



TFT-LCD TV

Chassis	GJA26SEU
	GJA32SEU
	GJA37SEU
	GJA40SEU
	GJA46SEU

Model	LE26S81BX
	LE32S81BX
	LE37S81BX
	LE40S81BX
	LE46S81BX

SERVICE Manual

TFT-LCD TV



Fashion Feature

- Luxurious Slim Design
- Supreme Picture Quality
- Supreme Sound Quality
- Supreme Convenience Quality
- Convenience for Users

3-2 How to Access Service Mode

3-2-1 Entering Factory Mode

1. To enter "Service Mode" Press the remote -control keys in this sequence :

- If you do not have Factory remote - control



- If you have Factory remote - control



- The buttons are active in the service mode.

1. Remote - Control Key : Power, Arrow Up, Arrow Down, Arrow Left
Arrow Right, Menu, Enter, Number Key(0~9)
2. Function - Control Key : Power, CH +, CH -, VOL +, VOL -, Menu, TV/VIDEO(Enter)

3-2-2 Panel Check

Specially for LE26,32R7**, You have to check Panel Maker Because of different adjustments as follows.
First of all, Check the label rating!

1) Label Rating File



If Panel Mark is "A", Set the factory mode indicating as follows.

Panel BOM(Bill of material) : BN07-00289A
Connector between Panel and Power Unit
: BN39-00603M (300mm)

* Option Byte

1. Gamma "AUO"
2. Panel Option "AUO"

If Panel Mark is "S" or not printed.
Set the factory mode indicating as follows.

Panel BOM(Bill of material) : BN07-00247A
Connector between Panel and Power Unit
: BN39-00603M (300mm)

* Option Byte

1. Gamma "AMLCD"
2. Panel Option "AMLCD_INT"

If Panel Mark is "C" , Set the Factory mode indicating as follows.

Panel BOM(Bill of Material) : BN07-00207A
Connecotor between Panel and Powe Unit :
BN39-00659A(200mm)

* Option Byte

1. Gamma " CMO "
2. Panel Option " CMO "

Others are same shown below.

3-3 Factory Data

1. Calibration
 2. Option Table XXXX XXXX
 3. W/B
 4. W/B Movie
 5. MTK8202
 6. FBE2 option
 7. Sound
 8. Sound AMP
 9. YC Delay
 10. Adjust
 11. Bus Stop
 12. Password 80 80 80 80
 13. Checksum 0000
 14. Dynamic Contrast
 15. Spread Spectrum
 16. Reset
 HDCP Write Success..(or Failure..)
 T_JSMMP EU-1000 (Main Micom Ver) Month/ Day / Year / Hour/ Min./Sec.
 T-BRPMNSAS-1000 (Sub Micom Ver. Only BDX Plus)
 Panel On Time(Hour) XXXXX

1. Calibration
 - 1) AV Calibration
 - 2) DTV Calibration
 - 3) PC Calibration
 - 4) HDMI Calibration

2. Option Byte

NO	item	CMO 32"
1	Panel Inch	32
2	Panel Vender	CMO
3	Dimming	INTERNAL
4	Gamma	Off
5	Auto Power	On
6	Hotel Mode	Off
7	Shop Mode	Off
8	High Devi	Off
9	Carrier Mute	Off
10	TTX	On
11	TTX List	Flof
12	TTX Group	User OSD
13	TTX ATM	Off
14	HDMI Select	2HDMI
15	Volume Table	Small
16	Sound Wattage	LCD 10W
17	HP Position	Side
18	Language	English
19	HP Detect	Active High

3 Alignments and Adjustments

3. White Balance

No	item	RF/AV	Component
1	SubBright		
2	Roffset		
3	Goffset		
4	Boffset		
5	SubContrast		
6	RGain		
7	GGain		
8	BGain		
9/10	Low Light		
	High Light		

4. W/B Movie

NO	item	RF/AV/S_video
1	Service P Mode	Dynamic
2	Service Color Tone	Cool1
3	MSub Brightness	128
4	MSub Contrast	128
5	Warm1 Red Gain	143
6	Warm1 Blue Gain	111
7	Warm1 Red Offset	128
8	Warm1 Blue Offset	127
9	Warm2 Red Gain	142
10	Warm2 Blue Gain	101
11	Warm2 Red Offset	127
12	Warm2 Blue Offset	128
13	Normal Red Gain	134
14	Normal Blue Gain	121
15	Normal Red Offset	127
16	Normal Blue Offset	126
17	Cool2 Red Gain	128
18	Cool2 Blue Gain	134
19	Cool2 Red Offset	128
20	Cool2 Blue Offset	128
21	Mov. Contrast	80
22	Mov. Brightness	50
23	Mov. Color	25
24	Mov. Sharpness	45

5. MTK8202

1) Cal. Adjustment

NO	item	value
1	R_Offset	30
2	G_Offset	32
3	B_Offset	23
4	R_Gain	77
5	G_Gain	85
6	B_Gain	89
7	Y_Offset	21
8	Cb_Offset	39
9	Cr_Offset	41
10	Y_Gain	41
11	Cb_Gain	41
12	Cr_Gain	41
13	CVBS Offset	55
14	CVBS Gain	52
15	CVBS U	0
16	CVBS V	0
17	HDMI R_Gain Ref.	229
18	HDMI G_Gain Ref.	229
19	HDMI B_Gain Ref.	229
20	HDMI R_Offset Ref.	16
21	HDMI G_Offset Ref.	16
22	HDMI B_Offset Ref.	16
23	2nd Cal Error AV	2
24	2nd Cal Error DTV	2
25	LVDS Control	55

2) Cal. Target

NO	item	value
1	Black Target	1
2	White Target	235

3) Scart RGB

NO	item	ALL Mode
1	SC1_R_Offset	115
2	SC1_G_Offset	115
3	SC1_B_Offset	115
4	SC1_R_Gain	70
5	SC1_G_Gain	70
6	SC1_B_Gain	70

3 Alignments and Adjustments

4) Picture enhance 1

NO	item	value
1	Dynamic Contrast	on
2	Dynamic CE	on
3	Dynamic Dimming	on
4	Black_Min	14
5	Black_Middle	26
6	Black_Max	36
7	Cut Off	4
8	Upper	28
9	Center L Lmt	6
10	Center R Lmt	26
11	Ugain Max	16
12	Lgain Max	8

5) Picture enhance 2

NO	item	value
1	PreLGain_Main	64
2	PreMGain_Main	64
3	PreHGain_Main	64
4	PreLGain_Sub	64
5	PreMGain_Sub	64
6	PreHGain_Sub	64
7	LocalLGain	72
8	LocalMGain	80
9	LocalHGain	64
10	PostLGain	72
11	PostMGain	72
12	PostHGain	84
13	Vgain	0
14	Sub Color	28

6) FBE2 option

NO	item	value
1	Patt-Sel	0
2	B-Slope gain	64
3	B-Tilt min	20
4	B-Tilt max	120
5	B-Tilt slpe	128
6	Lfunc-Basis	75
7	Hfunc-Basis	88
8	Mean-Offset1	75
9	Mean-Offset2	150
10	Mean-Slope	41
11	Input-Offset	128
12	Input-gain	128
13	ACR-Offset	30
14	ACR-Th1	30
15	ACR-Th2	100
16	Skin-Enable	On
17	Skin-Tu	22
18	Skin-Tv	22
19	M-Skin-Tu	128
20	M-Skin-Tv	128
21	Sub color	143
22	M-Au-Sub color	128
23	M-Wi-Sub color	128

3 Alignments and Adjustments

7) Sound

NO	item	value
1	AM Mute	Off
2	AM_mute Th_High	9
3	AM_mute Th_Low	8
4	FM Mute	Off
5	FM_mute Th_High	34
6	FM_mute Th_Low	32
7	Correct Threshold	6
8	Sync Loop	201
9	Error Threshold	8
10	Parity Error Thrd	48
11	Every Num Frames	512
12	Num of Check	10
13	Num of Double Chk	10
14	Mono Weight	1
15	Stereo Weight	1
16	Dual Weight	1
17	M2S Threshold	10
18	S2M Threshold	10
19	NICAM FINE VOL	20
20	FM FINE VOL	20
21	AM FINE VOL	19
22	FINE TUNE VOL	20
23	SC1 Fine Vol	21
24	SC2 Fine Vol	21
25	Output Matrix	Bypass
26	Speaker EQ	Off

8) SOUND AMP

1	Amp Volume	17
2	Speaker EQ	OFF

9) YC Delay

NO	item	TV/AV/S_Video
1	RF PAL-B/G	6
2	RF PAL-D/K	5
3	RF PAL- I	5
4	RF PAL- L/L'	5
5	RF SECAM-B/G	7
6	RF SECAM-D/K	5
7	RF SECAM-I	5
8	RF SECAM-L/L'	5
9	RF NTSC3.58	5
10	RF NTSC4.43	6
11	AV PAL	3
12	AV SECAM	7
13	AV NTSC 3.58	6
14	AV NTSC4.43	6
15	AV PAL60	5

9. Adjust

1) User Control Initial

NO	item	value
1	TTX PWM	30
2	Dyn. Contrast	100
3	Dyn. Brightness	45
4	Dyn. Color	55
5	Dyn. Sharpness	75
6	Std. Contrast	80
7	Std. Brightness	50
8	Std. Color	55
9	Std. Sharpness	50
10	Melody Volume	20
11	Brightness Center	38
12	Contrast Gain	64
13	MTK_Dyn.Contrast	On
14	DSP Recovery	Off
15	Channel Table	Suwon
16	Video Mute Time	10

3 Alignments and Adjustments

2) LNA PLUS

NO	item	value
1	LNA Plus	On
2	RF_dB0_TH	5
3	RF_dB1_TH	15
4	RF_dB2_TH	43
5	RF_dB3_TH	64
6	NR1_Coring	16
7	NR2_Coring	32
8	NR3_Coring	32
9	NR4_Coring	32

3) Hotel Option

NO	item	value
1	Power On Channel	1
2	Power On Band	Air
3	Power On Volume	10
4	Max Volume	100
5	Local Key Lock	OFF
6	Power On Source	TV

10. Bus Stop

NO	item	value
1	Main Loop	Off
2	Eeprom	Off
3	Tuner	Off
4	Normal	Off
5	Watch Dog	On

11. Password : 80 80 80 80

12. Checksum XXXX

13. Dynamic Contrast

NO	item	value
1	Dynamic CE	On
2	Dynamic Dimming	On
3	FBE2 Y_MEAN Read	50

14. Spread Spectrum

NO	input resolution	value
1	Spread Spectrum	On
2	Step_480I/576I	40
3	Range_480I/576I	50
4	Step_480P/576P	30
5	Range_480P/576P	50
6	Step_720P	30
7	Range_720P	45
8	Step_1080I	30
9	Range_1080I	45
10	Step_640_480	40
11	Range_640_480	50
12	Step_800_600	40
13	Range_800_600	55
14	Step_1024_768	40
15	Range_1024_768	55
16	Step_1360_768	40
17	Range_1360_768	55

15. Reset

3-4 Service Adjustment

3-4-1 White Balance - Calibration

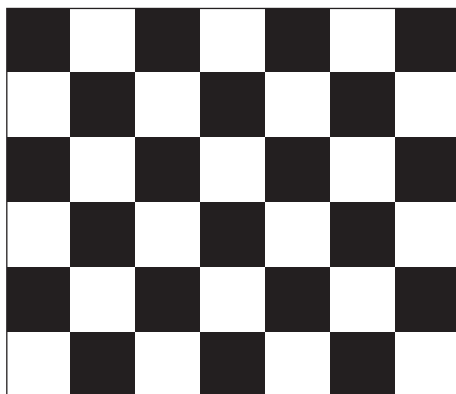
If picture color is wrong, do calibration first.

Equipment : CA210, Patten : chess pattern

Execute calibration in Factory Mode

Source AV : PAL composite, Component : 1280*720/60Hz

PC : 1024*768/60Hz



(chess patten)

3-4-2 White Balance - Adjustment

If picture color is wrong, check White Balance condition.

Equipment : CA210, Patten : Toshiba

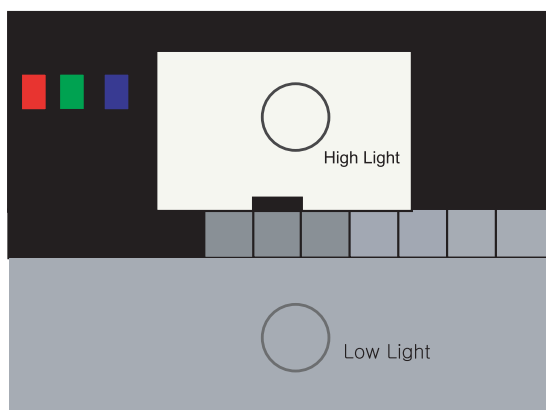
Adjust W/B in Factory Mode

Sub brightness and R/G/B Offset controls low light region

Sub contrast and R/G/B Gain controls high light region

Source AV : PAL composite, Component : 1280*720/60Hz

HDMI[DVI] : 1280*720/60Hz



[Test Pattern : MSPG-945 Series Pattern #16]

*Color temperature

1500K +/-500, -6 ~-20 MPCD

*Color coordinate

H/L : 267/263 +/- 2 35.0 Ft +/- 2.0Ft

L/L : 270/260 +/- 3 1.5 Ft +/- 0.2Ft

Toshiba Patten

3-4-3 Conditions for Measurement

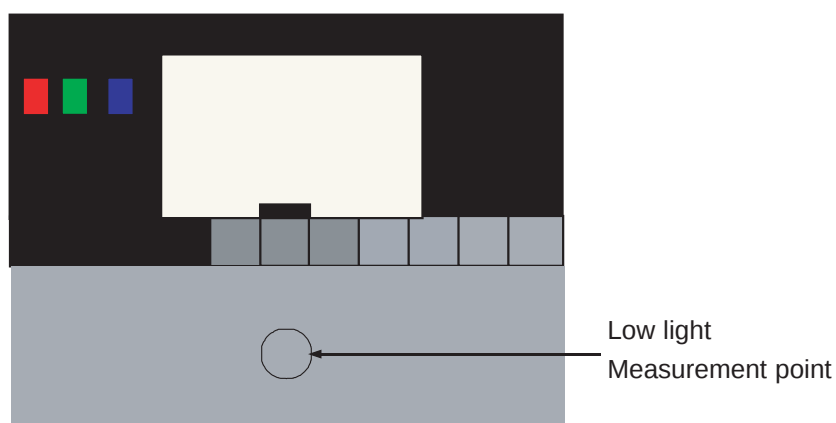
1. On the basis of toshiba ABL pattern : High Light level (57 IRE)
 - INPUT SIGNAL GENERATOR : MSPG-925LTH
 - * Mode NO 2 : 744X484@60 Hz
 - NO 6 : 1280X720@60 Hz
 - NO 21 : 1024X768@60 Hz
 - * Pattern NO 36 : 16 Color Pattern
 - NO 16 : Toshiba ABL Pattern
2. Optical measuring device : CA210 (FL)

Please use the MSPG-925 LTH generator for model LE26M51B/LE32M51B/LE40M51B/LE46M51B.

3-4-4 Method of Adjustment

1. Adjust the white balance of AV, Component and DVI Modes.
 - (AV → Component)
 - a) Set the input to the mode in which the adjustment will be made
(RF → DTV → PC → DVI).
 - * Input signal - VIDEO Mode : Model #2 (744*484 Mode), Pattern #16
 - DTV,DVI Mode : Model #6 (1280*720 Mode), Pattern #16
 - HDMI Mode: Model #6(1280*720 Mode), Pattern #16
 - b) Enter factory color control, confirm the data.
 - c) Adjust the low light. (Refer to table 1, 2 in adjustment position by mode)
 - Adjust sub - Brightness to set the 'Y' value.
 - Adjust red offset ('x') and blue offset ('y') to the color coordinates.

Picture 4-2 Toshiba ABL Pattern



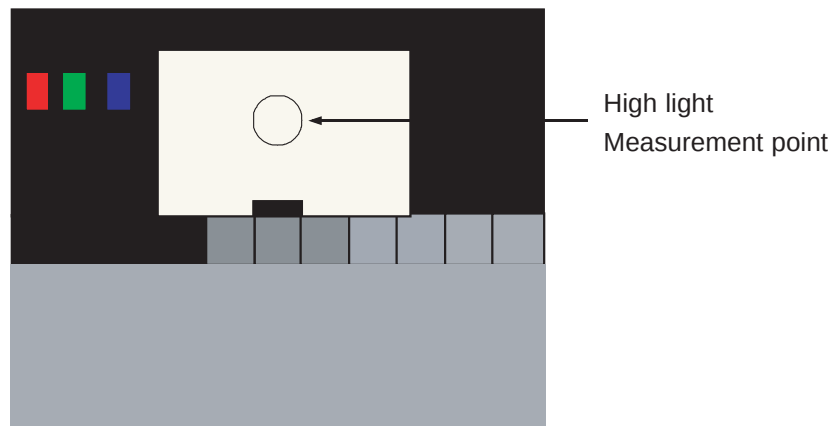
* Do not adjust green offset data.

- d) Adjust the high light. (Refer to table 1, 2 in adjustment position by mode)
 - Adjust red gain ('x') and blue gain ('y') to the color coordinates.
 - * Do not adjust the green gain and sub-contrast (Y) data.

3 Alignments and Adjustments

- d) Adjust the high light. (Refer to table 1, 2 in adjustment position by mode)
- Adjust red gain ('x') and blue gain ('y') to the color coordinates.
 - * Do not adjust the green gain and sub-contrast (Y) data.

Picture 4-3 Toshiba ABL Pattern



3-5 Software Upgrade

3-5-1 How to Update Flash ROM

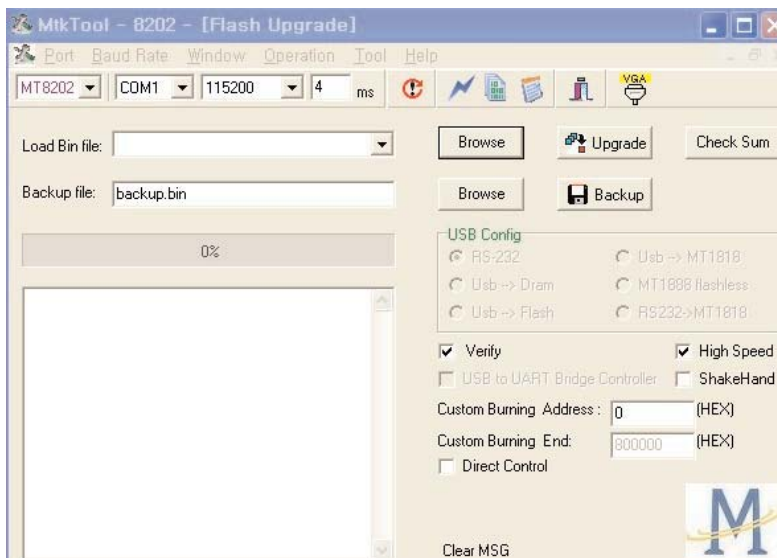
1. Install the Flash Downloader

Connect Set (Service Jack) and Jig Cable to execute Program Update.



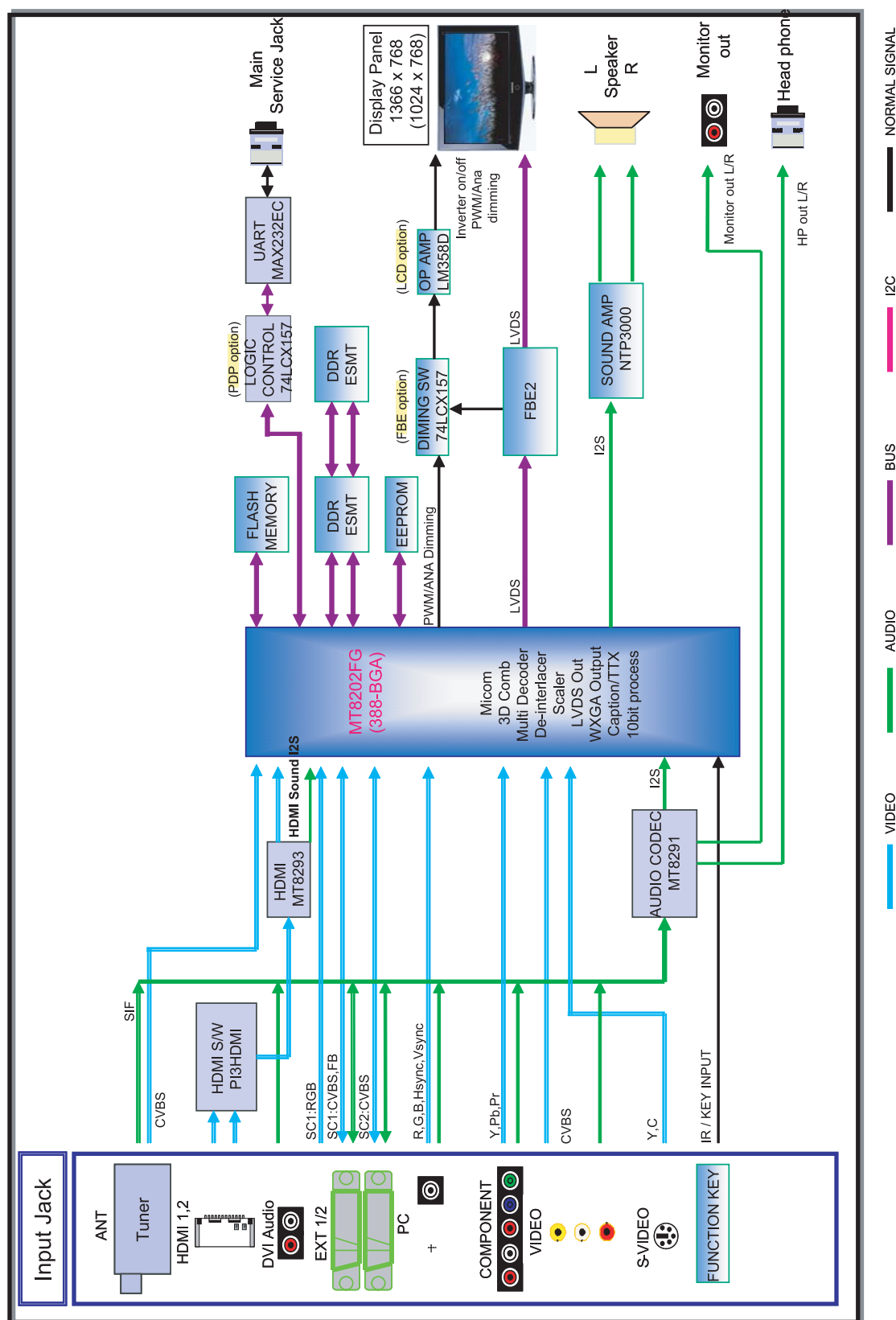
2. Flash Downloader program update

- Before Turning on the set, Click "connect" which is under of OSD Screen!
- Turn on the Set.



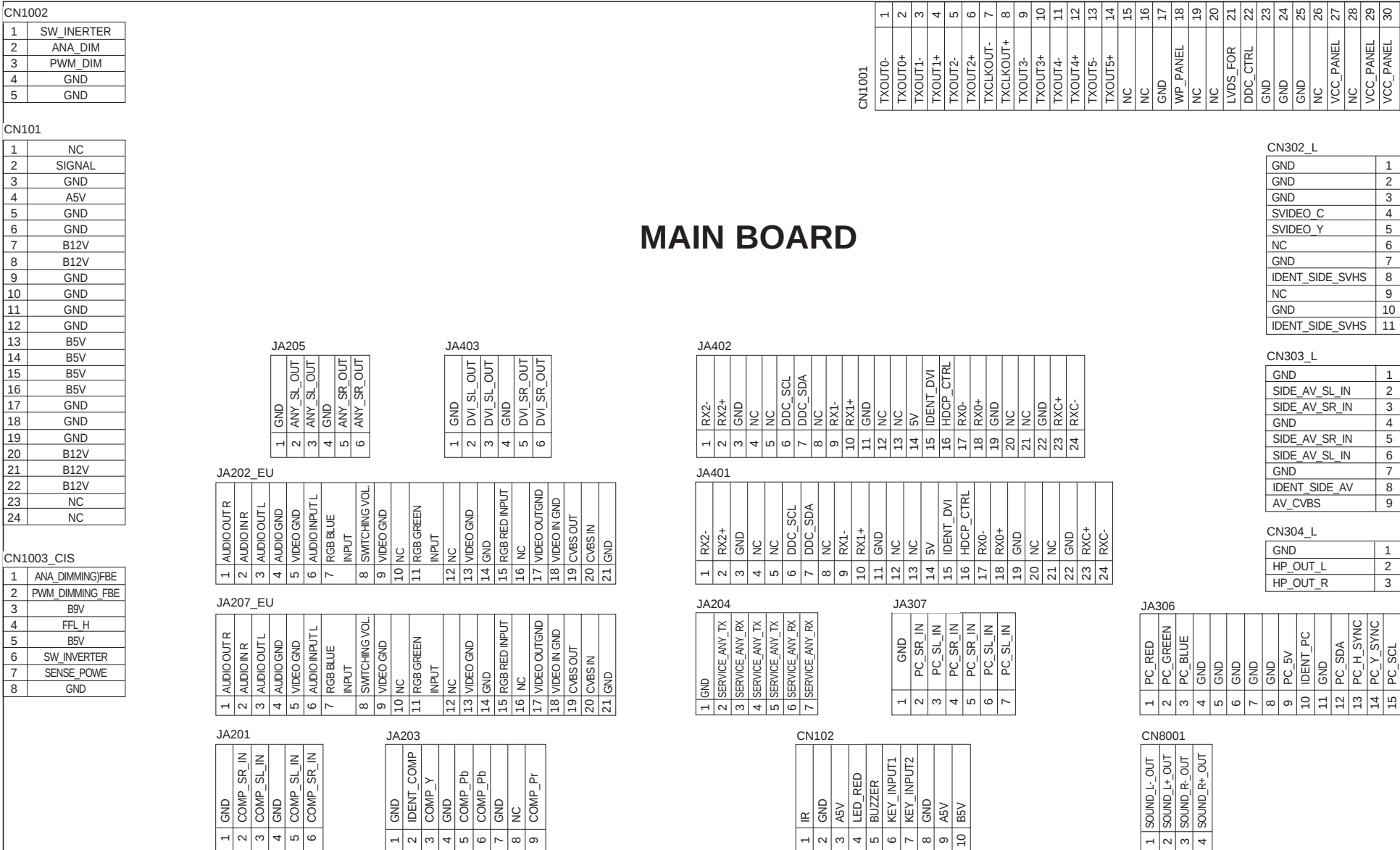
7 Block Diagram

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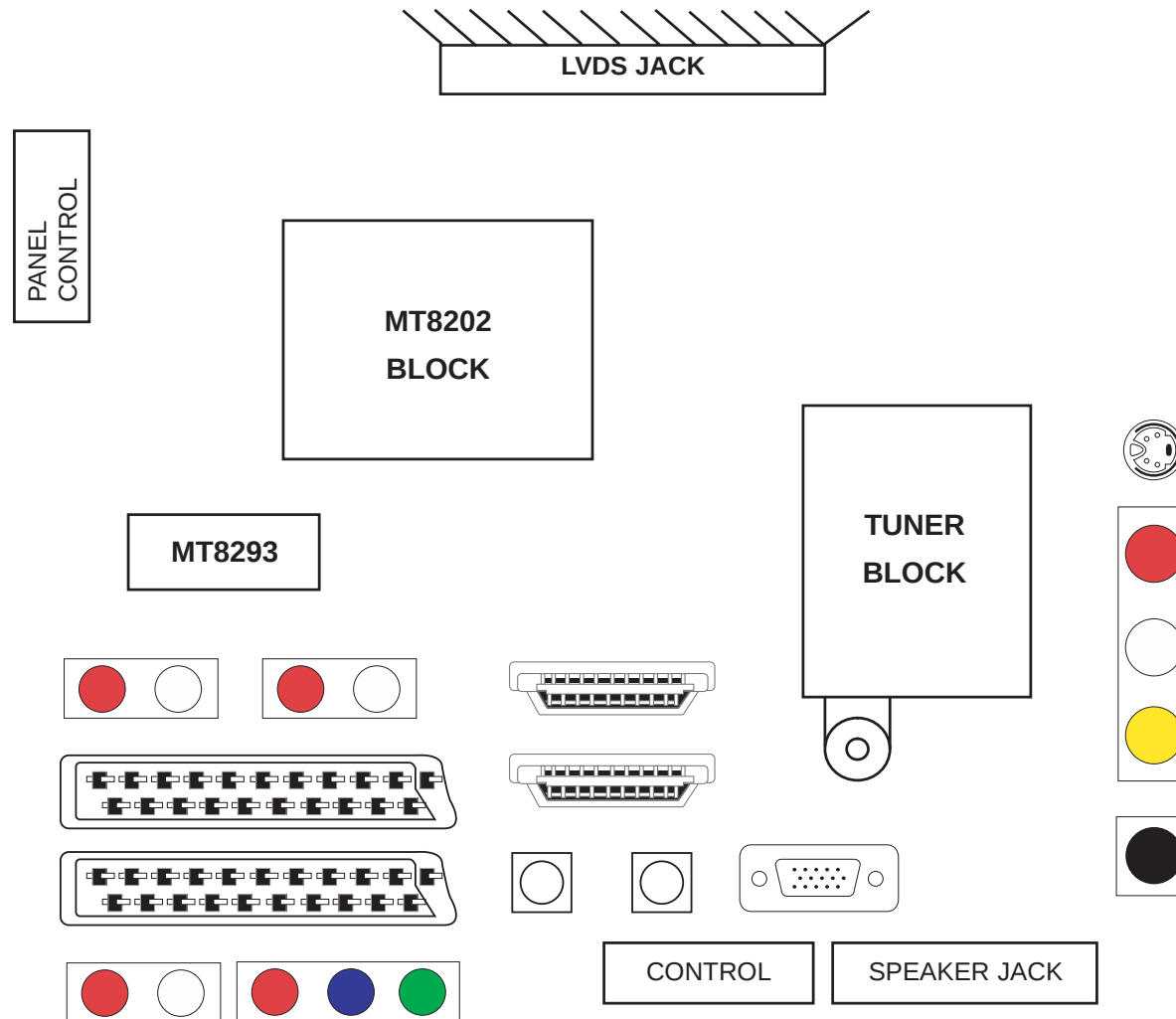


8 Wiring Diagram

8-1 Wiring Diagram



8-2 Main Board Layout



8-3 PIN characteristic

CN101- Main Board power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12
NAME	NC	SIGNAL	GND	A5V	GND	GND	B12V	B12V	GND	GND	GND	GND
PIN	13	14	15	16	17	18	19	20	21	22	23	24
NAME	B5V	B5V	B5V	B5V	GND	GND	GND	B12V	B12V	B12V	NC	NC

CN8001-SPEAKER CONNECTOR

PIN	1	2	3	4
NAME	SOUND_L-_OUT	SOUND_L+_OUT	SOUND_R-_OUT	SOUND_R+_OUT

CN102-Front control

PIN	1	2	3	4	5
NAME	IR	GND	A5V	LED_RED	BUZZER
PIN	6	7	8	9	10
NAME	KEY_INPUT1	KEY_INPUT2	GND	A5V	B5V

Function Define

- A5V Front control board power supply
- KEY INPUT1,2 Key control, from the menu, change up/down Etc.
- IR Remote control signal
- LED_RED Control the timing and standby LED color

CN501-panel control

PIN	1	2	3	4	5
NAME	SW_inverter	Ana_dimming	PWM_dimming	GND	GND

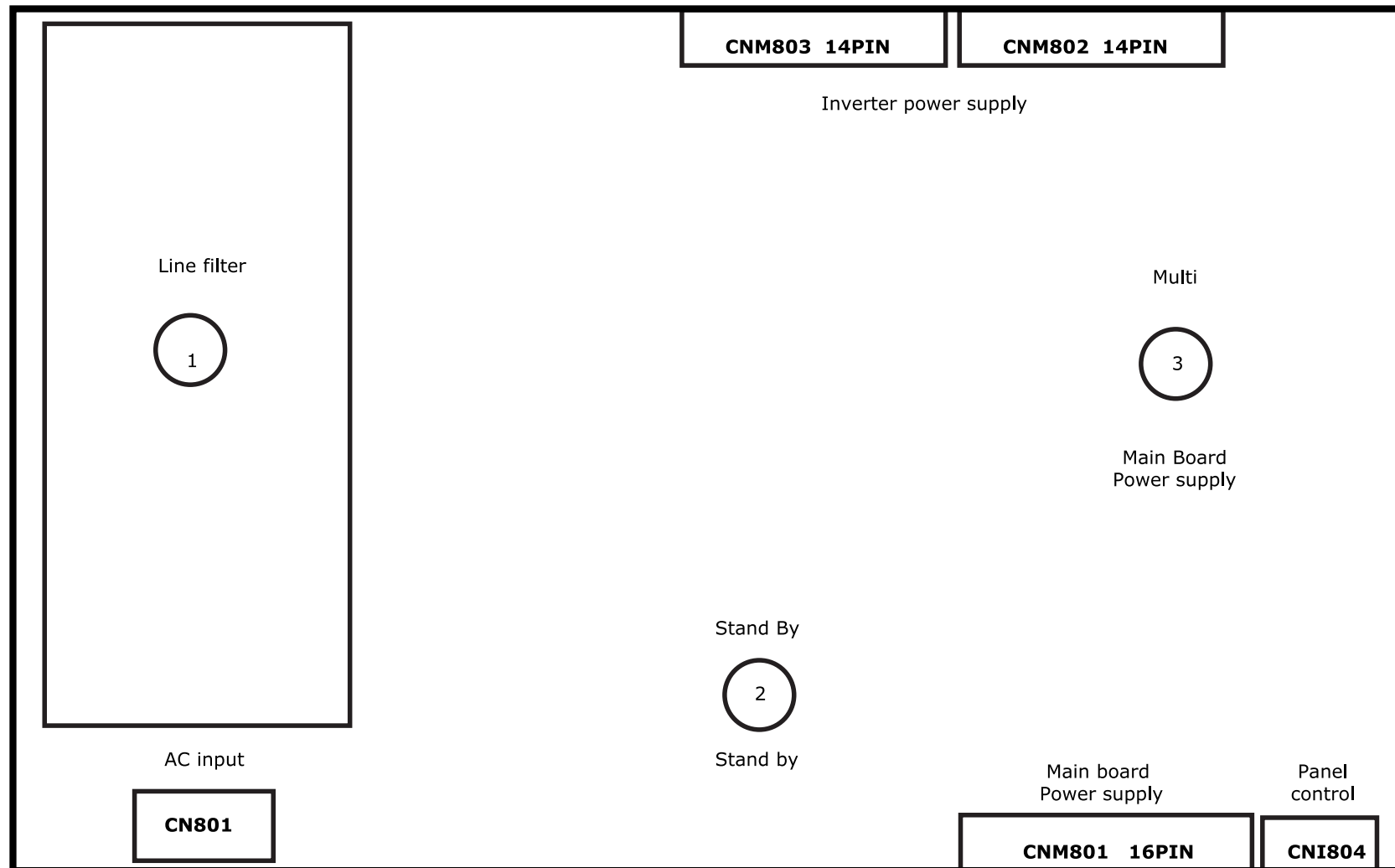
Function Define

- SW_inverter panel inverter control, about 5V
- Ana_dimming panel dimming control
- PWM_dimming panel PWM control, duty 40% ~ 90%

CN1001-LVDS Signal

PIN	1	2	3	4	5	6
NAME	TXOUT0-	TXOUT0+	TXOUT1-	TXOUT1+	TXOUT2-	TXOUT2+
PIN	7	8	9	10	11	12
NAME	TXCLKOUT-	TXCLKOUT+	TXOUT3-	TXOUT3+	TXOUT4-	TXOUT4+
PIN	13	14	15	16	17	18
NAME	TXOUT5-	TXOUT5+	NC	NC	GND	WP_PANEL
PIN	19	20	21	22	23	24
NAME	NC	NC	LVDS_FORMAL	DDC_CTRL	GND	GND
PIN	25	26	27	28	29	30
NAME	GND	NC	VCC_PANEL	NC	VCC_PANEL	VCC_PANEL

8-4 Power Board Layout



CN801 - AC Input

PIN	I	2
NAME	Live	Netural
VOLTAGE	AC	AC

Functioning Define

- Refer to : AC Input

CN801 - Main Board power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NAME	13V	GND	5.4V	5.4V	5.4V	GND	GND	GND	12V	12V	12V	GND	GND	GND	ST7V	PWR

Functioning Define

- ST7V Stand-By Output
- PWR Power On/Off Control

- Refer to : CN801 function define

CNM804 - Panel control

PIN	1	2	3	4	5
NAME	SW_inverter	Ana_dimming	PWM_dimming	GND	SENSOR POWER

Functioning Define

- Refer to : CN815 function define

CN802 - Inverter power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
NAME	24V	24V	24V	24V	24V	GND	GND	GND	GND	GND	GND	B/L	A_D	P_D

Functioning Define

- AMLCD Panel Inverter Power
- 24V LAMP INVERTER Voltage
- B/L Brightness sensor power
- A_D ANA_DIMMING
- P_D PWM_DIMMING

CN803 - Inverter power supply

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
NAME	24V	24V	24V	24V	24V	GND	GND	GND	GND	GND	A_D	B/L	P_D	GND

Functioning Define

- AUO Panel Inverter Power
- 24V LAMP INVERTER Voltage
- B/L Brightness sensor power
- A_D ANA_DIMMING
- P_D PWM_DIMMING

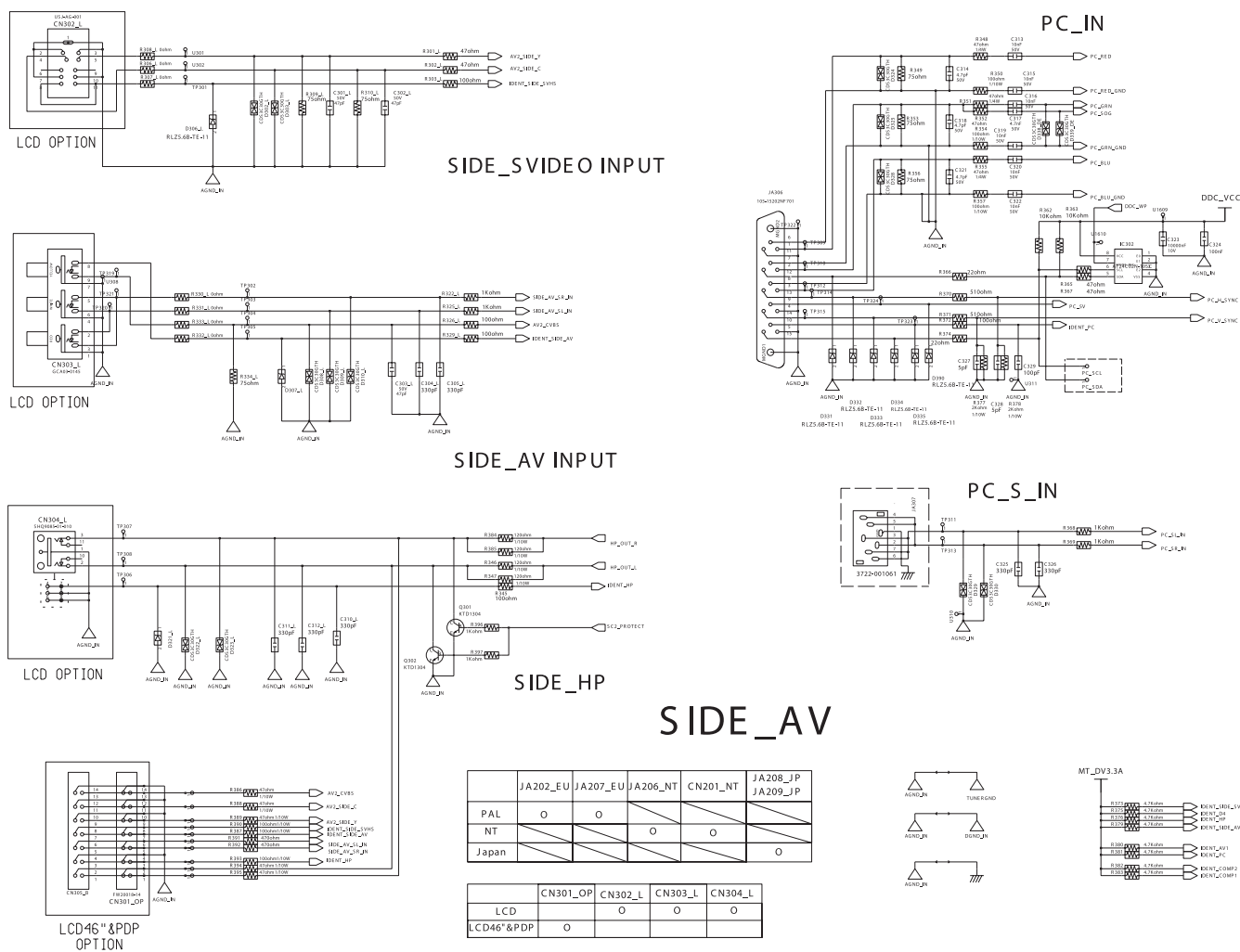
9-1 Power_Function Schematic Diagram





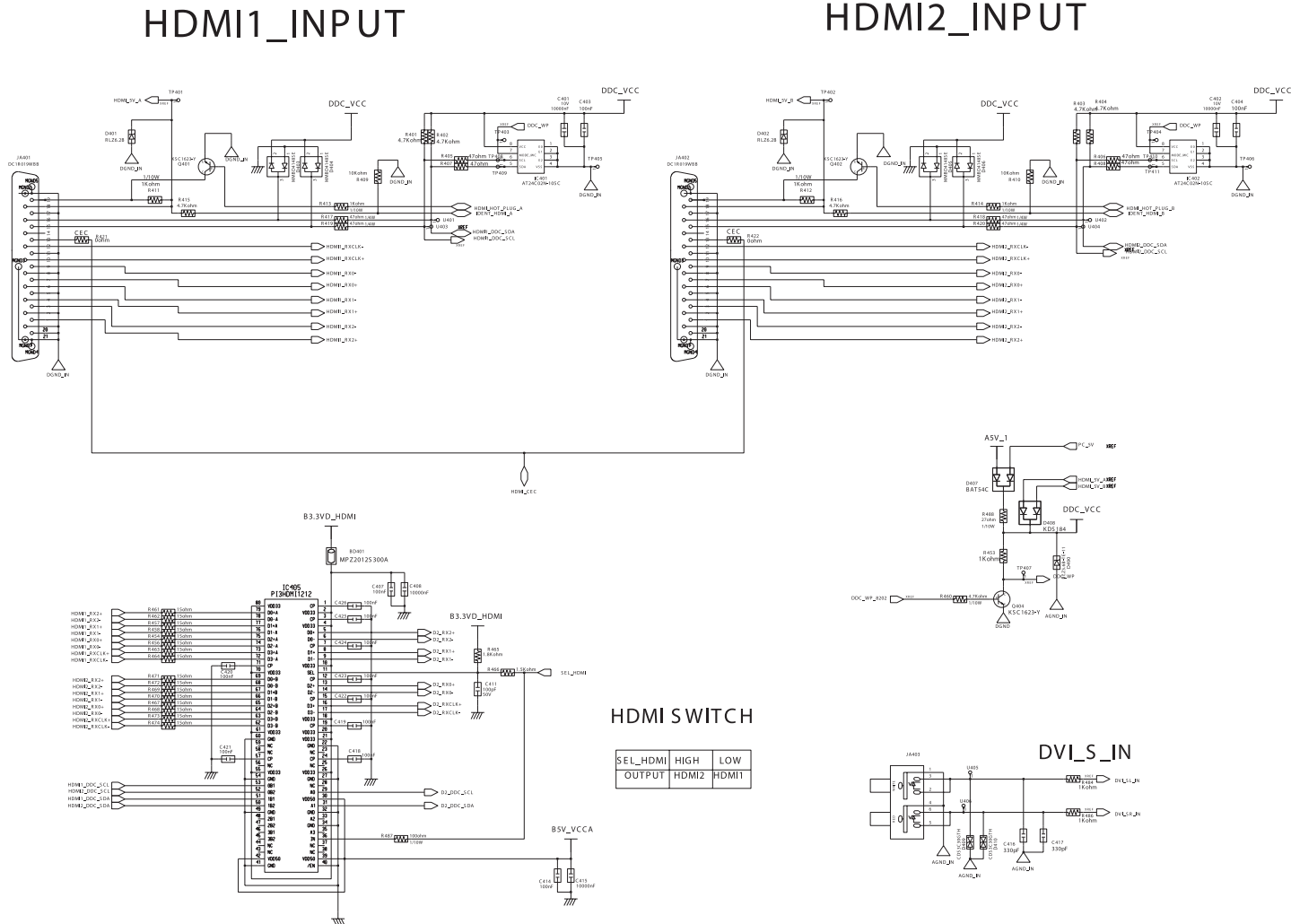
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9-3 SIDE_AV Schematic Diagram



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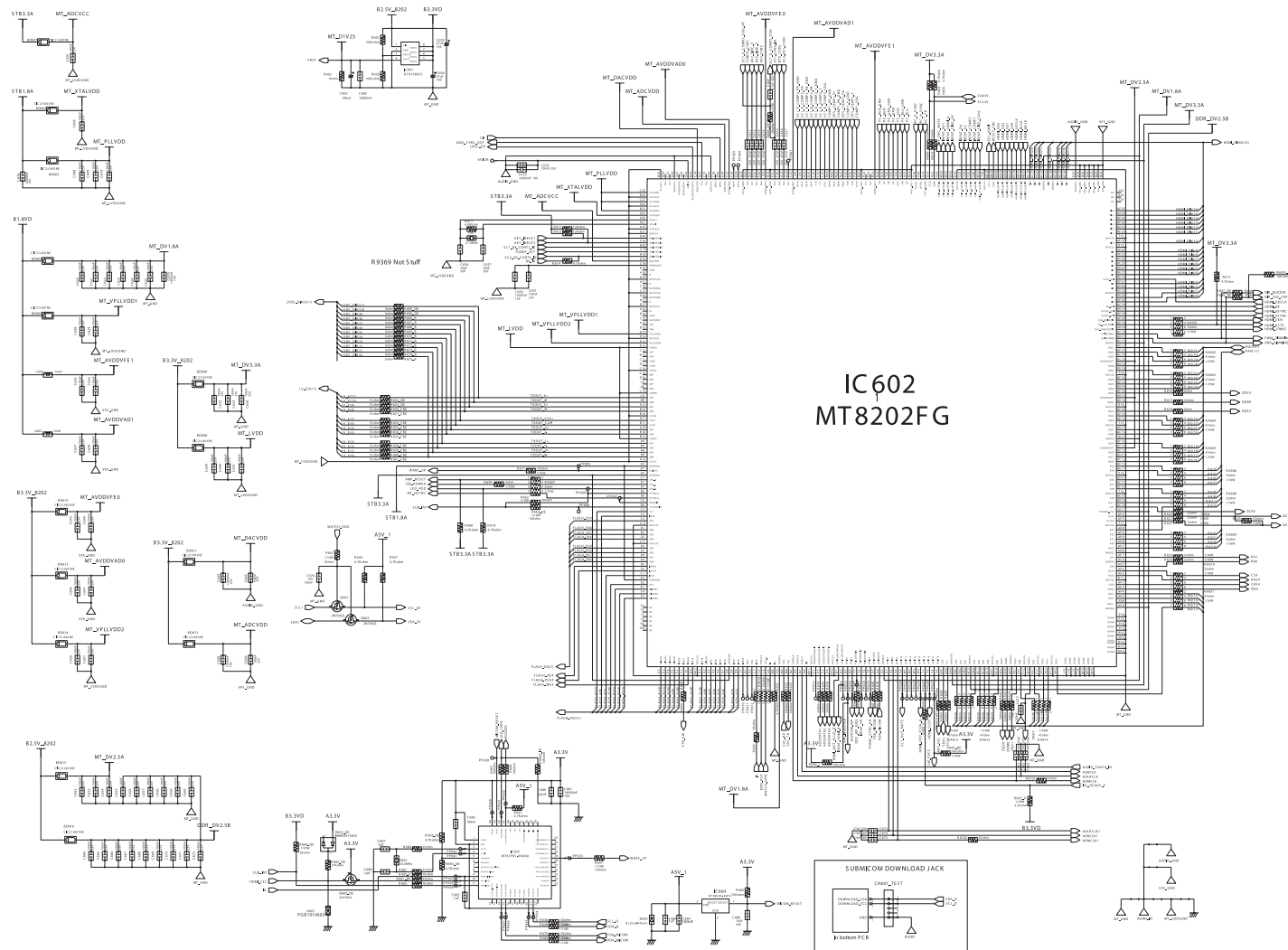
9-4 HDMI_INPUT Schematic Diagram



9 Schematic Diagrams

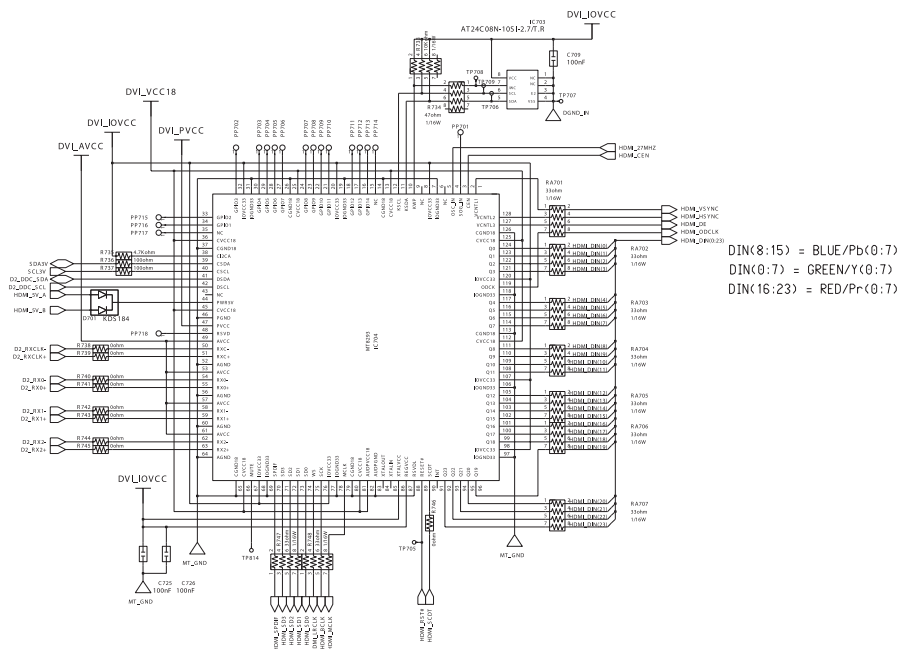
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9-6 Application Schematic Diagram

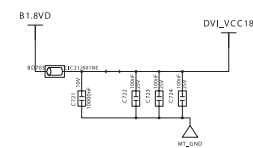
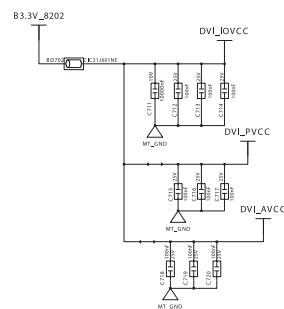


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9-7 Application Schematic Diagram



Near to Connector

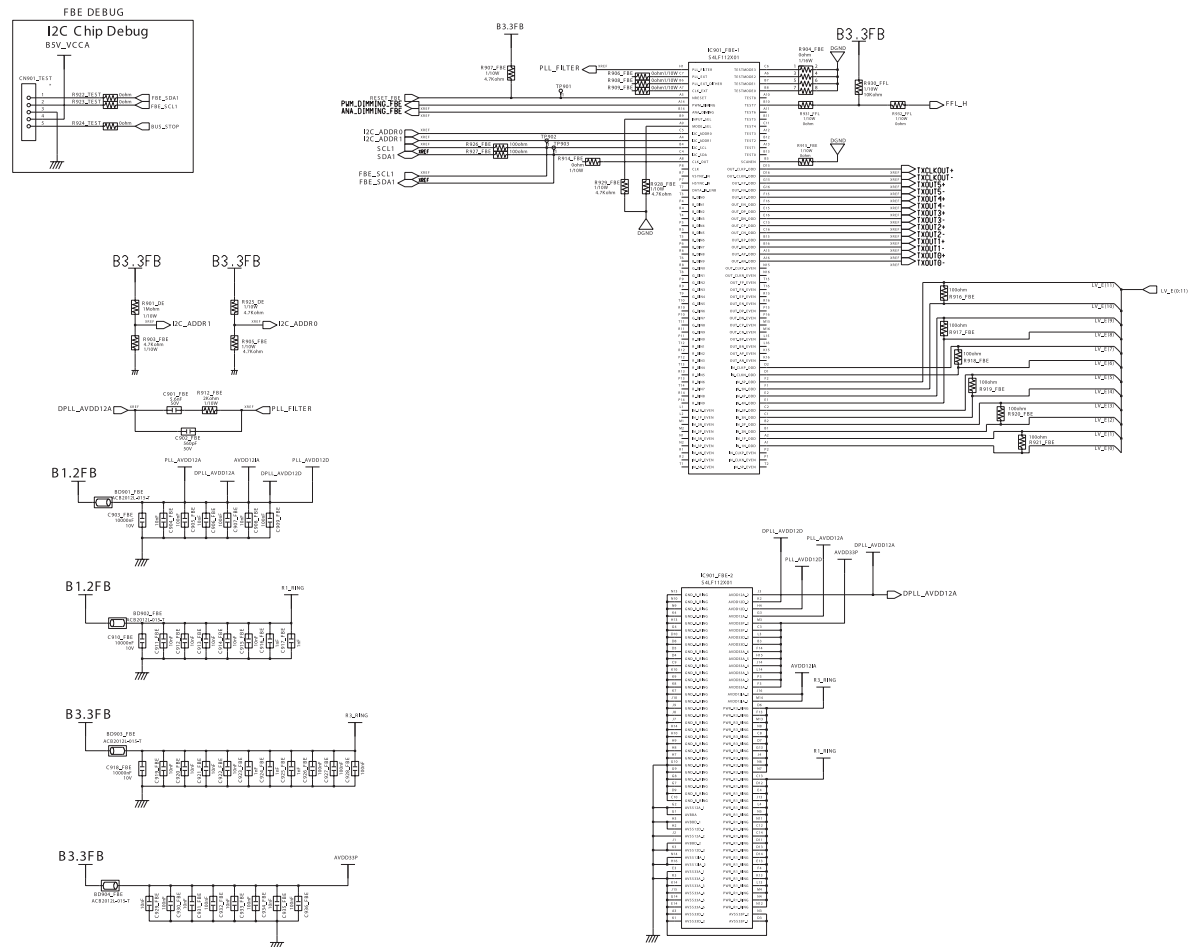




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9-9 Application Schematic Diagram

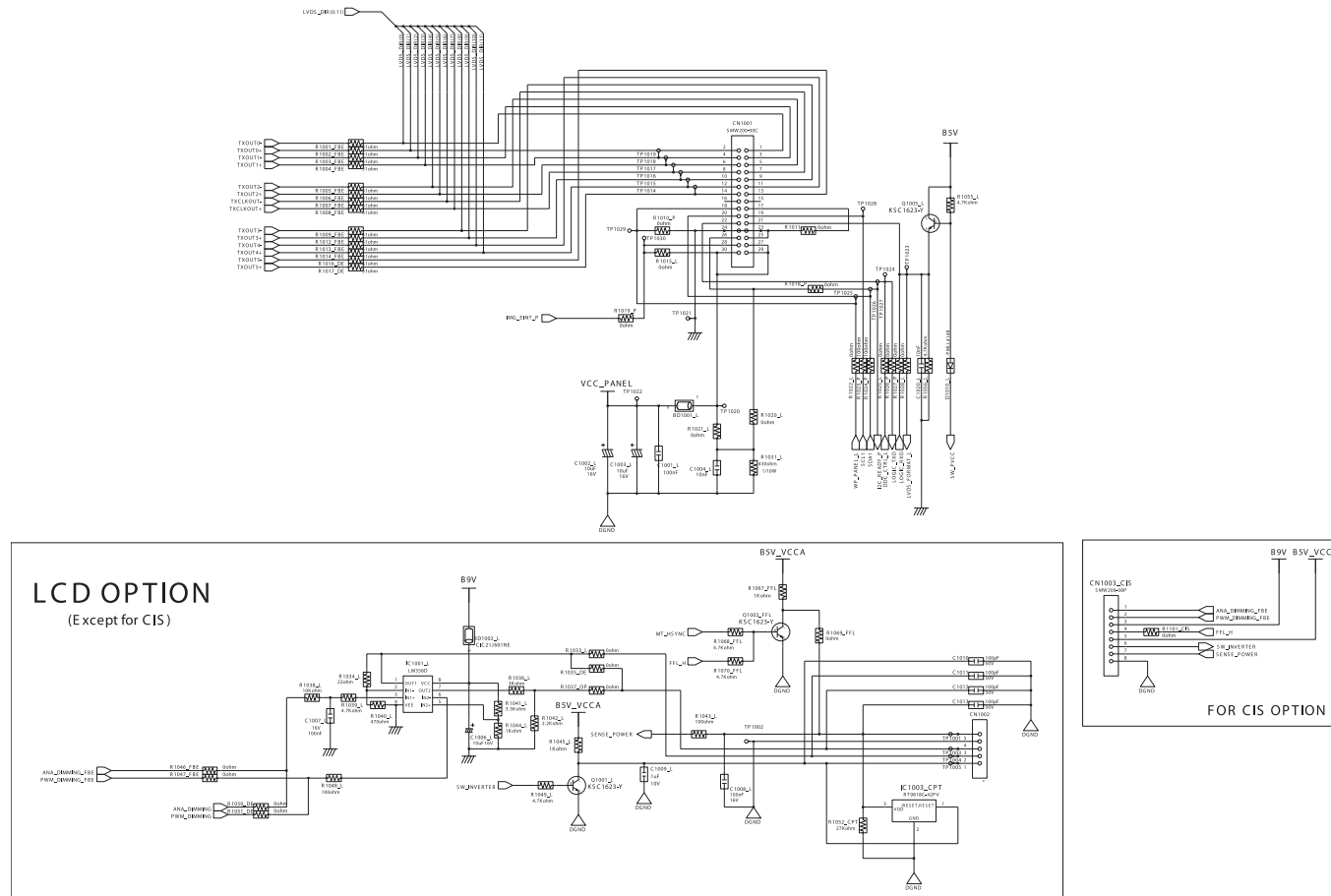
F B E 2



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9-10 Application Schematic Diagram

LVDS&Dimming



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9-11 DIMMING BOARD Schematic Diagram

