



PDP-TELEVISION

Chassis : D74B(P_Europe_50HD)_Mustang
Model : PS50Q7HDX/XEU

SERVICE *Manual*

PDP-TELEVISION



FEATURES

- DTV Ready PDP TV
- Supreme Picture Quality
Supreme Convenience Quality
- RF, HDMI, 2 Scart, PC (Analog),
Component, Video, S-Video
- Slim line design
- Energy Saving



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2. Product Specification

2-1 Product Features

Block	Specification	Major IC	Remark
RF	Tuner	DNOS403ZH261B(S)	SEMCO
Power	Sanken Electric Co. SMPS	50" HD SMPS	
Video	Scaler	SVP-PX	TRIDENT
	Video Decoder		
Sound	Sound Processor	STV8257DSX	ST Microelectronics
	Sound AMP	STA323W	ST Microelectronics
	Audio S/W	MM74HC4052	
PDP Module	Samsung SDI V5.1 Module	50" HD	SAMSUNG SDI
Remocon	TM87B		
Cabinet	Q7		

■ Chip Description

- SVP-PX (IC611) : SVPTMPX contains dual-purposed triple 10-bit high-precision and high speed video ADCs for both PC and video inputs, the high speed HDMI could support all HDMI inputs up to 135MHz with HDCP format, the high-performance multi-format 3D digital comb video decoder that supports NTSC, PAL, and SECAM*, a HDTV sync separator, motion adaptive de-interlacing engine, and the video format conversion engine, supporting multi-window display in many different output modes.
- STV8257DSX (IC503) : Digital Audio Decoder/Processor
- STA323W (IC505) : Audio power amplifiers

2-2 Key Features

Model	PS-50Q7HD
Dimensions	1227.1(W) x 95.5(D) x 802.2(H) mm (Without Stand) 1227.1(W) x 340(D) x 844.8(H) mm (With Stand)
Weight	42.6 Kg (Without Stand) 49.0 Kg (With Stand)
Voltage	EU : AC 220-240V~, 50Hz CIS : AC 100-240V~, 50/60Hz
Colour System	PAL, SECAM, NT3.58, NT4.43
Sound System	BG, DK, I, L
Power Consumption	440 W
Number of Pixels	1366 (H) x 768 (V)
Screen Size	50 inches
ANTENNA input	VHF, UHF (75Ω unbalanced)
VIDEO input	SCART1, SCART2 AV (Side), S-VIDEO (Side) COMPONENT IN (480i/P, 576i/P, 720P, 1080i) PC IN (MINI D-SUB 15P) HDMI/DVI IN
AUDIO input	SCART1, SCART2 AV (Side), S-VIDEO (Side) Component PC DVI
AV Output	AUDIO OUT Headphone (Side)
Speaker Output	10W + 10W (8Ω) (Headphone Out : 10 mW MAX)
New Function	Blue eye

■ H/W Configuration

- Video : SVP-PX
- Sound : STA8257DSX, STA323W
- Tuner : DNOS403ZH261B(S)

■ S/W Configuration

- Main Micom : M30840SGP (IC202)
- Sub Micom : 3F866BXZZ (IC207)

■ Picture

- System : Video → PAL/SECAM/NTSC4.43, Sound → Analog
- Progressive
- Output resolution : 1366x768
- OSD : Smart user Interface
- Picture Enhancement : FRC
- Still picture, Noise reduction
- Comb Filter : 3D comb filter
- PIP : Large
- Panorama : Wide

■ Sound

- System : Stereo
- Output : 10W + 10W
- Speaker : built-in

■ Feature

- Component Interface (480i/480p/576i/576p/720p/1080i, Y/Pb/Pr)
- Digital Interface : HDMI
- Picture Size : Auto Wide/16:9/Wide4:3/Zoom/4:3
- Auto Store
- Sleep Timer : 180 minute
- Clock
- Zoom, Previous channel, Blue Screen, Color Tone, Screen Burn Protection

■ Remocon

- TM87B

■ Power Supply

- EU : AC 220-240V, 50Hz
- CIS : AC 100-240V~, 50/60Hz

■ Power Consumption

- Max Power : 440 W

■ Note

- You can input the DVI signal using the DVI ↔ HDMI conversion cable.
- When connecting HDMI input using the DVI ↔ HDMI conversion cable, connect the sound signal to the DVI Audio IN port using a separate connection cable.

- Both screen position and size will vary, depending on the type of PC monitor and its resolution.
The table below shows all of the display modes that are supported: (N : Negative, P : Positive)

Video Signal	Resolution (Dot X Line)	Vertical Frequency (Hz)	Horizontal Frequency (KHz)	Vertical Polarity	Horizontal Polarity	PS-42C7HD/ PS-42Q7HD	PS-50C7HD/ PS-50Q7HD
IBM PC / AT Compatible	640 X 350	70.086	31.469	N	P	√	√
	720 X 400	70.087	31.469	P	N	√	√
	640 X 480	59.940	31.469	N	N	√	√
		70.000	35.000	N/P	N/P	√	√
		72.809	37.861	N	N	√	√
		75.000	37.500	N	N	√	√
	800 X 600	56.250	35.156	N/P	N/P	√	√
		60.317	37.879	P	P	√	√
		70.000	43.75	N/P	N/P	√	√
		72.188	48.077	P	P	√	√
		75.000	46.875	P	P	√	√
	848 x 480	60.000	31.020	P	P	√	
		74.769	37.684	P	N	√	
	1024 X 768	60.004	48.363	N	N	√	√
		70.069	56.476	N	N	√	√
		72.000	57.672	N/P	N/P	√	√
		75.029	60.023	P	P	√	√
	1280 X 720	59.855	44.772	P	N		√
	1360 X 768	60.015	47.712	P	P		√

- ▶ The interlace mode is not supported.
- ▶ The TV operates abnormally if a non-standard video format is selected.
- ▶ 480i/p, 576i/p, 720p, or 1080i is not available in PC mode.
- ▶ The PC text quality is optimum in XGA mode (1024 x 768@60Hz). (PS-42C7HD/PS-42Q7HD)
- ▶ The PC text quality is optimum in WXGA mode (1360 x 768@60Hz). (PS-50C7HD/PS-50Q7HD)

■ DTV Specification

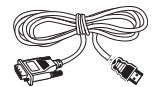
Category	Functions	UK	GERMANY
SYSTEM	Broadcasting system Video format Audio format	DVB-T MPEG-2(MP@ML) MPEG-1 audio layer I , II	DVB-T MPEG-2(MP@ML) MPEG-1 audio layer I , II
Channel Parameters	Operational Bands channel range Channel Band width	UHF 21 ~ 68 8 MHz	VHF/UHF 5 ~ 12, 21 ~ 69 VHF-7, UHF-8
EPG	Now/Next Scheduled EPG	○ ○	○ ○
SI	LCN Dynamic SI Replacement Service	○ X X	X X X
CA	CI Embedded CAS Parental Lock	○ (TopUp TV) X ○	○ X ○
System software upgrade	BBC OTA DVB SSU	○ X	X Enhanced profile
Data Service	MHEG MHP	○ (Ver. 1.06) X	X X
Time zone	Time zone setting	X	X
Add-on services	DVB subtitle Teletext AC3 VPS AFD	○ X X X ○	X ○ X ○ X
Etc	Channel list Auto store Manual store Language selection	○ ○ ○ ○	○ ○ ○ ○
Connectors	SPDIF OUT PCMCIA (Type II) RS-232 (Phone Jack) Modem Smart Card	DTV ○ ○ X X	DTV ○ ○ X X

Category	Functions	Sweden	Italy	France
SYSTEM	Broadcasting system Video format Audio format	DVB-T MPEG-2(MP@ML) MPEG-1 audio layer I , II	DVB-T MPEG-2(MP@ML) MPEG-1 audio layer I , II	DVB-T MPEG-2(MP@ML) MPEG-1 audio layer I , II
Channel Parameters	Operational Bands channel range Channel Band width	UHF 21 ~ 69 8 MHz	VHF/UHF 3 ~ 13 (A ~ H2), 21 ~ 69 VHF-7, UHF-8	VHF/UHF 5 ~ 10, 21 ~ 69 VHF-8, UHF-8
EPG	Now/Next Scheduled EPG	○ ○	○ ○	○ ○
SI	LCN Dynamic SI Replacement Service	○ X X	X X X	○ X X
CA	CI Embedded CAS Parental Lock	○ X ○	○ X ○	○ X ○
System software upgrade	BBC OTA DVB SSU	X Simple profile	X Simple profile	X Simple profile
Data Service	MHEG MHP	X X	X ○ (Ver. 1.0.2)	X X
Time zone	Time zone setting	X	X	X
Add-on services	DVB subtitle Teletext AC3 VPS AFD	○ ○ X X X	○ ○ X X X	○ ○ X X X
Etc	Channel list Auto store Manual store Language selection	○ ○ ○ ○	○ ○ ○ ○	○ ○ ○ ○
Connectors	SPDIF OUT PCMCIA (Type II) RS-232 (Phone Jack) Modem Smart Card	DTV ○ ○ X X	DTV ○ ○ ○ ○	DTV ○ ○ X X

2-3 Specifications Analysis

Model		PS-50Q7HD (Mustang-50HD)	Puccini (V4)
Design			
Basic	Display Type	PDP TV	PDP TV
	Built-In Tuner	O	O
	Resolution	1366 x 768	1366 x 768
	PDP Module	Samsung SDI V5.1	V4
	Screen Size	50 inches	50 inches
	Aspect Ratio	16 : 9	16 : 9
	Power Consumption	440 W	420 W
	Dimensions	1227.1(W) x 95.5(H) x 802.2(D) mm	48.43 (W) x 32.52 (H) x 3.72 (D) inches
	Weight	42.6 Kg / 93.9 lbs	46.8 Kg / 103.17 lbs
Picture	Brightness	1,000 Cd/m2	1,300 Cd/m2
	Contrast Ratio	10,000 : 1	10,000 : 1
	Image Enhancer	DNIE FRC	DNIE-L
Audio	Equalizer	5 Band	5 Band
	Auto Volume	O	O
	Surround Sound	SRS TruSurround XT Dolby Digital	SRS TruSurround
	Speaker Output	10 W + 10 W	15 W + 15 W
	Speaker	Included	Included
Features	PIP	O	O
	Double Screen	X	O
	TTX	O	O
	Still Image	O	O
	My Color Control	X	O
	Color Weakness	X	O
	Energy Saving	O	O
	Screen Burn Protection	O	O
Connections	Antenna	1 Input	1 Input
	CVBS	1 AV	1 AV
	S-Video	1 Input	1 Input
	Component(Y/PB/PR)	1 Input	1 Input
	PC(D-SUB)	1 Input	1 Input
	DVI	X	X
	HDMI	1 Input	1 Input
	Sub Woofer	X	X
	Optical	X	X
	Coaxial	X	X

2-4 Accessories

Accessories		Item	Item code	Remark
Supplied Accessories		User Manual	BN68-00889J	Samsung Service center
		Remote Control AAA Batteries	BN59-00516A 4301-000103	
		Power Cord	3903-000145	
		Cloth-Clean	BN63-01798A	
		Ferrite Core	3301-001110	
Accessories that can be purchased additionally		S-VIDEO Cable	-	Internal shopping mall
		HDMI Cable	-	
		HDMI/DVI cable	-	
		Component Cables (RCA)	-	
		PC Cable	-	
		PC Audio Cable	-	
		Scart Cable	-	
		Antenna Cable	-	

3. Alignment & Adjustment

3-1 Service Instruction

■ Before Performing After Sales Services

1. Check if the measurement and test equipment is working properly.
2. Secure sufficient work space for disassembling the product.
3. Prepare a soft pad for disassembling the product.

3-2 How to Access Service Mode

1. General Remote

To Enter : Power Off → INFO → MENU → MUTE → Power On
(Interval between key strokes : less than 3 sec)

To Exit : Power Off → On

2. Factory Remote

To Enter : Power On → INFO → FACTORY Key (Interval between key strokes : less than 3 sec)

To Exit : Power Off → On

Press the Factory key twice with a key stroke interval of more than 1 second (Pressing once enters Aging Mode)

3. Settings when entering Factory mode

- Sharp Screen (Dynamic), Color Tone (Cool1), Factory (Dynamic CE Off)

4. Adjustment Procedures

- Channel ▲ ▼ Key : Select an item.
- Volume ◀ ▶ Key : Adjust the value up or down.
- MENU Key : Save the changes to the EEPROM and return to the higher-level mode.
- Using the Numeric (0~9) keys, you can select a channel.
- Using the SOURCE key, you can switch AV modes.

5. Initial SERVICE MODE DISPLAY State

```

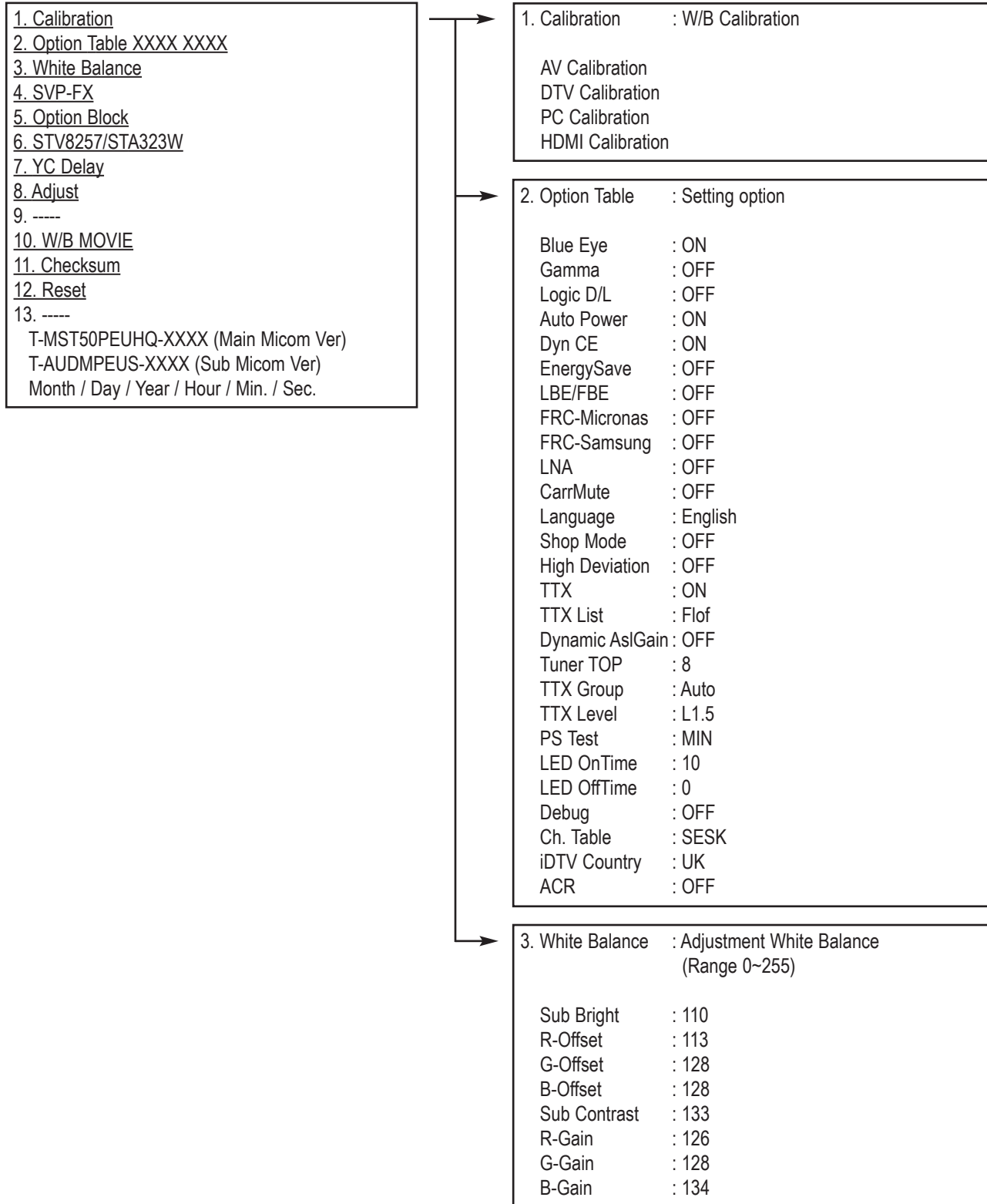
1. Calibration
2. Option Table XXXX XXXX
3. White Balance
4. SVP-FX
5. Option Block
6. STV8257/STA323W
7. YC Delay
8. Adjust
9. -----
10. W/B MOVIE
11. Checksum
12. Reset
13. -----
    T-MST50PEUHQ-XXXX (Main Micom Ver)
    T-AUDMPEUS-XXXX (Sub Micom Ver)
    Month / Day / Year / Hour / Min. / Sec.
```

※ The version of the firmware displayed at the bottom of the screen may differ and the firmware is subject to change for the improvement of product functions.

※ If you have adjusted the settings in Service Mode, you have to reset the product.

3-3 Factory Data

★ The underlined are items applied during the service adjustment. None of the others should be adjusted.



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 T-AUDMPEUS-XXXX (Sub Micom Ver)
 Month / Day / Year / Hour / Min. / Sec.



4. SVP-PX	: SVP-PX Correct Register				
ComB Filter	: Y-Filter - 80H				
Sharpness	:	RF/AV	COMP	PC	HDMI
H2Gain		0FH	10H	10H	08H
H4Gain		10H	04H	04H	00H
V2Gain		10H	10H	10H	08H
V4Gain		10H	04H	04H	04H
Sr2Gain		00H	00H	00H	00H
Sr4Gain		00H	00H	00H	00H
SI2Gain		00H	00H	00H	00H
SI4Gain		00H	00H	00H	00H
Peakth1		00H	00H	00H	00H
Peakth2		40H	80H	80H	80H
Peakth3		00H	00H	00H	00H
NR	:	YNROFF	80H		
		CNROFF	80H		
		YNRON	80H		
		CNRON	80H		
RGB Calibration	:	RF/AV	COMP	PC	HDMI
R-Offset		4EH	4CH	49H	48H
G-Offset		4EH	4CH	49H	48H
B-Offset		4EH	4CH	49H	48H
R-Gain		7CH	7BH	78H	9DH
G-Gain		7CH	7BH	80H	9DH
B-Gain		7CH	7BH	7AH	9DH
ADC Calibration	:	RF/AV	COMP	PC	HDMI
TCD3 Contrast		82H	78H	78H	78H
TCD3 Brightness		21H	20H	20H	20H
TCD3 CR		80H	80H	80H	80H
TCD3 CB		80H	80H	80H	80H
TCD3 Delay		00H	00H	00H	00H
Analog Y Offset		40H	40H	42H	40H
Analog PB Offset		80H	80H	38H	80H
Analog PR Offset		80H	80H	39H	80H
Analog Y Gain		D6H	DAH	D0H	D6H
Analog PB Gain		FEH	9AH	80H	FEH
Analog PR Gain		FEH	9AH	80H	FEH
Black Level		00H	00H	00H	00H
SVP Brightness		00H	00H	00H	00H
Calibration Target	:	low	high	delta	
AV ADC		10H	F8H	04H	
COMP ADC		10H	F8H	04H	
PC ADC		10H	F8H	04H	
ALL RGB		04H	F8H	10H	

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 Month / Day / Year / Hour / Min. / Sec.

5. Option Block

FRC-Micronas		
FRC-Samsung	: Patt Sel	00H
	B Ratio	00H
	W Ratio	50H
	Pdf Min	55H
	Urd Th	33H
	Max Gain	01H
	Test Mcc	80H
	Oclk Phase	70H
	Cep Bypass	64H
	Bws Bypass	00H
	Mcc Bypass	80H
	Dnie Bypass	4FH
	Full Bypass	54H
	Ramp Speed	3EH
	Nolinear On	42H
	OccModeOn	40H
	Text En	40H
	Rep Mode	3DH
	PC C Coeff	45H
	PC B Coeff	00H
	Dout Mode	00H

LBE/FBE

6. STV8257/STA323W : Sound IC Correct Register

Ch1 Volume	: 55H
Ch2 Volume	: 55H
AGC Gain	: 07H
AM-Prescale	: 00H
ZWT TH	: 0AH
AV Delay	: 55H
Comp Delay	: 32H
HDMI Delay	: 32H
PC Delay	: 32H
L1 Att/Rel Th	: EDH

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7. YC Delay

PAL B/G	: 99H
PAK D/K	: 88H
PAL I	: 88H
SECAM B/G	: 88H
SECAM D/K	: 77H
SECAM L/L'	: 66H
NTSC 3.58	: 95H
NTSC 4.43	: CCH
AV PAL	: AAH
AV SECAM	: 55H
AV NT3.58	: 98H
AV NT4.43	: CCH
AV PAL60	: 77H

8. Adjust

V Mute Time	: 10
Melody Volume	: 9
Ana_Dimm_Max	: FEH
TTX Contrast	: 50
TTX Brightness	: 50
TTX Color	: 50
Dynamic Contrast	: 100
Dynamic Sharpness	: 60
Standard Contrast	: 90
Standard Brightness	: 80
Standard Color	: 70
Standard Sharpness	: 70
Movie Contrast	: 60
Movie Brightness	: 50
Movie Color	: 50
Movie Sharpness	: 40
LNA PLUS	: RFDB-1 Level 2
	RFDB-2 Level 5
	RFDB-3 Level 9
	RFDB-4 Level 24
Hotel Option	: Hotel Mode OFF
	PWR On CH 1
	PWR On Vol. 10
	Max Volume 100
	L.Key Lock OFF
	PWR On Src RF

9. -----

1. Calibration
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 Month / Day / Year / Hour / Min. / Sec.

10. W/B MOVIE

	RF/AV	COMP	PC	HDMI
WB Movie	OFF	OFF	OFF	OFF
Color Mode	Movie	Movie	Movie	Movie
Color Tone	Warm2	Warm2	Warm2	Warm2
W1 R Gain	131	131	130	132
W1 B Gain	118	117	119	118
W1 R Offset	131	129	138	128
W1 B Offset	127	131	115	129
W2 R Gain	133	133	134	134
W2 B Gain	104	109	115	110
W2 R Offset	127	128	141	128
W2 B Offset	132	120	113	119
Movie Contrast	70	70	70	70
Movie Brightness	50	50	50	50
Movie Color	45	45	45	45
Movie Sharpness	25	25	25	25

11. Checksum

12. Reset

13. -----

3-4 Service Adjustment

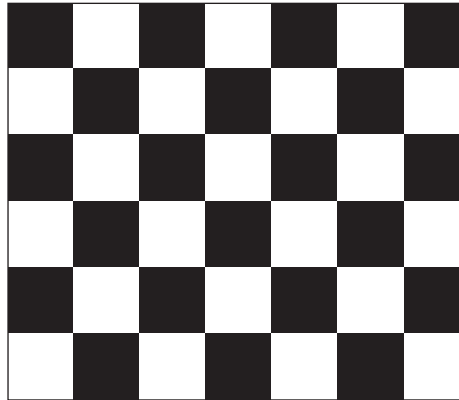
3-4-1 White Balance - Calibration

If picture color is wrong, do calibration first.

Execute calibration in Factory Mode

1. Source : VIDEO
2. Setting Mode : PAL Video (MODE : #2)
3. Pattern : Pattern #24 (Chess Pattern)
4. Use Equipment : K-7256 or Equipment of equality level
5. Work order
 - 1) Enter by Factory Mode select "1.CALIBRATION".
 - 2) Select "AV CALIBRATION" again in CALIBRAION MENU.
 - 3) After Completing Calibration, come out "Av success". OSD on the screen (bottom-side) for about 3 seconds.

Source AV : PAL composite, Component : 1280*720/60Hz
PC : 1024*768/60Hz



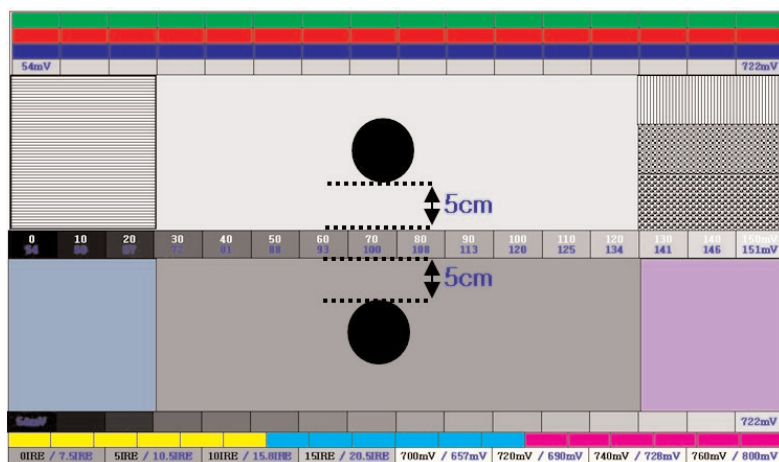
(Chess Pattern)

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



(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

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

* Color temperature
1500K +/-500, -6 ~-20 MPCD

* Color coordinate
H/L : 270/280 +/- 2
L/L : 270/280 +/- 3, 2.1 Ft +/-0.05 Ft

3-4-3 Conditions for Measurement

- 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
- Optical measuring device : CA210 (FL)
 - Please use the MSPG-925 LTH generator for model PS-50Q7HD.

3-4-4 Method of Adjustment

1. Adjust the white balance of AV, Component and DVI Modes.

(AV → Component)

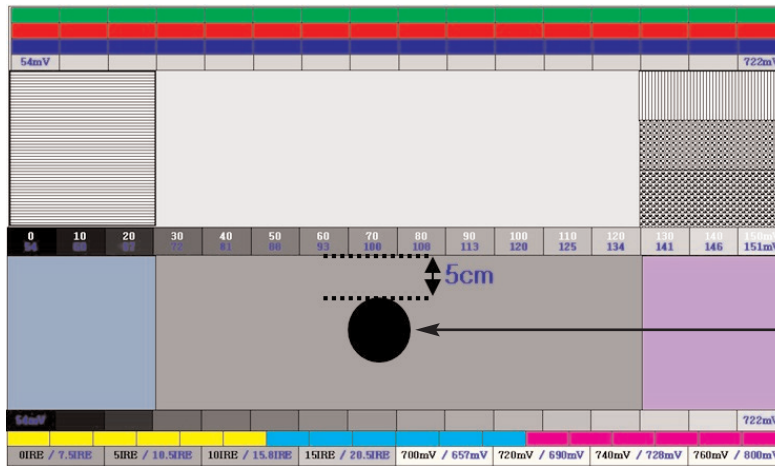
a) Set the input to the mode in which the adjustment will be made (RF → DTV → PC → DVI).

- * 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.



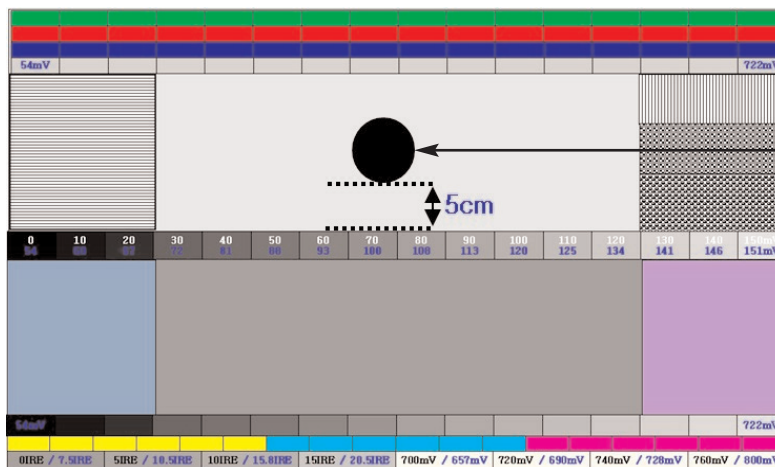
Low light
Measurement point

(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

* 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.



Hight light
Measurement point

(SAMSUNG WHITE BALANCE Adjustment PATTERN with FPD)

* Do not adjust the green gain and sub-contrast (Y) data.

3-5 Software Upgrade

3-5-1 How to Update Flash ROM

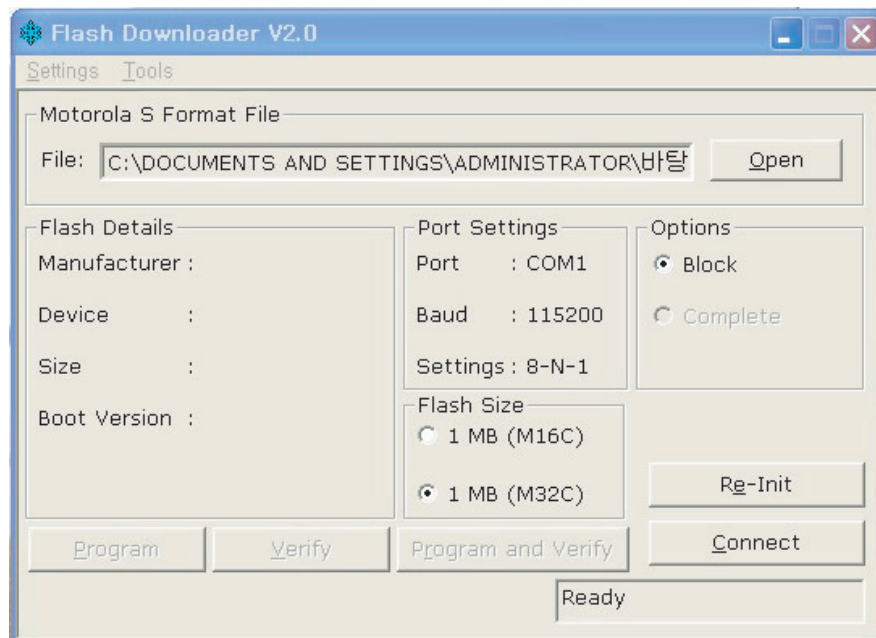
1. Install the Flash Downloader

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.



3-5-2 How to Update DTV Software

1. Software Version Check Method

Press the MENU key and select System.

Where you can find the Product Information menu in it.

When you press the Product Information you can find the Software Version.

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

2. Serial Download Method

- ① Turn off PDP-TV.
- ② Connect the RS-232 cable to the PDP-TV
- ③ Execute the sv2_fr.exe file.
- ④ Assign the path of samsung.tvz file (application image)
- ⑤ Execute the progress follow the screen until step 2.
- ⑥ Turn On the PDP-TV.
- ⑦ If the PDP-TV turn on during the sv2_fr.exe execution, it will automatically find the COM port and execute the upgrade.

3. Hyper Terminal Setting

Set the hyper terminal to observe the progress of the TV via the RS-232 cable. Set up hyper terminal.

- ① When setting up a hyper terminal, set it in sub-program.
- ② Enter a new name.
- ③ Select a modem port. (com 1 and direct connection.)
- ④ Set the bit/second to 115200.
- ⑤ Set the data bit to 8.
- ⑥ No parity bit.
- ⑦ Set stop bit to 1.
- ⑧ No flow control.
- ⑨ Save in memory.
- ⑩ At this point, the new hyper terminal is ready.

4. Resetting the System Parameters

- ① Press the MENU button and select the Reset menu of System.
- ② Press the secret number.
- ③ Press the RED, GREEN, YELLOW, BLUE button in order, after the Reset execute.
- ④ In a few minutes, DTV will booting again.

3-6 Replacements & Calibration

※ The ASS"Y code can be changed, see "5 Chapter. Electrical Part List."

* Check items listed after changing each

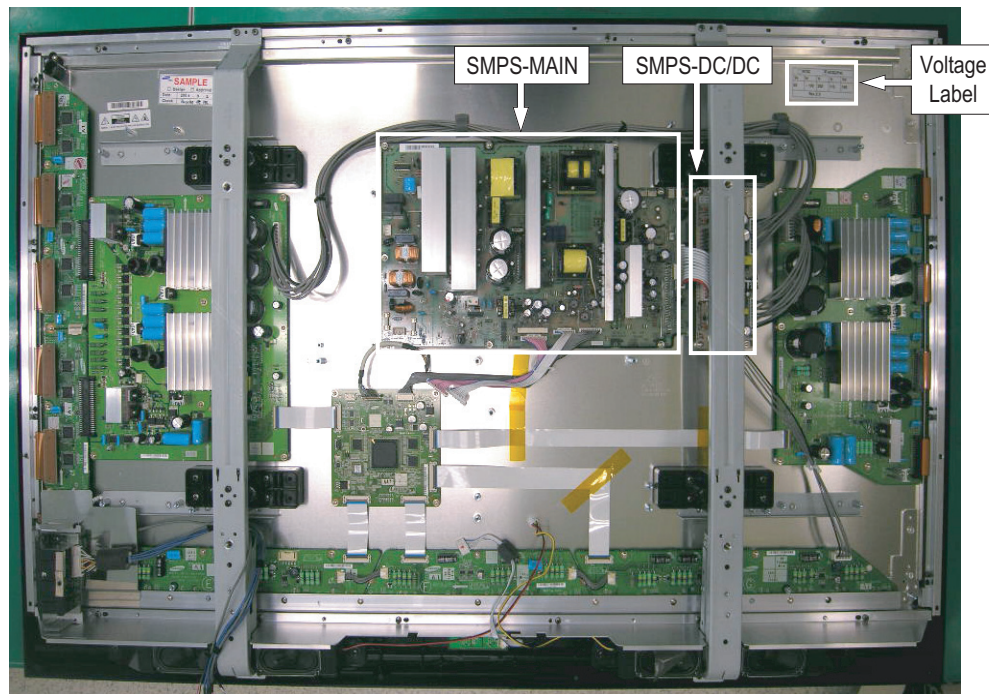
Replaced Items	Code No.	Check Items
ASSY PCB MISC-MAIN	BN94-00960A	1) Auto Program 2) White Balance adjust
ASSY PCB P-SMPS(MAIN)	BN96-03051A	Vs, Va voltage check and adjust
ASSY PCB P-SMPS(DC DC)	BN96-01856A	Vscan, Vset, Ve voltage check and adjust
ASSY PDP P-LOGIC BOARD	BN96-03366A	Not adjustment
ASSY PDP P-X MAIN BOARD	BN96-03359A	
ASSY PDP P-Y MAIN BOARD	BN96-03360A	
ASSY PDP P-Y UPPER SCAN BOARD	BN96-03361A	
ASSY PDP P-Y LOWER SCAN BOARD	BN96-03362A	
ASSY PDP P-ADDRESS E BUFF BOARD	BN96-03363A	
ASSY PDP P-ADDRESS F BUFF BOARD	BN96-03364A	
ASSY PDP P-ADDRESS G BUFF BOARD	BN96-03365A	

※ When replacing the SMPS (DC DC) or PDP panel, you have to check the voltage printed on the panel sticker and adjust it.

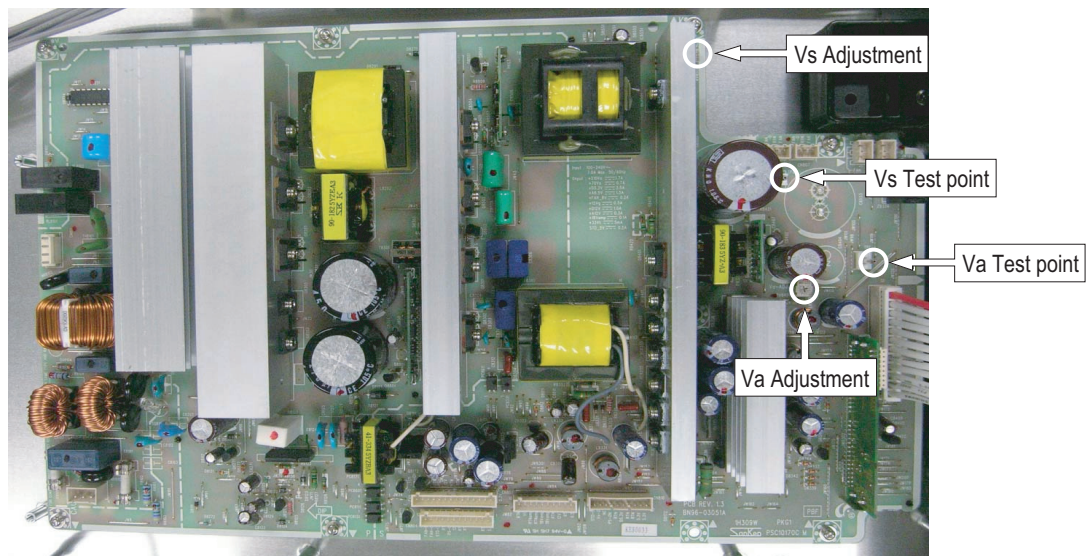
3-6-1 Voltage Adjustment

1. After replacing the SMPS or PDP panel, you must adjust the voltage referring to the voltage label printed on the panel.
(If you do not adjust the voltage, an abnormal discharge symptom may appear.)

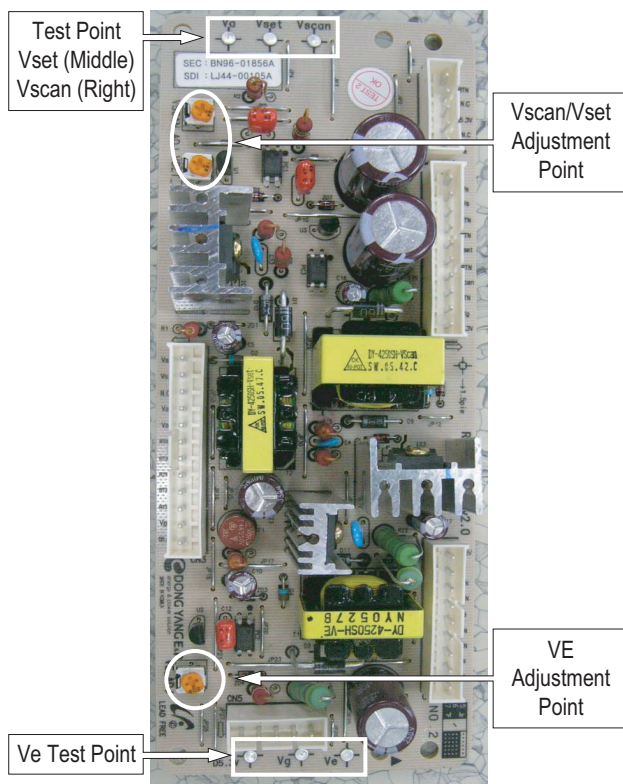
	Value	Board Adjustment
Vs	200	SMPS-MAIN
Va	65	
Vset	190	SMPS-DC/DC
Ve	115	
Vscan	-190	



2. A point of adjusting SMPS-MAIN voltage.



3. A point of adjusting SMPS-DC/DC.

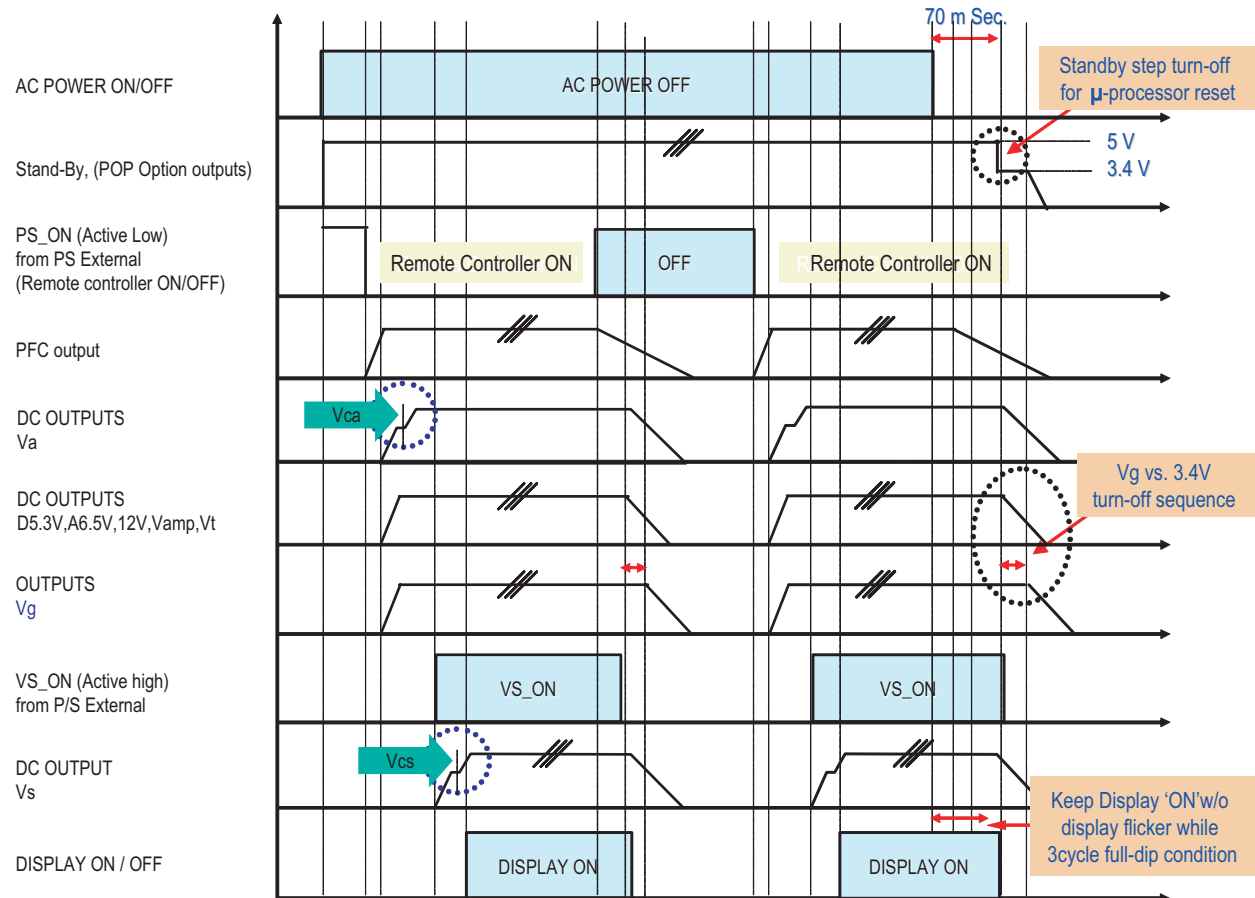


* Use base chassis of PDP panel as GND point.

MEMO

13. Circuit Description

13-1 Power ON/OFF Signal Timing Sequence



1. When connecting the AC power cord, Stand-By 5V from the Main SMPS is supplied to the Main Board (Pin 3 of CN1002 of Main Board).
2. When pressing the Power button on the remote control or on the main body, PS_ON (Pin 5 of CN1002 of Main Board) changes from High to Low.
3. If the PS_ON signal changes to Low, the Main SMPS supplies power to the Main Board and Logic Board, and Va and Vg power is supplied to the DC-DC SMPS.
4. If the VS_ON signal from the Logic Board changes from Low to High, the Main SMPS supplies VS power to the X and Y Main Board through the DC-DC SMPS, and the screen displays a picture on it.

13-2 Partial Block Description

13-2-1 Main SMPS

1. Summary

This is a service manual about the explanation of basic operation in power circuit (1H309W) for 50" PDP.

2. Input Part

This switching mode power supply (SMPS) has the input voltage range of 90 ~ 264[Vac].

Thus, at 90[Vac] input condition or any voltage level in a spec, the power board must operate even if the ac source is cut off and re-input ON.

3. Output Part

This power circuit has the 10 outputs. In steady state, the specification about the output's voltage and current is the same as following Table 1.

Table 1. PDP SMPS's output specifications (for 50")

Output Circuit	Nominal Voltage [V]	Voltage Adjustment [V]	Total Regulation	Nominal Load [A]	Load Variation [A]	Peak Current [A]	Ripple Noise [mV p-p]
Vs	210	190 - 220	± 2%	1.7	0.1 - 2.5	10.0	800
Va	70	60 - 80	± 2%	0.7	0.1 - 3.0	4.5	500
D5.3V	5.3	-----	± 5%	3.5	0.1 - 5.0	6.0	50
A6.5V	6.5	-----	± 5%	1.5	0.01 - 3.0	4.0	50
FAN_8V	8	-----	± 5%	-	0.01 - 0.2	0.5	120
Vg	15	-----	± 5%	0.5	0.01 - 1.0	1.5	120
12V	12	-----	± 5%	1.3	0.01 - 1.5	3.0	120
Vamp	18	-----	± 10%	0.1	0.01 - 2.5	3.0	180
Vt	33	-----	± 5%	5m	1m - 6m	7m	300
STBY	5.0	-----	± 5%	0.5	0.01 - 1.0	1.5	50

① Over Voltage Protection

This power circuit has the function of over voltage protection (O.V.P) in all outputs.

In condition of any over voltage in each output ports, the power supply is shut-down by O.V.P function for the protection of part's damage.

② Short / Over Current Protection

Because any output ports have small impedance (smaller than 300m ohm) at the output short condition, power circuit was designed to have the function of short / over current protection (O.C.P) in all outputs. Thus, in condition of any over current in each output ports, the power supply is shut-down by O.C.P function for the protection of part's damage. The specification about the O.C.P in each port is the same as following Table 2.

Table 2. OCP specification

Protection	Output Circuit	Trip point	Notes
Over Current	Vs	3.0 - 6.0A	Shut down by Under Voltage
	Va	3.5A or more	Short Circuit Protection
	Output except Vs&Va	-----	Shut down by Under Voltage

4. Basic Function

① Remote Control

This power circuit has the function of remote control by using the relay (250V, 10A)

② Free Voltage

This power circuit has the free voltage input range.

③ Power Factor Correction

This power circuit has the PFC for high power factor (higher than 0.9)

④ Protection

This power circuit has the function of short / O.V.P / O.C.P for the protection of part's damage.

5. Explanation of Circuit Blocks

① Filter Circuit

Line filter consists of Common Mode Reactor L8102; L8103, Normal Mode Reactor L8101, X-condenser C8101 · C8106, Line by-pass condenser(Y-con) C8104 · C8105 and surge protection parts ; NR8101 · NR8102 · NR8103 · NR8104 · SQ8104 · SQ8105.

This block reduces the high frequency ground noise from the original ac power source.

② Rectifier / DC link Circuit

This rectifier circuit creates the dc regulated voltage from AC input line.

【Power Source】

• Sub-power Source

The half-wave AC voltage through the D8151 creates the sub-dc source in C8121.

• Main-power Source

The full-wave AC voltage through the RC8101 creates the main-dc source for PFC input.

③ Inrush Current Protection Circuit

In a transient response interval of the AC source injection, the high inrush current flows from ac source to this power board because of an input capacitor having the low impedance. At that interval, the part's damage is quite within the realms of possibility. The inrush current protection circuit removes this possibility in a transient interval by adding thermistor (TH8101, TH8102). After PFC input capacitor is fully charged, (in steady state), the relays (RL8101, RL8102) are ON and input normal current flows through them without any overheat.

④ Sub-Power Circuit

【Basic Operation】

This Stand-by block is controlled by SMPS operation ; On/off switching FET inside of PRC [pulse ratio controlled] IC (STR-V152).

Using the switching operation, we can get the energy in an input capacitor [C8121] to transmit to output-port for STD 5V, dc source for Micom and PFC controller. The PRC controller STR-V152 can be operated by injection of the Start-up current to 8 pin of it. Output voltage is also controlled by following method ;

Controlled op-amp [Z8171] keeps the output voltage to be constant in steady state by compensating an error voltage between the dividing-resistors (R8174, RX8172 and R8175) and its reference 2.5V. And then output small signal voltage of op-amp induces a Photocoupler current level on the feedback line. Dc source voltage for PFC controller comes from secondary side link in a main transformer (3~5 pin).

【Protection Function】

• Over Voltage Protection

When the Vcc voltage is higher than O.V.P level [Vcc(OVP)=31.2V(TYP)], Latch is on and power board is shut down. After Latch is on, this power board can not operate before the voltage of an electric capacitor C8123 is fully discharged for about 5 minutes.

- **Over Current Protection**

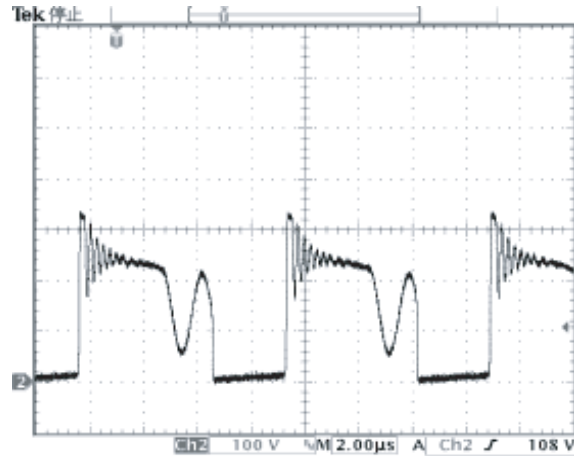
O.C.P function in STR-V152 can be obtained by sensing the MOS-FET's drain peak current per 1 pulse (Pulse by Pulse method). This sensing value comes from the voltage across sensing-resistor(R8122) between OCP(FET source,3Pin) and GND(5Pin). Thus, this power board can protect any part's damage caused by over current flowing.

- **Over Load Protection**

If there is an overload state in output ports due to some reason, this power board operates in UVLO mode for protection of IC's damage.

- **Over Heat Protection**

If the temperature on the chip parts is higher than about 135℃, this power board operates in thermal protection mode and makes Latch on, finally this power board is shut down.



< Vds Voltage Waveform on Sub-power Circuit FET >

⑤ PFC Circuit

【Basic Operation】

After the sub-dc voltage source is on, Vcc of PFC controller IC(UCC2818A) induces the PSON port to be "L" level and this makes the oscillation with a frequency $\frac{0.6}{RT \times CT}$ (RT:R8239, CT:C8235) in it. The PFC block consists of two inside feedback

loop to control FET duty ratio. The first is the voltage loop that keeps the output voltage to be constant by sensing the output voltage in 11 pin. And the second loop controls the power factor by comparing the input line voltage (6pin) and reference in it. By this current loop, the input current waveform can be sinusoidal and now we can get the higher power factor (almost 1.0) in this power board.

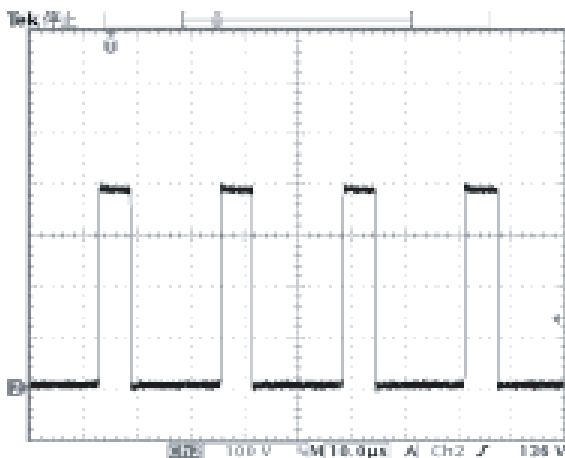
【Protection Function】

• Over Voltage Protection

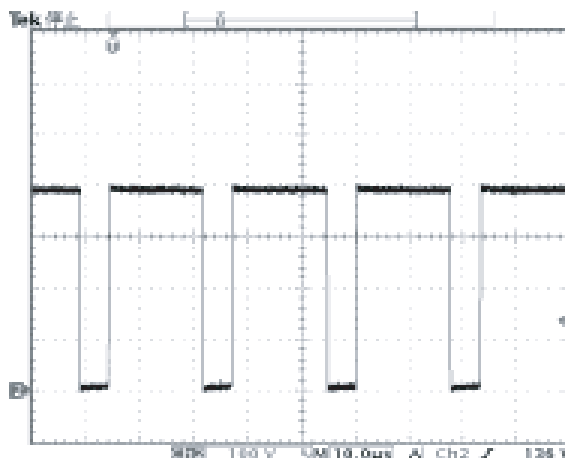
Because the PFC controller IC(UCC2818A) has the function of over voltage protection about the high output voltage limit, even if the overshoot and not-controlled state occur with the deep condition in ac input source or output step load, this controller protects the abnormal output voltage state by decreasing the FET ON ratio. The high output limit level is set to 110% value of voltage across the dividing resistors ; R8247, R8248, R8249, R8250, R8251 (this power board has also the high limit O.V.P level about 440V)

• Over Current Protection

PFC controller has the function of over current protection by sensing the voltage (2 pin) coming from the current-sensing resistor R8201. If the over current flows across the sensing resistor, controller decreases the FET duty ratio for protection of part's damage.



< FET Vds Waveform (100Vac input) >



< FET Vds Waveform (230Vac input) >

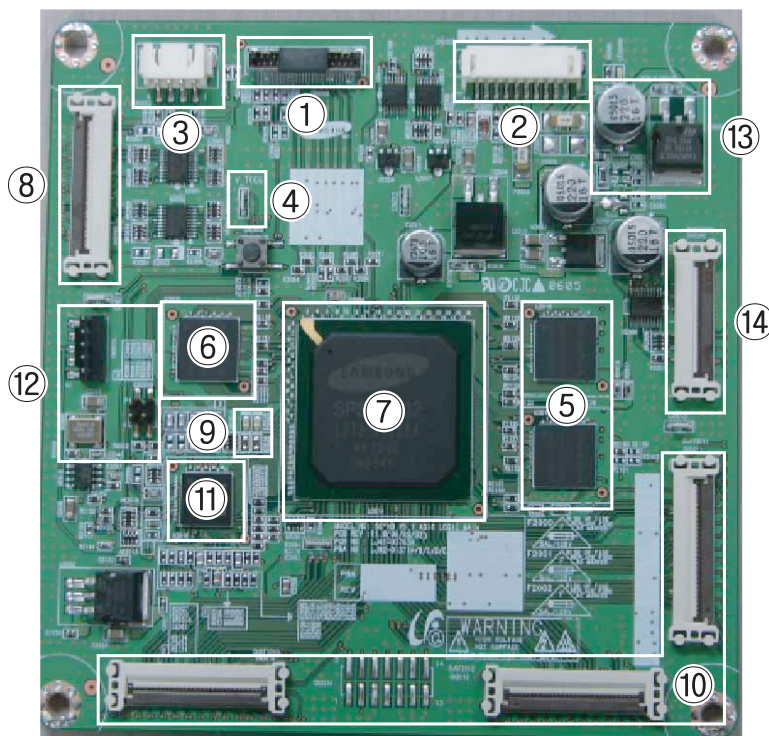
6. Component Spec

Z8231	UCC2818A	18V, 20mA	TEXAS	PFC IC
Q8201, Q8202, Q8205	2SK3911	600V, 20A	TOSHIBA	PFC Switching FET
D8203	FMC-26UA	1200V, 3A	SANKEN	PFC Diode
D8205	FMX-G16S	600V, 5A	SANKEN	PFC Diode
Z8121	STR-V152	17.5V, 4A	SANKEN	ST-BY Switching IC
D8171	FMB-G14L	40V, 5A	SANKEN	ST-BY Diode
Q8301, Q8302	2SK2698	500V, 15A	TOSHIBA	Half SMZ FET
Q8502, Q8503	2SK2698	500V, 15A	TOSHIBA	SMZ FET
Z8333	SI-3150C	35V, 1.5A	SANKEN	Regulator
Z8334	SI-3050J	25V, 2.0A	SANKEN	Regulator
RC8336	FMX-22S	200V, 10A	SANKEN	Vamp Output Diode
D8332	1SS244	250V, 625mA	ROHM	Vt Output Diode
RC8331	FMX-22S	200V, 10A	SANKEN	Vg Output Diode
RC8332	FMB-26L	60V, 10A	SANKEN	12V Output Diode
Q8332	2SK2232	60V, 25A	TOSHIBA	6.5V Switching IC
RC8333, RC8334	FMB-26L	60V, 10A	SANKEN	6.5V Output Diode
Q8331	2SK3659	20V, 65A	NEC	5.3V Switching IC
RC8335	FME-24H	40V, 15A	SANKEN	5.3V Output Diode
Q8401	2SK2698	500V, 15A	TOSHIBA	Va FET
RC8401	FMX-G26S	600V, 10A	SANKEN	Va Output Diode
RC8551	FMG-26S	600V, 6A	SANKEN	Vs Output Diode
RC8101	RBV-1506J	600V, 15A	SANKEN	Bridge Diode
RL8101, RL8102	G5PA-1-M-E	250V, 10A	OMRON	Relay

13-2-2 PDP Module

1. Logic Board

■ A name of main part of Logic Board and vocabulary.



Item	Name	Explanation												
①	LVDS Connector	The connector to receive LVDS-encoded RGB, H, V, DATAEN and DCLK signals from the Video Board.												
②	Power Connector	The connector to receive power (5V) and the control signal for the Logic Board.												
③	Communications Connector	The connector to connect the keyscan, which adjusts the pattern and registry values, the window manager and the 512K loading board.												
④	V-TOGG	V-SYNC Out pin.												
⑤	DDR MEMORY (MENCON)	Memory for saving address output data.												
⑥	DDR MEMORY (SFP)	Memory for saving DRIVE output and FRAME DELAY data.												
⑦	ASIC CHIP	The Main Processor that generates and outputs the logic drive signal and address data.												
⑧	Y Connector	The connector to output the Y Drive Board control signal.												
⑨	Operating Status LED	The LED that shows if the Sync and Clock signals are normally applied to the Logic Board. (Normal Condition: Blinks at a 0.5 second interval) For an initial drive, LED2001 is on for 2 seconds and LCD2002 blinks at a 0.5 second interval.												
⑩	CN2010, CN2011, CN2012	The connector to output address data and the control signal to the lower E, F and G-buffer board.												
⑪	ARM-PROCESSOR	The IC circuit that controls the control signal to drive the Logic Main.												
⑫	Micom Loading 5Pin Connector Initial image option PIN (CN2009)	: The connector for loading the Micom Drive program (CN2015). Loads the program in connection with the GA-WRITER. : Initial image select F/W or BLACK : Jumper Yes : <table><tr><td>4</td><td>3</td></tr><tr><td>2</td><td>1</td></tr></table> or <table><tr><td>4</td><td>3</td></tr><tr><td>2</td><td>1</td></tr></table> Full White, Jumper No : <table><tr><td>4</td><td>3</td></tr><tr><td>2</td><td>1</td></tr></table> Black	4	3	2	1	4	3	2	1	4	3	2	1
4	3													
2	1													
4	3													
2	1													
4	3													
2	1													
⑬	Main Power Input	The Power Block that receives 5V input from SMPS and outputs 3.3V (L4957AD3.3V regulator adopted)												
⑭	X Connector	The connector to output the X Drive Board control signal.												

■ About Logic Board

The Logic Board consists of a Logic Main board, which processes the video signal input through LVDS and creates the address driver output and XY drive signals, and a Buffer board, which buffers the output signal and outputs the signal to the Address Driver IC (TCP IC).

Logic Board		Function	Remark
Logic Main		- Video Signal Processing (W/L, error diffusion, APC, FCR) - Built-in LVDS Application and 1 ASIC Chip - Outputs the Address Driver Control and Data Signals to the Buffer board - Outputs the XY Drive Board Control Signal - Major Drive Voltage Monitoring (MICOM Circuit Block) : Detects abnormal voltage applications and protects drive circuits - Temperature Induced Operating Mode (Low Temperature/Room Temperature/High Temperature) : Optimization of discharge by temperature	
Buffer Board	E Buffer Board	Outputs data and control signals to the bottom left TCP IC.	Single Scan and RSDS applied
	F Buffer Board	Outputs data and control signals to the center up TCP IC.	
	G Buffer Board	Outputs data and control signals to the bottom right TCP IC.	

■ Normal Waveform

If the PDP set and the Logic Board are operating properly, the Operating LED of Figure 1 blinks normally (at a 0.5 second interval) and the V-SYNC and data are properly output. If the screen is displayed abnormally, check if the Vref voltage supplied to the DDR is 1.25V.

If the set is out of order, follow the troubleshooting procedures below.

1. Visual Inspection: Check if the Operating LED of the Logic Main blinks at a 0.5 second interval.

- ▶ The Operating LED blinks too fast or too slow when Micom is processing data abnormally. In this case, reload the data to the Micom. To load the data, load the data using the GA-WRITER, connecting power to the module.

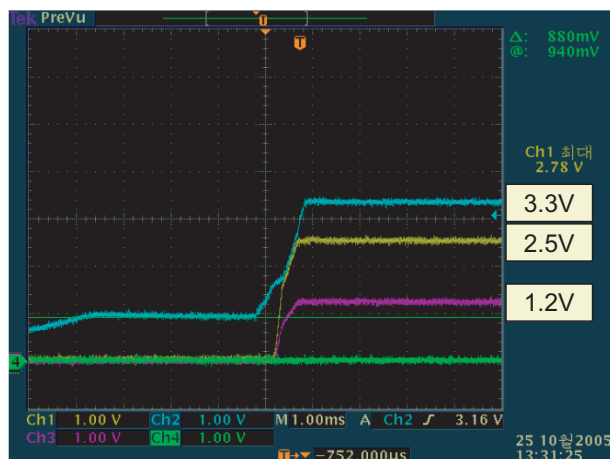
2. If no problem has been found by a visual inspection, check if the drive waveform and address data are normal using an oscilloscope.

(Checkpoint : For drive waveform output, measure the power of the damping resistance.

For address data output, because the address output is RSDS data, measure the output using a Differential Probe for a more accurate result.

- ▶ If the drive waveform or address output is not measured, check if the output of R2104, which is to the left of U2010, is 3.3V using a multimeter. No output is measured when the program is corrupted. In this case, reload the program. If the output is measured, check if the ASIC_nRESET TP output is 3.3V. If the set does not work or no picture is displayed when the output is normal, load the program using the GA-WRITER or measure the output again using another oscillator as this happens when the clock generator is out of order through an oscillator (X2000) short, or an error occurred during the program's initial run.
- ▶ For an abnormally displayed screen, check the data output. If the data output is normal, the reason may be a hardware short or a resistance crack. First check if there is short or crack on the Logic Board (Logic Main and Buffer) through a visual inspection and measure the resistance of the resistor in the area in question. For address data, check if the U2003 regulator output is 2.5V as an abnormal screen may be caused by an abnormal operation of the DDR memory through the wrong Vref voltage. Then, measure the R2018 and R2020 resistors and check if the output voltage is 1.25V. If not, the reason may be because BGA is open or short. In this case, since this defect is not repairable, replace the board, reload the latest program and retest it.
- ▶ If the screen is displayed abnormally when the Vref voltage is normal, conduct a short test to find any abnormal points and repair the points, if found. If the found short is internal, replace the board.
- ▶ The following waveform shows a waveform when the V-sinc and address data are output properly.

- In addition, you must first conduct a preliminary appearance inspection to locate damages to a device, a blank screen due to a missing jumper and any abnormal operations because of a missing jumper.



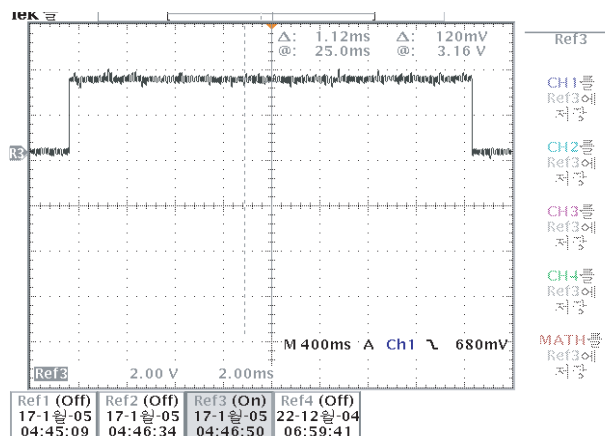
Normal Power Input Waveform

1. ARM3.3V or D3.3V

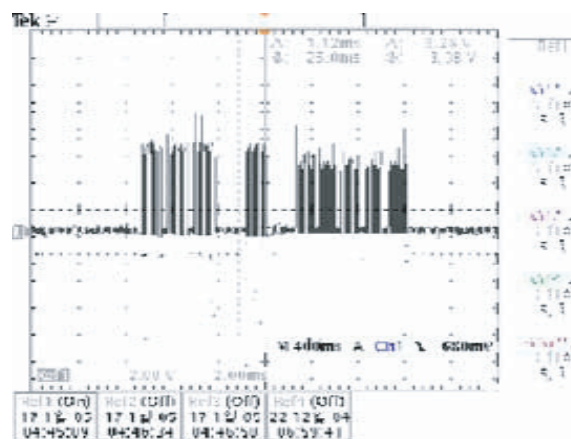
* ASIC_nRESET and ARM-RESET must also be output as 3.3V.

2. D2.5V(DDR I/O)

3. D1.2V (for ASIC Core)



< Normal V-SYNC Output Waveform >



Since it is RSDS, process the signal using a differential signal. The above waveform is a positive signal. The waveform of the negative signal output is the reverse of the positive signal.

2. X, Y Control Block

■ Drive Circuit Definition

The Drive Circuit is a circuit that generates a waveform (high-voltage pulse) for the X and Y electrode group of the panel's external port so as to control the panel. The high-voltage switching pulse is generated through the combination of the IC HYBRID (Drive block + IGBT) and FET.

■ Drive Circuit Mechanism

A picture is displayed on the PDP by applying voltage to the X, Y and ADDRESS electrodes of each pixel according to the appropriate condition. The drive waveform applied to 42HD V4 is of the ISSS (ISSS: Interweaving Scan and Selective Sustain with Scan IC) type and has IDS (InDependent Sustain) in the Scan section unlike the existing ADS. Discharges within a PDP pixel can be classified into 3 types:

- ① Address Discharge: To form a wall voltage within the pixel by giving information (applying DATA voltage) to the pixel to be lit.
- ② Sustain Discharge: Sustain Discharge is a display section that voluntarily maintains the discharge of the pixels whose wall voltage has been formed by the Address Discharge. (Optical output for displaying a picture is generated).
- ③ Erase Discharge: To selectively perform Address Discharge for each pixel, all pixels on the panel should be in the same status (the wall electric charge status and space electric charge status must be the same). Therefore, the Erase Discharge section is an important component for guaranteeing the drive margin, and is implemented by various methods such as applying a log waveform. However, the current 42HD V4 has adopted a wall voltage control through an RA (Repeated Auto-quenching) reset that separates the discharge area and performs switching to perform an efficient erase operation, while the gradient was the same in the RAMP section in the existing approach.

1) Address Discharge

A discharge that is caused by the difference between the plus electric potential (V_a apply voltage of 65~70V + Positive Wall Charge) of the electrode and the negative electric potential (Applied GND Level + Negative Wall Charge) of the Y electrode. The Address discharge forms a wall voltage within the pixel to display color (to be discharged) before the Sustain Discharge period. That is, the pixel whose wall charge has been formed by the Address Discharge forms a Sustain Discharge via the following Sustain pulse.

2) Sustain Discharge

A Sustain Discharge is a Self-Sustaining Discharge formed by the accumulation of the electric potential of the Sustain pulse (generally 200 ~ 210 Volt) alternating over the X and Y electrodes during the sustain period, and the wall charge depending on whether the pixel has previously been discharged or not. That is, it is controlled by the memory characteristics, one of the basic characteristics of the AC PDP (in that the past operating conditions determine the current status). That is, if a wall voltage exists on the pixel (if the pixel is on), a discharge is formed again because the applied voltage, which is the sum of the following applied Sustain voltage and the wall voltage, is higher than the discharge threshold voltage. If no wall voltage exists on the pixel (if the pixel is off), a discharge will not occur because the Sustain voltage is not higher than the discharge threshold voltage. The Sustain Discharge period is the period for generating actual optical output so as to display a picture on the PDP screen.

3) Erase Discharge

The purpose of a Reset (Erase) Discharge is to create uniformity of the wall voltage within all panel pixels. It evens the wall voltages regardless of the Sustain Discharge in the previous stage. The Erase Discharge has to remove the wall voltage introduced by the Sustain Discharge by supplying ions or electrons by a discharge. When the wall voltage is removed through a discharge, the time when the reverse polarity is applied to the wall voltage (fine width erasing) is to be limited or ions or electrons are to be supplied by a weak discharge (low voltage erasing) so as to prevent a wall charge in reverse polarity.

There are 2 known weak discharge (low-voltage) erase methods. 1) A log waveform adopted by F company and 2) a weak erase discharge via a ramp waveform adopted by Matsushita and other companies. Both methods control the externally applied voltage by the difference of the wall voltage of the pixel by applying the rising gradient of the erasing waveform slowly, because the discharge begins when the sum of the existing remaining wall voltage and the rising waveform voltage exceeds the drive threshold voltage. In addition, a weak discharge is introduced, because the applied voltage is low.

■ Requisite Components Necessary for Drive Board Operation

1) Power

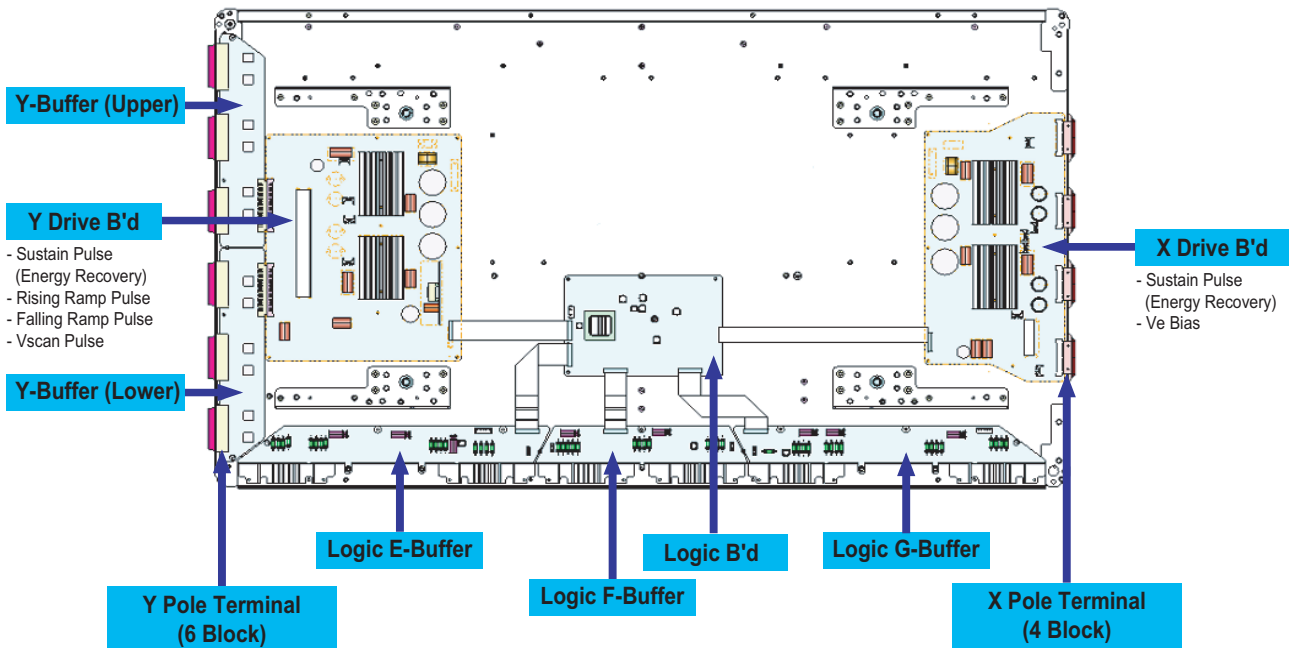
- Supplied from the power board. The optimal value may differ from the following:
 - a) V_s : 200V - Sustain
 - b) V_{set} : 190V - Y Rising Ramp
 - c) V_e : 110V - V_e bias
 - d) V_{scan} : -190V - Scan low bias
 - e) V_{sc_h} : -70V - Scan high bias (Created by the DC-DC power block of the Y Drive board)
 - f) V_{dd} : 5V - Logic signal buffer IC
 - g) V_{cc} : 15V - Gate drive IC

2) Logic Signal

- Supplied by the Logic board
- Gate signal of each switch

■ Drive Circuit Architecture and Function Description

- Description of the function of each board



1) X Drive Board

This is connected to the X port part of the panel. 1) Sustain voltage waveform (including ERC) is output, and 2) V_e bias in the Scan section is maintained.

2) Y Drive Board

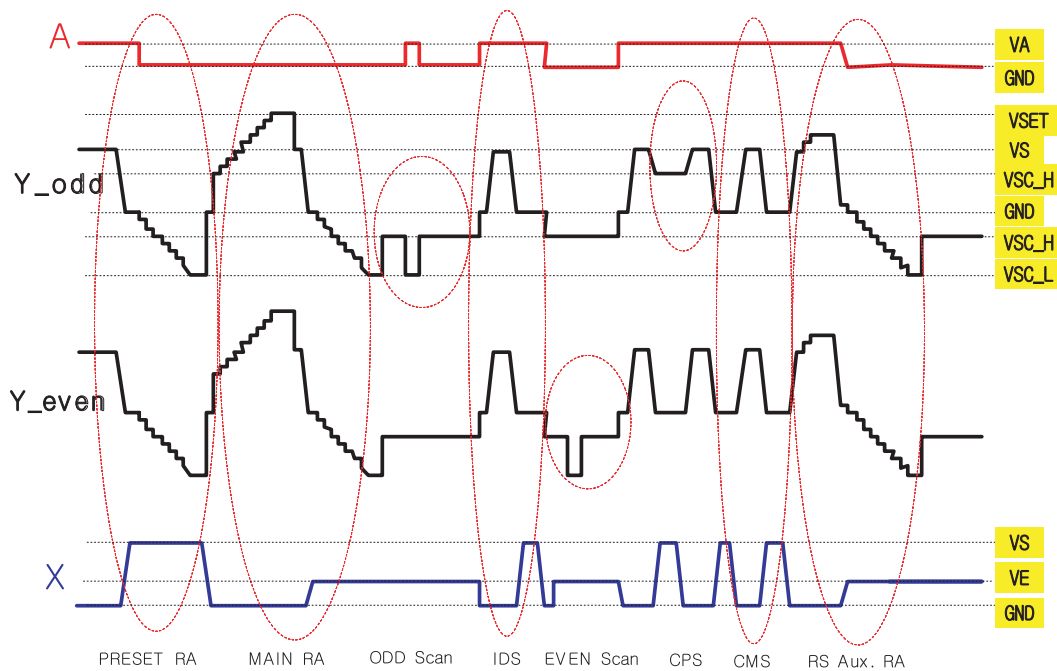
This is connected to the Y port part of the panel. It outputs 1) Sustain voltage wave form (including ERC), and 2) Y Rising, Falling Ramp waveform, and maintains 3) V_{scan} bias.

3) Y Buffer Board

A board, which applies the Scan waveform to the Y terminal block, consists of 12 Scan Driver ICs (TI SN755870: 64 Outputs).

■ Drive Waveform Specifications

- Drive Waveform



- Description of the function of each pulse

1) Y Preset RA Pulse

This is supplied to the first sub-field and erases the discharge status of the previous subfield.

2) Y Main RA Pulse

During the Y Rising Ramp section, approximately 300V~350V ($V_{scan-h} + V_{set}$) of external voltage is supplied to the Y electrode, and a weak discharge is started when each gap voltage is equal to the discharge start voltage. While maintaining the weak discharge, as a whole, negative wall charges are accumulated on the Y electrode and positive wall charges on the X electrode and the address electrode.

During the Y Falling Ramp section, the negative wall charges accumulated on the Y electrode by the approximately 105V of X bias are used to erase the positive wall charges on the X electrode, and the address electrode maintains most of the positive wall charges accumulated during the (0V) Rising Ramp section preparing for the next address discharge.

3) Y Scan Pulse (Odd/Even)

A scan pulse classifies the Y electrode into Odd and Even lines and selects FPC output electrodes sequentially (one line-at-a-time). At this time, V_{scan} is called the Scan Bias Voltage.

A V_{scan} voltage of approximately -175 Volt (V_{sc_1}) is supplied to the electrode lines. For the other lines, -56 volt (V_{sc_h} is higher than V_{sc_l} by 120V) is supplied. However, negative wall charges are accumulated on the Y electrode by the Ramp pulse, and positive wall charges are accumulated on the address electrode, and the voltage applied to the cells, to which the Address pulse (70V~75V) has been applied, becomes higher than the discharge voltage. An address Discharge occurs as a result. Since the Scan and Data pulse is applied one line at a time as above, the address time of PDP is very long.

4) IDS Pulse (InDependent Sustain Pulse)

Since an Odd Scan is performed first, the Odd line output sustains optical twice during the IDS section. At this time, a Sustain Discharge does not occur for the Even line because the Even line is not scanned.

5) CPS Pulse (ComPare Sustain Pulse)

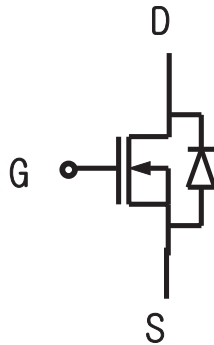
By floating the Odd line that caused the Sustain Discharge in the IDS section to the V_{scan-h} level, and introducing the Sustain Discharge only for Even lines, it compensates for the optical output difference between the Even and Odd lines.

6) CMS Pulse (ComMon Sustain Pulse)

Actual optical is output during the common Sustain Discharge section.

■ Mechanism of the FET Operation and High-Voltage Switching

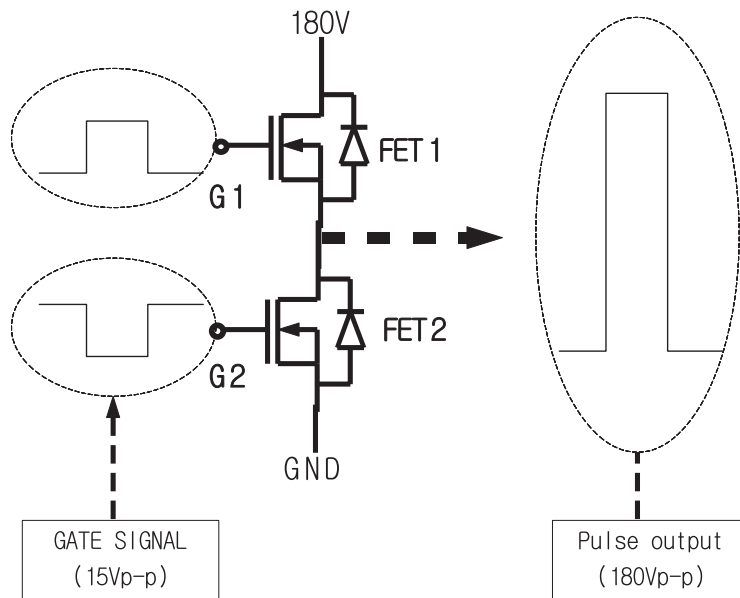
Mechanism of the FET Operation



G : Gate
S : Source
D : Drain

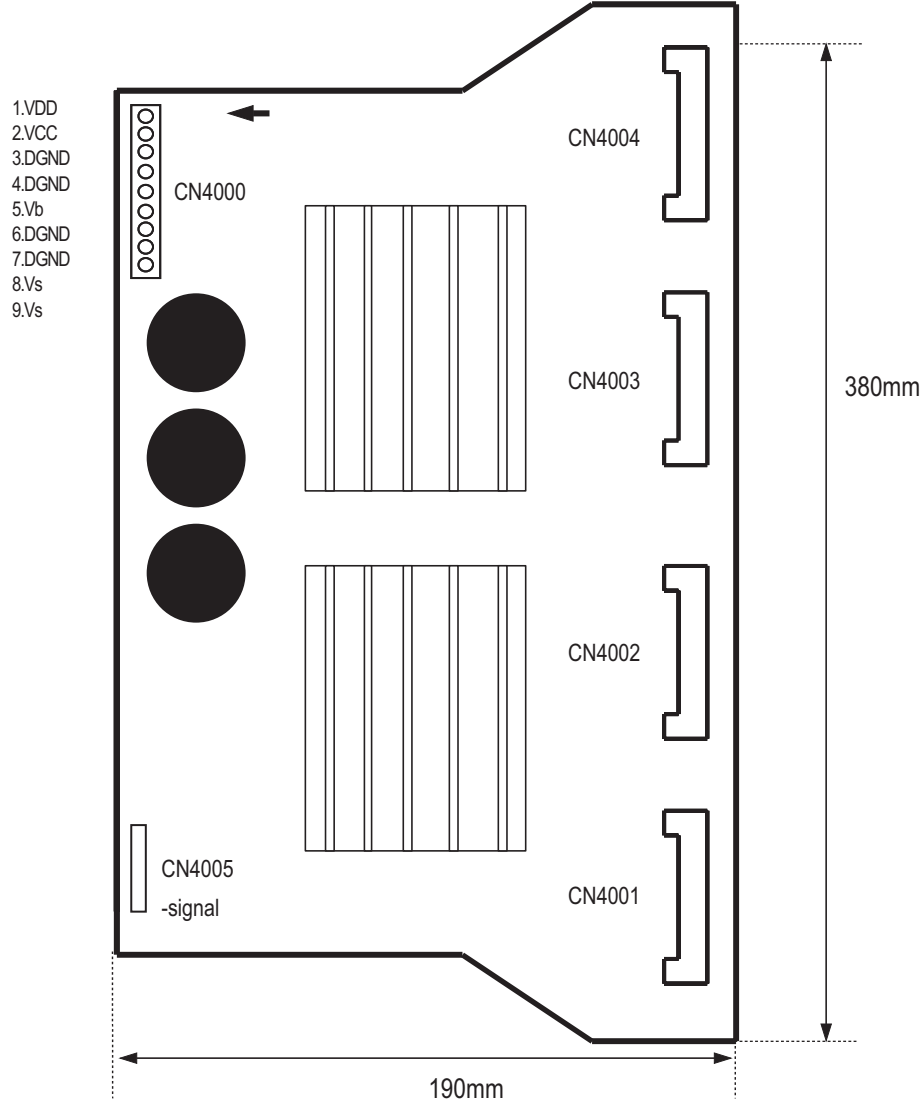
- 1) When the signal is output to the gate, (positive electric potential) FET short circuits (i.e. Conductor of resistance 0)
- 2) When no signal is output to the gate (GND), FET changes to an open circuit (i.e. an insulator of resistance ∞).

High-Voltage Switching of the FET Operation

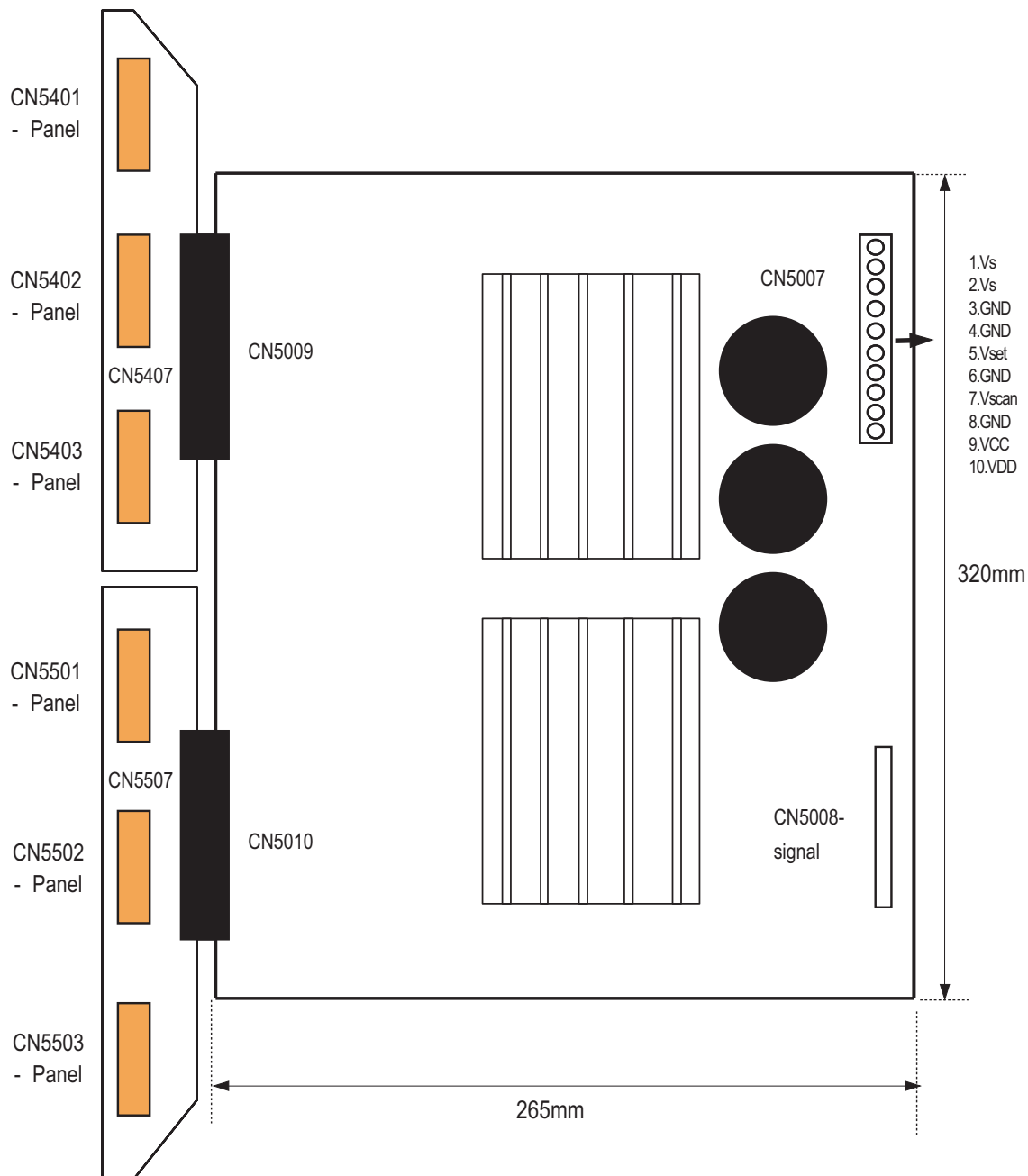


- 1) When no signal is applied to G1, FET1 is opened and when the signal is applied to G2, FET2 short circuits, GND is output via the output terminal.
- 2) When a signal is applied to G1, FET1 short circuits and when no signal is applied to G2, FET2 is opened, and 180V is output via the output terminal.

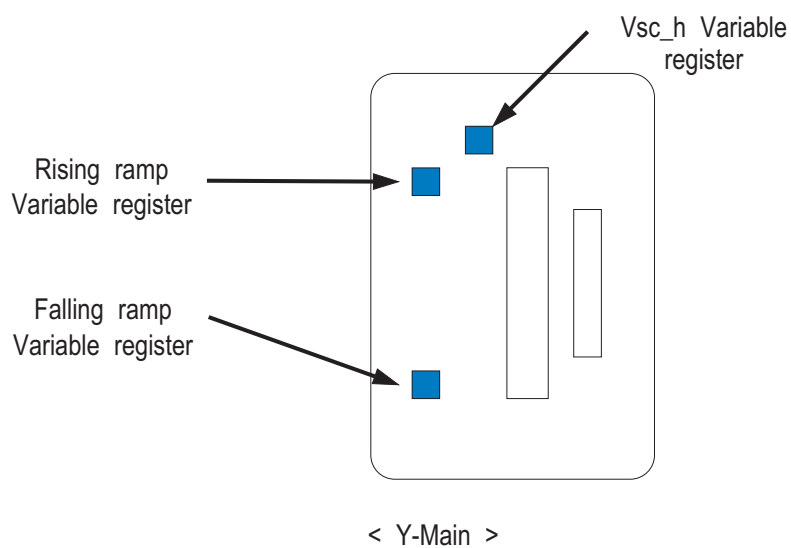
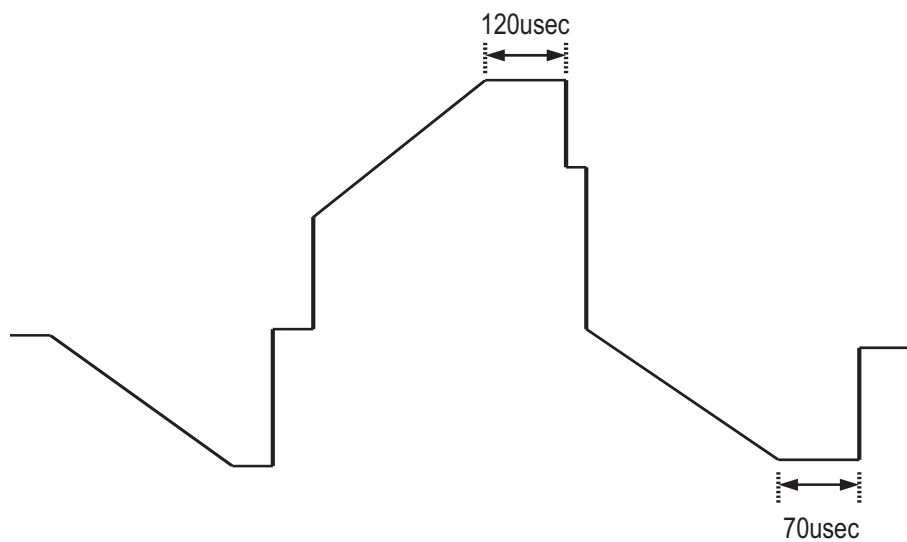
■ Drive Board Connector Layout
1) X-Main Board



Samsung Electronics



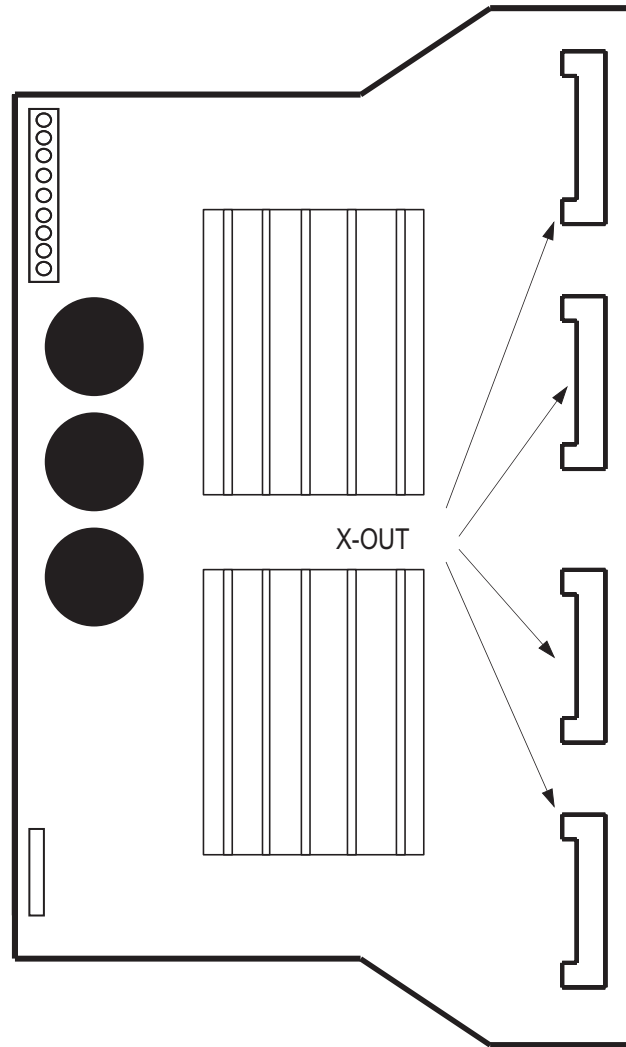
- Adjust the drive waveform so that the main reset (rising, falling:40usec) is the same as those in the F/W pattern.
(※ Attachment 1 reference)



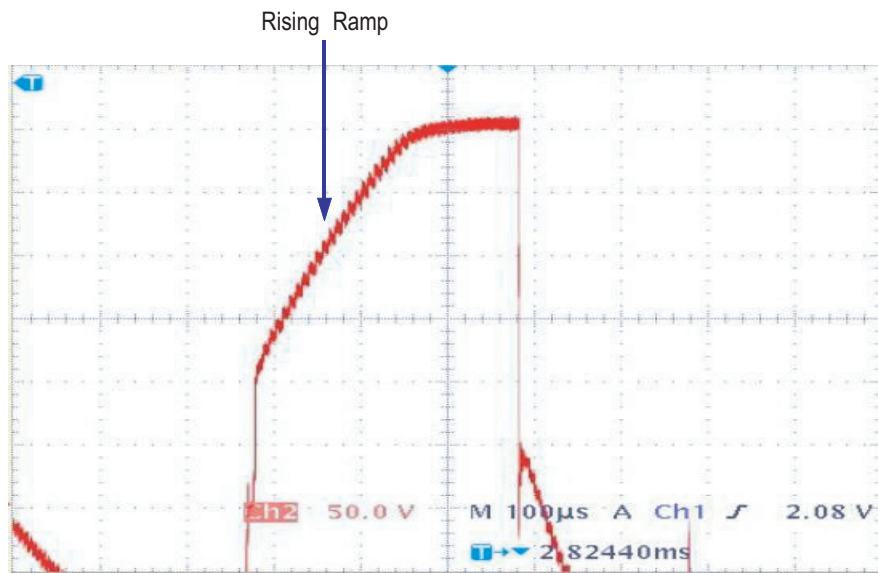
<Voltage Adjustment Specifications>

Vset	Vs	Vsc_l	Vsc_h	Ve	Va
190V	200V	-190V	-70V	115V	65V

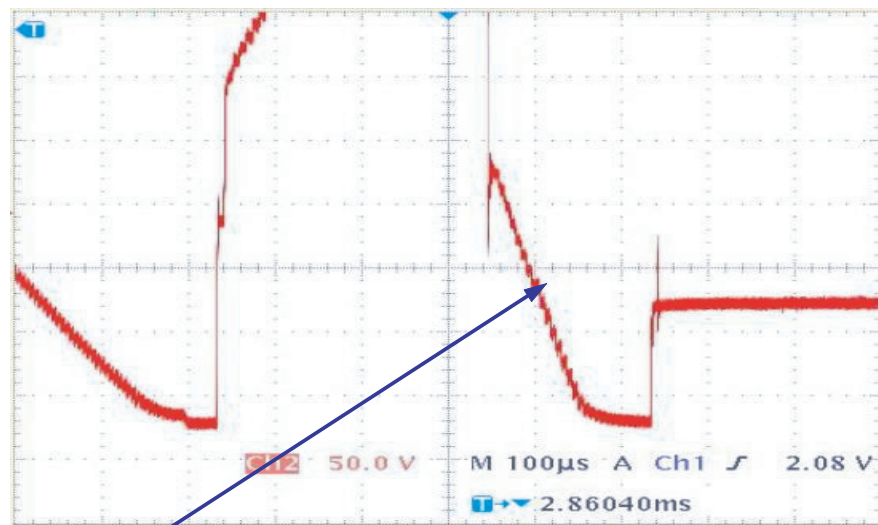
- Check that the output of X-Out of the X board follows the waveform of ※ Attachment 2 when the power is supplied.



- ※ Attachment 1
■ Y Output Waveform

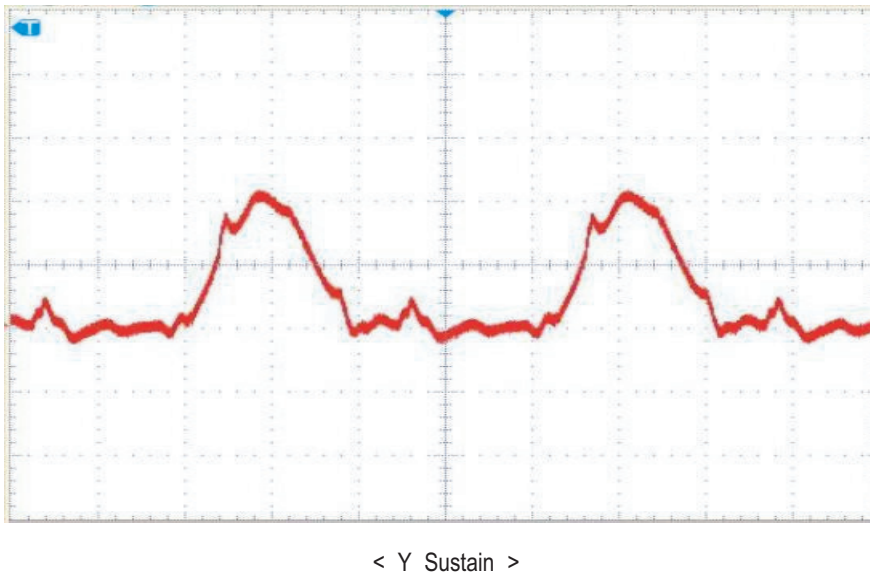
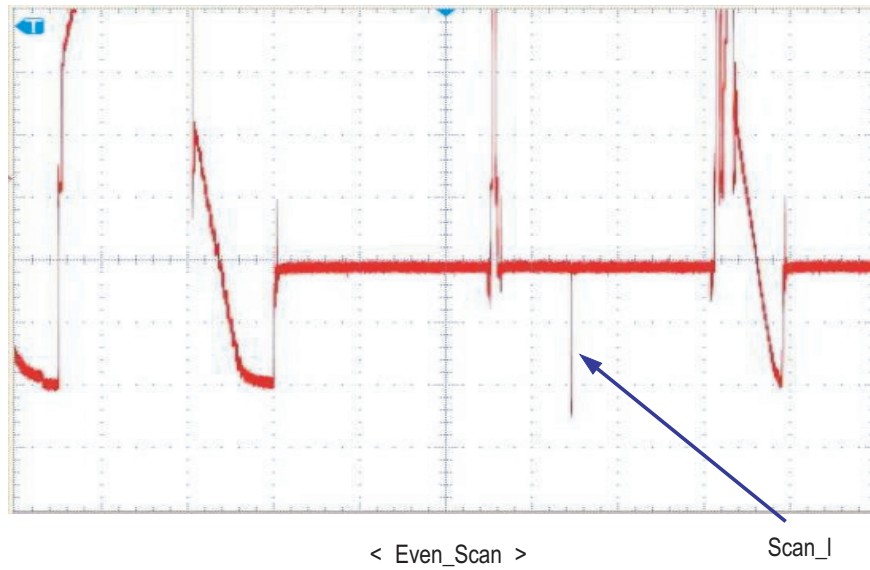


< Rising Ramp >



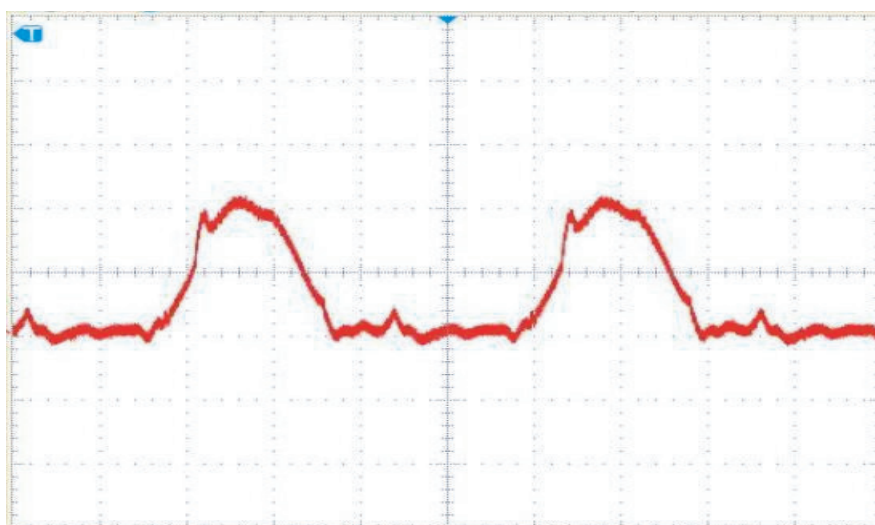
Falling Ramp

< Falling Ramp >



※ Attachment 2

■ X Output Waveform

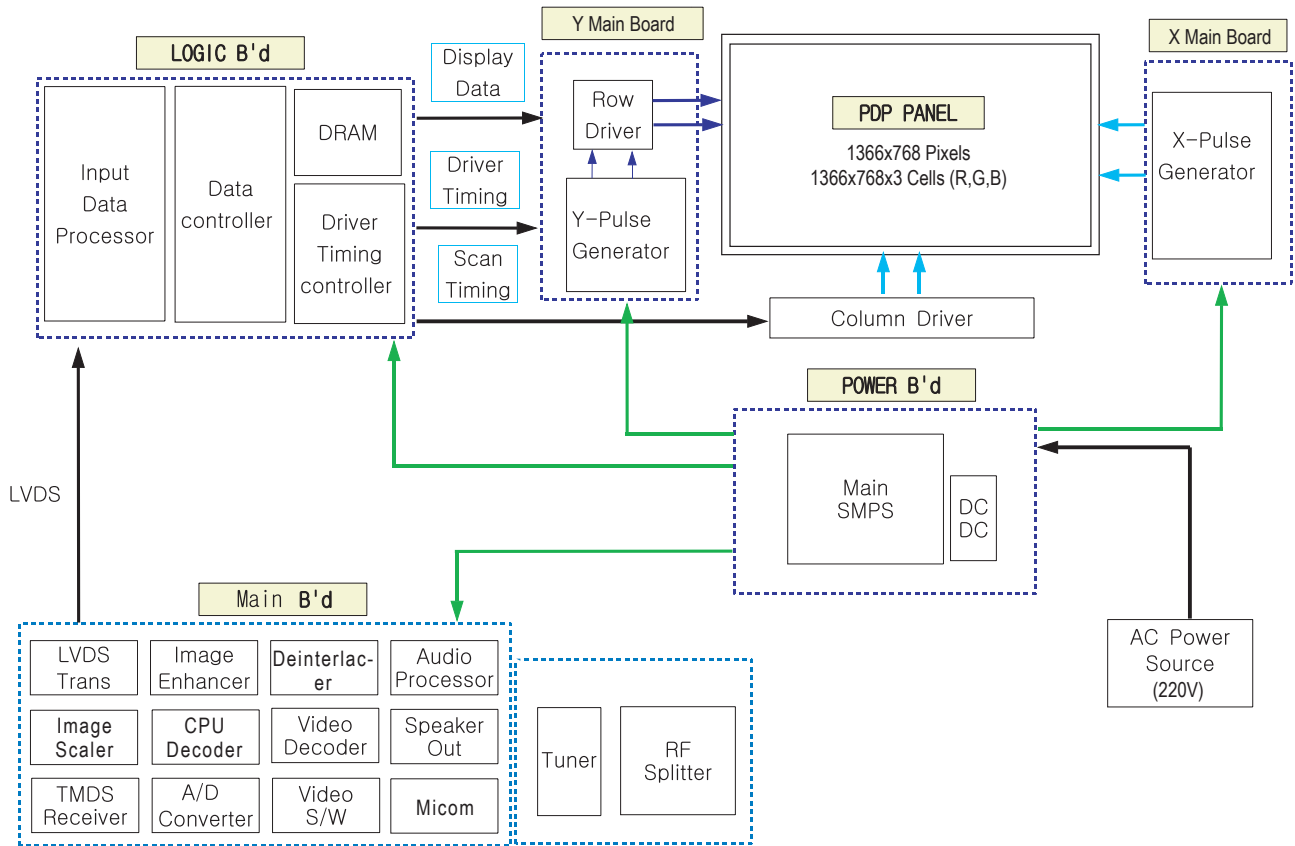


< X Sustain >

MEMO

7. Block Diagram

7-1 Overall Block Diagram

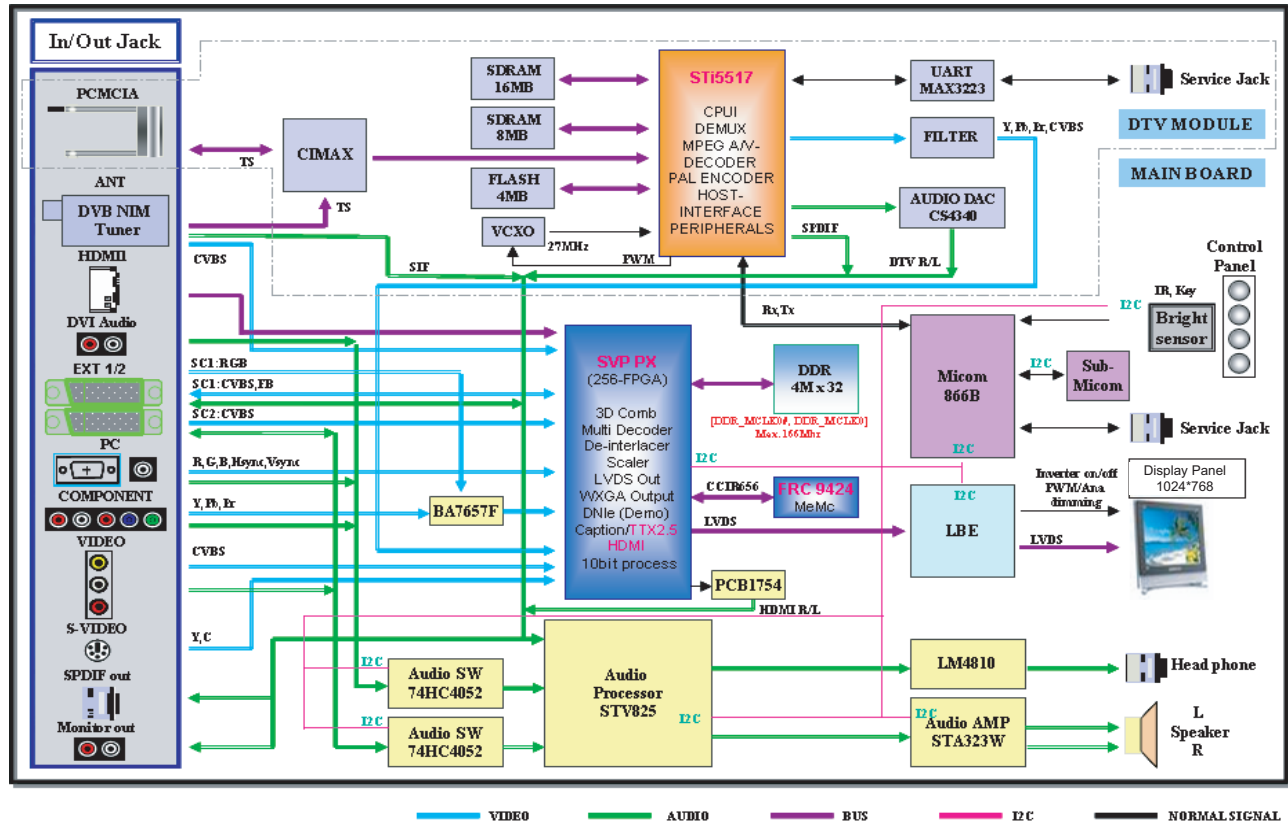


CN804-1(Main SMPS) ↔ CN102(Main B'D)		CN803(Main SMPS) ↔ CN101(Main B'D)		CN810(Main SMPS) ↔ CN2005(Logic B'D)		CN2(DC-DC SMPS) ↔ CN5007(Y B'D)		CN4(DC-DC SMPS) ↔ CN4000(X B'D)	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	D5.3V	1	6.5V	1	D5.3V	1	D5.3V	1	D5.3V
2	RTN	2	RTN	2	D5.3V	2	Vg	2	Vg
3	VCS	3	A12V	3	RTN	3	RTN	3	RTN
4	VCA	4	RTN	4	RTN	4	Vscan	4	RTN
5	RTN	5	18V-AMP	5	D5.3V	5	RTN	5	Ve
6	RTN	6	18V-AMP	6	RTN	6	Vset	6	RTN
7	D12V	7	RTN-AMP	7	PS_ON	7	RTN	7	RTN
8	PS_ON	8	RTN-AMP	8	N.C	8	RTN	8	Vs
9	RTN	9	VT	9	VS_ON	9	Vs	9	Vs
10	STB-5V	10	RTN	10	STB-5V	10	Vs		
11	FAN_ON								
12	FAN_D								

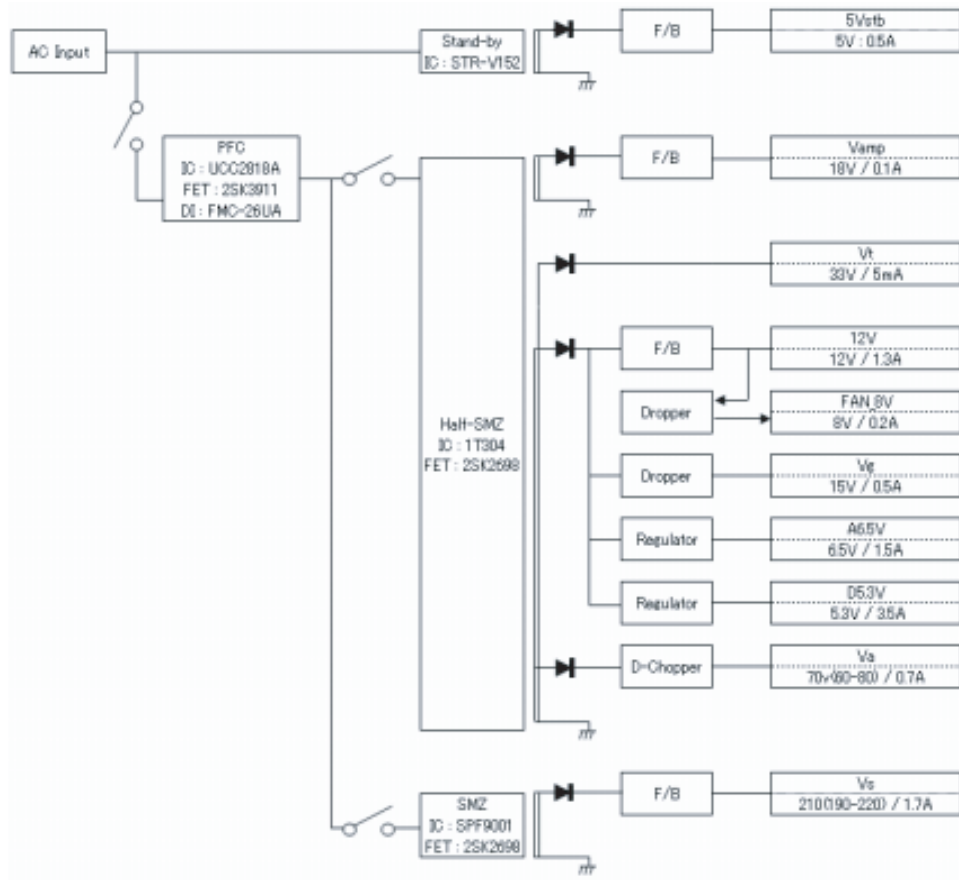
CN5(DC-DC SMPS) ↔ CN2710(F-Buffer)	
Pin No.	Signal
1	RTN
2	N.C
3	D5.3V
4	N.C
5	Va

7-2 Partial Block Diagram

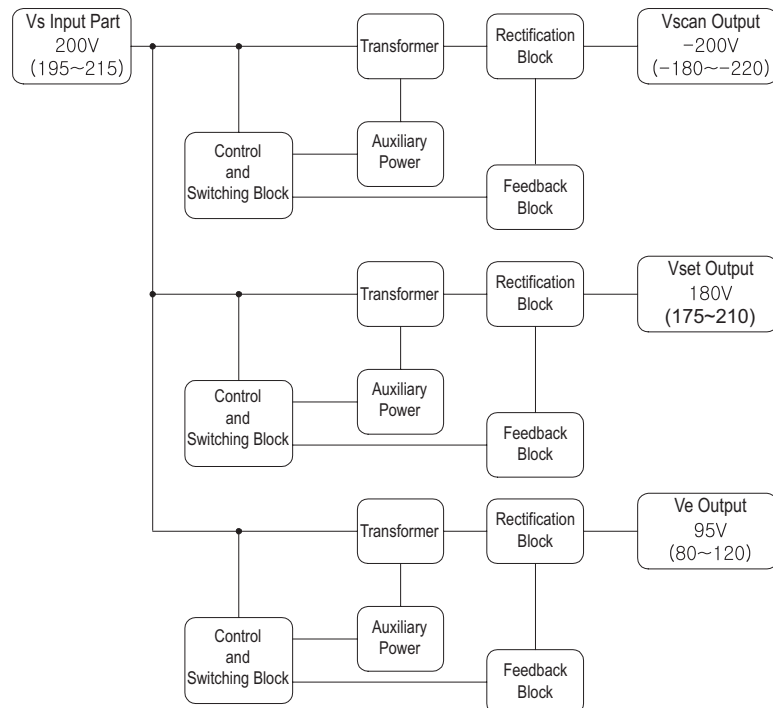
7-2-1 Audio/Video Signal Block Diagram



7-2-2 Main SMPS Block Diagram

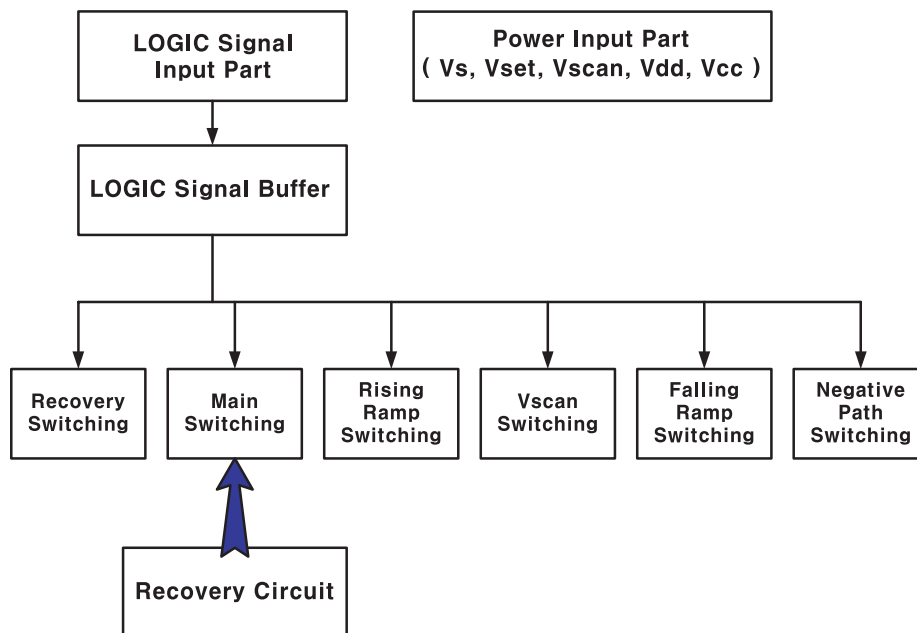


7-2-3 DC-DC SMPS Block Diagram

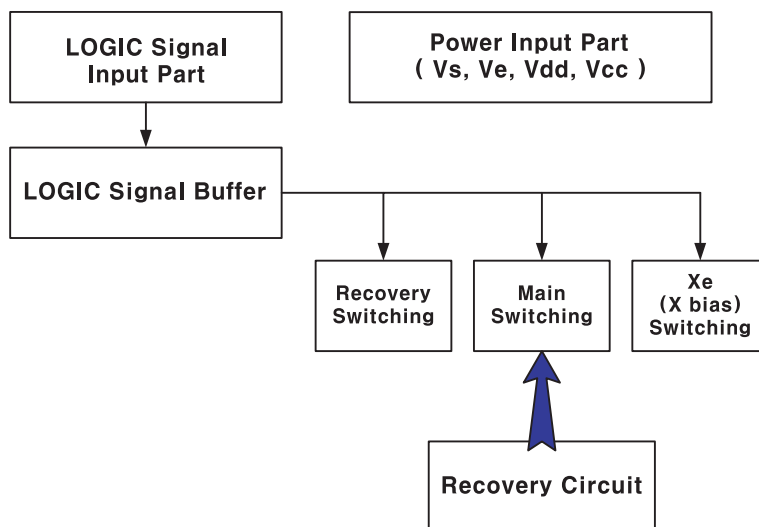


7-2-4 Module Driver Board Block Diagram

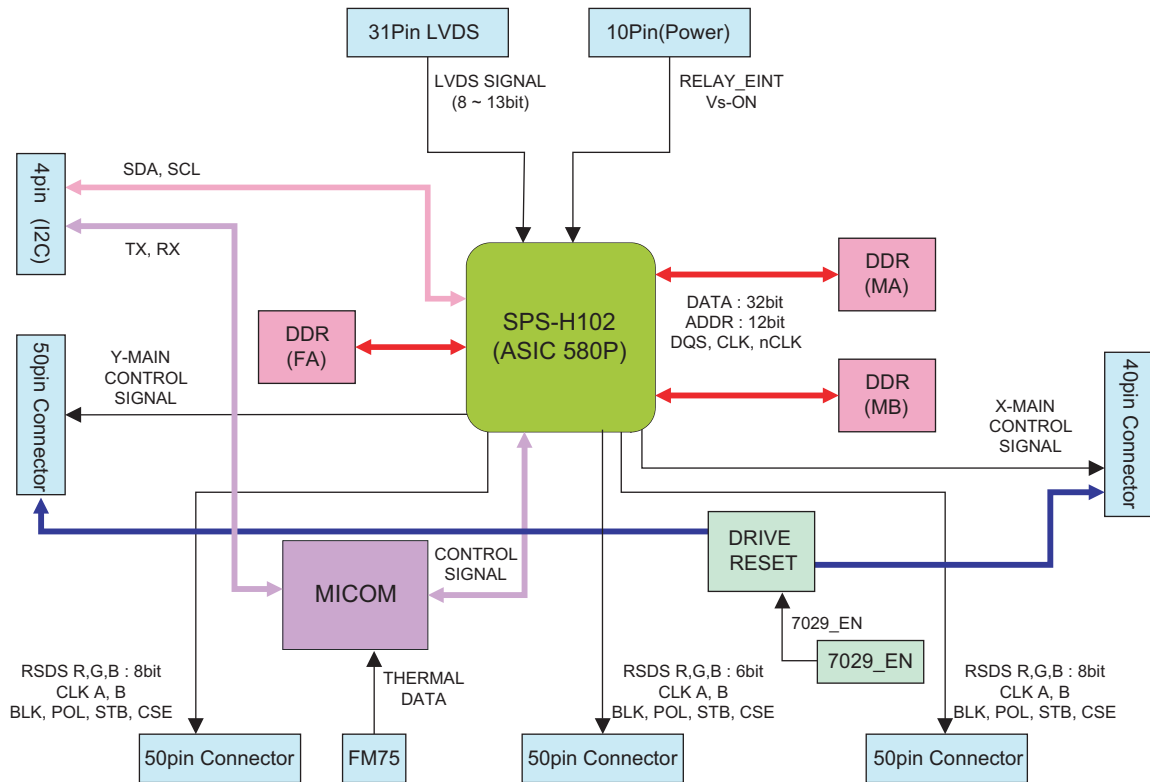
1. Y Main Board



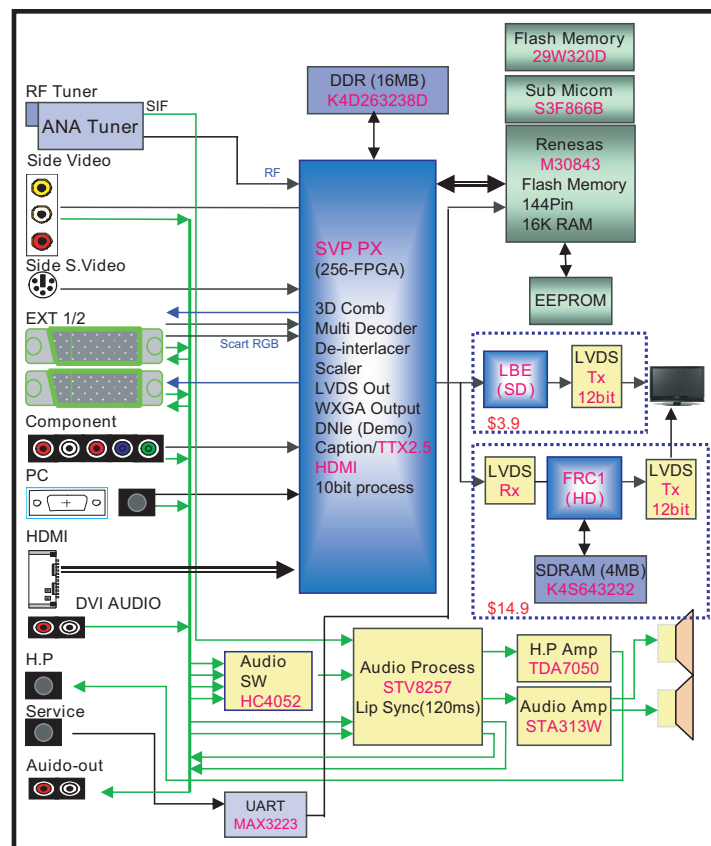
2. X Main Board



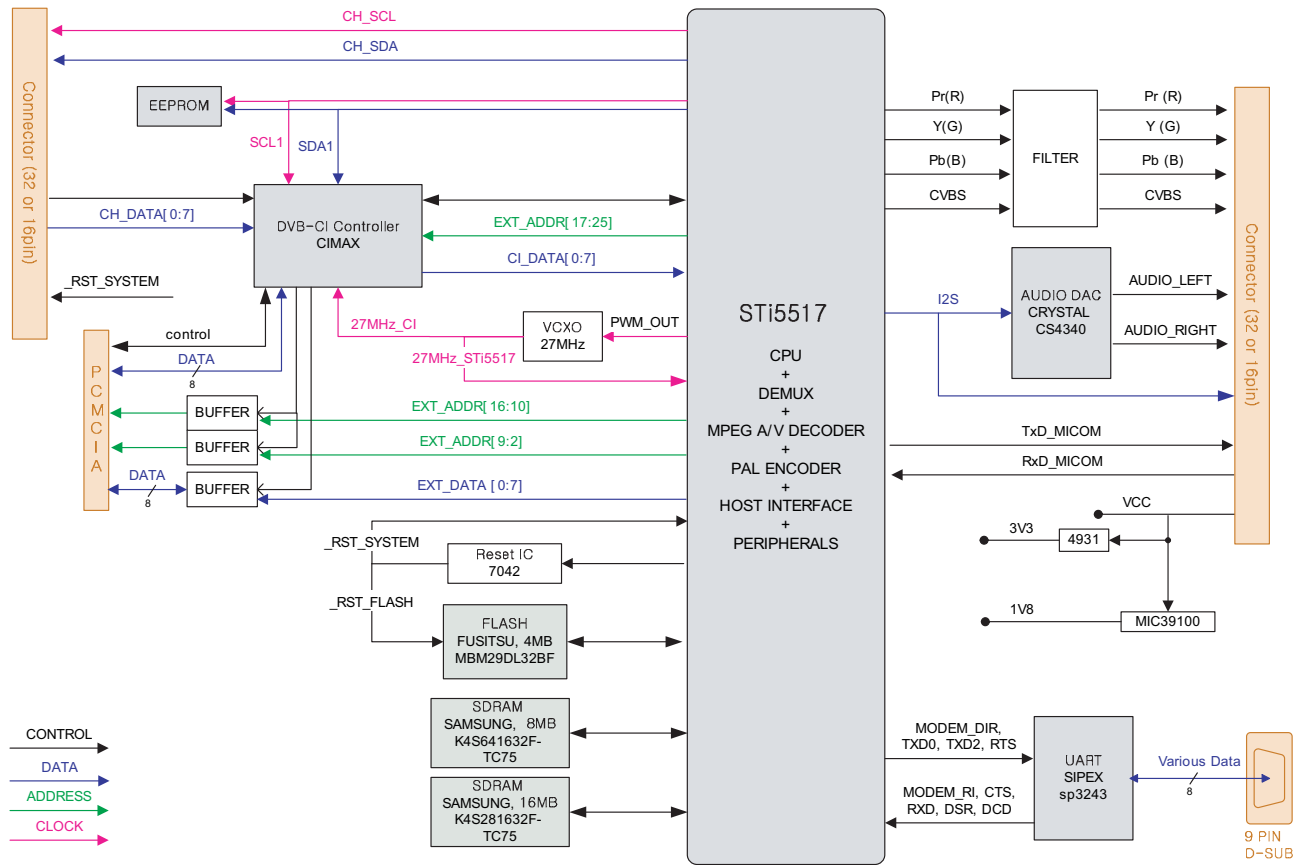
7-2-5 Logic Board Block Diagram



7-2-6 Main Board Block Diagram



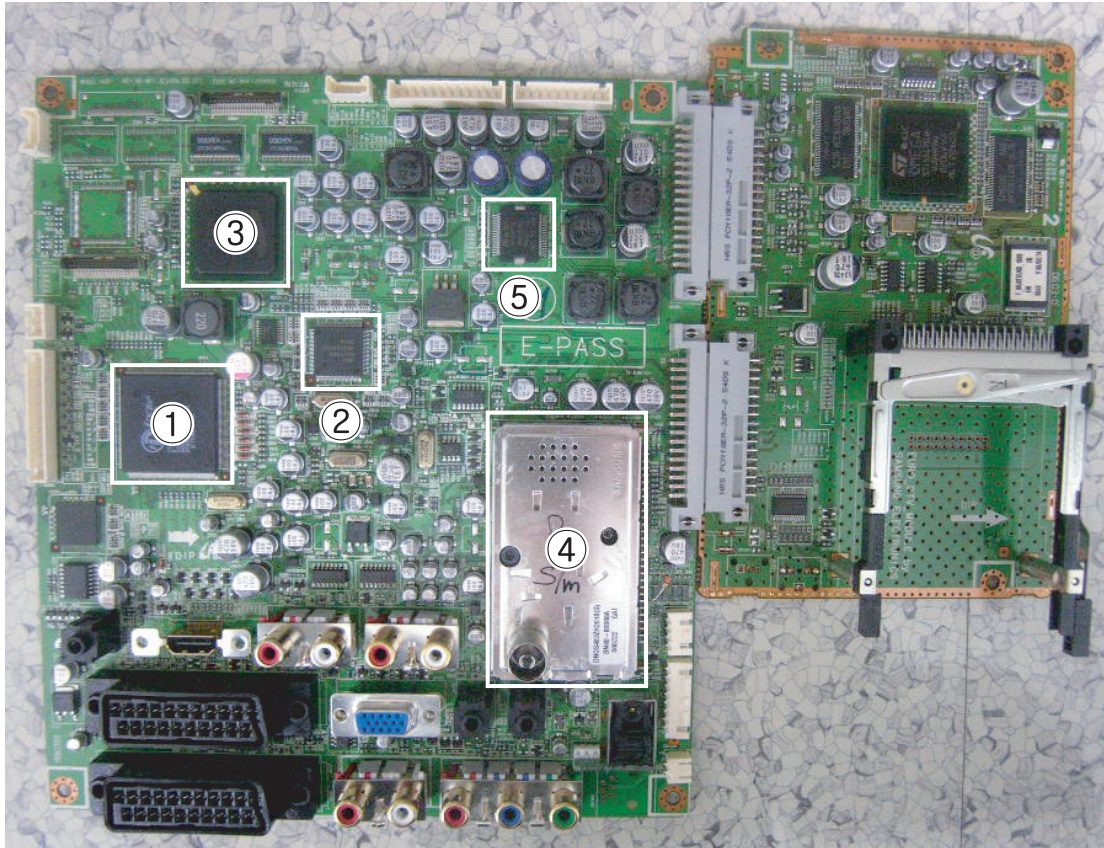
7-2-7 DTV Module Board Block Diagram



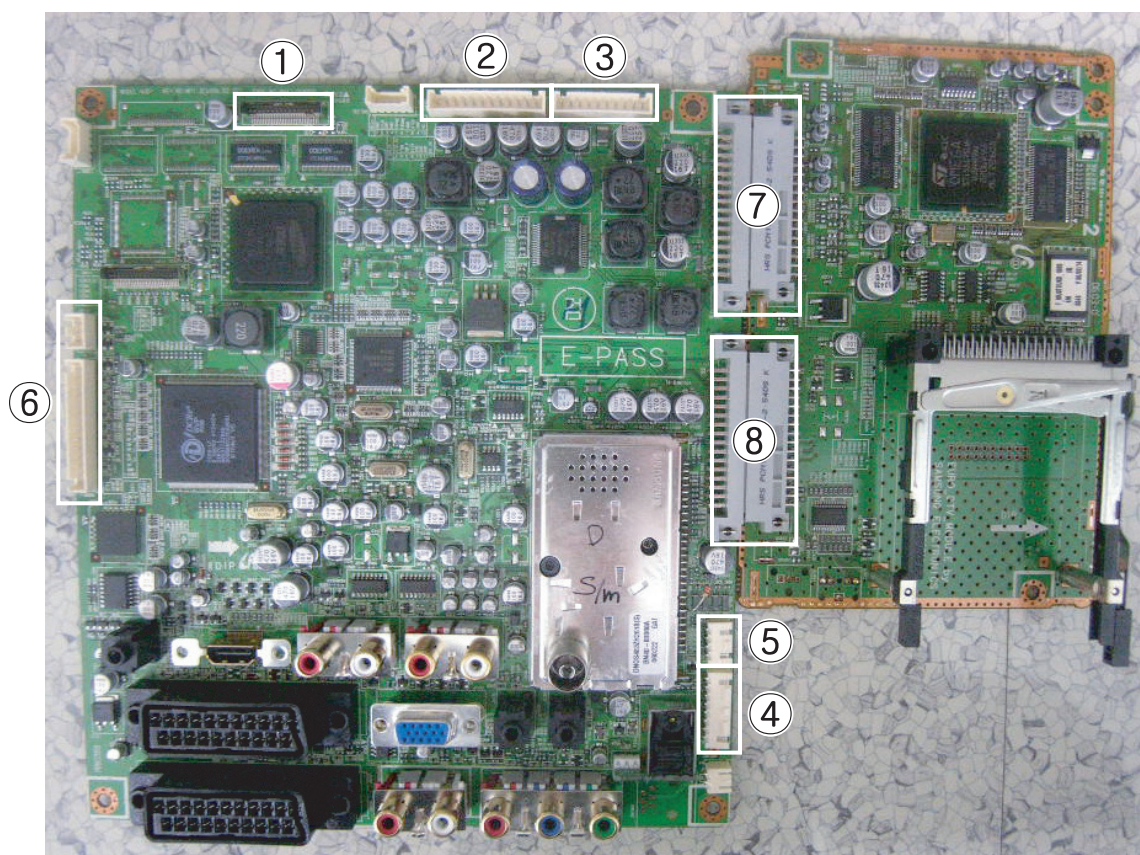
MEMO

9. PCB Diagram

9-1 MAIN & DTV MODULE Board



No	Name	Function	Description
①	SVP-PX	Scaler IC Controller	SVPTMPX contains dual-purposed triple 10-bit high-precision and high speed video ADCs for both PC and video inputs, the high speed HDMI could support all HDMI inputs up to 135MHz with HDCP format, the highperformance multi-format 3D digital comb video decoder that supports NTSC, PAL, and SECAM*, a HDTV sync separator, motion adaptive de-interlacing engine, and the video format conversion engine, supporting multi-window display in many different output modes.
②	M30840SGP	IC MICOM	With a 16-Mbyte address space, this microcomputer combines advanced instruction manipulation capabilities to process complex instructions by less bytes and execute instructions at higher speed.
③	FRC	IC DNle	Image enhancement IC
④	DOCS403ZH261B (S)	TUNER	Tuner CH Tuning
⑤	STA323W	IC AUDIO-AMP	Audio power amplifiers



① CN2013(Logic B'd) ↔ CN902(Main Board)					
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	GND	12	TXOUT2+	23	TXOUT0B-
2	GND	13	GND	24	TXOUT0B+
3	TXOUT-	14	GND	25	
4	TXOUT+	15	TXOUTCLK-	26	GND
5	GND	16	TXCLKOUT+	27	SCL_G
6	GND	17		28	GND
7	TXOUT-	18		29	SDA_G
8	TXOUT+	19	TXOUT3-	30	GND
9		20	TXOUT3+	31	
10		21		32	GND
11	TXOUT2-	22		33	GND

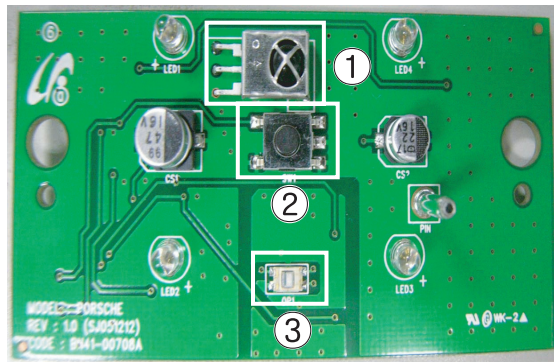
② CN804-1(Main SMPS) ↔ CN102(Main Board)	
Pin No.	Signal
1	5.3V
2	RTN
3	N/C
4	N/C
5	RTN
6	RTN
7	12V
8	PS_ON
9	RTN
10	STBY
11	FAN_ON
12	FAN_D

③ CN803(Main SMPS) ↔ CN101(Main Board)	
Pin No.	Signal
1	6.5V
2	RTN
3	12V
4	RTN
5	18Vamp
6	18Vamp
7	RTN_amp
8	RTN_amp
9	Vt
10	RTN

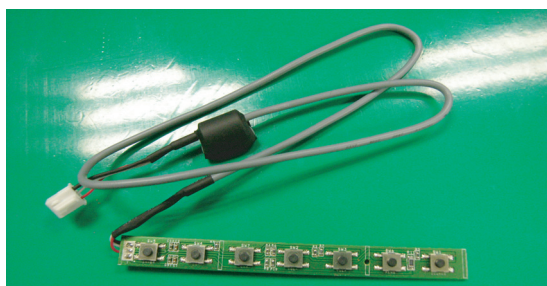
④ CN740(Main Board) ↔ CN001(Power Button)		⑤ CN501(Main Board) ↔ Speaker Out		⑥ CN741(Main Board) ↔ CN1(Function Board)		⑦ CN1002(Main Board) ↔ CN#1(DTV Board)		⑧ CN1003(Main Board) ↔ CN#2(DTV Board)	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	GND	1	SPK_R+	1	KEY_INPUT1	1	GND	1	CH_START
2	LED	2	SPK_R-	2	KEY_INPUT2	2	D5V	2	CH_VALID
3	ST5V	3	SPK_L+	3	GND	3	GND	3	CH_CLK
4	GND	4	SPK_L-			4	D12V	4	GND
5	KEY_INPUT2					5	GND	5	CH_DATA0
6						6	DTV_Y_G	6	CH_DATA1
7						7	GND	7	CH_DATA2
8	IR_7414					8	DTV_Pb_B	8	CH_DATA3
						9	DTV_Pr_R	9	CH_DATA4
						10	GND	10	CH_DATA5
						11	DTV_RtO	11	CH_DATA6
						12	N/C	12	CH_DATA7
						13	DTV_SPDIF	13	GND
						14	RESET_IN	14	CH_ERROR
						15	N/C	15	CH_RST
						16	N/C	16	GND
						17	GND	17	USB_VCC_CHECK
						18	D5V	18	USBBN
						19	GND	19	USBBP
						20	D12V	20	GND
						21	GND	21	N/C
						22	N/C	22	N/C
						23	N/C	23	TXD
						24	IR_DTV	24	RXD
						25	DTV_CVBS	25	N/C
						26	GND	26	N/C
						27	DTV_LtO	27	N/C
						28	GND	28	N/C
						29	TxD_MICOM	29	GND
						30	RxD_MICOM	30	CH_SCL
						31	N/C	31	CH_SDA
						32	N/C	32	GND

9-2 Power & IR Board

No	Loc. No.	Description
①	RM1	Remote Control Sensor
②	SW1	Power Button
③	OP1	The Illumination sensor that senses the quantity of light. It senses the illumination and automatically adjusts the screen brightness according to the surrounding brightness when the Power Saving Mode of the User menu is set to Auto.



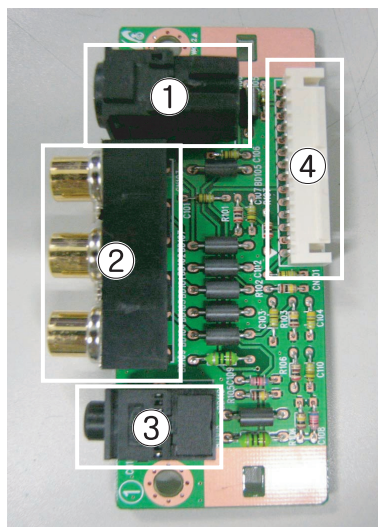
9-3 Function Board



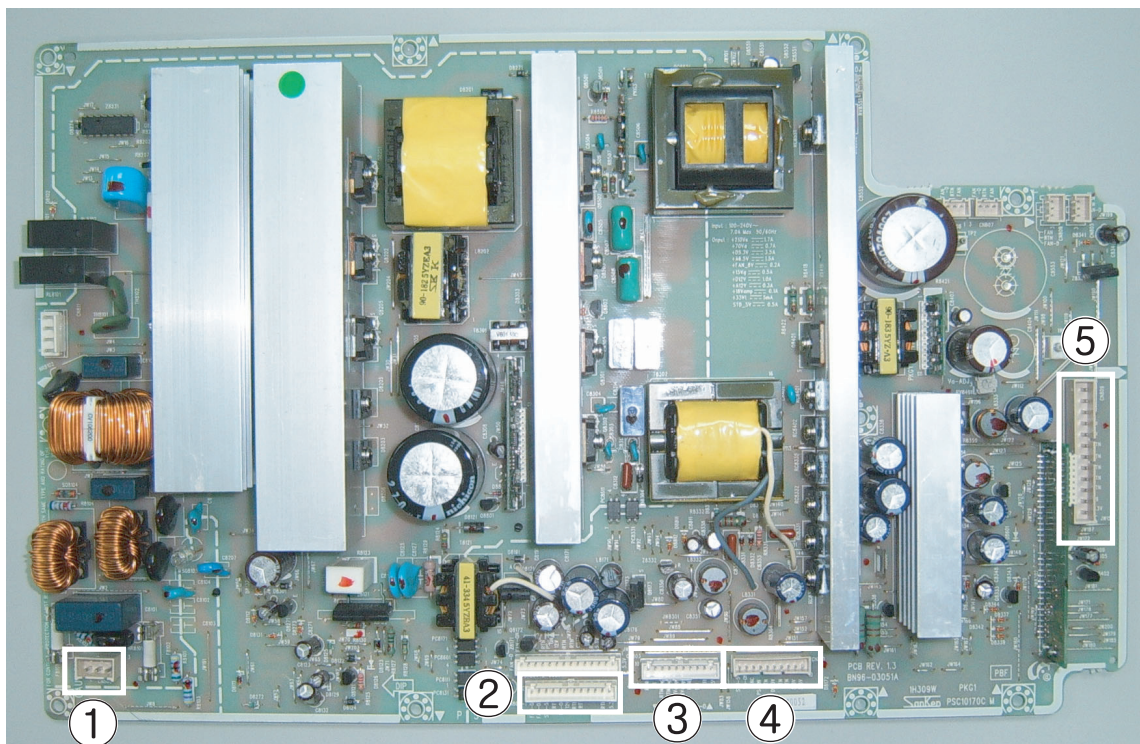
Function Key. Located on the side of the unit.

9-4 Side AV Board

No	Loc. No.	Description
①	CN102	S-VIDEO2 Input Jack
②	CN103	AV2 Input Jack
③	CN104	Earphone Jack
④	CN105	Side AV Connector



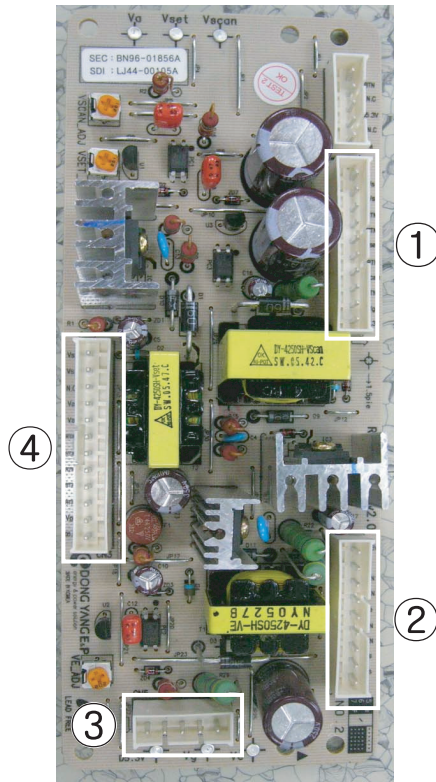
9-5 Main SMPS Board



① CN800 : AC IN (220V)

② CN804-1(Main SMPS) ↔ CN102(Main B'D)		③ CN803(Main SMPS) ↔ CN101(Main B'D)		④ CN810(Main SMPS) ↔ CN2005(Logic B'D)		⑤ CN809(Main SMPS) ↔ CN3(DC-DC SMPS)	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	D5.3V	1	6.5V	1	D5.3V	1	D5.3V
2	RTN	2	RTN	2	D5.3V	2	Vg
3	VCS	3	A12V	3	RTN	3	RTN
4	VCA	4	RTN	4	RTN	4	RTN
5	RTN	5	18V-AMP	5	D5.3V	5	RTN
6	RTN	6	18V-AMP	6	RTN	6	RTN
7	D12V	7	RTN-AMP	7	PS_ON	7	RTN
8	PS_ON	8	RTN-AMP	8	N.C	8	Va
9	RTN	9	VT	9	VS_ON	9	Va
10	STB-5V	10	RTN	10	STB-5V	10	N.C
11	FAN_ON					11	Vs
12	FAN_D					12	Vs

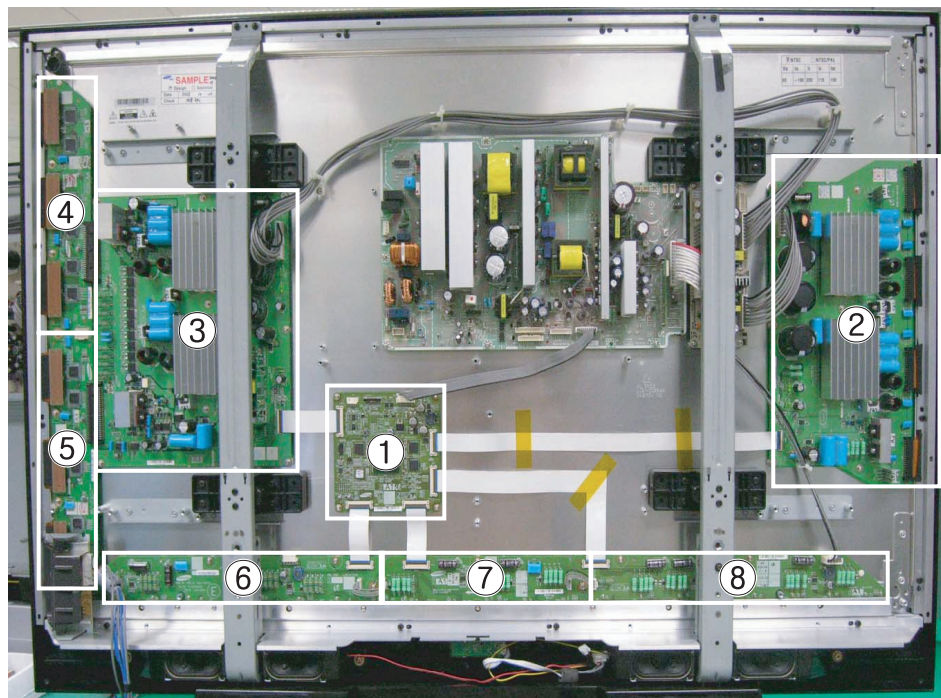
9-6 DC-DC SMPS Board



① CN2(DC-DC SMPS) ↔ CN5010(Y B'D)		② CN4(DC-DC SMPS) ↔ CN4004(X B'D)		③ CN5(DC-DC SMPS) ↔ CN2710(F-Buffer)		④ CN3(DC-DC SMPS) ↔ CN809(Main SMPS)	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	Vs	1	Vs	1	RTN	1	D5.3V
2	Vs	2	Vs	2	N.C	2	Vg
3	RTN	3	RTN	3	D5.3V	3	RTN
4	RTN	4	RTN	4	N.C	4	RTN
5	Vset	5	Ve	5	Va	5	RTN
6	RTN	6	RTN			6	RTN
7	Vscan	7	RTN			7	RTN
8	RTN	8	Vg			8	Va
9	Vg	9	D5.3V			9	Va
10	D5.3V					10	N.C
						11	Vs
						12	Vs

9-7 PDP Module

※ The ASSY code can be changed, see "5 Chapter. Electrical Part List."



No	Assy	Code No.	Description
①	ASSY PDP MODULE P-LOGIC MAIN BOARD	BN96-03366A	Logic Main Board
②	ASSY PDP MODULE P-X MAIN BOARD	BN96-03359A	X Drive Board
③	ASSY PDP MODULE P-Y MAIN BOARD	BN96-03360A	Y Drive Board
④	ASSY PDP MODULE P-Y MAIN UPPER SCAN	BN96-03361A	Y Upper Scan Board
⑤	ASSY PDP MODULE P-Y MAIN LOWER SCAN	BN96-03362A	Y Lower Scan Board
⑥	ASSY PDP MODULE P-ADDRESS E BUFFER	BN96-03363A	Address E Buffer Board
⑦	ASSY PDP MODULE P-ADDRESS F BUFFER	BN96-03364A	Address F Buffer Board
⑧	ASSY PDP MODULE P-ADDRESS G BUFFER	BN96-03365A	Address G Buffer Board

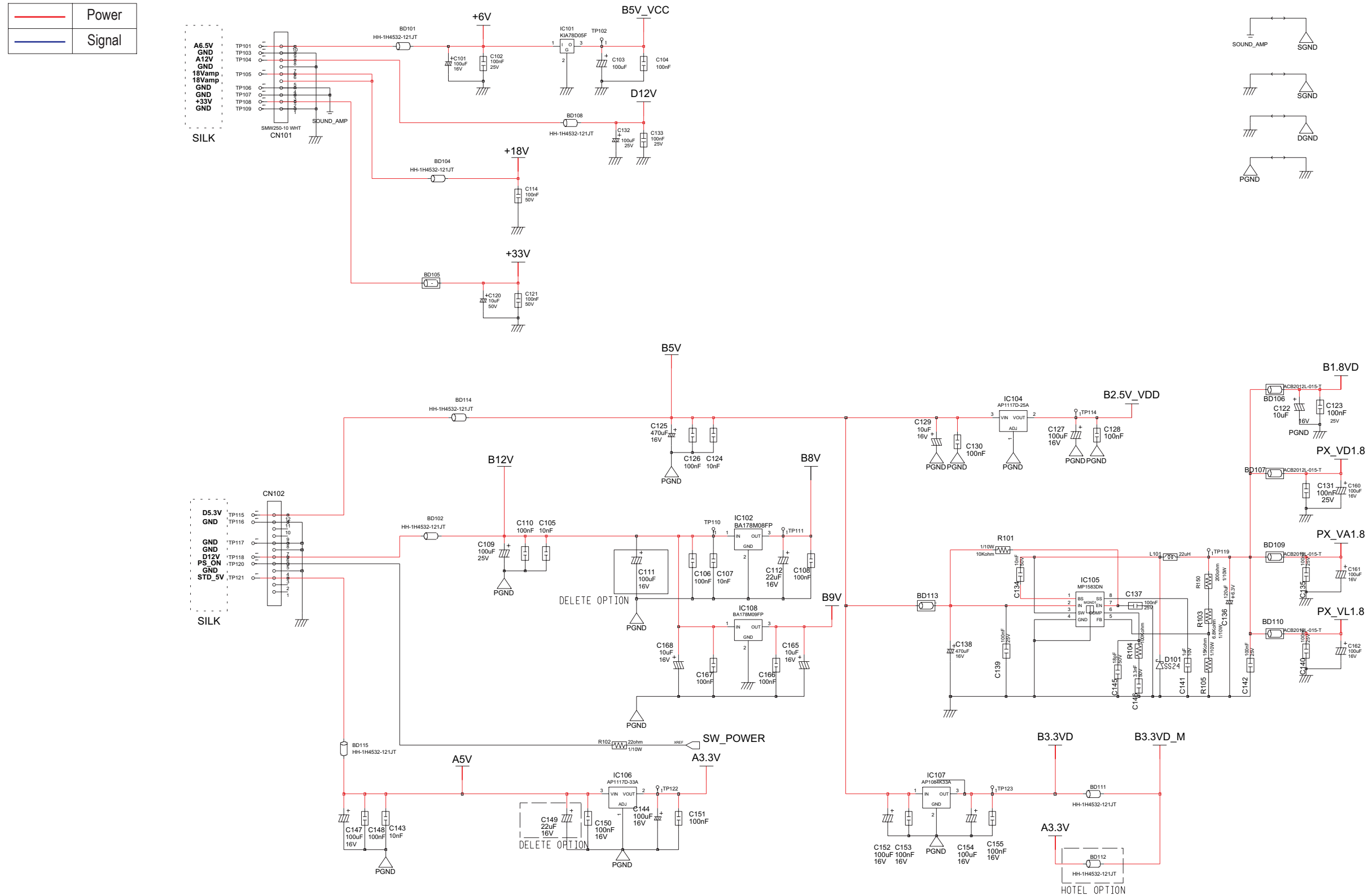
MEMO

10. Schematic Diagram

10-1 Analog

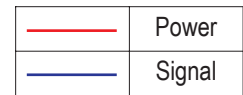
10-1-1 POWER

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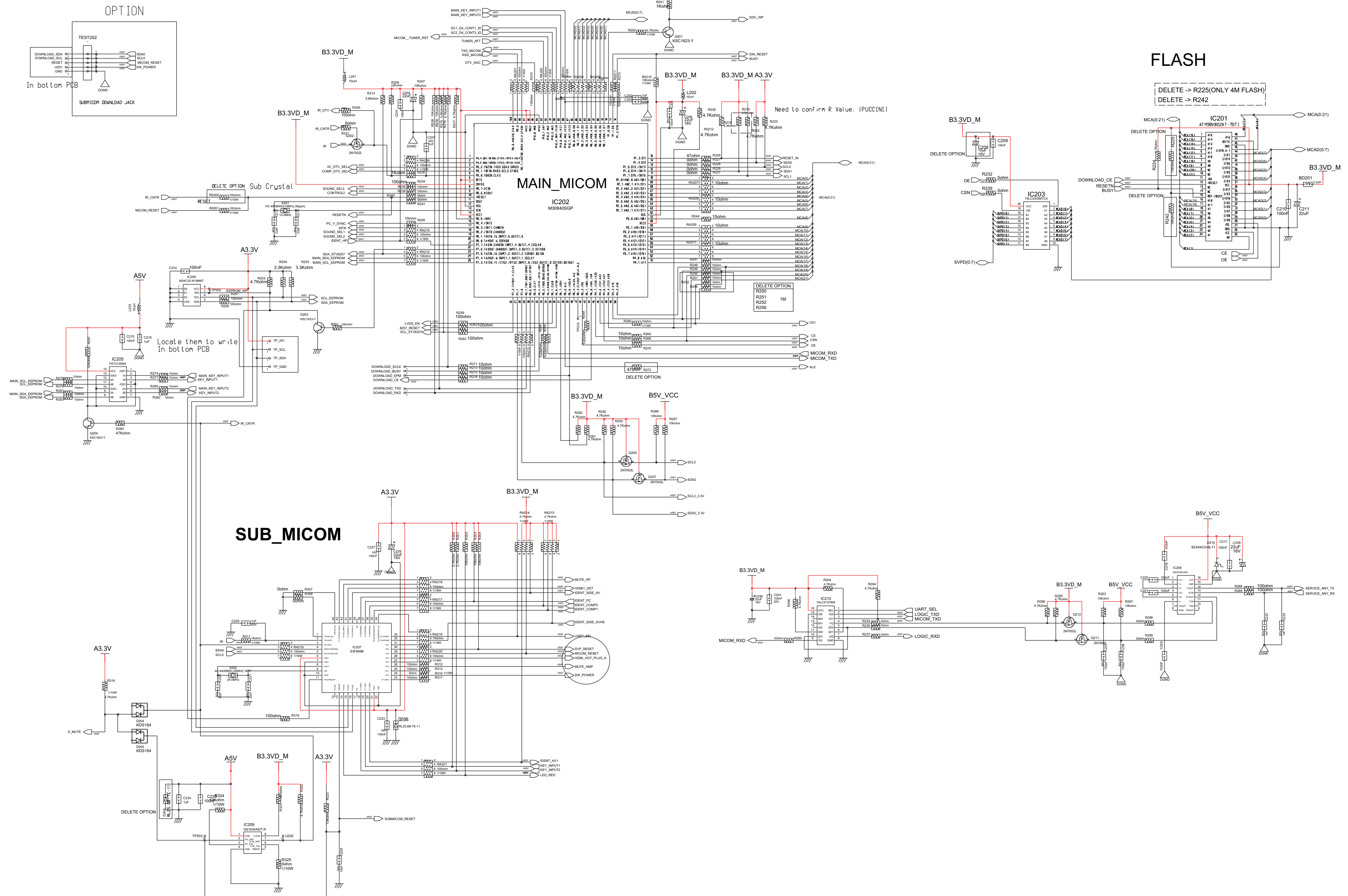


10-1-2 MICOM

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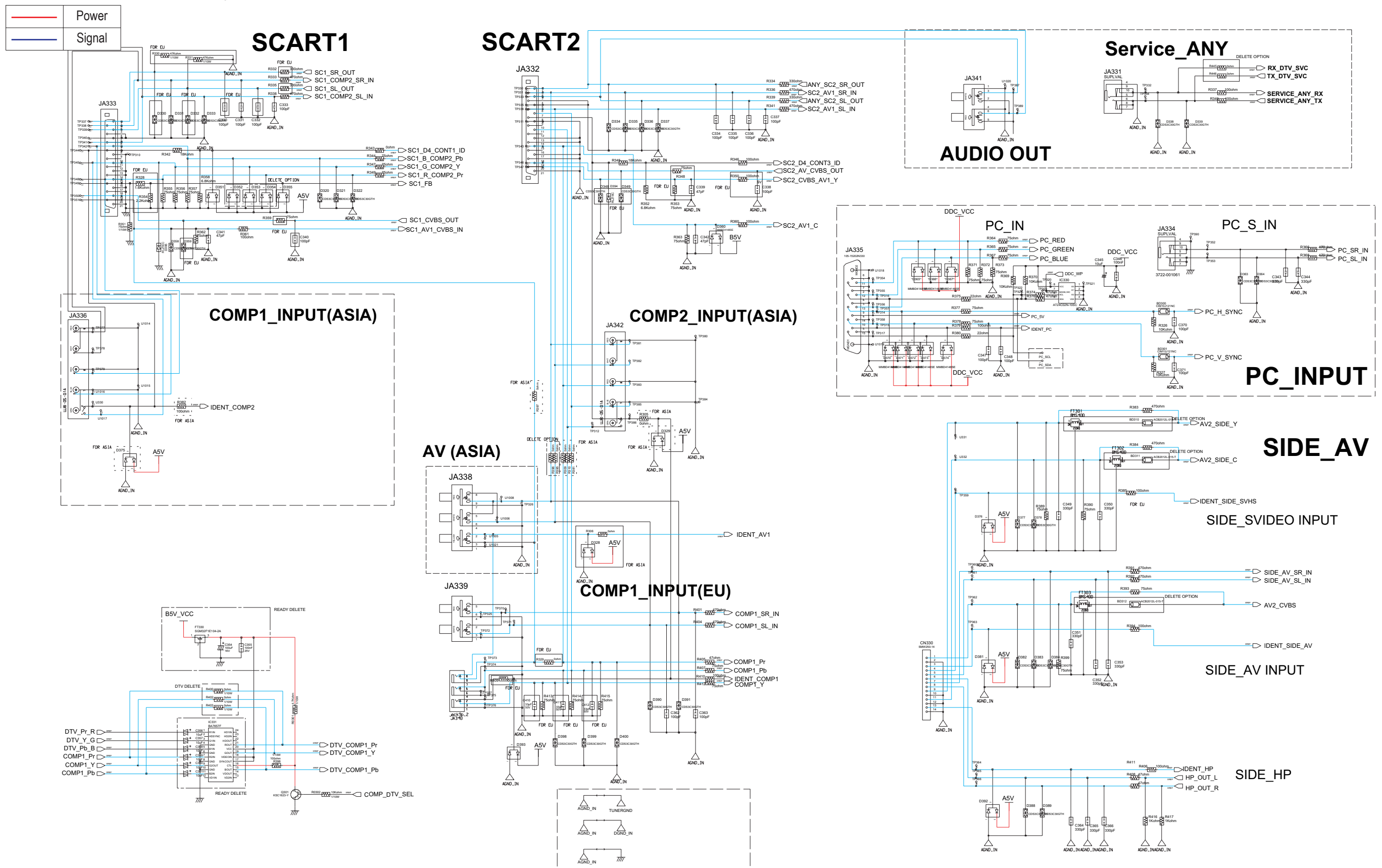


MICOM



10-1-3 IN_OUT_JACK

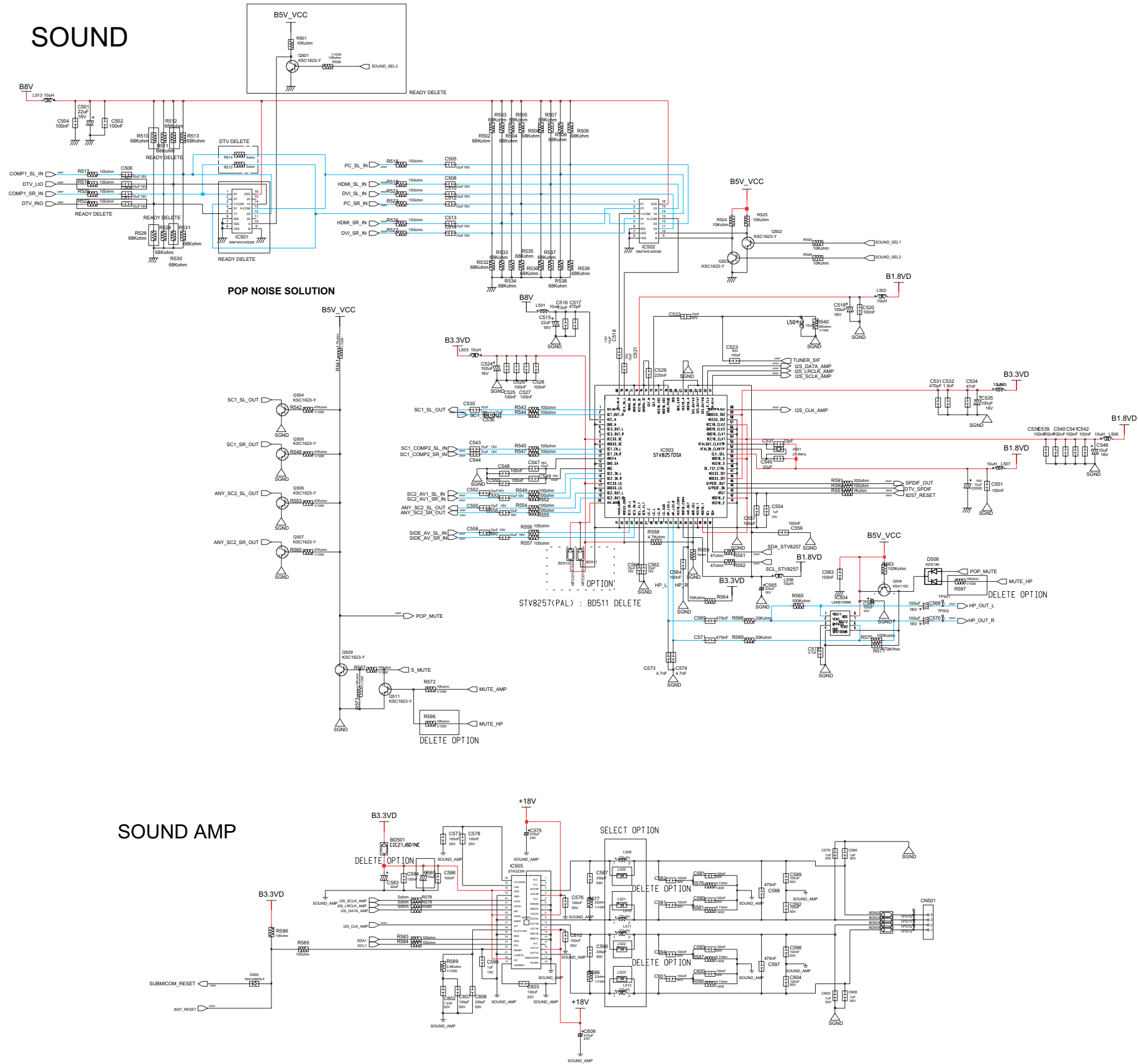
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10-1-5 SOUND

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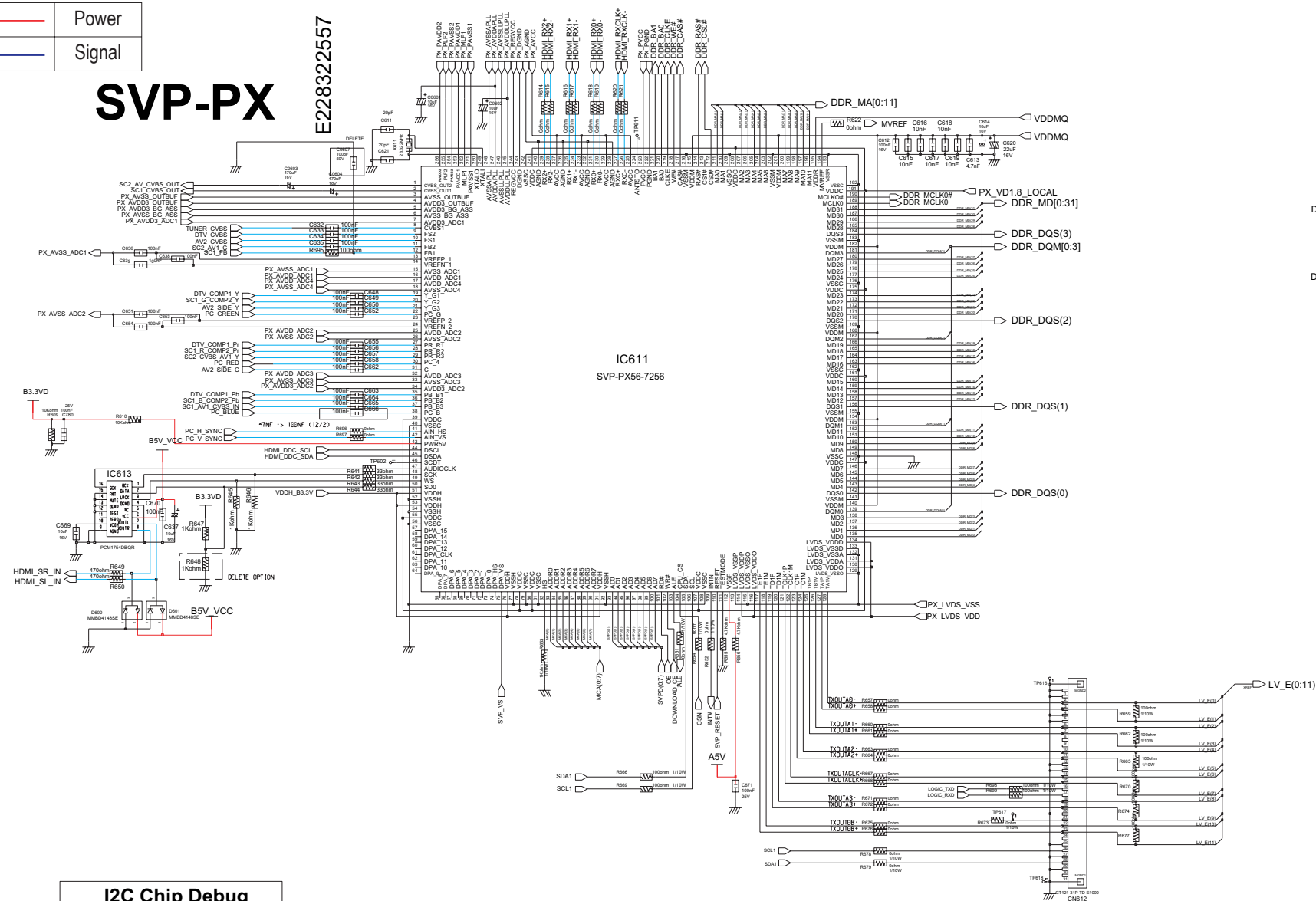
	Power
	Signal



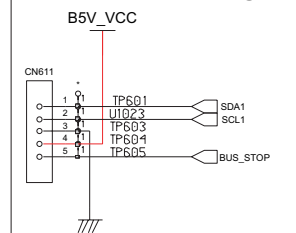
	Power
	Signal

SVP-PX

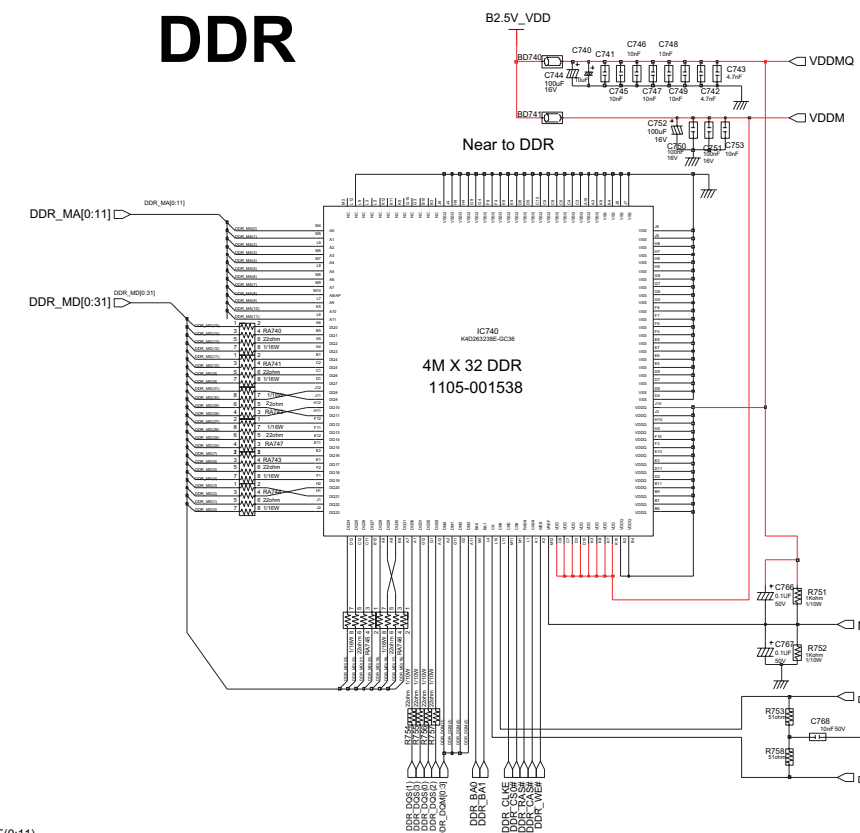
E228322557



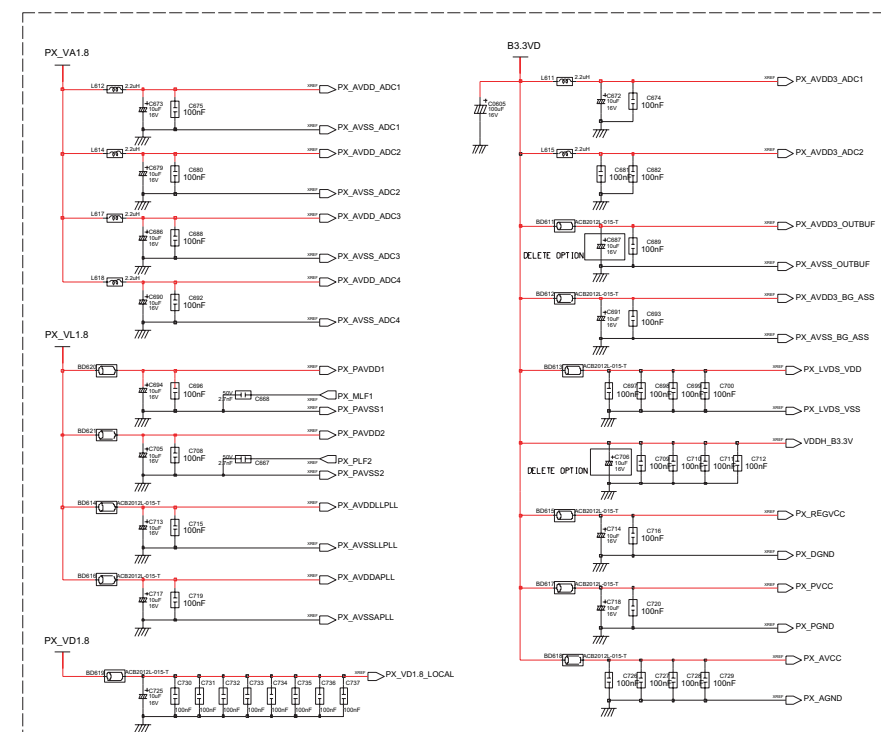
I2C Chip Debug



DDR

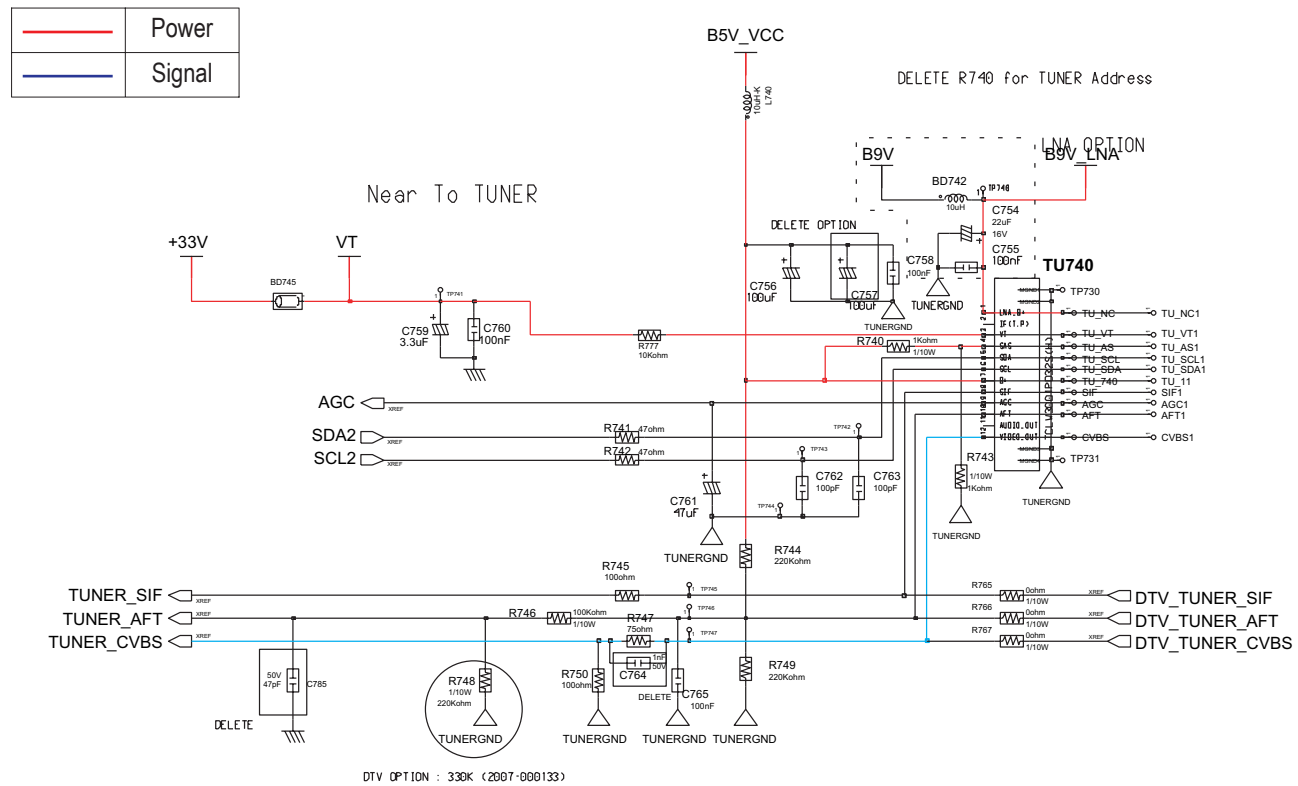


PX_Power



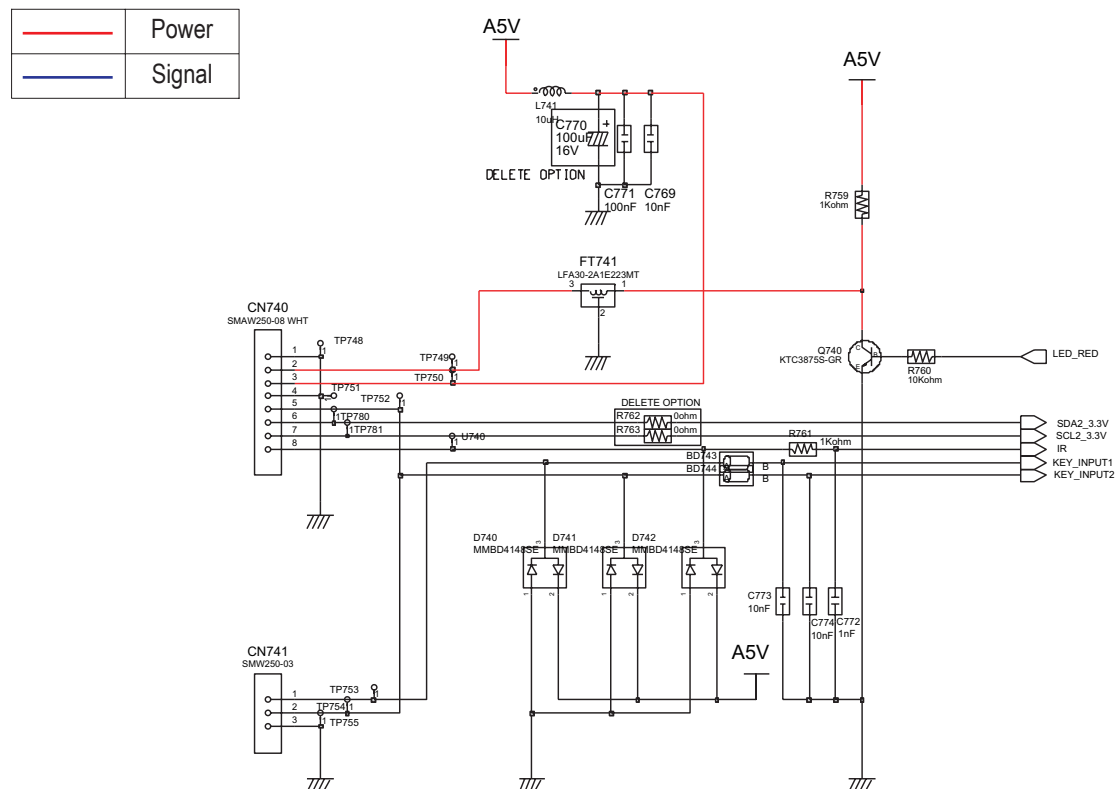
10-1-7 TUNER

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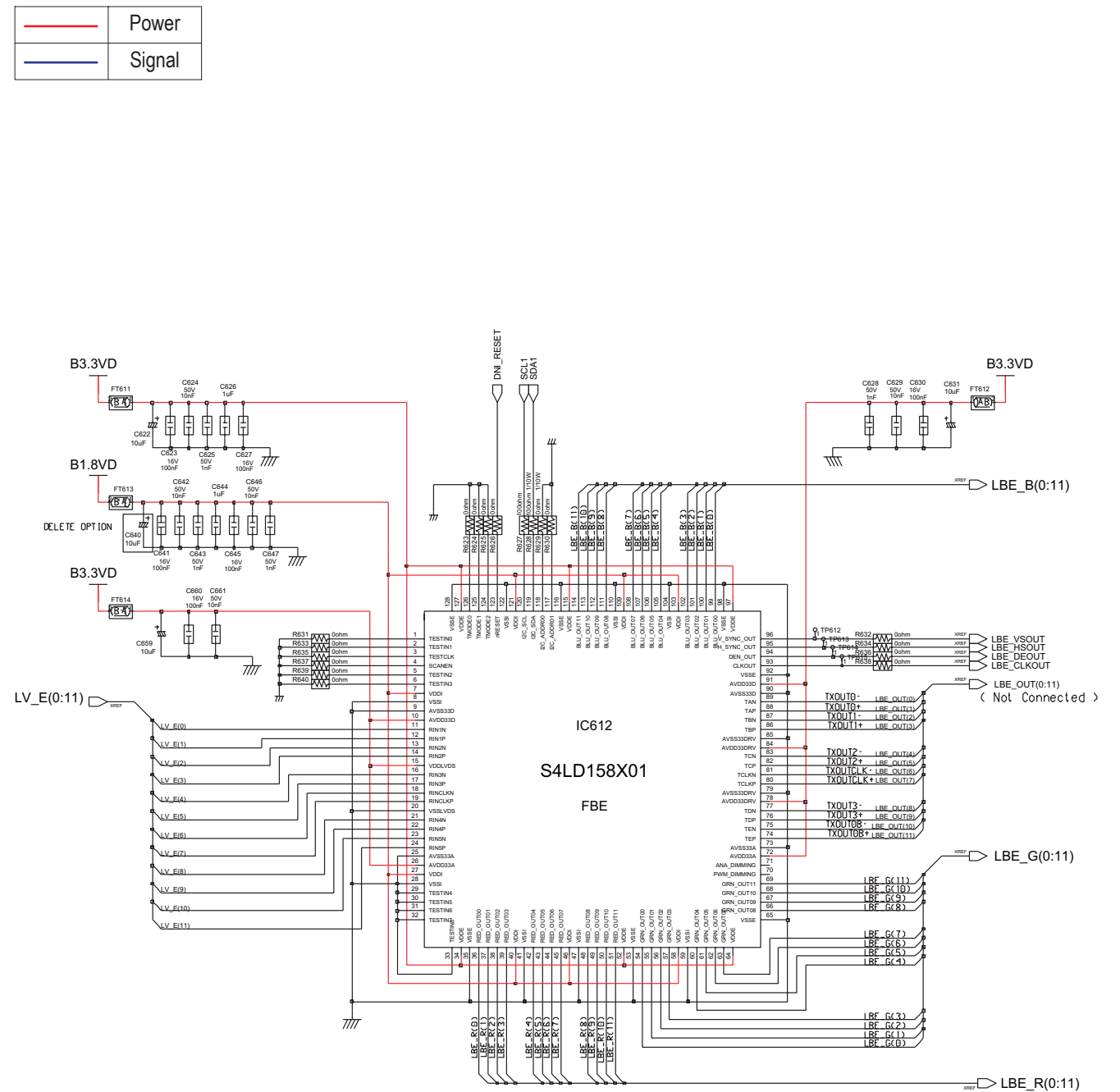
10-1-8 FUNCTION

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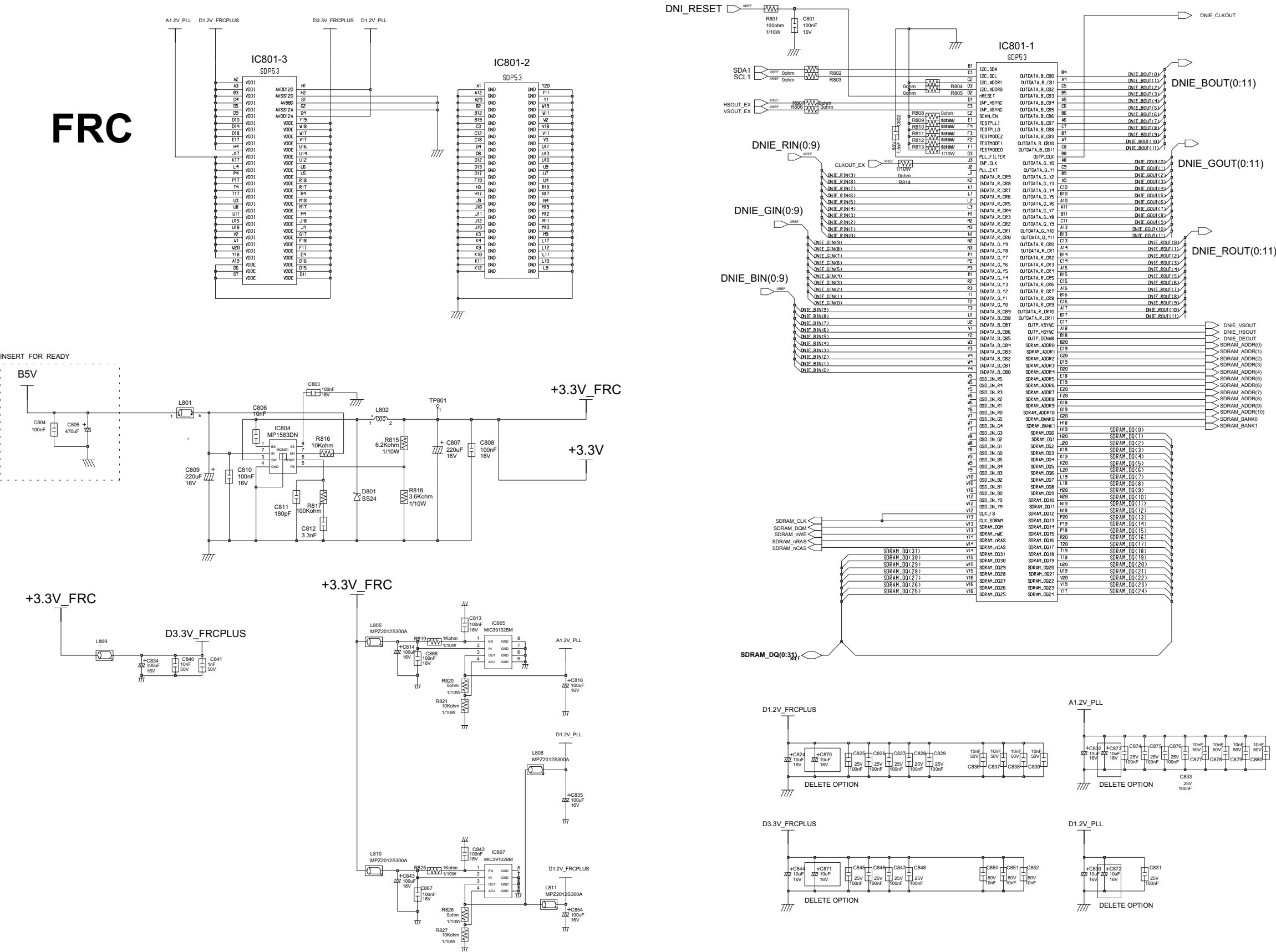
10-1-9 FBE_Option

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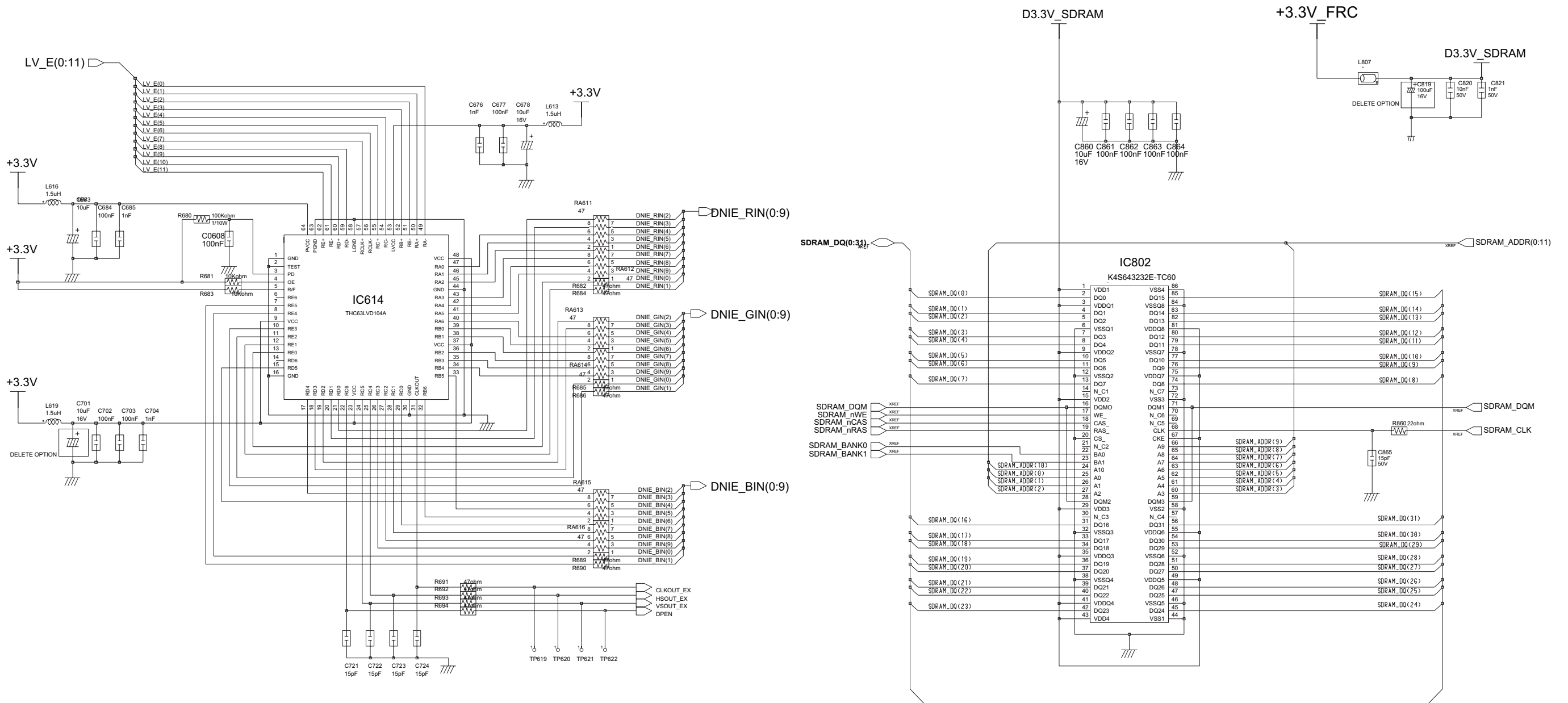
10-1-10 FRC

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LVDS RX (FOR FRC)

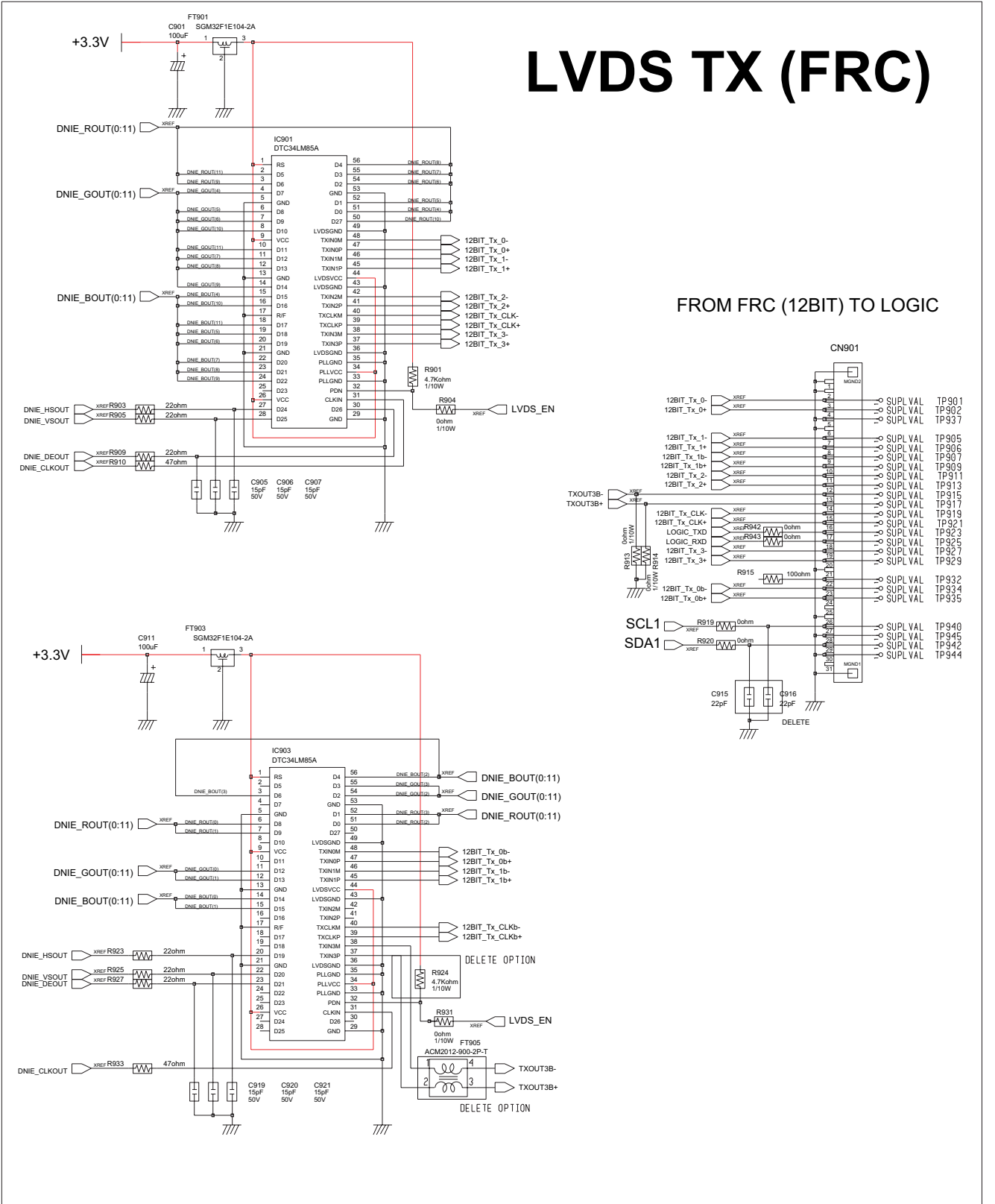
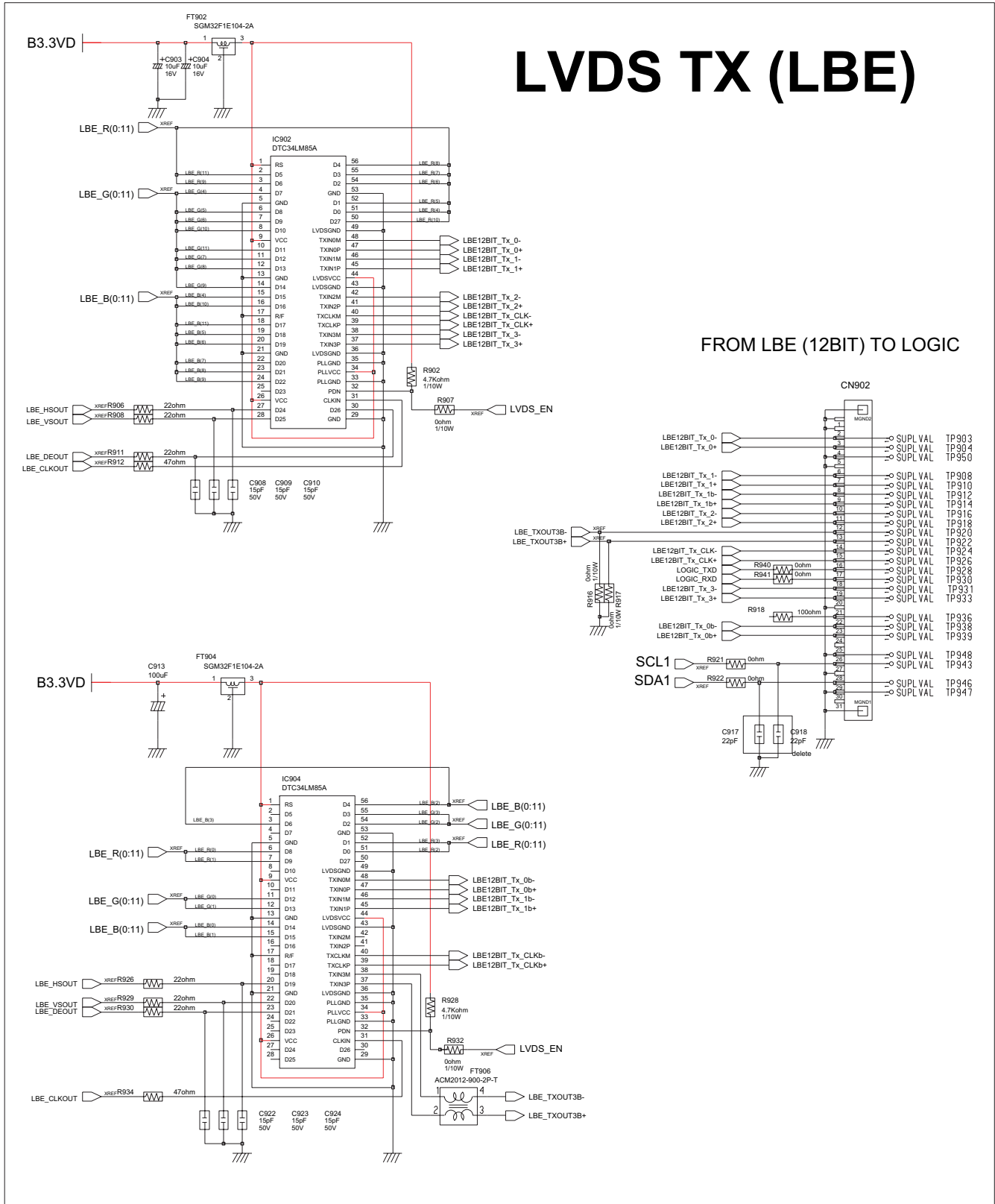
FRC Memory



10-1-12 LVDS

This Document can not be used without Samsung's authorization.

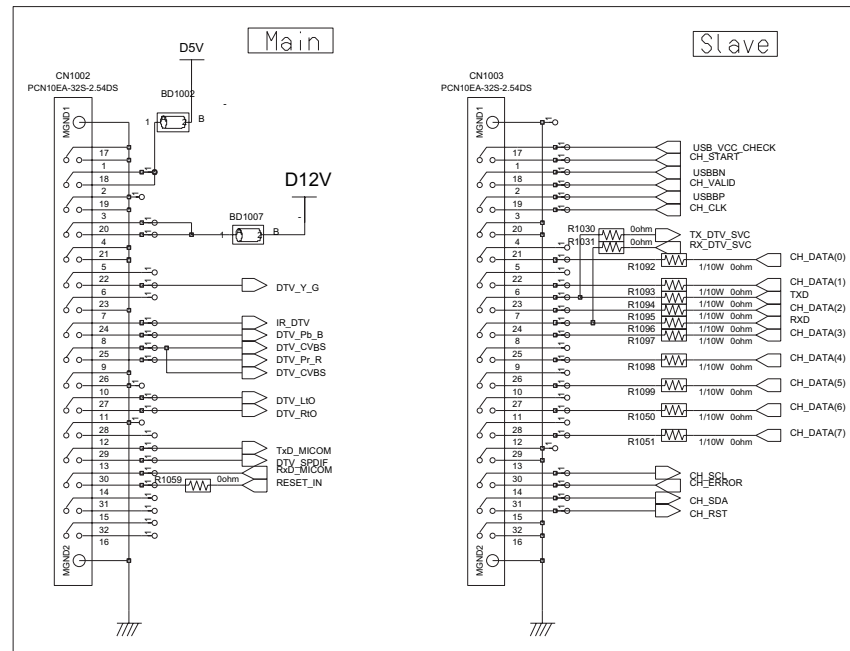
	Power
	Signal



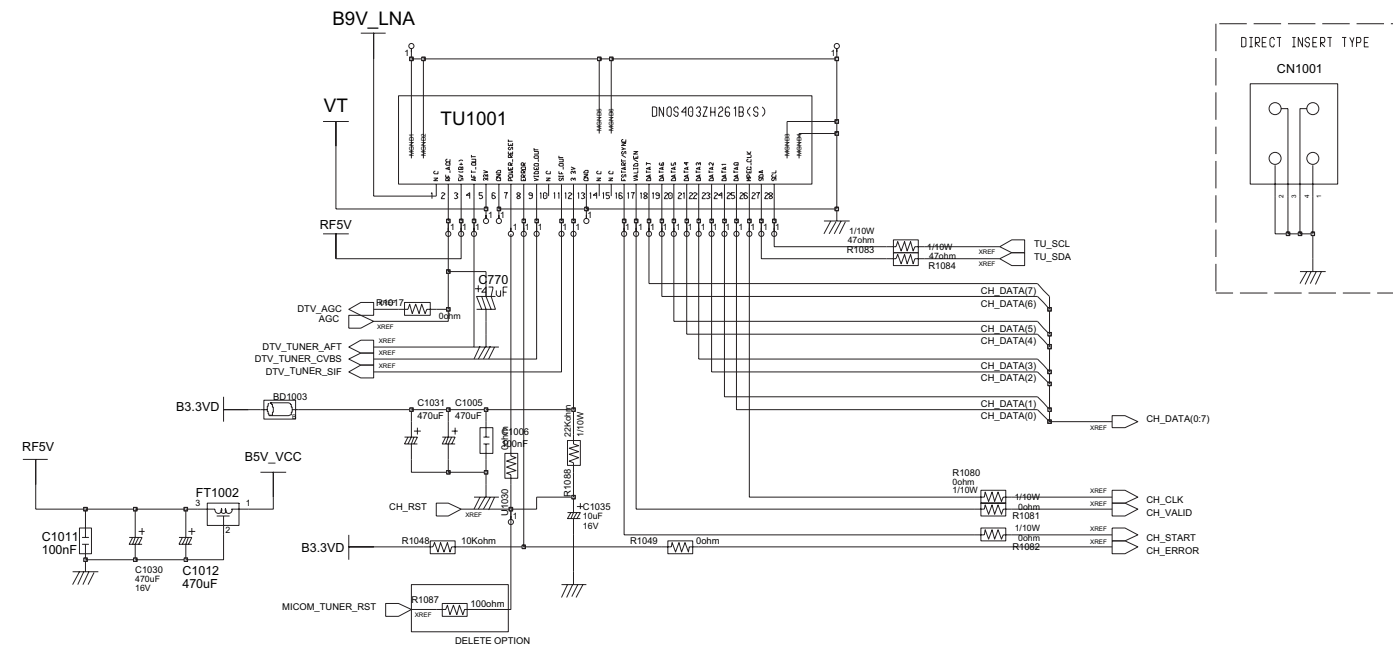
10-1-13 DTV / TUNER / POWER

This Document can not be used without Samsung's authorization.

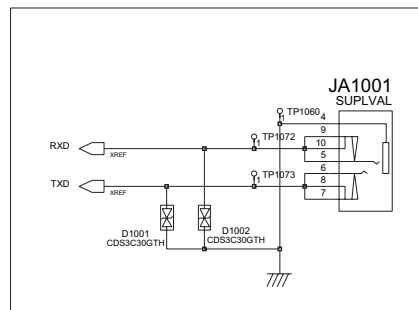
DTV MODULE CONNECTION



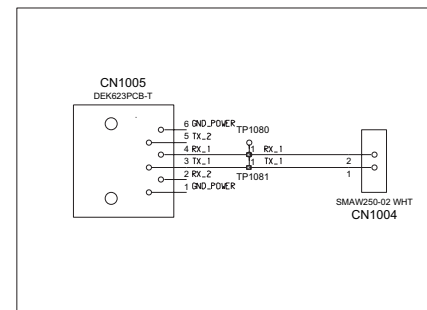
DIGITAL TUNER



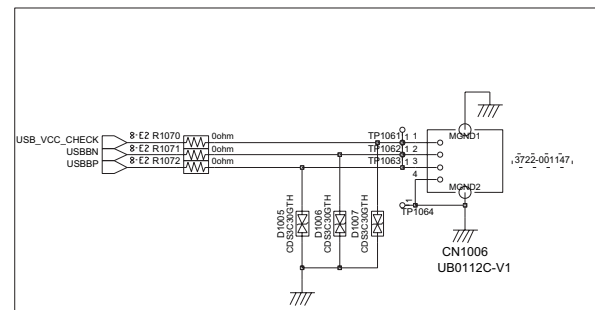
PHONE JACK



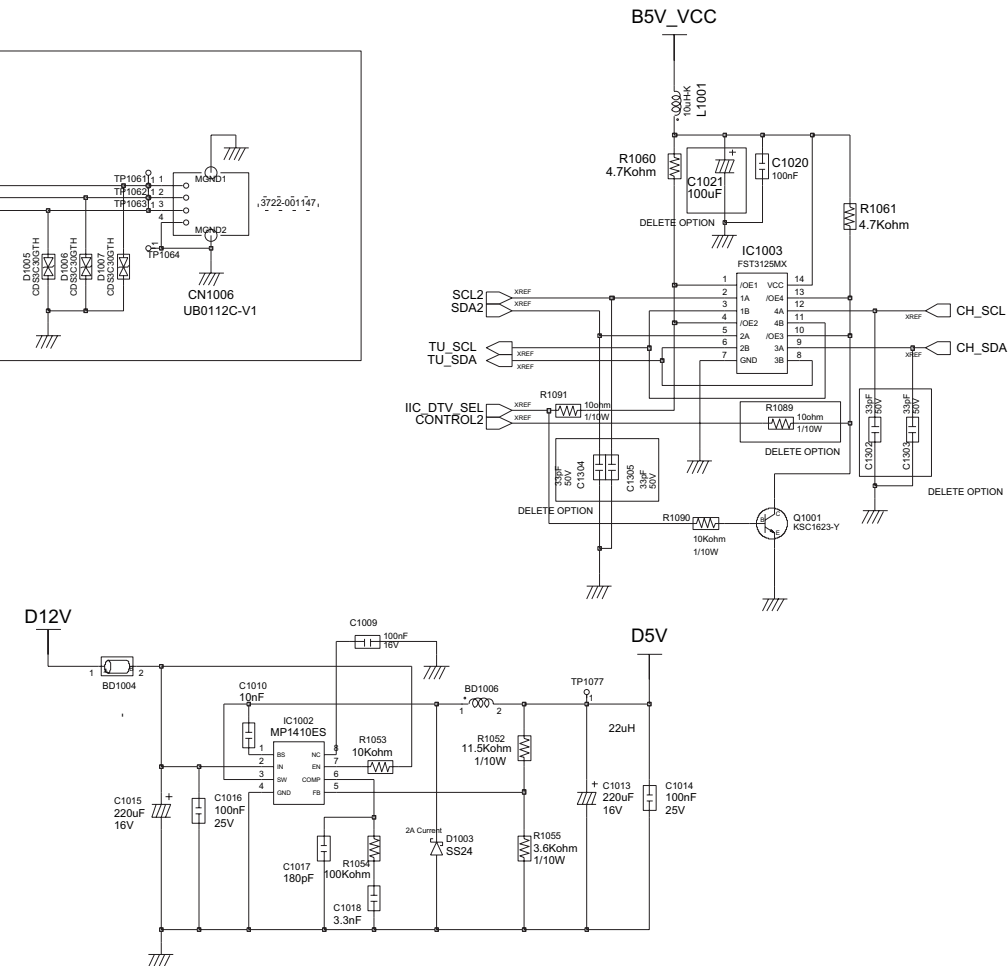
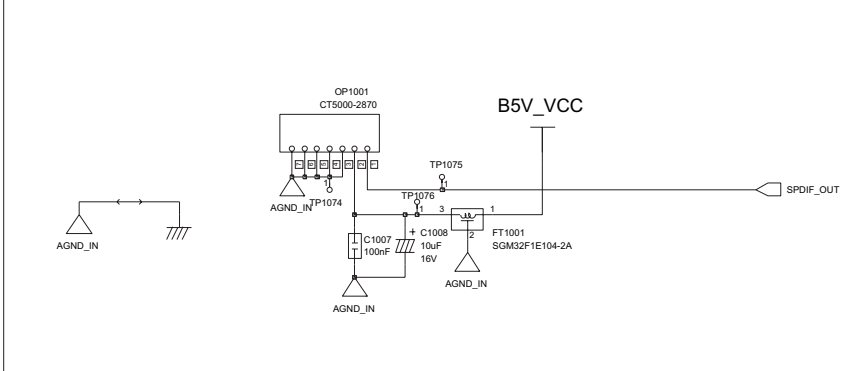
MODEM JACK



USB



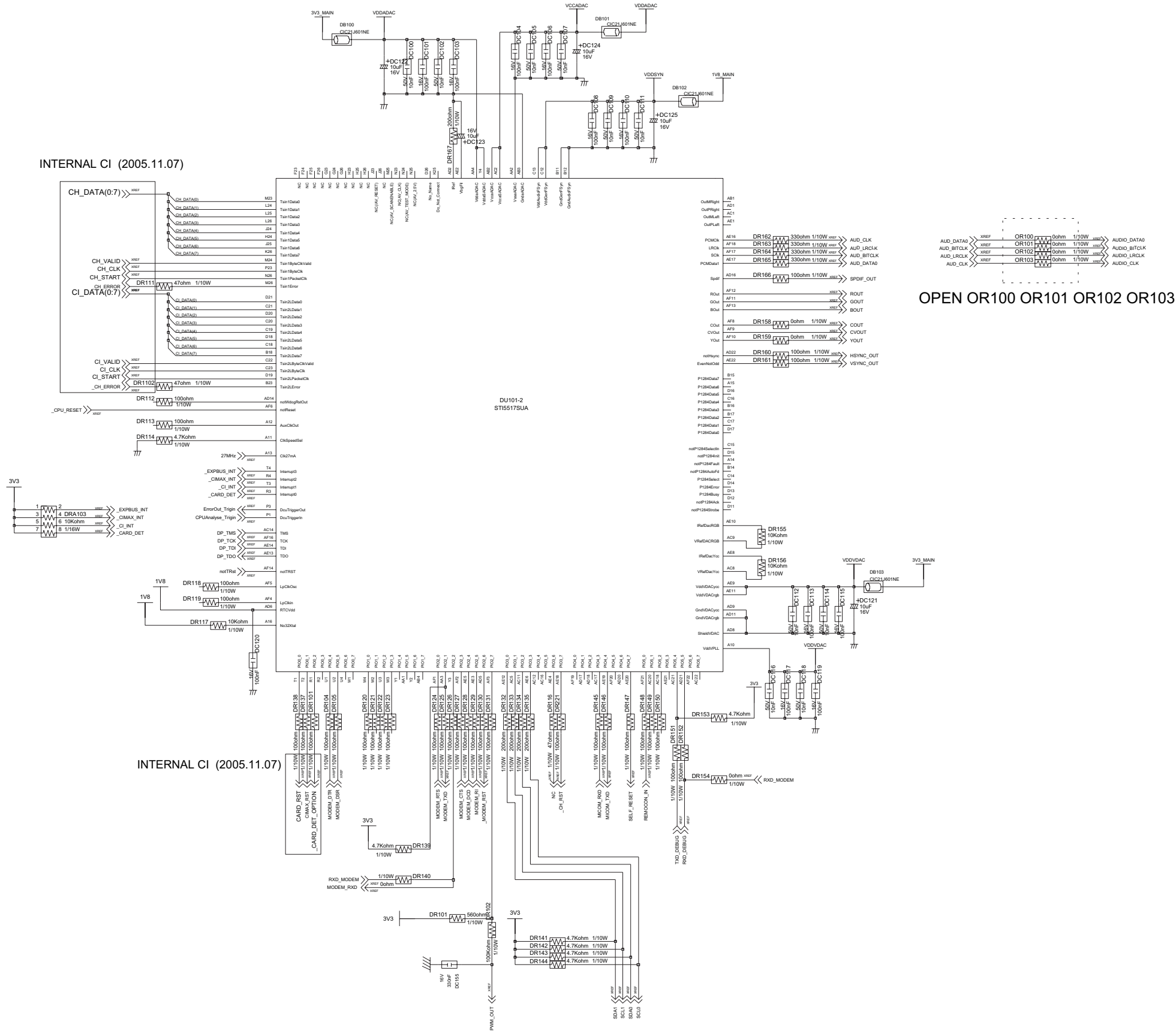
OPTICAL SPDIF OUT



10-12

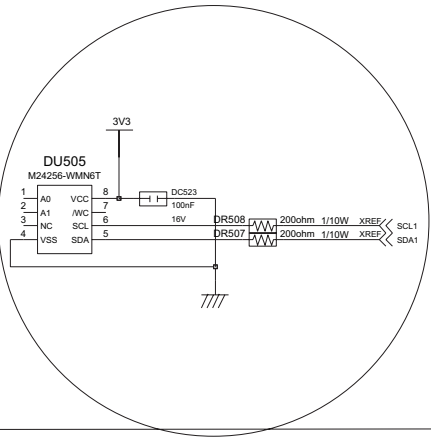
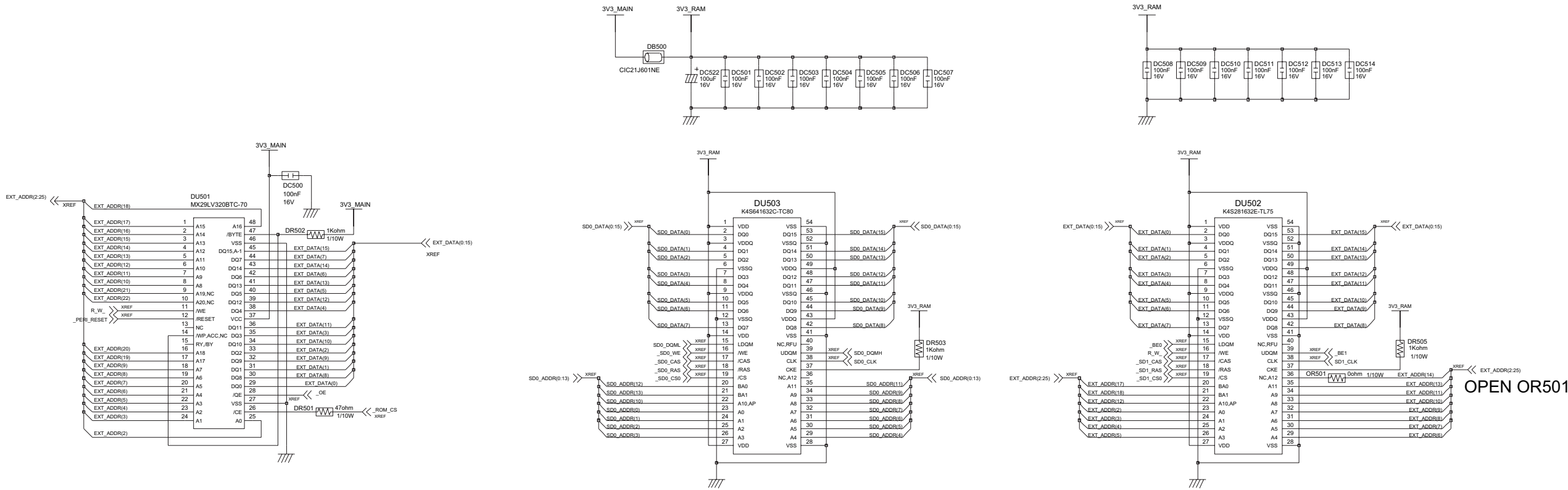
10-2-2 STi5517 VIDEO / AUDIO / GPIO

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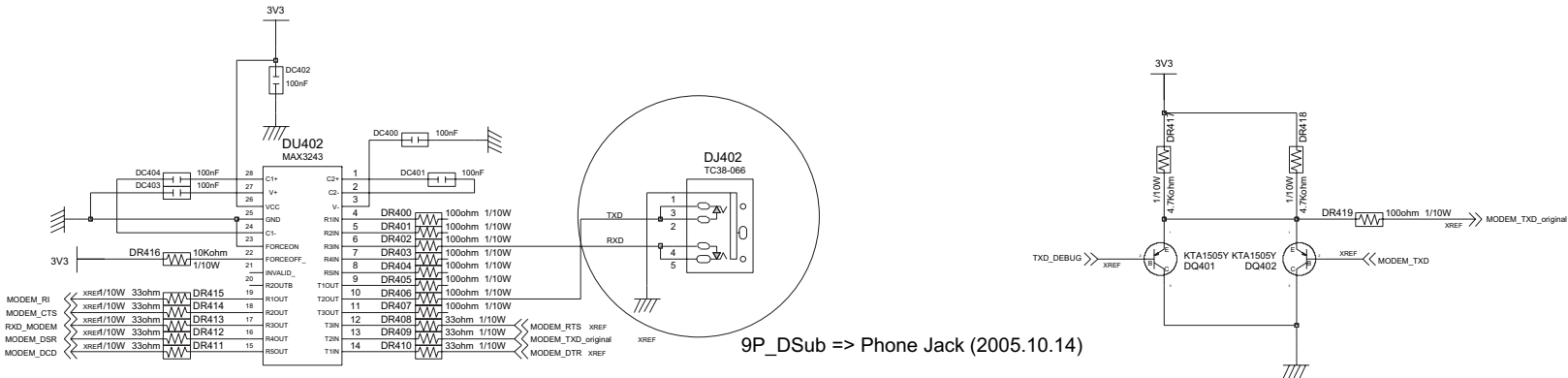


10-2-3 MEMORY / EXTERNAL UART

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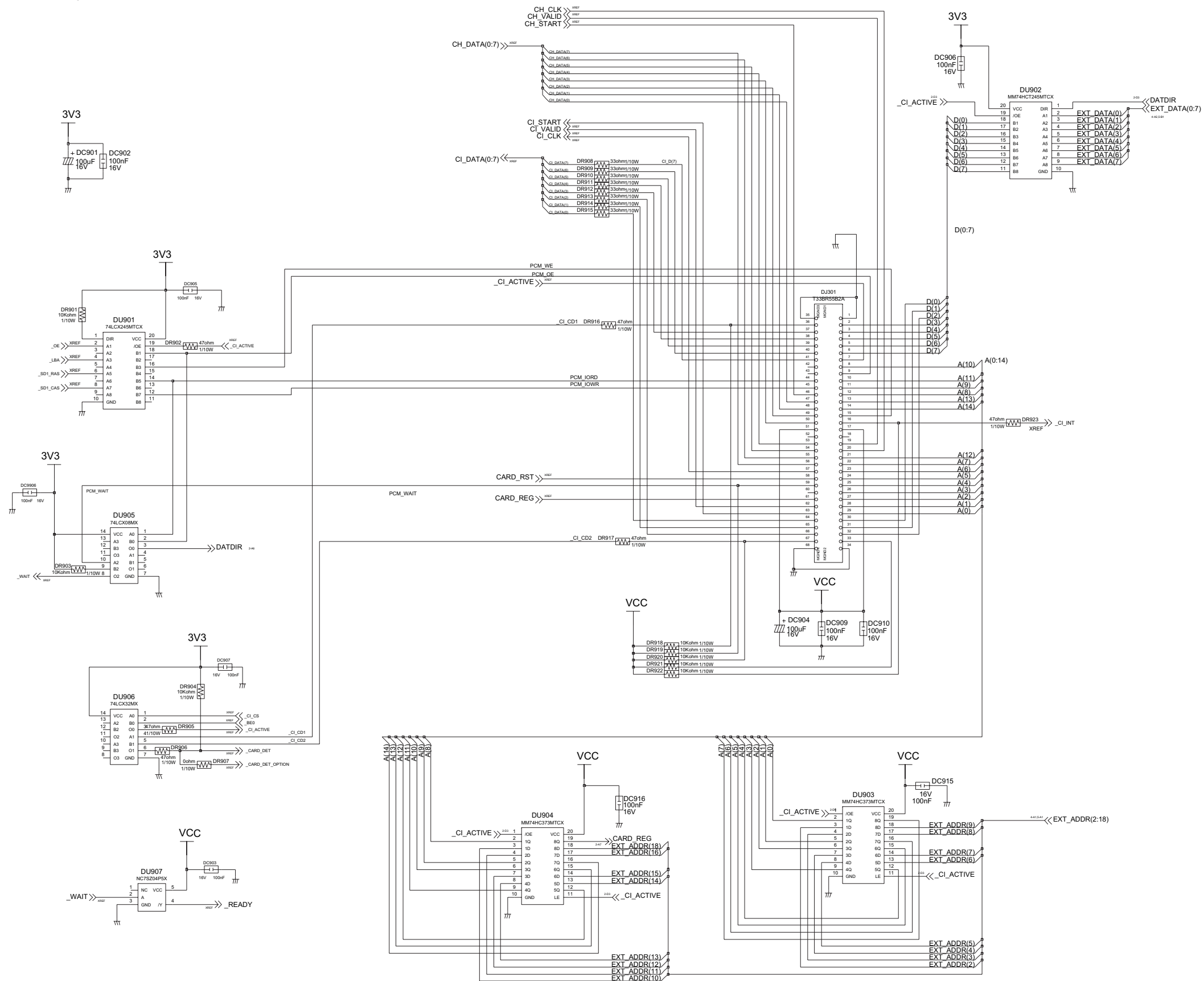


EEPROM_OPTION (2005.10.14)
OPEN EEPROM_OPTION



9P_DSub => Phone Jack (2005.10.14)

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12. Disassembly & Reassembly

12-1 Overall Disassembly & Reassembly

△ Notice

- Be sure to separate the power cord before disassembling the unit.
- Discharge the capacitors first when separating PCB's with high capacity capacitors such as SMPS, X Main Board, Y Main Board, etc. (A spark may be generated by the electric charge, and there is danger of electronic shock.)
- Check that the cables are properly connected referring to the circuit diagram when disassembling or assembling the unit taking care not to damage the cables.
- Take care not to cause a flaw in the Glass Filter in the front.
- Assemble the boards in the reverse order of the disassembly.
- The plasma must be laid down on a flat padded surface for disassembly and reassembly.

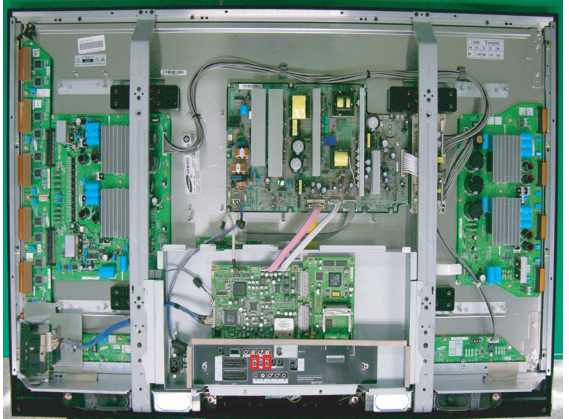
12-1-1 Separation of ASSY STAND P-BASE

Part Name	Description	Description Photo
Stand	① Remove 4 screws. : PH,+,WSP,S,M4,L35,ZPC(BLK) ② Pull the ASSY STAND P-BASE down to remove it from the unit. △: Please lay the PDP unit face down on a soft surface when removing the stand.	

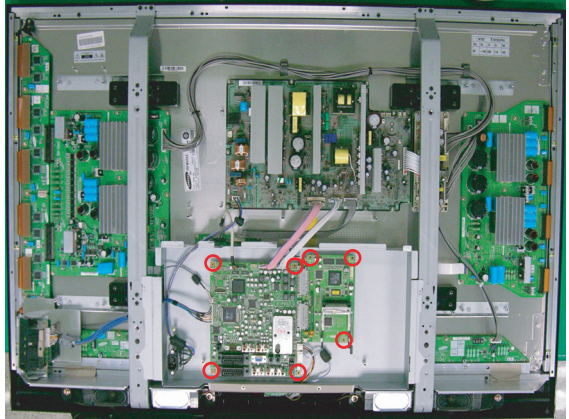
12-1-2 Separation of ASSY COVER P-REAR

Part Name	Description	Description Photo
Cover Rear	① Remove 4 screws.() : M8,L16,ZPC(BLK),SWRCH18A,WP ② Remove 14 screws.() : BH,+,B,M4,L12,ZPC(BLK) ③ Remove 4 screws.() : BH,+,S,M4,L10,ZPC(BLK) ④ Remove the ASSY COVER REAR.	

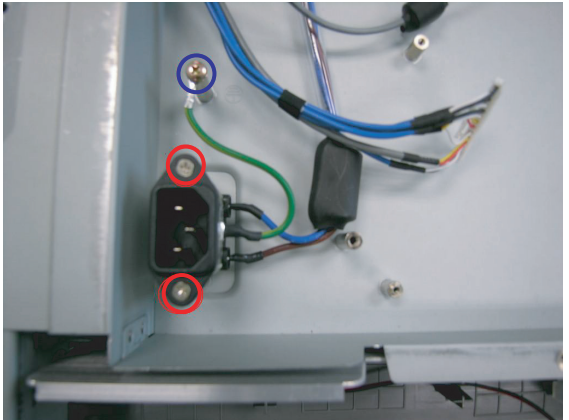
12-1-3 Separation of ASSY BRACKET P-TERMINAL

Part Name	Description	Description Photo
Bracket Terminal	① Remove the 2 Hex nuts for the PC input. : #4-40,L6,NI PLT,C3601,- ② Remove Bracket Terminal.	

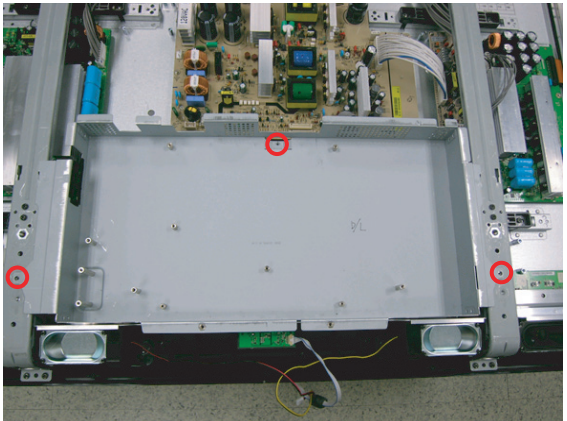
12-1-4 Separation of ASSY PCB MISC-MAIN

Part Name	Description	Description Photo
Main Board	① Detach all connectors from the Main Board. ② Remove 7 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the Main Board.	

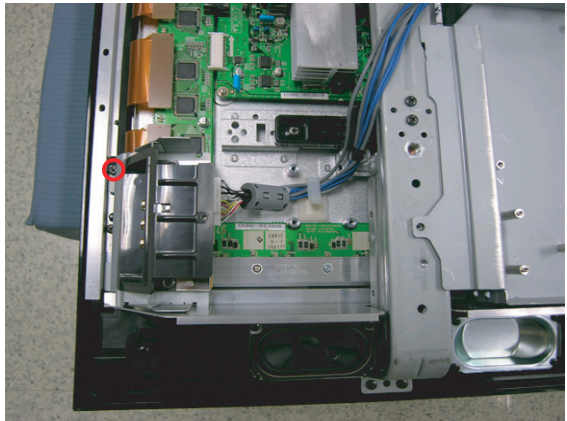
12-1-5 Separation of FILTER-EMI AC LINE

Part Name	Description	Description Photo
Filter-EMI AC LINE	① Detach connector from Main SMPS. ② Remove 2 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove a screw. : BH,+,S,M4,L10,ZPC(BLK) ④ Remove FILTER-EMI AC LINE.	

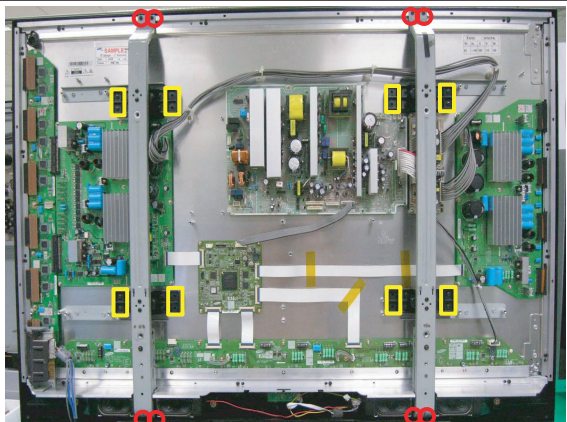
12-1-6 Separation of BRACKET-PCB

Part Name	Description	Description Photo
Bracket PCB	① Remove 3 screws. : BH,+,S,M4,L10,ZPC(BLK) ② Remove the BRACKET-PCB.	

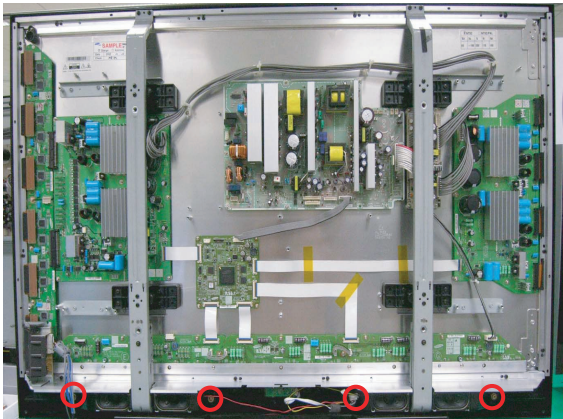
12-1-7 Separation of ASSY BOARD P-SIDE AV

Part Name	Description	Description Photo
Side AV	① Remove 1 screw. : BH,+,S,M4,L10,ZPC(BLK) ② Remove the Side AV assy.	

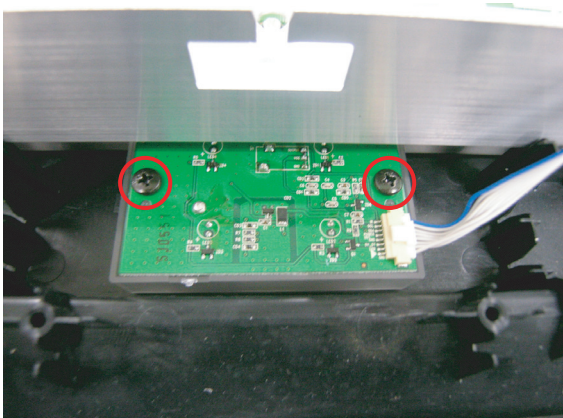
12-1-8 Separation of ASSY BRACKET P-WALL

Part Name	Description	Description Photo
Wall Bracket	① Remove 8 screws. : BH,+,B,M4,L12,ZPC(BLK) ② Remove 16 screws. : BH,+,S,M4,L10,ZPC(BLK) ③ Remove Wall Bracket. ⚠: Please lay the PDP panel face down on a soft surface when separating front cover.	

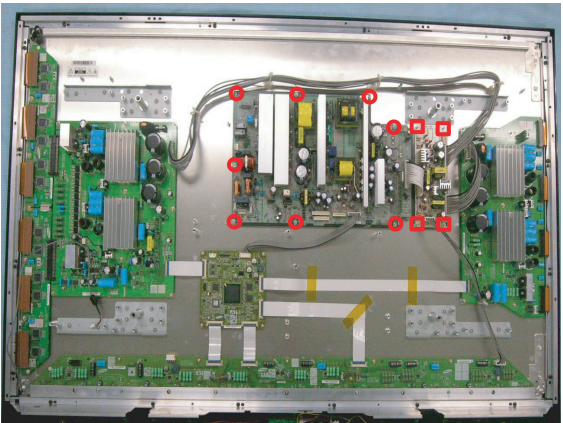
12-1-9 Separation of ASSY SPEAKER P

Part Name	Description	Description Photo
Speaker	① Remove 4 screws. : BH,+,WP,B,M4.0,L12,ZPC(BLK),SWRCH18A,- ② Remove the Speaker.	

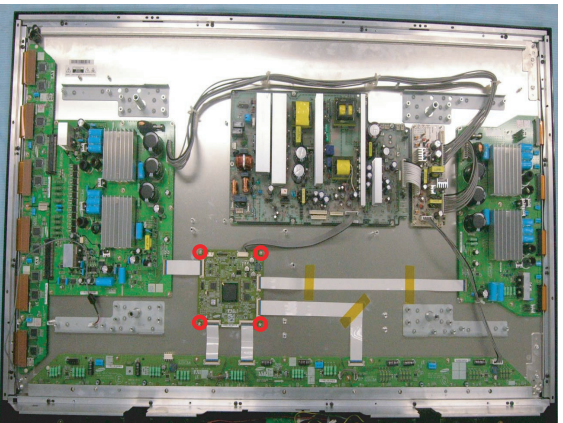
12-1-10 Separation of ASSY BOARD P-POWER&IR

Part Name	Description	Description Photo
Power & IR Board	① Remove 2 screw. : BH,+, -,S,M4,L8,ZPC(BLK) ② Remove the Power & IR Board.	

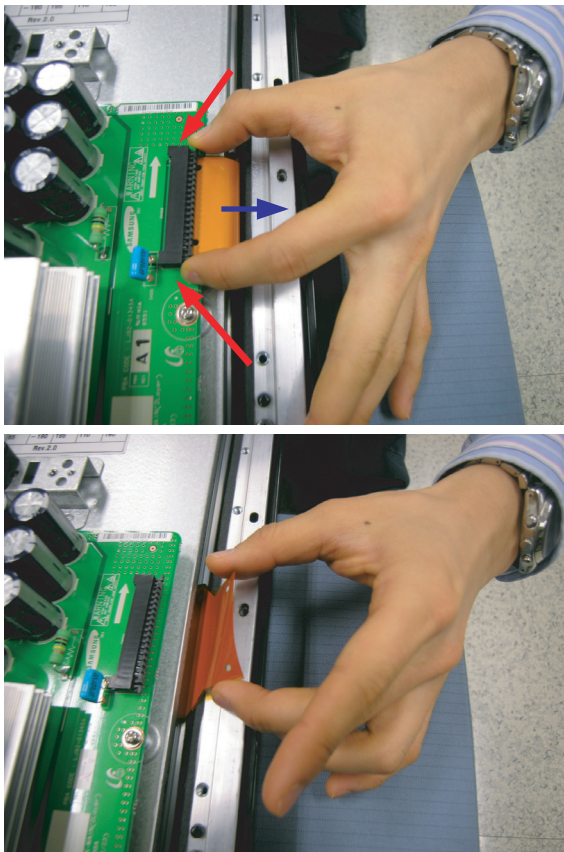
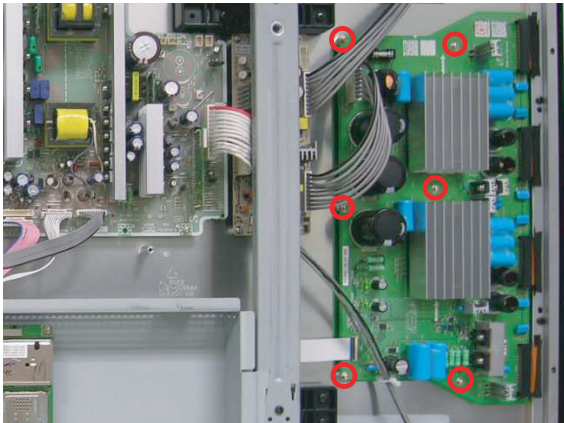
12-1-11 Separation of ASSY PCB P-SMPS & SMPS DC-DC

Part Name	Description	Description Photo
SMPS & SMPS DC-DC Board	① Detach all connectors from the Assy PCB P-SMPS. ② Remove 8 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the Assy SMPS PCB. ④ Detach all connectors from the Assy SMPS DC/DC Board. ⑤ Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ⑥ Remove the SMPS DC/DC Board. ⚠ : Wear gloves when handling the power board as there may be some remaining electrical charge in the capacitor. Specifically, avoid touching any part of the capacitor.	

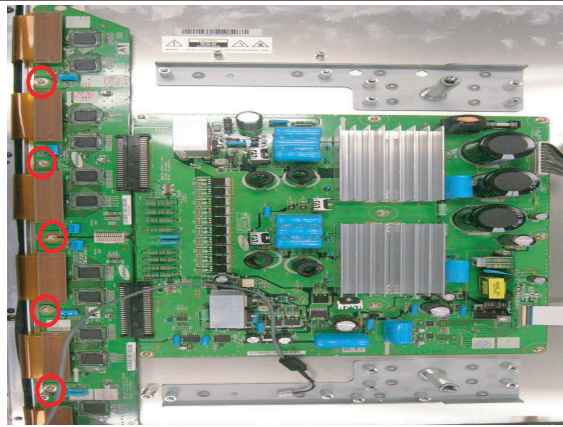
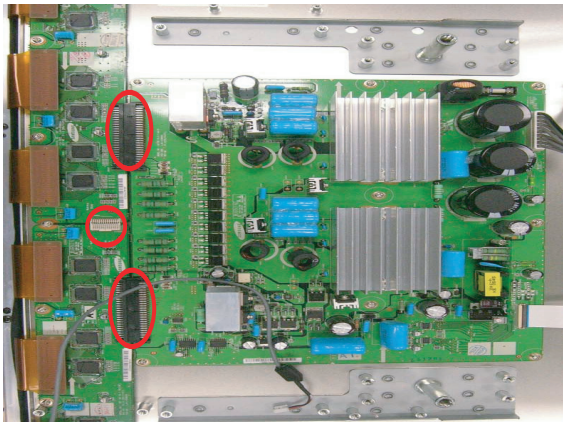
12-1-12 Separation of ASSY PDP MODULE P-LOGIC MAIN BOARD

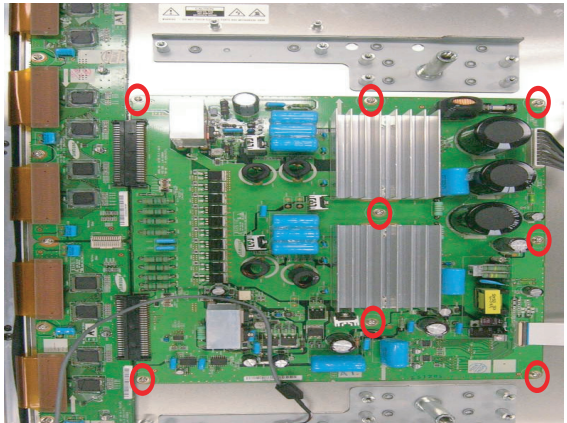
Part Name	Description	Description Photo
Logic Board	① Detach all connectors from the Logic Main Board. ② Remove 4 screws. : WSP,PH,+,M3,L8,NI PLT ③ Remove the Logic Main Board.	

12-1-13 Separation of ASSY PDP MODULE P-X MAIN BOARD

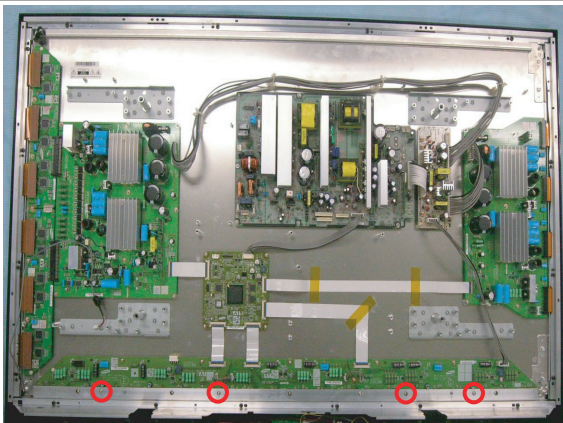
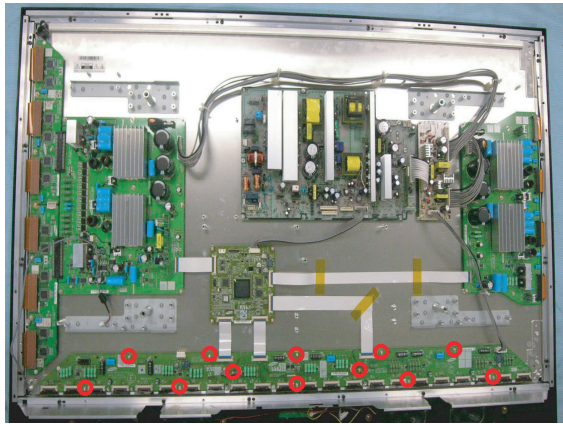
Part Name	Description	Description Photo
Flat Cable	① Detach all Connectors from the X Main Board. ※ To separate the Flat Cable of the X-Board, press the upper and the lower sides of the connector.	
X-Main Board	① Detach all Connectors from the X Main Board. ② Remove 6 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the X-Main Board.	

12-1-14 Separation of ASSY PDP MODULE P-Y MAIN BOARD

Part Name	Description	Description Photo
Flat Cable	① Detach the 6 scan board connectors from the panel by pulling the holder from both the top and bottom ends.	
Y-Scan	① Remove 5 screws. : PH,+,WWP,M3,L8,NI PLT	
Connectors	① Separate the scan board from the Y-Main Board by detaching the 3 connectors and remove the Scan Boards.	

Part Name	Description	Description Photo
Y-Main Board	① Detach all connectors from the Y-Main Board. ② Remove 8 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the Y-Main Board.	

12-1-15 Separation of ASSY PDP MODULE P-ADDRESS BUFFER BOARD

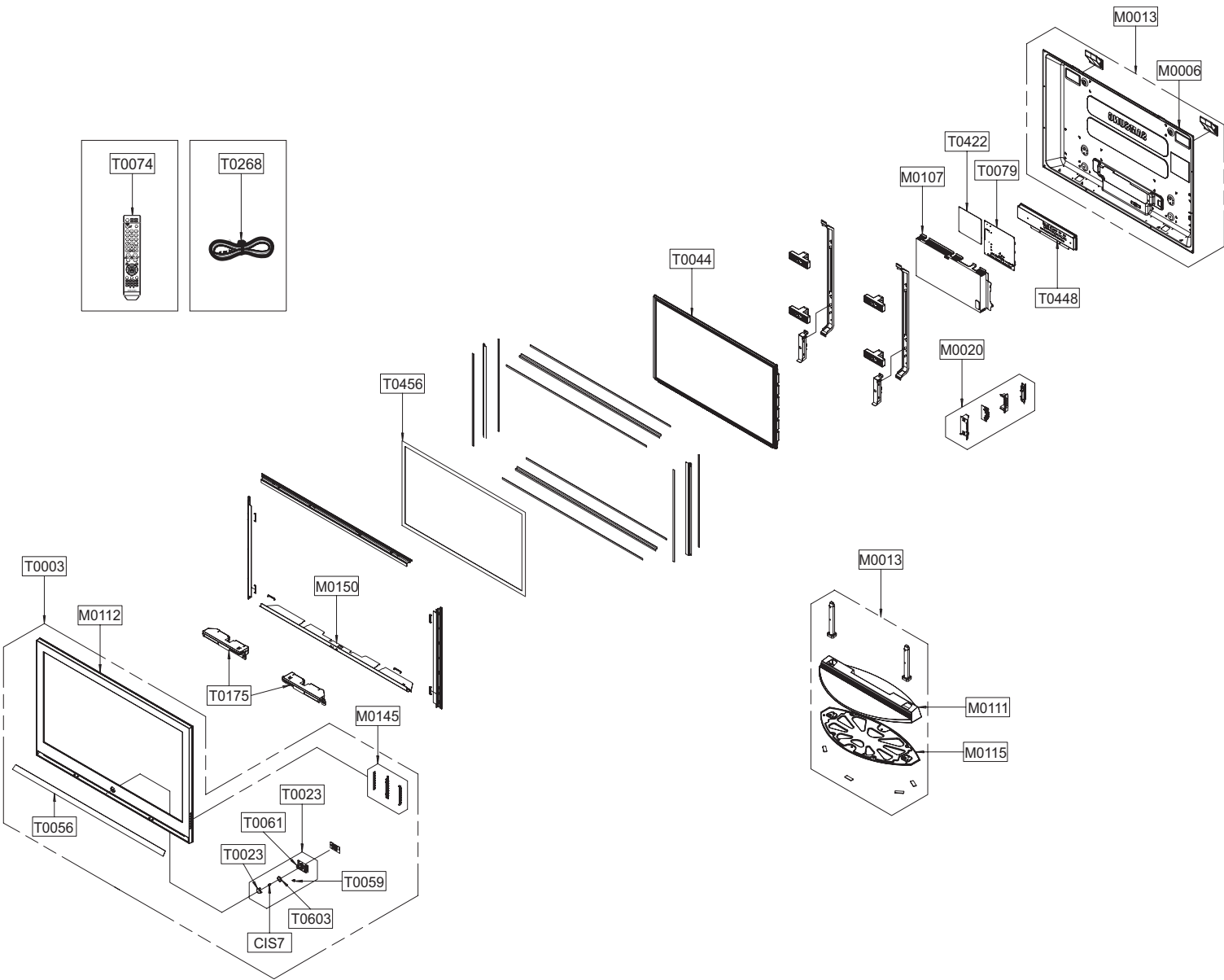
Part Name	Description	Description Photo
Still Bar	① Remove 4 screws. : PH,+,WWP,M3,L8,NI PLT ② Remove the still bar.	 The photo shows the internal components of the PDP module. A horizontal metal bar (the still bar) is positioned across the middle of the unit. Four screws are circled in red at the bottom of the bar, indicating where to remove them. The bar is held in place by yellow tape on the sides.
Buffer	① Detach the all connectors from the buffer board. ② Remove 12 screws. : PH,+,WWP,M3,L8,NI PLT ③ Remove the E-Board and F-Board and G-Board.	 The photo shows the internal components of the PDP module after the still bar has been removed. The buffer board is now visible. Twelve screws are circled in red along the bottom edge of the buffer board, indicating where to remove them. The board is held in place by yellow tape on the sides.

MEMO

4. Exploded View & Part List

4-1 PS50Q7HDX/XEU

You can search for the updated part code through ITSELF web site.
URL:<http://itself.sec.samsung.co.kr>



Loc. No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
CIS7	AA61-60003B	SPRING ETC-CS	-,SUS304,-,-,OD11.2,N7,OD1	1	S.N.A	
M0006	BN63-02389A	COVER-REAR	50C7,PCM,T0.5	1	S.N.A	
M0013	BN96-03154A	ASSY STAND P-BASE	Q7,HGI T3.0,BK23,Round	1	S.A	
M0013	BN96-03161C	ASSY COVER P-REAR	50Q7/P7,PCM T0.5	1	S.A	
M0020	BN96-03075G	ASSY BOARD P-SIDE AV	AUDI,SJ06-01-004G,S	1	S.N.A	
M0107	BN61-02315D	BRACKET-PCB	42C7,SECC,0.8	1	S.N.A	
M0111	BN63-02564A	COVER-STAND	Q7,ABS,HB,SF0507,BK23	1	S.N.A	
M0112	BN63-02390D	COVER-FRONT	50Q7/P7HD,ABS,HB,XEU,BK23	1	S.N.A	
M0115	BN61-02338A	BRACKET-STAND	42C7,SECC,3.0	1	S.N.A	
M0145	BN96-02784B	ASSY BOARD P-FUNCTION	CADILLAC,SJ06-01-0	1	S.A	
M0150	BN96-03948A	ASSY BRACKET P-FILTER BOTTOM	50Q7/P7,AL,	1	S.N.A	
T0003	BN96-03952D	ASSY COVER P-FRONT	50Q7(HQ),ABS HB,BK23,	1	S.N.A	
T0023	BN96-03173A	ASSY COVER P-KNOB POWER	42P7,ABS	1	S.N.A	
T0023	BN64-00459A	KNOB POWER	42P7,PC,Violet	1	S.N.A	
T0044	BN96-03290A	ASSY PDP MODULE P-PDP MODULE	M1,50HD,V5.	1	S.A	
T0056	BN63-02391A	COVER-DECORATION	50Q7,PC SHEET,T0.5,Silv	1	S.N.A	
T0059	BN64-00461A	INDICATOR LED	42P7,PMMA	1	S.N.A	
T0061	BN64-00462A	WINDOW-REMOCON	42P7,ACRYL,5%	1	S.N.A	
T0074	BN59-00516A	REMOCON	CAMBRIDGE,TM87B,45,CAMBRIDGE,EUR	1	S.A	
T0079	BN94-00960A	ASSY PCB MISC-MAIN	PS50Q7HDX/XEU,D74B,MU	1	S.N.A	
T0175	BN96-03392B	ASSY SPEAKER P	8ohm,Q7,10W,2Way 2speaker	1	S.A	
T0268	3903-000145	CBF-POWER CORD	DT,EU,FP3/YES,U(IEC C13-R	1	S.A	
T0422	BN94-00977A	ASSY PCB MISC-DTV MODULE	PS50C7HDX/XEU,D	1	S.N.A	
T0448	BN96-03144F	ASSY BRACKET P-TERMINAL	42C7HD,XEC,SECC	1	S.N.A	
T0456	BN67-00173A	GLASS-FILTER EMI	50" C7 No B/C,Mesh,T=44	1	S.A	
T0603	BN64-00460A	KNOB-DECORATION POWER	42P7,ABS,HB,AL	1	S.N.A	

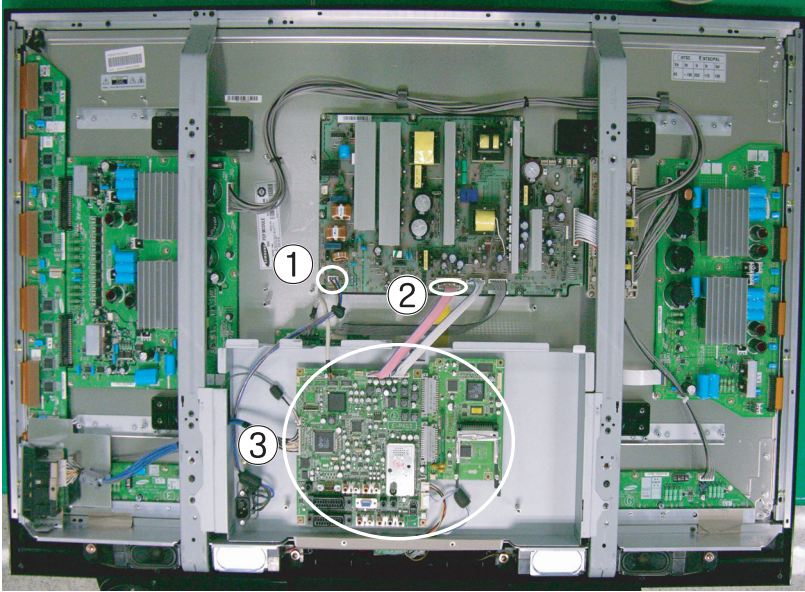
6. Troubleshooting

6-1 First Checklist for Troubleshooting

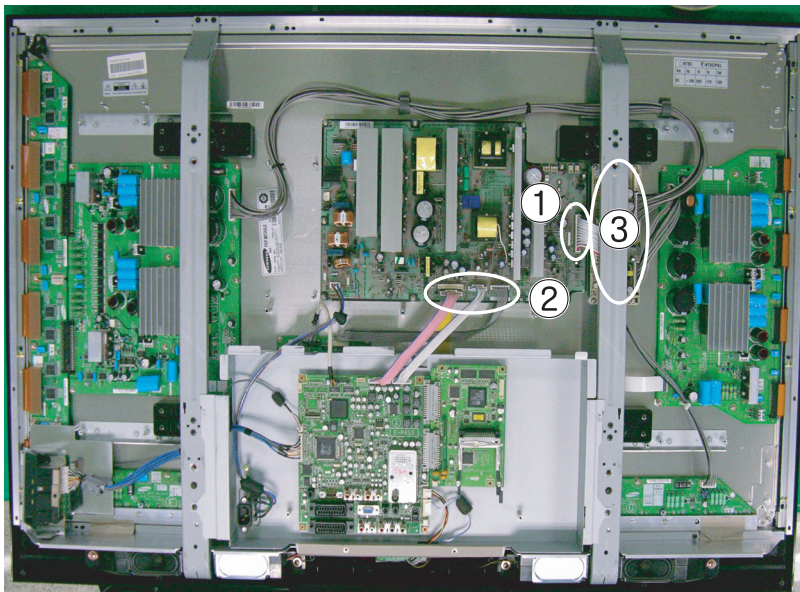
1. Check the various cable connections first.
 - Check to see if there is a burnt or damaged cable.
 - Check to see if there is a disconnected cable connection or a connection is too loose.
 - Check to see if the cables are connected according to the connection diagram.
2. Check the power input to the Main Board.
3. Check the voltage in and out between the SMPS ↔ Main Board, between the SMPS ↔ X, Y Main Board, and between the Logic Boards.

6-2 Checkpoints by Error Mode

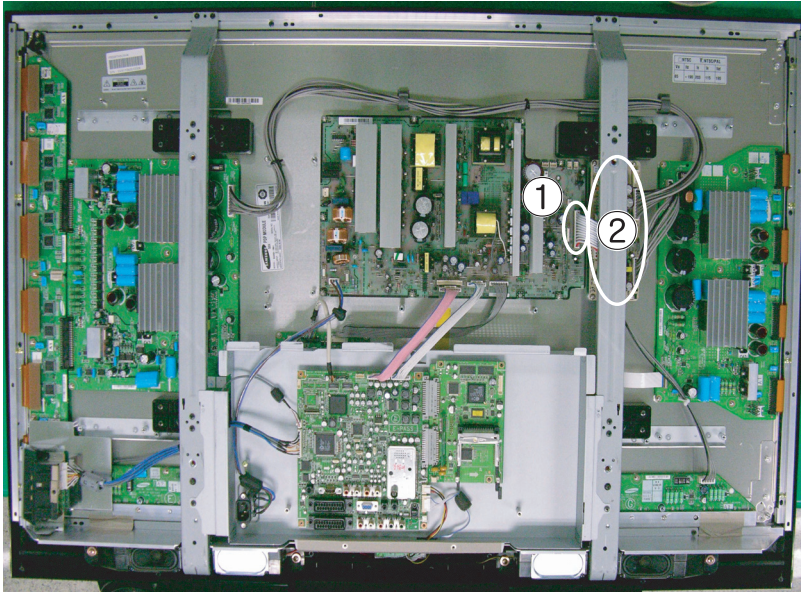
6-2-1 No Power

Symptom	- The LEDs on the front panel do not work when connecting the power cord. - The SMPS relay does not work when connecting the power cord. - The power of the unit seems to be out of order.
Major Checklist	The SMPS relay or the LEDs on the front panel do not work when connecting the power cord if the cables are improperly connected or the Main Board or SMPS is out of order. In this case, check the following: - Check the internal cable connection status inside the unit. - Check the fuses of each part. - Check the output voltage of SMPS. - Replace the Main Board.
Troubleshooting Procedures	 <pre> graph TD Q1["① Are the AC IN socket connector and the Main SMPS CN800 connected?"] A1["Connect The AC IN socket connector and the Main SMPS CN800"] Q2["① Is the Fuse (F101) of the Main SMPS Power Input Part blown?"] A2["Replace the Main SMPS"] Q3["② Check Main SMPS 804-1 Pin 10 : STB 5V = 5V Pin 8 : PS-ON = 0V"] A3["Replace the Main SMPS"] Q4["③ Replace the Main Board"] Q1 -- No --> A1 Q1 -- Yes --> Q2 Q2 -- No --> A2 Q2 -- Yes --> Q3 Q3 -- No --> A3 Q3 -- Yes --> Q4 </pre>

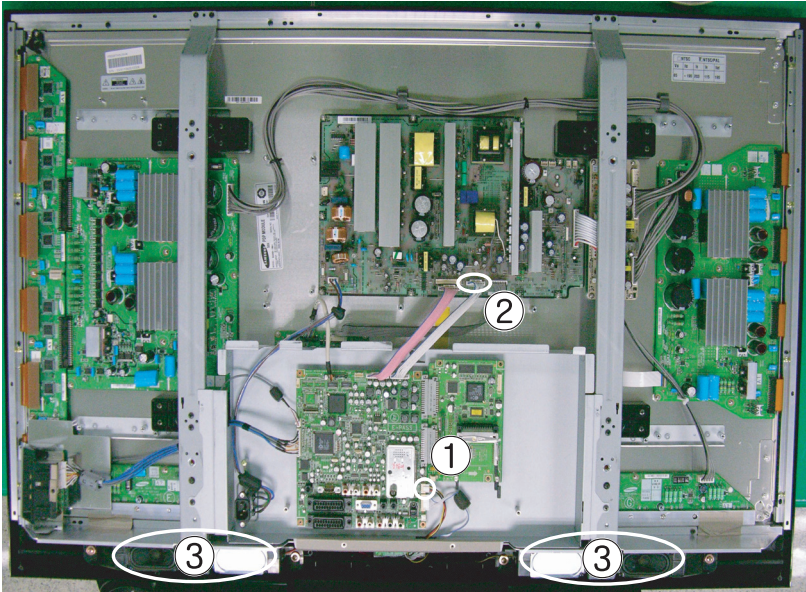
6-2-2 When the unit is repeatedly turned on and off

Symptom	- The SMPS relay is repeatedly turned on and off.
Major Checklist	In general, the SMPS relay repeatedly turns on and off by the protection function due to a defect on a board connected to the SMPS. - Disconnect all cables from the SMPS, operate the SMPS alone and check if the SMPS works properly and if each voltage output is correct. - If the symptom continues even when SMPS is operated alone, replace the SMPS. - If the symptom is not observed when operating the SMPS alone, find any defective ASSYs by connecting the cables one by one.
Troubleshooting Procedures	 <pre> graph TD Q1["① Does the symptom continue after connecting the power and removing CN809 cable from the Main SMPS?"] Q2["② Does the symptom continue when separating the CN804-1 and CN803 cables from the Main SMPS and shorting pins 4 and 5 of the CN804-2 Connector?"] Q3a["③ Does the symptom continue when connecting the power after connecting the CN809 cable and removing the CN2, CN4 and CN5 cables from the DC-DC SMPS?"] Q3b["③ Reconnect all cables. Does the symptom continue when connecting the power after the CN4 cable to the DC-DC SMPS?"] Q3c["③ Does the symptom continue when connecting the power after CN2 to the DC-DC SMPS?"] Q3d["② Does the symptom continue when connecting the power after removing CN810 from the Main SMPS?"] R1["Replace the DC-DC SMPS"] R2["Replace the X Main Board"] R3["Replace the Y Main Board"] R4["Replace the Logic Main Board"] R5["Replace the Main SMPS"] R6["Replace the Main Board"] Q1 -- Yes --> R5 Q1 -- No --> Q3a Q2 -- Yes --> R5 Q2 -- No --> R6 Q3a -- Yes --> R1 Q3a -- No --> Q3b Q3b -- Yes --> R2 Q3b -- No --> Q3c Q3c -- Yes --> R3 Q3c -- No --> Q3d Q3d -- No --> R4 </pre>
Caution	When separating and connecting the cables such as CN809 of the Main SMPS, CN1, CN2, CN3, CN4 and CN5 of DC-DC SMPS, CN of the X Main Board, and CN of the Y Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after separating the power cord from the unit.

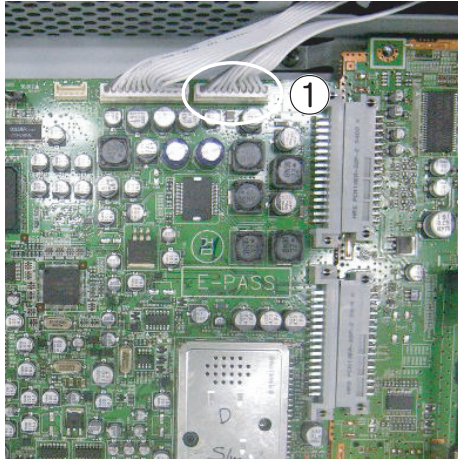
6-2-3 No Picture (When audio is normal)

Symptom	- Audio is normal but no picture is displayed on the screen.
Major Checklist	- This may happen when the Main Board is normal but the X, Y Main Board, Logic Board, or Y Buffer Boards are out of order. - The output voltage of the Main SMPS or the DC-DC SMPS is out of order. - This may happen when the LVDS cable connecting the Main Board and the Logic Board is disconnected.
Troubleshooting Procedures	 <pre> graph TD Q1["① Are the Vs and Va voltages normal after removing the CN809 cable from the Main SMPS?"] Q2["② Is the output voltage of the DC-DC SMPS normal when reconnecting the CN809 cable and removing the CN2, CN4 and CN5 cables from the DC-DC SMPS?"] R1["Replace the Main SMPS"] R2["Replace the DC-DC SMPS"] R3["Replace the Y Main Board"] R4["Replace the X Main Board"] R5["Replace the Logic Main Board"] R6["Replace the Y SCAN Board"] Q1 -- No --> R1 Q1 -- Yes --> Q2 Q2 -- No --> R2 Q2 -- Yes --> R3 R3 --> R4 R4 --> R5 R5 --> R6 </pre>
Caution	When separating and connecting the cables such as CN809 of the Main SMPS, CN1, CN2, CN3, CN4 and CN5 of the DC-DC SMPS, CN of the X Main Board, and CN of the Y Main Board, a spark may be generated by the electric charge of the high capacity capacitor. Therefore, wait some time after separating the power cord from the unit.

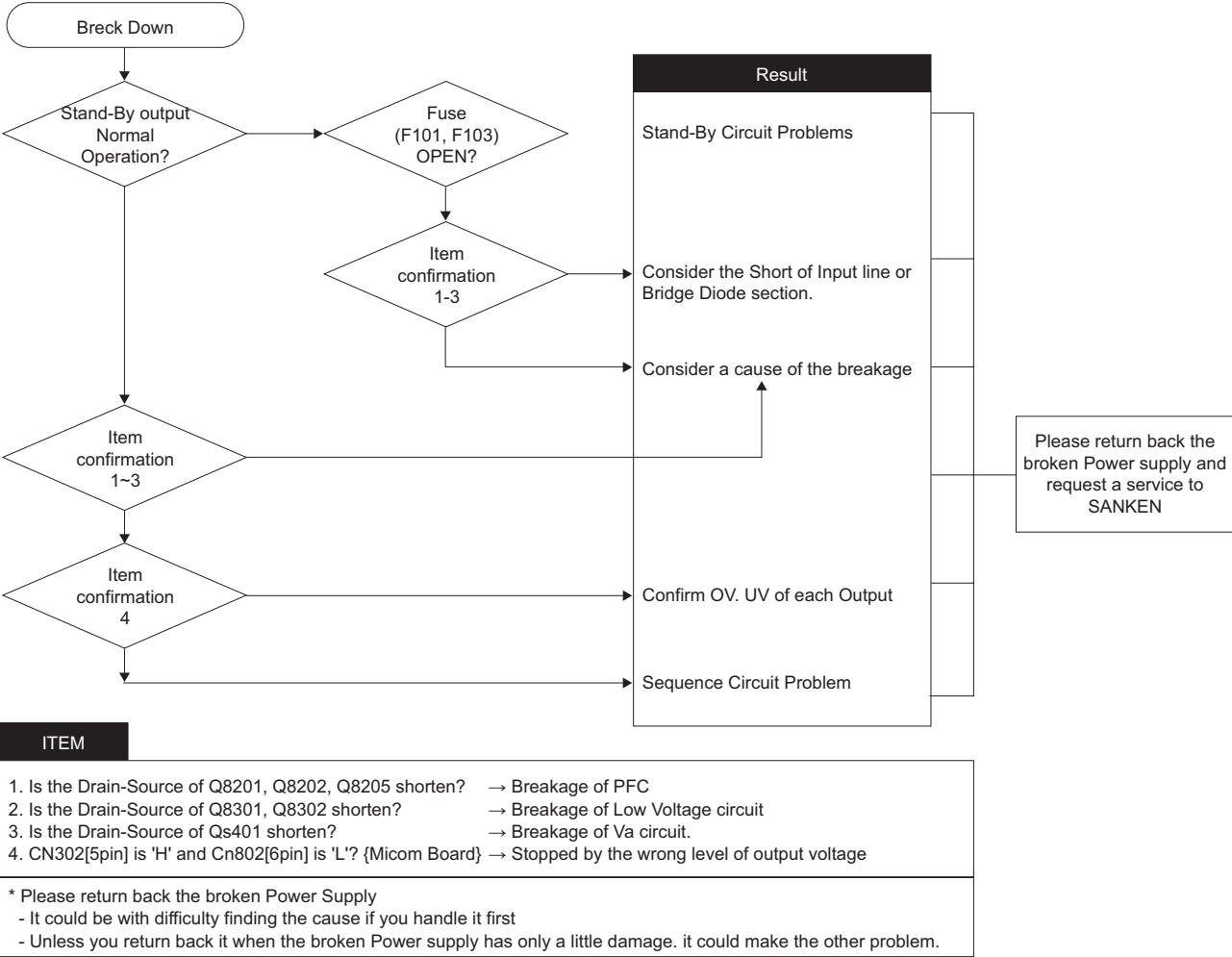
6-2-4 No Sound

Symptom	- Video is normal but there is no sound.
Major Checklist	- When the speaker connectors are disconnected or damaged. - When the sound processing part of the Main Board is out of order. - Speaker defect.
Troubleshooting Procedures	 ① Is the cable connection between the Main Board and the speaker properly connected? No Connect the cable properly or replace the cable, if necessary. Yes ② Is the output voltage of SMPS normal? (CN803 #5) No Replace the Main SMPS Yes Is the speaker output terminal of the Main Board normal? No Replace the Main Board Yes ③ Replace the Speaker

6-2-5 No Video

Symptom	- A normal/cable network analog broadcast screen is blank or abnormal but OSD is OK.
Major Checklist	- Check the antenna connection settings (Antenna 1 - Normal/Cable/DTV, Antenna 2 - Only for DTV) - Check the tuner output signal (CVBS). - Check the power input of the Main board.
Troubleshooting Procedures	 <pre> graph TD Q1[Is the antenna connection setting properly configured?] -- No --> A1[Configure properly] Q1 -- Yes --> Q2[1 Check CN101 pin2 for +33V] Q2 -- No --> A2[Replace the Main SMPS] Q2 -- Yes --> A3[Replace the Main Board] </pre> The troubleshooting procedure starts with the question: "Is the antenna connection setting properly configured?". If the answer is "No", the instruction is "Configure properly". If the answer is "Yes", the procedure moves to step 1: "Check CN101 pin2 for +33V". If this check fails (No), the instruction is "Replace the Main SMPS". If the check passes (Yes), the final instruction is "Replace the Main Board".

6-2-6 Main SMPS Troubleshooting



6-2-7 Drive Board Troubleshooting

1) Troubleshooting Summary

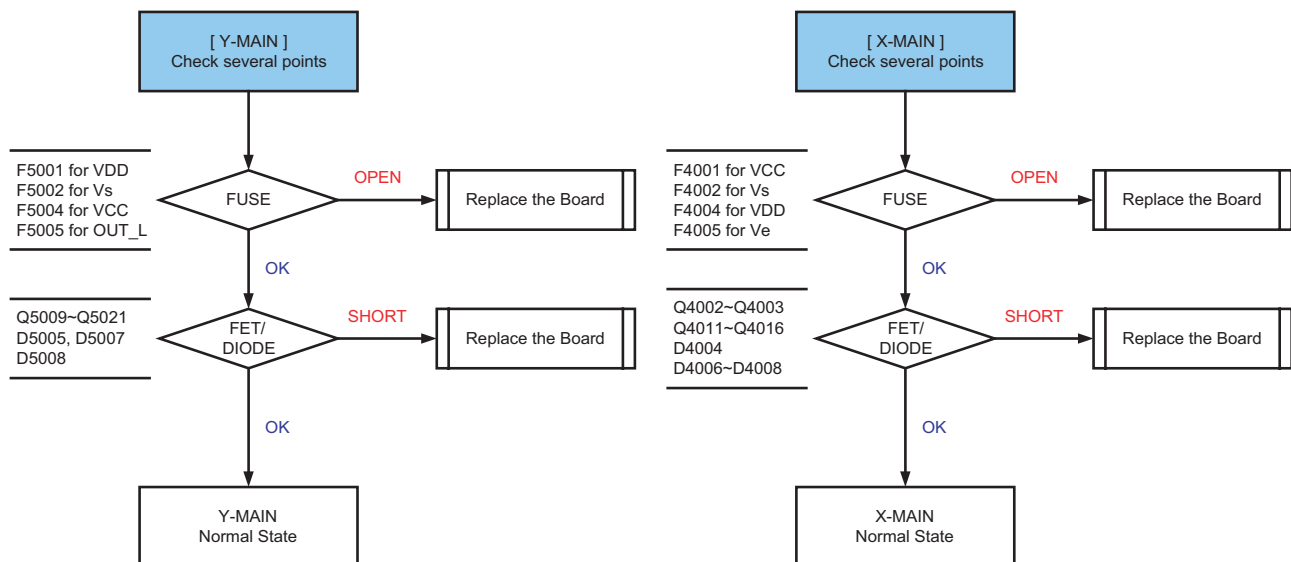
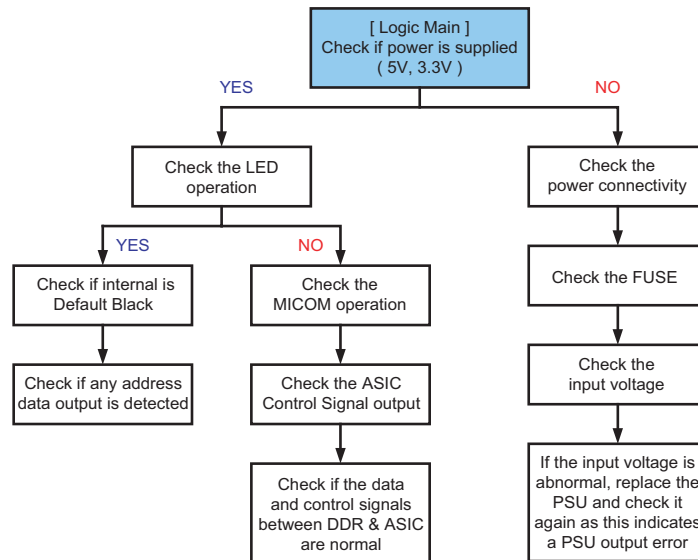
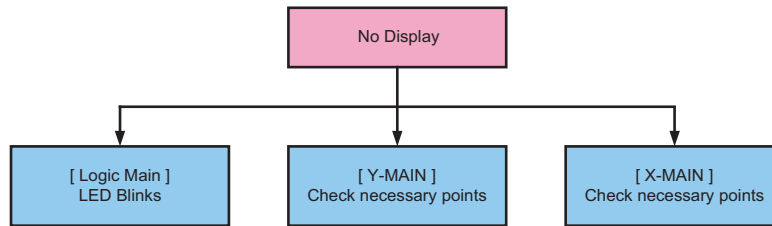
Condition Name	Description	Related Board
No Voltage Output	Operating Voltage don't exist	PSU
No Display	Operating Voltage exist, but an Image doesn't exist on screen	Y-MAIN, X-MAIN, Logic Main, Cable
Abnormal Display	Abnormal Image (not open or short) is no screen	Y-MAIN, X-MAIN, Logic Main
Sustain Open	Some horizontal lines don't exist on screen	Scan Buffer, FPC of X/Y
Sustain Short	Some horizontal lines appear to be linked on screen	Scan Buffer, FPC of X/Y
Address Open	Some vertical lines don't exist on screen	Logic Main, Logic Buffer, TCP
Address Short	Some vertical lines appear to be linked on screen	Logic Main, Logic Buffer, TCP

2) Troubleshooting Procedure in Abnormal Conditions

① No Display (Operating Voltage exist, but an doesn't exist on Screen)

- No Display is related with Y-MAIN, X-MAIN, Logic Main and so on.

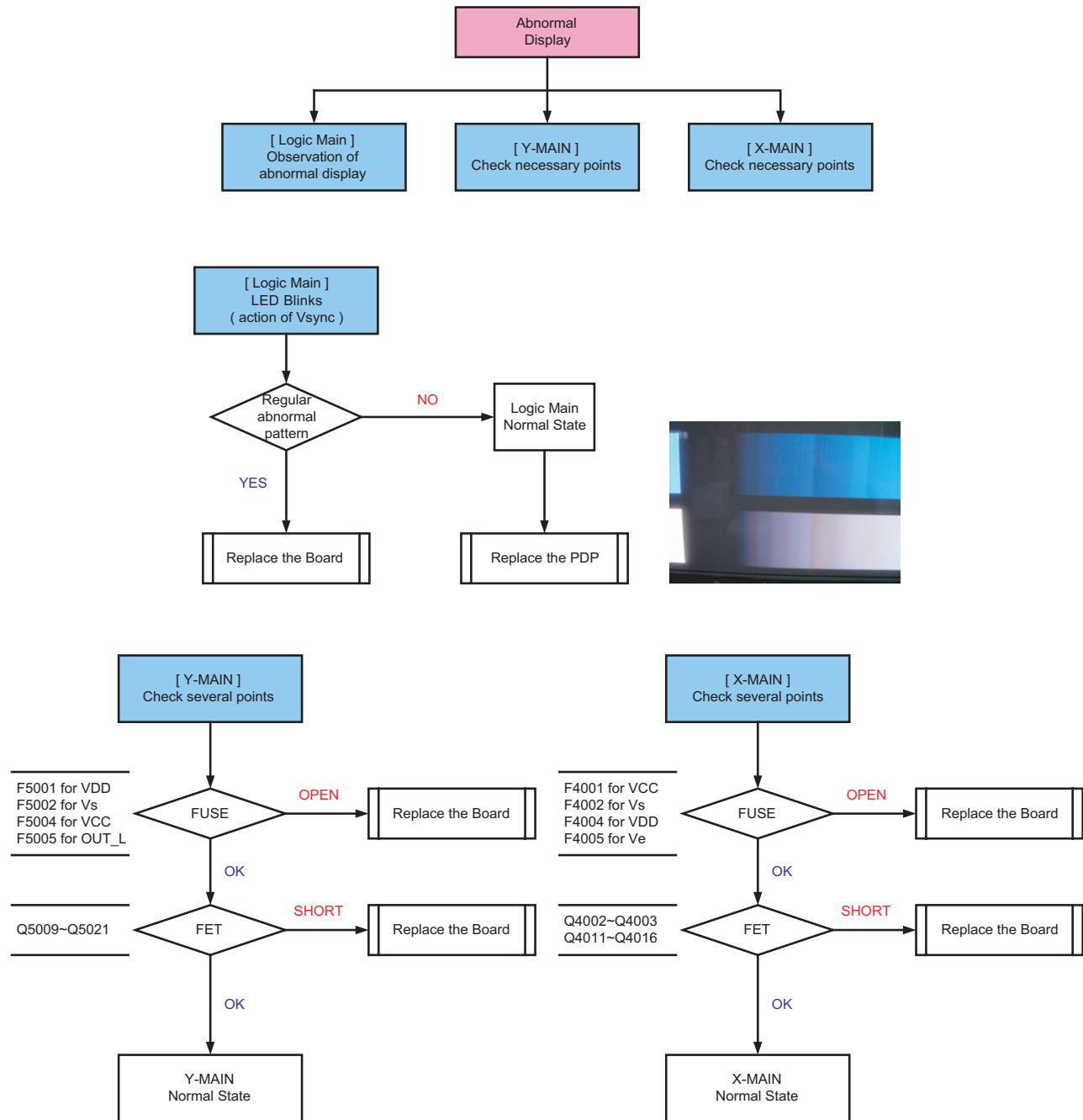
This page shows you how to check the boards, and the following pages show you how to find the defective board.



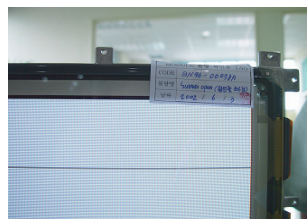
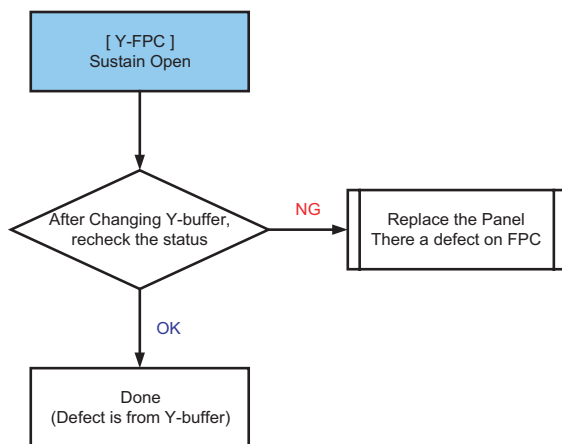
② Abnormal Display(Abnormal Image is on Screen.(except abnormality in Sustain or Address)

- Abnormal Display is related with Y-MAIN, X-MAIN, Logic Main and so on.

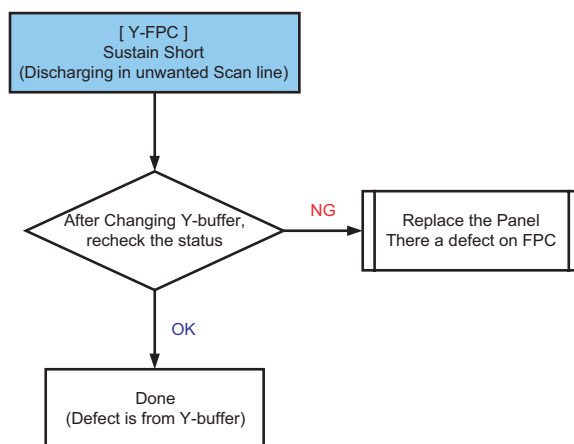
This page shows you how to check the boards, and the following pages show you how to find the defective board.



③ Sustain Open (some horizontal lines don't exist on screen)



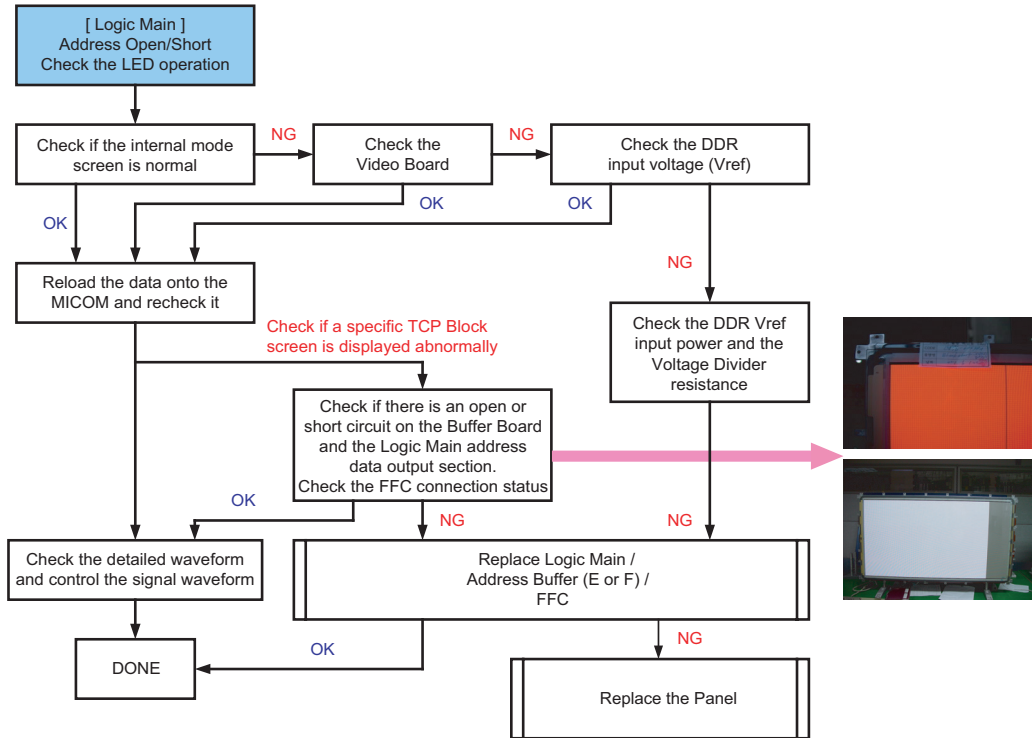
④ Sustain Short (some horizontal lines appear to be linked on Video)



⑤ Address Open, Short(some vertical lines don't exist on screen)

- Address Open and Short is related with Logic Main, Logic Buffer, FFC, TCP film and so on.

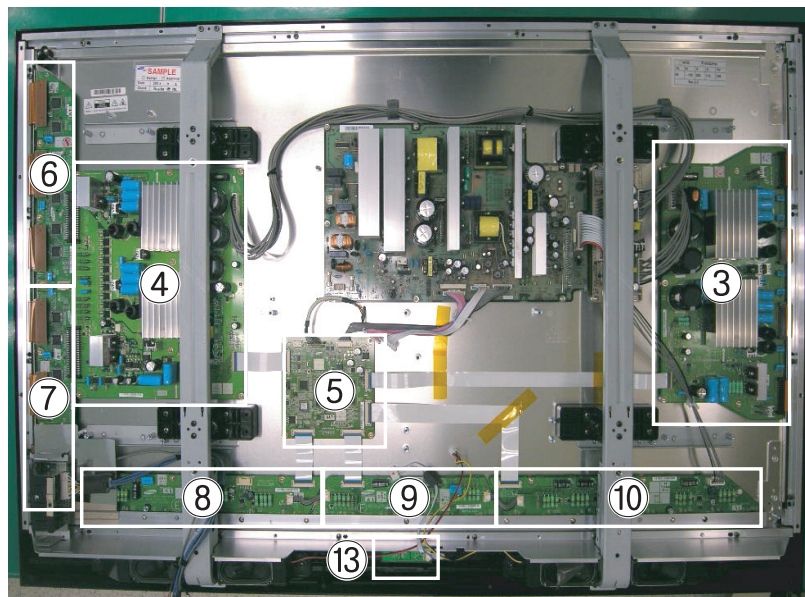
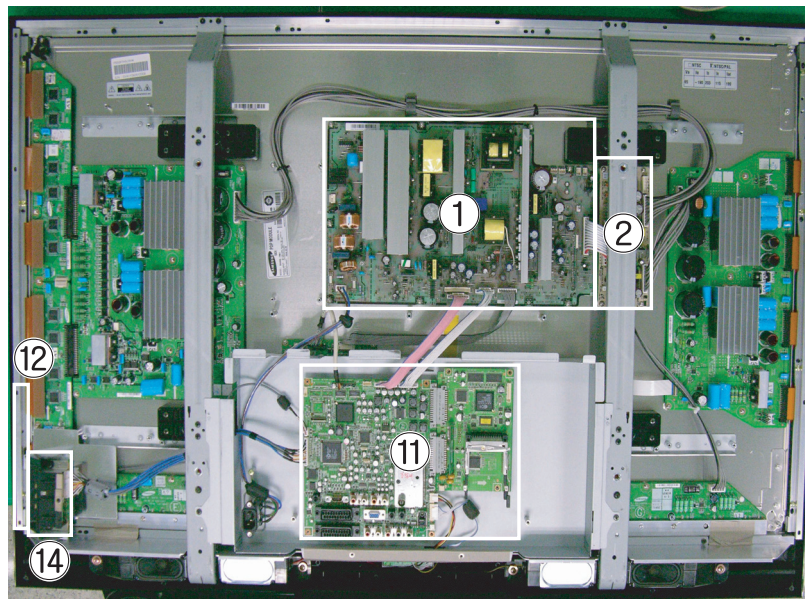
This page shows you how to check the boards, and the following pages show you how to find the defective board.



6-3 Troubleshooting Procedures by ASS'Y

※ The ASS'Y code can be changed, see "5 Chapter. Electrical Part List."

No	Assy	Code No.	Description	Major Symptoms
1	ASSY PCB P-SMPS(MAIN)	BN96-03051A	Main SMPS	No power, Blank screen, the Relay repeats On and Off.
2	ASSY PCB P-SMPS(DC-DC)	BN96-01856A	DC-DC SMPS	Blank screen, the Relay repeats On and Off.
3	ASSY PDP P-X MAIN BOARD	BN96-03359A	X Main Board	Blank screen
4	ASSY PDP P-Y MAIN BOARD	BN96-03360A	Y Main Board	Blank screen
5	ASSY PDP MODULE P-LOGIC MAIN BOARD	BN96-03366A	Logic Board	Blank screen, Screen noise
6	ASSY PDP P-Y UPPER SCAN BOARD	BN96-03361A	Y Upper Scan Board	Row Bar screen is blank
7	ASSY PDP P-Y LOWER SCAN BOARD	BN96-03362A	Y Lower Scan Board	Row Bar screen is blank
8	ASSY PDP P-ADDRESS E BUFF BOARD	BN96-03363A	Address E Buffer Board	Corresponding Buffer Board block screen is blank.
9	ASSY PDP P-ADDRESS F BUFF BOARD	BN96-03364A	Address F Buffer Board	Corresponding Buffer Board block screen is blank.
10	ASSY PDP P-ADDRESS G BUFF BOARD	BN96-03365A	Address G Buffer Board	Corresponding Buffer Board block screen is blank.
11	ASSY PCB MISC-MAIN ASSY PCB MISC-DTV MODULE	BN94-00960A BN94-00977A	Main Board DTV Module Board	No Power, Abnormal screen for each input source, PIP screen trouble, Sound trouble
12	ASSY BOARD P-FUNCTION	BN96-02784B	Function Key Board	The side function key does not work properly
13	ASSY BOARD P-POWER&IR	BN96-03320A	Power Button Board	The remote control does not work properly, the LED does not work properly.
14	ASSY BOARD P-SIDE AV	BN96-03075G	Side AV Board	The AV2 and S-VIDEO2 modes do not work properly

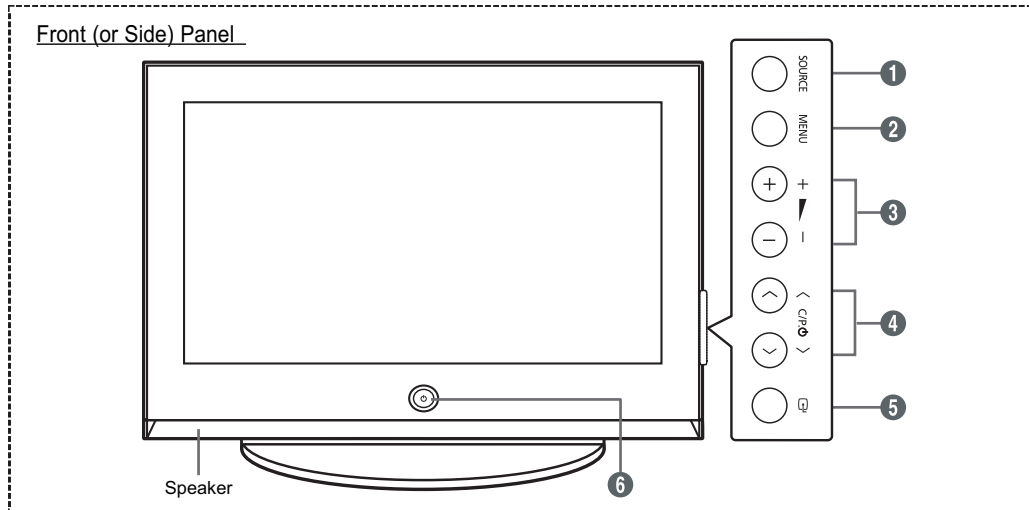


MEMO

11. Operation Instruction & Installation

11-1 Product Features and Functions

11-1-1 Front (or Side) Panel

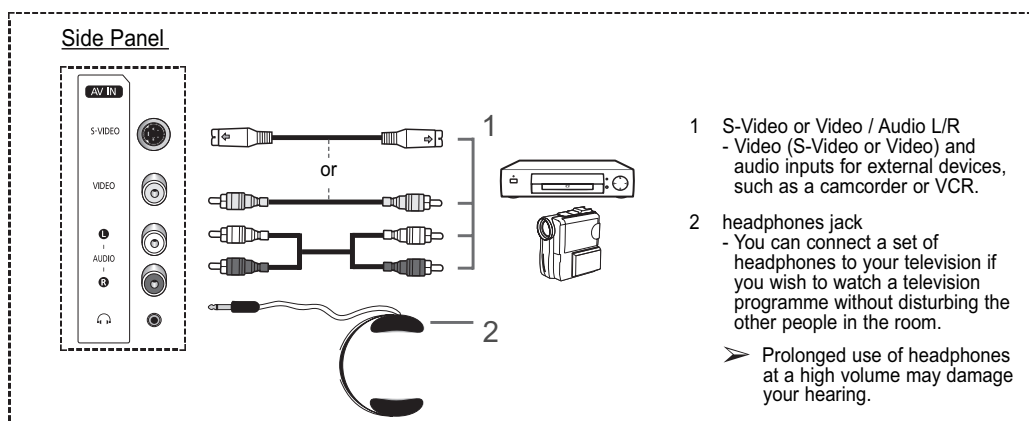


- 1 **SOURCE**
Displays a menu of all of the available input sources (TV, Ext.1, Ext.2, AV, S-Video, Component, PC, HDMI, DTV).
- 2 **MENU**
Press to see the on-screen menu of your TV's features.
- 3 **— +**
Press to decrease or increase the volume.
In the on-screen menu, use the — + buttons as you use the ◀ and ▶ buttons on the remote control.
- 4 **∇ C/P ∇**
Press to change channels. In the on-screen menu, use the ∇ C/P ∇ buttons as you use the ▲ and ▼ buttons on the remote control.
- 5 **↵ (ENTER)**
Press to confirm a selection.
- 6 **⏻ (Power) button**
Press to turn the TV on and off.

Power Indicator
- Power Off: Blue
- Power On: Off

Remote Control Sensor
Aim the remote control towards this spot on the TV.

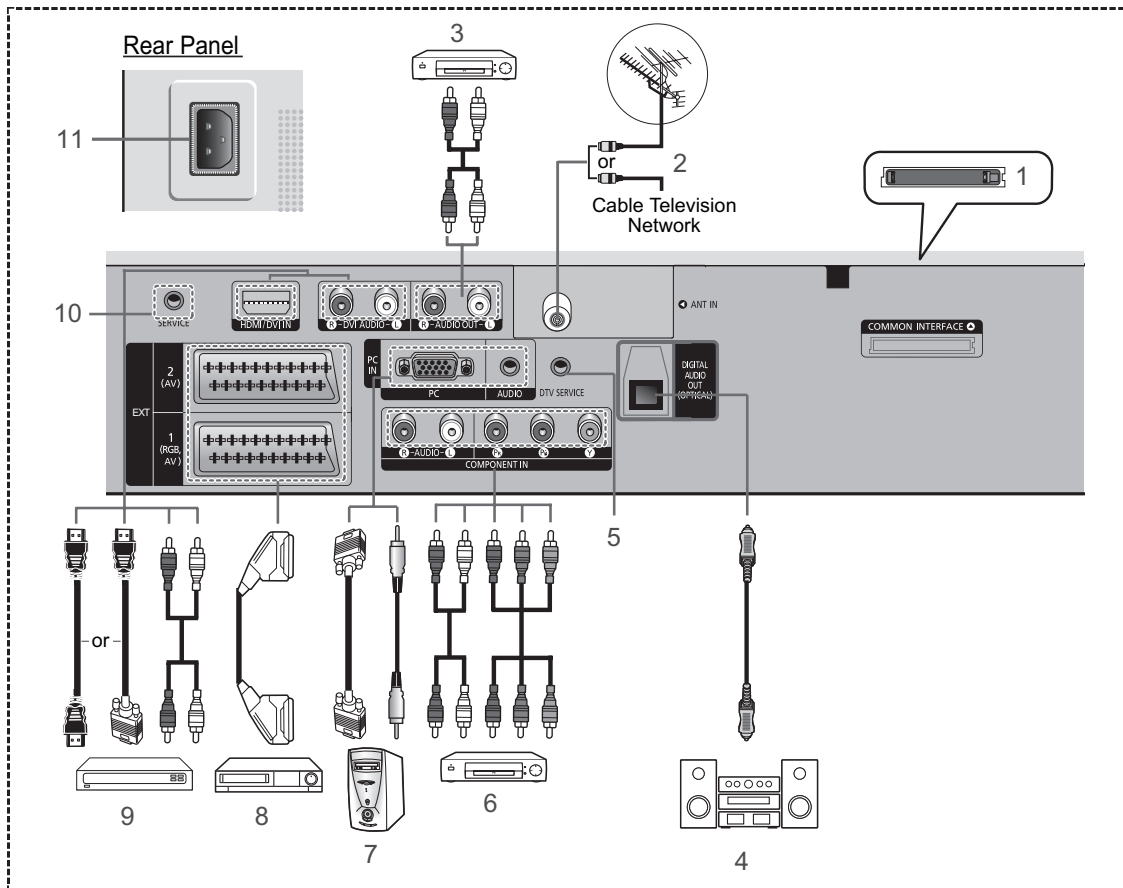
➤ Press the MENU button once in DTV mode, then the DTV menu is displayed.



- 1 **S-Video or Video / Audio L/R**
- Video (S-Video or Video) and audio inputs for external devices, such as a camcorder or VCR.
- 2 **headphones jack**
- You can connect a set of headphones to your television if you wish to watch a television programme without disturbing the other people in the room.

➤ Prolonged use of headphones at a high volume may damage your hearing.

11-1-2 Rear Panel



- ☛ Whenever you connect an audio or video system to your set, ensure that all elements are switched off.
- ☛ When connecting an external device, match the colour of the connection terminal to the cable.

- 1 Common Interface Slot
 - Insert CI (Common Interface) card into the slot.
- 2 ANT IN VHF/UHF (75Ω)
 - 75Ω Coaxial connector for Aerial/Cable Network.
- 3 Connecting external Audio Devices
 - Connect RCA audio signals from the TV to an external source, such as Audio equipment.
- 4 DIGITAL AUDIO OUT (OPTICAL)
 - Connect to a Digital Audio Component.
- 5 DTV SERVICE
 - Connector for service only.
- 6 COMPONENT IN
 - Video (Y/P_B/P_R) and audio (AUDIO L/R) inputs for Component.
- 7 PC IN / AUDIO
 - Connect to the video and audio output jack on your PC.
- 8 EXT 1, EXT 2
 - Inputs or outputs for external devices, such as VCR, DVD, video game device or video disc players.

Input/Output Specification

Connector	Input				Output
	Video	Audio (L/R)	S-Video	RGB	Video + Audio (L/R)
EXT 1	✓	✓	✓	✓	Only TV or DTV output is available.
EXT 2	✓	✓	✓		Output you can choose.

- 9 HDMI/DVI IN
 - Connect to the HDMI jack of a device with HDMI output. These inputs can also be used as a DVI connection with separate analog audio inputs. An optional HDMI/DVI cable will be necessary to make this connection. When using the optional HDMI/DVI adapter, the DVI analog audio inputs on your TV allow you to receive left and right audio from your DVI device. (Not compatible with PC)
 - When connecting this product via HDMI or DVI to a Set Top Box, DVD Player or Games Console etc, make sure that it has been set to a compatible video output mode as shown in the table below. Failure to observe this may result in picture distortion, image breakup or no picture.
 - Do not attempt to connect the HDMI/DVI connector to a PC or Laptop Graphics Card. (This will result in a blank screen being displayed)

DVI AUDIO IN L/R

- DVI audio outputs for external devices.

- 10 SERVICE
 - Connector for service only.

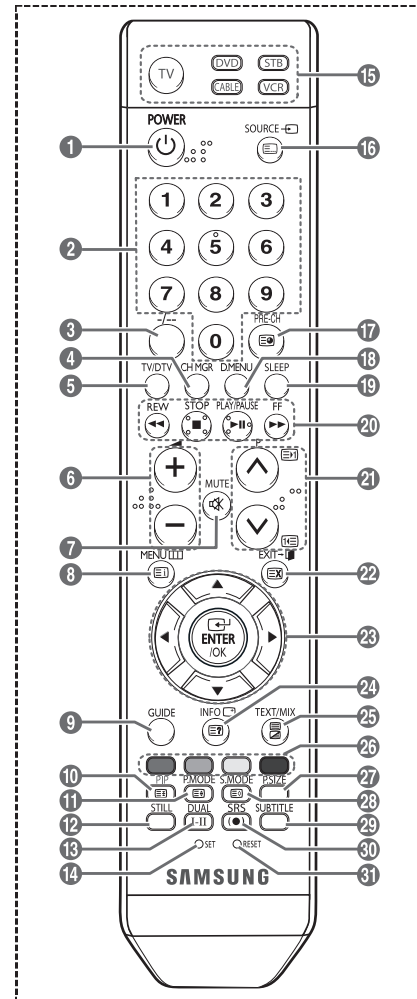
- 11 POWER IN
 - Connect the supplied power cord.

➤ Supported modes for HDMI/DVI and Component

	480i	480p	576i	576p	720p	1080i
HDMI/DVI 50Hz	X	O	X	O	O	O
HDMI/DVI 60Hz	X	O	X	X	O	O
Component	O	O	O	O	O	O

11-1-3 Remote Control

- | | |
|---|--|
| 1 POWER button
(turns the TV on and off) | 23 Control the cursor in the menu |
| 2 Number buttons for direct
channel access | 24 Use to see information on the
current broadcast |
| 3 One/Two-digit channel
selection | 26 Fasttext topic selection |
| 4 Channel control button | 27 Picture size selection |
| 5 Selects the TV and DTV mode
directly | 28 Sound effect selection |
| 6 $\oplus$ Volume increase
$\ominus$ Volume decrease | 29 Digital subtitle display |
| 7 Temporary sound switch-off | 30 TruSurround XT mode button |
| 8 Displays the main on-screen
menu | 31 If your remote control is not
functioning properly, take out
the batteries and press the
reset button for about 2~3
seconds.
Re-insert the batteries and
try using the remote control
again. |
| 9 Electronic Program Guide
(EPG) display | |
| 10 Picture-In-Picture On/Off | |
| 11 Picture effect selection | |
| 12 Picture freeze | |
| 13 Sound mode selection | |
| 14 Remote control setup | |
| 15 Selects a target device to be
controlled by the Samsung
remote control (TV, DVD,
STB, CABLE, VCR) | |
| 16 Available source selection | |
| 17 Previous channel | |
| 18 DTV menu display | |
| 19 Automatic Power-off | |
| 20 VCR/DVD Function
(Rewind, Stop, Play/Pause,
Fast/Forward) | |
| 21 $\odot$ Next channel
$\oslash$ Previous channel | |
| 22 Exit the on-screen menu | |
| | Teletext Functions |
| | 5 Exit from the teletext display
(depending on the model) |
| | 8 Teletext index |
| | 10 Teletext hold |
| | 11 Teletext size selection |
| | 16 Teletext mode selection
(LIST/FLOF) |
| | 17 Teletext sub page |
| | 21 P $\odot$: Teletext next page
P $\oslash$: Teletext previous page |
| | 22 Teletext cancel |
| | 24 Teletext reveal |
| | 25 Teletext display/mix both
teletext information and
the normal broadcast |
| | 26 Fasttext topic selection |
| | 28 Teletext store |



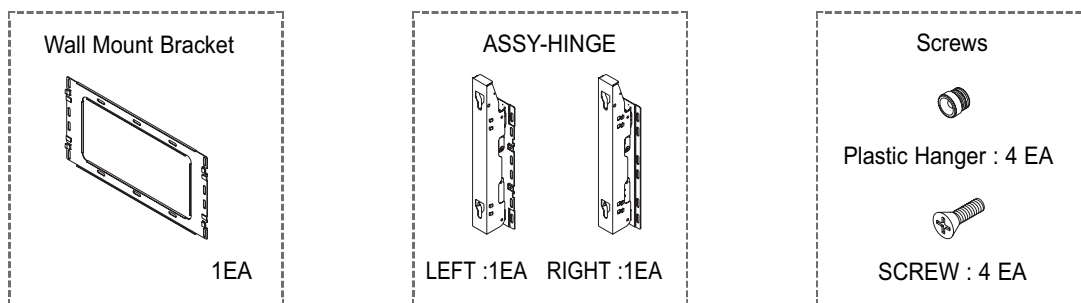
- The performance of the remote control may be affected by bright light.
- This is a special remote control for the visually impaired, and has Braille points.

11-2 Installation Notes and Precautions

11-2-1 Installation Notes

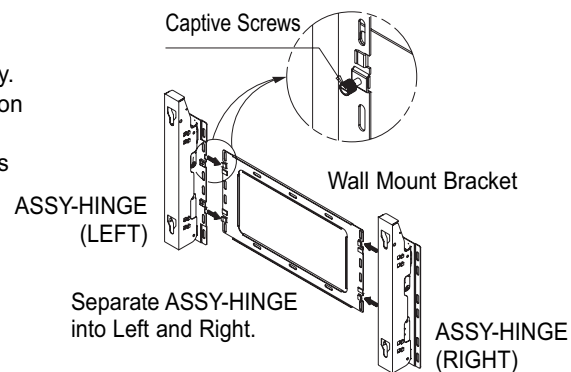
1. Contact a technician for installing the wall bracket.
2. Samsung Electronics is not responsible for any damages to the product or harm to customers when the installation is done by the customer.
3. This product is for installing on cement walls. The product may not stay in place when installed on plaster or wood.
4. The package contents and parts supplied for the wall mount are subject to change without prior notice.

11-2-2 Mounting Kits



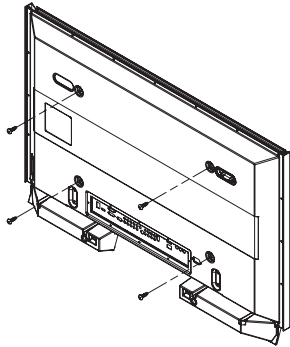
11-2-3 How to assemble the Wall Mount Bracket

- 1 The wall mount bracket is delivered separately. Please tighten the captive screw in the direction of the arrow after assembling the bracket. Install the Wall Mount Bracket after the screws are securely inserted into the wall.

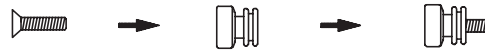


11-2-4 Instructions on Securing the SET to the Wall Mount Bracket

- 1 Remove the screws from the back of the PDP.

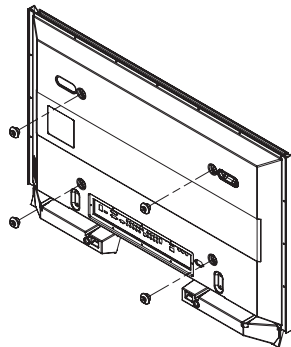


- 2 Use the screw and assemble the plastic hanger. (Please refer to the following picture.)

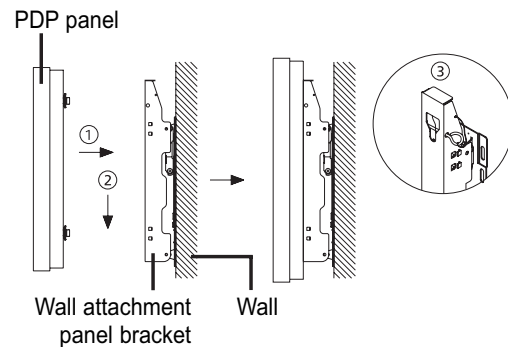


- 1 Please ask the installers to install the wall mount bracket.
 2 Please be sure to check if the plastic hanger is completely secured on both the left and right side after hanging the SET on the wall mount bracket.
 3 Please avoid catching your fingers while installing and adjusting the angle.
 4 Please tightly secure the wall mount bracket to the wall to avoid injury from a falling SET.

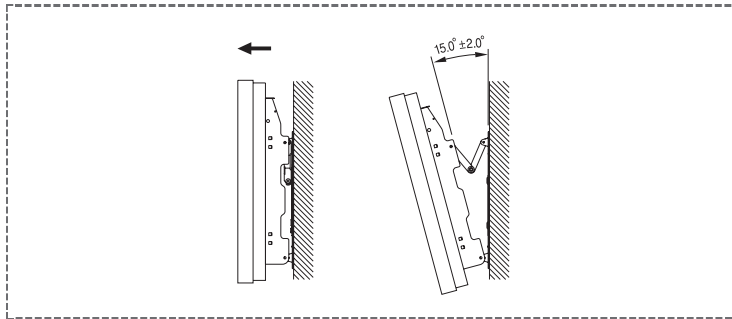
- 3 Tighten the screws of the plastic hanger (shown in picture 2) to the back side of the PDP.



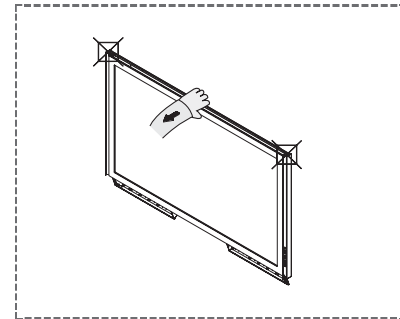
- 4 Remove the Safety Pins. Fasten the 4 plastic latches assembled at step (3) on the back side of the PDP using the guide holes of the wall mount, push (1) and hook (2) down to secure the PDP on the wall mount as illustrated. Secure the PDP by inserting the Safety Pins, not to fall from the wall mount.



11-2-5 How to Adjust Mounting Angle

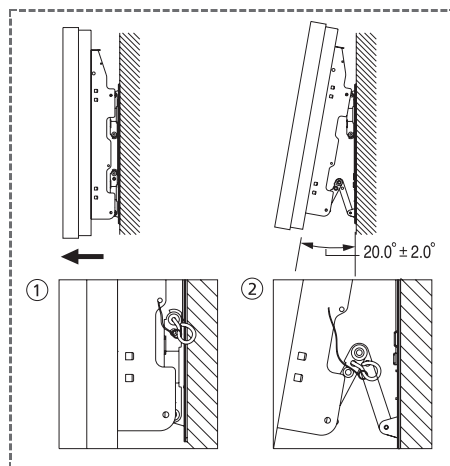


- 1 Secure the SET to the wall mount bracket.(Please refer to the following instructions.)
- 2 Set the angle by pulling the upper end of the SET attached to bracket in the direction of the arrow. (Refer to the illustration on the right.)
- 3 The angle can be adjusted from 0° to 15° by $\pm 2^\circ$.



Hold onto the middle of the PDP to adjust the angle (not the sides of the PDP).

11-2-6 Connecting External Devices to the PDP

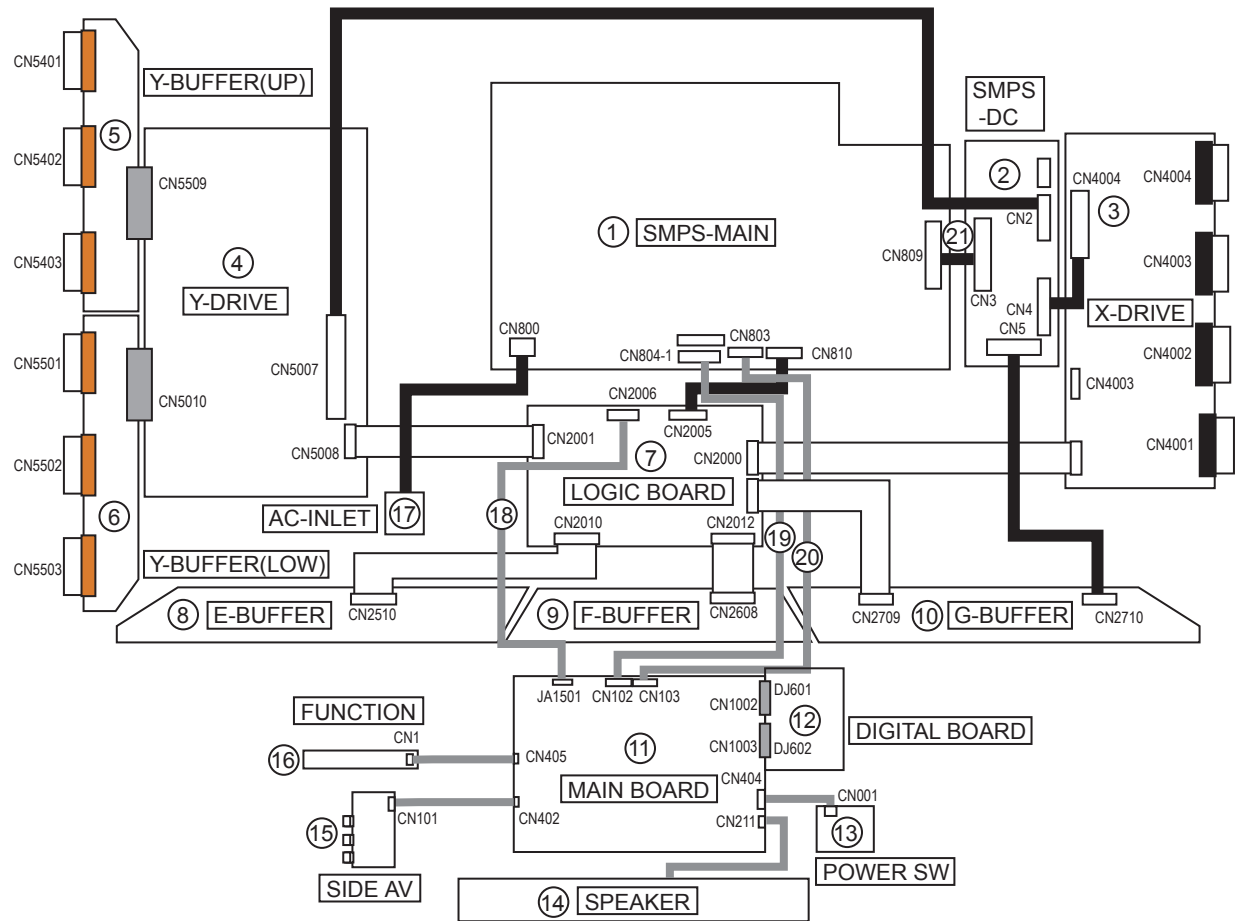


- 1 Be sure to remove the safety pins underneath the PDP.
 - If the safety pins are not removed, the angle cannot be adjusted. Any attempt to do so may cause damage to the PDP.
- 2 Hold onto the bottom of the PDP and pull forward fully as directed by the arrow as illustrated) to adjust the angle. (0°~20° by 2°) Insert the Safety Pins to the front guide holes on both sides as illustrated in figure ②.
 - Viewing the PDP after connecting the external devices Remove the Safety Pins to adjust the angle to 0°, and then secure the Safety Pins again.
 - ☞ For safety, be sure to secure the PDP using the safety pins. If the safety pins are not used, the PDP may fall, causing serious injury.

8. Wiring Diagram

8-1 Overall Wiring

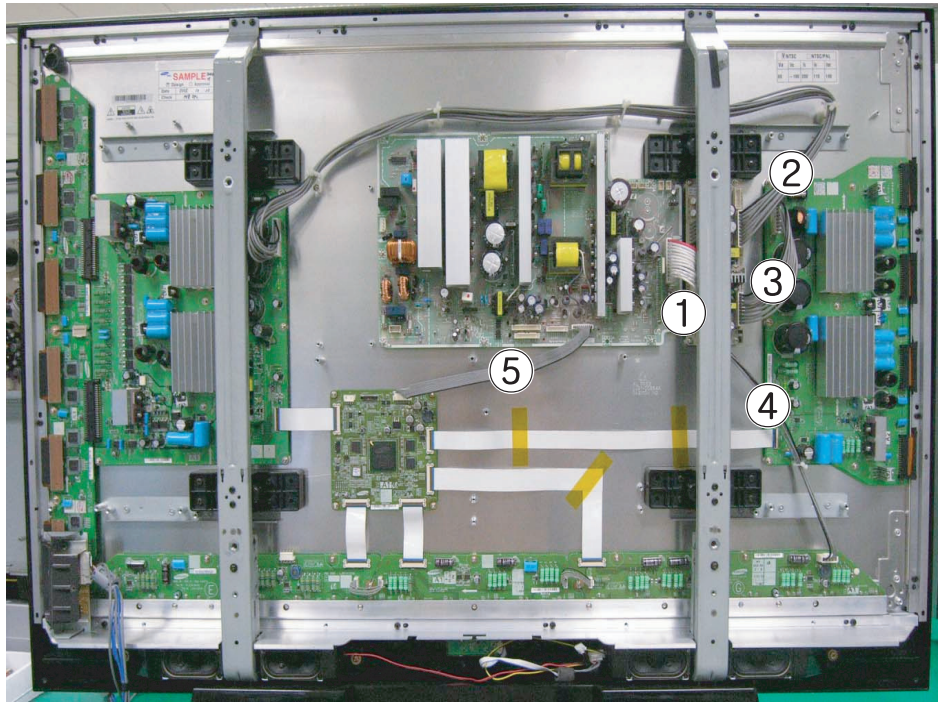
※ The ASS'Y code can be changed, see "5 Chapter. Electrical Part List."



No	Assy	Code No.	Description
-	ASSY PDP MODULE P	BN96-03290A	M1,50HD,V5.1,1366*768,NTSC/PAL,complementary color,with logic
①	ASSY PCB P-SMPS	BN96-03051A	HPS5053,Free Voltage,245*395
②	ASSY PCB P-SMPS	BN96-01856A	SPD-50P5HD(DC_DC),200Vin(DC_DC)
③	ASSY PDP MODULE P-X MAIN BOARD	BN96-03359A	50HD,PL50HW006A,V5.1,1366*768,NTSC/PAL,LJ92-01388A
④	ASSY PDP MODULE P-Y MAIN BOARD	BN96-03360A	50HD,PL50HW006A,V5.1,1366*768,NTSC/PAL,LJ92-01381A
⑤	ASSY PDP MODULE P-Y MAIN UPPER SCAN	BN96-03361A	50HD,PL50HW006A,V5.1,1366*768,NTSC/PAL,LJ92-01383A
⑥	ASSY PDP MODULE P-Y MAIN LOWER SCAN	BN96-03362A	50HD,PL50HW006A,V5.1,1366*768,NTSC/PAL,LJ92-01384A
⑦	ASSY PDP MODULE P-LOGIC MAIN BOARD	BN96-03366A	50HD,PL50HW006A,V5.1,1366*768,NTSC/PAL,sec/sesk,LJ92-
⑧	ASSY PDP P-ADDRESS E BUFFER	BN96-03363A	50HD,PL50HW006A,V5.1,1366*768,NTSC/PAL,LJ92-01372A
⑨	ASSY PDP P-ADDRESS F BUFFER	BN96-03364A	50HD,PL50HW006A,V5.1,1366*768,NTSC/PAL,LJ92-01373A
⑩	ASSY PDP P-ADDRESS G BUFFER	BN96-03365A	50HD,PL50HW006A,V5.1,1366*768,NTSC/PAL,LJ92-01374A
⑪	ASSY PCB MISC-MAIN	BN94-00960A	PS50Q7HDX/XEU,D74B,MUSTANG
⑫	ASSY PCB MISC-DTV MODULE	BN94-00977A	PS50C7HDX/XEU,D74B,UK
⑬	ASSY BOARD P-POWER&IR	BN96-03320A	CADILLAC,SJ05-01-516,POWER & IR,CORE, 250MM
⑭	ASSY SPEAKER P	BN96-03392B	8ohm,Q7,10W,2Way 2speaker,Bass Reflex
⑮	ASSY BOARD P-SIDE AV	BN96-03075G	AUDI,SJ06-01-004G,SIDE-AV,500MM
⑯	ASSY BOARD P-FUNCTION	BN96-02784B	CADILLAC,SJ06-01-006,FUNCTION,600MM, CORE
⑰	FILTER-EMI AC LINE	2901-001340	250V,6A,-,-,50x22.5x37.2mm,BK,AE
⑱	LEAD CONNECTOR-LVDS	BN39-00477A	D66A/SPD-50P4HD,UL20276#30,UL/CSA,31P,150mm,#30,GT121-
⑲	LEAD CONNECTOR	MD39-00074G	V18C,UL1007#26,UL/CSA,12P,200mm,#26,SMH250-12,SMH250-
⑳	LEAD CONNECTOR	BP39-00053E	HP-R4252,UL1007#26,UL/CSA,10P,200mm,#26,SMH250-
㉑	LEAD CONNECTOR	BN39-00632A	HPR4252,UL1617#22,UL/CSA,12P/12P,80mm,BLK/WHT,#22,35156

8-2 Partial Wiring

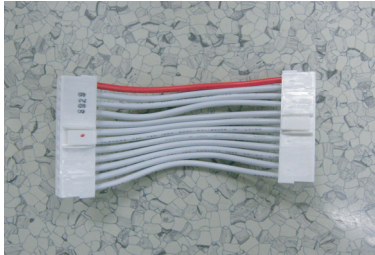
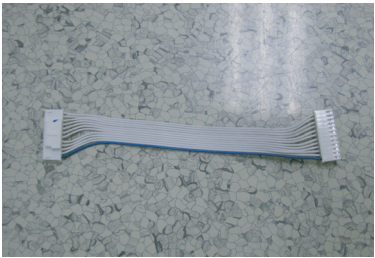
8-2-1 PDP Module ↔ SMPS Wiring



① CN809(Main SMPS) ↔ CN3(DC-DC SMPS)		② CN2(DC-DC SMPS) ↔ CN5007(Y B'D)		③ CN4(DC-DC SMPS) ↔ CN4000(X B'D)		④ CN5(DC-DC SMPS) ↔ CN2710(F-Buffer)		⑤ CN809(Main SMPS) ↔ CN2005(Logic B'D)	
Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal	Pin No.	Signal
1	D5.3V	1	D5.3V	1	D5.3V	1	RTN	1	STD 5V
2	Vg	2	Vg	2	Vg	2	N.C	2	Vs-ON
3	RTN	3	RTN	3	RTN	3	D5.3V	3	N.C
4	RTN	4	Vscan	4	RTN	4	N.C	4	PS-ON
5	RTN	5	RTN	5	Ve	5	Va	5	RTN
6	RTN	6	Vset	6	RTN			6	D5.3V
7	RTN	7	RTN	7	RTN			7	RTN
8	Va	8	RTN	8	Vs			8	RTN
9	Va	9	Vs	9	Vs			9	D5.3V
10	N.C	10	Vs					10	D5.3V
11	Vs								
12	Vs								

8-2-2 Connect Cables

※ The code number of cable(Lead-connector) can be changed, see "5 Chapter. Electrical Part List."

Use	SMPS 12P	LVDS 31P	POWER 10P
Code	BN39-00632A	BN39-00477A	BP39-00053E
Photo			
Use	POWER 12P		
Code	MD39-00074G		
Photo			

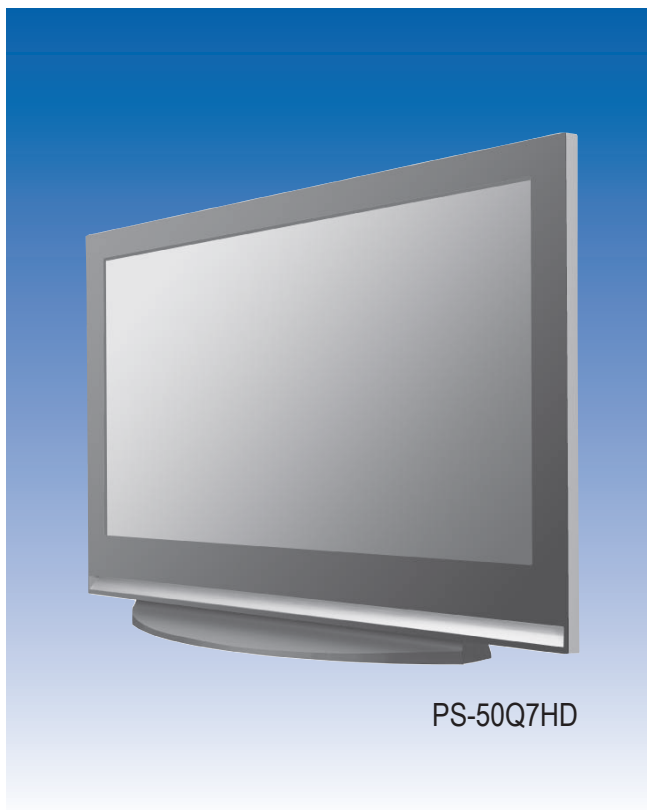


PDP-TELEVISION

Chassis : D74B(P_Europe_50HD)_Mustang
Model : PS50Q7HDX/XEU

SERVICE *Manual*

PDP-TELEVISION



FEATURES

- DTV Ready PDP TV
- Supreme Picture Quality
Supreme Convenience Quality
- RF, HDMI, 2 Scart, PC (Analog),
Component, Video, S-Video
- Slim line design
- Energy Saving



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5. Electrical Part List

5-1 PS50Q7HDX/XEU Service Item

You can search for the updated part code through ITSELF web site.

URL:<http://itself.sec.samsung.co.kr>

Loc. No.	Code No.	Description	Specification	Q'ty	SA/SNA	Remark
M0013	BN96-03154A	ASSY STAND P-BASE	Q7,HGI T3.0,BK23,Round	1	S.A	
M0013	BN96-03161C	ASSY COVER P-REAR	50Q7/P7,PCM T0.5	1	S.A	
M2893	BN39-00477A	LEAD CONNECTOR-LVDS	D66A/SPD-50P4HD,UL20	1	S.A	
M2893	BN39-00632A	LEAD CONNECTOR	HPR4252,UL1617#22,UL/CSA,	1	S.A	
M2893	BP39-00053E	LEAD CONNECTOR	HP-R4252,UL1007#26,UL/CSA	1	S.A	
M2893	MD39-00074G	LEAD CONNECTOR	V18C,UL1007#26,UL/CSA,12P	1	S.A	
T0044	BN96-03290A	ASSY PDP MODULE P-PDP MODULE	M1,50HD,V5.	1	S.A	
T0074	BN59-00516A	REMOCON	CAMBRIDGE,TM87B,45,CAMBRIDGE,E	1	S.A	
T0079	BN94-00960A	ASSY PCB MISC-MAIN	PS50Q7HDX/XEU,D74B,MU	1	S.A	
T0159	BN96-01856A	ASSY PCB P-SMPS	SPD-50P5HD(DC_DC),200Vin	1	S.A	
T0159	BN96-03051A	ASSY PCB P-SMPS	HPS5053,Free Voltage,245	1	S.A	
T0175	BN96-03392B	ASSY SPEAKER P	8ohm,Q7,10W,2Way 2speaker	1	S.A	
T1910	BN96-03359A	ASSY PDP MODULE P-X MAIN BOARD	50HD,PL50	1	S.A	
T1911	BN96-03360A	ASSY PDP MODULE P-Y MAIN BOARD	50HD,PL50	1	S.A	
T1912	BN96-03361A	ASSY PDP MODULE P-Y MAIN UPPER	50HD,PL50	1	S.A	
T1913	BN96-03362A	ASSY PDP MODULE P-Y MAIN LOWWE	50HD,PL50	1	S.A	
T1914	BN96-03363A	ASSY PDP MODULE P-ADDRESS E BU	50HD,PL50	1	S.A	
T1915	BN96-03364A	ASSY PDP MODULE P-ADDRESS F BU	50HD,PL50	1	S.A	
T1916	BN96-03365A	ASSY PDP MODULE P-ADDRESS G BU	50HD,PL50	1	S.A	
T1917	BN96-03366A	ASSY PDP MODULE P-LOGIC MAIN B	50HD,PL50	1	S.A	

MEMO