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 the standard time in the appropriate condition. (See below chart.)

Set Condition	Set Key	Remocon Key	Standard Time	Operations
TV mode	VOL. DOWN (Minimum)	0	2 sec.	Releasing of V-CHIP PASSWORD.
TV mode	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.
DVD mode (No disc)	VOL. DOWN (Minimum)	4	2 sec.	Initialization of factory DVD data. NOTE: Do not use this for normal servicing.
TV mode	VOL. DOWN (Minimum)	6	2 sec.	Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
ALL mode	VOL. DOWN (Minimum)	8	2 sec.	Check of the SUM DATA, POWER ON total hours, MICON VERSION and DIGITAL TV MICON FIRMWARE on the screen. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
ALL mode	VOL. DOWN (Minimum)	9	2 sec.	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).
DVD mode (No disc)	STOP	7	2 sec.	Releasing of PARENTAL LOCK. Refer to the "PARENTAL CONTROL - RATING LEVEL".

WHEN REPLACING EEPROM (MEMORY) IC

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

Initial total of MEMORY IC, POWER ON total hours, MICON VERSION and Digital TV MICON Firmware 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, POWER ON total hours, MICON VERSION and Digital TV MICON Firmware, turn off the power.
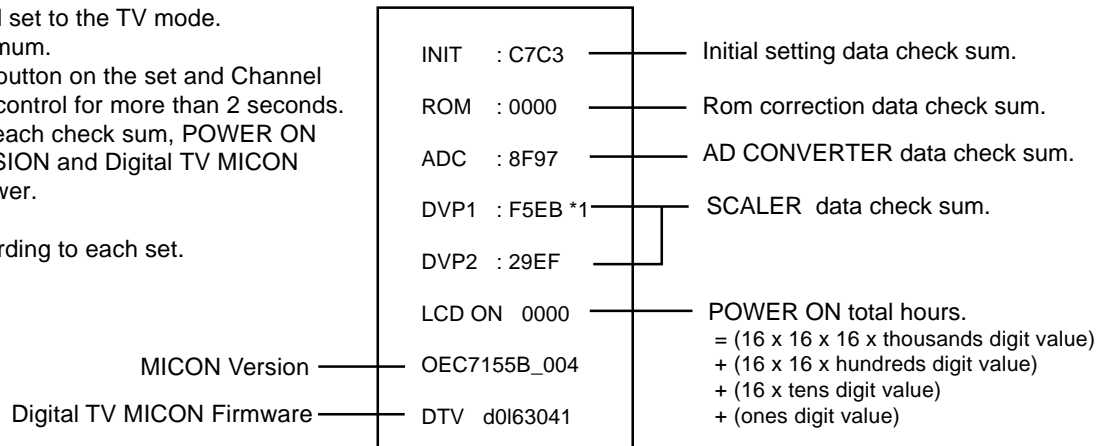
   *1 DVP1 is different according to each set.

Display	Description
INIT : C7C3	Initial setting data check sum.
ROM : 0000	Rom correction data check sum.
ADC : 8F97	AD CONVERTER data check sum.
DVP1 : F5EB *1	SCALER data check sum.
DVP2 : 29EF	
LCD ON 0000	POWER ON total hours.
OEC7155B_004	MICON Version
DTV d0l63041	Digital TV MICON Firmware

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)

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.
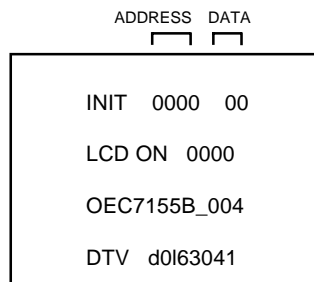
ADDRESS   DATA

INIT   0000   00

LCD ON   0000

OEC7155B_004

DTV   d0l63041

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 RIGHT/LEFT 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 RIGHT/LEFT 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 POWER on.
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.

RE-WRITE FOR DIGITAL SOFT FIRMWARE

JG176 USA HD DTV ROM
        DISC
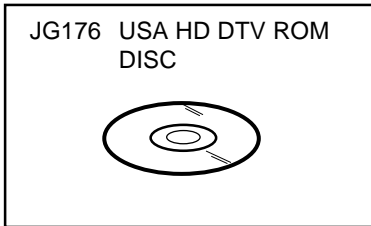
Ref. No.	Part No.	Parts Name	Remarks
JG176	APJG176095	USA HD DTV ROM DISC	Up-Date of the Firmware

NOTE: The operating manual for Re-writing is included in USA HD DTV ROM DISC (JG176).

Prepare the following tools for Up-Date of the Firmware.

1 Computer of WINDOWS2000
2 USB Flash Memory **(Use only SanDisk Cruzer Mini USB Flash Drive 256Mb)**

SET (REAR)

USB CONNECTOR
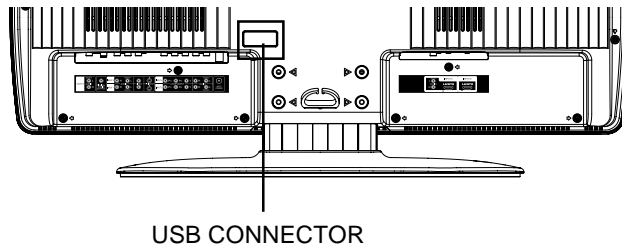
ELECTRICAL ADJUSTMENTS

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 damage to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Pattern Generator

2. BASIC ADJUSTMENTS

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. 2-1**.
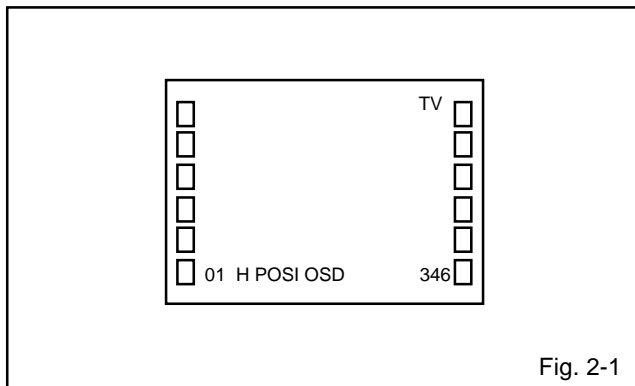

Fig. 2-1

3. Use the UP/DOWN button or Channel button **(0-9)** on the remote control to select the options shown in **Fig. 2-2**.
4. Press the MENU button on the remote control to end the adjustments.
5. To display the adjustment screen for AV, YUV, HDMI mode, press the INPUT button on the remote control to set to the AV, YUV, HDMI mode. 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
01	H POSI OSD	22	H POSI 60Hz
02	V POSI OSD	24	V POSI 60Hz
03	R DRIVE (N)	25	BAK LIGHT CENT
04	R CUTOFF (N)	26	BAK LIGHT MAX
05	G DRIVE (N)	27	BAK LIGHT MIN
06	G CUTOFF (N)	28	BRIGHT CENT
07	B DRIVE (N)	29	BRIGHT MAX
08	B CUTOFF (N)	30	BRIGHT MIN
09	R DRIVE (C)	31	TINT
10	R CUTOFF (C)	35	CONTRAST CENTER
11	G DRIVE (C)	36	CONTRAST MAX
12	G CUTOFF (C)	37	CONTRAST MIN
13	B DRIVE (C)	38	COLOR CENT
14	B CUTOFF (C)	39	COLOR MAX
15	R DRIVE (W)	40	COLOR MIN
16	R CUTOFF (W)	63	CONTRAST 40
17	G DRIVE (W)	64	BRIGHT (3F54)
18	G CUTOFF (W)	65	CONTRAST (3F55)
19	B DRIVE (W)	66	SRC TOP
20	B CUTOFF (W)	67	DFEA VIMGVT

Fig. 2-2

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. 1-1** and press the channel button **(03)** on the remote control to select "R DRIVE (N)".
6. Press the UP/DOWN button on the remote control to select the "R CUTOFF (N)", "B DRIVE (N)", "B CUTOFF (N)", "R DRIVE (C)", "R CUTOFF (C)", "B DRIVE (C)", "B CUTOFF (C)", "R DRIVE (W)", "R CUTOFF (W)", "B DRIVE (W)" and "B CUTOFF (W)".
7. Adjust the RIGHT/LEFT button on the remote control to whiten the R CUTOFF (N), B DRIVE (N), B CUTOFF (N), R DRIVE (C), R CUTOFF (C), B DRIVE (C), B CUTOFF (C), R DRIVE (W), R CUTOFF (W), B DRIVE (W) and B CUTOFF (W) at each step tone sections equally.
8. Perform the above adjustments 5 and 6 until the white color is looked like a white.

ELECTRICAL ADJUSTMENTS

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

Please check if the fixed values of each of the adjustment items are set correctly referring below. **(TV/AV/YUV/HD-MI)**

NO.	FUNCTION	TV	TV 720p	AV	AV (S)	YUV 480i	YUV 480p	YUV 720p	YUV 1080i	HD-MI 480i	HD-MI 480p	HD-MI 720p	HD-MI 1080i	VGA
		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.
1	H POSI OSD	346	346	346	346	346	346	346	346	346	346	346	346	346
2	V POSI OSD	83	83	83	83	83	83	83	83	83	83	83	83	83
3	R DRIVE (N)	---	137	---	---	138	136	137	137	137	137	137	137	137
4	G CUTOFF (N)	---	129	---	---	127	130	129	129	130	130	130	130	130
5	G DRIVE (N)	128	128	128	128	128	128	128	128	128	128	128	128	128
6	G CUTOFF (N)	128	128	128	128	128	128	128	128	128	128	128	128	128
7	B DRIVE (N)	---	108	---	---	107	106	108	108	107	107	107	107	107
8	B CUTOFF (N)	---	126	---	---	127	128	126	126	127	127	127	127	127
9	R DRIVE (C)	---	134	---	---	134	135	134	134	135	135	135	135	135
10	R CUTOFF (C)	---	129	---	---	127	128	129	129	128	128	128	128	128
11	G DRIVE (C)	128	128	128	128	128	128	128	128	128	128	128	128	128
12	G CUTOFF (C)	128	128	128	128	128	128	128	128	128	128	128	128	128
13	B DRIVE (C)	---	130	---	---	128	129	130	130	130	130	130	130	130
14	B CUTOFF (C)	---	125	---	---	127	125	125	125	124	124	124	124	124
15	R DRIVE (W)	---	159	---	---	160	160	159	159	159	159	159	159	159
16	R CUTOFF (W)	---	128	---	---	127	128	128	128	128	128	128	128	128
17	G DRIVE (W)	128	128	128	128	128	128	128	128	128	128	128	128	128
18	G CUTOFF (W)	128	128	128	128	128	128	128	128	128	128	128	128	128
19	B DRIVE (W)	---	81	---	---	82	81	81	81	81	81	81	81	81
20	B CUTOFF (W)	---	128	---	---	127	128	128	128	128	128	128	128	128
22	H POSI 60Hz	276	320	276	276	276	134	322	122	266	134	284	228	156
22	H POSI (SIDE BAR)	284	322	284	284	284	140	---	---	274	140	---	---	160
24	V POSI 60Hz	23	63	23	23	34	34	55	38	35	34	54	38	34
25	BAK LIGHT CENT	128	128	128	128	128	128	128	128	128	128	128	128	128
26	BAK LIGHT MAX	255	255	255	255	255	255	255	255	255	255	255	255	255
27	BAK LIGHT MIN	00	00	00	00	00	00	00	00	00	00	00	00	00
28	BRIGHT CENT	126	126	126	126	126	126	126	126	126	126	126	126	126
29	BRIGHT MAX	156	156	156	156	156	156	156	156	156	156	156	156	156
30	BRIGHT MIN	70	70	70	70	70	70	70	70	70	70	70	70	70
31	TINT	108	128	108	110	115	122	122	122	122	132	131	132	132
35	CONTRAST CENTER(N)	---	108	---	---	163	107	108	108	113	113	113	113	113
36	CONTRAST MAX(N)	---	148	---	---	223	146	148	148	155	155	155	155	155
37	CONTRAST MIN(N)	50	50	50	50	50	50	50	50	50	50	50	50	50
38	COLOR CENT	90	115	100	96	83	115	115	115	77	77	77	74	77
39	COLOR MAX	127	127	127	127	127	127	127	127	127	127	127	127	127
40	COLOR MIN	00	00	00	00	00	00	00	00	00	00	00	00	00
63	CONTRAST 40	---	142	---	---	215	140	142	142	149	149	149	149	149
64	BRIGHT (3F54)	---	128	---	---	120	126	128	128	113	113	113	113	113
65	CONTRAST (3F55)	---	180	---	140	182	180	180	122	122	122	122	122	122
66	SRC TOP(STRECH)	20	20	20	20	20	20	20	20	20	20	20	20	20
66	SRC TOP(SIDE BAR)	20	20	20	20	20	20	---	---	20	20	---	---	20
66	SRC TOP(CINEMA WIDE1)	18	20	18	18	20	20	---	---	20	20	---	---	20
66	SRC TOP(ZOOM)	43	43	43	43	43	43	---	---	43	43	---	---	43
66	SRC TOP(S.STRECH)	26	26	26	26	26	26	---	---	26	26	---	---	26
67	DEFA VIMGVT(STRECH)	20	25	20	20	20	43	26	24	20	44	32	24	42
67	DEFA VIMGVT(SIDE BAR)	20	25	20	20	20	43	---	---	20	43	---	---	42
67	DEFA VIMGVT(CINEMA WIDE1)	20	28	20	20	20	44	---	---	20	44	---	---	42
67	DEFA VIMGVT(ZOOM)	50	28	50	50	50	104	---	---	50	104	---	---	102
67	DEFA VIMGVT(S.STRECH)	26	25	26	26	26	56	---	---	26	56	---	---	55