

SERVICE ADJUSTMENTS

GENERAL

This set has an On-screen Service Menu system included in the CPU that allows remote operation for most of the service adjustments.

IC802 (EEPROM) REPLACEMENT

When IC802 (EEPROM) is replaced, IC801 (CPU) will automatically write the initial reference data into IC802 for basic TV operation. However, the bus data should be checked and some bus data should be set up before attempting the service adjustments. (See pages 4 – 5 for detailed information.)

INITIAL BUS DATA SETUP

Note: When IC802 (EEPROM) is replaced, the Service Menu No. 007 VLN (V Linearity), No. 010 VSC (V S-Correction), No. 021 SBI (Sub-Bias), No. 023 POS (Pre/Over-Shoot), No. 028 PRE (Pre-Shoot Width), No. 037 AF (AutoFlesh), No. 041 RYA (R-Y/B-Y Angle) and No. 055 STI (Sub-Tint) should be set up for proper TV operation before attempting the service adjustments.

1. Disconnect the AC power cord (AC 120V line).
2. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
3. Select No. 007 VLN (V Linearity) with ▲ or ▼ key. Adjust the data with + or – key for 16.
4. Select No. 010 VSC (V S-Correction) with ▲ or ▼ key. Adjust the data with + or – key for 7.
5. Select No. 021 SBI (Sub-Bias) with ▲ or ▼ key. Adjust the data with + or – key for 60.
6. Select No. 023 POS (Pre/Over-Shoot) with ▲ or ▼ key. Adjust the data with + or – key for 1.
7. Select No. 028 PRE (Pre-Shoot Width) with ▲ or ▼ key. Adjust the data with + or – key for 3.
8. Select No. 037 AF (AutoFlesh) with ▲ or ▼ key. Adjust the data with + or – key for 1.
9. Select No. 041 RYA (R-Y/B-Y Angle) with ▲ or ▼ key. Adjust the data with + or – key for 2.
10. Select No. 055 STI (Sub-Tint) with ▲ or ▼ key. Adjust the data with + or – key for 18.
11. Press the MENU key to turn off the Service Menu display.

ON-SCREEN SERVICE MENU SYSTEM

1. Enter the Service Menu:

- While pressing the MENU key, reconnect the AC power cord. The Service Menu Display will now appear. (See Figure 1 below.)

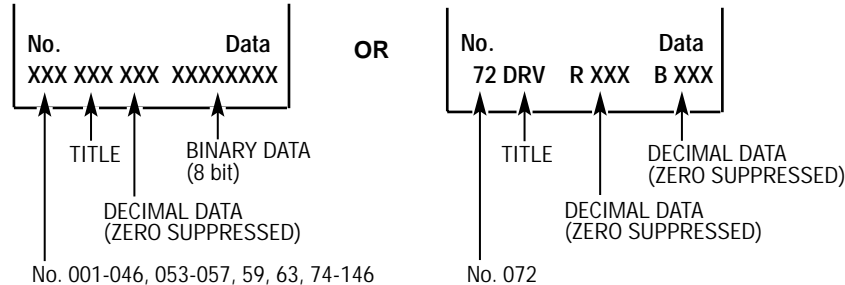


Figure 1. Service Menu Display

2. Service Adjustments:

- Press the ▲ or ▼ key to select the desired service menu you want to adjust. (See page 4 for On-screen Service Menu.)
- Use the + or – key to adjust the data.

3. Exit from the Service Menu:

- Press the MENU key to turn off the Service Menu display.

Table 1. ON-SCREEN SERVICE MENU

When IC802 (EEPROM) is replaced, check the bus data to confirm they are the same as below. The shaded menu should be checked and be set up or readjusted according to the procedures described in the following pages. Initial Setup Data marked with an * should be changed from Initial Reference Data. (See page 3 for Initial Bus Data Setup.)

No.	TITLE	INITIAL REFERENCE DATA	INITIAL SETUP DATA	RANGE OF DATA	FUNCTION
001	HFR	30	30	0~63	Align Horizontal Frequency
002	AFC	0	0	0, 1	Select Horizontal First Loop Gain & H-Sync Gating On/Off
003	HP	13	13	0~31	Align Sync to Flyback Phase (Horizontal Phase)
004	VS	50	50	0~127	Align Vertical Amplitude (Vertical Size)
005	VPO	5	5	0~63	Align Vertical DC Bias (Vertical Position)
006	VSP	0	0	0, 1	Select Vertical Sync Separation Sensitivity
007	VLN	19	16*	0~31	Align Vertical Linearity
008	CRS	0	0	0~3	Service Test Mode (Normal/Black/White/Cross)
009	GRY	1	1	0, 1	OSD Gray Tone Enable
010	VSC	8	7*	0~31	Align Vertical S-Correction
011	HBR	3	3	0~7	H-Blanking Control for Right Side Edge on Screen
012	HBL	4	4	0~7	H-Blanking Control for Left Side Edge on Screen
013	CDM	0	0	0, 1	Select Count Down Mode
014	VC	7	7	0~7	Align Vertical Size Compensation
015	RB	0	0	0~255	Align Red OUT DC Level (Red Bias)
016	GB	0	0	0~255	Align Green OUT DC Level (Green Bias)
017	BB	0	0	0~255	Align Blue OUT DC Level (Blue Bias)
018	RD	64	64	0~127	Align Red OUT AC Level (Red Drive)
019	GD	8	8	0~15	Align Green OUT AC Level (Green Drive)
020	BD	64	64	0~127	Align Blue OUT AC Level (Blue Drive)
021	SBI	64	60*	0~127	Align Common RGB DC Level (Sub-Bias)
022	OSD	2	2	0~3	Align OSD AC Level
023	POS	0	1*	0, 1	Select Control for Pre/Over-Shoot Adjustment
024	FLS	1	1	0~7	Select Y/C Filter Mode
025	CKO	3	3	0~7	Select Color Killer Operational Point
026	GYA	0	0	0, 1	Select G-Y Angle
027	CRG	2	2	0~3	Select Coring Gain (w/Defeat)
028	PRE	1	3*	0~3	Select Pre-Shoot Width
029	WP	1	1	0~3	Select White Peak Limiter Operating Point
030	FSW	0	0	0, 1	Enable RGB Blanking or FBP
031	VBL	0	0	0, 1	Select Vertical Blanking Period
032	BSG	1	1	0~3	Select Black Stretch Gain
033	BSS	1	1	0~3	Select Black Stretch Start Point (w/Defeat)
034	DCR	1	1	0~3	Select Luma DC Restoration
035	YGM	1	1	0~3	Select Y Gamma Start Point
036	CBP	0	0	0, 1	Select Chroma BPF Bypass
037	AF	0	1*	0, 1	Enable AutoFlesh Function
038	BAT	4	4	0~7	Align Brightness ABL Threshold
039	MSD	0	0	0, 1	Disable Brightness Mid Stop
040	ABL	0	0	0, 1	Disable Brightness ABL
041	RYA	4	2*	0~15	R-Y/B-Y Angle
042	RAD	15	15	0~63	Align RF AGC Threshold (RF-AGC Delay)
043	IAS	0	0	0, 1	Disable IF and RF AGC (IF AGC Switch)
044	FMM	0	0	0, 1	Disable FM Outputs (FM Mute)
045	FL	15	15	0~31	Align WBA Output Level (FM Level)
046	VL	4	4	0~7	Align IF Video Level
053	SB	32	32	0~63	Align Sub-Brightness
054	SCO	10	10	0~31	Align Sub-Color
055	STI	22	18*	0~31	Align Sub-Tint
056	SSH	18	18	0~15	Align Sub-Sharpness
057	OPT	0	0	0~255	Option (Program Codes) (See Note 1 page 5.)
059	HR	13	13	0~31	Align OSD H-Position
063	SBO	5	5	0~255	Sub-Bright Offset
072	DRV	—	—	0~127	Red Drive Adjustment (See Note 2 page 5.)
		—	—	0~127	Blue Drive Adjustment (See Note 2 page 5.)
073	—	0	0	0~255	Red Bias Adjustment (See Note 3 page 5.)
	—	0	0	0~255	Green Bias Adjustment (See Note 3 page 5.)
	—	0	0	0~255	Blue Bias Adjustment (See Note 3 page 5.)
074	R00	0	0	0~255	N/A
↓	↓	↓	↓	↓	↓
146	R48	0	0	0~255	N/A

SERVICE ADJUSTMENTS (Continued)

PROGRAM CODES

The microprocessor used in this model is a multi-purpose type and is used in several different models. To ensure proper operation and the correct features for your particular model, the Program Codes must be correct.

Note 1. Option Data 1 (No. 057 OPT) should be decimal 0 (00000000 binary). See page 3 INITIAL DATA SETUP for set up procedure. If this program code is wrong the TV will not operate properly.

BIT	FUNCTION	DATA	
		0	1
0	TV/HOTEL	TV	HOTEL
1	NOT USED	N/A	
2	NOT USED	N/A	
3	NOT USED	N/A	
4	NOT USED	N/A	
5	NOT USED	N/A	
6	NOT USED	N/A	
7	NOT USED	N/A	

Note 2. Red/Blue Drive Adjustments in Service Menu No. 072 DRV: Adjust Red and Blue Drive Levels alternately with 1, 3, 7, and 9 keys on the remote control. (See figure 2.) The Drive Level adjustment data will be written in the Service Menu No. 018 and 020 automatically.

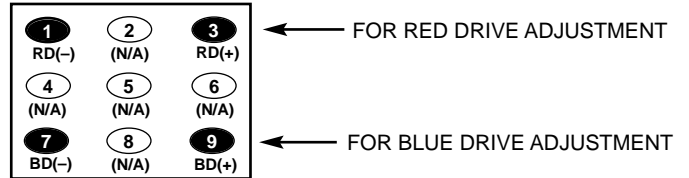


Figure 2.

Note 3. Red/Green/Blue Bias Adjustments in Service Menu No. 073: Adjust each Bias Level with 1, 3, 4, 6, 7, or 9 key on the remote control. (See figure 3.) The Bias Level adjustment data will be written in the Service Menu No. 015 ~ 017 automatically.

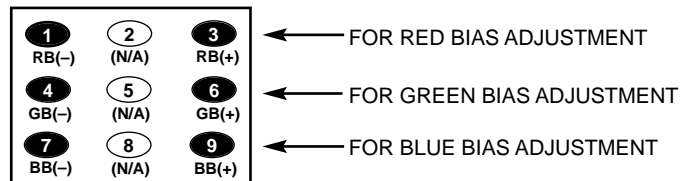


Figure 3.

SERVICE ADJUSTMENTS (Continued)

GRAYSCALE ADJUSTMENT

1. Set the picture controls to the Auto levels.
2. Turn off the receiver and disconnect the AC power cord (120V AC line).
3. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
4. Select No. 015 RB (Red Bias), No. 016 GB (Green Bias), and No. 017 BB (Blue Bias) with ▲ or ▼ key and set each data to 0 with + or – key.
5. Select No. 018 RD (Red Drive) and No. 020 BD (Blue Drive) with ▲ or ▼ key and set each data to 64 with + or – key.
6. Set No. 019 GD (Green Drive) data to 8, No. 053 SB (Sub-Brightness) data to 32, No. 054 SCO (Sub-Color) data to 10, No. 055 STI (Sub-Tint) to 18 and No. 056 SSH (Sub-Sharpness) data to 18 with ▲ or ▼, and + or – keys.
7. Turn Screen Control (T402) to minimum (fully counterclockwise).
8. Select the Service Menu No. 073 (Bias Adjustments) with ▲ or ▼ key.
9. Advance Screen Control (T402) clockwise to obtain just visible one color line. If line does not appear, place this control to maximum (fully clockwise).
10. Raise each Bias Level with 3, 6, and 9 keys to obtain just visible white line. (See Figure 4 below.)

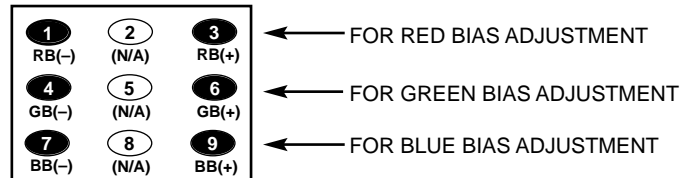


Figure 4. Remote Control Number keys' function in Service Menu No. 073

11. Select the Service Menu No. 072 DRV (Drive Adjustments) with ▲ or ▼ key.
12. Adjust Red and Blue Drive Levels alternately with 1, 3, 7, or 9 key to produce normal black and white picture in highlight areas. (See figure 5 below.)

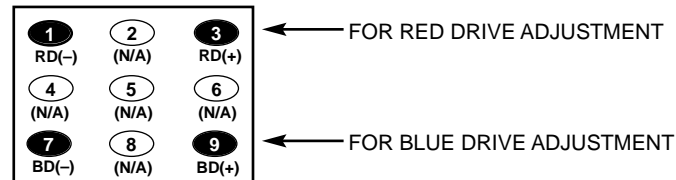


Figure 5. Remote Control Number keys' function in Service Menu No. 072 DRV

13. Check for proper grayscale at all brightness levels.
To turn off the Service Menu display, press the MENU key.

Note: If Grayscale Adjustment is made after picture tube replacement, check Brightness Level Adjustment.