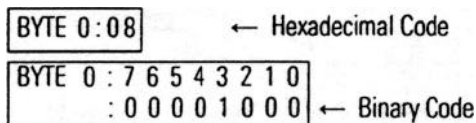
This adjustment is necessary whenever the EEPROM (IC902) is replaced. The Option Bytes initial value is 08 (hexadecimal Code).



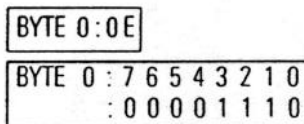
Select "SET OPTION BYTE" by pressing the Channel ▼ key twice.



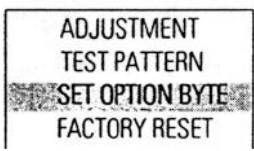
Press the Volume +/- keys to enter the Set Option mode.



Press the Volume "+" key to increase and press the Volume "-" key to decrease. Example Volume "+" key



Press MENU to return to the factory mode.



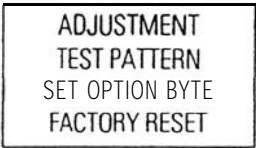
Select "Factory Reset" using the channel ▼ key.



Press the volume "+" key.



4-1-4 Service Mode Adjustments



- 1. The “Test Pattern” Adjustment is done only in the factory. Do not attempt to readjust it.
- 2. Refer to 42 for other adjustments.
- 3. “SET OPTION BYTE” Adjustment should be set to the factory-preset values

4-1-5 Service Mode Adjustment Values

No	Item	Function	Range	Initialized MICOM Data
1	AGC	RF AGC Adjustment	0-63	40
2	VCO	PIF VCO Adjustment	0-127	63
3	SC	SUB-CONTRAST Adjustment	0-63	15
4	SR	SUB-COLOR Adjustment	0-27	4
5	ST	SUB-TINT Adjustment	0-27	19
6	SS	SUB-SHARPNESS Adjustment	0-31	25
7	RC	RED-CUT OFF Adjustment	0-255	0
8	GC	GREEN-CUT OFF Adjustment	0-255	0
9	BC	BLUE-CUT OFF Adjustment	0-255	0
10	GG	GREEN-GAIN Adjustment	0-255	90
11	BG	BLUE-GAIN Adjustment	0-255	140
12	SB	SUB-BRIGHTNESS Adjustment	0-63	25
13	VA	VERTICAL SIZE Adjustment	0-63	38
14	VS	VERTICAL CENTER Adjustment	0	0
15	HS	HORIZONTAL PHASE Adjustment	0-31	17
16	SVC	Input a Horiz Line Pattern		

Note : These are the initial MICOM data values when IC902 is replaced.

## 4-2 Alignment and Adjustment

### 4-2-1 General Alignment Instructions

1. Usually, a color TV needs only slight touch-up adjustment upon installation. Check the basic characteristics such as picture height, focus and a horizontal and vertical sync.
2. Observe the picture and check for good back and white details; there should be no objectionable color shading. If color shading is present, demagnetize the receiver. If color shading persists, perform purity and convergence adjustments described below.
3. To protect against shock hazard, use an isolation transformer.

### 4-2-2 Power Supply Check

Check the following :

A: "Stand-by" mode (power cord is connected).

B: Power On ("Power ON" button is pressed).

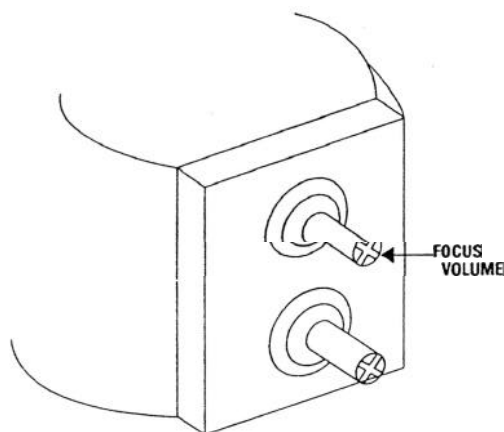
c : Power On (FBT).

Each supply is marked on its lead-in wire.



### 4-2-3 Focus Adjustment

Adjust the focus control on the FBT for well defined scanning lines on the picture screen.



### 4-2-4 Fail Safe Circuit Check (FS)

1. The failsafe check must be the final step in servicing.
2. Turn the power switch ON and adjust customer controls for normal operation.
3. Temporarily short Pin X to Pin R on the main board (RX05, RX04) with a jumper wire. Raster will disappear.
4. The TV must remain in this state even after removing the jumper wire. This shows that the failsafe circuit is working properly.
5. To recover picture and sound, temporarily turn off the TV and allow the failsafe circuit more than 30 seconds to reset. Then switch power ON to produce normal picture and sound.

### 4-2-5 IC902 Replacement

1. When IC902 is replaced, all values are reset to "Initialized MICOM Data" and readjustment is necessary.
2. Press POWER button 10 seconds after plug-in.
3. To enter the Service Mode, refer to 4-1 (Service Mode Adjustment).

### 4-2-6 PIF VCO Adjustment

1. Without connecting an antenna to the tuner, input 45.75MHz IF signal to C151 (IF). Use a pattern generator.
2. Adjust VCO in the Service Mode. Set IC201 Pin 44 (AFT) to 2.5V.

### 4-2-7 RF-AGC Adjustment

1. Input a Color Bar pattern.
2. Enter into the AGC in the Service Mode.
3. Adjust AGC until color bar noise disappears.

#### 4-2-8 Sub-Contrast Adjustment

1. Enter SC while in the Service Mode.
2. Set SC to 15.

#### 4-2-9 Sub-Tint Adjustment

1. Enter ST while in the Service Mode.
2. Set ST to 16.

#### 4-2-10 Sub-Color Adjustment

1. Enter SR while in the Service Mode.
2. Set SR to 5.

#### 4-2-11 White Balance Adjustment

Low-Light Adjustments:

1. Input a "pure white" color pattern.
2. Warm up the receiver for 30 minutes.
3. Check and set the data in the Service Mode:  
RC, GC, BC are 0. SB is 25;  
Steps BG and GG are 127.
4. Enter the Horizontal Line mode by pressing the MUTE key.
5. Adjust the screen VR on the FBT until a dim colored line (red, green or blue) appears on the screen.
6. Adjust RC, BC, GC so the dim colored line becomes white.
7. Exit the Horizontal Line via the MUTE key.

High Light Adjustments:

1. After making the low-light adjustments, input a 5-step staircase pattern.
2. Adjust GG, BG in the Service Mode.
3. Check "Pure White" in the high-light.
4. Recheck in low light.

#### 4-2-12 Sub-Brightness Adjustment

1. Input a 10-step staircase pattern.
2. Warm up the receiver for 10 minutes.
3. Enter into the Service Mode and set SB to the point which is sectioned with 10 steps on the screen.

#### 4-2-13 Vertical Size Adjustment

1. After the vertical center adjustment, enter into the Service Mode.
2. Adjust VA so that the vertical size is over scanned about 10% on the screen.

#### 4-2-14 Horizontal Shift Adjustment

1. Enter into the Service Mode.
2. Adjust HS so that the picture is centralized.

#### 4-2-15 When CRT Is Replaced

Do the following adjustments after the basic purity adjustments and convergence adjustment.

1. White Balance Adjustment
2. Sub-brightness Adjustment
3. Vertical Size Adjustment
4. Horizontal Shift Adjustment
5. Fail Safe adjustment (Note: Do the Fail Safe adjustment as the final step).