3 Alignments and Adjustments

3-1 General Alignment Instuction

1. Usually, a color LCD-TV needs only slight touch-up adjustment upon installation.
   Check the basic characteristics such as height, horizontal and vertical sync.
2. Use the specified test equipment or its equivalent.
3. Correct impedance matching is essential.
4. Avoid overload. Excessive signal from a sweep generator might overload the front-end
   of the TV. When inserting signal markers, do not allow the marker generator to distort test result.
5. Connect the TV only to an AC power source with voltage and frequency as specified on
   the backcover nameplate.
6. Do not attempt to connect or disconnect any wire while the TV is turned on. Make sure
   that the power cord is disconnected before replacing any parts.
7. To protect aganist shock hazard, use an isolation transform.

3-2 Factory Mode Adjustments

3-2-1 Entering Factory Mode

To enter 'Service Mode' Press the remote -control keys in this sequence :
- If you do not have Factory remote - control

| Power OFF | → | MUTE | → | 1 | → | 8 | → | 2 | → | Power On |
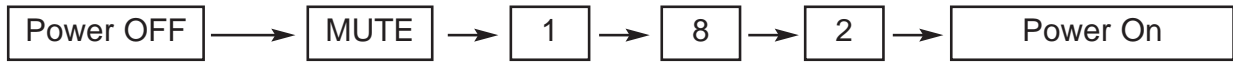
3-2-2 How to Access Service Mode
- Using the Customer Remote

1.Turn the power off and set to stand-by mode

2.Press the remote buttons in this order; POWER OFF-MUTE-1-8-2-POWER ON to turn the set on.

3.The set turns on and enters service mode.

4.Press the Power button to exit and store data in memory.

　※ If you fail to enter service mode, repeat steps 1 and 2 above.

5.Initial SERVICE MODE DISPLAY State

HDMI/DTV HD	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

※"T-BORDNUS0-0064 Dec 27 2005" and "T-BORDNUS5-0053" are firmware version.
　　The firmware version is subject to change without notice.

6.Buttons operations within Service Mode

MENU	Full Menu Display/Move to Parent Menu
Direction keys ▲/▼	Item Selection by Moving the Cursor
Direction keys ◀/▶	Data Increse/Decrese for the Selected Item
Source	Cycles through the active input source that are connected to the unit

3-2-3 Factory Data

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

AV Calibration
Comp Calibration
PC Calibration
Hdmi Calibration

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	Panel
Sub Micom Download	Mute
	CH Memory
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

Caption Level	16
Watchdog Enable	1
Spread Spectrum	>>
Panel Option	32AUO
PWM Dimming	Ext
NIM Version	KS1409
SIDE A/V	On
RS-232 JACK	Serial
Gamma	OFF
ACR	OFF
HSCB	BASE

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

Sub Bright(LBE)	128
R-Offset	512
G-Offset	512
B-Offset	512
Sub Contrast(LBE)	128
R-Gain	512
G-Gain	512
B-Gain	512

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

W/B Movie On/Off	Off	NOR_BGain	0
Mode	Dynamic	NOR_ROffset	0
Color Tone	Cool1	NOR_BOffset	0
W1_RGain	0	C2_RGain	0
W1_BGain	0	C2_BGain	0
W1_ROffset	0	C2_ROffset	0
W1_BOffset	0	C2_BOffset	0
W2_RGain	0	Movie Contrast	70
W2_BGain	0	Movie Bright	50
W2_ROffset	0	Movie Color	25
W2_BOffset	0	Movie Sharpness	45
NOR_RGain	0		

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-B0RDNUS0-0064 Dec 27 2005	
T-B0RDNUS5-0053 [Sec:47]	

Sharpness	>>
LNA PLUS	>>
Color Manage	>>
UV Delay	>>
PGA	>>
Calibration Target	>>
CLK_A	16
CLK_B	133

H2gain	16
H4gain	4
V2gain	16
V4gain	4
Sr2gain	2
Sr4gain	0
Sl2gain	2
Sl4gain	0
Peakth1	4
Peakth2	47
Peakth3	63

Sharpness	>>
LNA PLUS	>>
Color Manage	>>
UV Delay	>>
PGA	>>
Calibration Target	>>
CLK_A	16
CLK_B	133

dB0_Peaking_th1	2
dB0_Vpeaking_th1	4
dB1_Peaking_th1	12
dB1_NoiseAmount	20
dB1_Vpeaking_th1	12
dB2_Peaking_th1	32
dB2_NoiseAmount	40
dB2_Vpeaking_th2	32
dB3_Peaking_th1	128
dB3_NoiseAmount	60
dB3_Vpeaking_th1	80

Sharpness	>>
LNA PLUS	>>
Color Manage	>>
UV Delay	>>
PGA	>>
Calibration Target	>>
CLK_A	16
CLK_B	133

DSM_Skin_Direct	Red
DSM_Skin_Enhance	0
DSM_Green_Stretch	0
DSM_Blue_Strech	0
Ss_Skin_Direct	Red
Ss_Skin_Enhance	0
Ss_Green_Stretch	0
Ss_Blue_Stretch	0

Sharpness	>>
LNA PLUS	>>
Color Manage	>>
UV Delay	>>
PGA	>>
Calibration Target	>>
CLK_A	16
CLK_B	133

U Delay	1
V Delay	1

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

Sharpness	>>
LNA PLUS	>>
Color Manage	>>
UV Delay	>>
PGA	>>
Calibration Target	>>
CLK_A	16
CLK_B	133

TCD3_Contrast	128
TCD3_Bright	40
TCD3_YC_Delay	0
ANALOG_Y_Offset	64
ANALOG_PB_Offset	128
ANALOG_PR_Offset	128
ANALOG_Y_Gain	214
ANALOG_PB_Gain	254
ANALOG_PR_Gain	254
BlackLevel	0
Bright40	25
CAGC_Target_NotUse	170
UserColor	127

Sharpness	>>
LNA PLUS	>>
Color Manage	>>
UV Delay	>>
PGA	>>
Calibration Target	>>
CLK_A	15
CLK_B	133

1st_AV_Low	0x17	2nd_AV_Low	0x 0
1st_AV_High	0xE8	2nd_AV_High	0xF5
1st_AV_Delta	0x 4	2nd_AV_Delta	0x10
1st_COMP_Low	0x F	2nd_COMP_Low	0x 0
1st_COMP_High	0xF0	2nd_COMP_High	0xF5
1st_COMP_Delta	0x 4	2nd_COMP_Delta	0x10
1st_PC_Low	0x 4	2nd_PC_Low	0x 0
1st_PC_High	0x 4	2nd_PC_High	0xF5
1st_PC_Delta	0xFF	2nd_PC_Delta	0x10
None	0x 4	2nd_HDMI_Low	0x 0
None		2nd_HDMI_High	0xF5
None		2nd_HDMI_Delta	0x10

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

PATT_SEL	0	COLOR_GAIN	129
BLACK_TILT	120	INPUT_RGBGAIN	512
BLACK_GAIN_MAX	380	INPUT_RGBOFFSET	
B_RATIO	120		
LOWER_FUNC	4		
UPPER_FUNC	7		
SKIN_EN	0		
SKIN_T_X	0		
SKIN_T_Y	0		
WHITE_EN	0		
WHITE_T_X	1700		
WHITE_T_Y	1650		

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

Carrier Mute	1
Stereo Pilot High	35
Stereo Pilot Low	16
SAP Pilot High	128
SAP Pilot Low	96
SQTH	112
Audio Delay(Analog)	60
Audio Delay(Digiatl)	0
Melody Speak Volume	7
Melody HP Volume	3

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

Checksum	[0000]

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

AGC_REF[AIR]	0x50	PACKET_ERR_THR	0x8
CR_F_GAIN[AIR]	0xD0B		
CR_L_GAIN[AIR]	0x24		
EQ_STEP[AIR]	0xB		
PILOT_GAIN[AIR]	0x1612		
AGC_REF[CABLE]	0x50		
CR_F_GAIN[CABLE]	0xD0B		
CR_L_GAIN[CABLE]	0x24		
EQ_STEP[CABLE]	0xB		
PILOT_GAIN[CABLE]	0x1		
CR_F2_GAIN[CABLE]	0x1612		

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

RF_AGC_TOP	0x8A
CR_PHASE_GAIN	0x4A
CR_PREQ_GAIN	0x1010
PILOT_GAIN	0x1
AGC_REF	0x50
EQ_CTRL	0x30E
PTL_COEFF	0x13
PTL_STEP	0x5A0

AV/S-VIDEO	
Calibration	Checksum
Option Byte	KS1406
White Balance	KS1409
W/B Movie	Dynamic Contrast
SVP-PX	EEPROM Access Count
LBE	RESET
SOUND(STV825X)	
Sub Micom Download	
T-BORDNUS0-0064 Dec 27 2005	
T-BORDNUS5-0053 [Sec:47]	

Dynamic CE	On
Dynamic Dimming	On
LBE Y_MEAN READ	

```
            AV/S-VIDEO
Calibration         Checksum
Option Byte         KS1406
White Balance       KS1409
W/B Movie           Dynamic Contrast
SVP-PX              EEPROM Access Count
LBE                 RESET
SOUND(STV825X)
Sub Micom Download
         T-BORDNUS0-0064 Dec 27 2005
           T-BORDNUS5-0053 [Sec:47]
```

Addr: 2E25, Cnt:	4	Addr: 2E16, Cnt:	1
Addr: 2900, Cnt:	1	Addr: 2E15, Cnt:	1
Addr: 2E20, Cnt:	1	Addr: 2E0D, Cnt:	1
Addr: 2E1F, Cnt:	1	Addr: 2908, Cnt:	1
Addr: 2E1E, Cnt:	1	Addr: 2907, Cnt:	1
Addr: 2E1D, Cnt:	1	Addr: 2906, Cnt:	1
Addr: 2E1C, Cnt:	1	Addr: 2905, Cnt:	1
Addr: 2E1B, Cnt:	1	Addr: 2904, Cnt:	1
Addr: 2E1A, Cnt:	1	Addr: 2903, Cnt:	1
Addr: 2E19, Cnt:	1	Addr: 2902, Cnt:	1
Addr: 2E18, Cnt:	1	Addr: 2901, Cnt:	1
Addr: 2E17, Cnt:	1	Addr: 0, Cnt:	0

```
            AV/S-VIDEO
Calibration         Checksum
Option Byte         KS1406
White Balance       KS1409
W/B Movie           Dynamic Contrast
SVP-PX              EEPROM Access Count
LBE                 RESET
SOUND(STV825X)
Sub Micom Download
         T-BORDNUS0-0064 Dec 27 2005
           T-BORDNUS5-0053 [Sec:47]
```
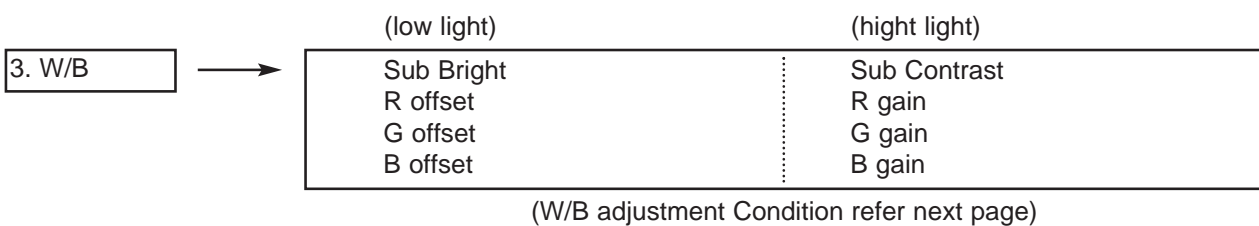
3-3 White Balance - Calibration

3-3-1 White Balance -Calibration

3-9

1. Calibration

→

DTV Calibration PC Calibration (Calibration Condition refer to next page)

3-3-2 White Balance - Adjustment

3. W/B

→

(low light)	(hight light)
Sub Bright	Sub Contrast
R offset	R gain
G offset	G gain
B offset	B gain

(W/B adjustment Condition refer next page)

3-3-3 Conditions for Measurement

1. On the basis of toshiba ABL pattern : High Light level (57 IRE)
   - INPUT SIGNAL GENERATOR : MSPG-925LTH
     * Mode NO 1 : 744X484@60 Hz
             NO 6 : 1280X720@60 Hz (Component 720P)
             NO 21 : 1024X768@60 Hz
     * Pattern NO 15 : Color bar
             NO 16 : Toshiba ABL Pattern
   NO 17 : 16 gray
2. Optical measuring device : CA210 (FL)
   Please use the MSPG-925 LTH generator for model LNR2355W,LNR2755W,LNR3255W.

3-4 White Ratio (Balance) Adjustment

1. You can adjust the white ratio in factory mode (1:Calibration, 3:White-Balance).

2. Since the adjustment value and the data value vary depending on the input source, you have to

   adjust these in CVBS, Component 1 and HDMI 1 modes.

3. The optimal values for each mode are configured by default. (Refer to Table 1, 2.)

   It varies with Panel's size and Specification.

- Equipment : CS-1000

- Pattern: Master MSPG925 #16 "ABL Pattern" as standard

    - Use other equipment only after comparing the result

    with that of the Master equipment.

- Set Aging time : 30min ↑

- Calibration and Manual setting for WB adjustment.
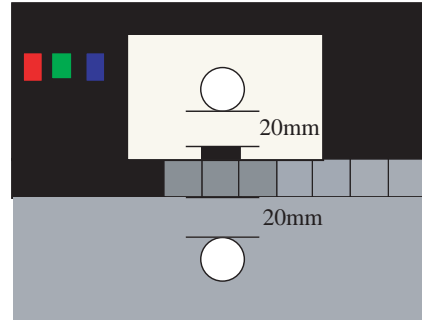
    HDMI: No Calibration   Manual adjustment at #16 pattern (720p)

    COMP: Calibration at #24 Chessboard Pattern ⟶ Manual adjustment at #16 pattern (720p)

    CVBS: Calibration at #24 Chessboard Pattern ⟶ Manual adjustment at #16 pattern (NTSC)

    PC : Calibration at #24 Chessboard Pattern ⟶ No Manual adjustment (1024x768@60Hz)

-White Balance Manual Adjustment (ABL Pattern)

		Adjustment Coordinate			
		x	y	Y (cd/m^2)	T(K) ± MPCD
CVBS	L/L	263	263	-	15000K/0
	L/L	263	263	3.8(1.1Ft)	15000K/0
Component (720p)	H/L	263	263	-	15000K/0
	L/L	263	263	4.2(1.2Ft)	15000K/0
HDMI (1080i)	H/L	263	263	-	15000K/0
	L/L	263	263	4.2(1.2Ft)	15000K/0

-Adjustment Specification

White Balance : High light (± 2), Low light (± 3)

Luminance : High light (Don't care), Low light (± 0.2 Ft/L)

3-5 Servicing Information

3-5-1 USB Download Method

3-11

1. Downloading boot code
    (1) Change the boot code's file name into "boot.bin".
    (2) Copy the "boot.bin" into the path "/bordeaux/us" in USB flash driver.
    (3) Turn off LCD TV.
    (4) Insert the USB flash driver into the service 1 jack of LCD TV.
    (5) Turn on LCD TV.
    (6) The banner osd "Updating SW..." is displayed.
    (7) The banner osd "Completed..." is displayed when the updating is completed.
    (8) Turn off and remove the USB flash driver from LCD TV
    (9) Check the program version.

2. Downloading application code
    (1) Change the application code's file name into "appl.rom".
    (2) Copy the "appl.rom" into the path "/bordeaux/us" in USB flash driver.
    (3) Turn off LCD TV.
    (4) Insert the USB flash driver into the service 1 jack of LCD TV.
    (5) Turn on LCD TV.
    (6) The banner osd "Updating SW..." is displayed.
    (7) The banner osd "Completed..." is displayed when the updating is completed.
    (8) Turn off and remove the USB flash driver from LCD TV
    (9) Check the program version.

Memo