Service Manual

LCD Monitor E2009W

Service Manual Versions and Revision

No.	Version	Release Date	Revision
1	1.0	2008-9-1	Initial Release

Dell E2009 Service Manual

Table of Contents

Chapter 1- PRECAUTIONS & SAFETY NOTICES

SAFETY PRECAUTIONS

This monitor is manufactured and tested on a ground principle that a user's safety comes first. However, improper used or installation may cause damage to the monitor as well as to the user.

WARNINGS:

- This monitor should be operated only at the correct power sources indicated on the rating label on the rear cover of the monitor. If you're unsure the power supply in your residence, consult your local dealer or Power Company.
- Use only the specified power cord that comes with this monitor.
- Do not try to repair the monitor by yourself, as it contains no user-serviceable parts. This monitor should only be repaired by a qualified technician.
- Do not remove the monitor cabinet. There is high-voltage parts inside that may cause electric shock to human bodies.
- Stop using the monitor if the cabinet is damaged. Have it checked by a service technician.
- Put your monitor only in a lean, cool, dry environment. If it gets wet, unplug the power cable immediately and consult your closed dealer.
- Always unplug the monitor before cleaning it. Clean the cabinet with a clean, dry cloth. Apply non-ammonia based cleaner onto the cloth, not directly onto the class screen.
- Do not place heavy objects on the monitor or power cord.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts, which do not have the same safety characteristics as specified in the parts list, may create shock, fire, or other hazards.

SERVICE NOTES

- When replacing parts on circuit boards, clamp the solder wires around terminals before soldering.
- Keep wires away from high voltage, high temperature components and sharp edges.
- Keep wires in their original position so as to reduce interference.
- Adjustment of this product please refers to the user' manual.
- Use Pb free solder wire for circuit board preparation.

Chapter 2- SERVICE TOOLS & EQUIPMENT REQUIRED

1. SIGNAL GENERATOR
2. MULTIMETER
3. SCREW DRIVER
4. OSCILLOSCOPE
5. Soldering IRON
6. SOLDER (Lead free, RoHS compliance)
7. Color Analyzer
8. Fox_VISP_Programmer
9. Fox_VEDID_Programmer

Chapter 3- CIRCUIT THEORY

Block Diagram

There are 4pcs PCBA in this monitor, one is power& inverter board which is a single layer board, one is interface board , one is keypad which is OSD control. The system function block diagram as below
This PWA is included switching power supplier, inverter for CCFL and interface board.(fig.1)

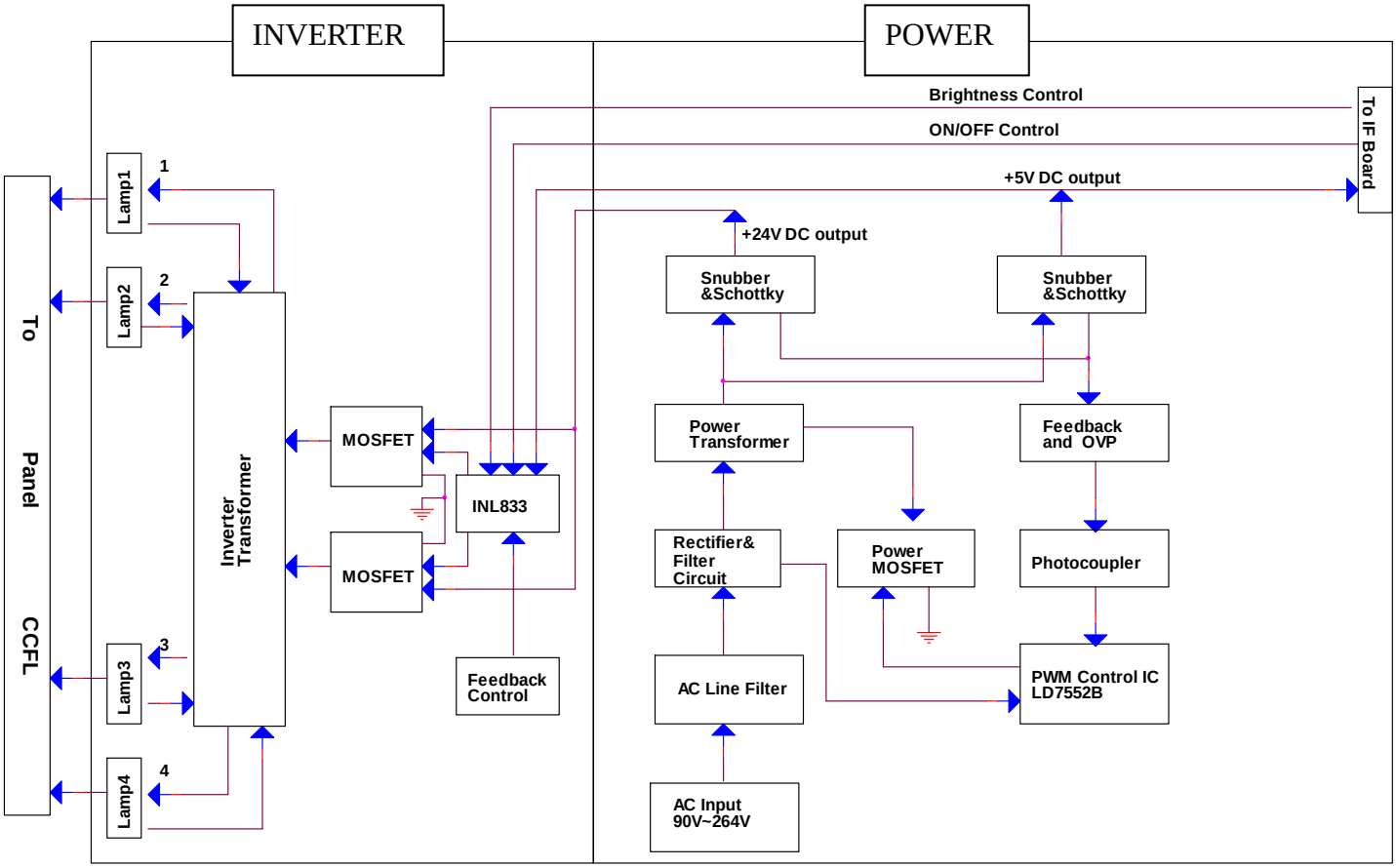


Fig.1

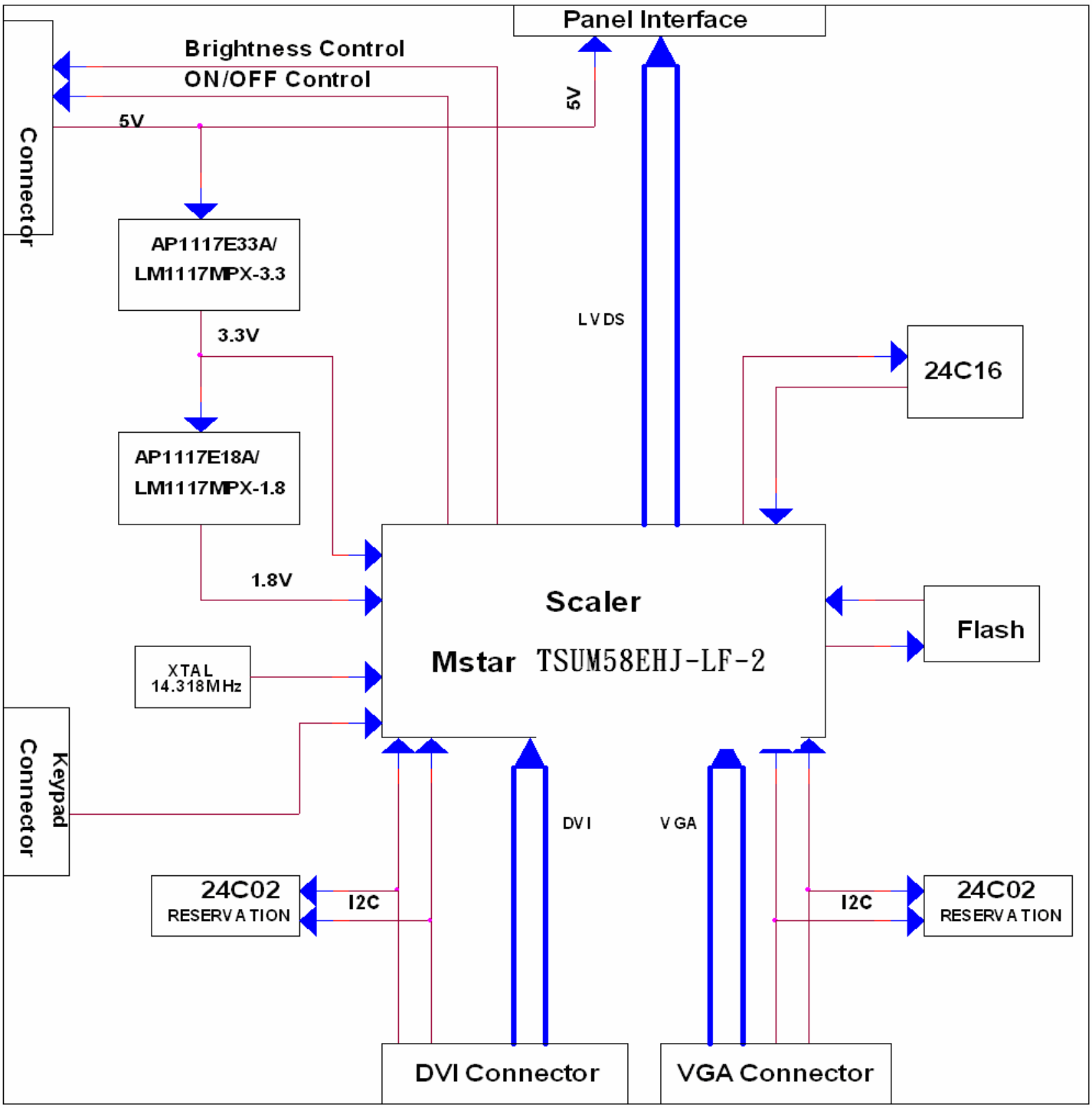

Panel Interface
Brightness Control
ON/OFF Control
5V
5V
Connector
AP1117E33A/
LM1117MPX-3.3
3.3V
LVDS
24C16
AP1117E18A/
LM1117MPX-1.8
1.8V
Scaler
Mstar TSUM58EHJ-LF-2
Flash
XTAL
14.318MHz
Keypad
Connector
DVI
VGA
24C02
RESERVATION
I2C
I2C
24C02
RESERVATION
DVI Connector
VGA Connector

Fig.2

Electronic Circuit Theory

2.1. Inverter PWM circuit

Inverter Control circuit:(fig.2.1)

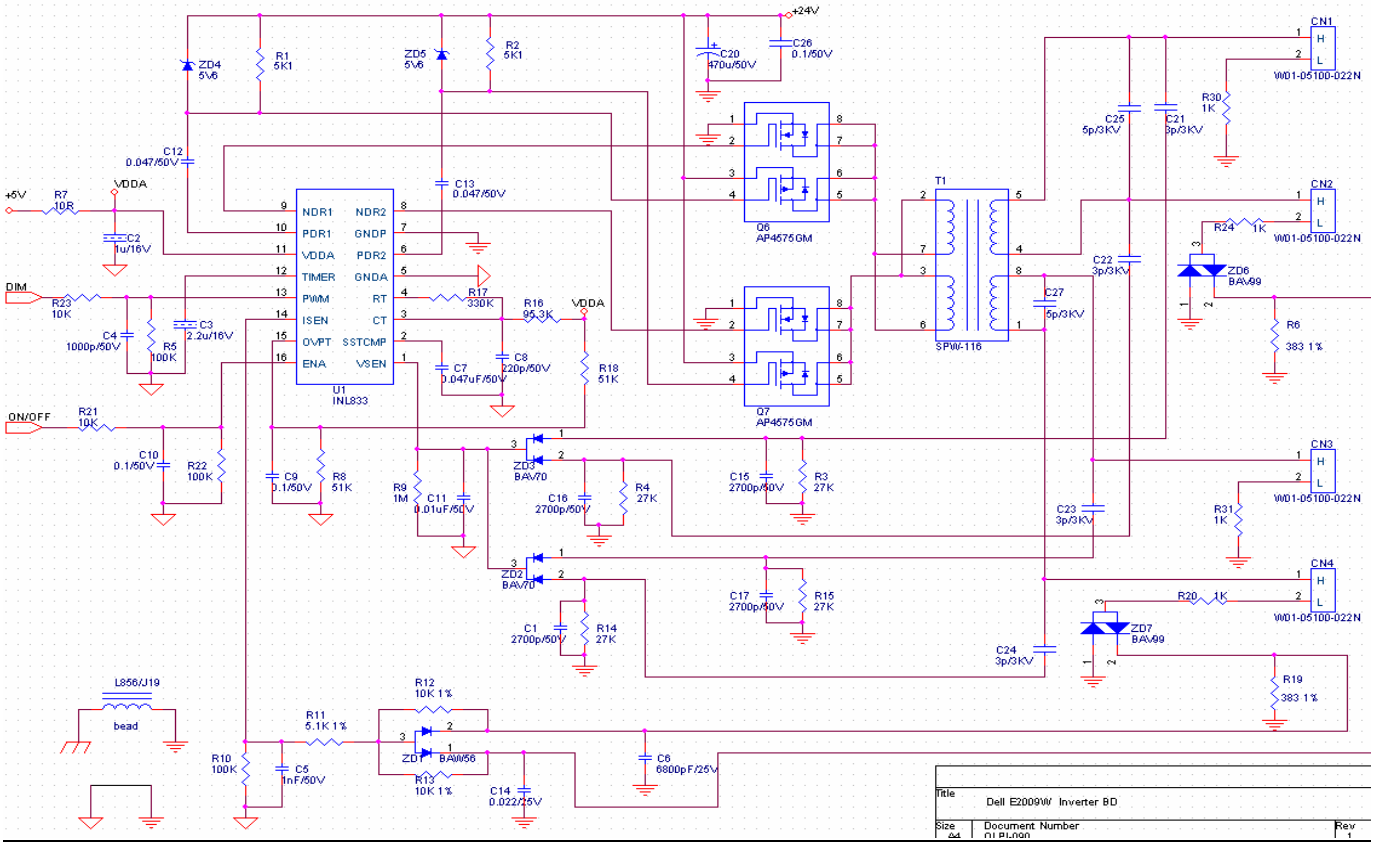


Fig.2.1

DC_5V through R7 and C2 will provide power for U1 on the pin11.

EN-ON/OFF voltage signal coming from scalar which is on IF BD will enable U1 to work. During start up,appling a voltage level greater than 2V to ENA(pin16)enables the IC. A voltage less than 1V will disable the IC.If no current is sensed approximately 2 seconds, U1 shuts off. R21 is used to limit current.C10 is used to dump noise, C7 is used to soft start, and then the voltage on pin 16 will enable U1.Once the voltage at the ISEN pin reaches the lamp on threshold, the IC switches from the striking mode to the normal operation mode and the PWM dimming control is activated.

PWM duty cycle signal through R23 and C4 is on Pin 13(PWM), which adjusted will can change the brightness of Panel.

The striking and operating frequency is determined by the external resistor (R17/R16 and C8) connected to Pin 3 and Pin4.

DRV1 and DRV2 of U1 are used to drive Q6 and Q7 . DRV1 and DRV2 are controlled by build-in PWM IC. Q6 and Q7 are switches which has two build-in N+P IGBTs.

The voltage signal on negative pole of ZD6/ZD7 sensed through R6/R19 comes to Pin14 of U1, ISEN (Lamp Current Detection & Control). The CCFL current is detected through R6/R19 and reaches a regulated value. The CCFL current detected at resistor R6/R19 is converted to a voltage level and input to the ISEN pin.Once the lamps are ignited and the voltage at pin14(ISEN) is >0.7V,the IC enters the normal operating mode and the PWM dimming control is activated.C5/C6/C14 is used to dump noise. Once the CCFLs are ignited and current is sensed through resistor R6/R19 ,capacitor C5 performs the loop compensation function. The voltage at IC pin2 controls the drive duty cycle of the power MOSFETs to regulate the CCFL current. The control loop regulates the average current through the lamps by adjusting the overlap of the output drives.

The transformer (T1) secondary winding leakage inductance and output capacitance(C25/C27) forms a lower pass filter,which converts the square-wave driving signal into a sinusoidal output voltage signal for CCFL.

The over-voltage protection feature is implemented by using an extermal capacitor devider(C1/C15/C16/C17) to sense the output voltage.The divide-down voltage signal is sent to the IC Pin1(VSEN) ,thus regulating the output voltage.

If a CCFL is removed, fails or damaged during normal operation, CCFL current is no longer sensed and the voltage on ISEN pin drops. The voltage at the SSTCMP(pin2)rises rapidly because there is no current feedback at ISEN(pin14).When the voltage at SSTCMP reaches a threshold of approximately 2V and ISEN is less than 0.7V,a current source charges the capacitor(C3) connected to TIMER(pin12).Once the voltage level at the TIMER pin reaches a threshold of approximately 3V,the drive outputs shut down and latch.To resume operation,toggle the ENA signal or restart VDDA.

Over-voltage and over-current protection are monitored by the voltage on VSEN(pin1).During normal operation,if a CCFL is damaged or removed,the voltage at VSEN exceeds the user-defined, preset voltage set by OVPT(pin15),the driver output duty cycle is regulated and the shutdown delay timer is activated.OVPT sets the overall protection threshold voltage that is lower than3V(VSEN threshold. Once the voltage at TIMER pin reaches 3V,the IC will shut down and latch. OVPT voltage setting is determined by a resistor divider(R16/R8)connected to the OVPT.

2.2.Power PWM circuit

2.2.1 AC Input and EMI Filter:(fig.2.2.1)

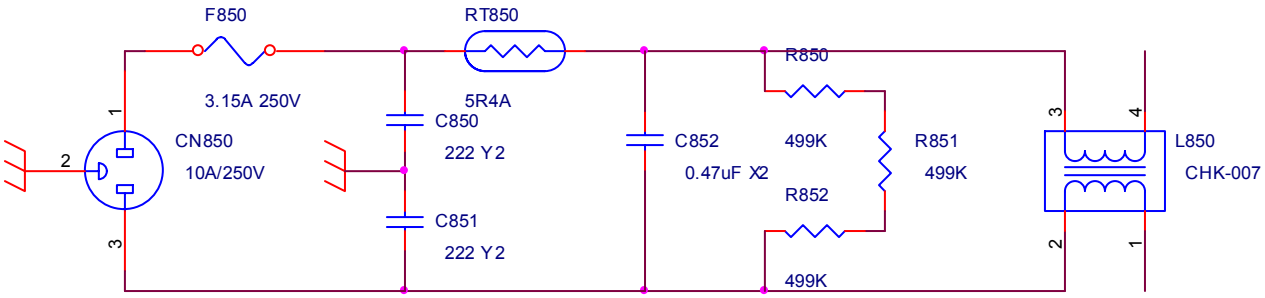


fig.2.2.1

CN850 is a connector for connecting AC Power. F850 is a fuse to protect all the circuit AC. Input voltage is from 90V to 264V. R850,R851and R852 are joined between two inputting main circuit to prevent man from shock. L850 is used to clear up low frequency wave. C850 and C851 are used to discharge the waves that L850 produced. High frequency waves are damped by C852.

2.2.2 High Voltage to Low Voltage Control Circuit:(fig.2.2.2)

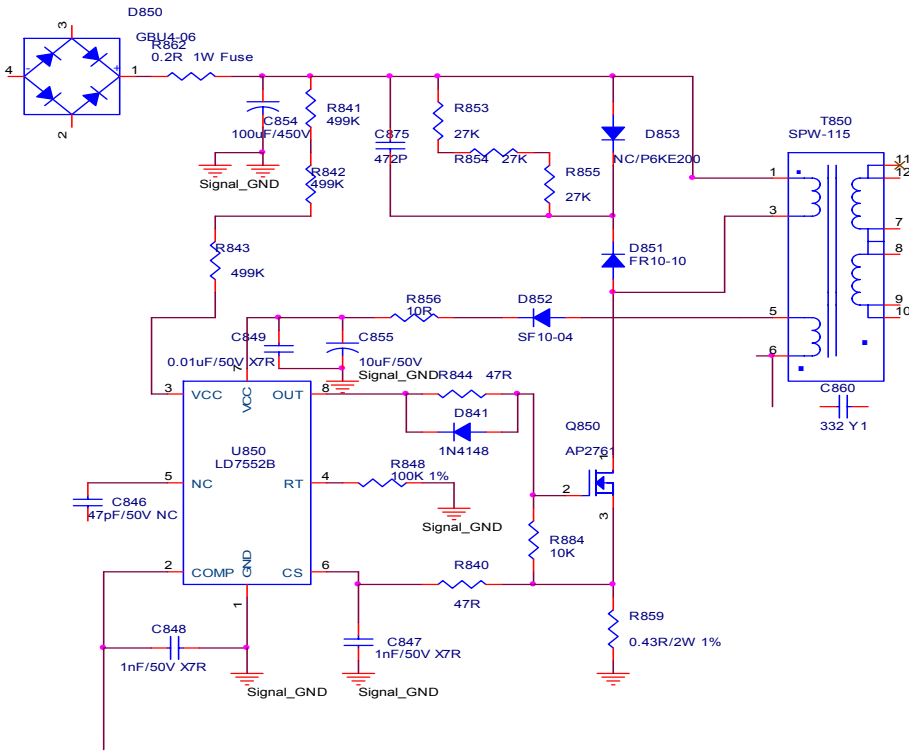


fig.2.2.2

D850 is a rectifier in which there are 4 build-in diodes, inverting AC to DC.

C854 is used to smooth the wave from rectifier. R852 is a fuse resistor to protect the following circuit when inrush current is too large. U850 is a highly integrated PWM controller. Typical start-up current for U850 is only 20 uA, R841,R842 and R843 are serial circuit to limit current flow. When current flow through R841,R842 and R843 gets to Pin 3 of U850, with VDD hold-up capacitor C855, U850 is enough for starting up.

When U850 begins to work Pin8 of U830 will output square wave to drive Q850,and then the main current flow get to GND bypassing through T850, Q850. Because of the change of current flow, wires in the other side of T850 will induct current.At the same time, the current inducted by wires which connected T850 Pin 5 and Pin 6, with components of D852, R856, C855 and C849, will be supplied to U850 for normal operating.

When the sense voltage across the sense resistor R859, reaches the threshold voltage around 0.85V, the output GATE drive will be turned off. Every time when the output of power supply is shorted or over loaded, the FB voltage will increase, the build-in PWM output will then be turned off. Both will prevent the power supply from being overheated under over loading condition. The PWM duty cycle is determined by this current sense signal and VFB, the feedback voltage. The voltage feedback signal is provided from the TL431 at the secondary side through the photo-coupler to the COMP pin of the LD7552B.

When the voltage on sense pin reaches Vcomp =(Vcomp-2Vf)/3, a switch cycle will be terminated immediately. Vcomp is internally clamped to a variable voltage around 1.2 V for output power limit.The LD7552B can be turned off by pulling COMP pin lower than 1.2V.The gate output pin of the LD7552B will be disabled immediately under such condition .The off-mode can be released when the pull-low signal is removed.

When Q850 are turned off, the main current flow will be consumed through D851, C875 R853,R854 and R855. This will prevent Q850 from being damaged under large current impulse and voltage spike.

2.2.3 DC_24V and 5V Output Circuit and Feedback circuit:(fig.2.2.3)

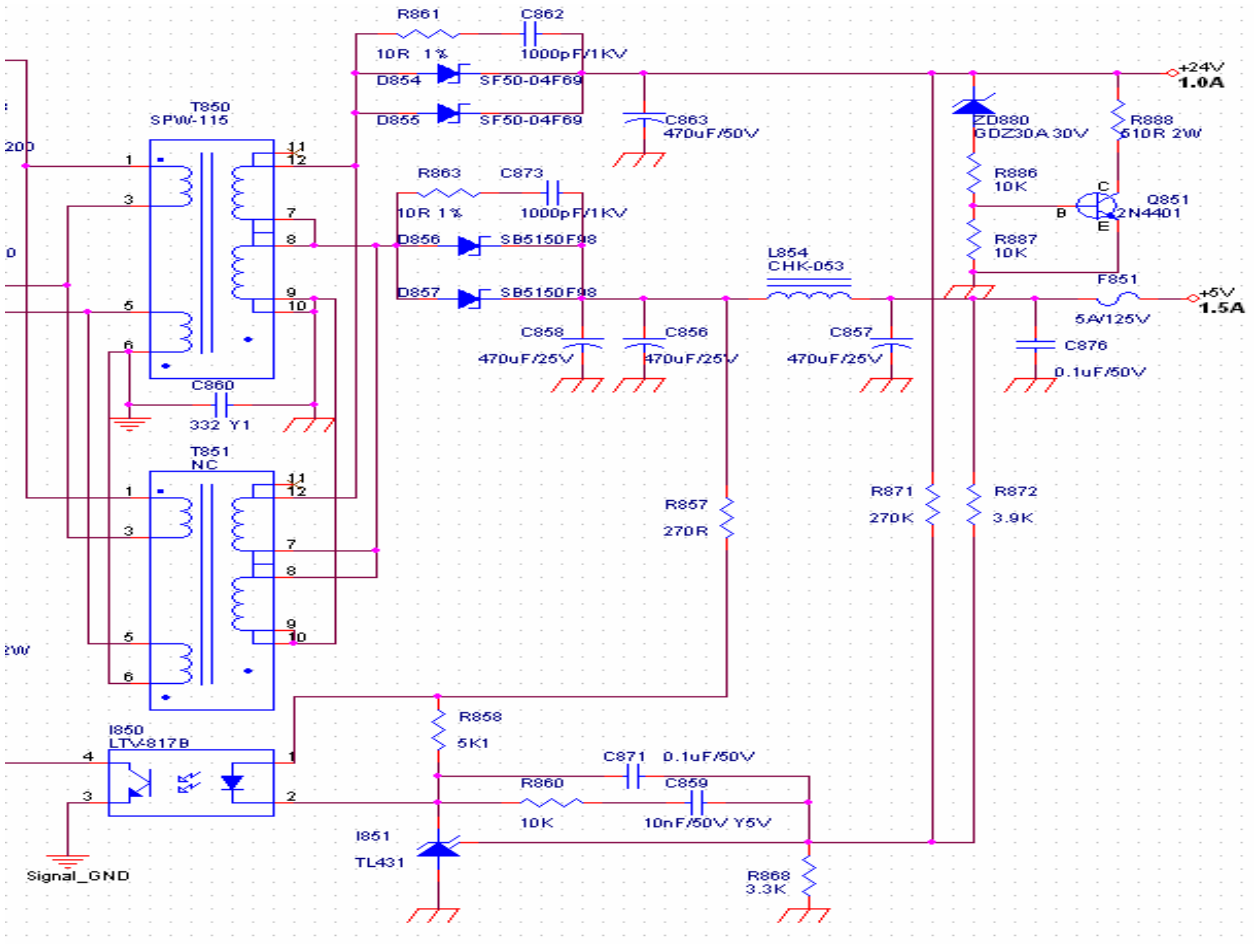


fig.2.2.3

D854&D855 are used to rectify the inducted current. R861 & C862 are used to store energy when current is reversed. The parts including C863 is used to smooth the current waves that are from D854&D855, and then 24V voltage is supplied.

D856&D857 are used to rectify the inducted current. C873 are used to store energy when current is reversed. The parts including C856, C857, C858 ,C876 and L854 are used to smooth the current waves that are from D856&D857, and then 5V voltage is supplied.

24V and 5V supply voltage feed back to PWM controller U850 via R871, R872, R868 and I850,I851.R860,C859 and C871 used to control respond time.

LD7552B are implemented an OVP function on Vcc.Whenever the Vcc voltage is higher than the OVP threshold voltage,the output gate drive circuit will be shutdown simultaneously thus to stop the switching of the power MOSFET until the next on.

2.3 I/F Board Circuit (see the Attachment 2- Schematic)

2.3.1 RGB CAPTURE

- Signal RED,GREEN,BLUE input through CN102 #1,#2,#3, Stop DC via C113, C114 and C115, and then enter into U105 (TSUM58EHJ-LF-2) analog input PIN #28,#25,#23, and then TSUM58EHJ-LF-2 deals with signal internally. D103, D104, D105 are ESD protector to prevent U105 from ESD.
- Signal DDC_SCL (series clock) inputs via CN102#15, and then passes through ZD106 for ESD protection, goes into EDID EEPROM IC U103 #6.
- Signal DDC_SDA (series data) inputs via CN102#12, and then passes through ZD103 for ESD protection, goes into EDID EEPROM IC U103 #5.
- Signal TTL vertical sync. (Vsync) inputs via CN102 #14, and then clamped by ZD105 Zener, passes through R134, and then goes into IC U105 (TSUM58EHJ-LF-2) #33.
- Signal TTL horizontal sync. (Hsync) inputs via CN101 #13, and then clamped by ZD102 Zener, passes through R133, and then goes into IC U105 (TSUM58EHJ-LF-2) #32.
- CN101#5 is defined as cable detect pin, this detector realize via R121 and U104#36, and D102 is ESD protector.
- U103 +5V is supplied by PC via CN102#9 with ZD102 for ESD protection, or supplied by Monitor self via D106
- U103 is an EEPROM IC which is memory and EDID data saved in it.

2.3.2 DVI CAPTURE

- Differential Signal input RX0+,RX0-,RX1+,RX1-,RX2+,RX2-,RXC+,RXC- through CN201 #18,#17,#10,#9,#2,#1,#23,#24 via R206,R205,R204,R203,R202,R201,R207,R208 enter into U105 (TSUM58EHJ-LF-2) Digital input terminal #16,#15,#13,#12,#10,#9,#18,#19, and then TSUM58EHJ-LF-2 deals with signal internally. D206, D207, D204, D205, D202, D203, D208, D209 are ESD protector to prevent U105 from ESD
- Signal DDC_SCL (series clock) inputs via CN201#6, and then passes through ZD204 Zener for ESD protection, via R209, goes into EDID EEPROM IC U201 #6.
- Signal DDC_SDA (series data) inputs via CN201#7, and then passes through ZD203 Zener for ESD protection, via R210, goes into EDID EEPROM IC U201 #5.
- CN201#15 is defined as cable detect pin, this detector realize passes through R216 ,go into U105#49, and D210 is ESD protector.
- U201 +5V is supplied by PC via CN201#14 through D201, or supplied by Monitor self via D201.
- U201 is an EEPROM IC which is memory and DVI input EDID data saved in it.

2.3.3 Buttons Control

- Button “Power” on front bezel connects to U105 (TSUM58EHJ-LF-2) #4 through CN104 #8, U105 #4 is defined as power on/off.
- Button “+” on front bezel connects to U105 (TSUM58EHJ-LF-2) #120 through CN104 #2, U105#120 Voltage is defined as “Plus”.
- Button “-” on front bezel connects to U105 (TSUM58EHJ-LF-2) #121 through CN104 #3, U105 #121 Voltage is defined as “Minus”.

- Button “Menu” on front bezel connects to U105 (TSUM58EHJ-LF-2) #50 through CN104 #1, U105 #50 Voltage is defined as “Menu”.
- Button “SELECT” on front bezel connects to U105 (TSUM58EHJ-LF-2) #122 through CN104 #4, U105 #122 Voltage is defined as “SELECT”.
- LED Indicator on Front Bezel
  a. When press button “power”, U105 (TSUM58EHJ-LF-2) #123 be send in low Voltage, make Q107#3 sends out high Voltage , and then to CN01#5 on keypad, LED green on.
  b. When in “Suspend” mode, U105 (TSUM58EHJ-LF-2) #124 sends out a low Voltage, make Q108#3 sends out high Voltage and then to CN01 #7 on keypad, LED Amber ON.

2.3.4 MATAR CHIP U105 (TSUM58EHJ-LF-2)

- U105 (TSUM58EHJ-LF-2) #91~#100 output 8 bit even and #77~#86 output 8 bit odd LVDS digital data to panel control circuit through CN103.
- U105 (TSUM58EHJ-LF-2) #73 output PPWR ”H” potential to make Q104 conducted, and then make Q101 conducted, +5V flow to CN103#1~#3 as Panel Vdd .
- U105 (TSUM58EHJ-LF-2) #109 output CCFL_ON/OFF ”L” potential to control Inverter on/off.
- U105 (TSUM58EHJ-LF-2) #125 outputs Brightness “PWM” signals to control CCFL brightness.
- TCLK by Crystal 14.318MHz input to U105 (TSUM58EHJ-LF-2) #128/#127.
- U105 (TSUM58EHJ-LF-2)#108 is RESET signals input pin

Please refer to U105 (TSUM58EHJ-LF-2) Pin Assignments table in page

2.3.5 Regulator Circuit

- +3.3V is generated from Regulator U101 which is supplied by+5V via R101 and through C104 filtering,
-+1.8V is generated from Regulator U102 which is supplied by+3.3V through C106 filtering,

3. FACTORY PRESET TIMING TABLE

Standard	Resolution	Horizontal Frequency (KHz)	Vertical Frequency (Hz)
VESA	640 x 480	31.469	59.940
	640 x 480	37.500	75.000
	800 x 600	37.879	60.317
	800 x 600	46.875	75.000
	1024 x 768	48.363	60.004
	1024 x 768	60.023	75.029
	1152x864	67.500	75.000
	1280x1024	48.483	60.042
	1280x1024	60.087	75.034
	1680x1050	55.935	59.887
IBM DOS	720 x 400	31.469	70.087

4. Power On/Off Sequency

Hardware power On/Off

When power cord plug into AC socket, Power provides 26V and DC_5V.

DC_5V is main voltage for panel and Regulator U101.

DC_3.3V is coming from Regulator U101, DC_3.3v is main voltage for U105. When DC_3.3V input to U105 and U105 reset circuit active, U105 all registers will be set to default, that means finish hardware power on.

When pull out power cord from AC socket,the system shut down instantly for no supply

Software power On/Off

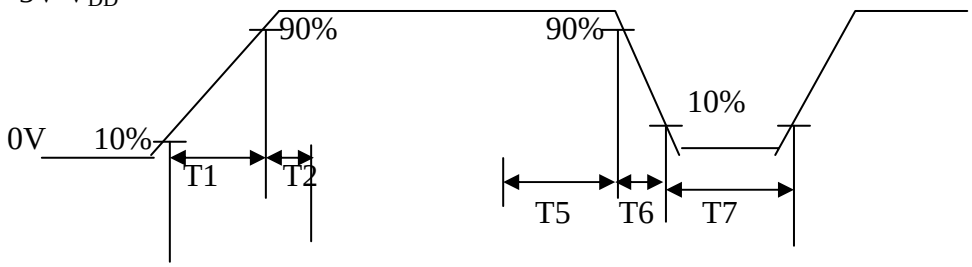
- When press power key, U105 #4 receives low pulse, then U105 (TSUM58EHJ-LF-2) will be wake up

and send control signals(at 73,109pin) to on CCFL and switch 5.0v to panel module, at the same time,U105 make the VGA/DVI cable input signal source display normal on panel if the VGA/DVI cable input signal is active

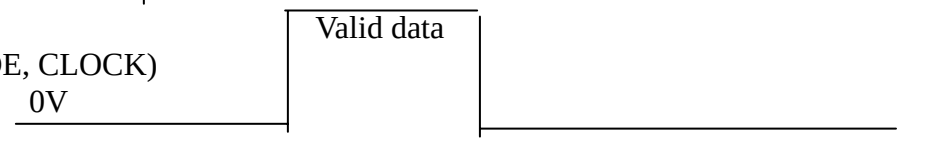
- If power ON, U105 #123 (LED_blue) will send out low potential, and then LED blue on.
- If power saveing, U105 #124 (LED_Amber) will send out low potential, and then LED Amber on.
- If power ON or power saveing, when press power key, U105 #4 receives low pulse, then U105 will be sleeping and turn off backlight, at the same time, the panel will lose +5V.

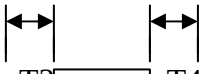
The Panel_Vcc, Backlight_En, CLK/DATA output to panel will follow the following sequency.

Power supply for panel+5V V_{DD}



Signals
(Digital RGB, HS, VS, DE, CLOCK)

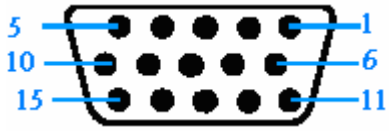




Power supply for backlight

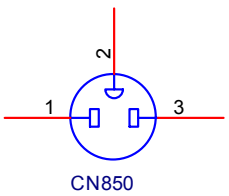
	T1(ms)	T2 (ms)	T3 (ms)	T4 (ms)	T5 (ms)	T6 (ms)	T7(ms)
SPEC(Samsung)	0.3~10	0.0~50	>500	>100	0.0~50	NA	>1000
SPEC (AUO)	0.5~10	0.0~50	200~	200~	0.5~50	NA	>1000

5. D-SUB Connector Pin Assignment



Pin	Symbol	Pin	Symbol	Pin	Symbol
1	Red	6	Red_GND	11	GND
2	Green	7	Green_GND	12	DDC_SDA
3	Blue	8	Blue_GND	13	Hsync
4	GND	9	PC+5V	14	Vsync
5	Cable Detect	10	GND	15	DDC_SCL

6. AC Outlet Pin Assignment



Pin	Symbol	Description
1	Line	
2	GND	
3	Neutral	

7. Inner Connector Pin Assignment

7.1 CN103 (Connect M/B to Panel,)

Pin	Symbol	Description
1	Panel_Vcc	Panel power supply (typ.5.0V)
2	Panel_Vcc	Panel power supply (typ. 5.0V)
3	Panel_Vcc	Panel power supply (typ. 5.0V)
4	NC	
5	NC	
6	NC	

7	GND_LVDS	LVDS Ground
8	RXE3+	LVDS signal of even channel 3(-)
9	RXE3-	LVDS signal of even channel 3(+)
10	RXEC+	LVDS signal of even channel clock (+)
11	RXEC-	LVDS signal of even channel clock (-)
12	RXE2+	LVDS signal of even channel 2(+)
13	RXE2-	LVDS signal of even channel 2(-)
14	GND_LVDS	LVDS Ground
15	RXE1+	LVDS signal of even channel 1(+)
16	RXE1-	LVDS signal of even channel 1(-)
17	GND_LVDS	LVDS Ground
18	RXE0+	LVDS signal of odd channel 0(+)
19	RXE0-	LVDS signal of odd channel 0(-)
20	RXO3+	LVDS signal of odd channel 3(+)
21	RXO3-	LVDS signal of odd channel 3(-)
22	RXOC+	LVDS signal of even channel clock (+)
23	RXOC-	LVDS signal of even channel clock (-)
24	GND_LVDS	LVDS Ground
25	RXO2+	LVDS signal of even channel 2(+)
26	RXO2-	LVDS signal of even channel 2(-)
27	RXO1+	LVDS signal of even channel 1(+)
28	RXO1-	LVDS signal of even channel 1(-)
29	RXO0+	LVDS signal of odd channel 0(+)
30	RXO0-	LVDS signal of odd channel 0(-)

7.2 CN1, CN2, CN3, CN4 (Connect to Panel Backlight,)

Pin	Symbol	Description
1	HV	High voltage for lamp
2	LV	Low voltage for lamp

7.3 CN104 (Connect to keypad, WAFER2*4P or compatible connector)

Pin	Symbol	Description
1	MENU	OSD “MENU” control
2	PLUS	OSD “+” control and “Brightness/Contrast” adjustable hot key
3	MINUS	OSD “-” control and “Auto adjust” adjustable hot key
4	SELECT	OSD “input source Select” control
5	LED Green	LED Green on/off control
6	GND	Ground
7	LED Amber	LED amber on/off control
8	POWER	Ground

8. Key Parts Pin Assignments

U105(TSUM58EHJ-LF-2)

Analog Interface

Pin Name	Pin Type	Function	Pin
HSYNC0	Schmitt Trigger Input w/ 5V-tolerant	Analog HSYNC Input	32
VSYNC0	Schmitt Trigger Input w/ 5V-tolerant	Analog VSYNC Input	33
REFP		Internal ADC Top De-Coupling Pin	31
REFM		Internal ADC Bottom De-Coupling Pin	30
RIN0P	Analog Input	Analog Red Input	28
RIN0M	Analog Input	Reference Ground for Analog Red Input	27
SOGIN0	Analog Input	Sync-On-Green Input	26
GIN0P	Analog Input	Analog Green Input	25
GIN0M	Analog Input	Reference Ground for Analog Green Input	24
BIN0P	Analog Input	Analog Blue Input	23
BIN0M	Analog Input	Reference Ground for Analog Blue Input	22
REXT		External Resistor 390 ohm to AVDD_33	7

DVI Interface

Pin Name	Pin Type	Function	Pin
RX0N	DVI Input	Negative DVI Input for Data Channel 0	16
RX0P	DVI Input	Positive DVI Input for Data Channel 0	15
RX1N	DVI Input	Negative DVI Input for Data Channel 1	13
RX1P	DVI Input	Positive DVI Input for Data Channel 1	12
RX2N	DVI Input	Negative DVI Input for Data Channel 2	10
RX2P	DVI Input	Positive DVI Input for Data Channel 2	9
RXCKN	DVI Input	Negative DVI Input for Clock Channel	19
RXCKP	DVI Input	Positive DVI Input for Clock Channel	18

Serial Flash Interface

Pin Name	Pin Type	Function	Pin
SDO	Input w/ 5V-tolerant	SPI Flash Serial Data Output	41
CSZ	Output	SPI Flash Chip Select	42
SCK	Output	SPI Flash Serial Clock	43
SDI	Output	SPI Flash Serial Data Input	44

LVDS Interface

Pin Name	Pin Type	Function	Pin
LVA0M	Output	LVDS A-Link Channel 0 Negative Data Output	86
LVA0P	Output	LVDS A-Link Channel 0 Positive Data Output	85
LVA1M	Output	LVDS A-Link Channel 1 Negative Data Output	84
LVA1P	Output	LVDS A-Link Channel 1 Positive Data Output	83
LVA2M	Output	LVDS A-Link Channel 2 Negative Data Output	82
LVA2P	Output	LVDS A-Link Channel 2 Positive Data Output	81
LVA3M	Output	LVDS A-Link Channel 3 Negative Data Output	78
LVA3P	Output	LVDS A-Link Channel 3 Positive Data Output	77
LVACKM	Output	LVDS A-Link Negative Clock Output	80
LVACKP	Output	LVDS A-Link Positive Clock Output	79
LVB0M	Output	LVDS B-Link Channel 0 Negative Data Output	100
LVB0P	Output	LVDS B-Link Channel 0 Positive Data Output	99
LVB1M	Output	LVDS B-Link Channel 1 Negative Data Output	98
LVB1P	Output	LVDS B-Link Channel 1 Positive Data Output	97
LVB2M	Output	LVDS B-Link Channel 2 Negative Data Output	96
LVB2P	Output	LVDS B-Link Channel 2 Positive Data Output	95
LVB3M	Output	LVDS B-Link Channel 3 Negative Data Output	92
LVB3P	Output	LVDS B-Link Channel 3 Positive Data Output	91
LVBCKM	Output	LVDS B-Link Negative Clock Output	94
LVBCKP	Output	LVDS B-Link Positive Clock Output	93

GPIO Interface

Pin Name	Pin Type	Function	Pin
GPIO_P14 / PWM0	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	2
GPIO_P15	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	3
GPIO_P16	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	4
GPIO_P22 / PWM1	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	36
GPIO_P47-GPIO_P43	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	45-49
GPIO_P42	Input/Output	General Purpose Input/Output; 4mA driving strength	50
GPIO_P24 / PWM2	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	51

Pin Name	Pin Type	Function	Pin
GPIO_00-GPIO_02	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	55-57
GPIO_06	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	70
GPIO_P04 / PWM3	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	73
GPO_P42	Output	General Purpose Output; 4mA driving strength	75
GPO_P43	Output	General Purpose Output; 4mA driving strength	76
GPIO_P25 / PWM3	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	109
GPIO_P26 / PWM0	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	110
GPIO_P27 / PWM1	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	111
GPIO_07-GPIO_10	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength	115-118
GPIO_P00 / SAR0	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength / SAR ADC Input	119
GPIO_P01 / SAR1	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength / SAR ADC Input	120
GPIO_P02 / SAR2	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength / SAR ADC Input	121
GPIO_P03 / SAR3	I/O w/ 5V-tolerant	General Purpose Input/Output; 4mA driving strength / SAR ADC Input	122
GPIO_P06	I/O w/ 5V-tolerant	General Purpose Input/Output; 6/12mA programmable driving strength	123
GPIO_P07	I/O w/ 5V-tolerant	General Purpose Input/Output; 6/12mA programmable driving strength	124
GPIO_P13 / PWM2	I/O w/ 5V-tolerant	General Purpose Input/Output / Pulse Width Modulation Output; 4mA driving strength	125

Misc. Interface

Pin Name	Pin Type	Function	Pin
BYPASS		For External Bypass Capacitor	102
VCTRL	Output	Regulator Control	103
RST	Input w/ 5V-tolerant	Chip Reset; High Reset	108
MODE	Input	Chip Configuration Input; 10K ohm pull-low for normal operation	37

Pin Name	Pin Type	Function	Pin
DDCD_SDA	I/O w/ 5V-tolerant	DDC Data and HDCP Slave Serial Port Data for DVI Interface; 4mA driving strength	5
DDCD_SCL	Input w/ 5V-tolerant	DDC Clock and HDCP Slave Serial Port Clock for DVI Interface	6
DDCA_SDA / RS232_TX	I/O w/ 5V-tolerant	DDC Data for Analog Interface / UART Transmitter / General Purpose Input/Output; 4mA driving strength	34
DDCA_SCL / RS232_RX	I/O w/ 5V-tolerant	DDC Clock for Analog Interface / UART Receiver / General Purpose Input/Output; 4mA driving strength	35
I2C_MDA / GPIO_P11	I/O w/ 5V-tolerant	I2C Master Data / General Purpose Input/Output; 4mA driving strength	38
I2C_MCL / GPIO_P10	I/O w/ 5V-tolerant	I2C Master Clock / General Purpose Input/Output; 4mA driving strength	39
XIN	Crystal Oscillator Input	Xin	128
XOUT	Crystal Oscillator Output	Xout	127

Power Pins

Pin Name	Pin Type	Function	Pin
AVDD_33	3.3V Power	Analog Power	34, 44, 50, 52, 60
VDDP	3.3V Power	Digital Output Power	14, 67, 95, 103, 115
VDDC	1.8V Power	Digital Core Power	12, 68, 97, 117
GND	Ground	Ground	13, 38, 41, 47, 96, 116

No Connects

Pin Name	Pin Type	Function	Pin
NC		No connects	1-3, 5-10, 15-18, 80-94, 98-101, 128

8.1 U108 (Serial Flash)

Pin	Symbol	I/O	Description
1	CE#	I	The device is enabled by a high to low transition on CE#. CE# must remain low for the duration of any command sequence.
2	SO	I/O	To transfer commands, addresses, or data serially into the device.
3	WP#	I/O	The write protect (WP#) pin is used to enable/disable BPL bit in the status register.
4	VSS	G	Connect ground
5	SI	I/O	To transfer commands, addresses, or data serially into the device input are latched on the rising edge of the serial clock.
6	SCK	I/O	To provide the timing of serial interface. Commands, addresses, or input data are latched on the rising edge of the clock input, while output data is shifted out on the Falling edge of the clock input.
7	HOLD	I/O	To temporarily stop serial communication with SPI flash memory without resetting the device.
8	VDD	P	To provide power supply.

8.3 U850 (LD7552B, PWM Power Controller)

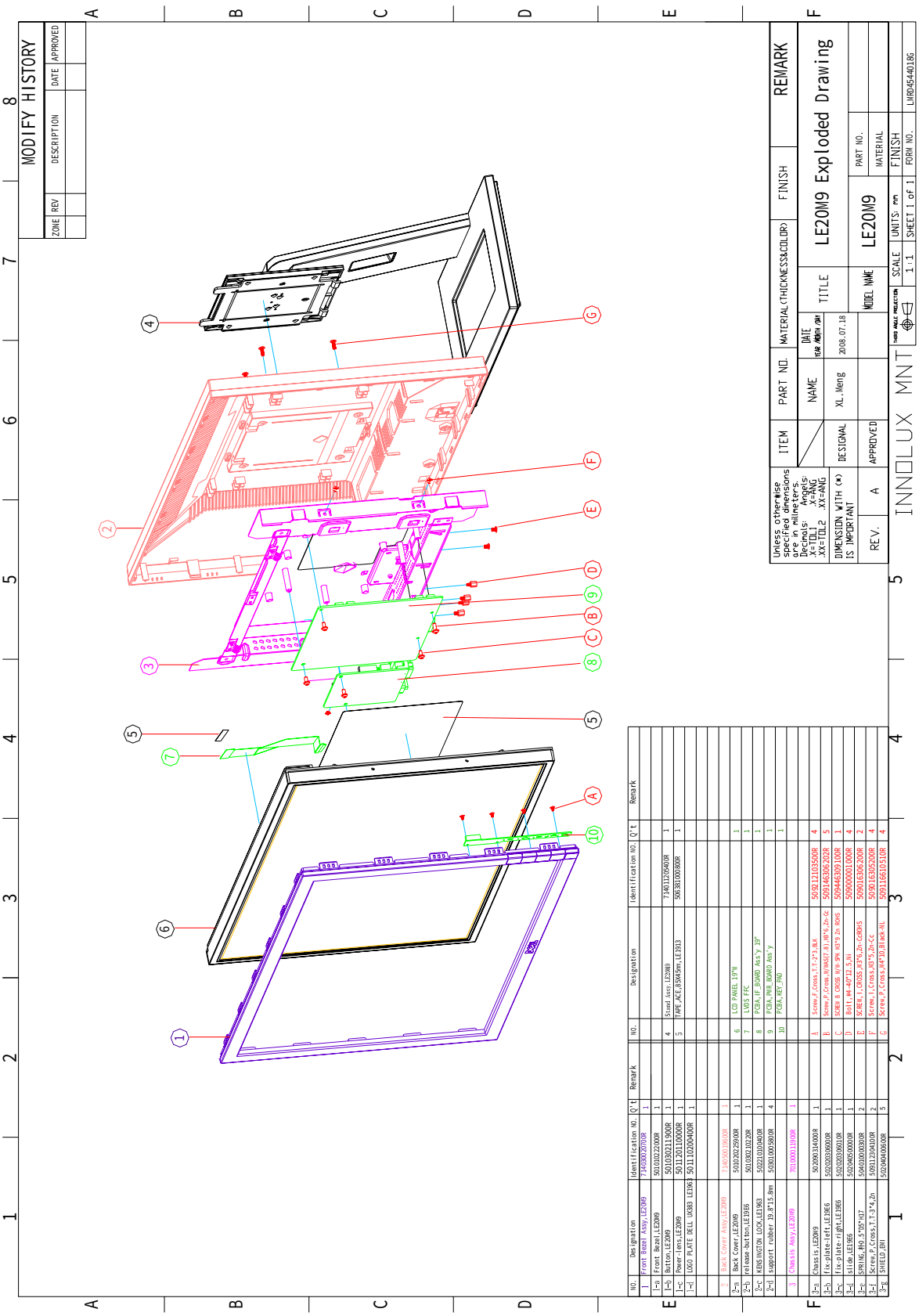
Pin	Symbol	I/O	Description
1	GND		Ground
2	COMP	I	Voltage feedback pin,by connecting a photo-coupler to close the control loop and achieve the regulation
3	VCC	I	Supply voltage pin
4	RT	I	This pin is to program the switching frequency. By connecting a resistor to ground to set the switching frequency.
5	NC		Unconnected pin
6	CS	I	Current sense pin,connect to sense the MOSFET current.
7	VCC	I	Supply voltage pin
8	Out	O	Gate drive output to drive the external MOSFET

8.4 U1 (INL833, CCFL Inverter controller IC)

Pin	Symbol	I/O	Description
1	VSEN	I	Voltage Sense Feedback
2	SSTCMP	I	Capacitor for Soft-Start and loop Compensation
3	CT	I	Timing Resistor and Capacitor for Operation and Striking Frequency
4	RT	I	Timing Resistor for Striking Frequency
5	GNDA		Signal Ground
6	PDR2	O	High Side Driver Output2
7	GNDP		Power Ground
8	NDR2	O	Low Side Driver Output2
9	NDR1	O	Low Side Driver Output1
10	PDR1	O	High Side Driver Output1
11	VDDA	I	Input Power Pin
12	TIMER	I	Timing Capacitor for Delay Timer
13	PWM	I	Ecternal PWM Dimming Input
14	ISEN	I	Current Sense Feedback
15	OVPT	I	Over-Voltage Protection Threshold Voltage
16	ENA	I	IC Enable/Disable

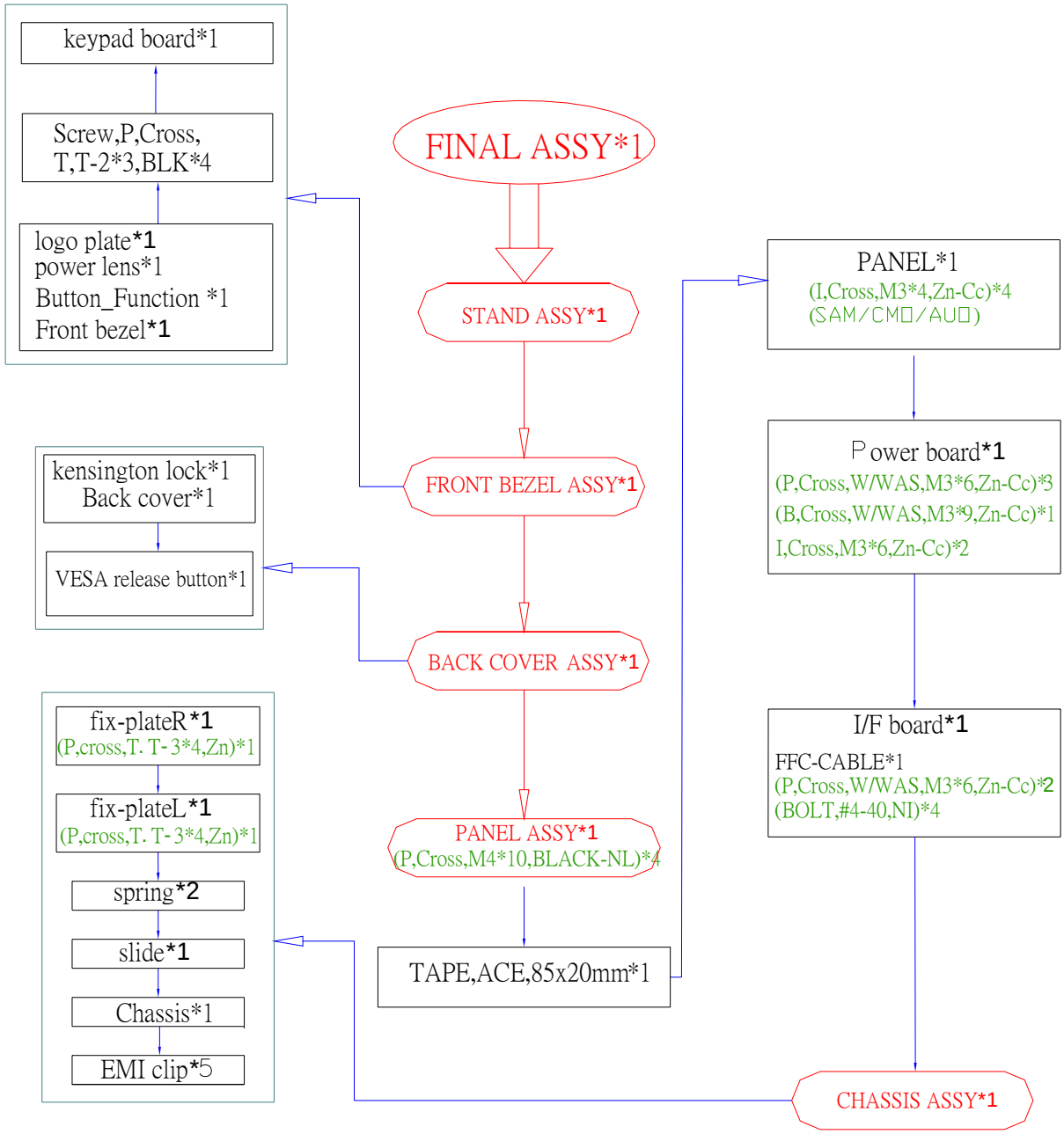
Chapter 4- Disassembly & Assembly

1. Exploded Diagram



2. E2009W Disassembly Block

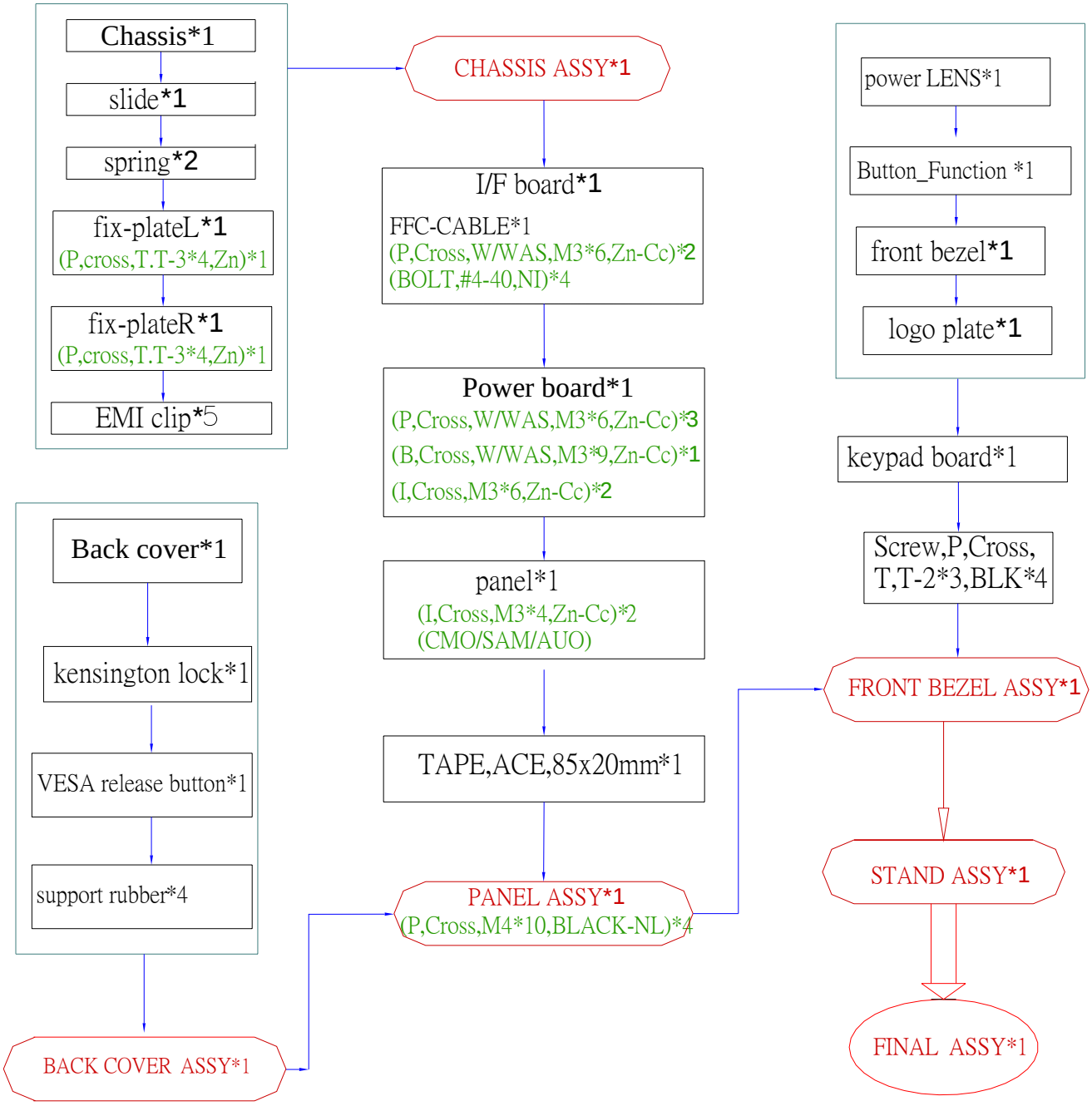
LE20M9 DISASSEMBLY BLOCK



Note: 1. The arrows point out the direction of disassembly.

3. Assembly Block

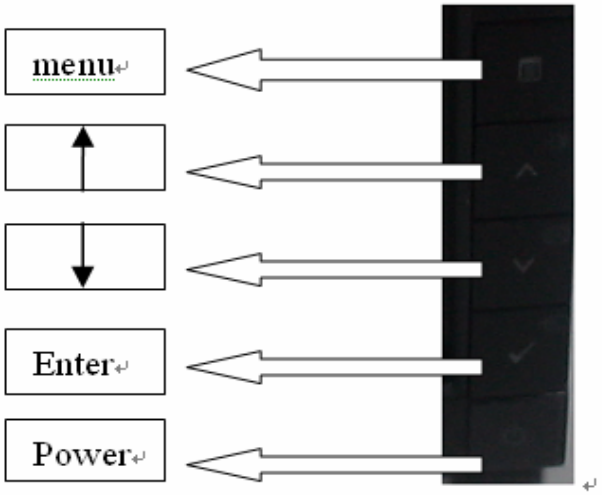
LE20M9 ASSEMBLY BLOCK



Note: 1. The arrows point out the direction of assembly

Chapter 5- TEST AND ADJUSTMENT

1. Function key Definitions



Power: On/Off, includes power indicator and Power ICON

Power Switch with power LED indicator — Blue - Active On

Amber- DPMS

Front Panel Controls — 1. *Menu:* Call out OSD Menu and choose

2. (+): symbol molded into button, calls out brightness/Contrast, move up the highlight bar.

3. (--)symbol molded into button, move down the highlight bar

4 .*Input select:* Select input signal

Hot Key Function — *Automatic adjust:* Directly press "-"

Brightness/Contrast Icon: Directly press "+"

Factory Modes Keys Function — *Auto Color Balance*

Purpose: Automatically calibrate chip ADC parameter by using chip internal DAC.

Process: If we want to do "*Auto Color Balance*" again, please confirm the following steps.

1) Connect the VGA cable with the standard video pattern generator and display the pattern with blackest and whitest colors.
2) Press "*Power Key*", to power off the monitor.
3) Press "*Menu Key*" and "*Up Key*" simultaneously, and then press "*Power Key*" to power on the monitor.
4) Press "Plus Key", and choose factory at bottom
5) Set Auto Color item to ON, then execute "Auto color" item.
6) After the "*Auto Color Balance*" process finished, go back to the submenu of "Other Settings", and press "Factory Reset" to exit Factory mode.

OSD Control

1st Level	2nd Level	3rd Level	4th Level	5th Level
Main Menu				
	Brightness/Contrast			
		Brightness		
		Contrast		
	Auto Adjust(For VGA)			
	Input Source	Auto Select		
		VGA		
		DVI-D		
	Color Setting			
		Input Color Format	RGB	YPbPr
		Mode Selection	Graphics	Video
		Preset Modes	Standard	Video
		Reset Color Settings	MultiMedia Game Warm sRGB Cool	
			Custom(R,G,B)	Back Red Green
		Horizontal Positon		
	Display Settings	Vertical Position	RGB	YPbPr
		Sharpness		
		Pixel Clock		
		Phase		
		Reset Display Settings		
	Other Settings	Language		
			Language	English Español Français Deutsch Brasil 簡體中文 日本語
		Menu Transparency		
		Menu Timer		

		Menu Lock	Unlock	Lock
		DDC/CI	Enable	Disable
		LCD Conditioning	Enable	Disable
		Factory Reset(Reset All settings)	Enable	Disable

Factory Mode Introduction

With signal input, press "*Power*" button to turn off the monitor. Press "*Menu*" and "*Auto/Plus*" buttons together, and then press "*Power*" button to turn on the monitor. After power on, press "*Menu*" button to call out Main Menu (Fig.9). Press "Plus Key", select"Other Settings Menu"then pop submenu and choose Factory to enter Factory mode (Fig.10).

Fig9

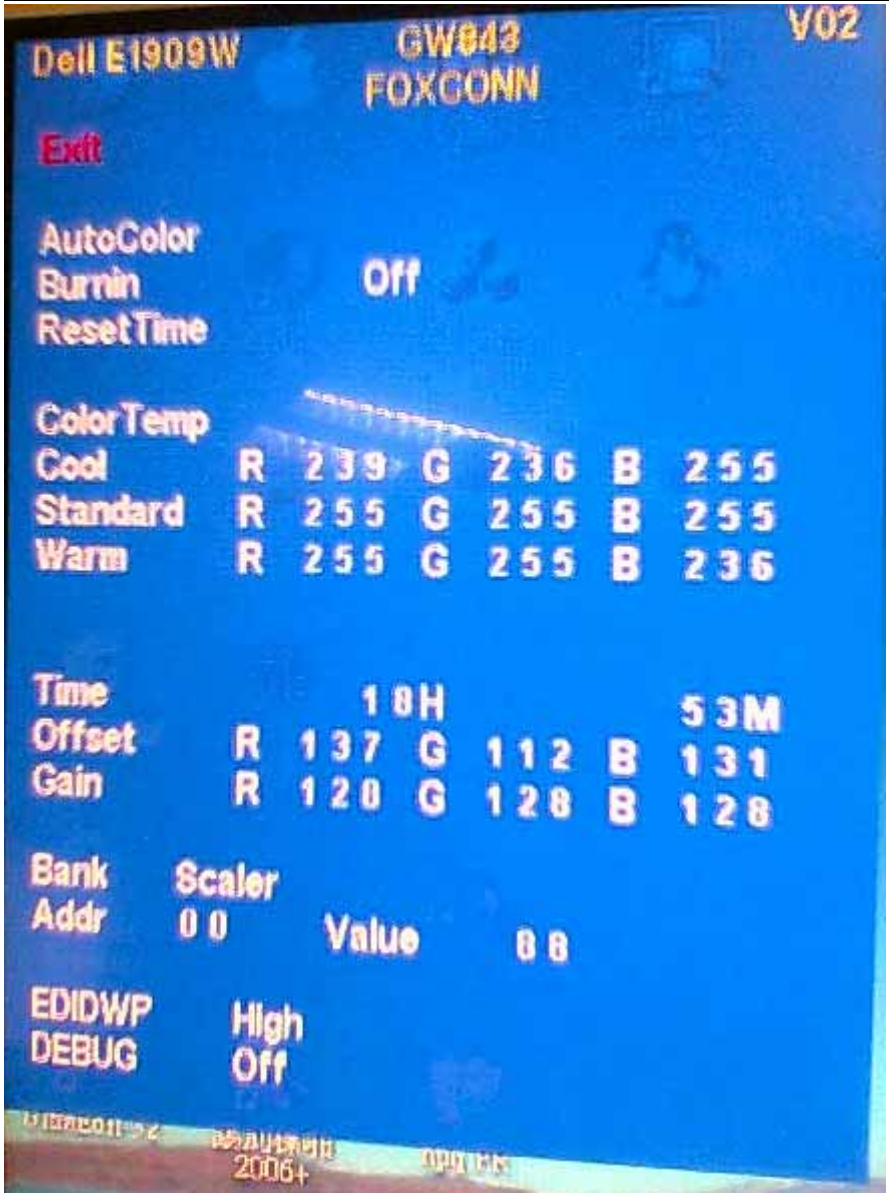


Fig10

Back: Exit from Factory mode and back to NO OSD Status.
Panel: The current-setting panel is highlighted.
Auto Color: Automatically calibrate chip ADC parameters by using internal DAC.
Burn In: Enable or disable the Burn-in mode by choosing ON or OFF.
Reset Timer: Reset the "Turn-on time" of the panel to 0H0M.
Color Temp: The R, G, B of Blue Preset (9300K), Red Preset (5700K) and Normal Preset (6500K) are generated from scaling chip's back-end white-balance program.
Time: Turn-on time of the panel.
DEBUG: Debug tool of scale IC U104.

Dell panel P/N

LCD supplier	Panel	Supplier P/N	Dell P/N
Samsung	19"W	LTM190M2L31	GW843
AUO	19"W	M190PW01	MY228

Burn-in pattern

Burn-in pattern will self-generate automatically without VGA and DVI cable plugged in when the monitor set at Burn-in on mode and burn-in pattern will not be stopped until plugging in the VGA cable. Exit Burn-in mode

method as followe: plugging in the VGA/DVI cable, press “Menu” button to call out OSD Main Menu, Press “Plus Key”to select“Other Settings Menu”then pop submenu and choose Factory reset.

Auto Color Balance (Automatically calibrate chip ADC parameter by using chip internal DAC.)

5.1 If it is a new-built set, press “*Auto/Plus*” button to execute “Auto Color” at standard video pattern 5-MOSAIC pattern

5.2 Please confirm the following steps to perform “Auto Color Balance”:

- Connect the VGA cable with the standard video pattern generator and display 5-MOSAIC pattern on the monitor.
- Press “*Power*” button to power off the monitor.
- Press “*Menu*” and “*Auto/Plus*” buttons simultaneously; then press “*Power*” button to power on the monitor.
- Press “Plus Key”, select“Other Settings Menu” ,then Press “Plus Key”and choose factory at bottom
- Set *BurnIn Mode* item to ON, then execute *Auto Color* item.
- After the “*Auto Color Balance*” process finished, go back to “Other Settings Menu”, and press “Factory Reset” to exit Factory mode

Upgrade Firmware to Serial via Flash Cable by ISP_Tool V4.100.exe

7.1 Connect the monitor and PC follow Fig 11

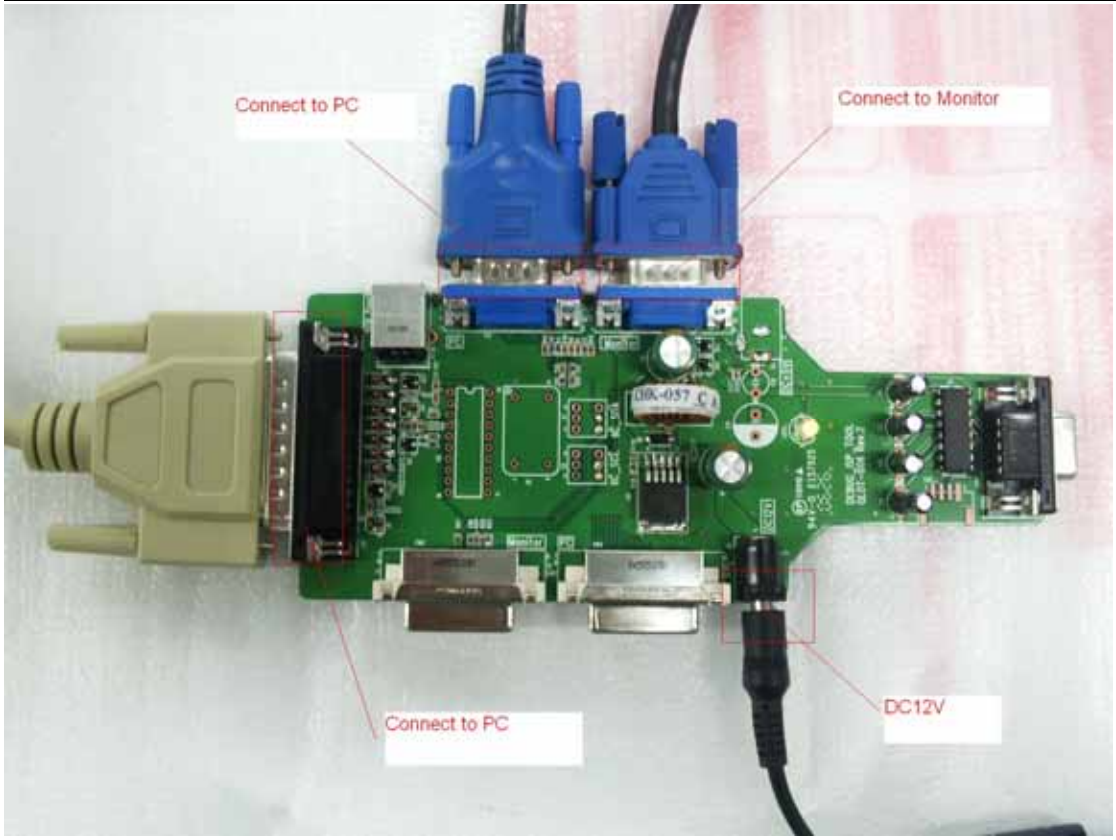


Fig 11

※ The detailed reprogramming procedures will be described in ISP User's Guide.

Edid 8.4.rar Edid.rar ISP User's Guide_20070312.rar ISP_Tool V4.100.rar

After repair, to ensure the quality you should do the following test and adjustment.

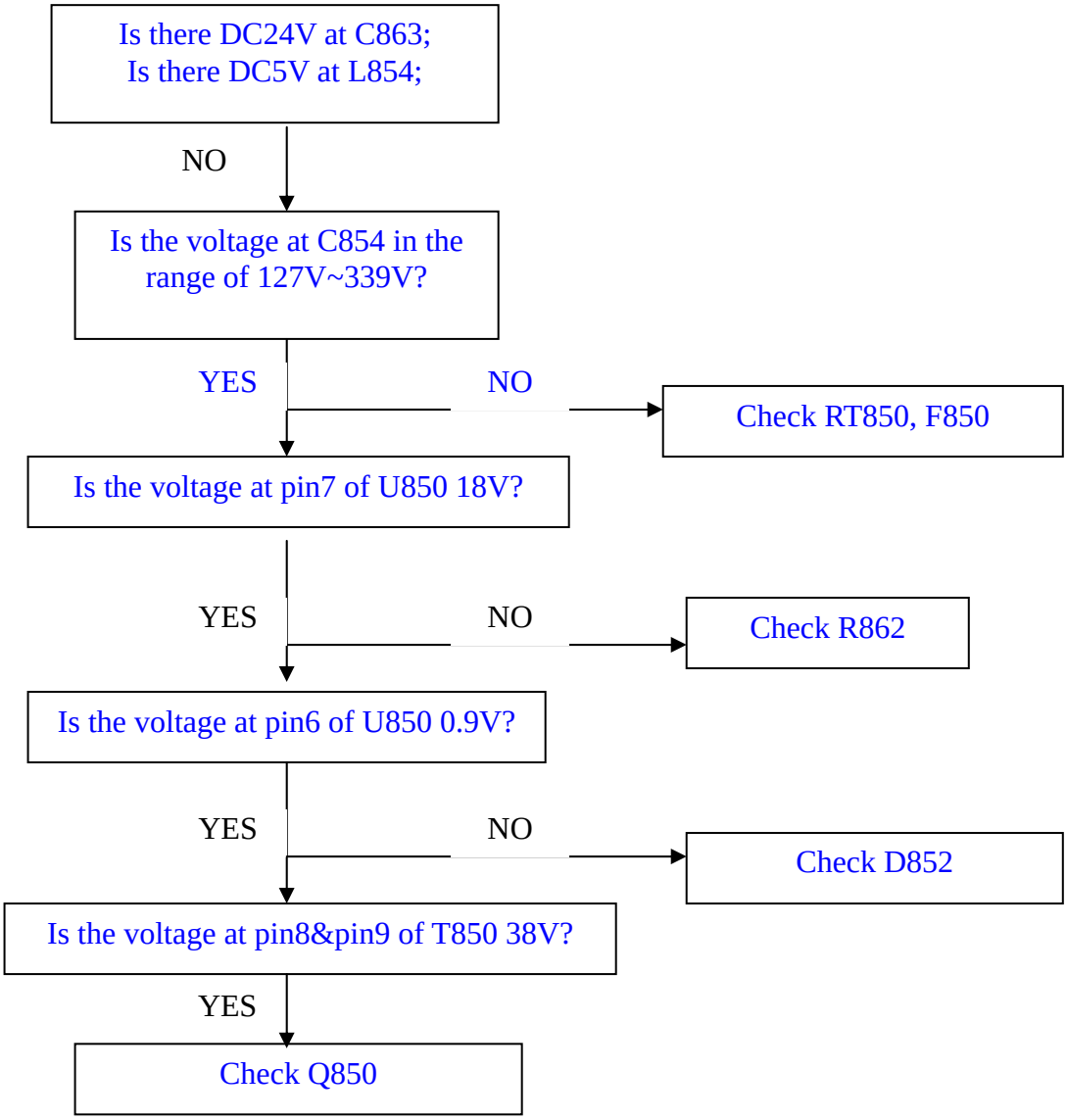
<table>
<tr><th>Item</th><th>Content</th><th>Equipment</th></tr>
<tr><td>Test OSD function</td><td>1.Signal is set as 1440×900@60Hz under General-1
2. LCM button are from left to right, checking whether each single function key and compound function key can be worked.</td><td>Chroma
Signal Generator</td></tr>
<tr><td>Contrast Check</td><td>1. Set input mode to 1440×900@60Hz
2. Set to 32gray scale pattern
3. Set contrast to the maximum. At most 6 bars cannot be distinguished.</td><td>Chroma
Signal Generator</td></tr>
<tr><td>Color Temperature</td><td>1. Do “Auto color Balance” at 1440×900@60Hz, 32gray scale pattern
2. Measure color temperature, check if it complies with the following temperature :
Warm x=0.328 +/- 0.03, y=0.344+/-0.03
Desktop x= 0.313 +/- 0.03, y=0.329+/-0.03
Cool x= 0.283 +/- 0.03, y=0.298+/-0.03</td><td>Chroma Signal Generator and color analyzer</td></tr>
<tr><td>Modes switching check</td><td>1. Use Chroma Pattern Generator to make sequence. VESA (640x480 800x600 1024x768 1152x864 1280x1024 1440×900@60Hz), the detail supported modes (see table 1) and power saving signal.
2. Confirm the above timing modes must be full screen and the picture must be normal.
3. LED is amber at power saving mode.</td><td>Chroma
Signal Generator</td></tr>
<tr><td>VGA cable detector</td><td>When select VGA model and VGA cable is not plugged out, self-test OSD will be floated.</td><td>Visual check</td></tr>
<tr><td>Y measurement at default setting</td><td>1. Set brightness and contrast to default value 75 at 6500K
2. With full white pattern, Y shall be 220±20 cd/m^2</td><td>Chroma Signal Generator and Color Analyzer</td></tr>
<tr><td>OSD Lock Test  </td><td>Soft Lock: When OSD is locked, this icon should appear for only 2 seconds with all buttons pressed, except for the “Menu” and “Power” ones.
Hard Lock: Press “Menu” button for 15 seconds enables the “locked” icon to be displayed, which will lock All buttons expect for the “Power”. Press “Menu” button for another 15 seconds enables the “unlock” icon to be shown.</td><td>Visual Inspection</td></tr>
<tr><td>Panel Flicker check</td><td>1. Mode:1440×900@60Hz
2. Set Brightness& Contrast to default value (75%)
3. Do “Auto Adjustment”
4. Shut down PC to check whether there’s flicker on the center of the picture.</td><td>Equipment::
Chroma Signal Generator & PC</td></tr>
<tr><td>Power saving</td><td>1. Mode:1440×900@60Hz
2. Pattern: full Black
3. Brightness: Max.
4. Contrast: Default
5. Check power consumption at each modes
<table>
<tr><th>State</th><th>Power Consumption</th><th>LED color</th></tr>
<tr><td>Normal(with full load)</td><td>＜37W</td><td>green</td></tr>
<tr><td>Stand By</td><td>＜2W</td><td>amber</td></tr>
<tr><td>Power Key Off</td><td>＜1W</td><td>no</td></tr>
</table></td><td>Chroma signal generator and Power meter
AC input:230V/50Hz</td></tr>
</table>

Chapter 6- TROUBLE SHOOTING

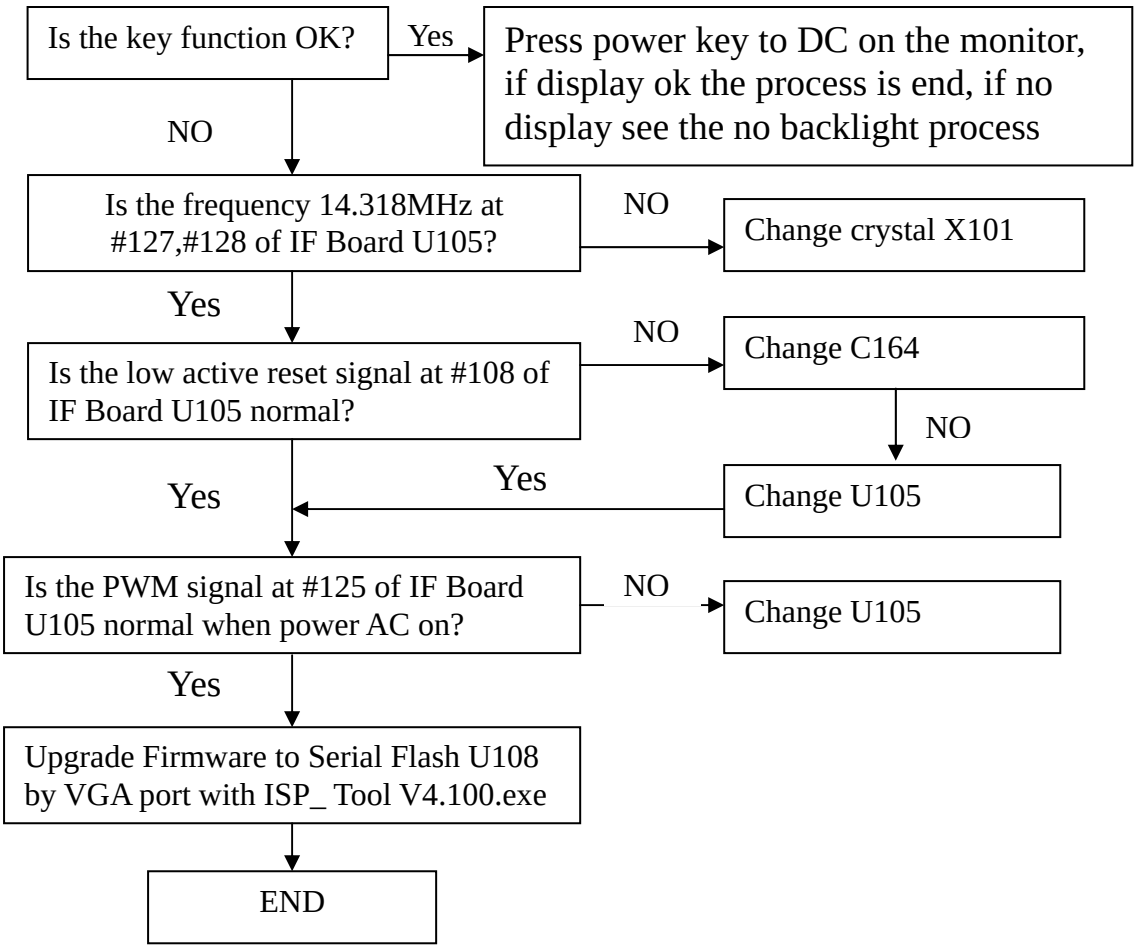
Common Acknowledge

- If you change the M/B, be sure that the U103,U201 and U108 these three components also changed to the new M/B because there was program inside. If not, please re-write EDID or upload firmware into serial flash(U108). How to do please refer to the Page 19.
- If you adjust clock and phase, please do it at condition of Windows shut down pattern.
- Please confirm the R/G/B color under 32gray scale pattern.
- This LCM is analog interface. So if the entire screen is an abnormal color that means the problem happen in the analog circuit part, if only some scale appears abnormal color that stand the problem happen in the digital circuit part.
- If you check the H/V position, please use the crosshatch pattern.
- This LCM support 10 timing modes, if the input timing mode is out of specification, “Cannot Display this Video Mode” will be displayed on the screen.
- If brightness uneven, repairs Inverter circuit or change a new panel.
- If you find the vertical line or horizontal line lost on the screen, please change panel.
- If the self-test pattern is moving on the screen, please check whether VGA Cable is plugged in the Monitor or PC if select analog model on OSD or check whether DVI Cable is plugged in the Monitor or PC if select DVI model on OSD . If the VGA or DVI Cable is plugged in well, please change another VGA or DVI cable.

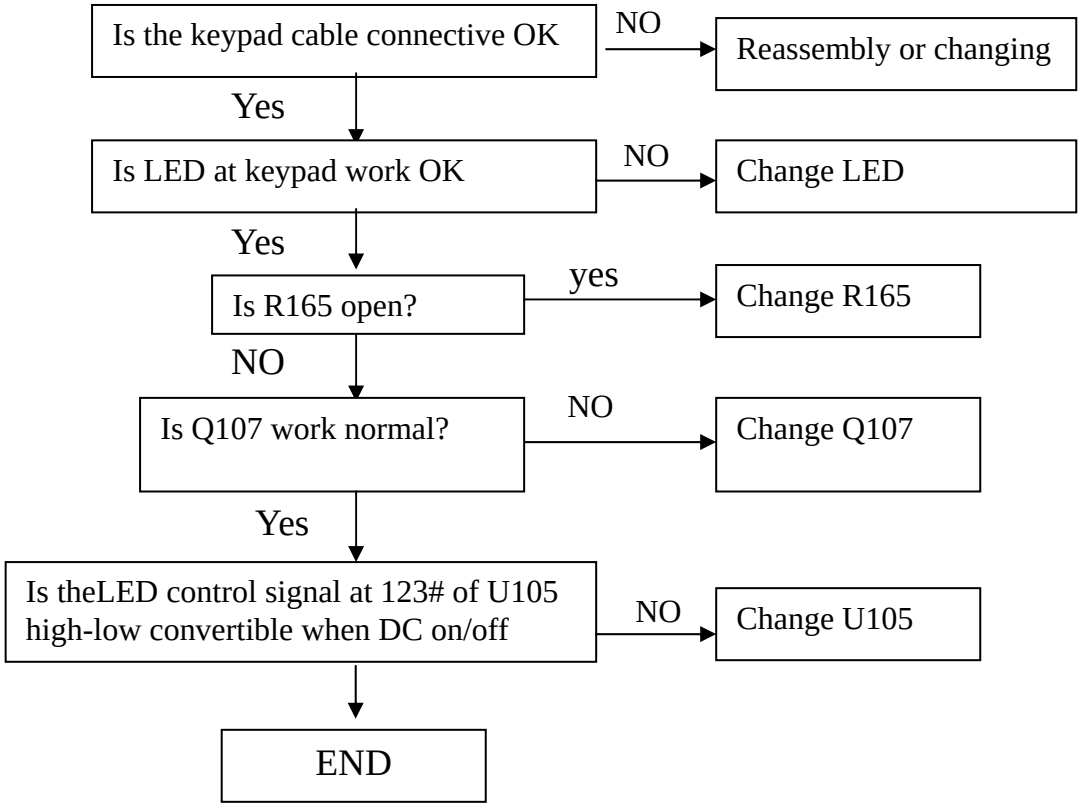
No Power and LED Off



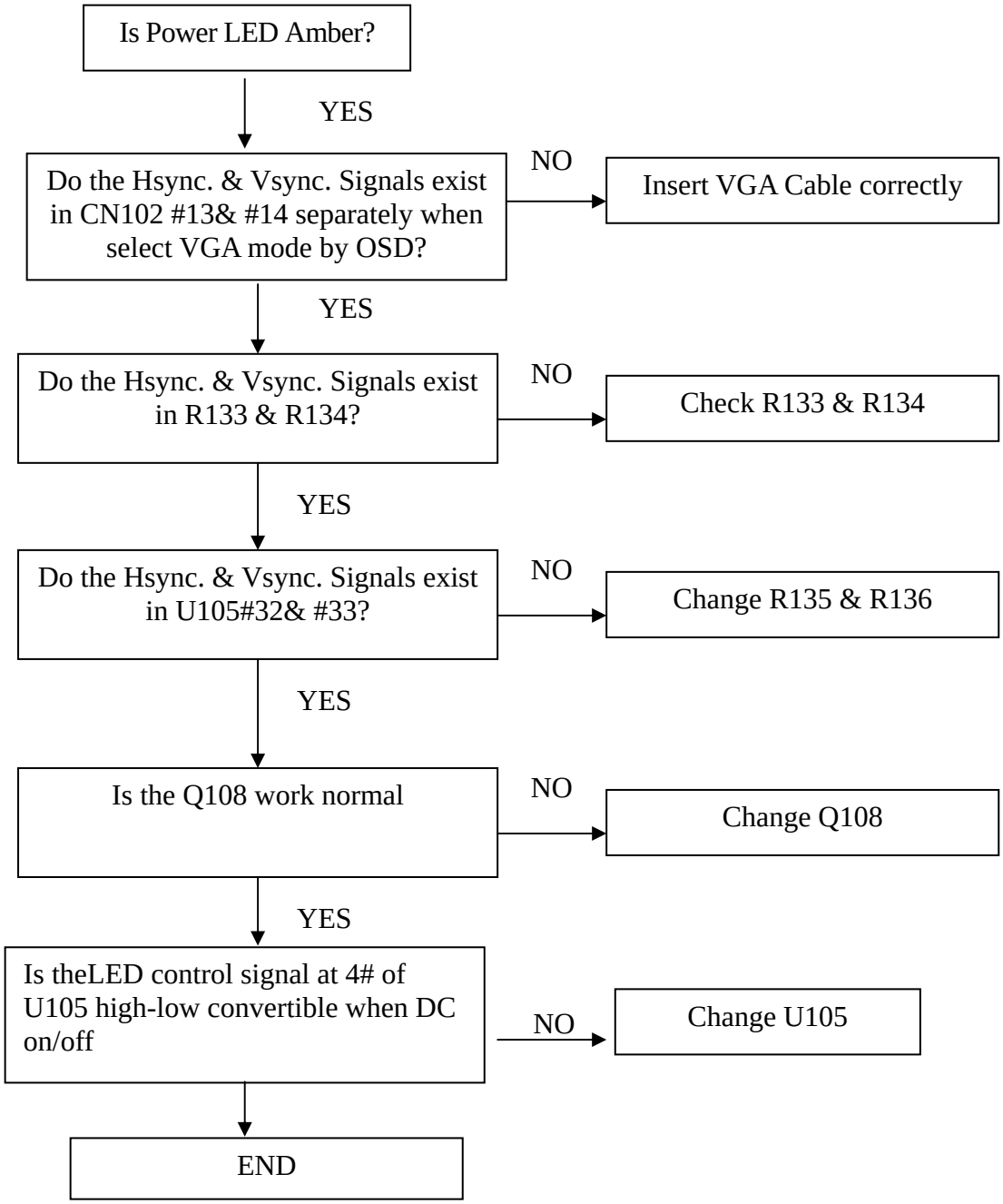
Power(include IF +5Vand +3.3V) supply normal but LED off and no display



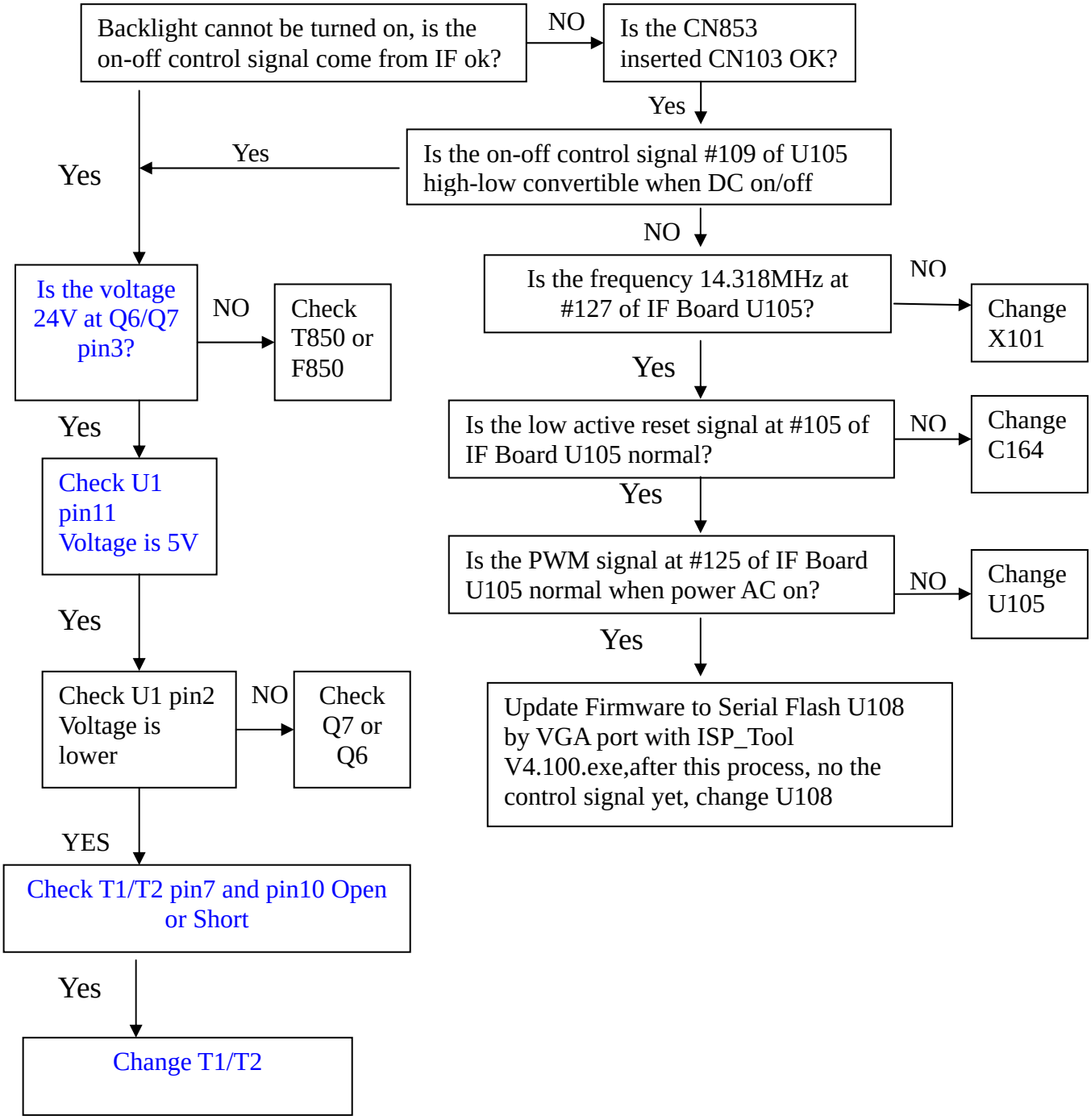
Power(include IF +5Vand +3.3V) supply and display normal only LED off



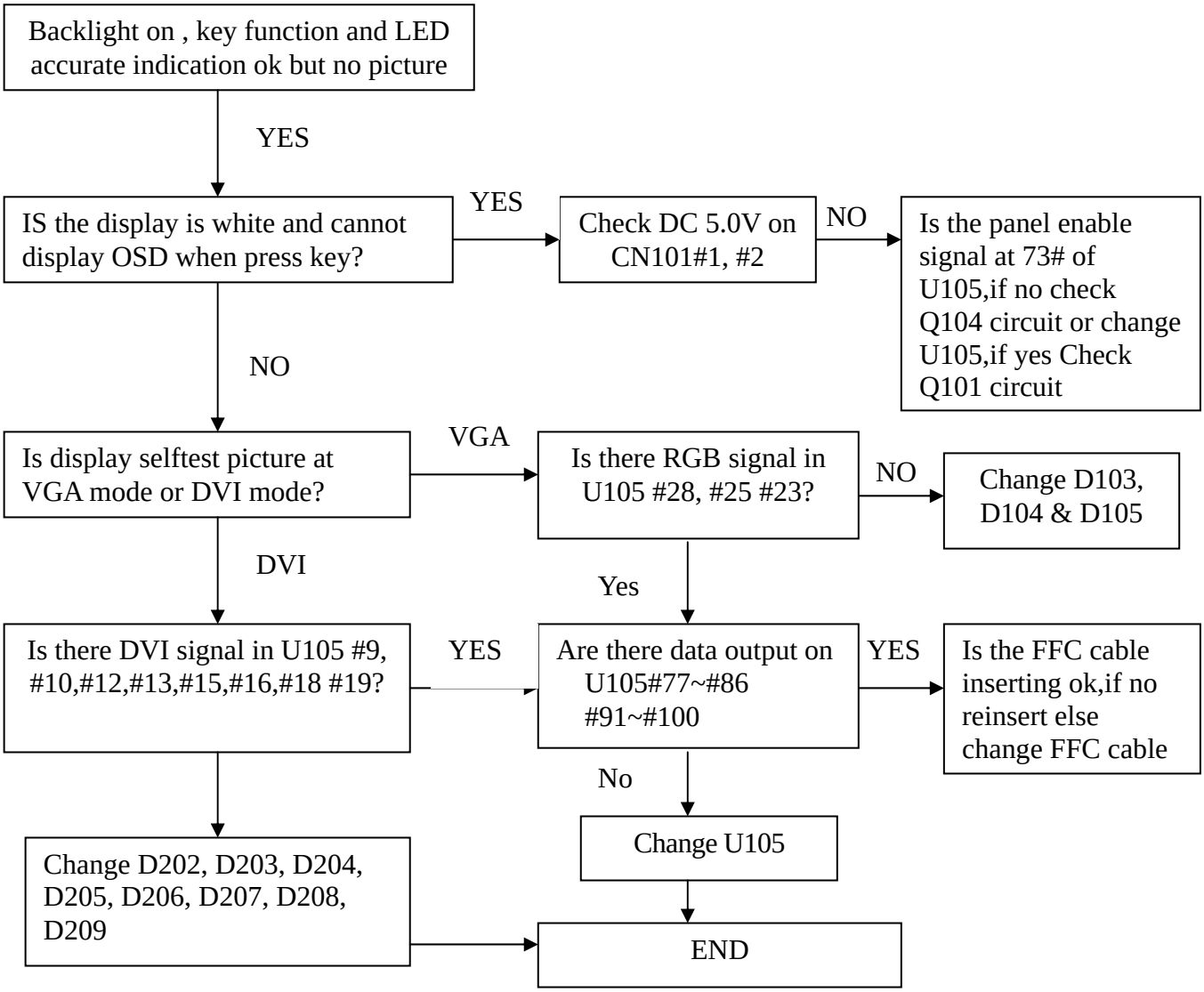
Power (include IF +5Vand +3.3V) supply and display normal but LED Amber



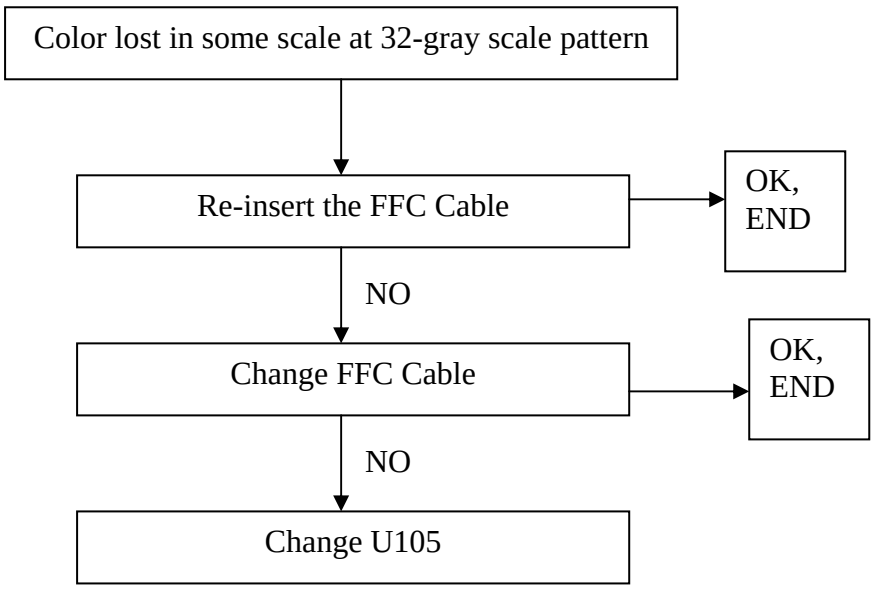
4.Power (include IF +5V and +3.3V) supply normal ,key function OK, but backlight can't be turned on



5. Backlight on, key function and LED accurate indication ok but no picture



6.At 32-gray scale pattern, color lost in some scale



Chapter 7- RECOMMENDED PART LIST

Dell V1909WFPf Critical Components List

Content	PN	Description	Supplier	Usage	Leadtime	Capacity
PI BD	412000628810R	IC LD7552BPS SOP8（Leadtrend)ROHS	LEADTREND	1		
	412000654630R	IC INL833GN SOP16(O2 MICRO)Rohs	O2	1		
	426000091150R	XFMR SW DIP ER28 TP4 550uH SPW-115 ROHS	FOXCONN	1		
		XFMR SW DIP ER28 TP4 550uH SPW-115 ROHS	FRONTIER	0		
		XFMR SW DIP ER28 TP4 550uH SPW-115 ROHS	LISHIN	0		
		XFMR SW DIP ER28 TP4 550uH SPW-115 ROHS	MEIKAI	0		
	426000091160R	XFMR SW DIP EEL22 P4 4.16H SPW-116 ROHS	DARFON	1		
		XFMR SW DIP EEL22 P4 4.16H SPW-116 ROHS	FOXCONN	0		
		XFMR SW DIP EEL22 P4 4.16H SPW-116 ROHS	HUALON	0		
		XFMR SW DIP EEL22 P4 4.16H SPW-116 ROHS	LISHIN	0		
	420431014083R	CAP SEK 100uF/450V M,105℃ CF 18x40(2.5)	SAMXON	1		

		CAP SEK 100uF/450V M,105℃ CF 18x40(2.5)	SU'SCON	0		
		CAP SEK 100uF/450V M,105℃ CF 18x40(2.5)	ELITE	0		
	410500059290R	XSTR AP2761I-A N-CH TO-220CFM ADVANCED P	APEC	1		
	410050103050R	XSTR FMA09N65GX N-CH TO-220F(FUJI) RoHS	FUJI	0		
	410050057280R	XSTR STP8NK80ZFP N-CH TO220FP (ST)	ST	0		
	491531400800R	PCB,P/I ,1/OSP /CEM1/16,LE119E6-812 ROHS	TATCHUN	1		
		PCB,P/I ,1/OSP /CEM1/16,LE119E6-812 ROHS	翔國	0		
IF BD	412000652060R	IC TSUM58EHJ-LF-2 PQFP128(MSTAR)Rohs	MSTAR	1		
	412000494190R	IC SST25LF020A-33-4C-SAE SOIC8(SST)ROHS	SST,	1		
	412000498620R	IC MX25L2005MC-12G SOP8(MXIC)RoHS	MXIC,	0		
	412000494310R	IC PM25LV020-100SCE SOIC8(PMC)RoHS	PMC,	0		
	412000224482R	IC AT24C16BN-SH-T 16K(ATMEL) SOIC 8 ROHS	ATMEL,	1		
	412000224280R	IC M24C16-WMN6TP SO8 16K (ST) ROHS	ST,	0		
	412000481990R	IC CAT24C16WI-TE13 SOIC-8(CATALYST)RoHS	CATALYST,	0		
	412000332020R	IC LD1117AL-3.3-A TO-252(UTC)RoHS	UTC,	1		
	412000332130R	IC AP1117D33LA 3.3V (ANACHIP) TO-252-3L,	ANACHIP,	0		
	412000332830R	IC AS1117R-3.3.TR-LF,TO-252(A1 SEMI)RoHS	A1SEMI,	0		
	412000330020R	IC LD1117AL-1.8V-A SOT223(UTC) RoHS	UTC,	1		
	412000330830R	IC AS1117L-1.8/TR-LF,SOT223(A1 SEMI)RoHS	A1SEMI,	0		
	412000330070R	IC AZ1117H-1.8 SOT223(AAC)RoHS	BCD,	0		
	412000435481R	IC AT24C02BN-SH-T 2K SOIC8(ATMEL)RoHS	ATMEL,	1		
	412000480280R	IC M24C02-RMN6TP SO8(ST)RoHS	ST,	0		
	412000480990R	IC CAT24C02WI-TE13 SOIC-8(CATALYST)RoHS	CATALYST,	0		

ATTACHMENT 1- Bill of Material

1. Interface board BOM

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2. power board BOM

ITEM	P/N	Description	Supplier	Usage	Un	Location
	791711400800R	PCBA,P/I BOARD W/O SPK,LE19E6-812 ROHS				
10	430637020030R	WFR. 2P P=3.5mm 90°W/LOCK,RoHS	CVILUX,FCN,FOXCONN,	4	PC	CN1,CN2,CN3,CN4,
20	440149000400R	SKT AC 10A/250V U/C/V,CDJ-3(E4)-BT3.6-0	TECX,	1	PC	CN850,
30	430300801650R	HRN ASS'Y 8P 130mm UL1007 24 AWG ROHS	FOXCONN,HEIGHTEN,JVE,	1	PC	CN853,
40	420424710510R	CAP SD 470uF/50V M 105℃ F 13x21 RoHS	LELON,SAMXON,SU'SCON,TEAPO,	2	PC	C20,C863,
50	418103051920R	CAP CD NPO 3pF 3KV D,S7.5, RoHS	JNC,SUCCESS(SEC),	4	PC	C21,C22,C23,C24,
50	418103058920R	CAP CD SL 3pF 3KV D,S7.5,RoHS	JNC,SUCCESS(SEC),	0	PC	
60	418105051920R	CAP CD NPO 5pF 3KV D,S7.5, RoHS	JNC,SUCCESS(SEC),	2	PC	C25,C27,
70	416202223620R	CAP MEY 2200pF 250V M Y2 Y5V,W /O FORMIN	JNC,POE,SUCCESS(SEC),	2	PC	C850,C851,
80	416194743011R	CAP MEX 0.47uF 275V K X2,F15 RoHS	ARCOTRONIC,EUROPTRONIC,HJC,SCC,	1	PC	C852,
90	420431014083R	CAP SEK 100uF/450V M,105℃ CF,18x40(2.5)	ELITE,SAMXON,SU'SCON,	1	PC	C854,
100	416213323620R	CAP MEY 3300pF 250V M Y1,F10mm W/O FORMI	JNC,POE,SUCCESS(SEC),	1	PC	C860,
110	416304723510R	CAP PP 0.0047uF 250V J,F7.5 RoHS	EUROPTRONIC,HJC,SCC,	1	PC	C875,
120	415502438551R	RES NKNP 2W 0.43Ω J, MINI,HK15,ROHS	FUTABA,QUEENMAO,TZAI YUAN,	1	PC	R859,
130	415350511550R	RES MOF 2W 510Ω J,MINI HK15,ROHS	FUTABA,QUEENMAO,TZAI YUAN,	1	PC	R888,
140	432009400701R	NTC 5Ω 4A 10ψ P=5mm, F RoHS	THINKING,UPPERMOST,	1	PC	RT850,
150	426000050070R	CHOKE L-FILTER 12mH LIN-007 ET-20,RoHS	DARFON,FOXCONN,LISHIN,MEIKAI,NCE,	1	PC	L850,
160	425000010530R	COIL CHK 5uH 7.8X10 CHK-053 0 181085R0L	CHILISIN,EASYMAGNET,FOXCONN,FRONTIER,	1	PC	L854,
170	411050012010R	DIO BRDG GBU405 600V/4A(TSC)RoHS	TSC,	1	PC	D850,
170	411050012020R	DIO BRDG GBU4-06-BF52 600V/4A(FEC)RoHS	FRONTIER,	0	PC	
180	411030068020R	DIO SF50-04F69-LF 400V/5A DO-201AD(FEC)R	FRONTIER,	1	PC	D854,
180	411030068450R	DIO SF55PT-F 400V/5A DO-201AD(CHENMKO)RO	CHENMKO,	0	PC	
180	411030071450R	DIO SF56PT-F 600V/5A DO-201AD(CHENMKO)RO	CHENMKO,	0	PC	
180	411030068520R	DIO SF50GG-E1 400V/5A DO-201AD(LITEON)R	LITEON,	0	PC	
190	411090050090R	SCHTKY SB5150F98 150V/5A DO-201AD (PANJI	PANJIT,	2	PC	D856,D857,
190	411090050020R	SCHTKY SR515F69-LF 150V/5A DO-201AD (FEC	FRONTIER,	0	PC	
190	411090050450R	SCHTKY SR5150PT-F 150V/5A DO-201AD (CHEN	CHENMKO,	0	PC	
200	426000091160R	XFMR SW DIP EEL22 P4 800uH SPW-116 ROHS	DARFON,FOXCONN,HUALON,LISHIN,	1	PC	T1,
210	426000091150R	XFMR SW DIP ER28 TP4 550uH SPW-115 ROHS	FOXCONN,FRONTIER,LISHIN,MEIKAI,	1	PC	T850,
220	412140002380R	IC LTV817M-PR VDE (LITE-ON) P=10mm RoHS	LITEON,	1	PC	I850,
240	735110007800R	ASSY,H/S,Q850, LE19E6-812,ROHS		1	PC	
250	791711440800R	PCBA,P/I BOARD W/O SPK,SMT LE19E6-812 RO		1	PC	
260	415350100550R	RES MOF 2W 10Ω J,MINI,HK15, RoHS	FUTABA,QUEENMAO,TZAI YUAN,	2	PC	R861,R863,
2E+07						
ITEM	P/N	Description	Supplier	Usage	Un	Location
	735110007800R	ASSY,H/S,Q850, LE19E6-812,ROHS				
10	410050103050R	XSTR FMA09N65GX N-CH TO-220F(FUJI) RoHS	FUJI,	1	PC	Q850,
10	410500059290R	XSTR AP2761I-A N-CH TO-220CFM ADVANCED P	APEC,	0	PC	
10	410050057280R	XSTR STP8NK80ZFP N-CH TO220FP (ST)	ST,	0	PC	
30	507300003300R	HEATSINK,"L", LE1713/1913	DMC,ORIENTAL POWER,	1	PC	
40	509146306200R	SCREW,P,CROSS,W/WAS,M3*6,Zn-Cc	GAOYI,LIQUAN,YIJIE,	1	PC	
2E+07						
ITEM	P/N	Description	Supplier	Usage	Un	Location
	791711440800R	PCBA,P/I BOARD W/O SPK,SMT LE19E6-812 RO				
10	419312720070R	C SMD (0805) X7R 2700pF 50V K ROHS	DARFON,TDK,WALSIN,YAGEO,	4	PC	C1,C15,C16,C17,
20	419311054070R	C SMD(0805) X7R 1uF/16V K RoHS REV:A	DARFON,TDK,WALSIN,YAGEO,	1	PC	C2,
30	419311020070R	C SMD(0805) X7R 1000PF/50V K RoHS	DARFON,TDK,WALSIN,YAGEO,	4	PC	C4,C5,C847,C848,
40	419312233070R	C SMD(0805) X7R 0.022uF/25V K RoHS	DARFON,TDK,WALSIN,YAGEO,	2	PC	C6,C14,
50	419314730070R	C SMD(0805) X7R 0.047uF/50V K ROHS	DARFON,TDK,WALSIN,YAGEO,	3	PC	C12,C13,C7,
60	419312210070R	C SMD(0805) X7R 220PF/50V K RoHS	DARFON,TDK,WALSIN,YAGEO,	1	PC	C8,
70	419311040070R	C SMD(0805) X7R 0.1uF/50V K RoHS REV:A	DARFON,TDK,WALSIN,YAGEO,	5	PC	C9,C10,C871,C876,C26,
80	419311030070R	C SMD(0805) X7R 0.01uF/50V K RoHS	DARFON,TDK,WALSIN,YAGEO,	3	PC	C11,C849,C859,
90	414908510110R	RES SMD (0805) 5.1KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	4	PC	R1,R2,R11,R858,
100	414908027350R	RES SMD (0805) 27KΩ J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	4	PC	R3,R4,R14,R15,
110	414908390010R	RES SMD (0805) 390Ω F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2	PC	R6,R19,

120	414908100310R	RES SMD (0805) 100KΩ F,RT,RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	3	PC	R5,R22,R848,
130	414908953210R	RES SMD (0805) 95.3KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	PC	R16,
140	414908510210R	RES SMD (0805) 51KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2	PC	R8,R18,
150	414908010550R	RES SMD (0805) 1MΩ J,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	2	PC	R9,R10,
160	414908100210R	RES SMD (0805) 10KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	8	PC	R12,R13,R21,R23,R860,R884,R886,R887,
170	414908330310R	RES SMD (0805) 330KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	PC	R17,
180	414908100110R	RES SMD (0805) 1KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	4	PC	R20,R24,R30,R31,
190	414908047050R	RES SMD (0805) 47Ω J,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	2	PC	R840,R844,
200	414904499310R	RES SMD (1206) 499KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	6	PC	R841,R842,R843,R850,R851,R852,
210	414904270210R	RES SMD (1206) 27kΩ F,RT ROHS	TA-I,UNIOHM,WALSIN,YAGEO,	3	PC	R853,R854,R855,
220	414908100910R	RES SMD(0805)10Ω F,RT ROHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	PC	R856,
230	414908270010R	RES SMD (0805) 270Ω F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	PC	R857,
240	414908330110R	RES SMD (0805) 3.3KΩ F,RT RoHS REV:A	TA-I,UNIOHM,WALSIN,YAGEO,	1	PC	R868,
250	414908390110R	RES SMD (0805) 3.9KΩ F,RT RoHS	TA-I,UNIOHM,WALSIN,YAGEO,	1	PC	R872,
270	411023004021R	DIO SN4148-LF 75V/0.15A SMD 1206 (FEC)Ro	FRONTIER,	1	PC	D841,
270	411020046090R	DIO 1N4148W 75V/0.15A(PEC)RoHS SOD-123	PANJIT,	0	PC	
270	411020046310R	DIO 1N4148W-F 75V/0.15A(DIODES RoHS,SOD-	DIODES,	0	PC	
280	411020068020R	DIO BAW56 70V SOT-23(FRONTIER)RoHS	FRONTIER,	1	PC	ZD1,
280	411020068090R	DIO BAW56 75V SOT-23(PANJIT)RoHS	PANJIT,	0	PC	
280	411020068210R	DIO BAW56 85V SOT-23(PHILIPS)RoHS	PHILIPS,	0	PC	
290	411020047410R	DIO BAV70 70V SOT23(MITSUBISHI RoHS	MITSUBISHI,	2	PC	ZD2,ZD3,
290	411020047210R	DIO BAV70 85V SOT23 (PHILIPS) RoHS	PHILIPS,	0	PC	
290	411020047090R	DIO BAV70, 70V SOT-23(PEC) ROHS	PANJIT,	0	PC	
290	411020047020R	DIO BAV70-LF, 70V SOT-23(FEC) ROHS	FRONTIER,	0	PC	
300	411131556950R	ZENER 5.6V 0.5W BZT52C5V6-F,SO D123(DIOD	DIODES,	2	PC	ZD4,ZD5,
300	411121456950R	ZENER 5.6V BZT52-C5V6 SOD-123(WILLAS)ROH	WILLAS,	0	PC	
300	411131056050R	ZENER 5.6V 0.5W BZX79-C5V6 DO3 5(PHILIPS	PHILIPS,	0	PC	
300	411120956950R	ZENER 5.6V 0.41W BZT52-C5V6,SO D123(PANJ	PANJIT,	0	PC	
310	411020026210R	DIO BAV99 350mW 70V SOT-23(PHI RoHS	PHILIPS,	2	PC	ZD6,ZD7,
310	411020026390R	DIO BAV99,SOT-23(INFINEON)RoHS	INFINEON,	0	PC	
310	411020026090R	DIO BAV99 350mW 75V SOT-23(PEC RoHS	PANJIT,	0	PC	
310	411020026020R	DIO BAV99-LF 350mW 70V SOT-23 (FEC)RoHS	FRONTIER,	0	PC	
320	410080003290R	XSTR AP4575GM N&P SO-8(APEC)ROHS	AP,	2	PC	Q6,Q7,
320	410080003430R	XSTR P5506NVG N&P SOP-8(NIKO-SEM)ROHS	NIKO,	0	PC	
330	410070010240R	XSTR MMBT4401 NPN SOT23(FAIRCHILD)RoHS	FAIRCHILD,	1	PC	Q851,
330	410070010420R	XSTR MMBT4401 NPN SOT23(PANJIT)RoHS	PANJIT,	0	PC	
330	410070010210R	XSTR PMBT4401 NPN SOT23(PHILIPS)RoHS	PHILIPS,	0	PC	
340	412000628810R	IC LD7552BPS SOP8（Leadtrend)ROHS	LEADTREND,	1	PC	U850,
350	412000654630R	IC INL833GN SOP16(O2 MICRO)Rohs	O2,	1	PC	U1,
360	791711410800R	PCBA,P/I BOARD W/O SPK,AI LE19E6-812 ROH		1	PC	
370	419312254070R	C SMD(0805) X7R 2.2uF 16V K RoHS	DARFON,MURATA,TDK,WALSIN,YAGEO,	1	PC	C3,
2E+07						
ITEM	P/N	Description	Supplier	Usage	Un	Location
	791711410800R	PCBA,P/I BOARD W/O SPK,AI LE19E6-812 ROH				
10	791711450800R	PCBA,P/I BOARD W/O SPK,AI/A LE19E6-812 R		1	PC	
20	791711460800R	PCBA,P/I BOARD W/O SPK,AI/R LE19E6-812 R		1	PC	
2E+07						
ITEM	P/N	Description	Supplier	Usage	Un	Location
	791711450800R	PCBA,P/I BOARD W/O SPK,AI/A LE19E6-812 R				
10	411032006020R	DIO FR10-10-LF 1000V/1A AT(FRO NTIER)RoH	FRONTIER,	1	PC	D851,
10	411032006040R	DIO FR107 1000V/1A DO-41(MOSPE C)RoHS	MOSPEC,	0	PC	
10	411020053090R	DIO PS1010R 1000V/1A DO-41(PAN JIT)RoHS	PANJIT,	0	PC	
20	411020064090R	DIO ER104 400V/1A DO-41(PANJIT RoHS	PANJIT,	1	PC	D852,
20	411032001020R	DIO SF10-04-LF 400V/1A DO-41(F RONTIER)R	FRONTIER,	0	PC	
30	415211009140R	RES MF 1/8W 10Ω F,AT,RoHS	QUEENMAO,TZAI YUAN,UNIOHM,	1	PC	R7,
40	415212703140R	RES MF 1/8W 270KΩ F,AT,RoHS	QUEENMAO,TZAI YUAN,UNIOHM,	1	PC	R871,
50	411131430010R	ZENER 30V GDZ30A DO35(WILLAS)RoHS	WILLAS,	1	PC	ZD880,
50	411130930010R	ZENER 30V GDZ30A DO35(PANJIT)RoHS	PANJIT,	0	PC	
60	430613050100R	FUSE SLOW PICO II 5A/125V U/C,AT,ROHS	LITTELFUSE,	1	PC	F851,
60	430613050101R	FUSE SLOW 5A/125V U/C,AT,ROHS	WALTER,	0	PC	
70	491531400800R	PCB,P/I ,1/OSP /CEM1/16,LE19E6-812 ROHS	HSIANGKUO,TATCHUN,	1	PC	

80	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 7.5MM	HOTRON,YUANYE,	550	MM	J3,J5,J6,J7,J8,J10,J12,J9,J18,J15,J20,
80	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 7.5MM	HOTRON,YUANYE,	0	MM	
90	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 10MM	HOTRON,YUANYE,	100	MM	J4,J13,
90	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 10MM	HOTRON,YUANYE,	0	MM	
100	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 15MM	HOTRON,YUANYE,	100	MM	J1,J2,
100	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 15MM	HOTRON,YUANYE,	0	MM	
110	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 12.5MM	HOTRON,YUANYE,	200	MM	J11,J16,J17,J19,
110	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 12.5MM	HOTRON,YUANYE,	0	MM	
120	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 17.5MM	HOTRON,YUANYE,	50	MM	J14,
120	430405000000R	JMPR ROLL/KG D=0.6mm,AT,RoHS 17.5MM	HOTRON,YUANYE,	0	MM	
2E+07						
ITEM	P/N	Description	Supplier	Usage	Un	Location
	791711460800R	PCBA,P/I BOARD W/O SPK,AI/R LE19E6-812 R				
20	420421000530R	CAP SD 10uF/50V M,VT 105℃ 5x11 RoHS	LELON,SAMXON,SU'SCON,TEAPO,	1	PC	C855,
30	420424710231R	CAP SD 470uF/25V M 105℃ VT 10x16 RoHS	LELON,SAMXON,SU'SCON,TEAPO,	3	PC	C856,C857,C858,
50	412022002240R	IC KA431AZ 1%,VT (FAIRCHILD) RoHS	FAIRCHILD,	1	PC	I851,
50	412022002550R	IC AME431BAJATB25Z TO-92-3(AME RoHS	AME,	0	PC	
50	412022002830R	IC AS431 TO-92 VT(A1SEMI)RoHS	A1SEMI,	0	PC	
50	412022002840R	IC TL431ACLPG TO-92 1%,VT(ON)RoHS	ON SEMI,	0	PC	
50	412022002440R	IC AZ431BZ-ATRE1 TO-92(BCD) RoHS	BCD,	0	PC	
60	430613830290R	FUSE TIME LAG 3.15A/250V,RoHS	BELFUSE,CONQUER,LITTELFUSE,WALTER,	1	PC	F850,
70	418210233030R	CAP CD X7R 1000pF/1KV K,VT 2X7R102K102K5	JNC,POE,SUCCESS(SEC),	2	PC	C862,C873,

3.PCBA KEYPAD BOM

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4.Assembly BOM

2008.08.06 Dynamic List Display

Material 8201M9A1D010R
Plant/Usage/Alt. S000 / 2 / 01
Description E2009Wf/D115J/LE20M9-A12/LGD/DAO
Base Qty (PC) 100

Lv	Item	Phant.item	RevLev	Component no.	Object description	Grp	Chngd o
1	0010		C	453070800150R	PWR CORD 10A/125V BLK 6FT UL/CSA SVT 3Cx		
1	0020		A	453030300440R	CABLE DVI-D 18+1P MALE 1.8M BLACK ROHS		
1	0030		B	453010100320R	CABLE D-SUB 15P MALE 6FT BLACK/BLUE AB 8		
1	0040	x	A	7140740A0000R	ASSY,FINAL(B)W/O SPK,LE20M9-A12(DAO/E200		
1	0070	x	A	713100009700R	ASSY, PACKAGE, PACK, DAO, LE20M9		
1				7140740A0000R	ASSY,FINAL(B)W/O SPK,LE20M9-A12(DAO/E200		
2	0010		A	509212103500R	SCREW,F,CROSS,T.T-2*3,BLK		
2	0020		A	509116610510R	SCREW,P,CROSS,M4*10,BLACK-NL(NYLOK)		
2	0030		A	714011205400R	Stand Assy,LE20M9		
2	0040		A	714030020700R	Front Bezel Assy,LE20M9		
2	0050		A	714050019600R	Back Cover Assy,LE20M9		
2	0060	x	A	7140840A0000R	ASSY,PANEL,W/O SPK,LE20M9-A12(E2009Wf)		
1				713100009700R	ASSY, PACKAGE, PACK, DAO, LE20M9		
2	0010		A	506250027500R	LABEL,ID(LH), LE20M9		

2	0020		A	506250027501R	LABEL,AGENCY,TCO 99 LE20M9	
2	0030		A	506431007100R	FILM,SCREEN,PROTECTION,PRINTED,LE20M9	
2	0040		A	506380001400R	TAPE 3M-897 12x45000mm	
2	0050		A	506280009101R	POSTER,QUICK SETUP,WEST, LE20M9	
2	0060		A	703500009800R	KIT,ACCESSORY, DOC, DAO, LE20M9	
2	0070		A	506120300060R	BAG, PLASTIC,L670*W440mm(PRINTED), LE22E	
2	0080		A	506120301810R	BAG,EPE+HDPE,L800/400XW450MM,LP1X03	
2	0090		A	506020029500R	CARTON,DELL(WWW), LE20M9	
2	0100		A	506060013600R	Cushion-top,LE20M9	
2	0110		A	506060013610R	Cushion-bottom,LE20M9	
2	0120		A	506340004700R	LABEL BLANK 101X50mm DELL EMEA CARTON	
2	0130		A	506380002622R	TAPE, WRAPPING TYPE PRINTED(DELL), BLACK	
2	0140	x	A	713010005400R	ASSY PACK,20STD,LE20M9	01
2	0140	x	A	713010005401R	ASSY PACK,40STD,LE20M9	01
2	0140	x	A	713010005402R	ASSY PACK,40HQ,LE20M9	01
2	0140	x	A	713010005403R	ASSY PACK,AIR CARGO(20STD),LE20M9	01
2	0140	x	A	713010005404R	ASSY PACK,AIRCARGO(40STD),LE20M9	01
2				714030020700R	Front Bezel Assy,LE20M9	
3	0010		A	501010222000R	Front Bezel,LE20M9	
3	0020		A	501030211900R	Button,LE20M9	
3	0030		A	501120110000R	Power-lens,LE20M9	
3	0040		A	501110200400R	LOGO PLATE DELL UX383 LE1963	
2				714050019600R	Back Cover Assy,LE20M9	
3	0010		A	501020225900R	Back Cover,LE20M9	
3	0020		A	501030210220R	release-button,LE19E6	
3	0030		A	502210100400R	KENSINGTON LOCK LE1963	
3	0040		A	503010005800R	SUPPORT RUBBER 19.8*15.8mm	
2				7140840A0000R	ASSY,PANEL,W/O SPK,LE20M9-A12(E2009Wf)	
3	0010			631102200330RD	LCP 20.1" LM201WE3-TLK3(A)(LGD)ROHS	
3	0020		A	701000011900R	Chassis Assy,LE20M9	
3	0030		A	506380001730R	TAPE ACE 85x20mm LE1913	
3	0040		A	509146306202R	SCREW,P,CROSS,W/WAS(7.8),M3*6,Zn-Cc	
3	0050		A	509446309100R	SCREW,B,CROSS,W/W-SPR,M3*9,Zn,ROHS	
3	0060		A	509016305200R	SCREW,I,CROSS,M3*5,Zn-Cc	
3	0070		A	509016306200R	SCREW,I,CROSS,M3*6,Zn-Cc	
3	0080		A	509000001000R	BOLT,#4-40x12.5,Ni ROHS	
3	0090			792241300A00R	PCBA,I/F BOARD,W/O SPK,LE20M9-A12 ROHS	
3	0100			792241400700R	PCBA,P/I BOARD,W/O SPK,LE20M9-712 ROHS	
3	0110			792241500000R	PCBA,KEYPAD BOARD,LE20M9 ROHS	
3	0120		A	430300802220R	HRN ASSY 2x4P to 8P 380mm UL1571#28	
3	0130			430303001950R	HRN LVDS FFC 30P 198.5mm W/core	
2				713010005400R	ASSY PACK,20STD,LE20M9	
3	0010		A	506432004700R	SLIP SHEET,L1188xW1146xH75mm, LE20M9	
3	0020		A	506037011100R	CARDBOARD,COVER,L1188xW1146xH100xT3mm,LE	
3	0030		A	506039006900R	CORNER PAPER 950x50x50xT3mm LE1712	
3	0040		A	506039007800R	CORNER PAPER 1150x50x50xT3mm LE1511	
3	0050		A	506431000300R	FILM,PE 500mmx900M ROHS	

3	0060		A	506120400100R	BAG AIR DUNNAGE 2000x1000mmLE1X03 ROHS
3	0070		A	506380002612R	TAPE,WRAPPING TYPE,50Mx82mm
2				713010005401R	ASSY PACK,40STD,LE20M9
3	0010		A	506432004700R	SLIP SHEET,L1188xW1146xH75mm, LE20M9
3	0020		A	506037011100R	CARDBOARD,COVER,L1188xW1146xH100xT3mm,LE
3	0030		A	506039006900R	CORNER PAPER 950x50x50xT3mm LE1712
3	0040		A	506039007800R	CORNER PAPER 1150x50x50xT3mm LE1511
3	0050		A	506431000300R	FILM,PE 500mmx900M ROHS
3	0060		A	506380002612R	TAPE,WRAPPING TYPE,50Mx82mm
2				713010005402R	ASSY PACK,40HQ,LE20M9
3	0010		A	506432004700R	SLIP SHEET,L1188xW1146xH75mm, LE20M9
3	0020		A	506037011100R	CARDBOARD,COVER,L1188xW1146xH100xT3mm,LE
3	0030		A	506039007800R	CORNER PAPER 1150x50x50xT3mm LE1511
3	0040		A	506039010000R	CORNER PAPER, L1350X50X50XT3MM,LP1716
3	0050		A	506431000300R	FILM,PE 500mmx900M ROHS
3	0060		A	506380002612R	TAPE,WRAPPING TYPE,50Mx82mm
2				713010005403R	ASSY PACK,AIR CARGO(20STD),LE20M9
3	0010		A	506150013600R	PALLET L1188xW1146xH120mm LE20M9
3	0020		A	506037011100R	CARDBOARD,COVER,L1188xW1146xH100xT3mm,LE
3	0030		A	506039006900R	CORNER PAPER 950x50x50xT3mm LE1712
3	0040		A	506039001400R	CORNER PAPER 200x50x50mm ROHS
3	0050		A	506431000300R	FILM,PE 500mmx900M ROHS
3	0060		A	506120400100R	BAG AIR DUNNAGE 2000x1000mmLE1X03 ROHS
3	0070		A	506380002612R	TAPE,WRAPPING TYPE,50Mx82mm
2				713010005404R	ASSY PACK,AIRCARGO(40STD),LE20M9
3	0010		A	506150013600R	PALLET L1188xW1146xH120mm LE20M9
3	0020		A	506037011100R	CARDBOARD,COVER,L1188xW1146xH100xT3mm,LE
3	0030		A	506039006900R	CORNER PAPER 950x50x50xT3mm LE1712
3	0040		A	506039001400R	CORNER PAPER 200x50x50mm ROHS
3	0050		A	506431000300R	FILM,PE 500mmx900M ROHS
3	0060		A	506380002612R	TAPE,WRAPPING TYPE,50Mx82mm
3				701000011900R	Chassis Assy,LE20M9
4	0010		A	502090314000R	Chassis,LE20M9
4	0020		A	502020306000R	fix-plate-left,LE19E6
4	0030		A	502020306010R	fix-plate-right,LE19E6
4	0040		A	502040500000R	slide,LE19E6
4	0050		A	504010000300R	SPRING 맔 0.5*D5*H17
4	0060		A	509112304100R	SCREW BTP3x4C3UC,ROHS
4	0070		A	502040400600R	SHIELD EMI LP2207

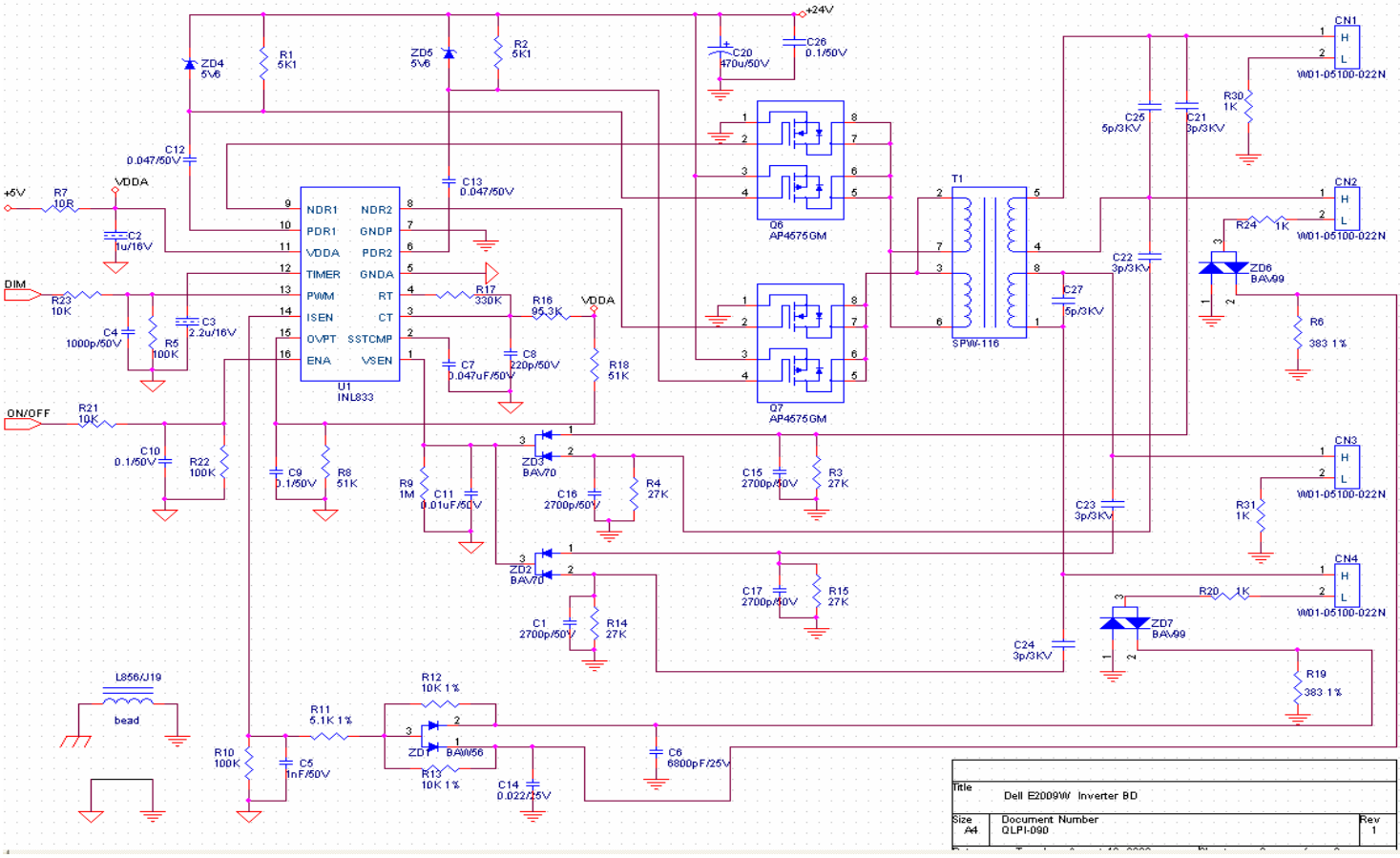
Attachment 2- Schematic

1.Interface board schematic

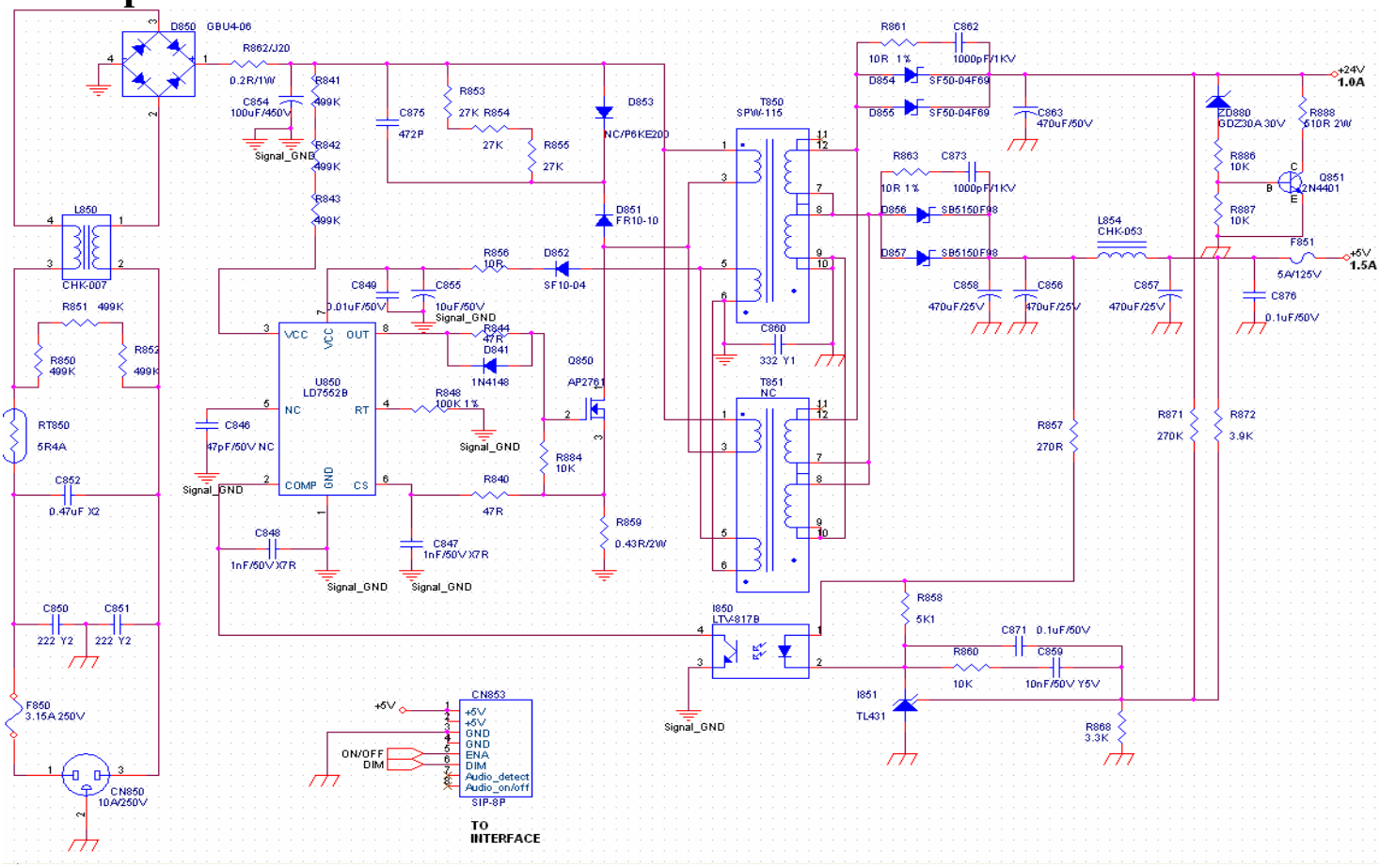

C:\Documents and Settings\f3112725\桌


C:\Documents and Settings\f3112725\桌

inverter board schematic



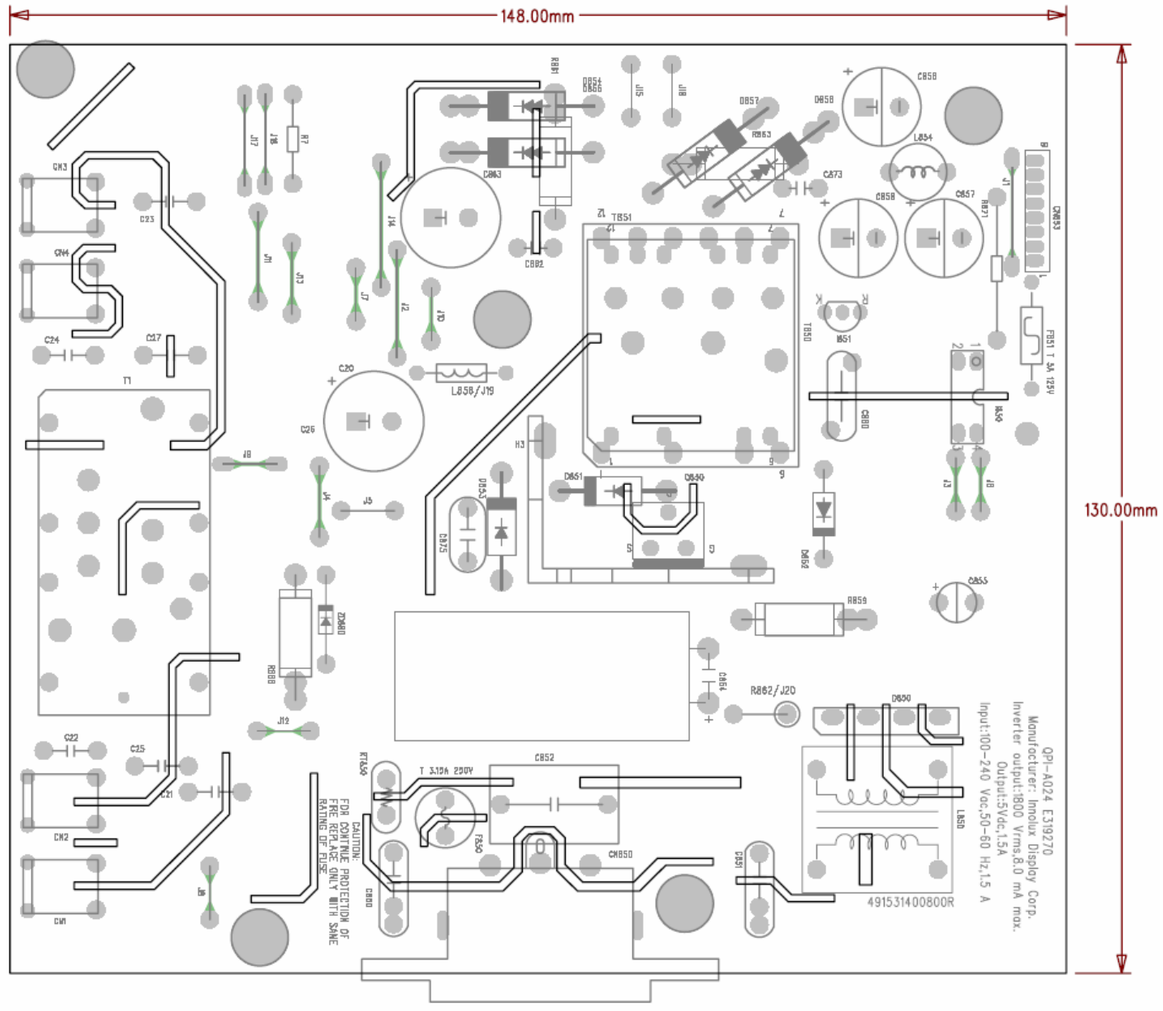
power board schematic



Attachment 3- PCB Layout power/inverter bd:

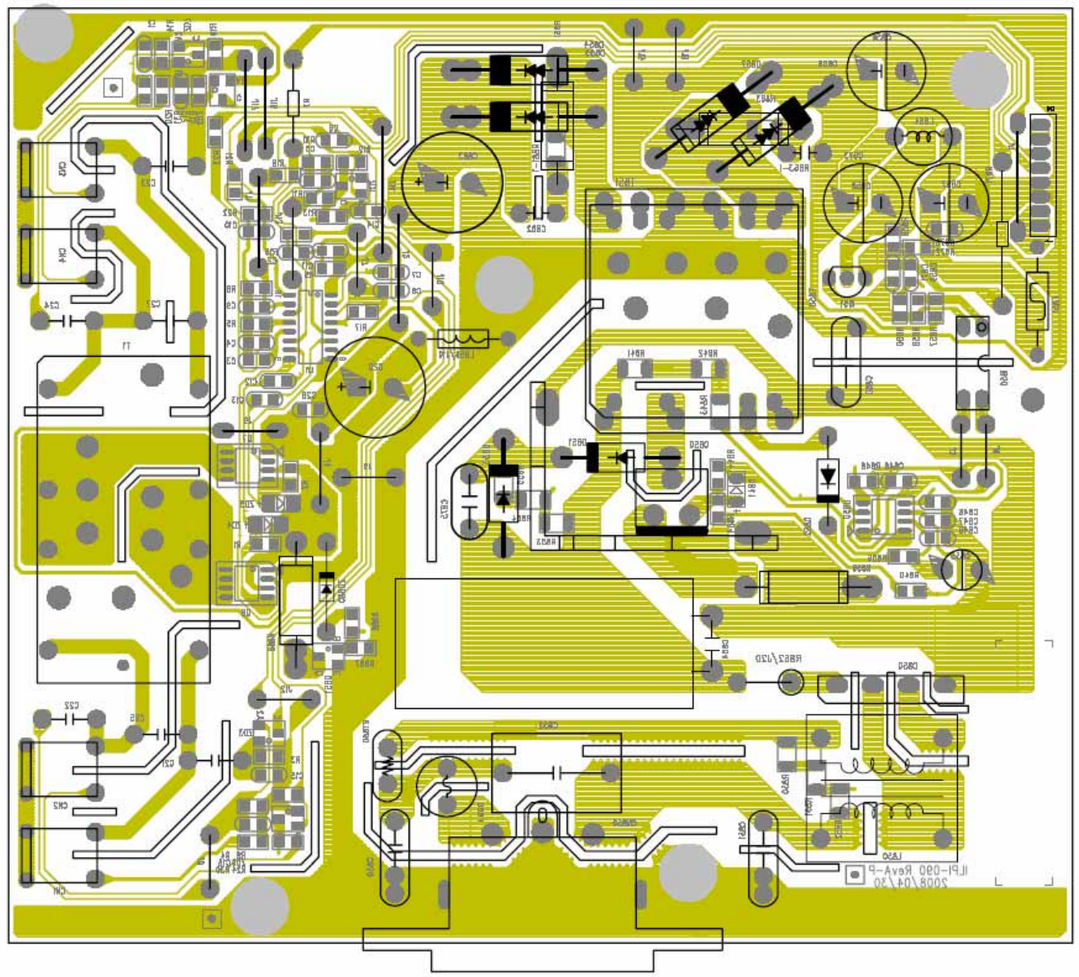
power/inverter bd:

Top Layer



FOXCONN	LAYER	DRILL TOP DRAWING			
	PCB NO	491531400800R	REV	A-P	DESIGNER: Inkai Qiu
	FILE NO	ILPI-090	REMARK	2008/04/30	

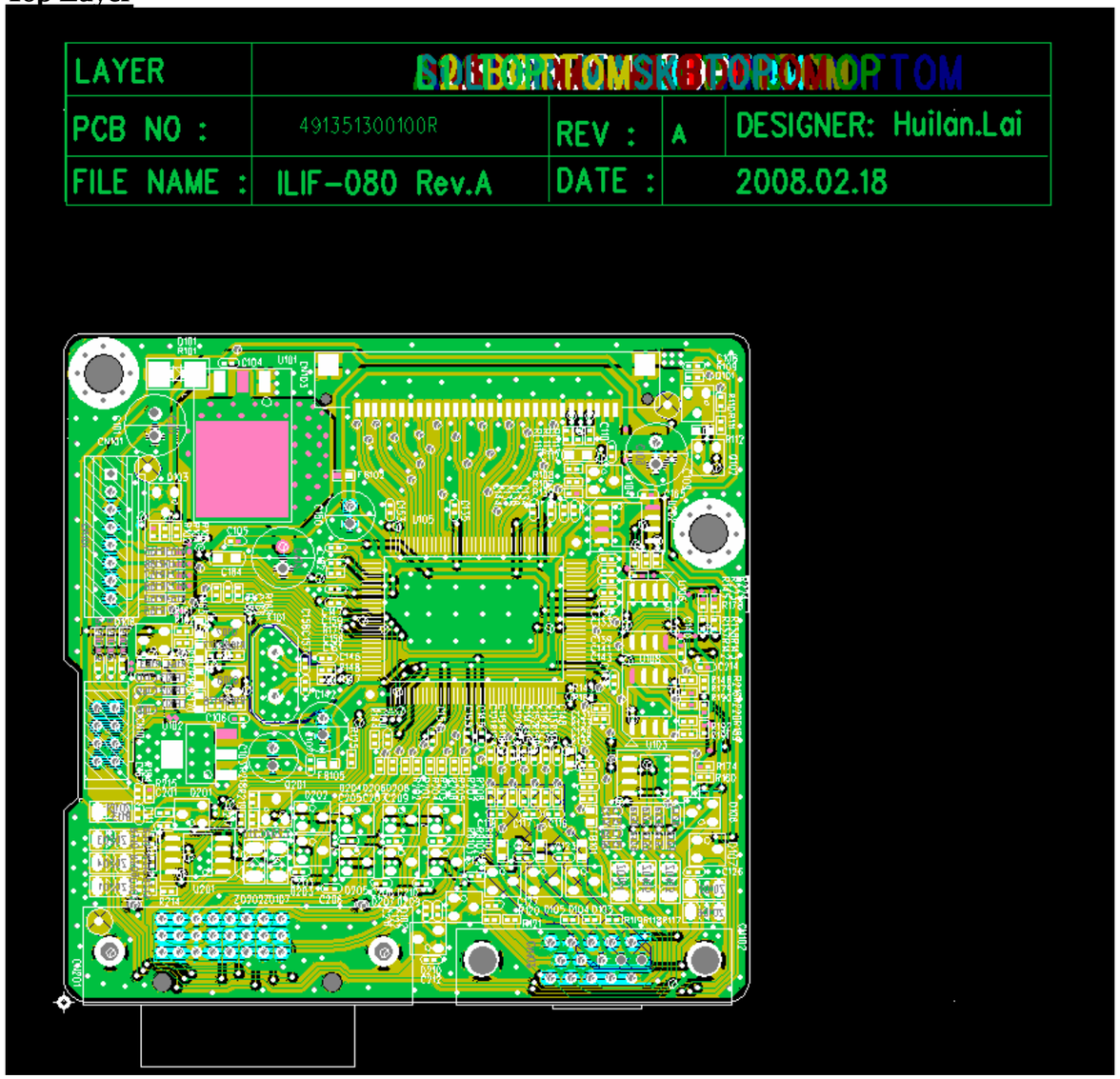
Bottom Layer



FOXCONN	LAYER	SILKSCREEN BOTTOM			
	PCB NO	491531400800R	REV	A-P	DESIGNER: Inkai Qiu
	FILE NO	ILPI-090	REMARK	2008/04/30	

I/F board:

Top Layer



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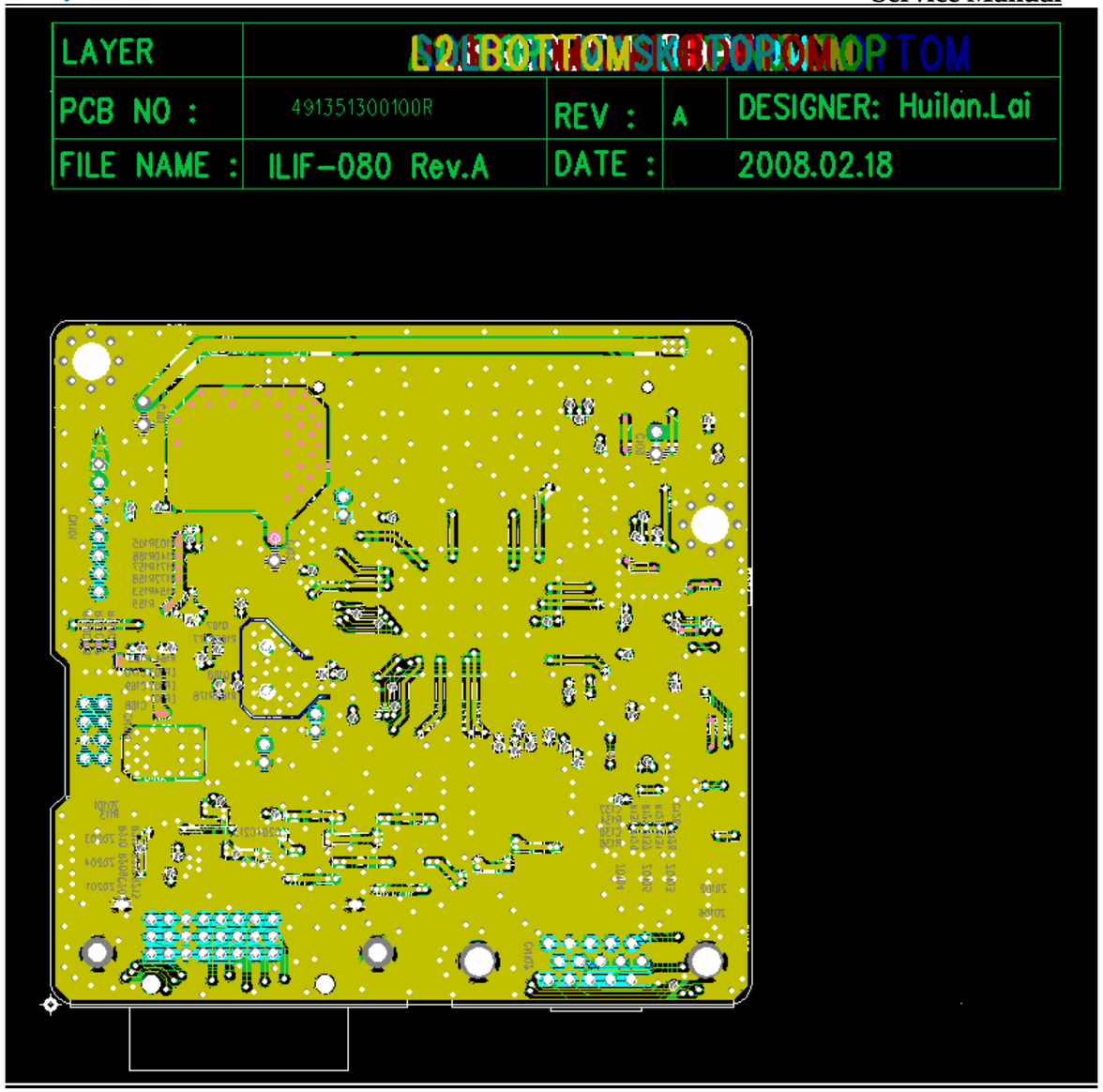

Keypad:

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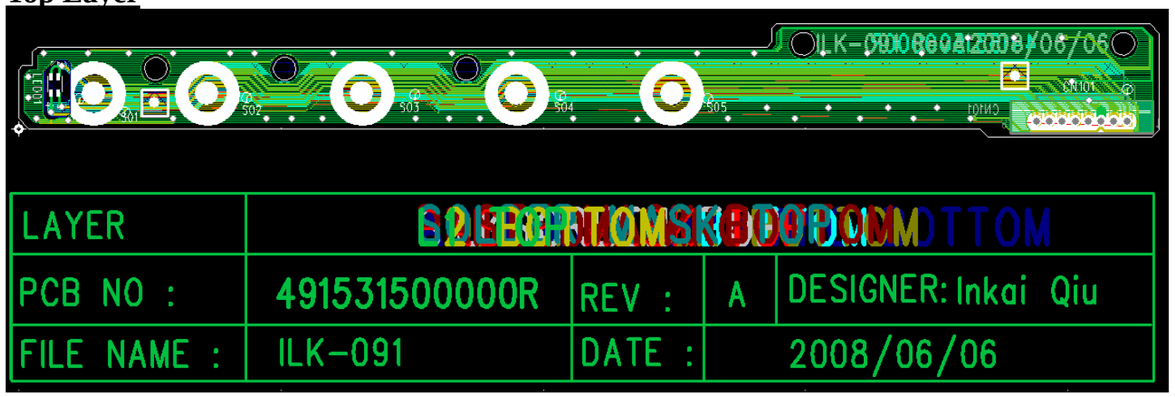

Bottom Layer