SERVICE MODE LIST

This unit is provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than a the standard time in the appropriate condition. (See below chart.)

Set Condition	Set Key	Remocon Key	Standard Time	Operations
Power ON	VOL. DOWN (Minimum)	0	2 sec.	Releasing of V-CHIP PASSWORD.
Power ON	VOL. DOWN (Minimum)	1	2 sec.	Initialization of factory TV data. NOTE: If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
Power ON	VOL. DOWN (Minimum)	6	2 sec.	Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
Power ON	VOL. DOWN (Minimum)	8	2 sec.	Check of the SUM DATA and MICON VERSION on the screen. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
Power ON	VOL. DOWN (Minimum)	9	2 sec.	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).

WHEN REPLACING EEPROM (MEMORY) IC

CONFIRMATION OF CHECK SUM, POWER ON TOTAL HOURS AND MICON VERSION

Initial total of MEMORY IC, POWER ON total hours and MICON VERSION can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".
Please refer to "CONFIRMATION OF INITIAL DATA" when SUM DATA is not corresponding.

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(8)** on the remote control for more than 2 seconds.
4. After the confirmation of each check sum, turn off the power.

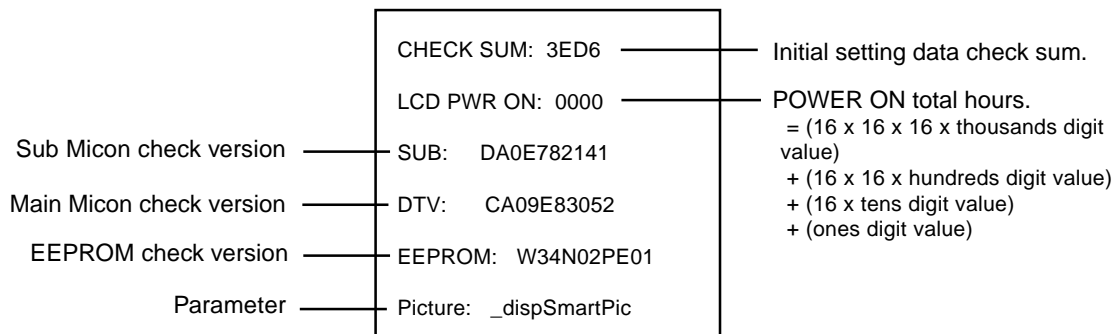NOTE: The each item value might be different according to each set.

CHECK SUM: 3ED6 ———————— Initial setting data check sum.

LCD PWR ON: 0000 ———————— POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

Sub Micon check version ———— SUB: DA0E782141

Main Micon check version ———— DTV: CA09E83052

EEPROM check version ———— EEPROM: W34N02PE01

Parameter ———— Picture: _dispSmartPic

FIG. 1

CONFIRMATION OF INITIAL DATA

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to INITIAL SETTING TABLE (Attached "INITIAL DATA").

1. Turn on the POWER, and set to the TV mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 2 seconds. ADDRESS and DATA should appear as **FIG 2**.

ADDRESS   DATA

INIT : 0001 0082

SUB: DA0E782141

DTV: CA09E83052

EEPROM: W34N02PE01
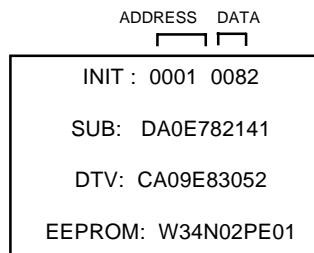
FIG. 2

4. ADDRESS is now selected and should "blink". Using the UP/DOWN buton on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press LEFT/RIGHT button to select DATA. When DATA is selected, it will "blink".
6. Again, step through the DATA using UP/DOWN button until required DATA value has been selected.
7. Pressing LEFT/RIGHT button will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 6 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.
10. Turn on the POWER, and set to the TV mode.
11. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 2 seconds.
12. After the finishing of the initializing of shipping, the unit will turn off automatically.
The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

• Use an isolation transformer when performing any service on this chassis.
• When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
• When you exchange IC and Transistor with a heat sink, apply silicon grease **(YG6260M)** on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Pattern Generator

On-Screen Display Adjustment

1. Set the VOLUME to minimum.
2. Press the VOL. DOWN button on the set and the channel button **(9)** on the remote control for more than 2 seconds to display adjustment mode on the screen as shown in **Fig. 1-1**.

```
                        TV
                        s.stretch
                        480i




Function ——  03  R DRIVE (N)      8  —— Step No.
```

Fig. 1-1
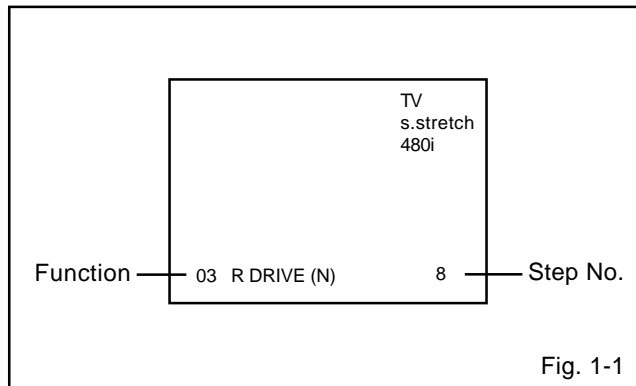
3. Use the UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 1-2**.
4. Press the MENU button on the remote control to end the adjustments.
5. To display the adjustment screen for TV, AV, COMPONENT, HDMI and PC mode, press the INPUT button on the remote control.
6. Receive the DIGITAL broadcasting.
7. To display the adjustment screen for DTV mode, select the digital channel.
8. Press the VOL.DOWN button on the set and the channel **(9)** on the remote control for more than 2 seconds.

NO.	FUNCTION	NO.	FUNCTION
03	R DRIVE(N)	31	BAK LIGHT MIN
04	R CUTOFF(N)	32	BRIGHTNESS CENT
05	G DRIVE(N)	33	BRIGHTNESS MAX
06	G CUTOFF(N)	34	BRIGHTNESS MIN
07	B DRIVE(N)	35	TINT
08	B CUTOFF(N)	36	SHARP H1 MAX
09	R DRIVE(C)	37	SHARP H1 MIN
10	R CUTOFF(C)	38	SHARP H2 MAX
11	G DRIVE(C)	39	SHARP H2 MIN
12	G CUTOFF(C)	40	SHARP V1 MAX
13	B DRIVE(C)	41	SHARP V1 MIN
14	B CUTOFF(C)	42	CONTRAST CENTER
15	R DRIVE(W)	43	CONTRAST MAX
16	R CUTOFF(W)	44	CONTRAST MIN
17	G DRIVE(W)	45	COLOR CENTER
18	G CUTOFF(W)	46	COLOR MAX
19	B DRIVE(W)	47	COLOR MIN
20	B CUT OFF(W)	50	CONTRAST 40
29	BAK LIGHT CENT		
30	BAK LIGHT MAX		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: WHITE BALANCE

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Press the INPUT button on the remote control to set to the AV mode.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-2** and press the channel button **(03)** on the remote control to select "R DRIVE(N)".
6. Press the CH. UP/DOWN button on the remote control to select the "R DRIVE (N)", "R CUT OFF (N)", "B DRIVE (N)", "B CUT OFF (N)", "R DRIVE (C)", "R CUT OFF (C)", "B DRIVE (C)", "B CUT OFF (C)", "R DRIVE (W)","R CUT OFF (W), "B DRIVE (W)" or "B CUTOFF(W)".
7. Adjust the LEFT/RIGHT button on the remote control to whiten the R DRIVE (N), R CUT OFF (N), B DRIVE (N), B CUT OFF (N), R DRIVE (C), R CUT OFF (C), B DRIVE (C), B CUT OFF (C), R DRIVE (W) ,R CUT OFF (W), B DRIVE (W) and B CUTOFF(W) at each step tone sections equally.
8. Perform the above adjustments 6 and 7 until the white color is achieved.

ELECTRICAL ADJUSTMENTS

2-2: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of each of the adjustment item is set correctly referring below. **(TV/AV/COMPONENT/HDMI/PC/DTV)**

NO.	FUNCTION	TV	AV CVBS	AV Y/C	GAME	COMP 480i/576i	COMP 480p/576p	COMP 720p	COMP 1080i	HDMI 480i/576i	HDMI 480p/576p	HDMI 720p	HDMI 1080i	HDMI VGA	HDMI 640x480	HDMI 1280x720	PC 640*480	PC 720*400	PC 800*600	PC 1024*768	PC 1280*68	PC 1280*720	PC 852*480	PC 1360*768	PC 1280*1024	PC 1440*900	DTV 480i	DTV 480p	DTV 720p	DTV 1080i
		Step No.	Step No.	Step No.	-	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.	Step No.
3	R DRIVE (N)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
4	R CUTOFF(N)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
5	G DRIVE(N)	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
6	G CUTOFF(N)	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
7	B DRIVE(N)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
8	B CUTOFF(N)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
9	R DRIVE(C)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
10	R CUTOFF(C)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
11	G DRIVE(C)	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
12	G CUTOFF(C)	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
13	B DRIVE(C)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
14	B CUTOFF(C)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
15	R DRIVE(W)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
16	R CUTOFF(W)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
17	G DRIVE(W)	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
18	G CUTOFF(W)	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
19	B DRIVE(W)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
20	B CUTOFF(W)	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
29	BAK LIGHT CENT	50	50	50	-	50	50	50	50	50	50	50	50	50	-	-	50	50	50	50	50	50	-	50	-	-	50	50	50	50
30	BAK LIGHT MAX	100	100	100	-	100	100	100	100	100	100	100	100	100	-	-	100	100	100	100	100	100	-	100	-	-	100	100	100	100
31	BAK LIGHT MIN	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
32	BRIGHTNESS CENT	121	123	123	-	124	140	141	140	139	139	139	139	139	-	-	128	128	128	128	128	128	-	128	-	-	139	139	139	139
33	BRIGHTNESS MAX	200	200	200	-	200	200	200	200	180	180	160	160	180	-	-	140	140	140	140	140	140	-	140	-	-	200	200	200	200
34	BRIGHTNESS MIN	60	60	60	-	60	60	60	60	60	60	60	60	60	-	-	110	110	110	110	110	110	-	110	-	-	60	60	60	60
35	TINT	120	113	112	-	119	118	120	120	118	118	118	118	118	-	-	128	128	128	128	128	128	-	128	-	-	130	130	130	130
36	SHARP H1 MAX	511	511	511	-	511	511	511	511	511	511	511	511	511	-	-	511	511	511	511	511	511	-	511	-	-	511	511	511	511
37	SHARP H1 MIN	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
38	SHARP H2 MAX	511	511	511	-	511	511	511	511	511	511	511	511	511	-	-	511	511	511	511	511	511	-	511	-	-	511	511	511	511
39	SHARP H2 MIN	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
40	SHARP V1 MAX	511	511	511	-	511	511	511	511	511	511	511	511	511	-	-	511	511	511	511	511	511	-	511	-	-	511	511	511	511
41	SHARP V1 MIN	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
42	CONTRAST CENTER	108	117	123	-	94	94	94	94	94	94	101	101	94	-	-	94	94	94	94	94	94	-	94	-	-	94	94	101	101
43	CONTRAST MAX	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
44	CONTRAST MIN	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*
45	COLOR CENTER	130	130	127	-	145	170	180	180	140	140	140	140	140	-	-	128	128	128	128	128	128	-	128	-	-	140	140	140	140
46	COLOR MAX	255	255	255	-	255	255	255	255	255	255	255	255	255	-	-	255	255	255	255	255	255	-	255	-	-	255	255	255	255
47	COLOR MIN	0	0	0	-	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	-	0	-	-	0	0	0	0
50	CONT 40	*	*	*	-	*	*	*	*	*	*	*	*	*	-	-	*	*	*	*	*	*	-	*	-	-	*	*	*	*

NOTE: For the step no. with * mark, please adjust it according to the situation of the set. For the step no. with - mark, no use.