

Service Manual

TELEVISION CONTROLLER
FOR TFT LCD

Model : TL-32VWTS

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1. Notes For Installation

This controller is designed for RGB monitor, Video Monitor and TV using different size of TFT LCD panels. This section provides some guidelines for assembly and preparation of a finished display solution.

Preparation : Before proceeding, it is important to familiarize yourself with the parts making up a system and the various connectors, mounting holes, and general layout of the controller. All connectors have their own number printed on the controller board. And their signal arrangements are shown in the following relevant sections.

LCD Panel : This controller has 12V or 5V or 3.3V LVDS interface logic on the board for different kind of TFT LCD panel. Due to the different signal timing and electrical characteristics from each LCD panel manufacturer, we need to use different Firmware, different LCD interface cable and select DC power level for LCD panel even on the same board.

Supplied power level, 12Vdc, 3.3Vdc and 5Vdc are marked on the board.

Inverter : Each LCD panels have their own inverter to obtain optimum performance and long lifetime. Because, Each LCD panel makers use different type of back light tubes for their all different models and inverter drives the tubes directly.

The controller board just supplies the power for inverter logic and controls a light On/off signal and a brightness control signal. So, it is important to use the inverter that has proper driving capacity and control input signal. This board supports two types of inverter in terms of brightness control. One is a current controlled and the other one is a voltage controlled brightness control. But this controller supports a voltage controlled brightness control as a default type.

Inverter cable : This cable supplies Inverter's power, an on/off control signal and a brightness control signal to the inverter.

OSD Button : See Operational Function section.

3 Color LED : This LED shows the state of controller.

- Green – Normal state
- Red – Stand-by mode

Power input : +12Vdc and +12Vdc(24Vdc) is required to supply enough power for the controller, inverter and LCD panel.

2. Specification

2-1. Electrical Specification

a. Power consumption: (Not Include Inverter and LCD Panel)

Operation mode

Power Consumption : 127 Watt

Audio AMP : 15 Watt (Reference : Speaker 7.5Wx2)

Power Saving mode (STB) : 3.0 Watt

b. Power Supply

Input for Main board : +12Vdc, +5Vdc, STB 5V

Input for Inverter : 24V

Output for LCD Panel : Depend on Panel Maker (3.3Vdc, 5.0Vdc, 12.0Vdc)

c. Environment

Operation Temperature : 0° ~ 60°

Storage Temperature : -20° ~ 70°

Operation Humidity : 0%~80% (non-condensing)

Storage Humidity : 0%~90%

d. Output Data Type -- Optional

TTL mode : 3.3Voltage level.

LDVS mode : 18bit, 24bit, 48bit data output.

e. Input Refresh Rates : fH: 30~60KHz, fV: 56~75Hz

2.2 SMPS Board Specification

a. Input Requirements

Normal Voltage : 100 to 240 Vrms

Voltage Range : 90 to 264 Vrms

b. Frequency

Normal Frequency : 50 to 60 Hz

Frequency Range : 47 to 63 Hz

Board	Output voltage	Minimum output voltage	Maximum output voltage	Output Current	Output Wattage	Condition
2632 PSU	+24VDC (±5%)	+22.8Vdc	+25.2Vdc	0A – 6.0A	144W	PWR-CNT ON
	+12VDC (±5%)	+11.4Vdc	+12.6Vdc	0A –3.0A	36W	
	+5VDC (±5%)	+4.75Vdc	+5.25Vdc	0A –2.5A	12.5W	
	ST +5VDC (±5%)	+4.75Vdc	+5.25Vdc	0A –0.5A	2.5W	
	+5Vdc (±5%)	+4.75Vdc	+5.25Vdc	0A –0.5A	2.5W	PWR- CNT OFF (Stand by Condition)

2-3. Television part

FEATURES		TL-32VWTS EUROPE	TL-32VWTS AUSTRALIAN	TL-32VWTS USA
VIDEO	SYSTEM	PAL/SECAM(AV NTSC)	PAL/SECAM(AV NTSC)	NTSC
	TELETEXT	1000 PAGE	1000 PAGE	
	CAPTION & C/LOCK	SOFTWARE	SOFTWARE	CAPTION & V-CHIP
	PIP	RF(RGB) to VIDEO	RF(RGB) to VIDEO	RF to VIDEO
	HDTV FORMAT	480i~1080i	480i~1080i	480i~1080i
	ATS	OK	OK	-
SOUND	SYSTEM	B/G/D/K/I/L/L'	B/G/D/K/I/L/L'	M
	SOUND OUTPUT	7.5W X 2	7.5W X 2	7.5W X 2
	STEREO	STEREO/DUAL/NICAM	STEREO/DUAL/NICAM	STEREO/BTSC/SAP
	EFFECT	SUPPORTED 5-BAND EQUALIZER, AVC	SUPPORTED 5-BAND EQUALIZER, AVC	SUPPORTED 5-BAND EQUALIZER, AVC
EXT. TERMINAL	SCART 1	VIDEO, AUDIO L/R INPUT EXT RGB INPUT S/SW, F/SW INPUT	VIDEO, AUDIO L/R INPUT EXT RGB INPUT S/SW, F/SW INPUT	-
	SCART 2	VIDEO, AUDIO L/R INPUT	-	-
	AV2(SIDE)	VIDEO, AUDIO L/R INPUT	VIDEO, AUDIO L/R INPUT	VIDEO, AUDIO L/R INPUT
		AV2 S-VHS	AV2 S-VHS	AV2 S-VHS
		Y/C INPUT	Y/C INPUT	Y/C INPUT
		HEAD PHONE	HEAD PHONE	HEAD PHONE
	LINE OUT		VIDEO, AUDIO L/R OUTPUT	VIDEO, AUDIO L/R OUTPUT
	YpbPr (COMPONENT)	Y/Pb/Pr INPUT		Y/Pb/Pr INPUT
AUDIO L/R INPUT			AUDIO L/R INPUT	
TUNER	CCIR	CCIR	F	

2-4. RGB & HDTV Ready

a. Analog RGB part

- . Horizontal Rate: 30KHz ~ 61KHz
- . Vertical Rate: 56 ~ 75Hz
- . Maximum Pixel Rate: 65MHz
- . Resolution Maximum: 1024(1280) x 768(720)
- . Color Maximum: 262,114/16.7M(option)
- . Sync type: H & V separate
- . Plug & Play: DDC DDC1/2B (EDID1.0)

b. HDTV READY PART

- . Resolution: 480i/p, 576i/p, 720p, 1080i

2-5. RGB Input format

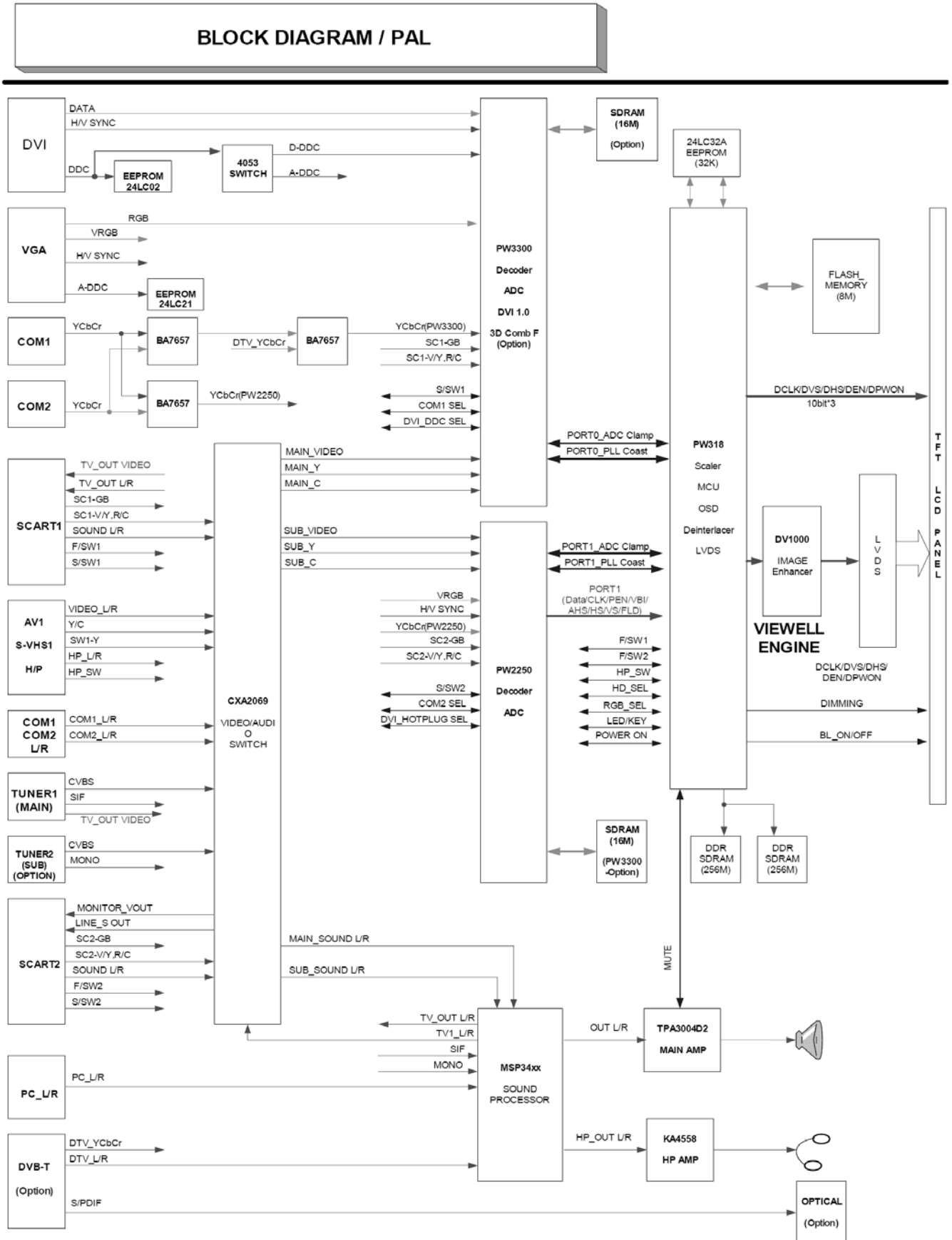
The microprocessor measures the H-sync, V-sync and V-sync/H-sync polarity for RGB input, and uses this timing information to control all of the display operation to get the proper image on a screen.

This board can detect all VESA standard Graphic modes shown on the table below and provide more clear and stable image on a screen.

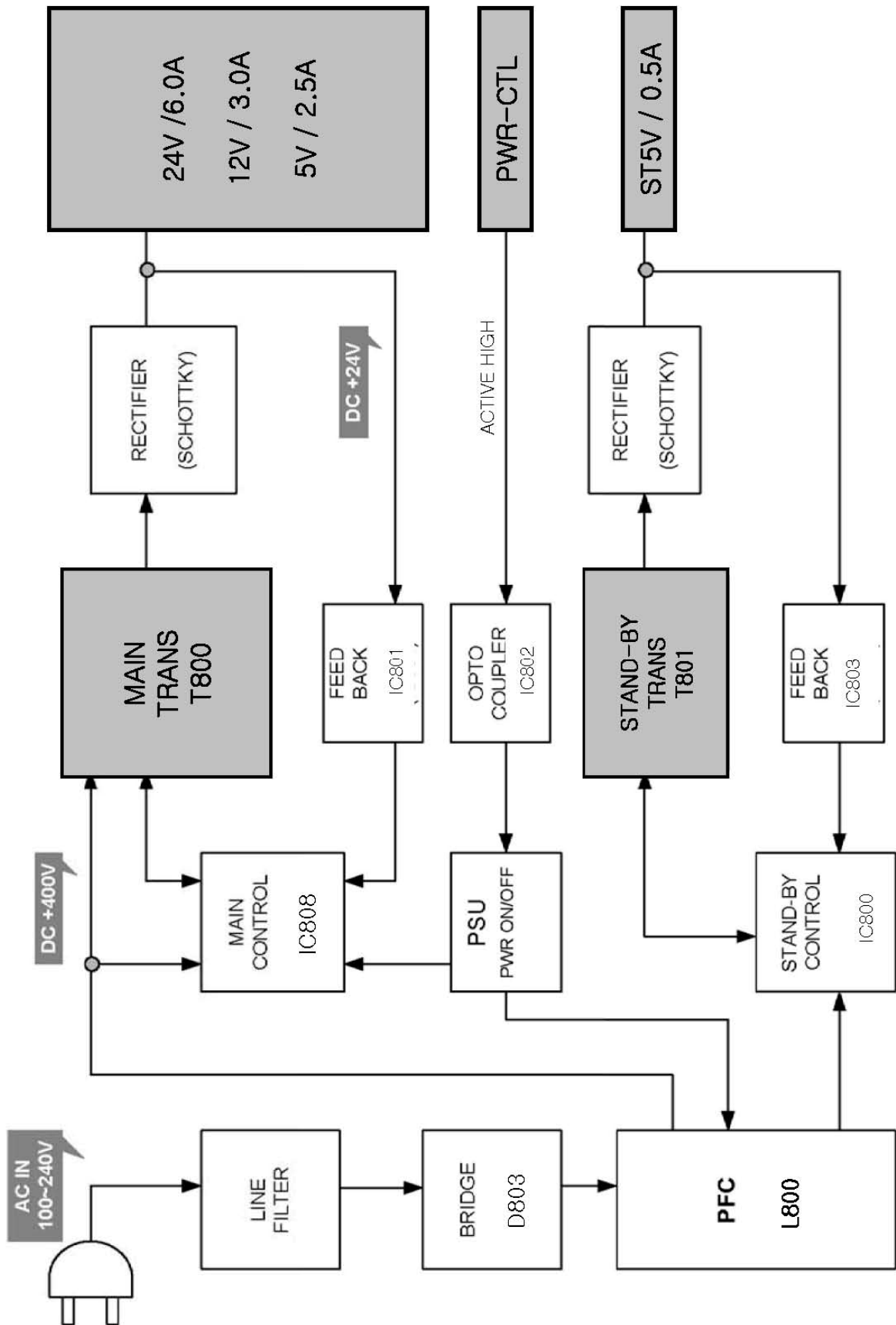
Character Mode	Pixel Freq. MHz	Horizontal Timing				Vertical Timing			
		Sync Polar	Freq. KHz	Total Pixel	Active Pixel	Sync Polar	Freq. Hz	Total Line	Active Line
640x350 @70Hz	25.151	P	31.44	800	640	N	70.02	449	350
720x400 @70Hz	28.295	N	31.44	900	720	P	70.02	449	400
640x480 @60Hz	25.175	-	31.47	800	640	-	59.94	525	480
640x480 @67Hz	30.240	-	35.00	864	640	-	66.67	525	480
640x480 @72Hz	31.500	-	37.86	832	640	-	72.81	520	480
640x480 @75Hz	31.500	-	37.50	840	640	-	75.00	500	480
800x600 @56Hz	36.000	-	35.16	1024	800	-	56.25	625	600
800x600 @60Hz	40.000	-	37.88	1056	800	-	60.32	628	600
800x600 @72Hz	50.000	-	48.08	1040	800	-	72.19	666	600
800x600 @75Hz	49.500	-	46.88	1056	800	-	75.00	625	600
832x624 @74Hz	57.285	-	49.73	1152	832	-	74.55	667	624
1024x768 @60Hz	65.000	-	48.36	1344	1024	-	60.00	806	768
1024x768 @70Hz	75.000	-	56.48	1328	1024	-	70.07	806	768
1024x768 @72Hz	75.235	-	57.70	1304	1024	-	72.30	798	768
1024x768 @75Hz	78.750	-	60.02	1312	1024	-	75.03	800	768

3. Block Diagram

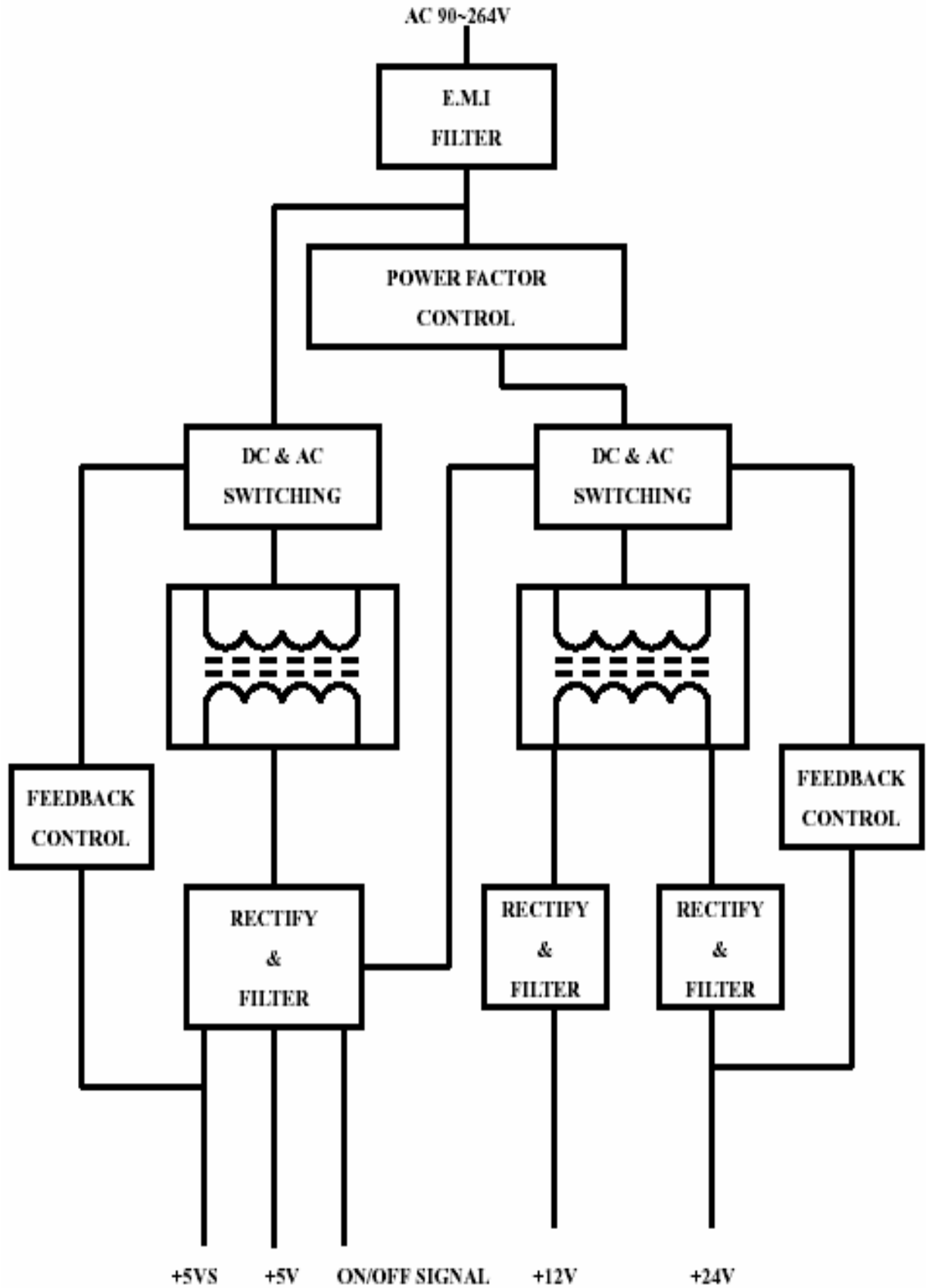
3-1. Main Board Block Diagram



3-2. SMPS Board Block Diagram (A)

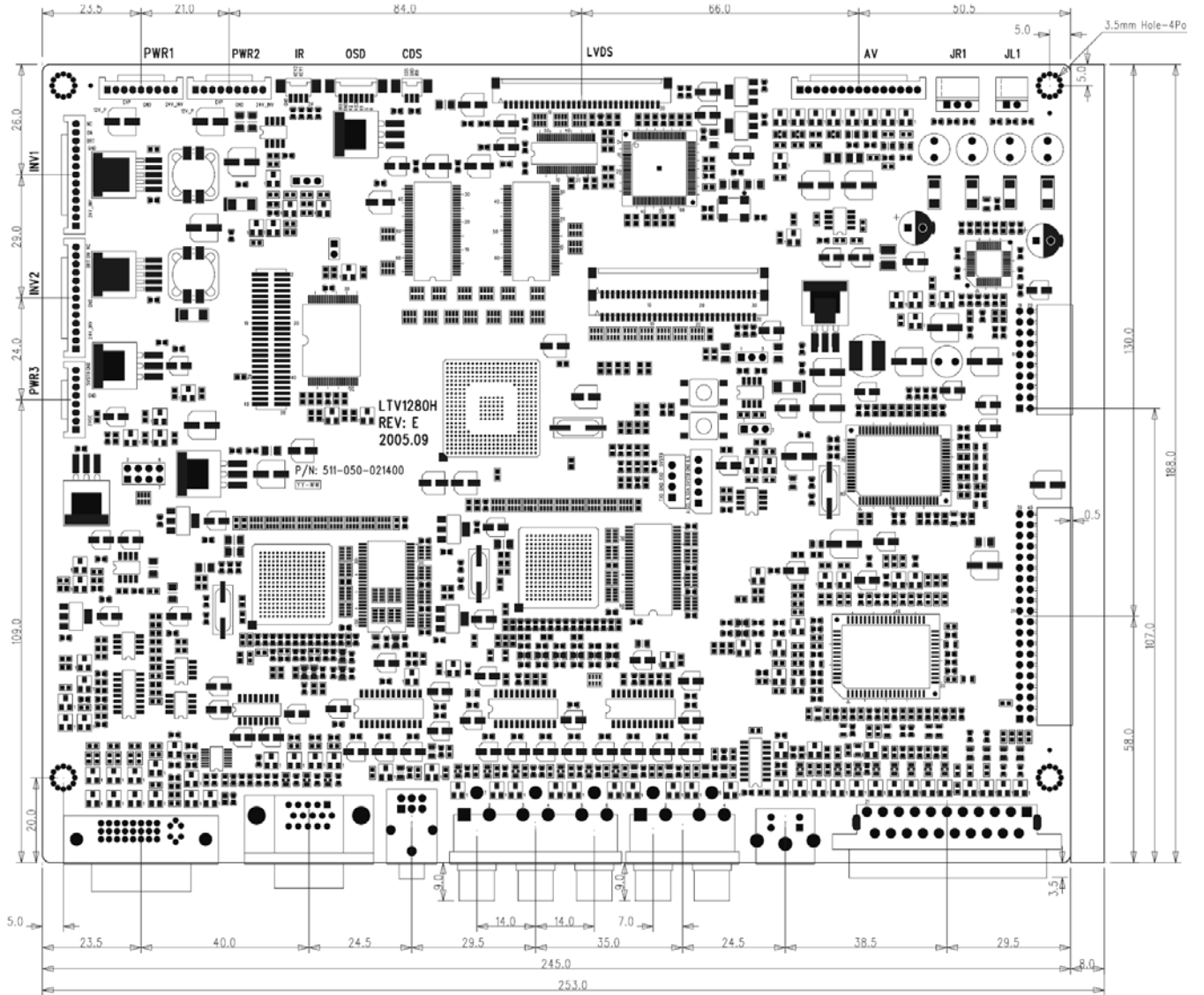


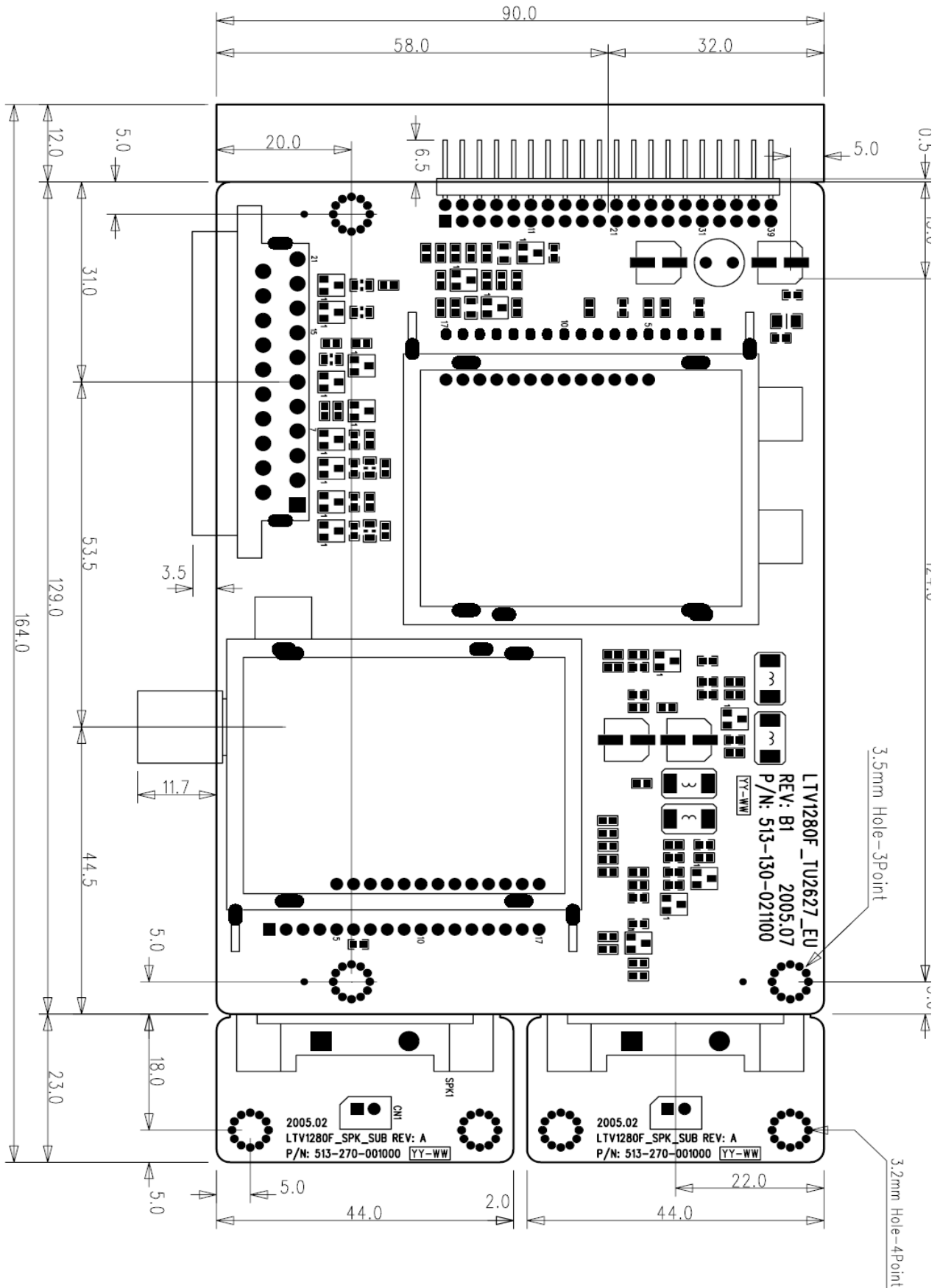
3-3. SMPS Board Block Diagram (B)



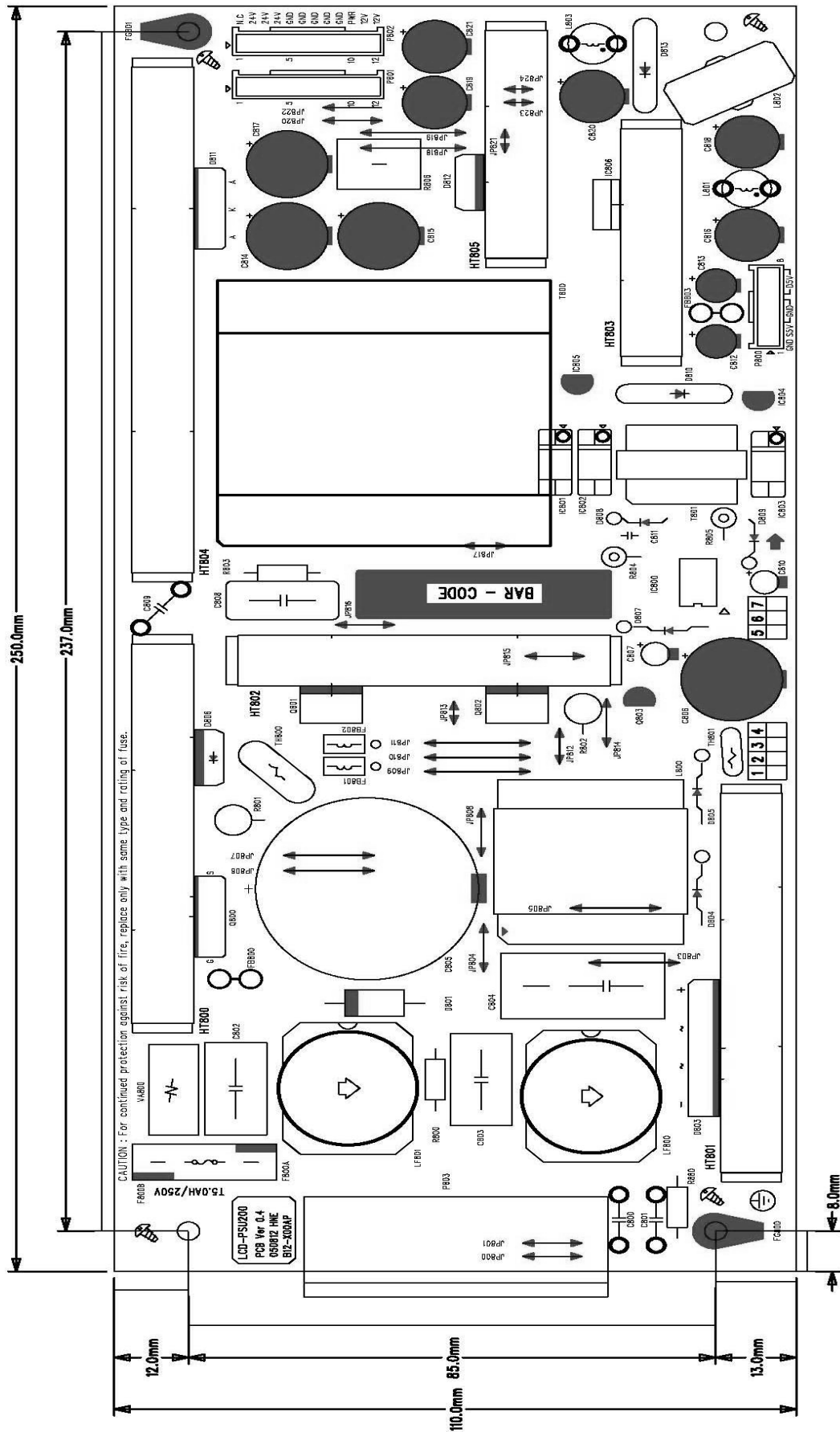
4. PCB Mechanical Dimension

4-1. Board Dimension

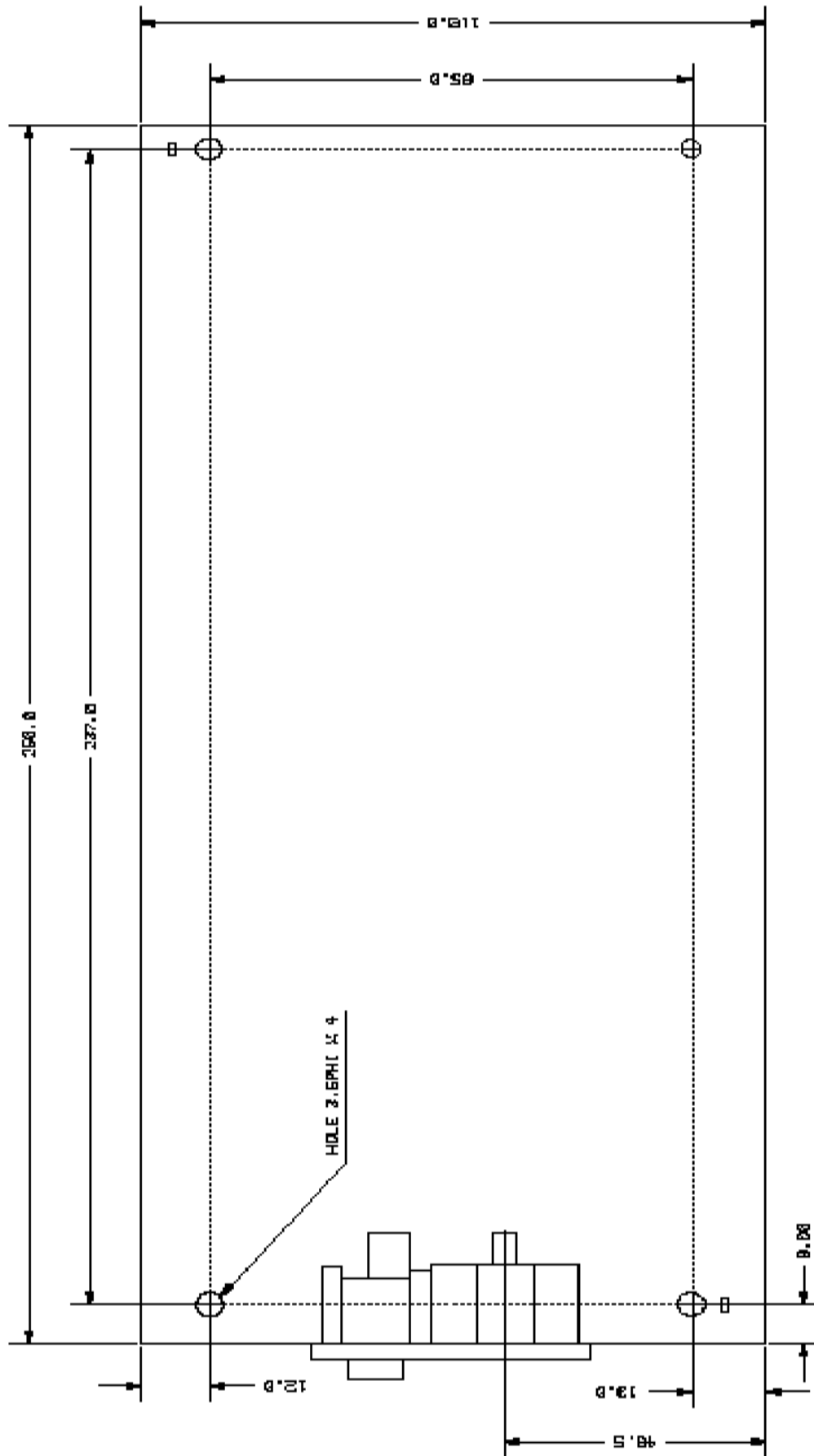




4-2. SMPS Board (A)

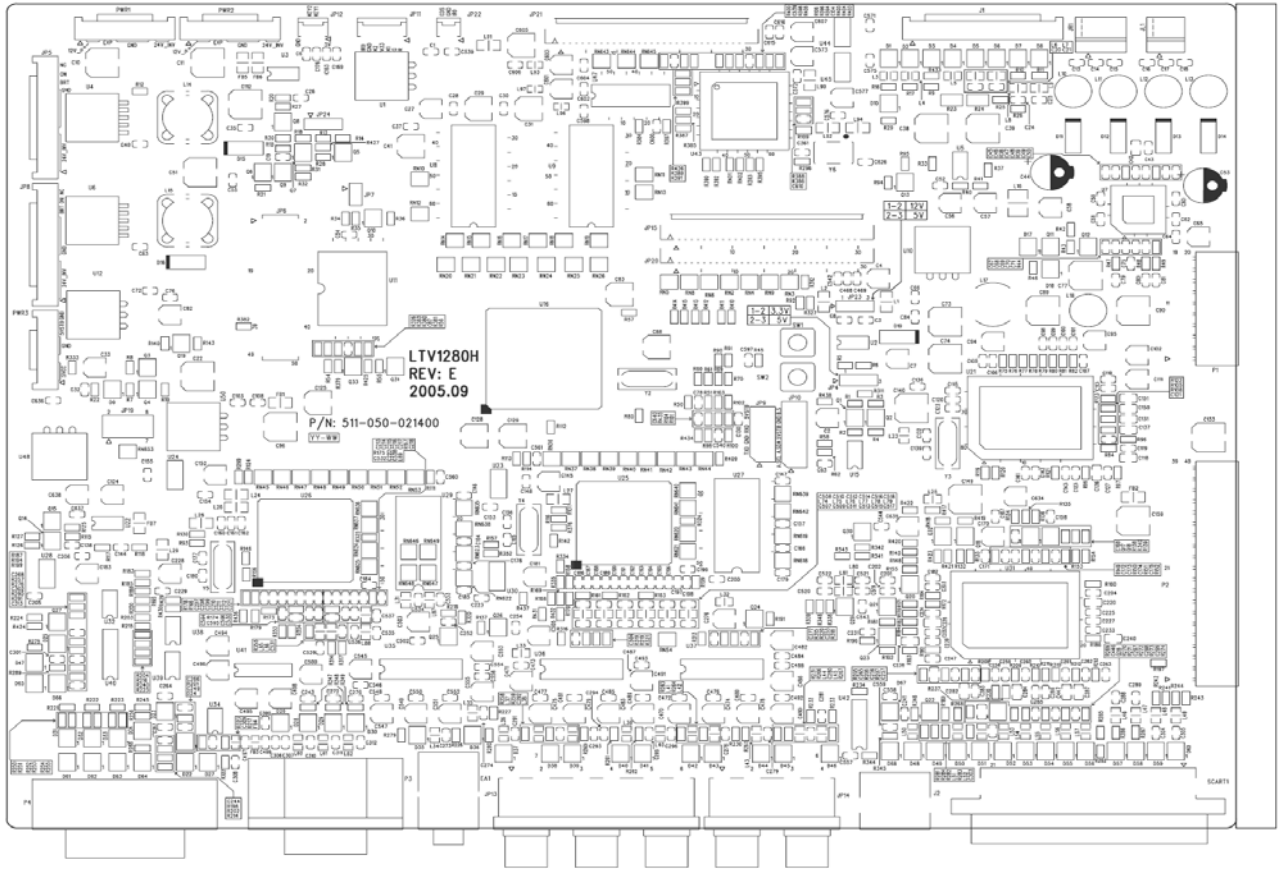


4-3. SMPS Board (B)

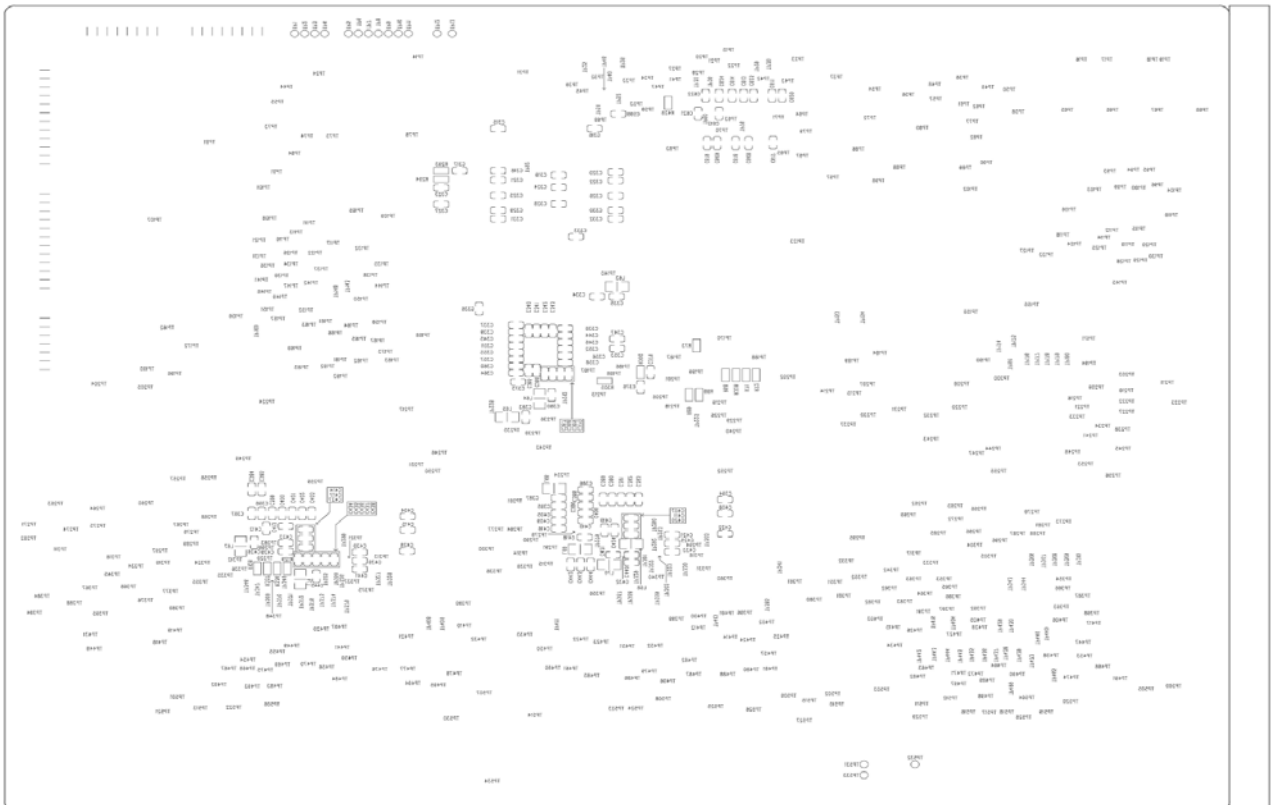


4-4. Main Board

a. TOP Pattern

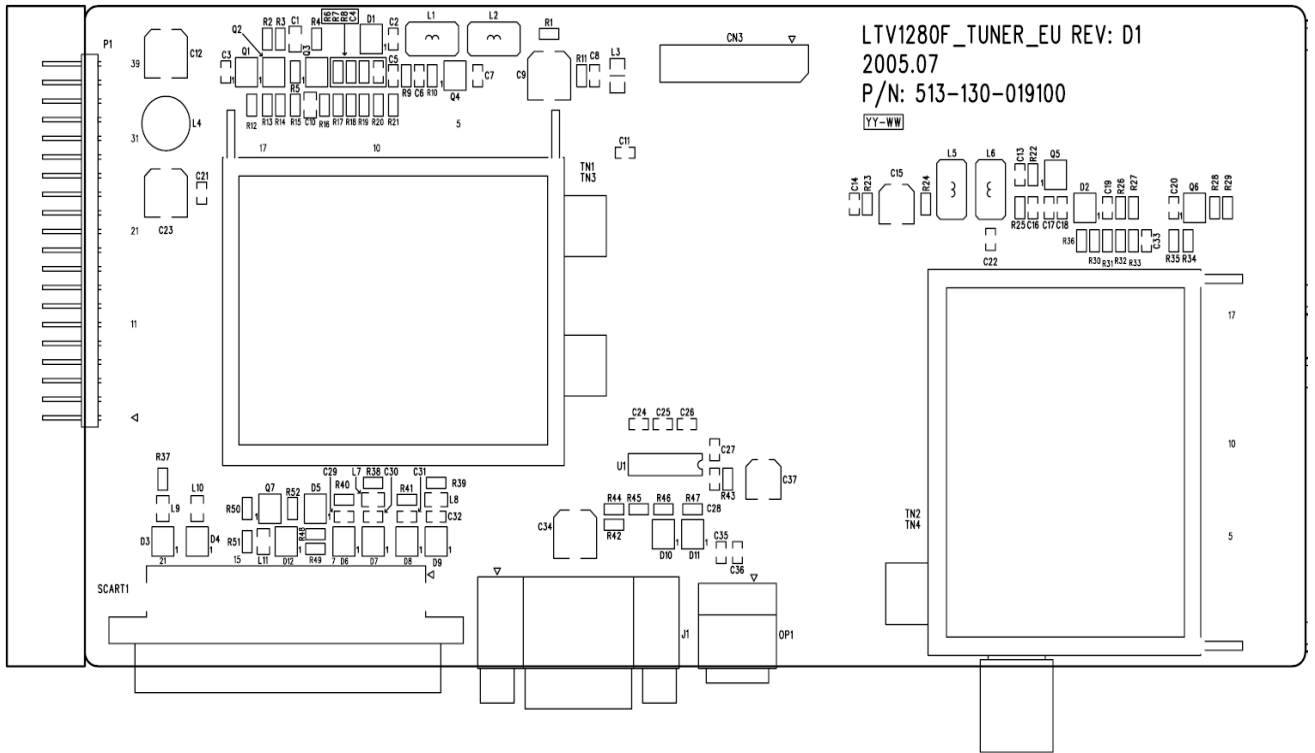


b. Bottom Pattern

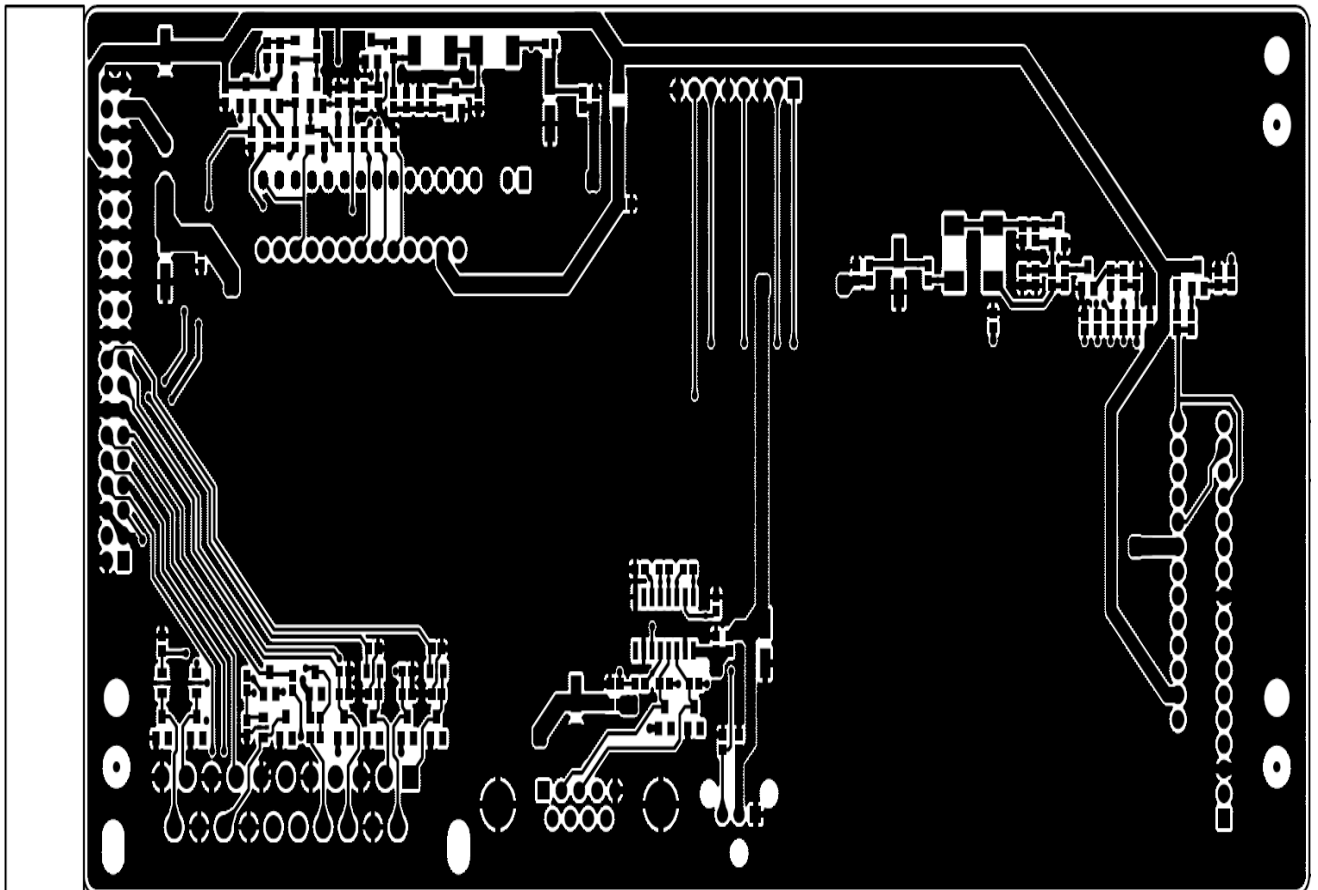


4-5. Tuner Board

a. TOP Pattern

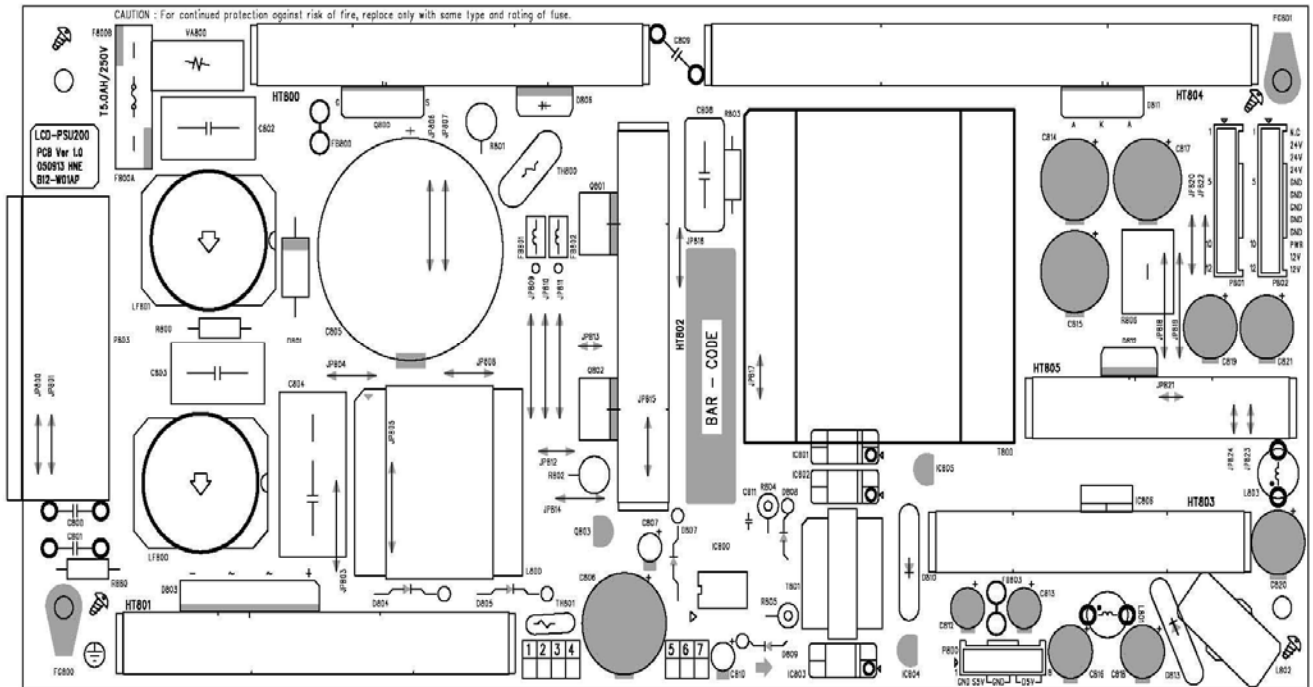


b. Bottom Pattern

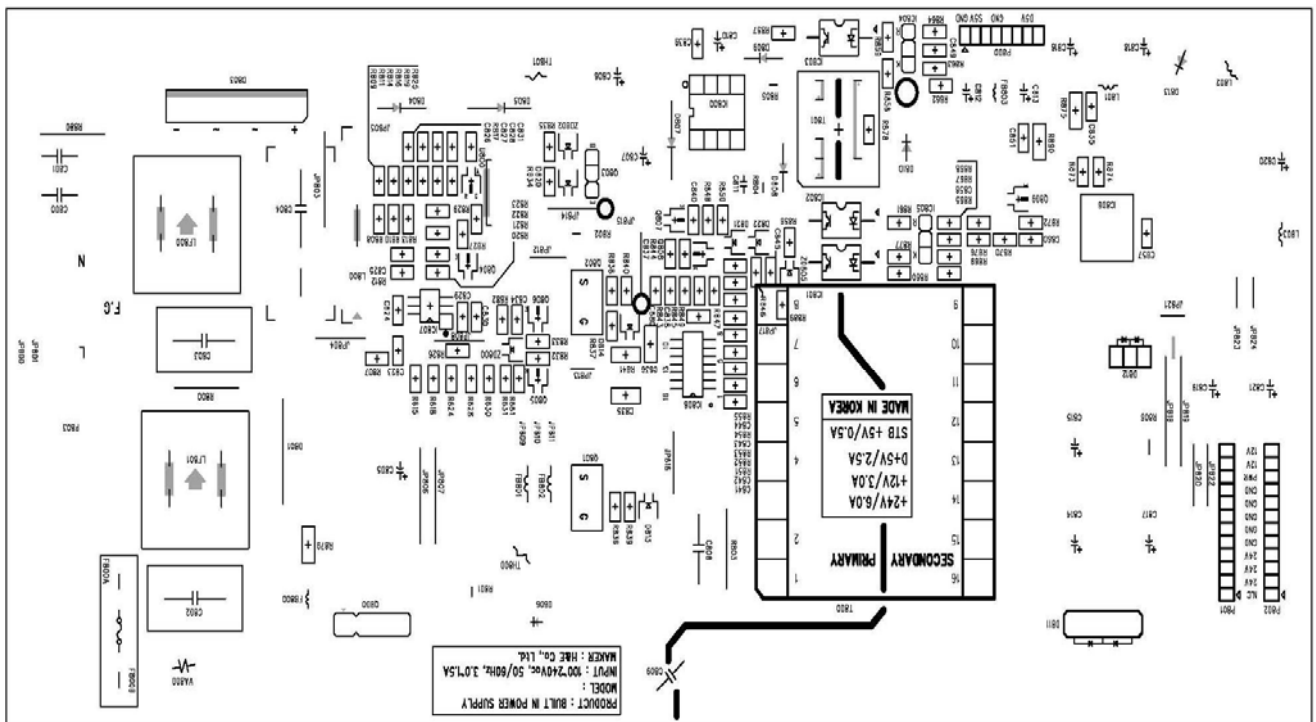


4-6. SMPS Board (A)

a. TOP Side

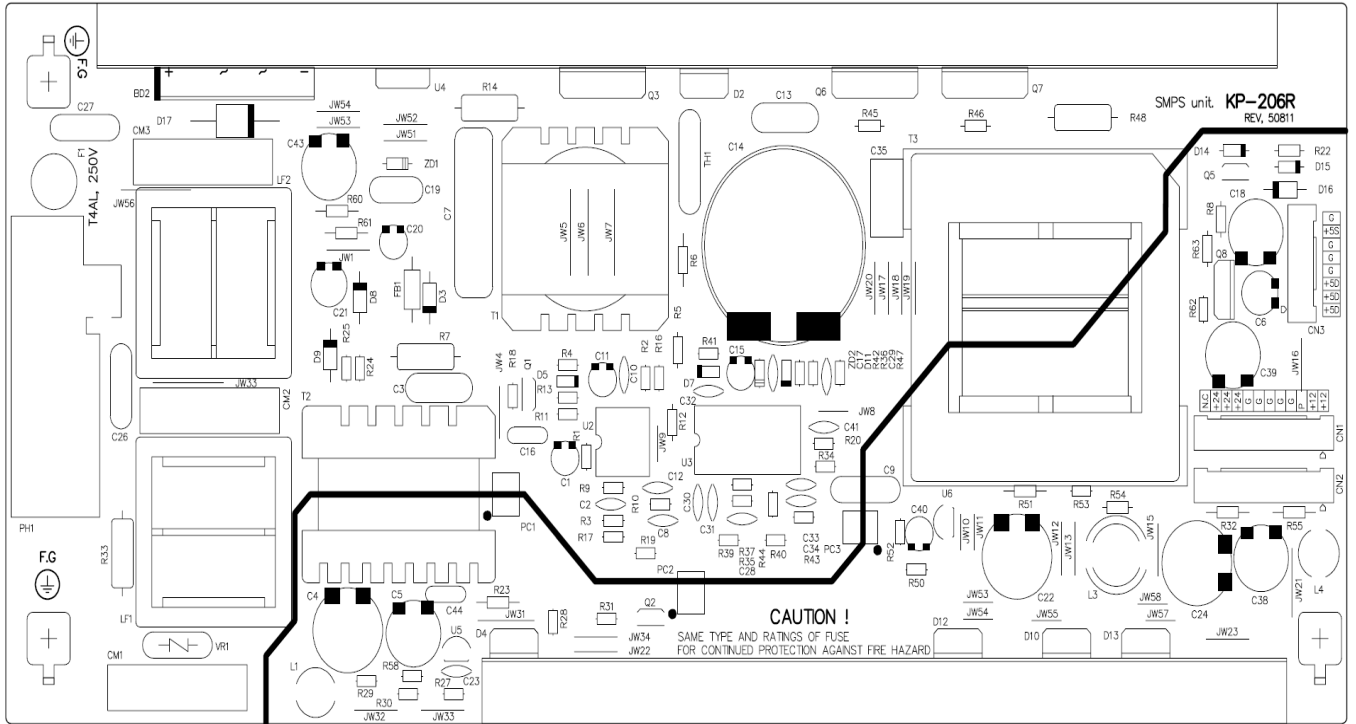


b. Bottom Side

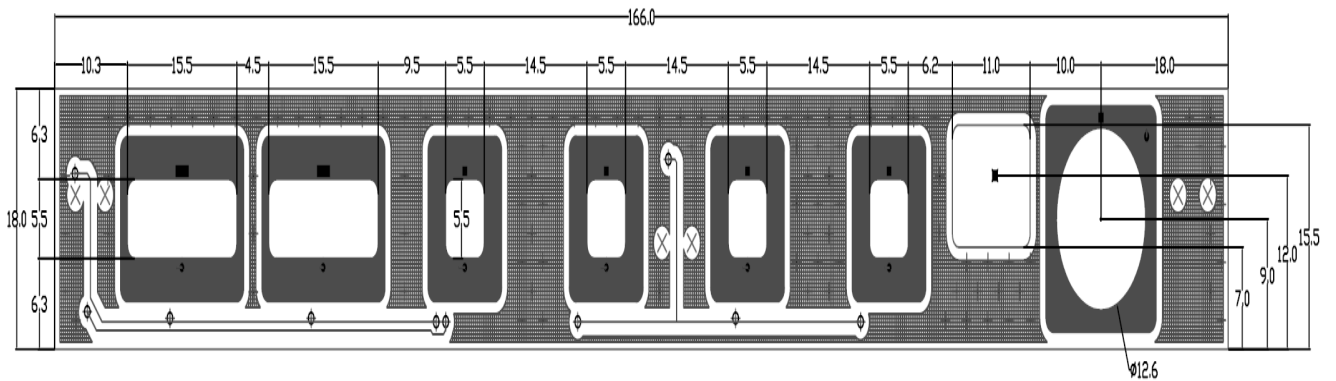


4-7. SMPS Board (B)

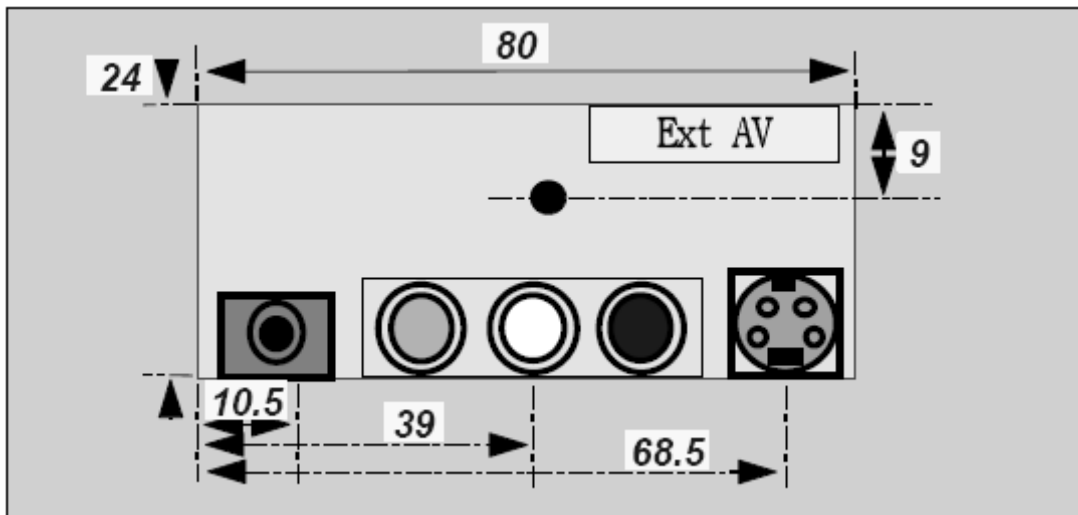
a. TOP Side



4-8. Control Key Board



4-9. Side Jack Board



5. Board Connectors Pin Assignment

a. JP21 : Pin define for Connectors to Panel : Optional (20p or 30p)

30p Pin Configuration (ex; LG-Philips, Samsung)

Pin	Symbo	Description	Polarity
1	NC	No Connection	- Option by Panel
2	BRT	No Connection	
3	ON/OFF	No Connection	
4	GND	Ground	
5	RX0-	Receiver Signal(-)	Negative
6	RX0+	Receiver Signal(+)	Positive
7	GND	Ground	
8	RX1-	Receiver Signal(-)	Negative
9	RX1+	Receiver Signal(+)	Positive
10	GND	Ground	
11	RX2-	Receiver Signal(-)	Negative
12	RX2+	Receiver Signal(+)	Positive
13	GND	Ground	
14	RCLK-	Receiver Clock Signal(-)	Negative
15	RCLK+	Receiver Clock Signal(+)	Positive
16	GND	Ground	
17	RX3-	Receiver Signal(-)	Negative
18	RX3+	Receiver Signal(+)	Positive
19	GND	Ground	
20	NC	No Connection	
21	DCR	No Connection	
22	NC	No Connection	
23	GND	Ground	
24	GND	Ground	
25	GND	Ground	
26	VCC	+5.0V power supply	- Optional to Panel
27	VCC	+5.0V power supply	
28	VCC	+5.0V power supply	
29	VCC	+5.0V power supply	
30	VCC	+5.0V power supply	

b. JP5, JP8 : Inverter Connector

Pin	Symbol	Description
1	+24V	<i>Power supply of Inverter +24Vdc</i>
2	+24V	<i>Power supply of Inverter +24Vdc</i>
3	+24V	<i>Power supply of Inverter +24Vdc</i>
4	+24V	<i>Power supply of Inverter +24Vdc</i>
5	+24V	<i>Power supply of Inverter +24Vdc</i>
6	GND	<i>Power supply of Ground</i>
7	GND	<i>Power supply of Ground</i>
8	GND	<i>Power supply of Ground</i>
9	GND	<i>Power supply of Ground</i>
10	GND	<i>Power supply of Ground</i>
11	PWM Dimmer	<i>Analog Dimmer / Min:0V,Max:3.3V</i>
12	Lamp On/Off	<i>Inverter Lamp Control</i>
13	NC	<i>No Connection</i>

c. PWR3 : Power Supply Connector

Pin	Symbol	Description
1,2,3	V +5V	<i>Power supply of +5Vdc</i>
7	STB +5V	<i>Stand-By +5Vdc</i>
4,5,6,8	GND	<i>Power supply of Ground</i>

d. PWR1, PWR2 : Power Supply Connector

Pin	Symbol	Description
1,2	V +12V	<i>Power supply of Main +12Vdc</i>
3	On-Off	<i>Power On-Off Control</i>
4,5	GND	<i>Power supply of Ground</i>
6,7	GND	<i>Ground of Inverter Power</i>
8,9	V +24V	<i>Power supply of Inverter +24Vdc</i>

e. JP11 : Front Key Button Connector

Pin	Symbol	Description
1	IR	<i>Interrupt Input</i>
2	GND	<i>Ground</i>
3	VCC	<i>Stand-by Vcc +5V</i>
4	Key1	<i>Key detect pin 1</i>
5	GND	<i>Ground</i>
6	Key2	<i>Key detect pin 2</i>
7	Power On/Off	<i>Power Control</i>

f. J1 : Ext_AV in & Headphone Out Connector : Optional

Pin	Symbol	Description
1	L_in	<i>External Audio L input</i>
2	GND	<i>Ground</i>
3	R_in	<i>External Audio R input</i>
4	GND	<i>Ground</i>
5	HP_R	<i>Headphone R output</i>
6	GND	<i>Ground</i>
7	HP_L	<i>Headphone L output</i>
8	HP_ID	<i>Headphone Jack Identification</i>
9	GND	<i>Ground</i>
10	Vin	<i>External Video input</i>
11	GND	<i>Ground</i>
12	Yin	<i>External S-VHS Y input</i>
13	GND	<i>Ground</i>
14	Cin	<i>External S-VHS C input</i>
15	GND	<i>Ground</i>

g. JR1, JL1 : Main Audio Speaker out Connector

Pin	Symbol	Description
1	L_SPK +	<i>Main Speaker L + output</i>
2	NC	<i>No Connection</i>
3	L_SPK -	<i>Main Speaker L - output</i>

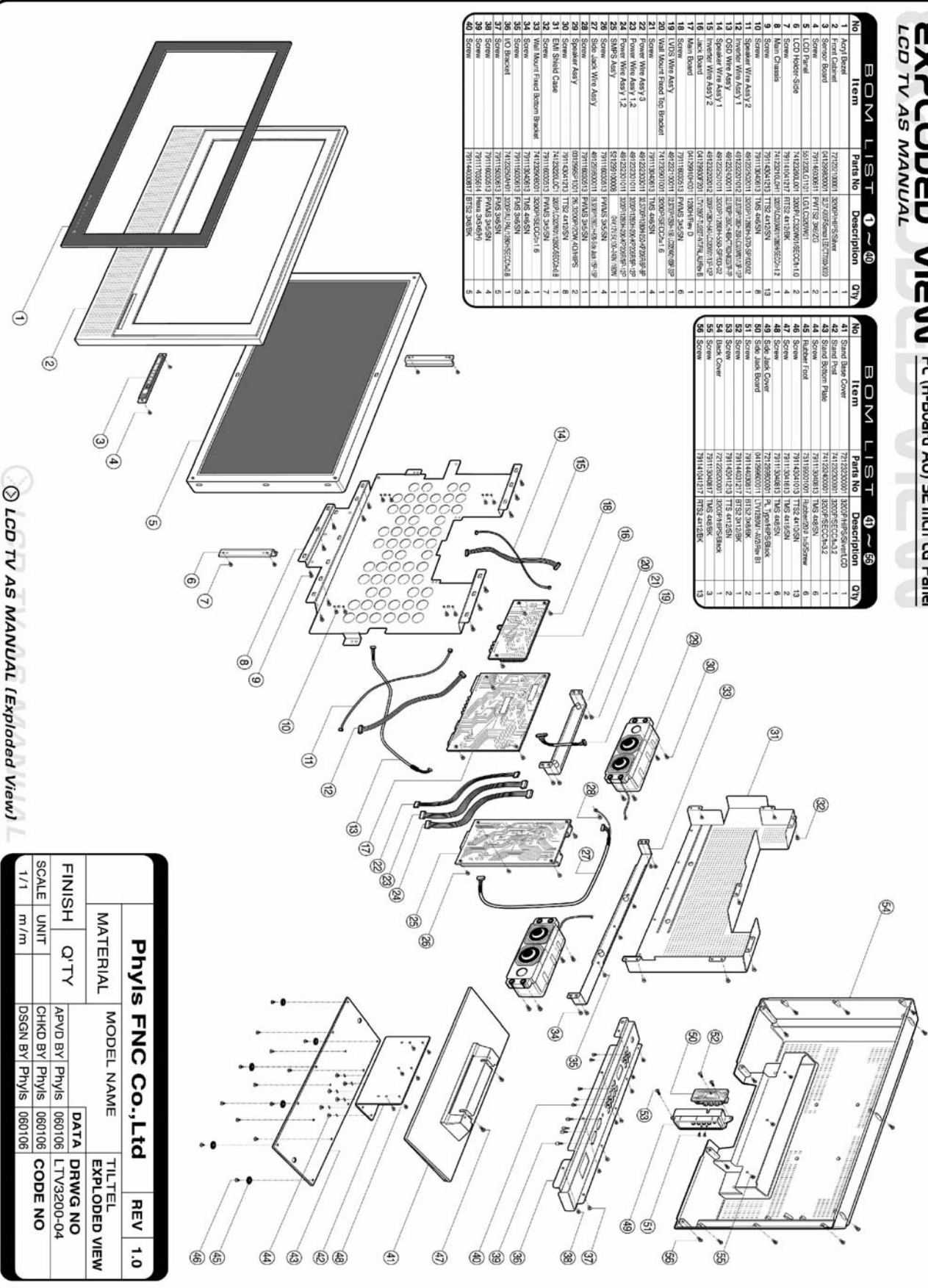
Pin	Symbol	Description
1	R_SPK +	<i>Main Speaker R + output</i>
2	R_SPK -	<i>Main Speaker R - output</i>

6. Exploded View

EXPLODED VIEW LCD TV AS MANUAL PL (H-Board AU) 32 Inch LG Panel

No	Item	Parts No	Description	QTY
1	Key Board	711210001	3200PHS-SHWR	1
2	Stand Base	711220001	3200PHS-SHWR	1
3	Speaker Board	541280001	32T-AD28S-1E07M000	1
4	Screw	711140001	PAV12S-2M2Z3	2
5	LCD Panel	501220010	LG.LCD00W01	1
6	LCD Holder-Side	711140001	3200PHS-SHWR	2
7	Screw	711140001	PAV12S-2M2Z3	4
8	Key Matrix	711140001	3200PHS-SHWR	1
9	Screw	711140001	PAV12S-2M2Z3	13
10	Screw	711140001	PAV12S-2M2Z3	8
11	Speaker Wire Assy 2	491220010	32SPR-38S-1A3M-0202	1
12	Speaker Wire Assy 1	491220010	32SPR-38S-1A3M-0202	1
13	Speaker Wire Assy 1	491220010	32SPR-38S-1A3M-0202	1
14	Speaker Wire Assy 2	491220010	32SPR-38S-1A3M-0202	1
15	Inverter Wire Assy 1	491220010	32SPR-38S-1A3M-0202	1
16	Inverter Wire Assy 2	491220010	32SPR-38S-1A3M-0202	1
17	Main Board	541280001	32T-AD28S-1E07M000	1
18	Speaker Assy	711140001	3200PHS-SHWR	6
19	Speaker Assy	711140001	3200PHS-SHWR	6
20	Unit Mount Front Top Bracket	711140001	3200PHS-SHWR	4
21	Screw	711140001	PAV12S-2M2Z3	4
22	Power Wire Assy 3	491220010	32SPR-38S-1A3M-0202	1
23	Power Wire Assy 1,2	491220010	32SPR-38S-1A3M-0202	1
24	Power Wire Assy 1,2	491220010	32SPR-38S-1A3M-0202	1
25	Power Wire Assy 1,2	491220010	32SPR-38S-1A3M-0202	1
26	Power Wire Assy 1,2	491220010	32SPR-38S-1A3M-0202	1
27	Slide Jack Wire Assy	491220010	32SPR-38S-1A3M-0202	1
28	Screw	711140001	PAV12S-2M2Z3	2
29	Speaker Assy	711140001	3200PHS-SHWR	2
30	Speaker Assy	711140001	3200PHS-SHWR	2
31	Speaker Assy	711140001	3200PHS-SHWR	2
32	Speaker Assy	711140001	3200PHS-SHWR	2
33	Unit Mount Front Bottom Bracket	711140001	3200PHS-SHWR	7
34	Screw	711140001	PAV12S-2M2Z3	4
35	Screw	711140001	PAV12S-2M2Z3	2
36	Screw	711140001	PAV12S-2M2Z3	2
37	Unit Mount Front Bottom Bracket	711140001	3200PHS-SHWR	5
38	Screw	711140001	PAV12S-2M2Z3	4
39	Screw	711140001	PAV12S-2M2Z3	4
40	Screw	711140001	PAV12S-2M2Z3	4
41	Screw	711140001	PAV12S-2M2Z3	5

No	Item	Parts No	Description	QTY
41	Stand Base Cover	711220001	3200PHS-SHWR	1
42	Stand Base Cover	711220001	3200PHS-SHWR	1
43	Stand Bottom Plate	711140001	3200PHS-SHWR	6
44	Screw	711140001	PAV12S-2M2Z3	1
45	Rubber Foot	711140001	3200PHS-SHWR	13
46	Screw	711140001	PAV12S-2M2Z3	2
47	Screw	711140001	PAV12S-2M2Z3	2
48	Slide Jack Cover	711140001	3200PHS-SHWR	1
49	Slide Jack Cover	711140001	3200PHS-SHWR	1
50	Slide Jack Cover	711140001	3200PHS-SHWR	2
51	Screw	711140001	PAV12S-2M2Z3	2
52	Screw	711140001	PAV12S-2M2Z3	2
53	Screw	711140001	PAV12S-2M2Z3	2
54	Screw	711140001	PAV12S-2M2Z3	3
55	Screw	711140001	PAV12S-2M2Z3	13
56	Screw	711140001	PAV12S-2M2Z3	13



⊗ LCD TV AS MANUAL (Exploded View)

Physis FNC Co., Ltd		REV 1.0	
MATERIAL	MODEL NAME	TILTEL	EXPLODED VIEW
FINISH	Q'TY	DATA	DRWG NO
SCALE	UNIT	APVD BY Physis	060106 LTV3200-04
1/1	m/m	CHKD BY Physis	060106
		DSGN BY Physis	060106
			CODE NO

7. Replacement Parts List

7-1. Ass'y Parts List

CODE : 0512321150AP

No.	Part No.	Item	Description	Q'ty
1	031299SP1001	Speaker Ass'y	26,3200P/20W,4Ω/HIPS	
2	04129910H001	Main Board	1280H/Rev	1
3	04129930F201	Jack Board	LTV1280F_TU2627_NT/PAL,AU/Rev	1
4	041299600011	Side Jack Board	LTV1280M1_AV2/Rev	1
5	041299820001	Sensor Board	32,37,4200P/Sensor LED/CT7000-0020	1
6	481199102301	Power Cord	220V,Euro/SM027/1.8M	1
7	491232100011	LVDS Wire Ass'y	32,3700P/1280H-150-LC320W01/30P-30P	1
8	491232201012	Inverter Wire Ass'y 1	32,3700P/1280H-250-LC320W01/13P-12P	1
9	491232202012	Inverter Wire Ass'y 2	3200P/1280H-540-LC320W01/13P-12P	1
10	491232301011	Power Wire Ass'y 1,2	3200P/1280H-200-SMPS/9P-12P	2
11	491232303011	Power Wire Ass'y 3	32,3700P/1280H-250-SMPS/8P-8P	1
12	491232400011	OSD Wire Ass'y	32,3700P/1280C,H-460-CT7000-0020/7P-7P	1
13	491232501011	Speaker Wire Ass'y 1	1280H-550-SP/03-02	1
14	491226502011	Speaker Wire Ass'y 2	1280C,H-370-SP/02-02	1
15	491299600011	Side Jack Wire Ass'y	26,3200P/1280C,H-620-Side Jack /15P-15P	1
16	521199200001	Battery	1.5V/AAA	2
17	521299100008	SMPS Ass'y	LCD-PSU200/24V,12V,5V,100~240V,250W	1
18	551232LG1101	LCD Panel	LG/LC320W01	1
19	031232FRTE11	Front Cabinet Ass'y	3200P/+Bezel/Silver/TECKTON	1
19-1	721232100001	Front Cabinet	3200P/HIPS/Silver	1
19-2	761232100TE1	Acryl Bezel	3200P/Acryl/Black/TECKTON	1
20	721232200001	Back Cover	3200P/HIPS/Black	
21	721232300001	Stand Base Cover	3200P/HIPS/Silver/LCD	
22	721299800001	Side Jack Cover	PL Type/HIPS/Black	1
23	74123210LOH1	Main Chassis	3200P/LC320W01/1280H/EGI/t=1.2	
24	74123220L001	EMI Shield Case	3200P/LC320W01/EGI/t=0.8	
25	741232300001	Stand Post	3200P/EGI/t=3.2	
26	741232400001	Stand Bottom Plate	3200P/EGI/t=3.2	
27	74123250AH01	I/O Bracket	3200P/AU,PAL/1280H/EGI/t=0.8	
28	74123260L001	LCD Holder-Side	3200P/LC320W01/EGI/t=1.0	
29	74123290B001	Wall Mount Fixed Bottom Bracket	3200P/EGI/t=1.6	
30	74123290T001	Wall Mount Fixed Top Bracket	3200P/EGI/t=1.6	
31	751199001001	Rubber Foot	Rubber/20 ¢ t=5/Screw	6
32	91123231TE01	Back Label	TL-32VWTS/PET/TECKTON	1

33	911232350002	I/O Label	3200P/AU/1280H/PVC/Black	1
34	911299000001	Barcode Label	50*25/Paper/Serial Number,EAN	2
35	911299360001	Side Jack Label	DTV/PVC/Black/PL Model	1
36	93123231TE01	Carton Box	TL-32VWTS/양면수입/949*280*740/TECKTON	1
37	93123233B001	Cushion Bottom	3200P/EPS	1
38	93123233T001	Cushion Top	3200P/EPS	1
39	931299341001	Vinyl Bag	26,3200P/PE/950*700	1
40	931299342001	Accessory Vinyl Bag	PE/250*300	1
41	941262P1TE01	Manual	32,3700P,1280H/TECKTON/Russian 2L	1
42	95129920TE01	Remote Controller	R23E/TECKTON/ENG	1
43	791113040817	Screw	TMS 4*8/BK	
44	791113041613	Screw	TMS 4*16/SN	
45	791113040613	Screw	TMS 4*6/SN	
46	791113040813	Screw	TMS 4*8/SN	
47	791115030613	Screw	FMS 3*6/SN	
48	791116030513	Screw	PWMS 3*5/SN	
49	791144030817	Screw	BTS2 3*8/BK	7
50	791144031217	Screw	BTS2 3*12/BK	
51	791141041217	Screw	PTS2 4*12/BK	
52	791143041013	Screw	TTS2 4*10/SN	
53	791143041213	Screw	TTS2 4*12/SN	
54	791146030611	Screw	PWTS2 3*6/ZG	
55	791117035614	Screw	Hexa 3*5*6(H)	

7-2. Main Board Parts List

N.O	quantity	location	description1	description2	description3
1	216	C1, C3, C8, C13, C15, C16, C18,	0.1uF		
		C19, C26, C28, C30, C35, C37,			
		C40, C43, C45, C47, C50, C52,			
		C54, C55, C63, C64, C66, C67,			
		C72, C76, C78, C81, C84, C87,			
		C93, C103, C106, C107, C108,			
		C113, C130, C136, C138, C141,			
		C143, C146, C147, C148, C153,			
		C154, C155, C157, C160, C161,			
		C162, C163, C164, C166, C167,			
		C169, C173, C176, C178, C179,			
		C185, C205, C206, C223, C241,			
		C244, C249, C252, C254, C264,			
		C266, C267, C277, C300, C306,			
		C307, C315, C316, C317, C318,			
		C319, C320, C321, C322, C323,			
		C324, C325, C326, C327, C328,			
		C329, C330, C331, C332, C333,			
		C334, C335, C336, C337, C338,			
		C339, C340, C341, C342, C343,			
		C344, C345, C346, C347, C351,			
		C352, C353, C355, C356, C357,			
		C358, C360, C364, C365, C366,			
		C367, C368, C369, C370, C373,			
		C380, C383, C384, C385, C386,			
		C387, C388, C389, C390, C391,			
		C392, C393, C394, C395, C396,			
		C397, C398, C399, C400, C401,			
		C402, C403, C404, C405, C406,			
		C407, C408, C409, C410, C411,			
		C412, C413, C414, C415, C416,			
		C417, C418, C419, C420, C422,			
		C423, C424, C426, C427, C428,			
		C429, C431, C432, C434, C435,			
		C436, C437, C438, C440, C442,			
		C443, C444, C445, C468, C502,			
		C504, C539, C540, C571, C572,			
		C575, C576, C597, C598, C599,			
		C600, C608, C609, C611, C612,			

		C613,C614,C615,C617,C618, C619,C620,C621,C622,C623, C624,C626,C636,C637,C640			
2	10	C2,C7,C144,C255,C258, C268,C286,C313,C542,C557	0.1uF/Remove		
3	29	C4,C33,C56,C57,C58,C65, C94,C95,C102,C111,C471, C475,C479,C483,C487,C491, C503,C505,C545,C547,C549, C551,C553,C555,C601,C603, C607,C634,C635	10uF/16V		
4	11	C6,C32,C59,C60,C61,C62, C469,C602,C604,C606,C616	0.01uF		
5	2	C11,C10	100uF/25V		
6	2	C14,C17	2.2uF		
7	25	C20,C21,C24,C25,C79,C80, C121,C123,C158,C168,C201, C202,C231,C273,C274,C278, C279,C280,C281,C288,C289, C304,C305,C543,C544	1nF		
8	9	C22,C51,C73,C74,C89,C90, C96,C112,C159	100uF/16V		
9	8	C27,C82,C145,C152,C181, C183,C573,C577	47uF/6.3V		
10	9	C29,C31,C41,C83,C88,C125, C128,C129,C638	47uF/16V		
11	4	C38,C39,C140,C149	47uF/25V		
12	15	C42,C118,C126,C131,C137, C150,C151,C238,C240,C265, C282,C284,C287,C446,C447	10uF/2012		
13	2	C44,C53	470uF/16V-Remove		
14	42	C46,C49,C68,C69,C70,C71, C75,C100,C101,C171,C172, C174,C175,C182,C192,C193, C195,C196,C203,C204,C213, C215,C221,C222,C224,C225, C227,C232,C233,C239,C247, C256,C257,C259,C260,C261, C262,C263,C283,C285,C425, C430	1uF		

15	1	C48	150pF		
16	1	C77	47uF/16V-Remove		
17	5	C98,C99,C105,C497,C499	1uF/Remove		
18	3	C110,C115,C142	470pF		
19	2	C119,C127	4.7nF		
20	2	C120,C122	56pF		
21	2	C124,C228	22uF/16V		
22	2	C139,C132	5pF		
23	1	C133	220uF/16V		
24	3	C134,C558,C559	33pF		
25	6	C156,C165,C177,C180,C371, C376	18pF		
26	1	C170	0.47uF/50V		
27	6	C184,C190,C194,C199,C211, C214	0.001uF		
28	2	C208,C186	82000pF		
29	2	C207,C187	8200pF		
30	16	C188,C189,C191,C197,C198, C200,C209,C210,C212,C216, C217,C218,C421,C433,C439, C441	0.22uF		
31	2	C226,C220	10uF/2012	Remove	
32	6	C229,C308,C309,C310,C311, C312	22pF		
33	9	C243,C270,C272,C291,C292, C293,C294,C295,C296	12pF		
34	7	C276,C470,C474,C478,C482, C486,C490	10uF/16V-Remove		
35	4	C297,C298,C299,C303	100pF/Remove		
36	2	C301,C302	33pF/Remove		
37	3	C361,C560,C561	10pF		
38	6	C472,C476,C480,C484,C488, C492	10nF-Remove		
39	12	C473,C477,C481,C485,C489, C493,C546,C548,C550,C552, C554,C556	10nF		
40	5	C494,C495,C496,C498,C500	1uF/50V		
41	11	C507,C509,C511,C515,C517, C518,C520,C522,C529,C531, C533	82pF/Remove		

42	11	C508,C510,C512,C514,C516, C530,C532,C534,C536,C538, C594	56pF/Remove		
43	1	C513	82p/Remove		
44	4	C519,C521,C535,C537	270pF/Remove		
45	2	C595,C596	56pF/Romove		
46	1	C605	100uF/6.3V		
47	1	C610	0.1uF		
48	1	C639	22pF/Remove		
49	39	D1,D2,D3,D4,D5,D6,D7,D8, D10,D24,D27,D28,D29,D30, D35,D36,D37,D38,D39,D40, D41,D42,D43,D44,D45,D46, D48,D49,D50,D51,D52,D53, D54,D55,D56,D57,D58,D59, D60	Z02W12V/Remove		
50	4	D9,D17,D23,D26	KDS184		
51	4	D11,D12,D13,D14	B340A-REMOVE		
52	2	D16,D15	B340A		
53	1	D18	KDS184-Remove		
54	1	D19	S1G		
55	1	D22	Z02W5.6V		
56	10	D25,D31,D32,D33,D34,D61, D62,D63,D64,D66	KDS226_Remove		
57	1	D47	Z02W5.6VRemove		
58	3	D65,D67,D68	Z02W5.6V/Remove		
59	1	EA1	ST322N-D4-BK		
60	2	FB1,FB7	HH-1M3216-121JT		
61	1	FB2	HB-1M3216-501JT		
62	5	FB3,FB4,L93,L96,L97	HB-1M1608-121JT		
63	2	FB5,FB6	HH-1M3216-121JT/Remove		
64	1	JL1	Feb-68	2.5MM	
65	1	JP4	HEADER 2.5mm/Remove		1*3
66	2	JP5,JP8	SMW200-13		
67	1	JP6	HEADER 1.27mm		
68	1	JP7	HEADER 2.5mm1*2		
69	1	JP9	5267-04(MOLEX)/Remove		
70	1	JP10	5267-05(MOLEX)/Remove		
71	1	JP11	12505WR_09P		
72	1	JP12	12505WR_04P/Remove		

73	1	JP13	JW-4105RS		
74	1	JP14	JW-4104RS		
75	2	JP21,JP15	12507WR-30P		
76	1	JP19	HEADER	4X2	
77	1	JP20	12507WR-30P/Remove		
78	1	JP22	12505WR_03P/Remove		
79	1	JP23	HEADER 2.5mm	S/T	1*3
80	1	JP24	HEADER 2.5mm-Remove	S/T	1*3
81	1	JR1	Mar-68	2.5MM	
82	1	J1	SMW200-15		
83	1	J2	S_VIDEO	Connector	DIN4_2/Remove
84	2	L2,L1	HH-1M3216-121_REMOVE		
85	18	L3,L4,L5,L36,L37,L38,L39, L40,L41,L52,L53,L54,L55, L56,L57,L60,L61,L62	LC-2012-300JT		
86	14	L6,L7,L8,L9,L34,L35,L42, L43,L44,L45,L46,L47,L48, L49	FI-B2012-332		
87	4	L10,L11,L12,L13	Radial-22uH		
88	2	L14,L15	BDS-1075R-47uH		
89	1	L16	HU-1H4532-121		
90	1	L17	BDS-7550D-100uH		
91	1	L18	Radial-100uH		
92	19	L23,L24,L25,L26,L27,L28, L29,L63,L64,L65,L66,L67, L68,L69,L70,L71,L90,L91, L92	HH-1M3216-121		
93	2	L33,L31	HH-1M2012-121		
94	1	L32	HH-1M2012-121/Remove		
95	2	L51,L50	LC-2012-300JT/Remove		
96	61	R18,R54,R71,R72,L74,L75, L76,L77,L78,L79,L80,L81, L85,L86,L87,L88,L89,R102, R103,R160,R185,R200,R202, R257,R269,R284,R291,R312, R334,R335,R336,R337,R344, R345,R353,R354,R355,R379, R385,R386,R387,R388,R389, R390,R391,R392,R393,R394, R395,R396,R403,R404,R405,	0ohm		

		R406,R429,R430,R431,R432,		
		R433,R436,R437		
97	1	L94	HB-1M3216-121JT	
98	2	PWR1,PWR2	SMW200-09/ST	
99	1	PWR3	SMW200-08/ST	
100	1	P1	FH01-20-DR-G/2*10P	
101	1	P2	FH01-40-DR-G/2*20P	
102	1	P3	DB15F3ROI	
103	1	P4	DVI-D	
104	25	Q1,Q2,Q3,Q4,Q5,Q6,Q7,Q8,	KSC1623Y	
		Q9,Q10,Q12,Q13,Q14,Q17,		
		Q18,Q19,Q20,Q21,Q23,Q25,		
		Q26,Q28,Q29,Q30,Q32		
105	1	Q11	KSA812-Remove	
106	6	Q15,Q22,Q24,Q27,Q31,Q33	KSC1623Y/Remove	
107	1	Q16	KSA812	
108	24	RN2,RN3,RN4,RN6,RN8,RN9,	RP164J470CS	
		RN36,RN37,RN38,RN39,RN40,		
		RN41,RN42,RN43,RN44,RN45,		
		RN46,RN47,RN48,RN49,RN50,		
		RN51,RN52,RN53		
109	2	RN54,RN5	RP164J000CS	
110	17	RN10,RN11,RN12,RN13,RN14,	RP164J220CS	
		RN15,RN16,RN17,RN18,RN19,		
		RN20,RN21,RN22,RN23,RN24,		
		RN25,RN26		
111	12	RN618,RN619,RN620,RN621,	AR3216J22	
		RN639,RN640,RN641,RN642,		
		RN646,RN647,RN648,RN649		
112	8	RN622,RN623,RN624,RN625,	AR3216J22/Remove	
		RN635,RN636,RN637,RN638		
113	3	RN643,RN644,RN645	AR3216J100	
114	1	RN653	AR3216J103	
115	10	R1,R6,R96,R97,R115,R204,	47K	
		R225,R275,R289,R417		
116	22	R2,R3,R4,R19,R21,R30,R31,	4.7k	
		R32,R35,R43,R47,R48,R50,		
		R68,R126,R188,R195,R201,		
		R217,R234,R328,R427		
117	2	R5,R117	68K	

118	28	R7, R8, R14, R15, R28, R34, R36, R57, R70, R73, R91, R92, R93, R101, R104, R116, R130, R131, R137, R156, R157, R214, R218, R219, R270, R409, R424, R438	10k		
119	4	R9, R276, R282, R290	100ohm/Remove		
120	14	R10, R11, R27, R198, R242, R244, R264, R265, R266, R267, R279, R280, R286, R287	100K		
121	13	R12, R13, R125, R183, R199, R380, R384, R410, R411, R412, R413, R414, R415	0ohm/Remove		
122	33	R16, R17, R132, R134, R135, R138, R145, R148, R176, R184, R192, R196, R197, R205, R247, R248, R249, R258, R259, R260, R261, R262, R263, R271, R272, R273, R274, R283, R339, R340, R341, R343, R348	75ohm		
123	3	R20, R100, R422	33k		
124	20	R22, R25, R26, R55, R95, R136, R139, R140, R155, R171, R193, R226, R227, R230, R231, R232, R233, R338, R342, R425	1K		
125	2	R24, R23	100ohm/3216		
126	49	R29, R60, R69, R75, R76, R77, R78, R79, R80, R81, R82, R85, R90, R105, R108, R109, R119, R120, R122, R123, R149, R150, R151, R153, R154, R164, R181, R182, R186, R187, R190, R194, R203, R206, R207, R208, R209, R210, R212, R213, R215, R216, R237, R240, R310, R322, R323, R401, R402	100ohm		
127	5	R33, R37, R84, R99, R285	5.1K		
128	3	R38, R39, R42	120k		
129	1	R40	2.7K		
130	7	R41, R159, R162, R163, R167,	3.3K		

		R174,R175		
131	1	R44	22K	
132	1	R45	2.2K	
133	1	R46	160K-Remove	
134	1	R49	27K	
135	1	R51	1k/Remove	
136	1	R56	1.8k	
137	6	R58,R62,R128,R129,R168, R169	2k	
138	11	R61,R88,R89,R121,R220, R224,R327,R333,R346,R376, R381	10K/Remove	
139	2	R143,R94	330ohm	
140	5	R98,R127,R180,R191,R434	4.7K/Remove	
141	12	R106,R314,R316,R317,R319, R320,R321,R324,R397,R399, R426,R428	22ohm	
142	7	R111,R112,R113,R114,R124, R299,R400	47ohm	
143	1	R118	47K/Remove	
144	1	R133		300
145	2	R146,R142	1.5Mohm	
146	2	R152,R172	470ohm	
147	2	R178,R158	23K	
148	2	R173,R161	1.6K	
149	3	R166,R170,R420		100
150	1	R179	560ohm/Remove	
151	2	R236,R211	100K/Remove	
152	6	R221,R222,R223,R245,R268, R281	75ohm/Remove	
153	2	R241,R243		560
154	8	R250,R251,R252,R253,R254, R255,R256,R288	27ohm	
155	1	R292	15K	
156	2	R293,R294	1.00K(1%)	
157	1	R296	10ohm	
158	1	R300	1.00Mohm	
159	1	R305	12K	
160	1	R311		0 ohm
161	5	R313,R315,R318,R325,R398	22ohm/Remove	

162	1	R326	1.8K/Remove		
163	1	R352	560ohm		
164	2	R383,R382	3.3K/Remove		
165	1	R418		470	
166	1	R419		150	
167	1	R421		330	
168	1	R423		510	
169	1	R435	33K/Remove		
170	1	SCART1	YSS002A		
171	2	SW2,SW1	ST-1102SB_4P	(SMD)/Remove	option
173	1	U1	AMS1085-2.5		
174	2	U2,U22	M9933		
175	1	U3	FDS4435		
176	2	U6,U4	SI-8050SD		
177	1	U5	KA4558	SO8P	
178	1	U7	TPA3004D2		
179	2	U8,U9	HY5DU561622DT		
180	1	U10	KA7809(D-PAK)		
181	1	U11	SST39VF1600A-70-4I-EK	option	TSOP48/m29w160et
182	1	U12	AMS1085-3.3		
183	1	U15	24LC32A		
184	1	U16	PW218B		
185	1	U21	MSP3410G		
186	3	U23,U28,U45	AMS1117-1.8		
187	3	U24,U30,U44	AMS1117-3.3		
188	1	U25	PW3300		
189	1	U26	PW2250		
190	1	U27	K4S161622H-TC60		
191	1	U29	K4S161622H-TC60/Remove	option	
192	1	U31	CXA2069		
193	1	U32	SI9936DY		
194	1	U34	74LCX14		
195	2	U35,U36	BA7657F		
196	1	U37	BA7657F/Remove	option	
197	1	U38	24LC02-/SN		
198	1	U39	24LC21-/SN		
199	1	U40	MM74HC4053/Remove	option	
200	1	U41	MAX232CSE-SOIC16		
201	1	U42	PI5V330		
202	1	U43	DV1000_TQFP128P/Remove	option	
203	1	U47	THC63LVDM83R		
204	2	U50,U48	AMS1086-1.8		
205	1	Y2	14.31818M(SMD)		
206	1	Y3	18.432M(SMD)		
207	2	Y5,Y4	27.00M(SMD)		
208	1	Y6	OSC	20MHz	

7-3. Tuner Board Parts List

Item	Quantity	Reference	Part	
1	2	C23,C12	220uF/16V	
2	1	C13	2200pF	
3	3	C14,C19,C21	0.01uF	
4	1	C15	100uF/16V	
5	1	C16	4700pF	
6	1	C17	220pF	
7	1	C18	0.022uF	
8	4	C20,C33,C40,C41	0.1uF	
9	4	C29,C30,C31,C32	1000pF	
10	1	D2	BAV99/SOT	
11	6	D3,D4,D6,D7,D8,D9	Z02W12V	
12	1	JP1	JW-4105RS	
13	1	L4	CHOKE	COIL-220M
14	2	L5,L6	4020L-102M	
15	4	L7,L8,L9,L10	LC-2012-300JT	
16	1	P1	PH01-40-DR-G/2*20P	
17	4	Q5,Q6,Q8,Q9	KSC1623Y	
18	5	R22,R38,R39,R40,R41	100K	
19	5	R23,R24,R30,R31,R34	100ohm	
20	1	R25	82K	
21	1	R26	33K	
22	1	R27	330K	
23	3	R28,R56,R60	1K	
24	1	R29	56ohm	
25	3	R32,R33,R36	0ohm	
26	1	R35	10K	
27	1	R37	75ohm	
28	2	R53,R57	12K	
29	2	R54,R58	2K	
30	2	R55,R59	560ohm	
31	1	R61	100ohm/Remove	
32	1	TN2	TCLW3101PD29A(T)	
33	14	TP6,TP8,TP9,TP10,TP12,	probe	

7-4. SMPS Board (A) Parts List

NO	L/V	QTY	UNIT	LOCATION	SPECIFICATION	DESCRIPTION	MAKER
1	0	1.00	EA		POWER NDDC ASSEMBLY	PCB ASS'Y	H&E Co., LTD
2	1	1.00	EA		10 X 42	BAR CODE	SHUN JIN
3	1	0.10	EA			OUT BOX	
4	1	0.20	EA			PAD	
5	1	0.11	EA			CROSS PAD-L	
6	1	0.20	EA			CROSS PAD-S	
7	1	1.00	EA			INNER PACK	
8	2	0.01	KG		ALPHA CLEANING	FLUX	
9	2	5.00	mLI		ALCOHOL, ISO-PROP	CLEANER	
10	2	5.00	G		D1.0 WIRE SN:96.5%, AG:3%, CU:0.5%	SOLDER	NIHON GAMMA DAEKIL METAL
11	2	8.00	G		BAR SOLDER SN:96.5%, AG:3%, CU:0.5%	SOLDER	NIHON GAMMA DAEKIL METAL
12	2	1.00	EA		KBJ406 ASS'Y	HEAT SINK ASS'Y	
13	3	1.00	EA		L75 * H25 * T10	HEAT SINK	JS-TECH
14	3	1.00	EA	D803	600V 4A DIODES KBJ406	DIODE BD	DIODES
15	3	1.00	EA		+ D3.0 L 10.0 MSWR	SCREW DRAWIN	JUNGGUMS A DONGYANG
16	3	2.00	G		G746	SILICON GREASE	SHINETSU
17	2	1.00	EA		SPP07N60C3 ASS'Y	HEAT SINK ASS'Y	
18	3	1.00	EA		L60 * H25 * T10	HEAT SINK	JS-TECH
19	3	2.00	EA	Q801 Q802	SPP07N60C3	FET	INFINEON
20	3	2.00	EA		+ D3.0 L 10.0 MSWR	SCREW DRAWIN	JUNGGUMS A DONGYANG
21	3	2.00	EA		NYLON, 6*3.5, 3.5Φ	INSULATING BUSHING	A-TECH SILICAM DONG-A BESTECH

22	3	1.00	EA		SILICON-PAD 13 * 18 NO	SIL-PAD	A-TECH SILICAM
23	2	1.00	EA		STW20NM60 FSF10A60 ASS'Y	HEAT SINK ASS'Y	
24	3	1.00	EA		W75 * H25 * D10	HEAT SINK	JS-TECH
25	3	1.00	EA	Q800	STW20NM60 650V 20A T0-247	TRANSISTOR FET	ST
26	3	1.00	EA	D806	FSF10A60 T0220 SINGLE 2PIN	SCHOTTKY DIODE	NIEC
27	3	2.00	EA		+ D3.0 L12.0 MSWR	SCREW DRAWIN	JUNGGUMS A DONGYANG
28	3	1.00	EA		+ D3.0 L 10.0 MSWR	SCREW DRAWIN	JUNGGUMS A DONGYANG
29	3	1.00	EA		SILICON-PAD 19 * 23 NO	SIL-PAD	A-TECH SILICAM
30	3	1.00	G		G746	SILICON GREASE	SHINETSU
31	2	1.00	EA		KCH30A10 ASS'Y	HEAT SINK ASS'Y	
32	3	1.00	EA		W105 * H25 * D10	HEAT SINK	JS-TECH
33	3	1.00	EA	D811	30A 100V KCH30A10 T0-247 30A 100V DSSK30-01A T0-247 30A 100V STPS30H100CW T0-247 30A 150V STPS30H150CW T0-247 - HT804: Anodizing 처리	DIODE RECTIF	NIEC IXYS ST
34	3	1.00	EA		+ D3.0 L12.0 MSWR	SCREW DRAWIN	JUNGGUMS A DONGYANG
35	3	1.00	EA		SILICON-PAD 19*24 NO	SIL-PAD	A-TECH SILICAM
36	2	1.00	EA		MBRF30H60CT ASS'Y	HEAT SINK ASS'Y	
37	3	1.00	EA		W50 * H25 * D10	HEAT SINK	JS-TECH
38	3	1.00	EA	D812	30A 60V MBRF30H60CT T0-220	DIODE RECTIF	GS
39	3	1.00	EA		+ D3.0 L10.0 MSWR	SCREW DRAWIN	JUNGGUMS A DONGYANG
40	3	0.00	G		G746	SILICON GREASE	SHINETSU
41	2	1.00	EA		LM2576TV-ADJ ASS'Y	HEAT SINK ASS'Y	
42	3	1.00	EA		W60 * H25 * D10	HEAT SINK	JS-TECH
43	3	1.00	EA	IC806	LM2576TV-ADJ	DIODE RECTIF	ON-SEMI
44	3	1.00	EA		+ D3.0 L10.0 MSWR	SCREW DRAWIN	JUNGGUMS

							A DONGYANG
45	3	0.00	G		G746	SILICON GREASE	SHINETSU
46	2	1.00	EA	VA800	OVR6211109AA VARIATOR INR 14D 621,SVC621D-14A	VARIATOR ASS'Y	
47	3	1.00	EA		SVC621D-14A INR 14D 621	VARIATOR	SAMWHA AMOTECH
48	3	1.00	EA		VARIATOR D-14 CAP V-0 GRAD	VARIATOR CAP	HAWHEE MFG HEANGSUN G
49	2	1.00	EA	P803	RF-2001C2090B 15A 250VAC	AC SOCKET	RONG FENG IND.
50	2	3.00	EA	C814 C815 C817	1000UF 35V M ZT HEC KM SAMXON KMG SAMYOUNG RD SAMWHA	CAPACITOR AL	HEC SAMXON SAMYOUNG SAMWHA
51	2	1.00	EA	C820	1000UF 25V M ZT HEC KM SAMXON KMG SAMYOUNG RD SAMWHA	CAPACITOR AL	HEC SAMXON SAMYOUNG SAMWHA
52	2	2.00	EA	C819 C821	680UF 25V M NXB SAMYOUNG WL SAMWHA	CAPACITOR AL	SAMYOUNG SAMWHA
53	2	1.00	EA	C806	22UF 450V M ZT HEC KM SAMXON KMG SAMYOUNG RD SAMWHA	CAPACITOR AL	HEC SAMXON SAMYOUNG SAMWHA
54	2	1.00	EA	C805	150UF 450V M TDA SAMYOUNG 30*25 HE SAMHWA	CAPACITOR AL	SAMYOUNG SAMHWA
55	2	3.00	EA	C800 C801 C809	1000PF 250VAC M Y-CAP	CAPACITOR CERA	SAMWHA DONGIL
56	2	1.00	EA	D801	1000V 3A UF5408 UF3007	DIODE RECTIF	GS DIODES
57	2	1.00	EA	C808	223 800V MPP 15MM	CAPACITOR MPP	WOOJIN MYUNGSUN G

58	2	1.00	EA	C804	105K 450V MPK	CAPACITOR MPK	MYUNGSUNG
59	2	1.00	EA	C803	334 275VAC 337 M 15MM	CAPACITOR POLY	PILKOR CARLI
60	2	1.00	EA	C802	474 275VAC 337 M 15MM	CAPACITOR POLY	PILKORCA RLI
61	2	1.00	EA	F800	FUSE CERAMIC TUBE 250V 5A HIGH BRK	FUSE	LITTELFU SE BUSSMANN
62	2	3.00	EA	IC801 IC802 IC803	LTV817BN 4P K1010	IC OPTO-C	LITE-ON COSMO
63	2	1.00	EA	IC800	VIPER22A DIP-8	STAND BY IC	ST
64	2	1.00	EA	D810	31DQ10 SCHOTTKY D0201AD M- FORM(15mm)	SCHOTTKY DIODE	NI EC
65	2	1.00	EA	D813	31DQ06 SCHOTTKY D0201AD M- FORM(15mm)	SCHOTTKY DIODE	NI EC
66	2	1.00	EA	L802	150UH CHOKE COIL	CHOKE COIL	DAESUNG ILSAN
67	2	2.00	EA	LF800 LF801	B62-FTR2022 22MH MIN RING 19PHI	LINE FILTER	DAESUNG ILSAN
68	2	1.00	EA	R804	33K 3W J R-FORMING	RESISTOR RW	SMART DI-ELEC
69	2	1.00	EA	R801	RW WOUND 0.11 OHM F 2W R- FORMING	RESISTOR RW	SMART DI-ELEC
70	2	1.00	EA	R802	RW WOUND 0.33 OHM F 2W R- FORMING	RESISTOR RW	SMART DI-ELEC
71	2	1.00	EA	TH800	NTC 8 OHM D15 DSC-8D-15	THERMISTOR	DSC THINKING
72	2	1.00	EA	L800	B60-P3019A EER3124 325UH 0.	TRANSFORMER	SOOJUNG ILSAN
73	2	1.00	EA	T801	B60-T1916A EE1916	ST-TRANSFORMER	SOOJUNG ILSAN
74	2	1.00	EA	T800	B60-T5050RF MB3-EPC50-Z 332412	TRANSFORMER	SOOJUNG ILSAN
75	2	1.00	EA	P800	SMW200-08P DIP	CONNECTOR	YEONHO
76	2	1.00	EA	P801 P802	SMW200-12P DIP	CONNECTOR	YEONHO
77	2	1.00	EA	R806	680 OHM 5W	RESISTOR CEMENT	DI ELEC. SMART

							ELEC.
78	2	2.00	EA	L801 L803	3UF CHOKE COIL	CHOKE COIL	DAESUNG ILSAN
79	2	2.00	EA	FG800 FG801	GND REINFORCE PIN	GND PIN	DAELIN
80	2	1.00	EA		POWER NDDC SMD ASSEMBLY		
81	3	1.00	EA	C844	101 50V ±5% 2012 COG	CAPACITOR CHIP	PILKOR SAMWHA
82	3	1.00	EA	C880	221 50V ±5% 2012 COG	CAPACITOR CHIP	PILKOR SAMWHA
83	3	1.00	EA	C842	391 50V ±5% 2012 COG	CAPACITOR CHIP	PILKOR SAMWHA
84	3	2.00	EA	C823 C825	102 50V ±10% 2012 X7R	CAPACITOR CHIP	PILKOR SAMWHA
85	3	1.00	EA	C829	103 50V ±10% 2012 X7R	CAPACITOR CHIP	PILKOR SAMWHA
86	3	1.00	EA	C839	473 50V ±10% 2012 X7R	CAPACITOR CHIP	PILKOR SAMWHA
87	3	9.00	EA	C843 C837 C849 C851 C860 C856 C855 C857 C845	104 50V ±10% 2012 X7R	CAPACITOR CHIP	PILKOR SAMWHA
88	3	1.00	EA	C834	224 50V ±10% 2012 X7R	CAPACITOR CHIP	PILKOR SAMWHA
89	3	1.00	EA	C830	334 25V ±10% 2012 X7R	CAPACITOR CHIP	PILKOR SAMWHA
90	3	1.00	EA	C838	474 25V ±10% 2012 X7R	CAPACITOR CHIP	PILKOR SAMWHA
91	3	7.00	EA	C824 C840 C826 C827 C828 C831 C841	105 16V ±10% 2012 X7R	CAPACITOR CHIP	PILKOR SAMWHA
92	3	1.00	EA	C835	104 25V -20%~+80% 3216 Y5V	CAPACITOR CHIP	PILKOR SAMWHA
93	3	1.00	EA	C836	105 25V -20%~+80% 3216 Y5V	CAPACITOR CHIP	PILKOR SAMWHA
94	3	5.00	EA	D814 D815 D821 D822 D820	1N4148WS SOD-323 CHIP KDS160	DIODE SWITCHING	DIODES KEC
95	3	1.00	EA	ZD805	ZENER 20 B S0T-23 CHIP S0D323	DIODE ZENER	VISHAY ON-SEMI
96	3	1.00	EA	IC807	L6562D S01C-8	IC PFC	ST

97	3	1.00	EA	IC808	L6598D S01C-16	IC MAIN RESONANT	ST
98	3	4.00	EA	R850 R851 R847 R820	0 OHM J 2012	RESISTOR CHIP	PILKOR SMART
99	3	2.00	EA	R839 R837	68 OHM J 2012	RESISTOR CHIP	PILKOR SMART
100	3	2.00	EA	R878 R858	270 OHM J 2012	RESISTOR CHIP	PILKOR SMART
101	3	1.00	EA	R807	470 OHM J 2012	RESISTOR CHIP	PILKOR SMART
102	3	4.00	EA	R840 R857 R859 R870	1K OHM J 2012	RESISTOR CHIP	PILKOR SMART
103	3	1.00	EA	R846	1.5K OHM J 2012	RESISTOR CHIP	PILKOR SMART
104	3	2.00	EA	R832 R827	2K OHM J 2012	RESISTOR CHIP	PILKOR SMART
105	3	3.00	EA	R856 R872 R860	2.2K OHM J 2012	RESISTOR CHIP	PILKOR SMART
106	3	2.00	EA	R877 R881	4.7K OHM J 2012	RESISTOR CHIP	PILKOR SMART
107	3	1.00	EA	R853	6.2K OHM J 2012	RESISTOR CHIP	PILKOR SMART
108	3	1.00	EA	R826	6.8K OHM J 2012	RESISTOR CHIP	PILKOR SMART
109	3	1.00	EA	R833	7.5K OHM J 2012	RESISTOR CHIP	PILKOR SMART
110	3	10.0 0	EA	R812 R836 R838 R849 R855 R829 R819 R825 R889 R882	10K OHM J 2012	RESISTOR CHIP	PILKOR SMART
111	3	1.00	EA	R852	16K OHM J 2012	RESISTOR CHIP	PILKOR SMART
112	3	1.00	EA	R821	22K OHM J 2012	RESISTOR CHIP	PILKOR SMART
113	3	2.00	EA	R844 R848	30K OHM J 2012	RESISTOR CHIP	PILKOR SMART
114	3	2.00	EA	R863 R865	33K OHM J 2012	RESISTOR CHIP	PILKOR SMART
115	3	2.00	EA	R834 R835	47K OHM J 2012	RESISTOR CHIP	PILKOR SMART

116	3	1.00	EA	R854	75K OHM J 2012	RESISTOR CHIP	PILKOR SMART
117	3	1.00	EA	R817	200K OHM J 2012	RESISTOR CHIP	PILKOR SMART
118	3	4.00	EA	R809 R811 R814 R816	240K OHM J 2012	RESISTOR CHIP	PILKOR SMART
119	3	3.00	EA	R828 R830 R831	270K OHM J 2012	RESISTOR CHIP	PILKOR SMART
120	3	1.00	EA	R873	1.8K OHM F 2012	RESISTOR CHIP	PILKOR SMART
121	3	1.00	EA	R864	4.42K OHM F 2012	RESISTOR CHIP	PILKOR SMART
122	3	4.00	EA	R822 R823 R862 R861	4.7K OHM F 2012	RESISTOR CHIP	PILKOR SMART
123	3	1.00	EA	R874	5.6K OHM F 2012	RESISTOR CHIP	PILKOR SMART
124	3	1.00	EA	R868	15K OHM F 2012	RESISTOR CHIP	PILKOR SMART
125	3	1.00	EA	R876	18K OHM F 2012	RESISTOR CHIP	PILKOR SMART
126	3	1.00	EA	R867	39K OHM F 2012	RESISTOR CHIP	PILKOR SMART
127	3	1.00	EA	R869	51K OHM F 2012	RESISTOR CHIP	PILKOR SMART
128	3	1.00	EA	R813	300K OHM F 2012	RESISTOR CHIP	PILKOR SMART
129	3	3.00	EA	R808 R810 R824	470K OHM F 2012	RESISTOR CHIP	PILKOR SMART
130	3	3.00	EA	R815 R818 R845	510K OHM F 2012	RESISTOR CHIP	PILKOR SMART
131	3	2.00	EA	R879 R841	22 OHM J 3216	RESISTOR CHIP	PILKOR SMART
132	3	1.00	EA	R875	220 OHM J 3216	RESISTOR CHIP	PILKOR SMART
133	3	1.00	EA	R890	560 OHM J 3216	RESISTOR CHIP	PILKOR SMART
134	3	3.00	EA	Q806 Q807 Q809	MMBT2222 SOT23 TP	TRANSISTOR NPN	INFINEON FAIRCHILD

							D ON-SEMI
135	3	3.00	EA	Q805 Q808 Q804	MMBT2907 SOT23 TP	TRANSISTOR NPN	INFINEON FAIRCHILD ON-SEMI
136	3	1.00	EA	U800	SFL431BSF AZ431AN SOT23	SHUNT REGULATOR IC	AUK BCD
137	3	1.00	EA	ZD800	ZENER 2.4 B SOD323 CHIP	DIODE ZENER	VISHAY ON-SEMI
138	3	1.00	EA		POWER NDDC AI ASSEMBLY	PCB ASS'Y	
139	4	1.00	EA	C811	1500PF 85°C B 1KV K DISK 1500PF 125°C (R/B*/BN) 1KV K DISK 5-TP	CAPACITOR CERA	SAMWHA DUSAN NEWCON
140	4	2.00	EA	C807 C810	22UF 50V M ZT HEC KM SAMXON KMG SAMYOUNG RD SAMWHA	CAPACITOR AL	HEC SAMXON SAMYOUNG SAMWHA
141	4	2.00	EA	C816 C818	470UF 16V M ZT HEC KM SAMXON KMG SAMYOUNG RD SAMWHA	CAPACITOR AL	HEC SAMXON SAMYOUNG SAMWHA
142	4	2.00	EA	C812 C813	470UF 10V ZT HEC KM SAMXON KMG SAMYOUNG RD SAMWHA	CAPACITOR AL	HEC SAMXON SAMYOUNG SAMWHA
143	4	2.00	EA	D809 D807	UF1004 D041 TP UF4004	DIODE RECTIF	DIODES GS
144	4	3.00	EA	D804 D805 D808	UF1007 D041 TP UF4007	DIODE RECTIF	DIODES GS
145	4	2.00	EA	FB801 FB802	FERRITE 1UH 3565R TP	FILTER BEAD	SCE SAMWHA
146	4	2.00	EA	FB800 FB803	FERRITE 2UH BFD3565R DUAL TP	FILTER BEAD	SCE SAMWHA
147	4	1.00	EA	TH801	NTC 10 OHM 9PHI DSC-10D-9 TP 10D9	THERMISTOR	DSC THERMOME TRICS
148	4	2.00	EA	F800A1 F800B1	FUSE NON CLIP MC994C	HOLDER	LITTELFU

							SE SAVEFUSE
149	4	2.00	EA	IC804 IC805	KA431Z 1% T0-92 TP	IC SHUNT	FAIRCHILD KEC
150	4	1.00	EA	R800	0.47M OHM J 1/2W	RESISTOR CC	SMART DI-ELEC
151	4	1.00	EA	R880	10M OHM J 1/2W	RESISTOR CC	SMART DI-ELEC
152	4	1.00	EA	R805	2.2 OHM J 1/2W R-FORM 1W	RESISTOR FIX	SMART DI-ELEC
153	4	1.00	EA	Q803	KTC3227	NPN TR	KEC
154	4	1.00	EA	R803	1M 1/2W J M-FORM	RESISTOR FIX	SMART DI-ELEC
155	4	29.0 0	EA	JP801 JP803 ~ JP830	JUMPER	JUMP WIRE	SMART DI-ELEC
156	4	1.00	EA	ZD802	ZENER 15 B D035 TP	DIODE ZENER	VISHAY ON-SEMI PCTRONIX
157	4	14.0 0	EA	EL1 EL2 EL3 EL4 EL5 EL6 EL7 EL8 EL9 EL10 EL11 EL12 EL13 EL14	1.6 * 3.0(ΦD * H)	EYELET	DAELIN
158	4	6.00	EA	EL21 EL22 EL23 EL24 EL25 EL26	2.3 * 3.0(ΦD * H)	EYELET	DAELIN
159	5	1.00	EA	PCB	249X110 CEM-1 35MICS D-SIDE	VE PCB	DAESUN DONG MYUNG

7-5. SMPS Board (B) Parts List

NO	DESCRIPTION	SPECIFICATION	LOCATION, NO.	Q'TY	VENDER 1	VENDER 2	VENDER 3
1	P.C.B	KP-206R(CEM-1,250X110)	PCB	1	HANSUNG	NURI CIRCUIT	
2	TRANSISTOR	KTA1274-Y	Q1	1	KEC		
3	TRANSISTOR	KRA102M	Q2	1	KEC		
4	TRANSISTOR	KRC105M	Q5	1	KEC		
5	FET	AP9435GJ(TO-251)	Q8	1	APEC		
6	FET	STW20NM60	Q3,6,7	3	ST		
7	IC-SHUNT	KA431AZ/TL431	U5,6	2	FAIRCHILD	WOO SEOK	
8	IC-SPS	KA5M0380R	U4	1	FAIRCHILD		
9	IC-PFC	L6562	U2	1	ST		
10	IC-PWM	L6598	U3	1	ST		
11	IC-OPTO-TR	KP1010B,817/LTV817	PC1,2,3	3	COSMO	LITEON	
12	DIODE-BRIDGE	D15SB60 (600V/15A)	BD2	1	LRC	SHINDENGEN	
13	DIODE-ZENER	1N5239 (1/2W, 9.1V)	ZD1	1	VISHAY	DEC	
14	DIODE-ZENER	1N5245 (1/2W, 15V)	ZD2	1	VISHAY	DEC	
15	DIODE-SW	1N4148 (75V/0.2A)	D5,7,11,14,15	5	VISHAY	DEC	
16	DIODE-SCHOTTKY	SR204 (40V/2A)	D16	1	FRONTIER	SUNG HO	
17	DIODE-UFR	UF4004 (400V/1A)	D8,9	2	FRONTIER	SUNG HO	
18	DIODE-UFR	UF4007 (1000V/1A)	D3	1	FRONTIER	SUNG HO	
19	DIODE-UFR	1N5404 (400V/3A)	D17	1	FRONTIER	SUNG HO	
20	DIODE-UFR	STTH5L06FP (600V/5A)	D2	1	ST		
21	DIODE-SCHOTTKY	MBRF10A0/STPS1045F	D4	1	SUNG HO	ST	
22	DIODE-SCHOTTKY	SRF20A0/STPS20L60CT	D10,12	2	SUNG HO	ST	
23	DIODE-SCHOTTKY	SRF10A0/STPS10L45CF	D13	1	SUNG HO	ST	

NO	DESCRIPTION	SPECIFICATION	LOCATION, NO.	Q'TY	VENDER 1	VENDER 2	REMARK
24	THERMISTOR	5D-15	TH1	1	DSC	SAMKYUNG	
25	VARISTOR	14D681K	VR1	1	CNR	AMOTECH	
26	R-WIRE WOUND	1W-J-0.15(NON-INDUCTIVE)	R14,48	1	KOREA	KYUNG IL	
27	R-METAL OXIDE	1W-J-100K	R7	1	KOREA	KYUNG IL	
28	R-CARBON FILM	1/2W-J-1.5M	R33	1	KOREA	KYUNG IL	
29	R-CARBON FILM	1/4W-J-10	R23	1	KOREA	KYUNG IL	
30	R-CARBON FILM	1/4W-J-4.7K	R55	1	KOREA	KYUNG IL	
31	R-CARBON FILM	1/4W-J-10K	R32	1	KOREA	KYUNG IL	
32	R-CARBON FILM	1/4W-J-150K	R60,61	2	KOREA	KYUNG IL	
33	R-CARBON FILM	1/8W-J-0	R27	1	KOREA	KYUNG IL	
34	R-CARBON FILM	1/8W-J-10	R13	1	KOREA	KYUNG IL	
35	R-CARBON FILM	1/8W-J-22	R24,25,41,42	4	KOREA	KYUNG IL	
36	R-CARBON FILM	1/8W-J-100	R11,12	2	KOREA	KYUNG IL	
37	R-CARBON FILM	1/8W-J-390	R17,28	2	KOREA	KYUNG IL	
38	R-CARBON FILM	1/8W-J-1K	R31,47	2	KOREA	KYUNG IL	
39	R-CARBON FILM	1/8W-J-1.5K	R19,22	2	KOREA	KYUNG IL	
40	R-CARBON FILM	1/8W-J-2.7K	R50,52,58,63	4	KOREA	KYUNG IL	
41	R-CARBON FILM	1/8W-J-3.3K	R35	1	KOREA	KYUNG IL	
42	R-CARBON FILM	1/8W-J-5.6K	R34	1	KOREA	KYUNG IL	
43	R-CARBON FILM	1/8W-J-10K	R3,4,36,43,45,46	6	KOREA	KYUNG IL	
44	R-CARBON FILM	1/8W-J-15K	R8	1	KOREA	KYUNG IL	
45	R-CARBON FILM	1/8W-J-20K	R40	1	KOREA	KYUNG IL	
46	R-CARBON FILM	1/8W-J-22K	R10,20	2	KOREA	KYUNG IL	
47	R-CARBON FILM	1/8W-J-27K	R37	1	KOREA	KYUNG IL	

NO	DESCRIPTION	SPECIFICATION	LOCATION, NO.	Q'TY	VENDER 1	VENDER 2	REMARK
48	R-CARBON FILM	1/8W-J-47K	R62	1	KOREA	KYUNG IL	
49	R-CARBON FILM	1/8W-J-68K	R2	1	KOREA	KYUNG IL	
50	R-CARBON FILM	1/8W-J-82K	R18	1	KOREA	KYUNG IL	
51	R-CARBON FILM	1/8W-J-100K	R39,44	2	KOREA	KYUNG IL	
52	R-CARBON FILM	1/8W-J-220K	R1,9	2	KOREA	KYUNG IL	
53	R-METAL FILM	1/8W-F-27	R51	1	KOREA	KYUNG IL	
54	R-METAL FILM	1/8W-F-1,1K	R53	1	KOREA	KYUNG IL	
55	R-METAL FILM	1/8W-F-2,4K	R30	1	KOREA	KYUNG IL	
56	R-METAL FILM	1/8W-F-2,7K	R29	1	KOREA	KYUNG IL	
57	R-METAL FILM	1/8W-F-10K	R16,54	2	KOREA	KYUNG IL	
58	R-METAL FILM	1/8W-F-750K	R5	1	KOREA	KYUNG IL	
59	R-METAL FILM	1/8W-F-820K	R6	1	KOREA	KYUNG IL	
60	JUMP WIRE	5mm	JW8,9,10,11,53,54,55,57,58	9	KOREA	KYUNG IL	
61	JUMP WIRE	8mm	JW1,4,12,13,15,16,17,18,19,20,22,23,32,33,34,51,52,53,54	19	KOREA	KYUNG IL	
62	JUMP WIRE	10mm	JW21,31	2	KOREA	KYUNG IL	
63	JUMP WIRE	12mm	JW5,6,7,33,56	5	KOREA	KYUNG IL	
64	C-EL	450V-M-150uF(30X30 KMH 105°C)	C14	1	SAMYOUNG	SAMWHA	
65	C-EL	400V-M-10uF(10X20 KMG 105°C)	C43	1	SAMYOUNG	SAMWHA	
66	C-EL	50V-M-1uF(5X11 KMG 105°C)	C40	1	SAMYOUNG	SAMWHA	
67	C-EL	50V-M-2,2uF(5X11 KMG 105°C)	C1	1	SAMYOUNG	SAMWHA	
68	C-EL	50V-M-10uF(5X11 KMG 105°C)	C11,15	2	SAMYOUNG	SAMWHA	
69	C-EL	50V-M-22uF(5X11 KMG 106°C)	C20	1	SAMYOUNG	SAMWHA	
70	C-EL	50V-M-47uF(6,3X11 KMG 105°C)	C21	1	SAMYOUNG	SAMWHA	

NO	DESCRIPTION	SPECIFICATION	LOCATION, NO.	Q'TY	VENDER 1	VENDER 2	REMARK
71	C-EL	25V-M-1000uF(10X20 KMG 105°C)	C38,39	2	SAMYOUNG	SAMWHA	
72	C-EL	35V-M-1000uF(12,5X20 KMG 105°C)	C22,24	2	SAMYOUNG	SAMWHA	
73	C-EL	16V-M-100uF(5X11 KMG 105°C)	C6	1	SAMYOUNG	SAMWHA	
74	C-EL	16V-M-1000uF(10X16 KMG 105°C)	C5,18	2	SAMYOUNG	SAMWHA	
75	C-EL	16V-M-2200uF(12,5X20 KMG 105°C)	C4	1	SAMYOUNG	SAMWHA	
76	C-MYLAR	2A-102J	C44	1	SAMWHA	SEWHA	
77	C-MYLAR	2A-104J	C19	1	SAMWHA	SEWHA	
78	C-MYLAR	2A-472J	C16	1	SAMWHA	SEWHA	
79	C-MONO	DC-50V-105	C41	1	SAMWHA	SEWHA	
80	C-MONO	DC-50V-224	C31	1	DAEMYUNG		
81	C-MONO	DC-50V-684	C2	1	DAEMYUNG	SAMWON	
82	C-CERAMIC	DC-50V-102	C8,12,29	3	DAEMYUNG	SAMWON	
83	C-CERAMIC	DC-50V-103	C33	1	DAEMYUNG	SAMWON	
84	C-CERAMIC	DC-50V-104	C10,17,23,28,32,34	6	DAEMYUNG	SAMWON	
85	C-CERAMIC	DC-50V-471	C30	1	DAEMYUNG	SAMWON	
86	C-CERAMIC	DC-1KV-103(10mm)	C3	1	DAEMYUNG		
87	C-CERAMIC	DG102M-Y1(AC400V)	C9,26,27	3	DAEMYUNG	NETRON TECH	
88	C-MP-FILM	630V-105K(21mm)	C7	1	MYUNG SUNG		
89	C-MP-FILM	630V-473K(10mm)	C13	1	MYUNG SUNG		
90	C-MF-FILM	334-M-275VAC(22,5mm)	CM1,2,3	3	SUNIL	PILKOR	
91	C-MF-FILM	333-M-275VAC(10mm)	C35	1	SUNIL	PILKOR	
92	TRANSFORMER	EER3024	T1	1	FINE	DONGIN SYSTEM	KWANG SUNG
93	TRANSFORMER	EER2828	T2	1	FINE	DONGIN SYSTEM	KWANG SUNG
94	TRANSFORMER	EPC5050	T3	1	FINE	DONGIN SYSTEM	KWANG SUNG
95	LINE FILTER	SQ2828	LF1,2	2	FINE	DONGIN SYSTEM	KWANG SUNG

NO	DESCRIPTION	SPECIFICATION	LOCATION, NO.	Q'TY	VENDER 1	VENDER 2	REMARK
96	CHOKE COIL	4X15 (4uH,0.70)	L1,4	2	FINE	DONGIN SYSTEM	KWANG SUNG
97	CHOKE COIL	6X25 (5uH,1.20)	L3	1	FINE	DONGIN SYSTEM	KWANG SUNG
98	BEAD CORE	O.D-3565	FB1	1	E-TECH	SAMHWA	
99	FUSE	250V T4A (SR-5)	F1	1	SAVE FUSE TECH		
100	SILICON PAD	TO-3P TYPE	Q3,6,7	3	A-TEK	KCCCOM	
101	SILICON PAD	TO-2P TYPE	D2	1	A-TEK	KCCCOM	
102	HEAT SINK	220X20X32 2.0t	HS1	1	DAEMYUNG	TAEJIN	P206R-2H-01
103	HEAT SINK	150X20X32 2.0t	HS2	1	DAEMYUNG	TAEJIN	
104	SCREW	PH 3X10	For BD2,U4,Q3,6,7,D2,4,10,12,13	10	HANYANG		
105	SCREW	PH 3X6	For HS1,2	4	HANYANG		
106	SCREW	FH 3X5	For INSULATION PAD	3	HANYANG		
107	AC INLET	RF-2001C22090A	PH1	1	RONG FENG		
108	CONNECTOR	SMW200-8	CN3	2	YEONHO		
109	CONNECTOR	SMW200-12	CN1,2	1	YEONHO		
110	INSULATION PAD	126X110X23 0.2t(도면 참조)	CHASSIS	1	SKC		P206R-2B-01
111	SHIELDING BAG	340X210 0.075mm		1	IL SHIN		
112	FG TERMINAL	5.5PHIx3.5PHI		3	CIMA		
113	CARTON BOX			1/10	MILSUNG		