Service
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Service Manual

Horizontal Frequency

30 kHz to 83 kHz

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SAFETY NOTICE

ANY PERSON ATTEMPTING TO SERVICE THIS CHASSIS MUST FAMILIARIZE HIMSELF WITH THE CHASSIS AND BE AWARE OF THE NECESSARY SAFETY PRECAUTIONS TO BE USED WHEN SERVICING ELECTRONIC EQUIPMENT CONTAINING HIGH VOLTAGES.

CAUTION: USE A SEPARATE ISOLATION TRANSFOMER FOR THIS UNIT WHEN SERVICING

Revision List

Revision	Release Date	Revise history	TPV model
A00	Mar.-11-2008	Initial Release	TC8SGHHKWDDNHC
			TC8SGHHKWDDDHC
			TC8GGHHKWDDDHC
A01	May.-09-2008	Add new BOM	TC8MGHHKWDDDHC
			TC8SGHHMWDDZHC
			TC8SGHHLWDDZHC
			TC8GGHHLWDDDHC
A02	May.-13-2008	Add new BOM	TC8MGHHKWDDNHC
			TC8MGHHKWDDDHN
			TC8GGHHKWDDNHC
			TC8MGHHMWDDDHC
			TC8MGHHLWDDDHC
			TC8MGHHJWDDDHC
			TC8MGHHMWDDFHC
			TC8MGHHFWDDDHC
			TC8MGHHBWDDD4C
A03	Jul.-05-2008	Add new BOM	TC8SGHHFWDDZHC
			TC8SGHHJWDDZHC
			TC8GGHHFWDDDHC
			TC8GGHHJWDDDHC
			TC8GGHHMWDDFHC
			TC8SGHHMWDDEHC
A04	Dec.-24-2008	Change Y value to Ymin (min luminance value） in item 10	ALL

ECN History

ECN No.	Change Description	Service Deposition	Cut-in date	MSR

Important Safety Notice

Proper service and repair is important to the safe, reliable operation of all AOC Company Equipment. The service procedures recommended by AOC and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It is also important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. AOC could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, AOC has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by AOC must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.
Hereafter throughout this manual, AOC Company will be referred to as AOC.

WARNING
Use of substitute replacement parts, which do not have the same, specified safety characteristics may create shock, fire, or other hazards.

Under no circumstances should the original design be modified or altered without written permission from AOC. AOC assumes no liability, express or implied, arising out of any unauthorized modification of design.

Servicer assumes all liability.

FOR PRODUCTS CONTAINING LASER:
DANGER-Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
CAUTION -The use of optical instruments with this product will increase eye hazard.

TO ENSURE THE CONTINUED RELIABILITY OF THIS PRODUCT, USE ONLY ORIGINAL MANUFACTURER'S REPLACEMENT PARTS, WHICH ARE LISTED WITH THEIR PART NUMBERS IN THE PARTS LIST SECTION OF THIS SERVICE MANUAL.

Take care during handling the LCD module with backlight unit
-Must mount the module using mounting holes arranged in four corners.
-Do not press on the panel, edge of the frame strongly or electric shock as this will result in damage to the screen.
-Do not scratch or press on the panel with any sharp objects, such as pencil or pen as this may result in damage to the panel.
-Protect the module from the ESD as it may damage the electronic circuit (C-MOS).
-Make certain that treatment person’s body is grounded through wristband.
-Do not leave the module in high temperature and in areas of high humidity for a long time.
-Avoid contact with water as it may a short circuit within the module.
-If the surface of panel becomes dirty, please wipe it off with a soft material. (Cleaning with a dirty or rough cloth may damage the panel.)

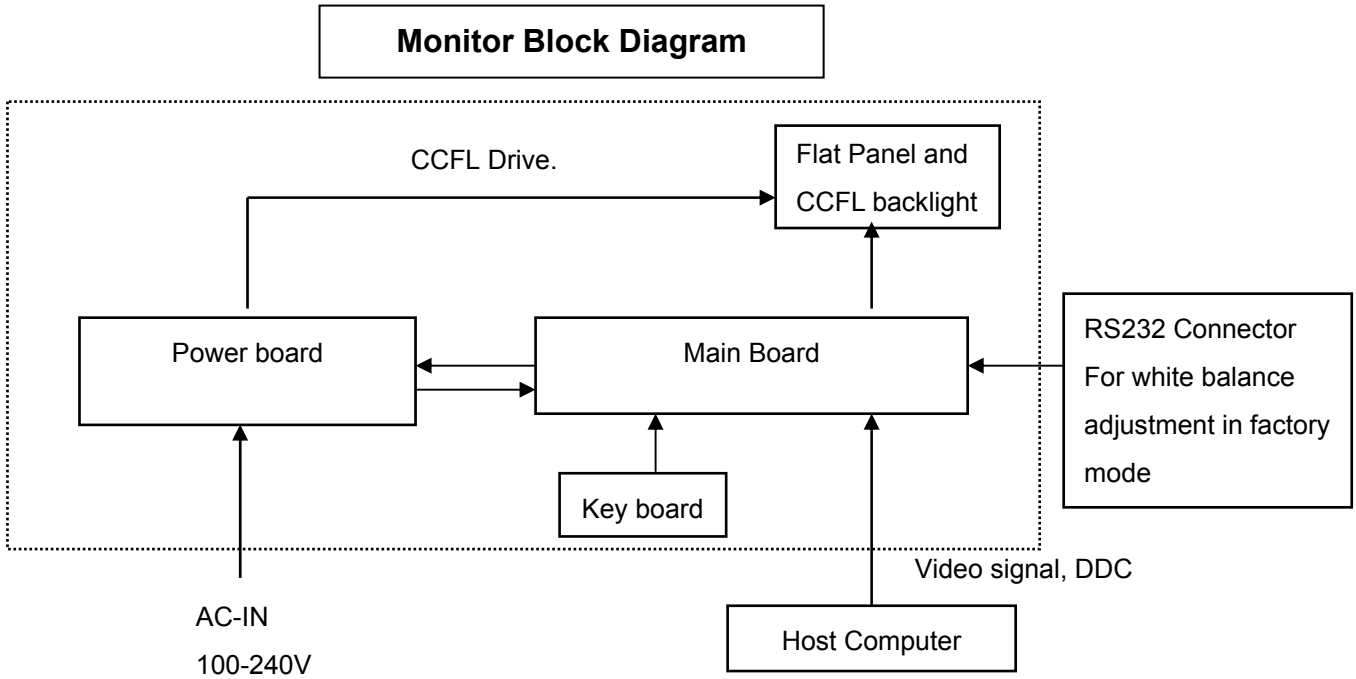
1. Monitor Specifications

LCD Panel	Screen type	Active matrix - TFT LCD
	Panel Type	LTM220M1-L01
	Size	22 inches (22-inch viewable image size)
	Pixel pitch	0.282mm(H) x 0.282mm(V)
	Viewable angle	160° (vertical) typ, 160° (horizontal) typ
	Response time	5ms(type)
Input	Video	R, G, B Analog Interface, DVI digital Interface
	Separate Sync	H/V TTL
	H-Frequency	30kHz – 83kHz
	V-Frequency	56 - 75Hz
Display Colors		16.7M
Luminance of White(Center of screen)		300cd/m2
Contrast Ratio(Center of screen)		1000
Dot Clock		165MHz (Max.)
Max. Resolution		1680 x 1050 at 60 Hz
Plug & Play		VESA DDC
EPA ENERGY STAR®	ON Mode	<45W
	OFF Mode	<1W
Input Connector		15-pin D-subminiature, blue connector; DVI-D, white connector
Maximum Screen Size		473.76mm(H) x 296.1mm(V)
Power Source		100 to 240 VAC / 50 or 60 Hz ± 3 Hz / 1.5A
Environmental Considerations		Operating Temp: 5° to 35°C Operating Humidity: 10% to 80% Storage Temp.: -20° to 60°C
Weight		Weight with packaging: 20.94 lbs (9.5 kg) Weight with stand assembly and cables: 15.65 lbs (7.1 kg) Weight without stand assembly: 11.46 lbs (5.2 kg) Weight of stand assembly: 2.65 lbs (1.2 kg)

2. LCD Monitor Description

The LCD monitor will contain a main board, a power board and a key board, which house the flat panel control logic, brightness control logic and DDC.

The power board will provide AC to DC Inverter voltage to drive the backlight of panel and the main board chips each voltage.



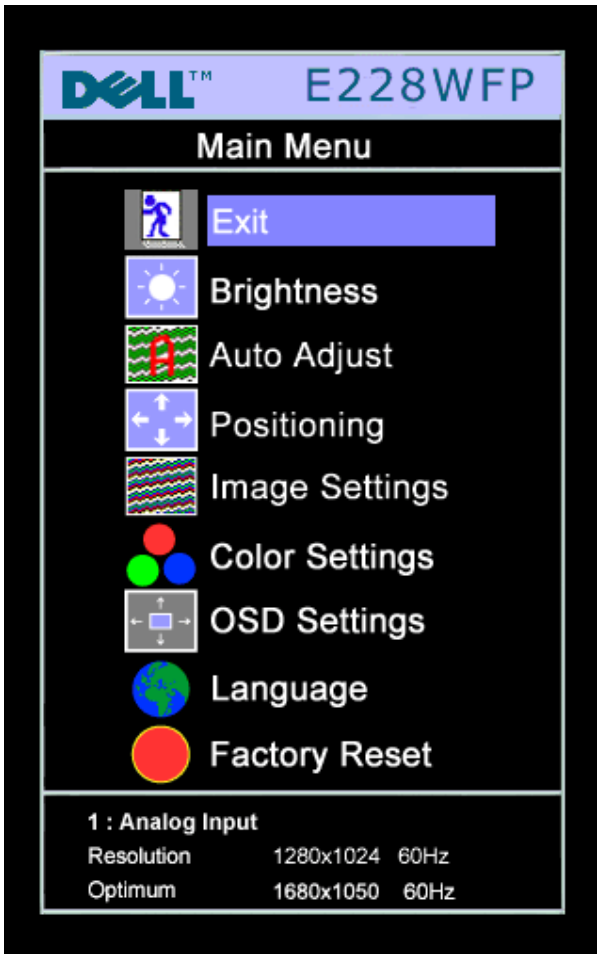
3. Operation instructions

3.1 General Instructions

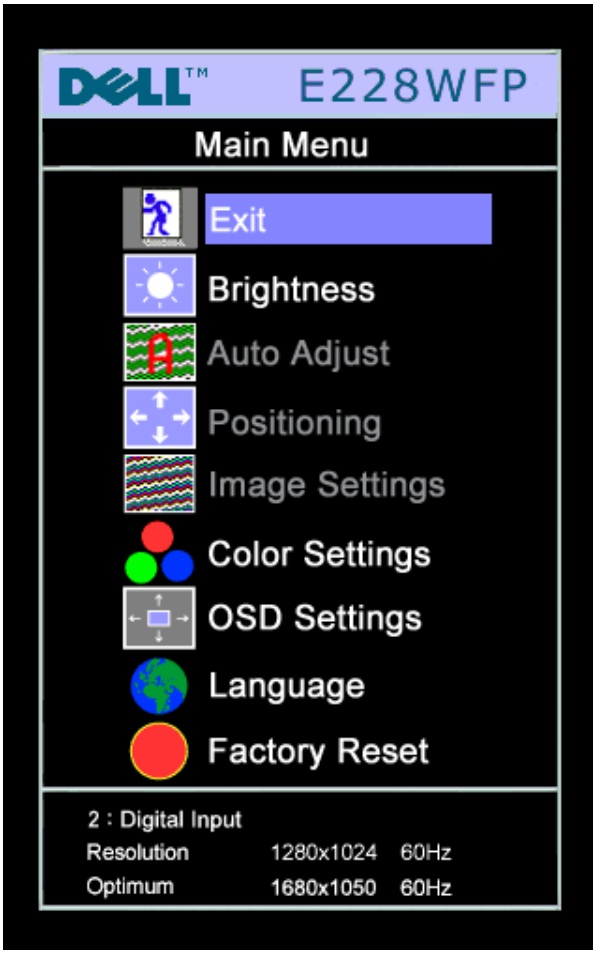
NOTE: If you change the settings and then either proceed to another menu or exit the OSD menu, the monitor automatically saves those changes. The changes are also saved if you change the settings and then wait for the OSD menu to disappear.

1. Push the MENU button to open the OSD menu and display the main menu.

Main Menu for Analog (VGA) Input



Main Menu for digital (DVI) Input

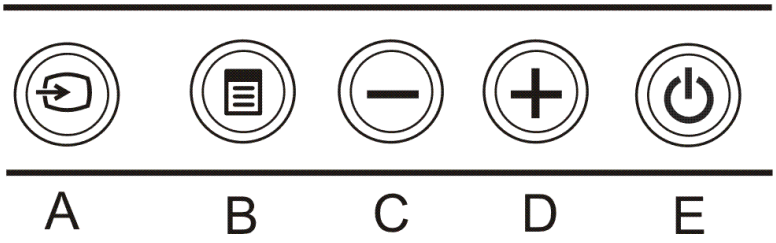


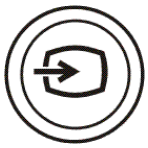
NOTE: Auto Adjust, Positioning and Image Settings are only available when you are using the analog (VGA) connector.

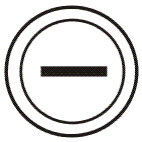
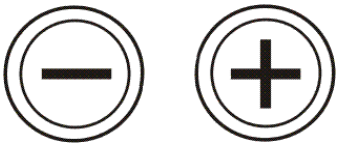
2. Push the - and + buttons to move between the setting options. As you move from one icon to another, the option name is highlighted. See the table below for a complete list of all the options available for the monitor.
3. Push the MENU button once to activate the highlighted option.
4. Push - and + button to select the desired parameter.
5. Push MENU to enter the slide bar and then use the - and + buttons, according to the indicators on the menu, to make your changes.
6. Push the MENU button once to return to the main menu to select another option or push the MENU button two or three times to exit from the OSD menu.

When the OSD is locked, pressing the menu button takes the user directly to the OSD settings menu, with OSD Lock selected. Select No (-) to unlock and allow user access to all applicable settings.

3.2 Control Buttons

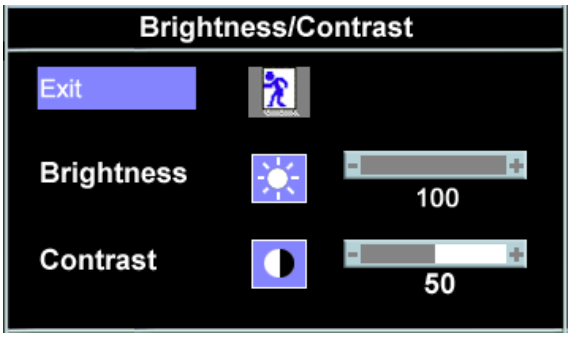
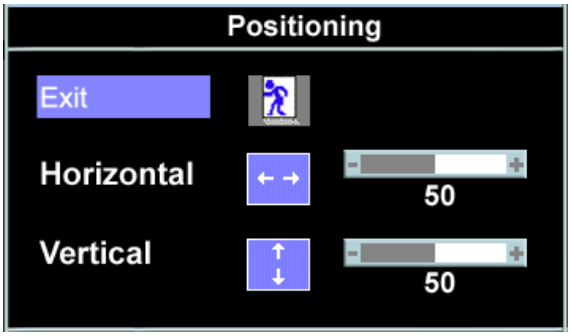


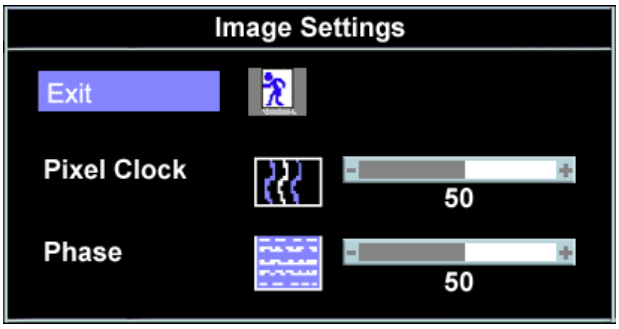
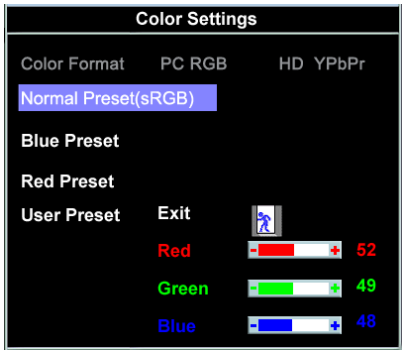
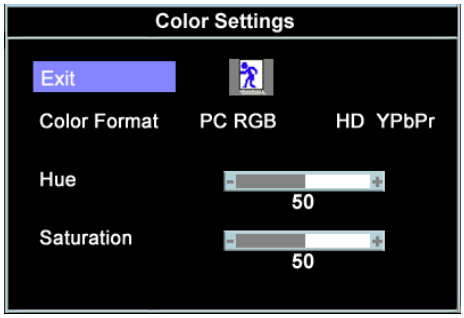
A	 **Input select**	Use the Input Select button to select between two different video signals that may be connected to your monitor. Description of auto-sync detect: If both VGA and DVI cables are connected to one PC, this monitor will display an image automatically just as long as a video signal is present in either VGA or DVI outputs. When connecting one display to two PCs, if using screen savers, best to set both to the exact times. Whichever mouse is moved first will activate that video input first. ***NOTE: The floating 'Dell Self-test Feature Check' dialog appears on a black background if the monitor cannot sense a video signal. Using the input select button, select the desired input to be tested either Analog Input or Digital Input. Disconnect the video cable from the video card and the Dell Self-test Feature Check dialogue box will appear if the display is operating correctly.*** 
B	 **OSD menu / select**	The Menu button is used to open and exit the on-screen display (OSD), and exit from menus and sub-menus. See Using the OSD Menu.

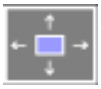
C	 **Brightness/Contrast Hot Key**	Use this button for direct access to the "Brightness" and "Contrast" control menu.
C, D	 **Down (-) and Up (+)**	Use these buttons to adjust (decrease/increase ranges) items in the OSD menu. ***NOTE: You can activate automatic scroll feature by pressing and holding either + or - button.***
D	 **Auto Adjust**	Use this button to activate automatic setup and adjust menu. The following dialog appears on a black screen as the monitor self-adjusts to the current input: Auto Adjust In Progress Auto Adjustment allows the monitor to self-adjust to the incoming video signal. After using Auto Adjustment, you can further tune your monitor by using the Pixel Clock (Coarse) and Phase (Fine) controls under Image Settings. ***NOTE: Auto Adjust will not occur if you press the button while there are no active video input signals, or attached cables.***
E	 **Power Button and Indicator**	Use the power button to turn the monitor on and off. The green light indicates the monitor is on and fully functional. An amber light indicates power save mode.

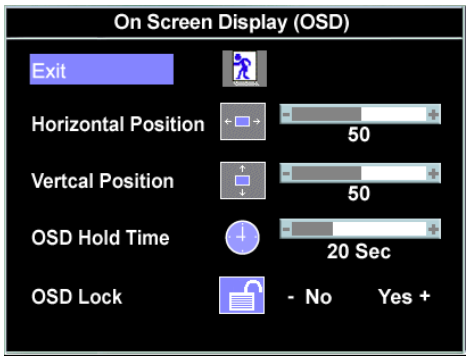
3.3 Adjusting the Picture

Icon	Menu and Submenus	Description
	**Exit**	Select to exit the Main menu.
	**Brightness/ Contrast**	Brightness adjusts the luminance of the backlight. Adjust Brightness first, then adjust Contrast only if further adjustment is necessary. Push the + button to increase luminance and push the - button to decrease luminance (min 0 ~ max 100). Contrast adjusts the degree of difference between darkness and lightness on the monitor screen.

		Push the + button to increase the contrast and push the - button to decrease the contrast (min 0 ~ max 100). 
	**Positioning:** Horizontal Vertical	Positioning moves the viewing area around on the monitor screen. When making changes to either the Horizontal or Vertical settings, no changes occur to the size of the viewing area. The image shifts in response to your selection. Minimum is 0 (-) and maximum is 100 (+).  NOTE: When using DVI source, the Positioning option is not available.
	**Auto Adjust**	Even though your computer recognizes your monitor on startup, the Auto Adjustment function optimizes the display settings for use with your particular setup. Select to activate automatic setup and adjustment. The following dialog appears on a black screen as the monitor self-adjusts to the current input: Auto Adjust In Progress Auto Adjustment allows the monitor to self-adjust to the incoming video signal. After using Auto Adjustment, you can further tune your monitor by using the Pixel Clock (Coarse) and Phase (Fine) controls under Image Settings. NOTE: In most cases, Auto Adjust produces the best image for your configuration. NOTE: When using DVI source, the Auto Adjust is not available.
	**Image settings:**	The Phase and Pixel Clock adjustments allow you to more closely adjust your monitor to your preference. These settings are accessed through the main OSD menu, by selecting Image Settings.

	Pixel Clock (Coarse) **Phase (Fine)**	Use the - and + buttons to make adjustments. (Minimum: 0 ~ Maximum: 100) If satisfactory results are not obtained using the Phase adjustment, use Pixel Clock (Coarse) and then use Phase (fine), again. NOTE: This function may change the width of the display image. Use the Horizontal function of the Position menu to center the display image on the screen.  NOTE: When using DVI source, the Image Settings option is not available.
	Color Settings	Color Settings adjusts the color temperature, color hue, and saturation. The color hue is most noticeable in areas of white.   **NOTE: Pixel Clock and Phase Adjustments are only available for "VGA" input.**
	Color Format	To achieve the different color domain for PC RGB and HD YPbPr (HD YPbPr is suitable for HD video playback over DVI. PC RGB is suitable for normal PC graphics display over DVI.).
	Blue Preset	Blue Preset is selected to obtain a bluish tint. This color setting is typically used for text based applications (spreadsheets, programming, text editors, etc.).
	Red Preset	Red Preset is selected to obtain a redder tint. This color setting is typically used for color-intensive applications (photograph image editing, multimedia, movies, etc.).
	Normal Preset	Normal Preset is selected to obtain the default (factory) color settings. This setting is also the “sRGB” standard default color space.

	User Preset	User Preset: Use the plus and minus buttons to increase or decrease each of the three colors (R, G, B) independently, in single digit increments, from 0 to 100.
	Hue	This feature can make color shift of video image to green or purple. This is used to adjust for desired flesh tone color. Use - or + to adjust the hue from '0' to '100'
	Saturation	⊖ makes video image shade into greenish. ⊕ makes video image shade into purplish. ***NOTE: Hue adjustment only available for video playback via DVI using HD YPbPr.*** ⊖ makes video image looks more monochrome. ⊕ makes video image looks more colorful. ***NOTE:*** *Saturation adjustment only available for video playback via DVI using HD YPbPr.*
	**OSD Settings:** **Horizontal Position** **Vertical Position**	Adjust the settings for the OSD, including the location and the amount of time the menu remains on-screen. Position of the OSD: • To adjust the horizontal position of the OSD, use the - and + buttons, and move OSD to the left and right. • To adjust the vertical position of the OSD, use the - and + buttons, and move OSD down and up.
	OSD Hold Time	OSD Hold Time: The OSD stays active for as long as it is in use. Adjusting the hold time, sets the length of time the OSD remains active after the last time you pressed a button. Use the - and + buttons to adjust the slider in 5 second increments, from 5 to 60 seconds.
	OSD Lock	OSD Lock: Controls user access to adjustments. When Yes (+) is selected, no user adjustments are allowed. All buttons are locked except the menu button. ***NOTE:*** *When the OSD is locked, pressing the menu button takes the user directly to the OSD settings menu, with OSD Lock selected. Select No (-) to unlock and allow user access to all applicable settings.*



NOTE: You can also lock or unlock the OSD by pushing and holding the Menu button for 15 seconds.

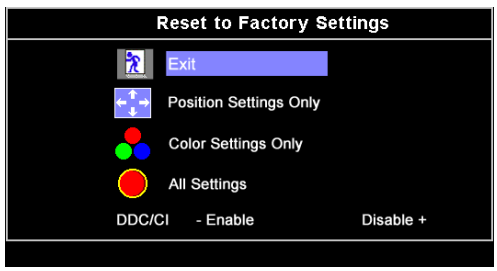
Language

Select to have the OSD display in one of five languages (English, French, Spanish, German, or Japanese).

NOTE: The change only affects the OSD. It has no effect on any software running on the computer.

Factory Reset:

Reset the OSD menu options to the factory preset values.



DDC/CI: — DDC/CI (Display Data Channel/Command Interface) allows your monitor parameters (brightness, color balance etc) to be adjustable via software on your PC. You can disable this feature by selecting "Disable".

Enable this feature for best user experience and optimum performance of your monitor.

Exit — Select to exit out of Reset to Factory Settings menu without resetting any OSD options.

Position settings only — Change the settings for Image Position back to original factory settings.

Color settings only — Change the Red, Green, and Blue settings back to their original factory settings and set the default setting for Normal Preset.

All settings — Change all the user-adjustable settings including color, position, and brightness, contrast, and OSD hold time to the factory defaults. The language of the OSD does not change.

DDC/CI: — Enable the DDC/CI control function.

DDC/CI (Display Data Channel/Command Interface) allows your monitor parameters (brightness, color balance etc) to be adjustable via software on your PC.

Default is "Enable". You can disable this feature by selecting "Disable".

For best user experience and optimum performance of your monitor, keep this feature enabled.

NOTE: *If user select "Disable", display Warning message box as below. Select "Yes" disable DDC/CI and return to "Factory Reset" menu. Warning message time-out in 20 sec.*

OSD Warning Messages

One of the following warning messages may appear on the screen indicating that the monitor is out of synchronization.

1. Auto Detect (Analog Input) Cannot Display This Video Mode **Optimum Resolution 1680 x1050 60Hz**	or	1. Auto Detect (Digital Input) Cannot Display This Video Mode **Optimum Resolution 1680 x1050 60Hz**
2. Analog Input Cannot Display This Video Mode **Optimum Resolution 1680 x1050 60Hz**	or	3. Digital Input Cannot Display This Video Mode **Optimum Resolution 1680 x1050 60Hz**

This means that the monitor cannot synchronize with the signal that it is receiving from the computer. Either the signal is too high or too low for the monitor to use. See specifications for the Horizontal and Vertical frequency ranges addressable by this monitor. Recommended mode is 1680 X 1050 @ 60Hz.

NOTE: The floating Dell Self-test Feature Check dialog appears on-screen if the monitor cannot sense a signal cable.

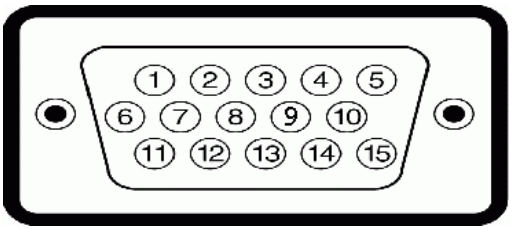
Occasionally, no warning message appears, but the screen is blank. This could also indicate that the monitor is not synchronizing with the computer.

See solving problems for more information.

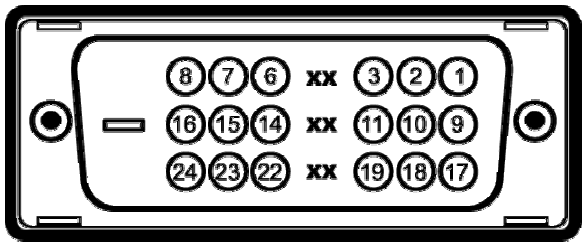
4. Input/Output Specification

4.1 Input Signal Connector

VGA Connector:

Pin NO.	Description	Pin NO.	Description
1.	Red Video	9.	DDC +5V
2.	Green Video	10.	GND-sync
3.	Blue Video	11.	GND
4.	GND	12.	DDC data
5.	Self-test	13.	H-Sync
6.	R-Ground	14.	V-Sync
7.	G-Ground	15.	DDC clock
8.	B-Ground		
VGA Connector layout			
			

DVI Connector:



Note: Pin 1 is at the top right.

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data 2-	9	T.M.D.S. Data 1-	17	T.M.D.S. Data 0-
2	T.M.D.S. Data 2+	10	T.M.D.S. Data 1+	18	T.M.D.S. Data 0+
3	T.M.D.S. Data 2 Shield	11	T.M.D.S. Data 1 Shield	19	T.M.D.S. Data 0 Shield
4	No Pin	12	No Pin	20	No Pin
5	No Pin	13	No Pin	21	No Pin
6	DDC Clock	14	+5V Power	22	T.M.D.S. Clock Shield
7	DDC Data	15	Ground (for +5V)	23	T.M.D.S. Clock +
8	No Connect	16	Hot Plug Detect	24	T.M.D.S. Clock -

4.2 Factory Preset Display Modes

VESA MODES							
			Horizontal		Vertical		
Mode	Resolution	Total	Nominal Frequency +/- 0.5kHz	Sync Polarity	Nominal Freq. +/- 1 Hz	Sync Polarity	Nominal Pixel Clock (MHz)
VGA	640x480@60Hz	800 x 525	31.469	N	59.940	N	25.175
	640x480@75Hz	840 x 500	37.500	N	75.00	N	31.500
	800x600@60Hz	1056 x 628	37.879	P	60.317	P	40.000
	800x600@75Hz	1056x625	46.875	P	75.000	P	49.500
XGA	1024x768@60Hz	1344x806	48.363	N	60.004	N	65.000
	1024x768@75Hz	1312x800	60.023	P	75.029	P	78.750
SXGA	1152x864@75Hz	1600x900	67.500	P	75.000	P	108.00
	1280x1024@60Hz	1688x1066	64.000	P	60.000	P	108.00
	1280x1024@75Hz	1688x1066	79.976	P	75.025	P	135.00
WSXGA	1680x1050@60H	2240x1899	65.16	P	60.0	P	146
DOS	720x400@70Hz	900 x 449	31.469	N	70.087	P	28.322

4.3 Power Supply Requirements

A/C Line voltage range	: 100 V ~ 240 V
A/C Line frequency range	: 50 ± 3Hz, 60 ± 3Hz
Current	: 1.5A max at 100V; 0.8A max at 240 V
Peak surge current	: < 60A peak at 240 VAC and cold starting
Leakage current	: < 3.5mA
Power line surge	: No advance effects (no loss of information or defect) with a maximum of 1 half-wave missing per second
DC output Voltage	: 5VDC ± 5%; 12VDC± 5%

4.4 Panel Specification

LTM220M1-L01 is a color active matrix liquid crystal display (LCD) that uses amorphous silicon TFT (Thin Film Transistor) as switching components. This model is composed of a TFT LCD panel, a driver circuit and a back light unit. The resolution of a 22” is 1680 x1050 and this model can display up to 16.7 millions colors.

Features

- High contrast ratio, high aperture structure
- TN (Twisted Nematic) mode
- Wide Viewing Angle
- High speed response
- WSXGA+ (1680 x 1050 pixels) resolution
- Low power consumption
- DE (Data Enable) only mode
- LVDS (Low Voltage Differential Signaling) interface (2pixel/clock)
- Compact Size Design
- RoHS, TCO 03’ compliance

4.4.1 Display Characteristics

Items	Specification	Unit
Pixel Pitch	0.282(H) x 0.282(W)	mm
Active Display Area	473.76(H) x 296.1(V)	mm
Surface Treatment	Haze 25% Hard coating (3H)	
Display Colors	16.7M (6 bit Hi-FRC)	colors
Number of Pixels	1,680 x 1,050	pixel
Pixel Arrangement	RGB vertical stripe	
Display Mode	Normally White	
Power Consumption	31.3 Watt (Typ)	
Luminance of White	300(Typ.)	cd/㎡

4.4.2 Optical Characteristics

(Ta = 25 ± 2°C, VDD=5V, fv= 60Hz, fDCLK=59.6MHz, IL = 7.5mArms)

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Contrast Ratio (Center of screen)		C/R		600	1000	-	
Response Time	On/Off	Tr + Tf		-	5	8	msec
Luminance of White (Center of screen)		Y_L		250	300	-	cd/m^2
Color Chromaticity (CIE 1931)	Red	Rx		0.610	0.640	0.670	
		Ry		0.300	0.330	0.360	
	Green	Gx		0.270	0.300	0.330	
		Gy		0.570	0.600	0.630	
	Blue	Bx		0.120	0.150	0.180	
		By		0.030	0.060	0.090	
	White	Wx	Normal $\theta_{L,R}=0$ $\theta_{U,D}=0$ Viewing Angle	0.283	0.313	0.343	
		Wy		0.299	0.329	0.359	
	Red	Ru'		-	0.451	-	
		Rv'		-	0.523	-	
Color Chromaticity (CIE 1976)	Green	Gu'		-	0.125	-	
		Gv'		-	0.564	-	
	Blue	Bu'		-	0.175	-	
		Bv'		-	0.158	-	
	White	Wu'		-	0.198	-	
		Wv'		-	0.468	-	
C.G.L (ACC ONLY)	White	△u'v'		-	-	0.02	

Item		Symbol	Condition	Min.	Typ.	Max.	Unit
Color Gamut		-		-	72	-	%
Color Temperature		-		-	6500	-	K
Viewing Angle	Hor.	θ_L	CR≥10(5)	70(80)	80(89)	-	Degrees
		θ_R		70(80)	80(89)	-	
	Ver.	θ_U		70(80)	80(89)	-	
		θ_D		70(80)	80(89)	-	
Brightness Uniformity (9 Points)		B_{uni}		-	-	25	%

4.5 Definition of Pixel Defects

4.5. 1.Description

These inspection standards shall be applied to LCD Module supplied by SAMSUNG LTM220M1-L01 Optoelectronics Corporation.

4.5.2 The environmental condition of inspection

viewing distance	35 ~ 50 cm
ambient illumination	300 ~ 700 Lux (normally 500 Lux)
ambient temperature	25 + - 5 'C
viewing angle	The surface of the module and the inspector's line of view shall be at 90 degrees(TN) 90±45 (PVA)
display pattern	Pure R, G, B, Black, White, Dot Gray pattern
inspection area	Active area

4.5.3 Classification of defects

dark / bright spots:

points on the display which appear dark / bright and remain unchanged in size

dark / bright lines:

lines on the display which appear dark / bright and remain unchanged in size

polarizer scratch:

when the unit is lit a light, line is seen across a darker background; line does not vary in size

polarizer dent:

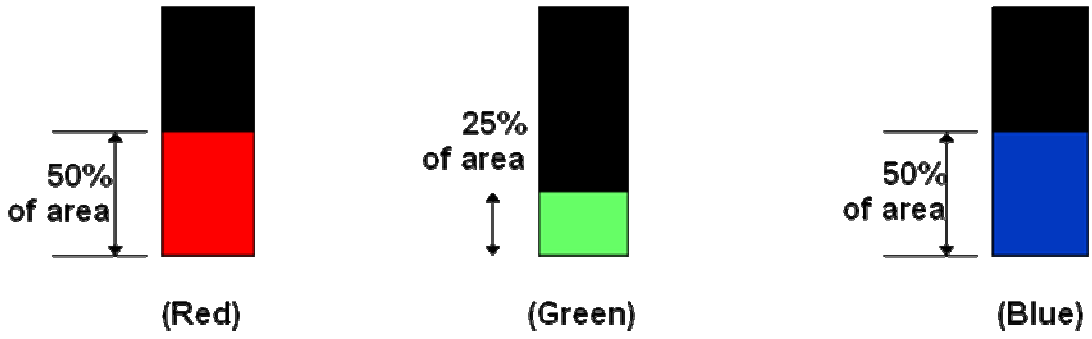
when the unit is lit a light, light(white) spots appear against a darker background, and do not vary in size

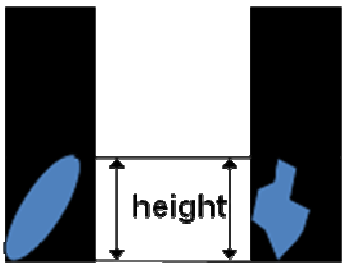
bright/dark dot:

a sub-pixel (R, G, B dot) stuck off / on

4.5.4 Inspection Criteria

(1) *. Definition of Partial dot*





(Oval) (Undefined)

When bright area in a sub-pixel(red or blue) exceed half size of a sub-pixel, that sub-pixel can be counted as a bright dot.

When bright area in a sub-pixel(green) exceed a third size of a sub-pixel, that sub-pixel can be counted as a bright dot.

Oval and undefined shape of Partial dot is defined as height of dot.

When bright area in a sub-pixel (R, B) is under 20% of a sub-pixel, that sub-pixel can be ignored.

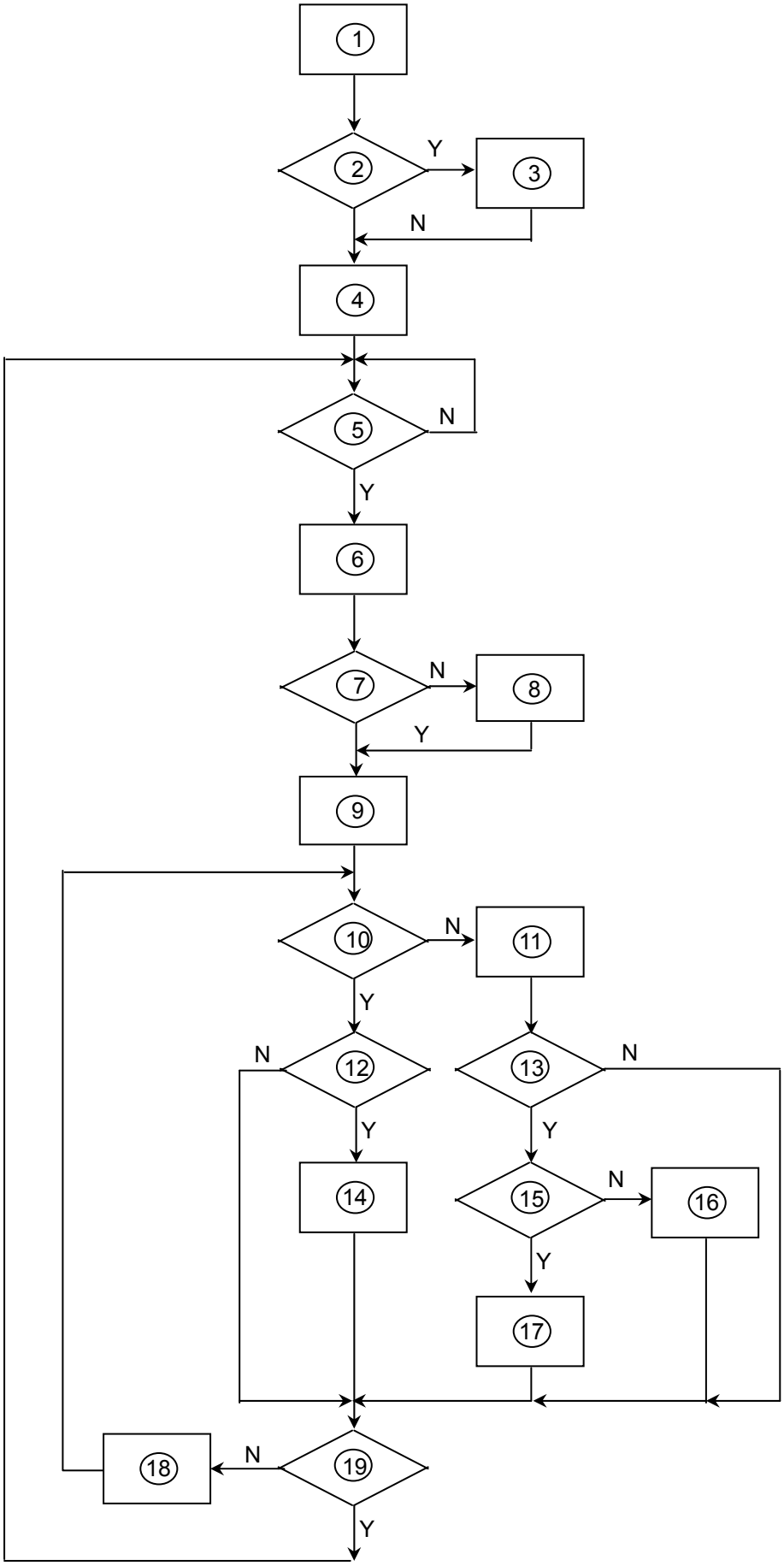
When bright area in a sub-pixel (G) is under 10% of a sub-pixel, that sub-pixel can be ignored.

(2) Display Inspection

Defect Type	Accept (mm)	Reject (mm)
Dark / bright spot *1 (foreign material,Stain,Dust)	0.3 < D ≤ 0.7 N ≤ 5	D > 0.7 N > 5
Bright line (light lint), or dark line (dark lint / hair)	0.01 < W ≤ 0.1 0.3 < L ≤ 7.0 N ≤ 3	W> 0.1 L >7.0 N > 3
Polarizer scratch	0.01 < W ≤ 0.1 0.3 < L ≤ 7.0 N ≤ 3	W > 0.1 L > 7.0 N > 3
Polarizer dent/bubble	0.3 < D ≤ 0.7 N ≤ 5	D > 0.7 N > 5
Maximum allowable number of defects	N ≤ 8	N > 8

5. Block Diagram

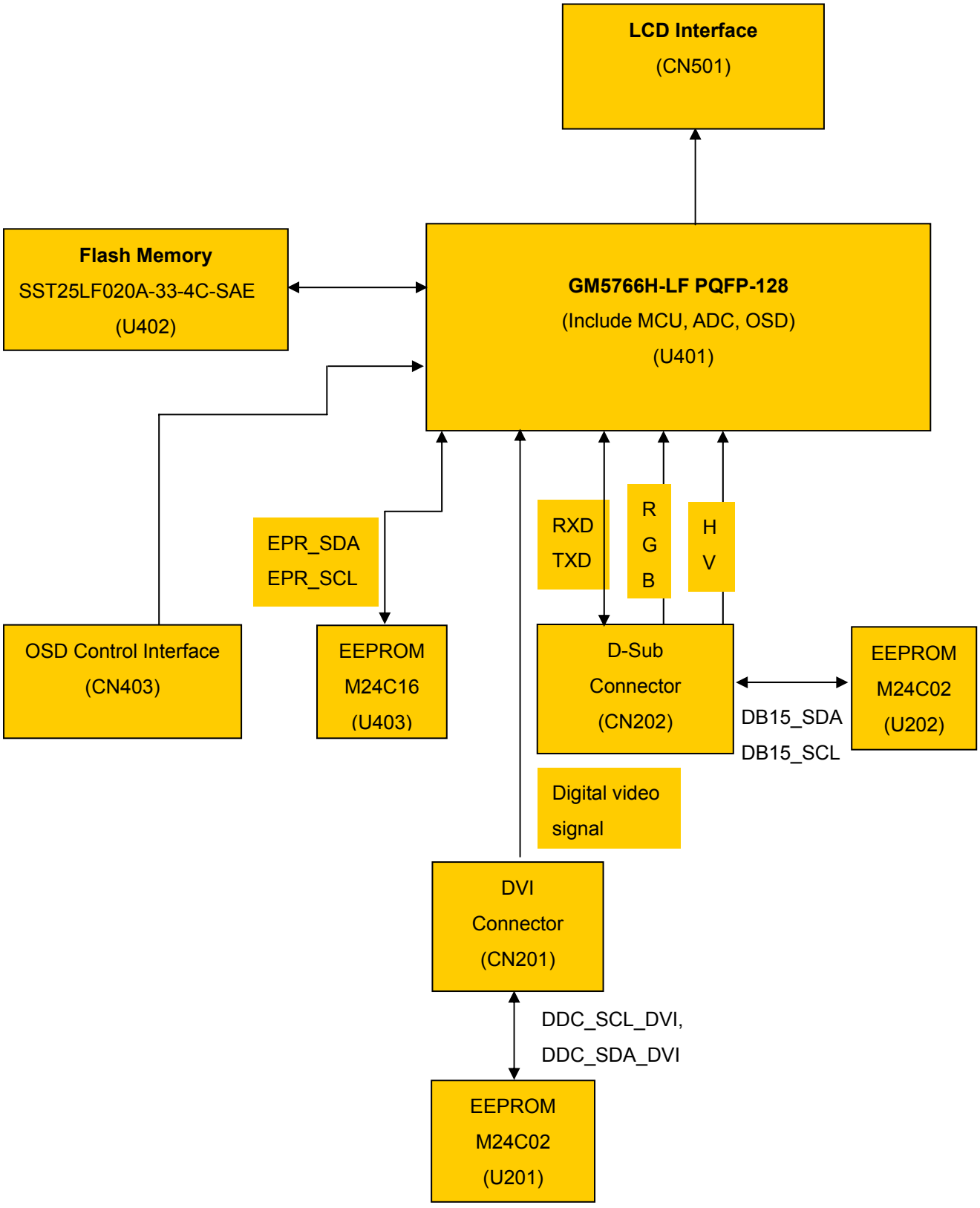
5.1 Software Flow Chart



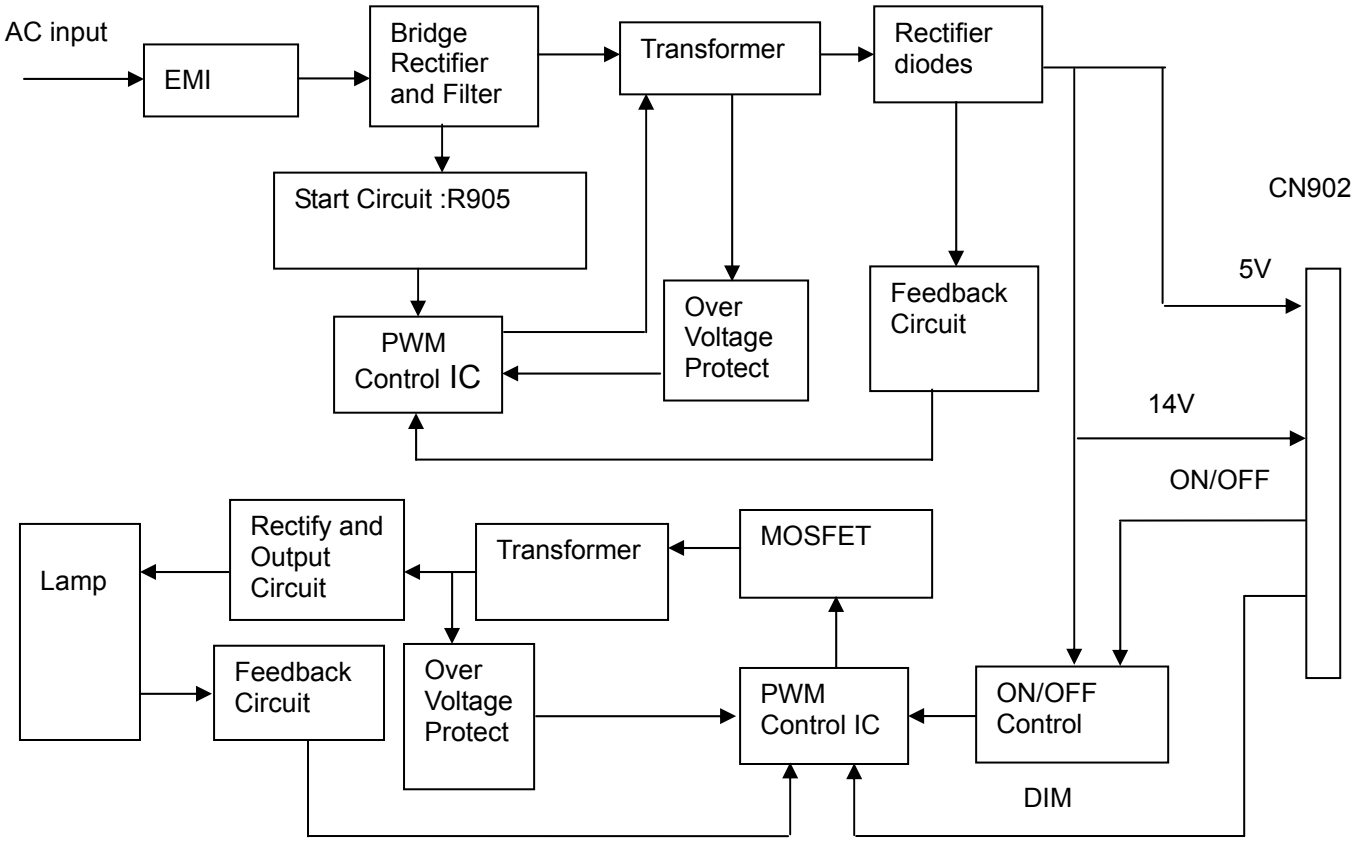
1) MCU Initializes.
2) Is the EEprom blank?
3) Program the EEprom by default values.
4) Get the PWM value of brightness from EEprom.
5) Is the power key pressed?
6) Clear all global flags.
7) Are the AUTO and SELECT keys pressed?
8) Enter factory mode.
9) Save the power key status into EEprom. Turn on the LED and set it to green color. Scalar initializes.
10) In standby mode?
11) Update the lifetime of back light.
12) Check the analog port, are there any signals coming?
13) Does the scalar send out an interrupt request?
14) Wake up the scalar.
15) Are there any signals coming from analog port?
16) Display "No connection Check Signal Cable" message. And go into standby mode after the message disappears.
17) Program the scalar to be able to show the coming mode.
18) Process the OSD display.
19) Read the keyboard. Is the power key pressed?

5.2 Electrical Block Diagram

5.2.1 Main Board



5.2.2 Inverter and Power Board

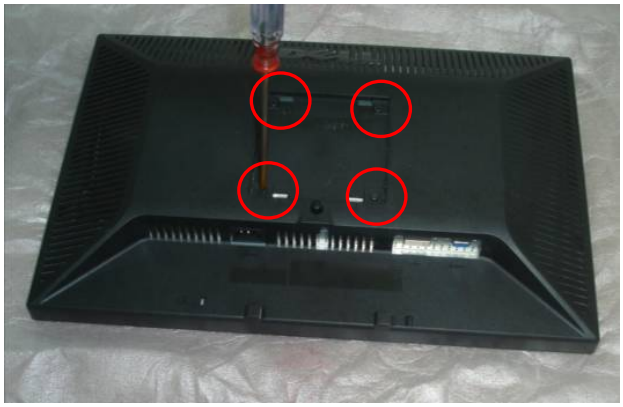


6. Mechanical Instruction (For TC8SGHHKWDDNHC)

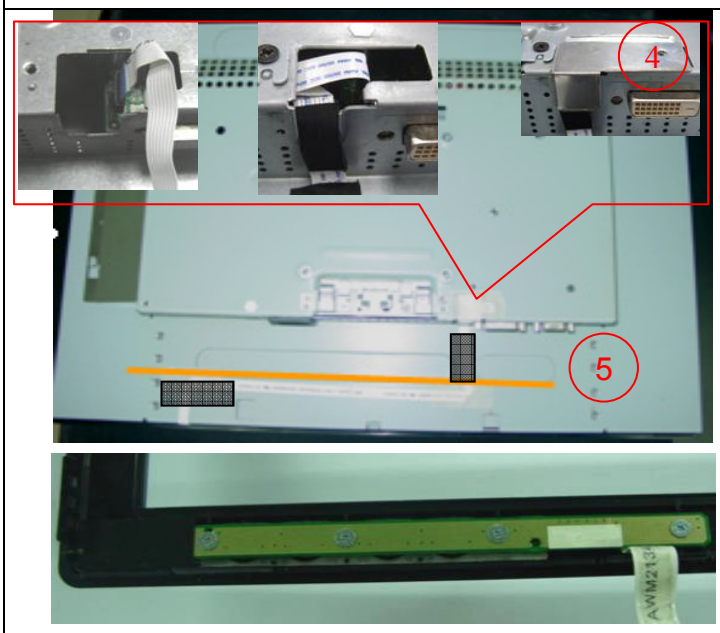
Note: Firstly, put the monitor on a soft, flat and clean surface, wear gloves.

Tools: 2 Power screwdrivers（φ=5mm、L=60mm）; 1 small cross screwdriver; turnbuckle driver;

Setting: Power screwdriver torque A=11 kgF. Cm; torque B=6 kgF. Cm

Fig	Instruction
	**Remove stand:** Press the Stand release button and lift up the Stand and away from the monitor.
	**Remove the cosmetic cover:** 1. Remove the 4 screws by Torque A 2. Pry the monitor up then find out the hooks' position, use the tool (like the picture or other card) to insert into the gap of bezel and rear cover. PS: be careful to separate the front cover, because the keyboard maybe damage.
	

Symbol	TPV Part Number	Description
1	A34G0152 VH 1B 30	Rear Cover
2	705GQCK0P34002	Stand-Base Ass'Y
3	A34G0151 VH 1B	Bezel



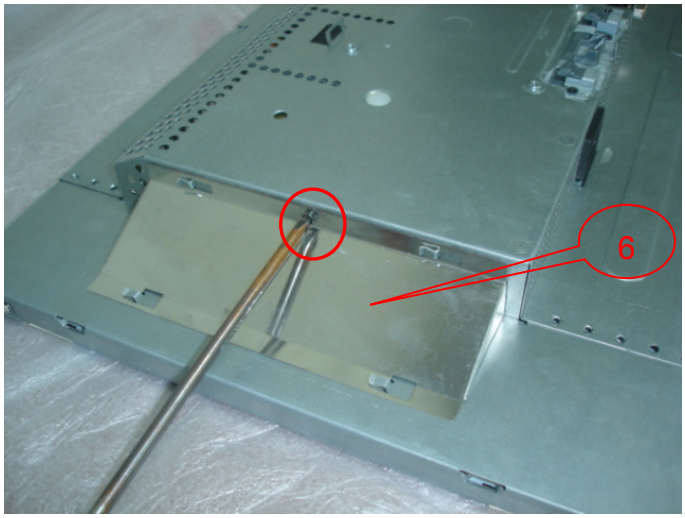
3. Turn over the monitor as the Fig and take off the rear cover

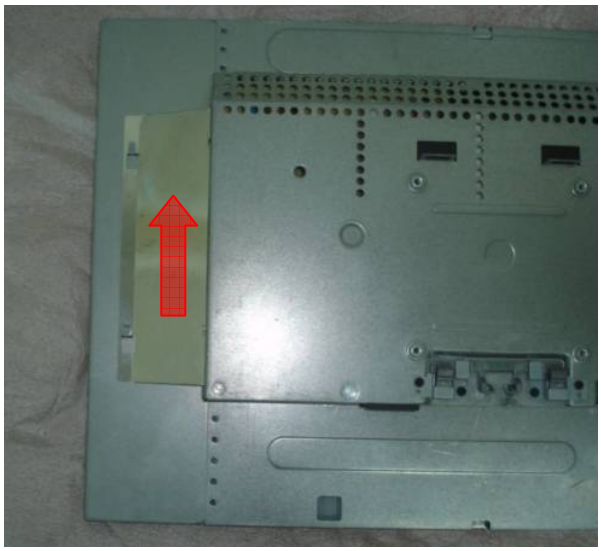
4. Remove the small cover shield.

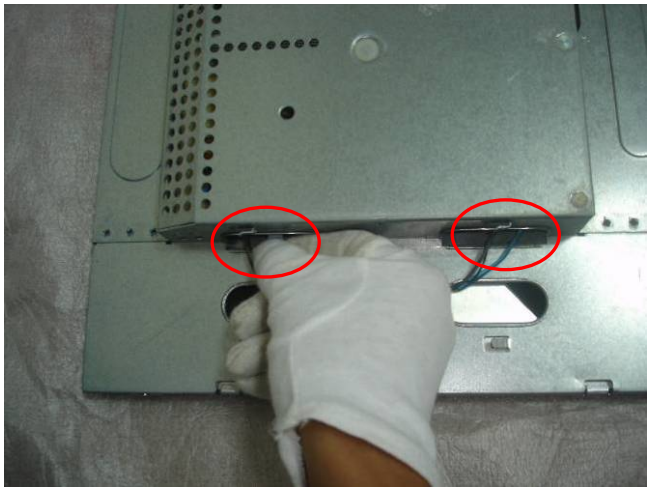
5.Disconnect the Key board connector and then remove the bezel

6. The harness must along with the yellow line indicate!

Symbol	TPV Part Number	Description
4	A85G0041 1	Shield
5	052G 1150 C	Black Adhesive Tape







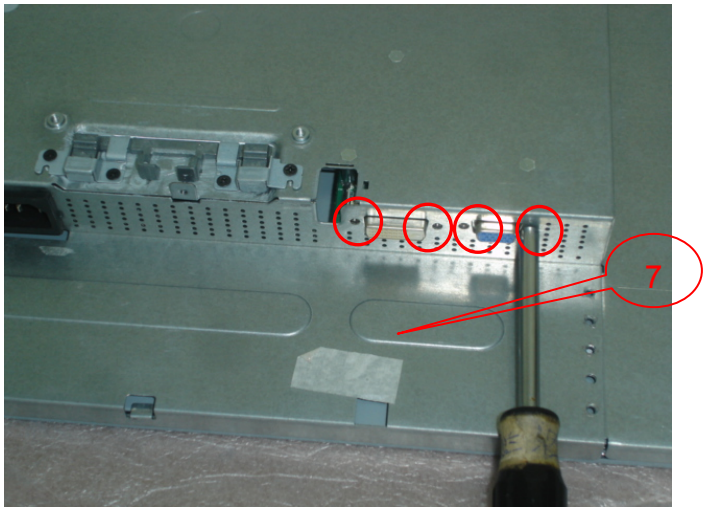
Symbol	TPV Part Number	Description
6	A85G0036 1	shielding-light

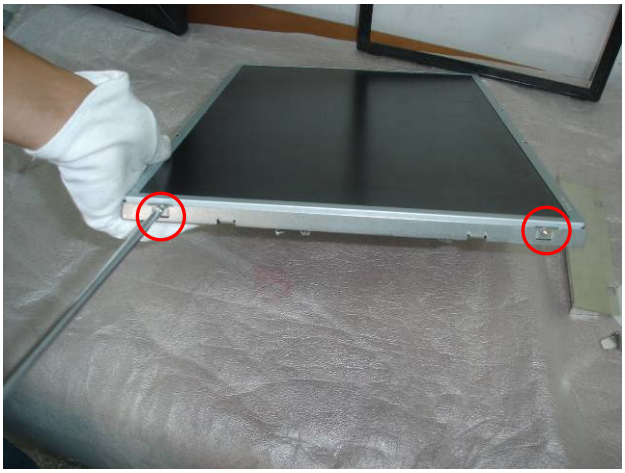
Remove the small shield and back light connector :

1.Remove the screw by Torque B or by manual

2.Push the small shield as the arrowhead direction

3.Disconnect the back light connectors





Symbol	TPV Part Number	Description
7	A15G0112 4	Main Frame

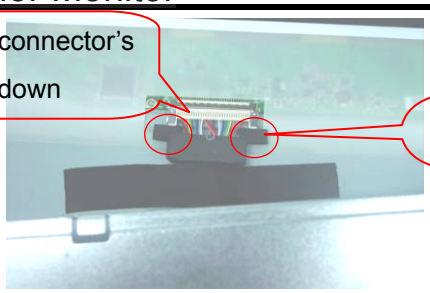
Remove the main frame :

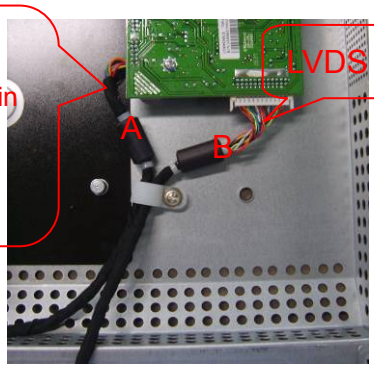
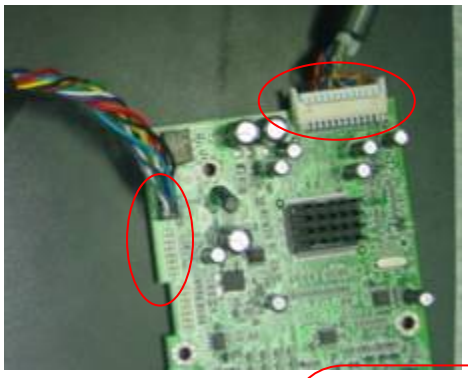
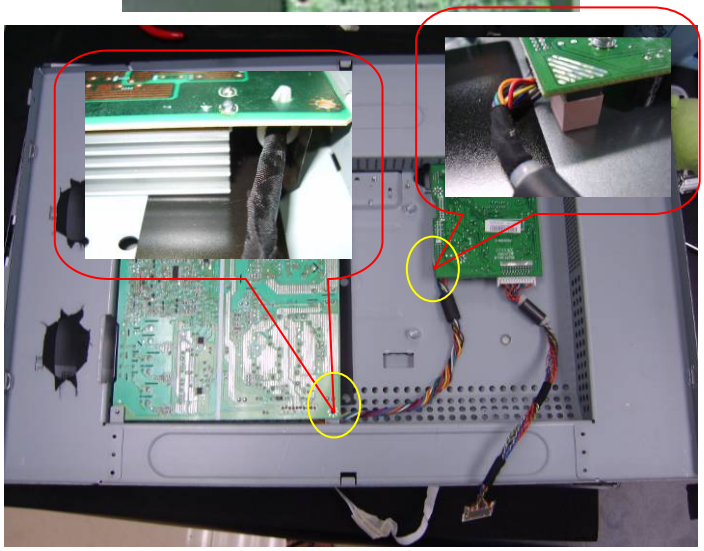
1.Remove the four screws by Torque B

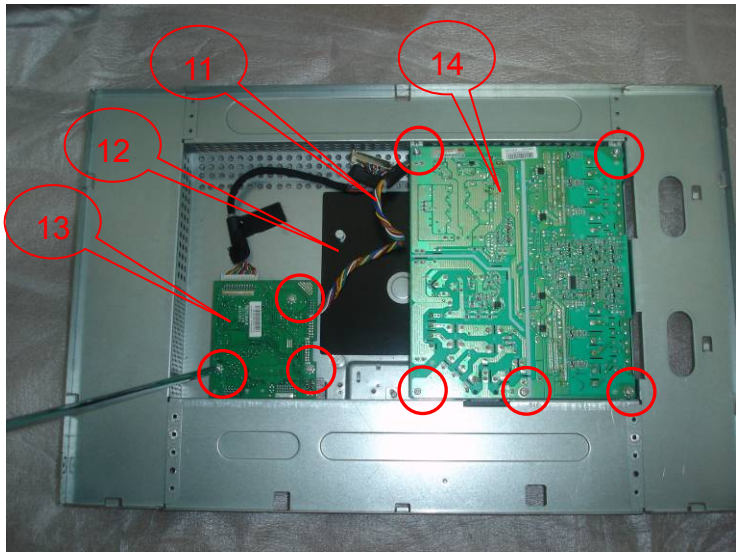
2.Remove the four screws and remove the main frame

by manual or torque = 3kgF.Cm

3. Remove the main frame and at the same time disconnect the LVDS connector and remove the EVA washers.

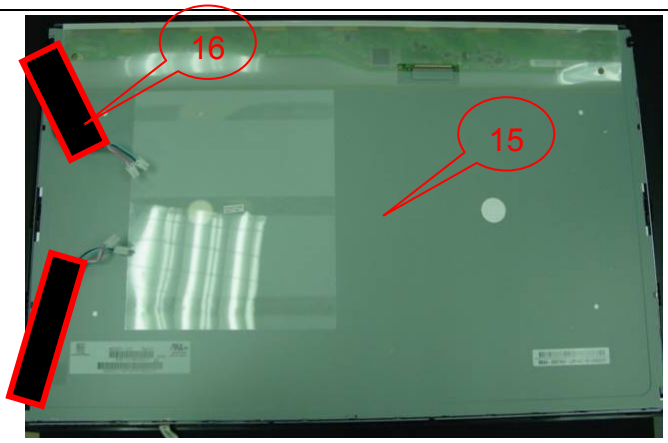
<table>
<tr>
<td>Note: Make connector's metal side adown
 

 
</td>
<td></td>
</tr>
<tr>
<td>Harness between main board and power board
 
</td>
<td>Button the harness A and B by Fix Button and screw to main frame.
Note: 1.Screw the cable hook as the figure showed left and make sure the magnetic ring don't touch the pillar of main frame.
2. Do not tighten the cable when screw the Fix Button.</td>
</tr>
<tr>
<td> 
  </td>
<td>1. Insert LVDS PIN to CN501 on the main board; insert Power board connector cable to CN601 of main board.
Note: 1.Harness can't be pressed by emanated foil, and can't touch main frame's ear.
2. Be careful of the CN403 PIN seat when install the main board, because the CN403 PIN seat is higher.</td>
</tr>
</table>



Remove the Power board and main board:

Remove the eight screws and remove the Power board and main board by Torque B

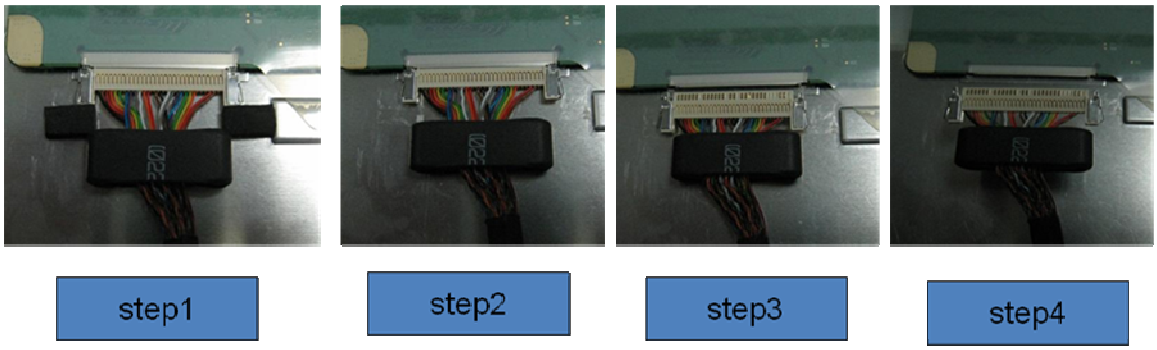


The end:

The Black Adhesive Tape should be affixed as the figure showed.

Symbol	TPV Part Number	Description
8	S95G80183608	LVDS ASS'Y
9	044G3231 15571	EVA WASHER
11	095G 825 9W507	HARNESS 12P-10P 230mm
12	Q52G6025 13156	Mylar
13	CBPC7SGHDDQ1	Main Board
14	PWPC7C42LAA1	PWPC Board
15	750GLSC0L0132D000D	Panel(SAMSUNG)
16	052F 1150501	Black Adhesive Tape

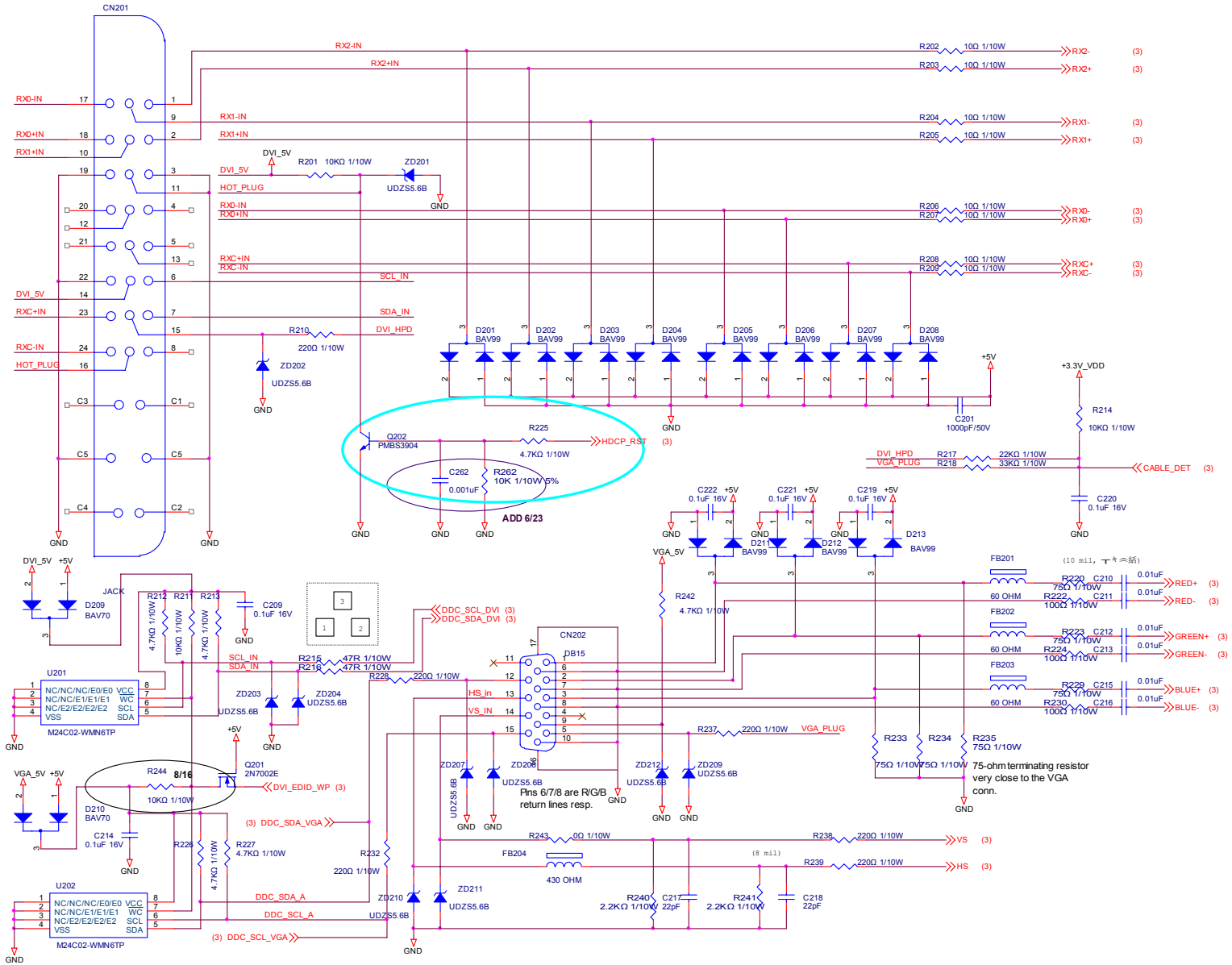
Disassemble LVDS cable process

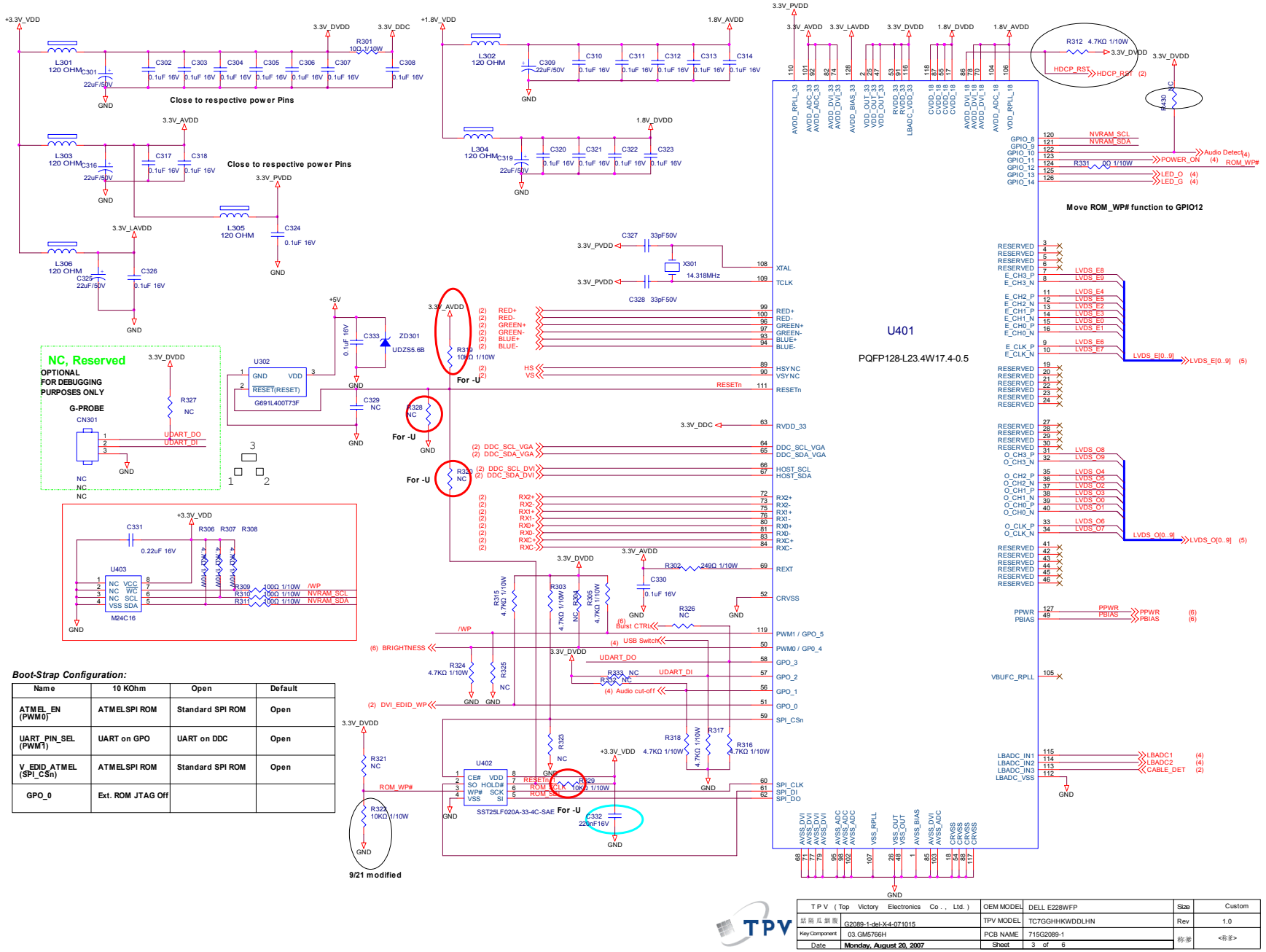


- Step1: LVDS cable with plugging –in
- Step2: remove foam
- Step3:pull out LVDS cable via pressing side-clip, but the core is still sticked there.
- Step4:take off LVDS with core.
- Through the process, the LVDS connector will not be damaged.

7. Schematic Diagram

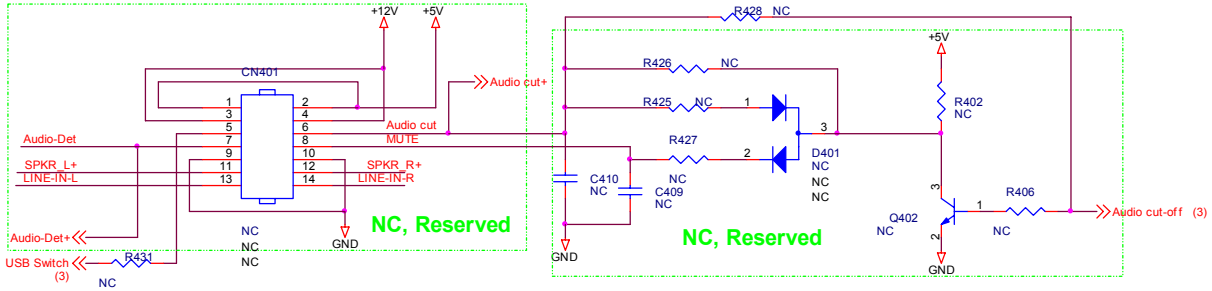
7.1 Main Board

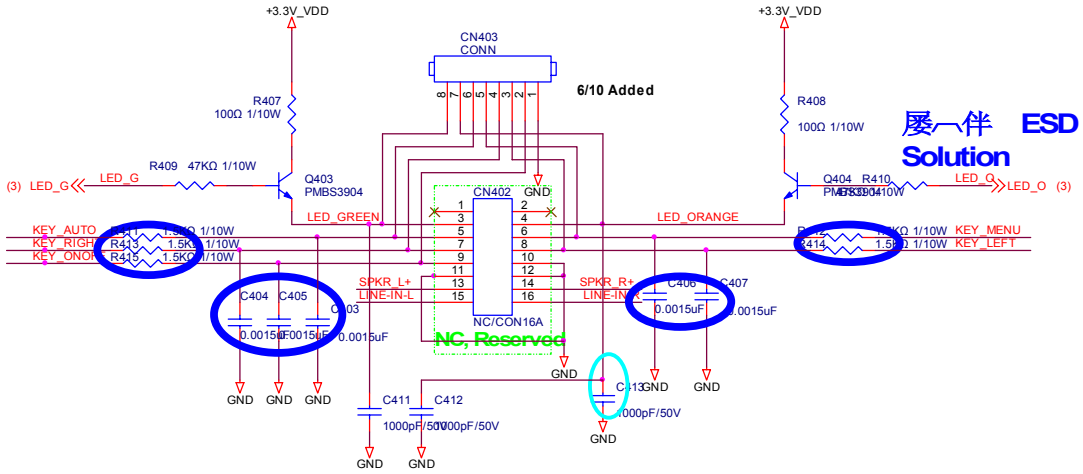


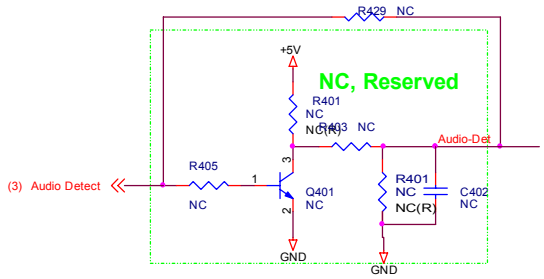


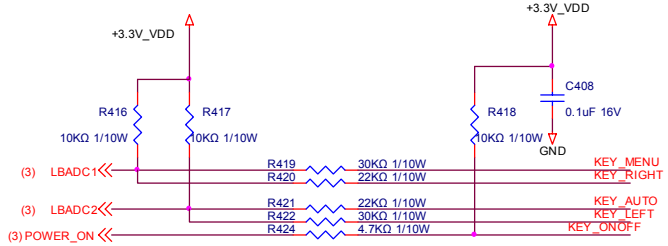
Boot-Strap Configuration:

Name	10 KOhm	Open	Default
ATMEL_EN (PWM0)	ATMELSPI ROM	Standard SPI ROM	Open
UART_PIN_SEL (PWM1)	UART on GPO	UART on DDC	Open
V_EDID_ATMEL (SPI_CSn)	ATMELSPI ROM	Standard SPI ROM	Open
GPO_0	Ext. ROM JTAG Off		

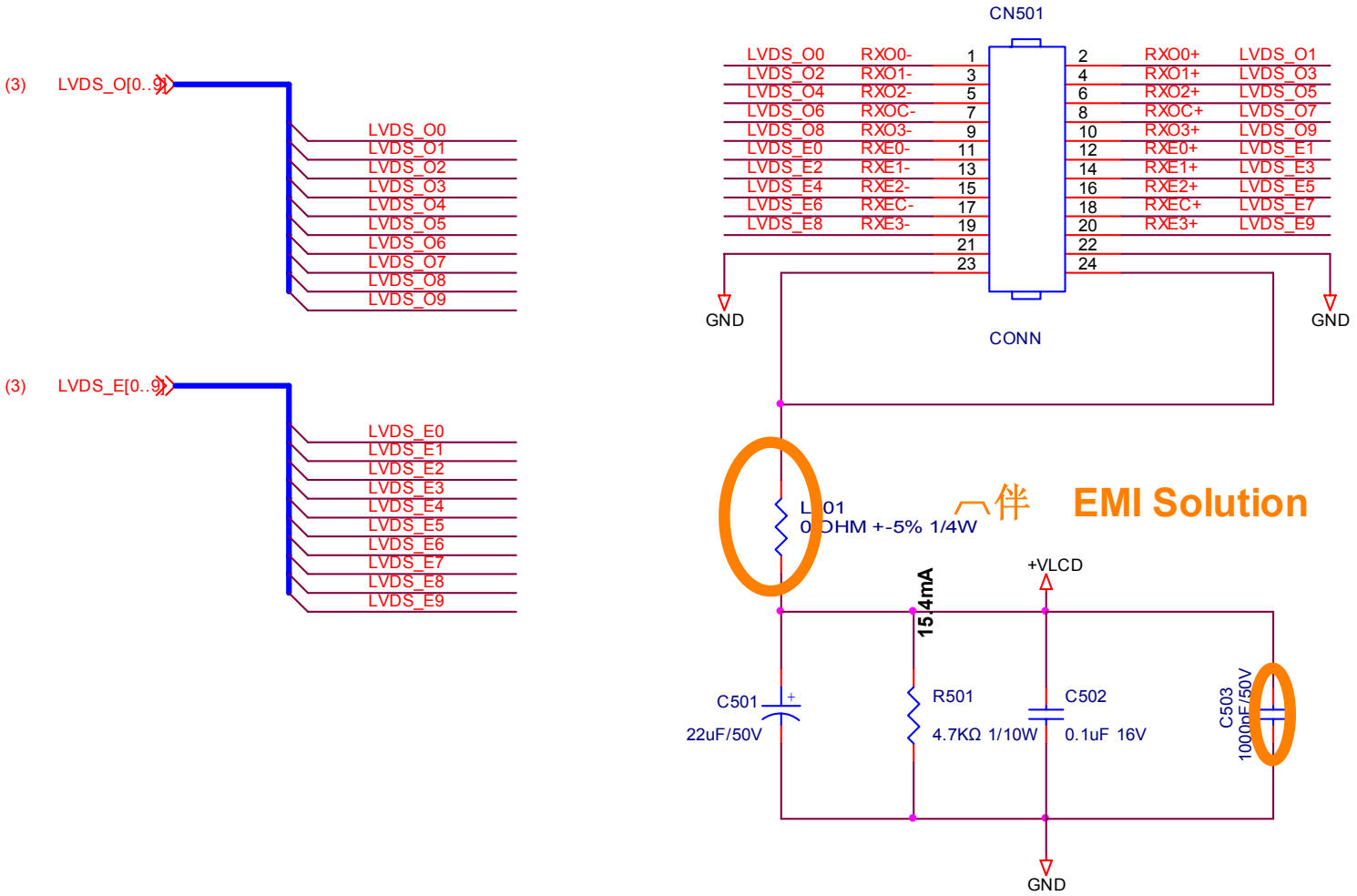




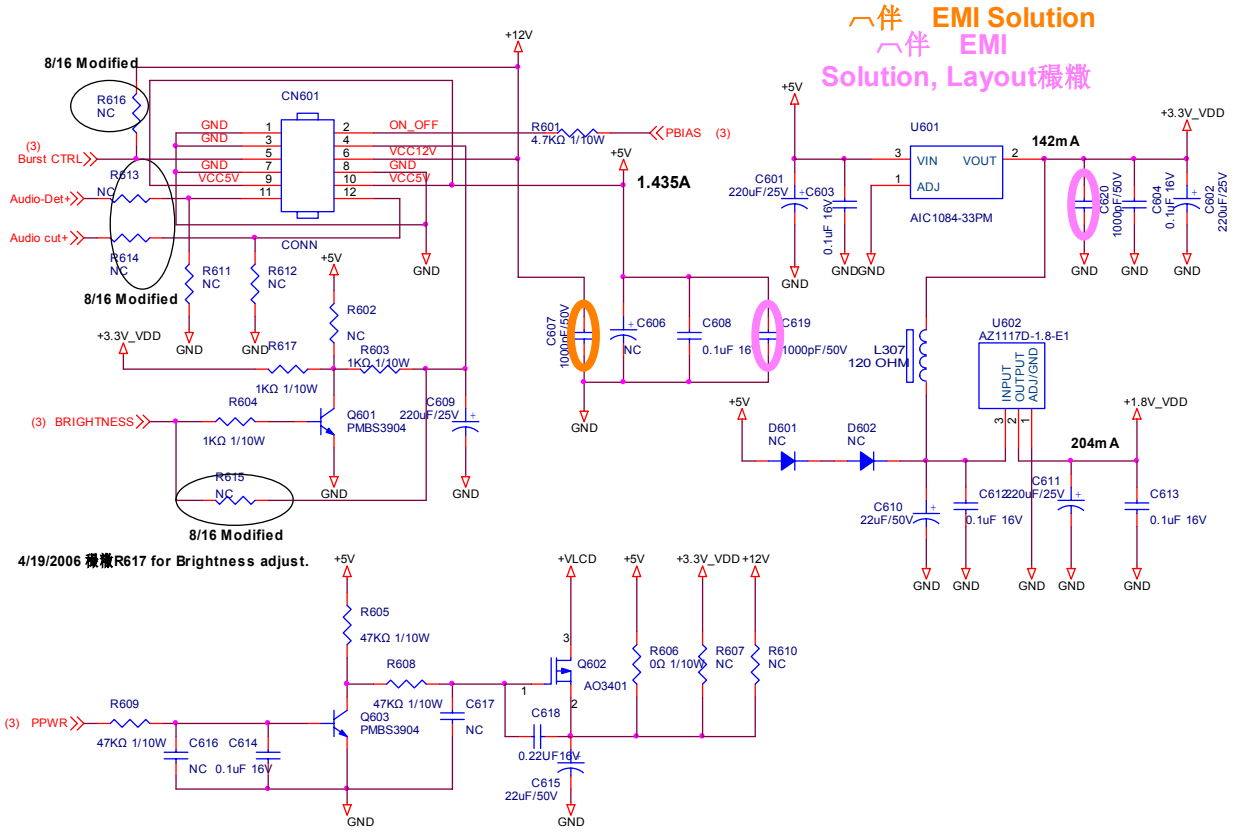




TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	DELL E228WFP	Size	B
結隔瓜鋼殿	G2089-1-del-X-4-071015	TPV MODEL	TC7GGHHKWDDLHN	Rev	1.0
Key Component	04.key pad	PCB NAME	715G2089-1	称爹	<称爹>
Date	Monday, August 20, 2007	Sheet	4 of 6		

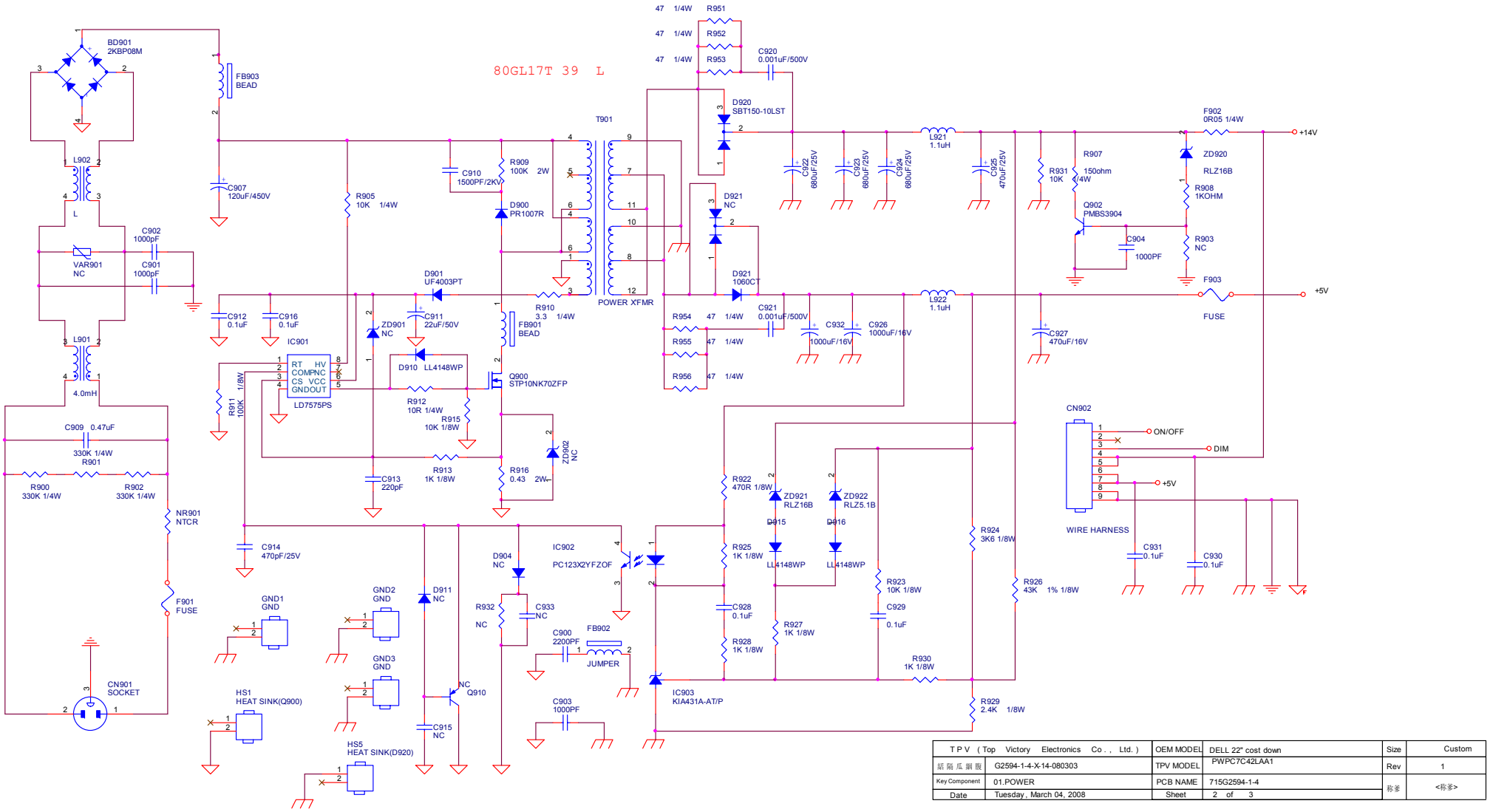


TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	DELL E228WFP	Size	A
結隔瓜網腹	G2089-1-del-X-4-071015	TPV MODEL	TC7GGHHKWDDLHN	Rev	1.0
Key Component	05.panel interface	PCB NAME	715G2089-1	称爹	<称爹>
Date	Monday, August 20, 2007	Sheet	5 of 6		

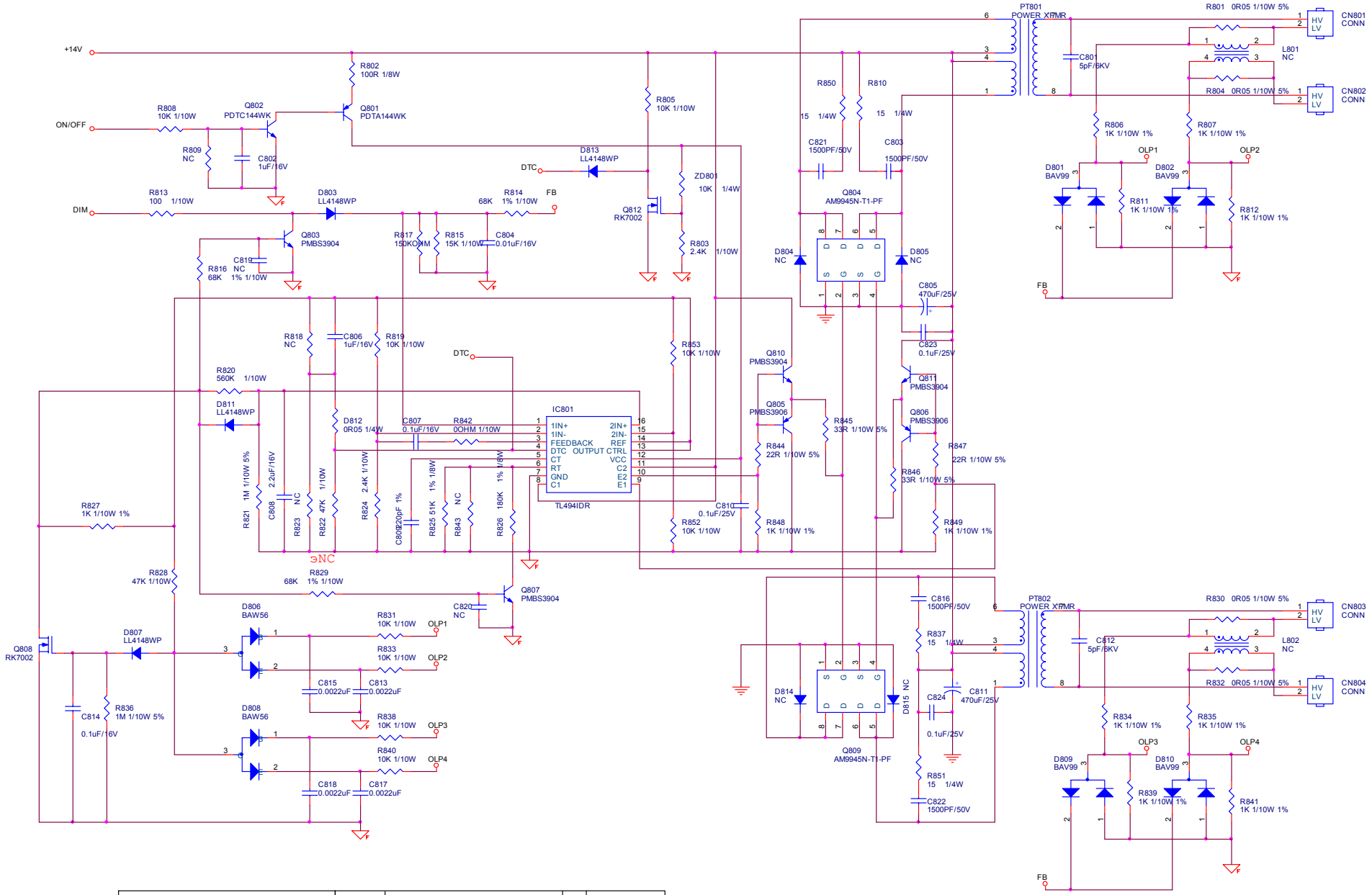


TPV (Top Victory Electronics Co., Ltd.)		OEM MODEL	DELL E228WFP	Size	B
結隔瓜綱腹	G2089-1-del-X-4-071015	TPV MODEL	TC7GGHHKWDDLHN	Rev	1.0
Key Component	06.power	PCB NAME	715G2089-1	称爹	<称爹>
Date	Monday, August 20, 2007	Sheet	6 of 6		

7.2 Power Board



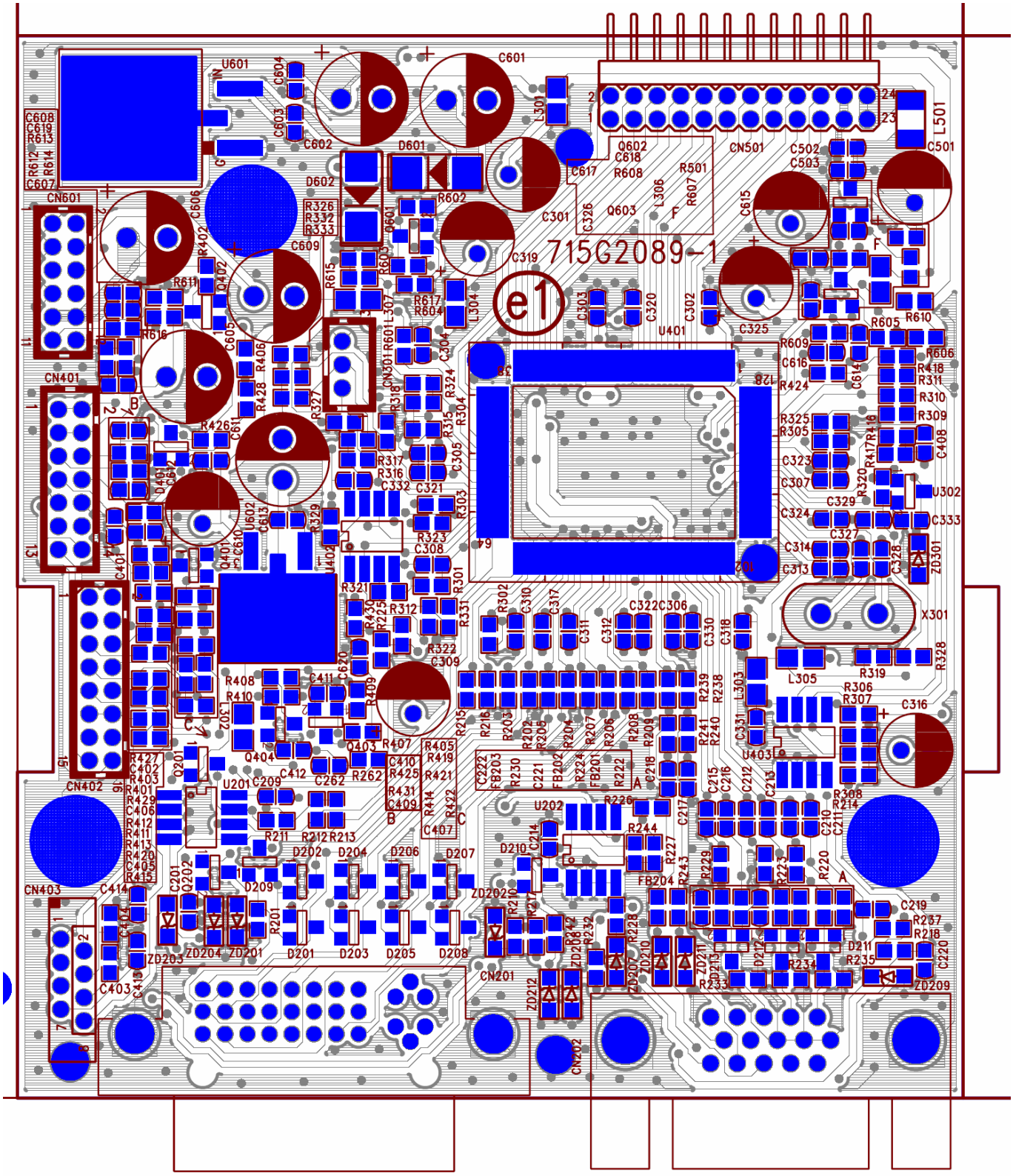
T P V (Top Victory Electronics Co . , Ltd.)		OEM MODEL	DELL 22" cost down	Size	Custom
基隔瓜銅版	G2594-1-4-X-14-080303	TPV MODEL	PWPC7C42LAA1	Rev	1
Key Component	01.POWER	PCB NAME	715G2594-1-4	称爹	<称爹>
Date	Tuesday , March 04, 2008	Sheet	2 of 3		

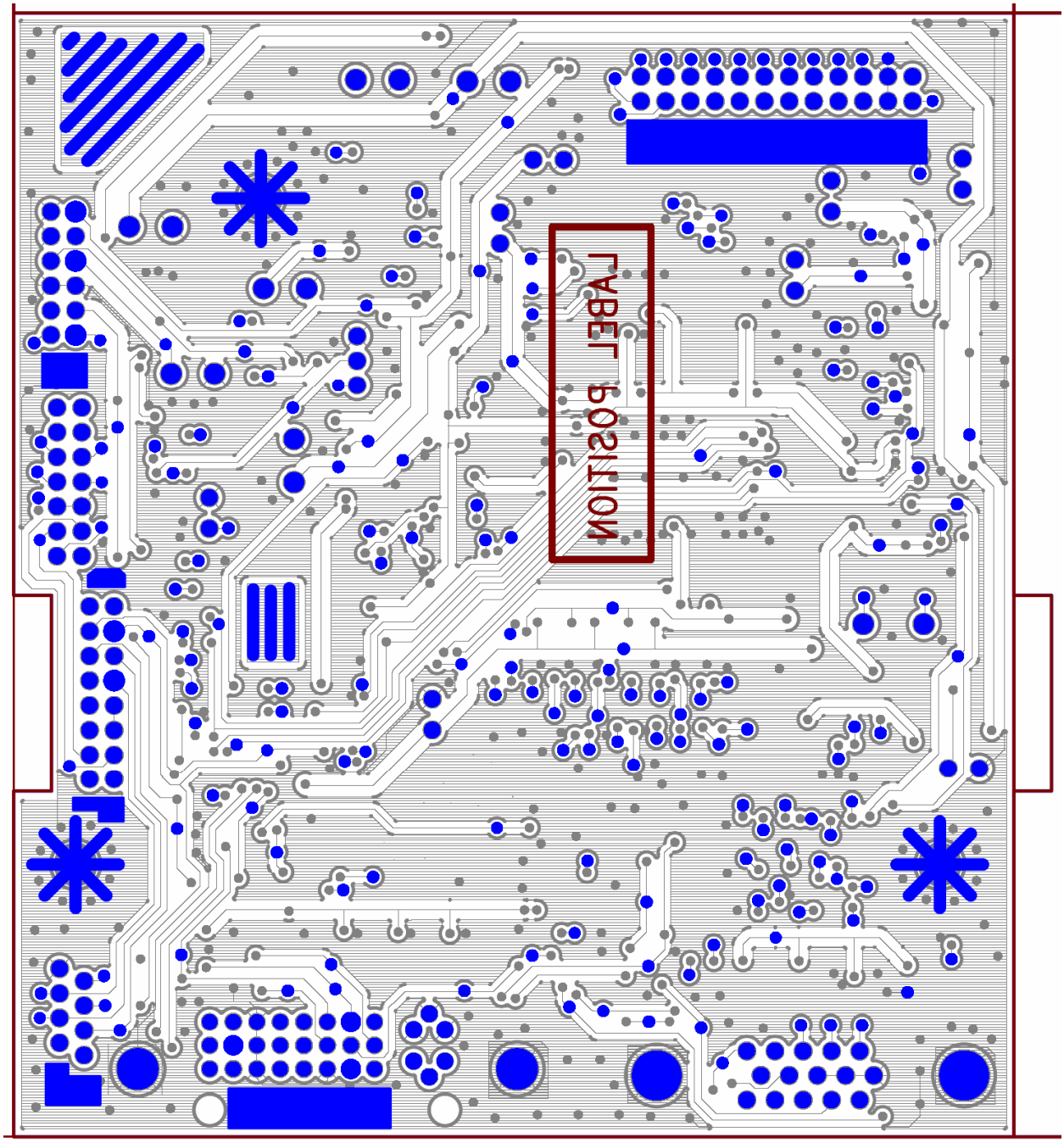


T P V （Top Victory Electronics Co., Ltd.）		OEM MODEL	DELL 22" cost down	Size	A3
結 隔 爪 銅 膜	G2594-1-4-X-14-080303	TPV MODEL	PWPC7C42LAA1	Rev	1
Key Component	02.INVERTER	PCB NAME	715G2594-1-4	称爹	<称爹>
Date	Tuesday, March 04, 2008	Sheet	2 of 3		

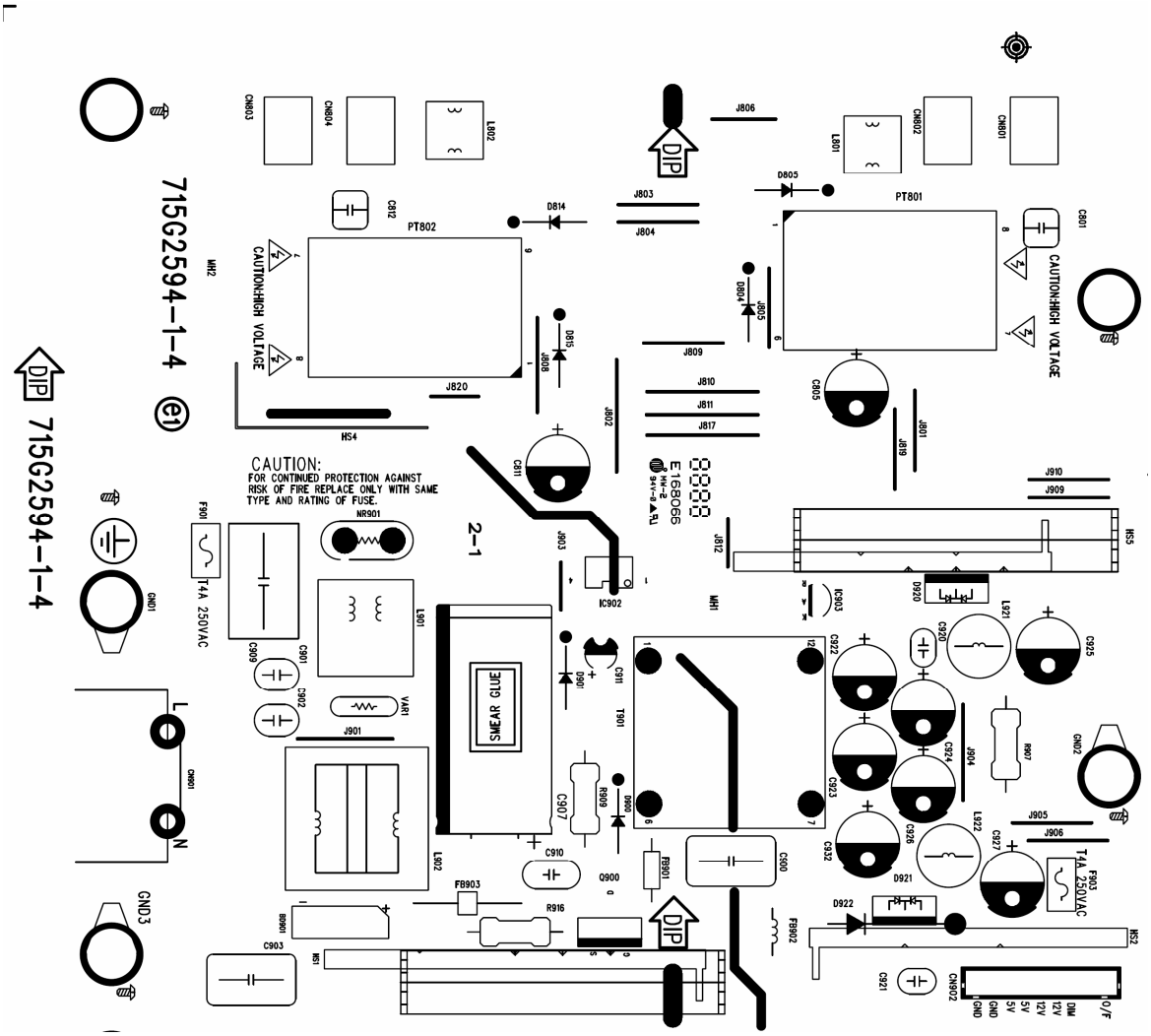
8. PCB Layout

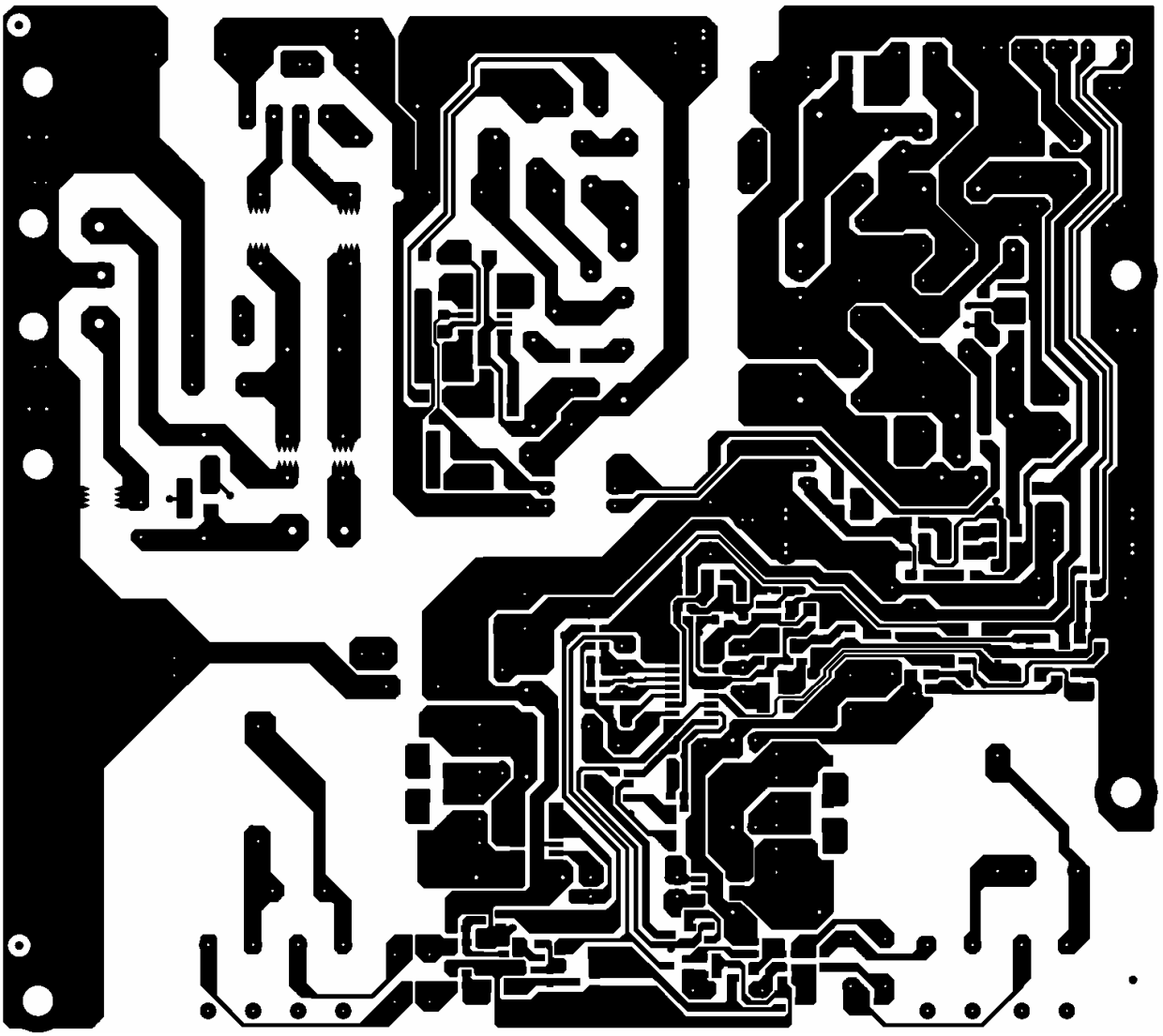
8.1 Main Board



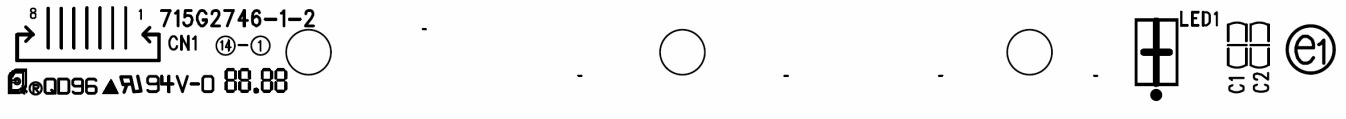

LABEL POSITION

8.2 Power Board





8.3 Key Board



9. Maintainability

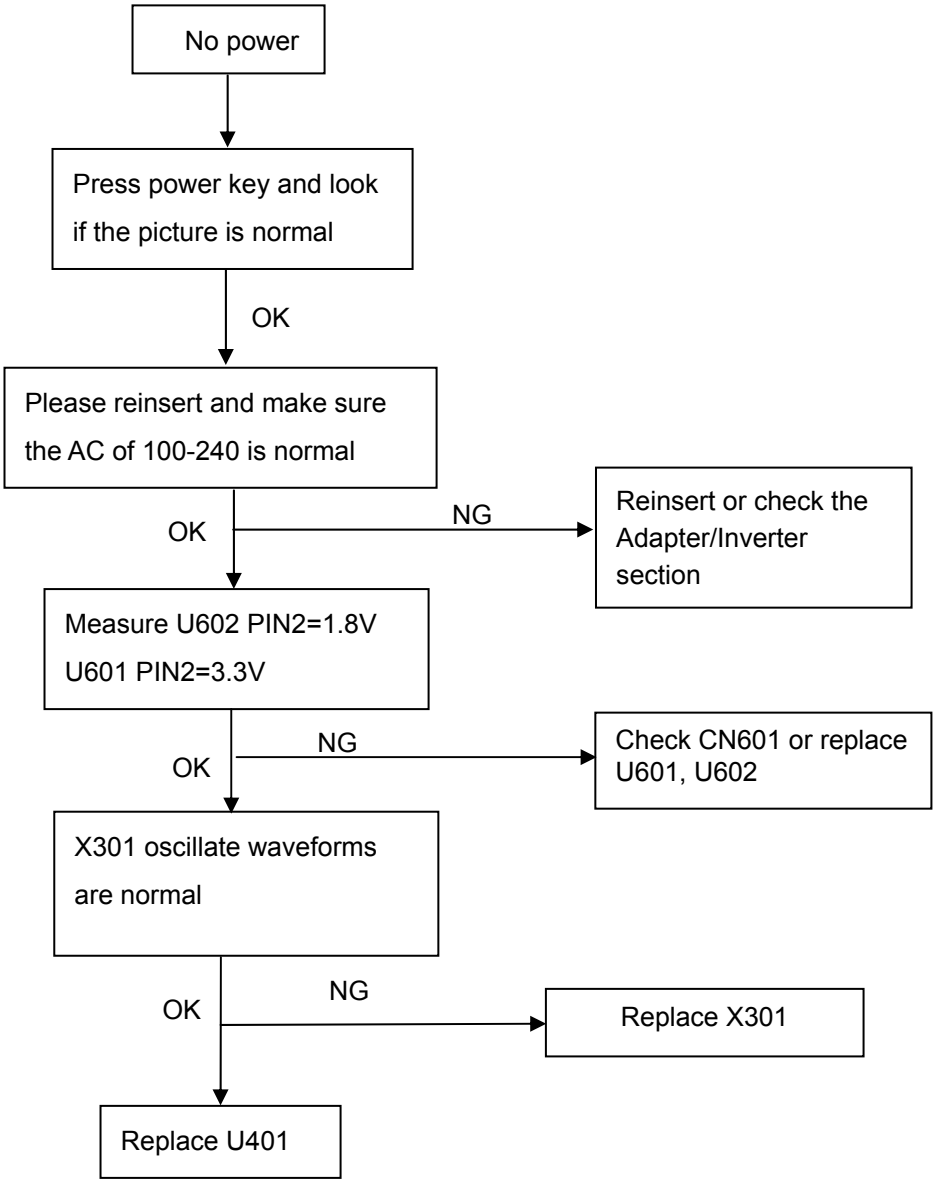
9.1 Equipments and Tools Requirement

1. Voltage meter
2. Oscilloscope
3. Pattern Generator
4. LCD Color Analyzer
5. Service Manual
6. User Manual

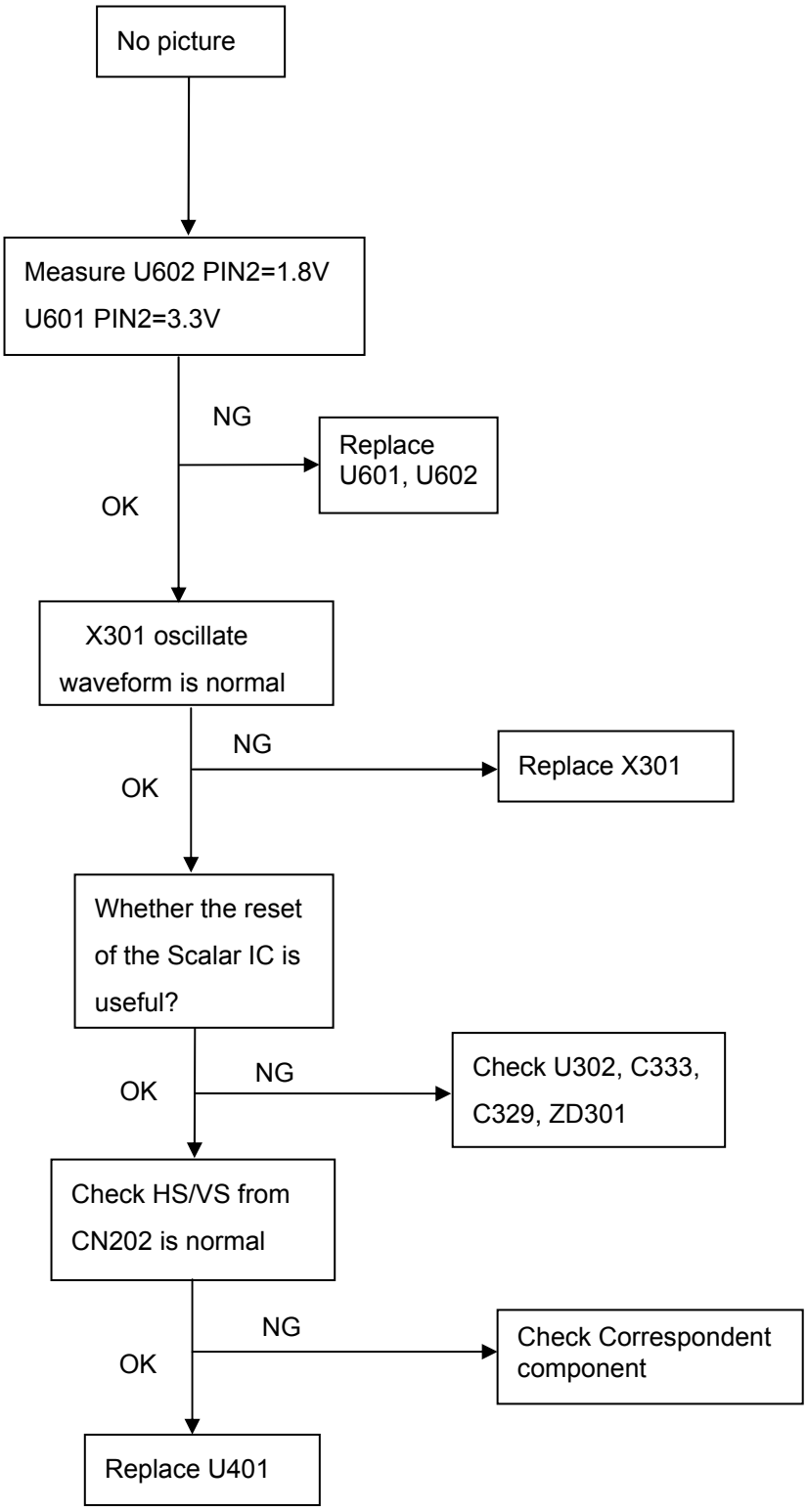
9.2 Trouble shooting

9.2.1 Main Board

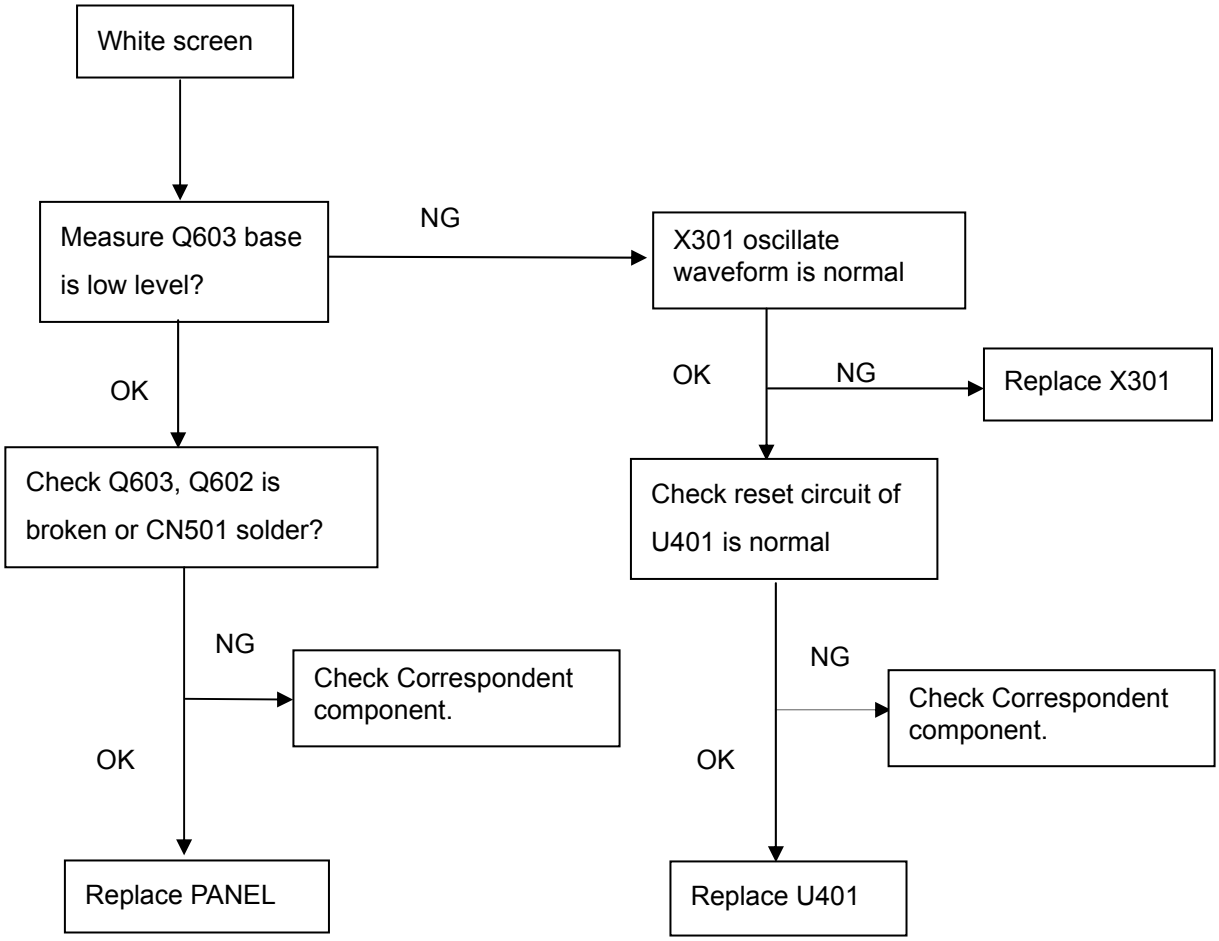
No power



No picture (LED orange)

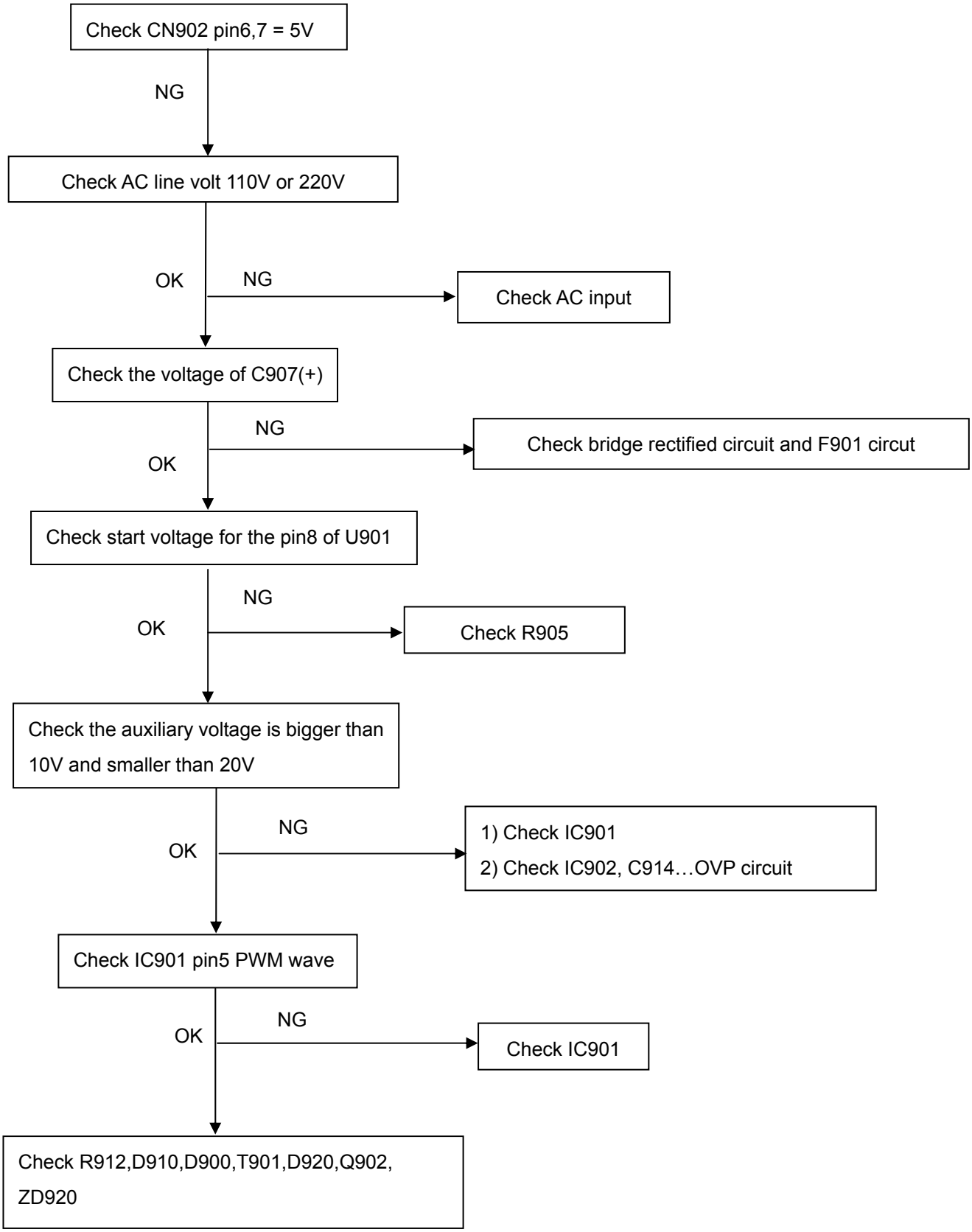


White screen

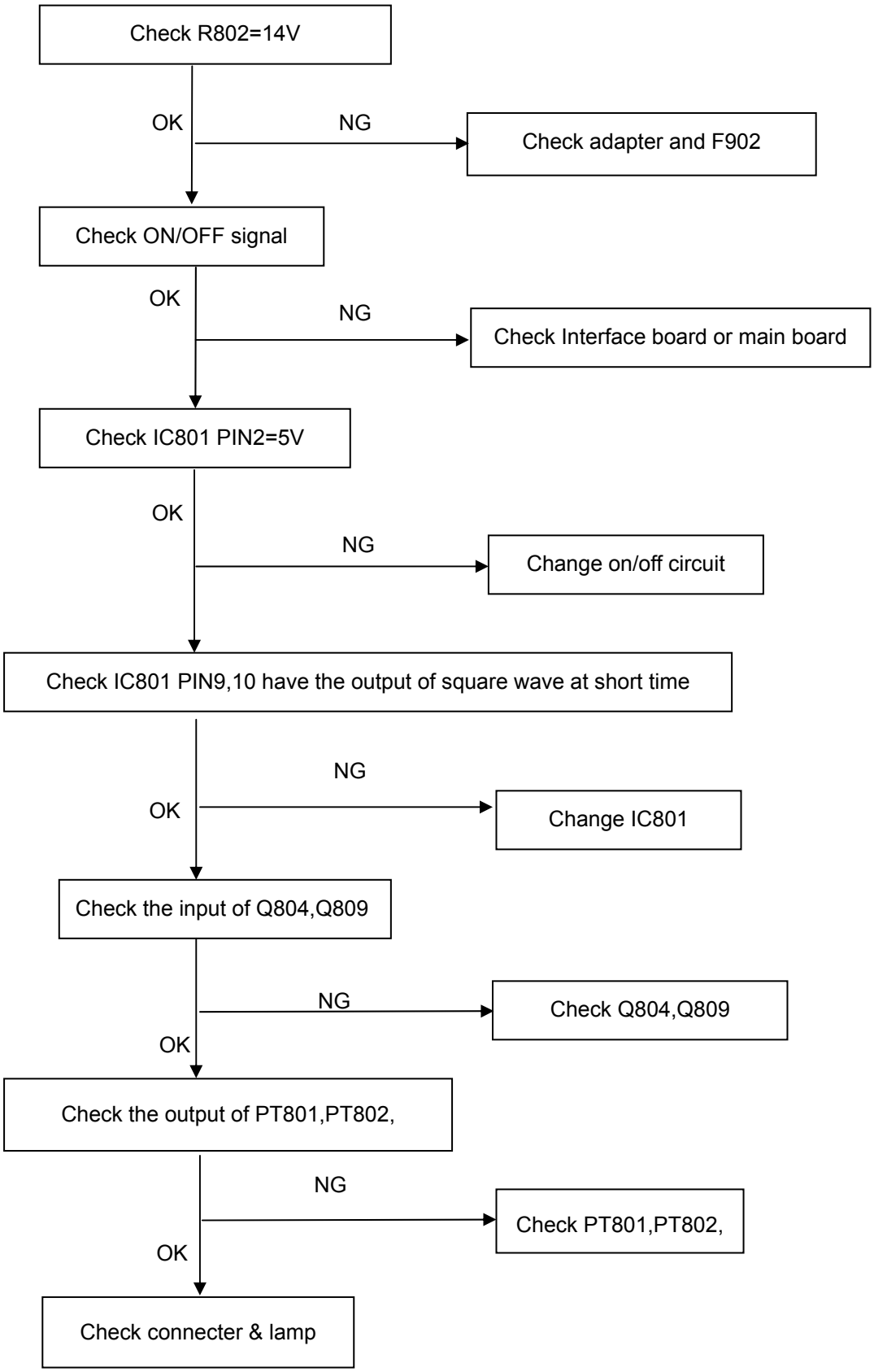


9.2.2 Power/Inverter Board

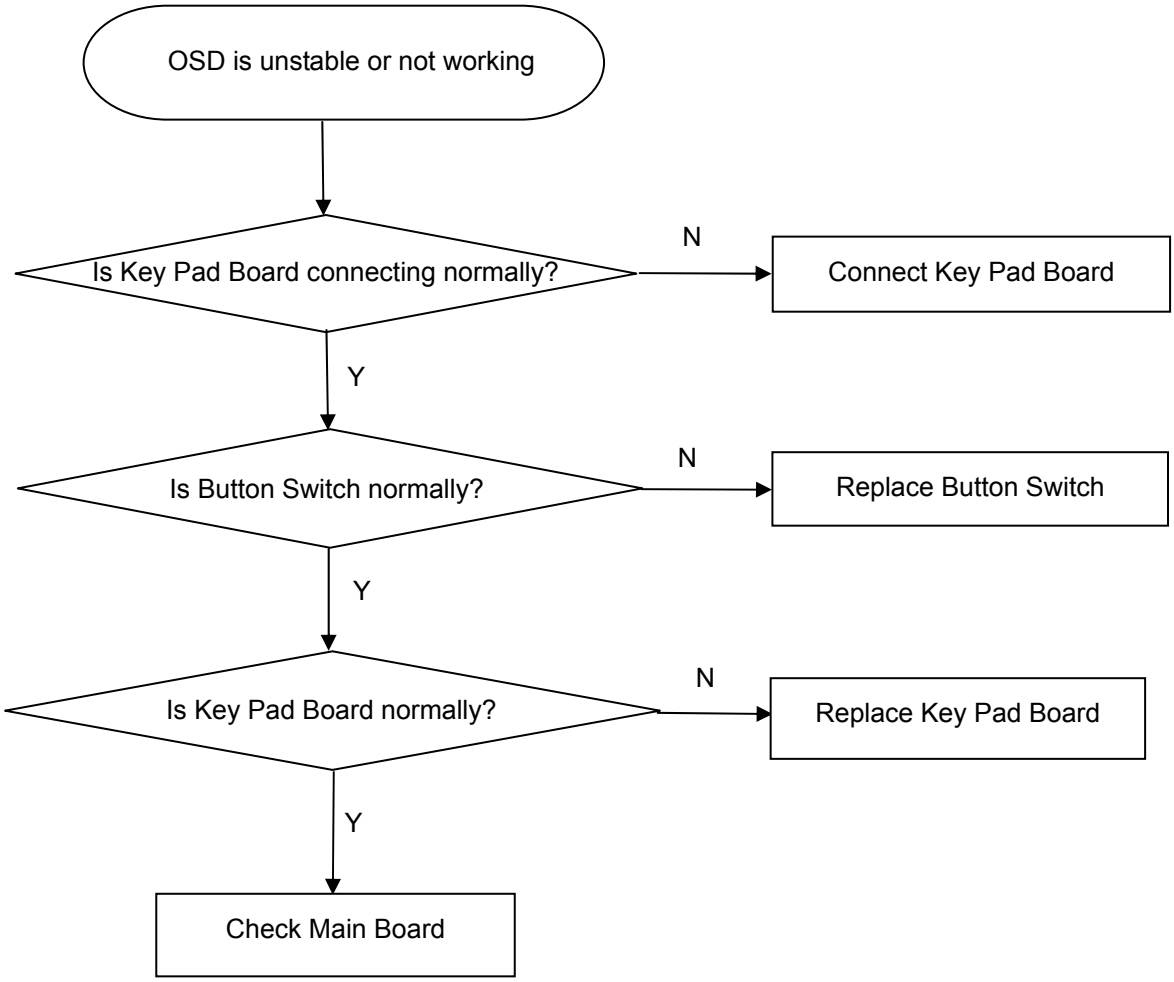
No power



No Backlight



9.2.3 Keypad Board



10. White balance, Luminance adjustment

Approximately 2 Hours should be allowed for warm up before proceeding White-Balance adjustment.

Before started adjust white balance, please setting the Minolta-CA210 **MEM. Channel 0 to 6500^{0}K** colors, **MEM. Channel 0 to 9300^{0}K** colors, **MEM. Channel 0 to 5700^{0}K** (our 9300 parameter is x=283±15, y=297±15, Ymin= 140cd/m^2, 6500 parameter is x =313±15, y=329±15, Ymin= 180cd/m^2, and 5700 parameter is x = 328 ±15, y = 344 ±15, Ymin= 140cd/m^2)

How to setting MEM.channel you can reference to Minolta-CA210 user guide or simple use " **SC"** key and " **NEXT"** key to modify x, y, Y value and use **"ID"** key to modify the TEXT description Following is the procedure to do white-balance adjust.

Enter into the factory mode:

Press MENU and "+" button during press Power button will activate the factory mode,

Gain adjustment:

Move cursor to "-Factory Setting-" and press MENU key to enter this sub-menu.

Move cursor to " Factory" and press MENU key.

Move cursor to " Auto Level" and press MENU key to adjust Gain and Offset automatically;

a. Adjust sRGB (6500^{0}K) color-temperature

1. Switch the Minolta-CA210 to **RGB-mode** (with press "MODE" button)

2. Switch the MEM.channel to Channel 0 (with up or down arrow on Minolta-CA210)

3.The LCD-indicator on Minolta-CA210 will show x = 313 ±30, y = 329 ±30, Ymin= 180cd/m^2

b. Adjust **Color1** (9300^{0}K) color-temperature

8. Switch the Minolta-CA210 to **RGB-mode** (with press "MODE" button)

9. Switch the MEM.channel to Channel 0 (with up or down arrow on Minolta-CA210)

10. The LCD-indicator on Minolta-CA210 will show x = 283 ±30, y = 297 ±30, Ymin= 140cd/m^2

c. Adjust **Color2** (5700^{0}K) color-temperature

15. Switch the Minolta-CA210 to **RGB-mode** (with press "MODE" button)

16. Switch the MEM.channel to Channel 0 (with up or down arrow on Minolta-CA210)

17. The LCD-indicator on Minolta-CA210 will show x = 328 ±30 y = 344 ±30, Ymin= 140cd/m^2

22. Move cursor to " Exit/Save" sub-menu and press MENU key to save adjust value and exit.

Turn the POWER-button off to on to quit from factory mode.

Max Brightness measurement: >250 cd/㎡

Test conditions:

a. Switch to the full white pattern, in user mode main menu:

1. Set <Color Settings> Red, Green, and Blue to the max.

2. Set <Brightness> Brightness, Contrast to the max.

b. The Minimum brightness is: **<** 40% of Max luminance (max luminance = max contrast + max brightness)

Test conditions:

Set <Brightness> Brightness, Contrast to the min.

11. ISP Instruction

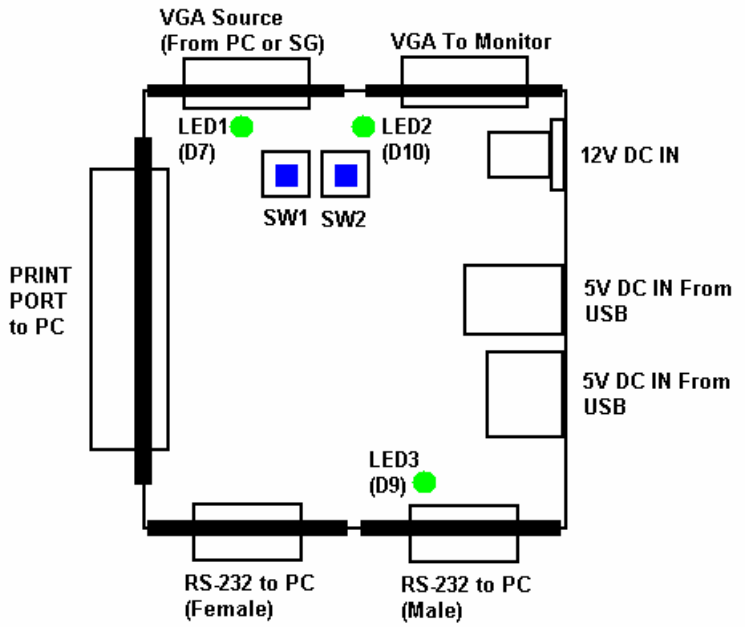
1.Introduction

Software tool and ISP files

a. GProbe5.0.0.15.exe – Software debug and ISP tool.

Hardware tool

a. Debug/ISP board



- LED1 – ON Use I^2C/DDC bus (controlled from PRINT/Parallel port).
  OFF Use UART bus (controlled from RS-232 port).
- LED2 – ON I^2C/DDC bus is connected to PRINT/Parallel port.
  OFF I^2C/DDC bus is bypassed to VGA Source port.
- LED3 – Indicate POWER state.
- SW1 – Switch I^2C/DDC bus and UART bus (refer to LED1).
- SW2 – Switch I^2C/DDC bus from PRINT/Parallel port or VGA Source.
- The power source of the debug board is from one among PRINT/Parallel port, 12V DC IN, and USB.

b. Print port cable

2. Installation

Install GProbe 5 on your PC.

a. Copy “GProbe5.0.0.15.exe” to your PC.

b. Install it by the prompts and finish that.

c. Unzip the file of “DELL_E228WFP_ISP_Code.rar” to D:\

Install Hardware and setup G-Probe

ISP by print port

a. Power up your PC.

b. Connect the debug board and PC with Print port cable.

c. Check LED3 is light. If it is not light, recheck the print port connection and ensure PC is turn on.

d. Check LED1 and LED2 both are light. If not, switch SW1 and SW2 to make them light.

e. Make the monitor AC power off.

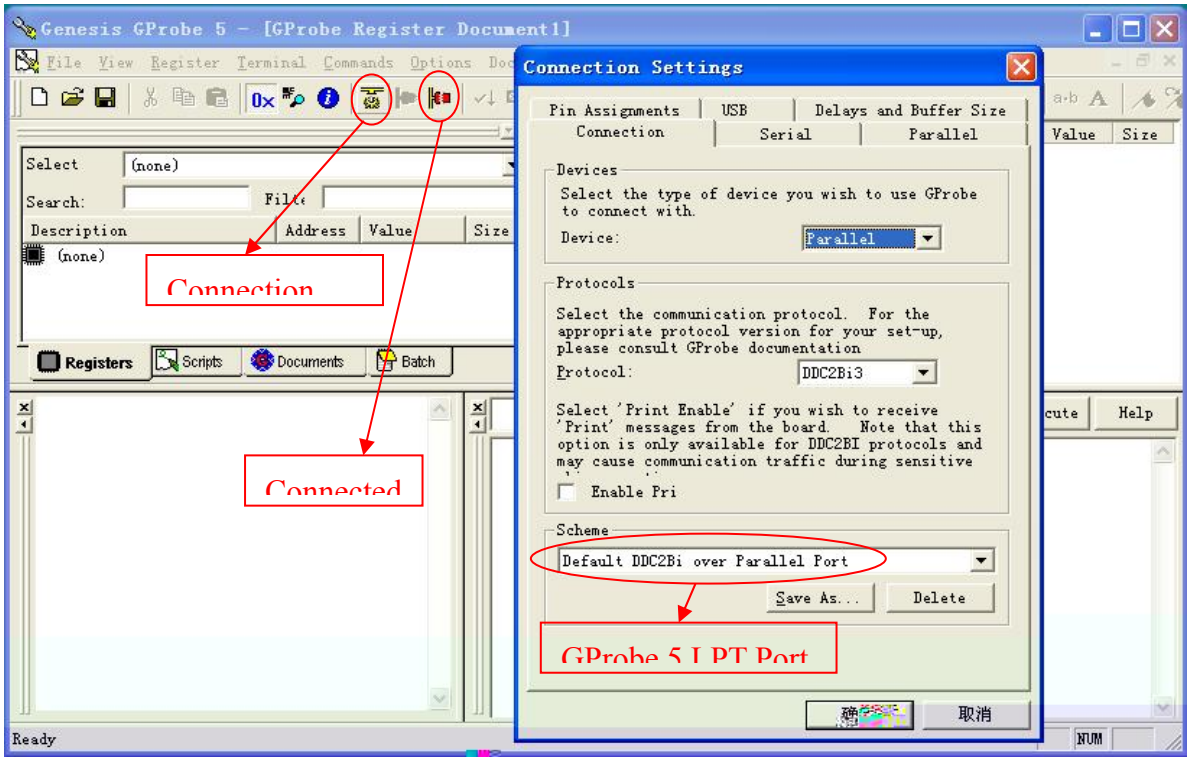
f. Connect the debug board and the monitor from “VGA To Monitor” port to the monitor’s VGA input.

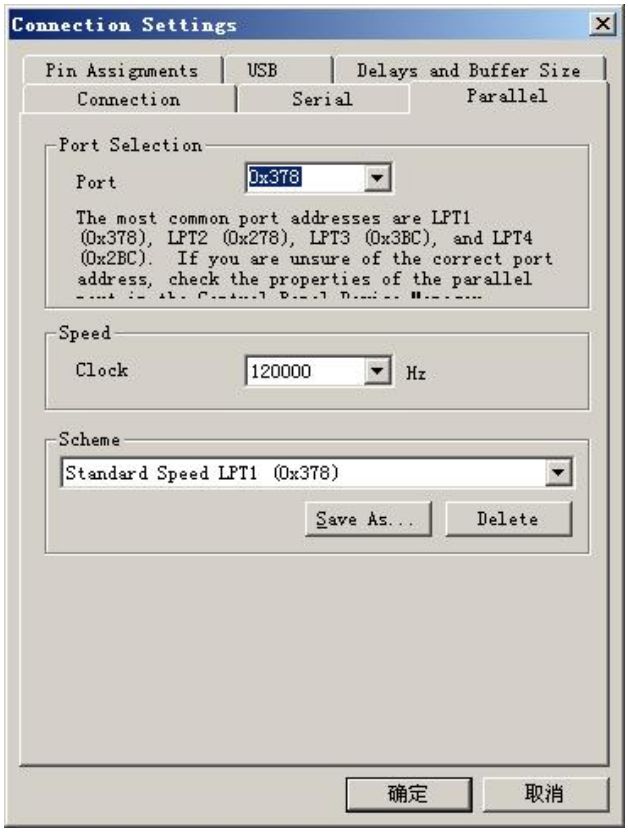
g. Connect the VGA signal source (SG or PC) to the debug board “VGA Source” connector.

h. Launch GProbe 5 on your PC.

i. Press the key “F10” on your keyboard and then “Connection Settings” dialogue box will be displayed on screen.

j. Set up the dialogue box as following and press “OK” button.



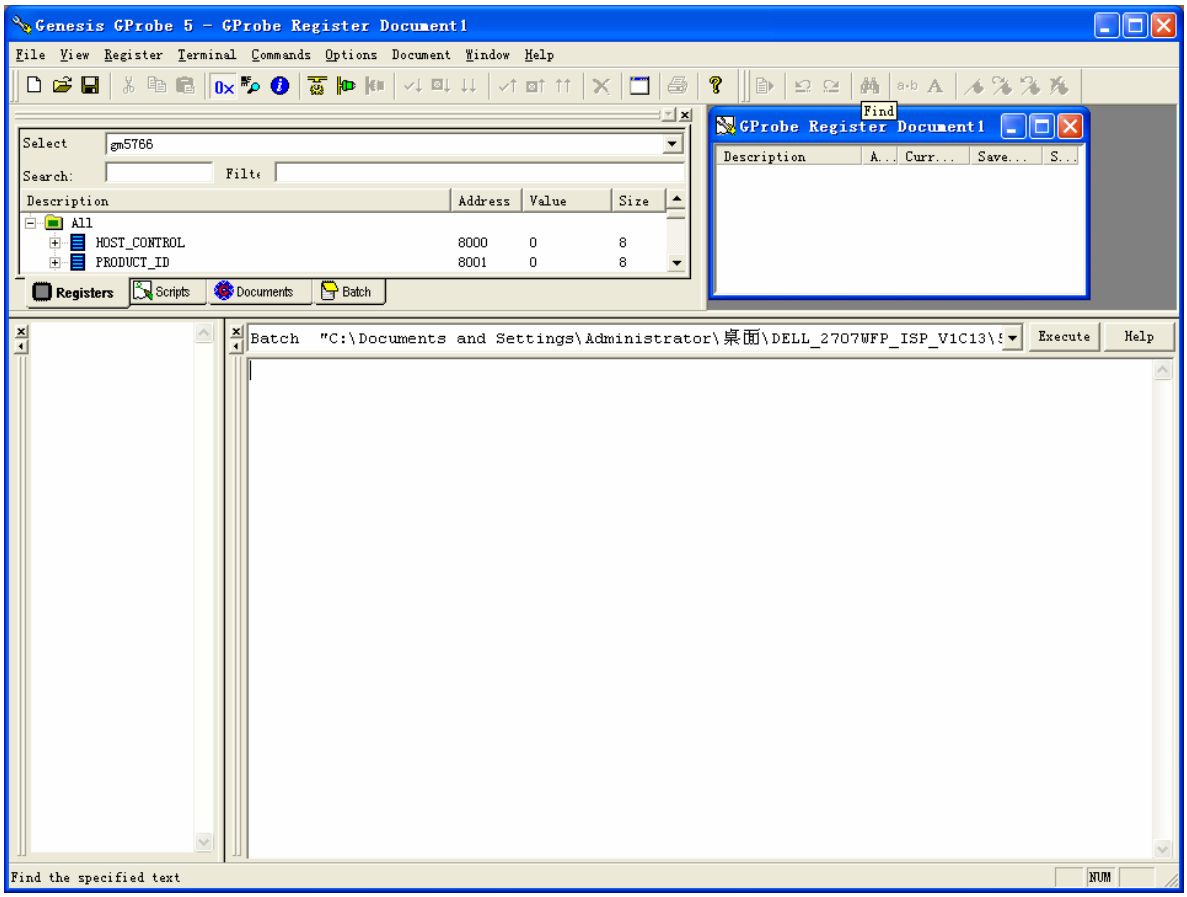


k. In g-probe 5, select “commands”→ “batch”. Than, appear the “batch” dialogue box.

In “file” blank, select”L191_VISTA_ISP\ibm_L191_gm2621_auoeg02_v019_061214_1.txt”

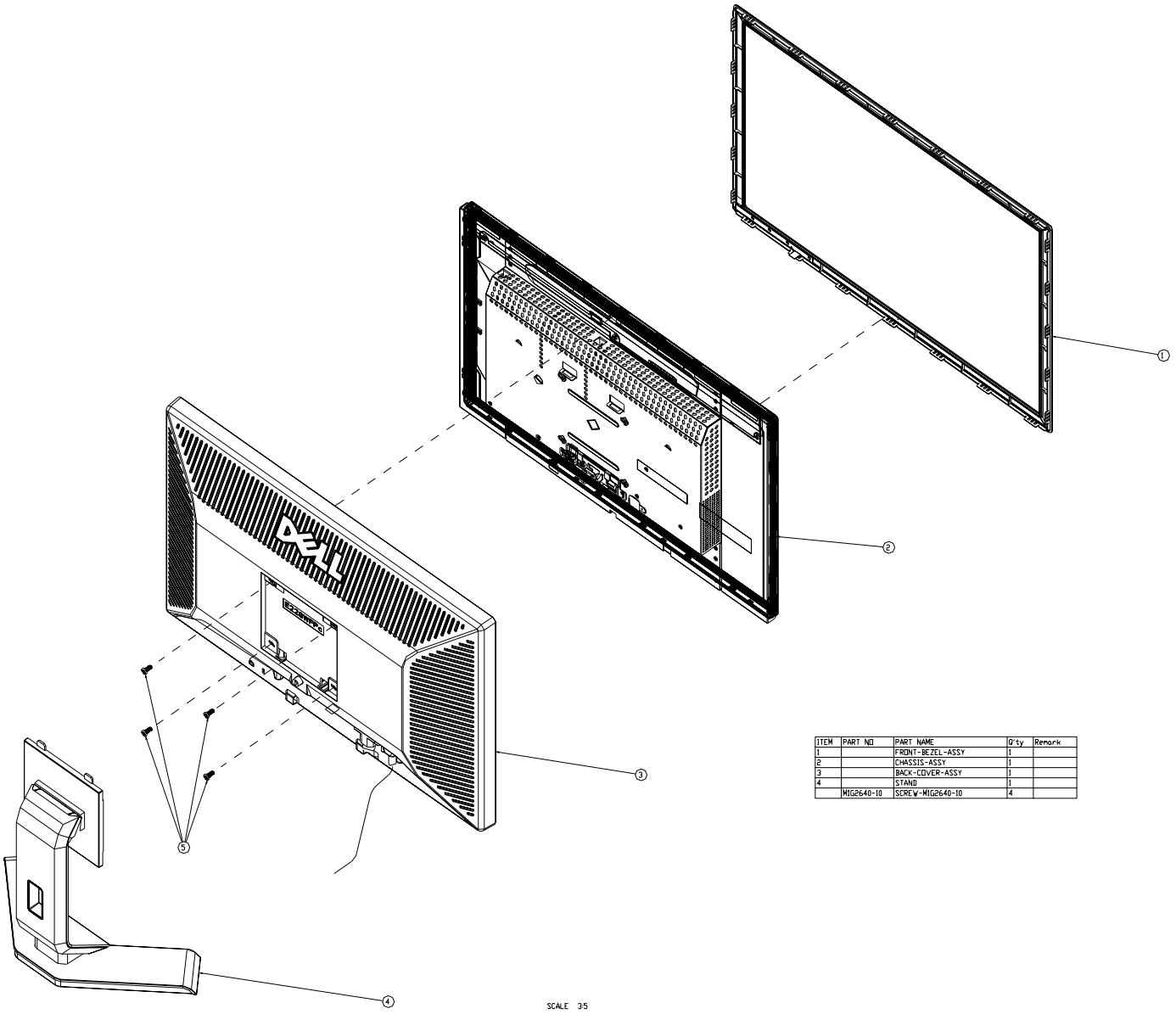
OR select”L191_VISTA_ISP\ ibm_L191_gm2621_secex-l2_v019_061214_1.txt”

Press “Execute”. Than plug the AC power immediately.

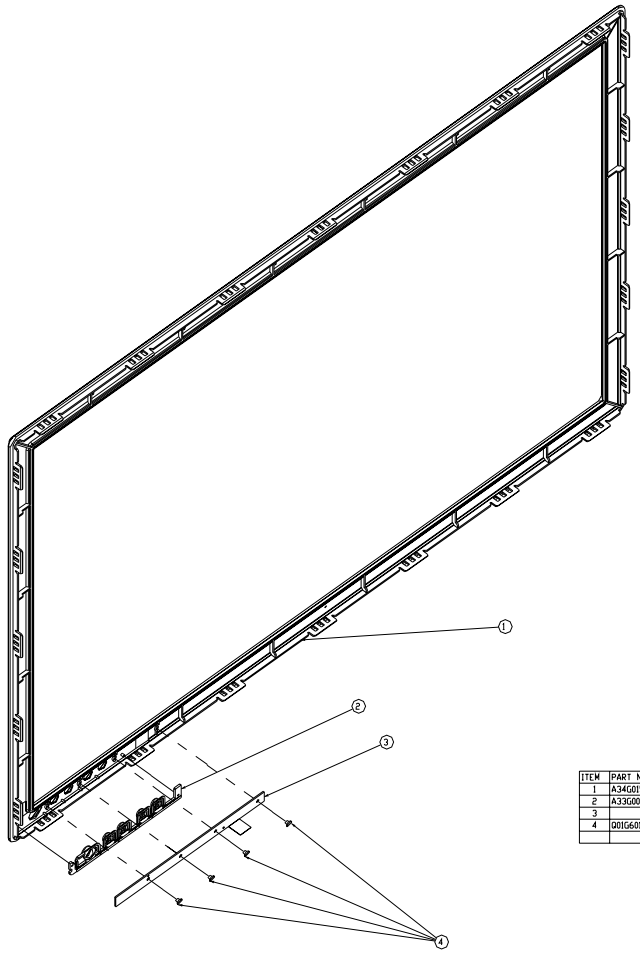


It will show the ISP information. About 18s, the ISP have be finished.

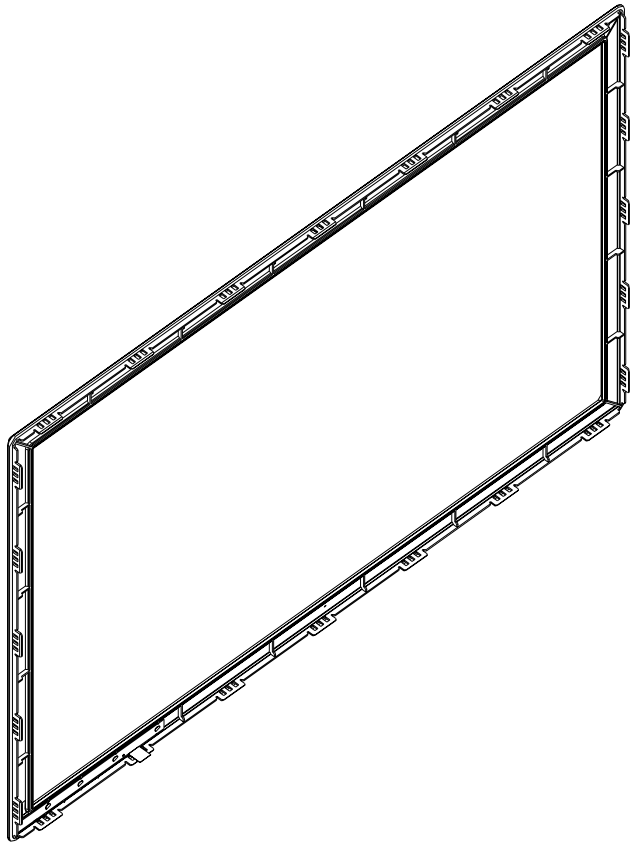
12. Exploded View

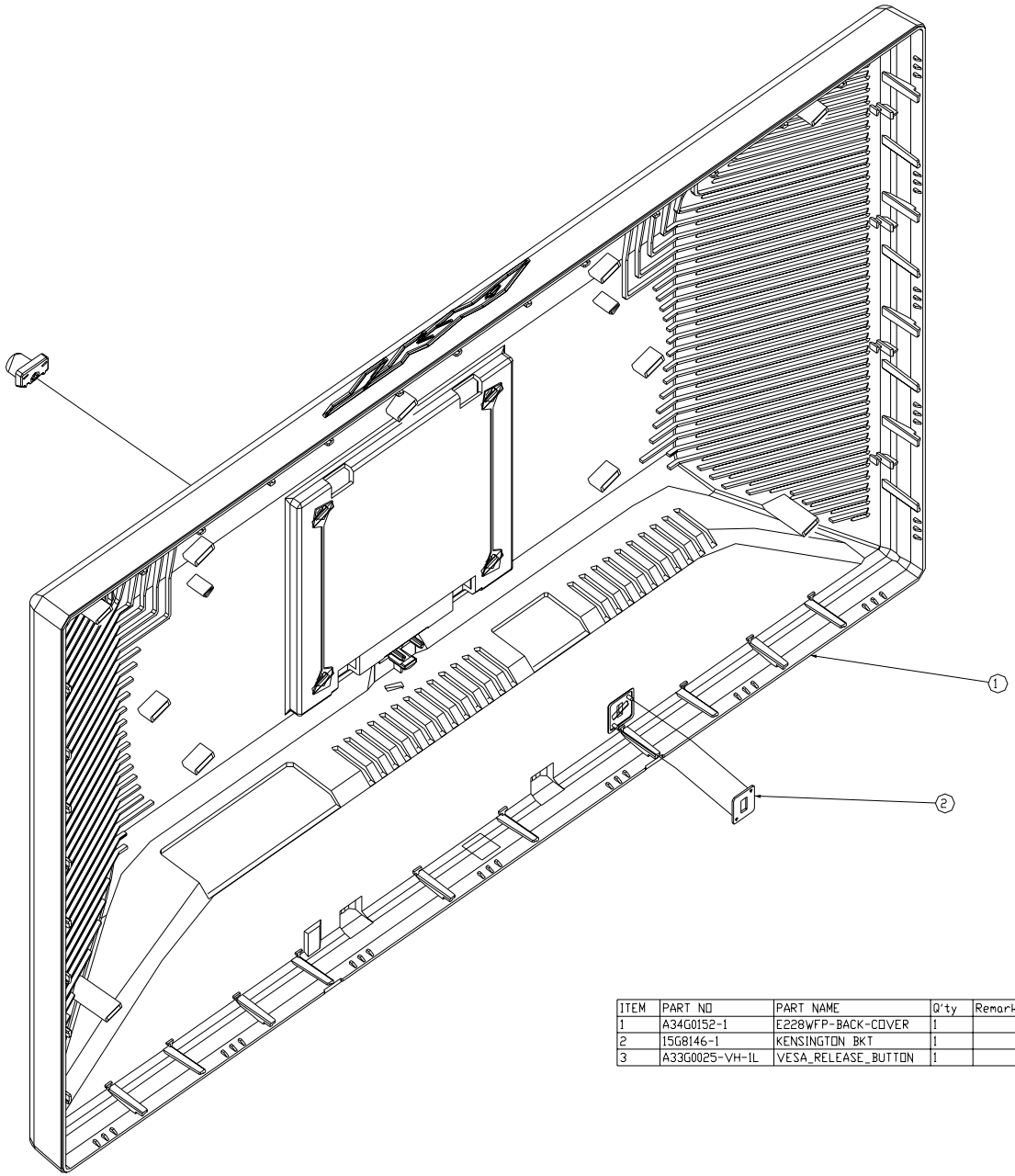


ITEM	PART NO	PART NAME	Q'ty	Remark
1		FRONT-BEZEL-ASSY	1	
2		CHASSIS-ASSY	1	
3		BACK-COVER-ASSY	1	
4		STAND	1	
	MIG2640-10	SCREW-MIG2640-10	4	

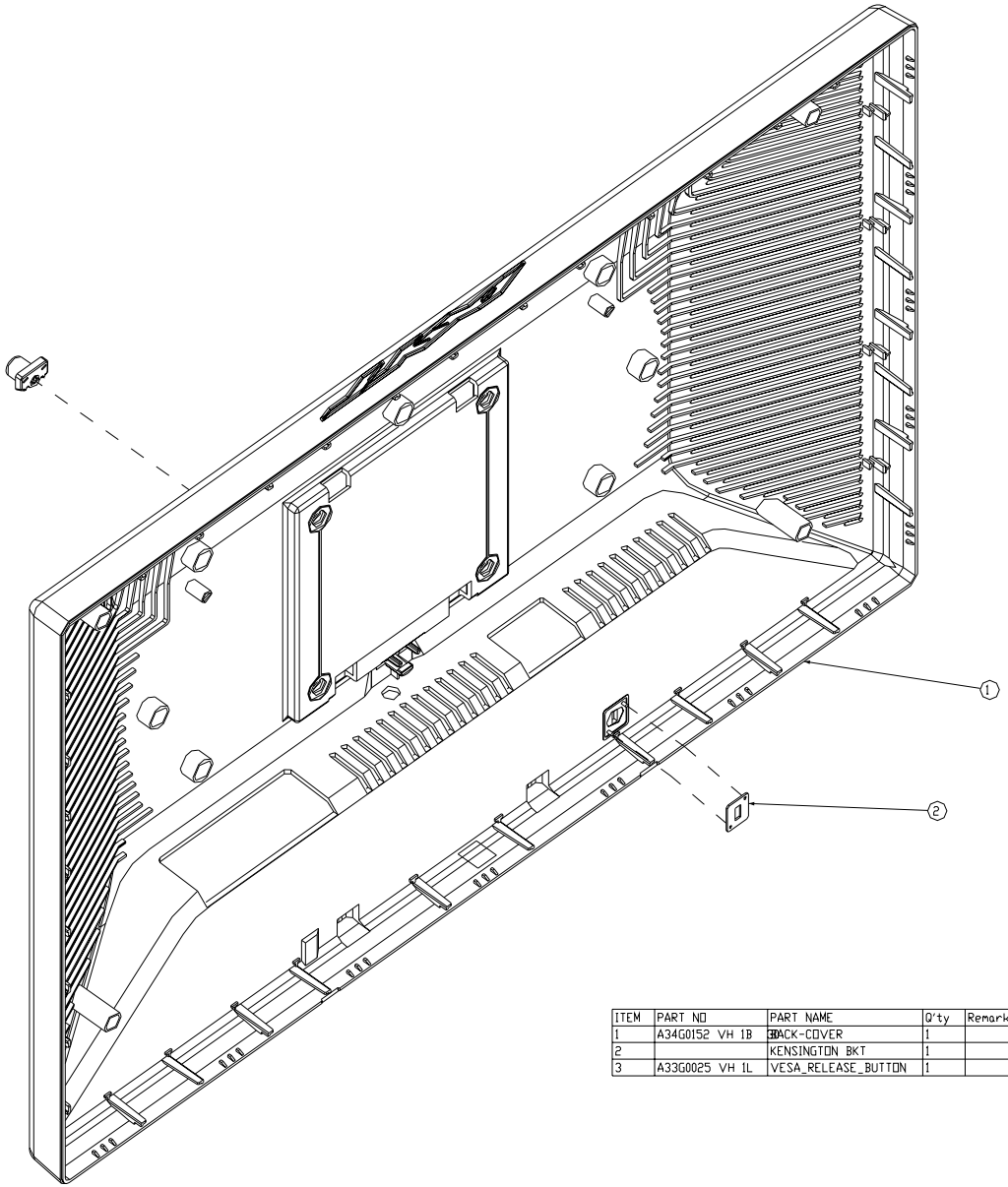


ITEM	PART NO.	PART NAME	Q'ty	Remark
1	A34G015I VH 2B	FRONT-BEZEL	1	
2	A33G0049 SNA2L	PUSH_BUTTON	1	
3		CONTOL_PCB_BOME	1	
4	Q01G6019 2	SCREW_TAP2	4	

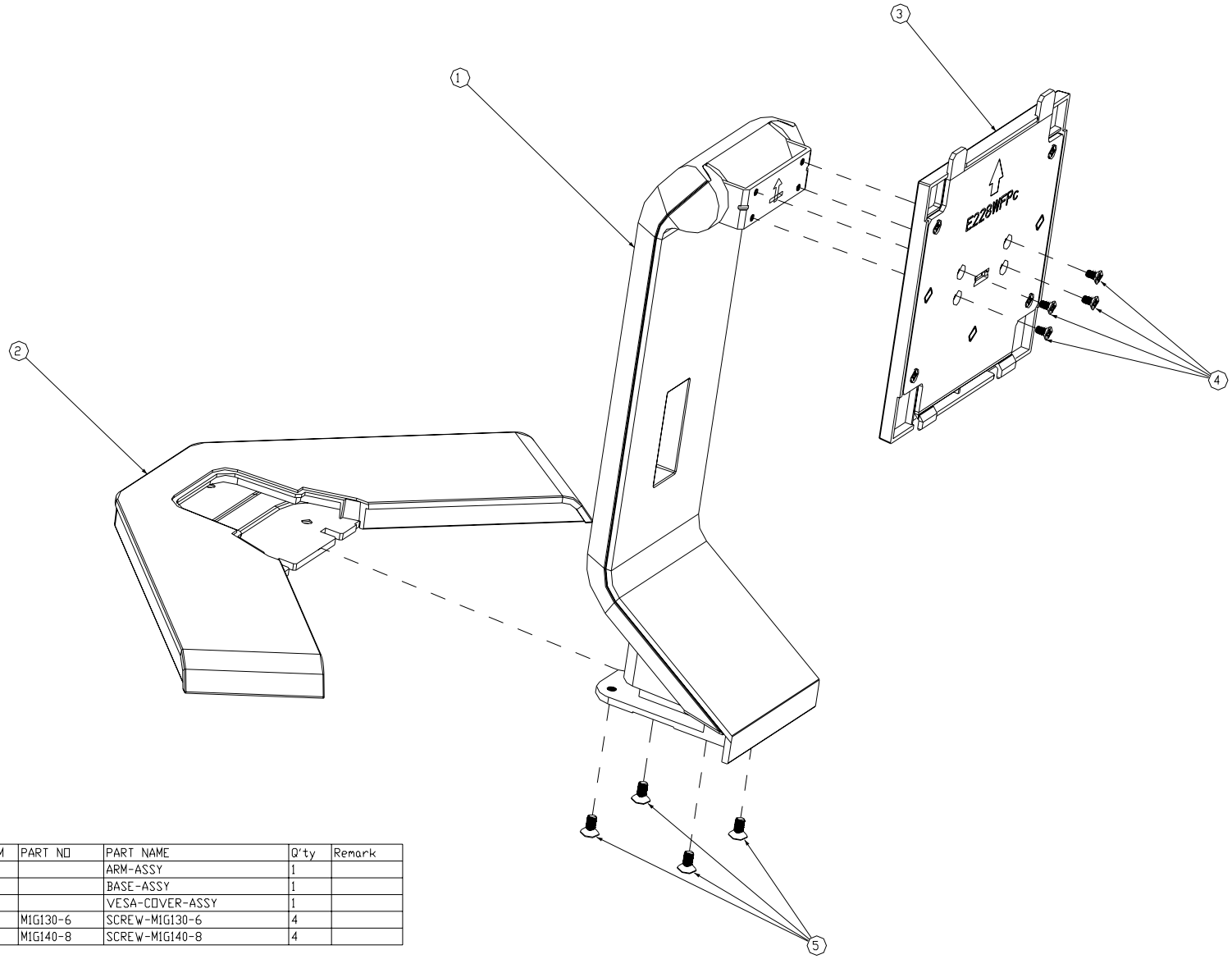




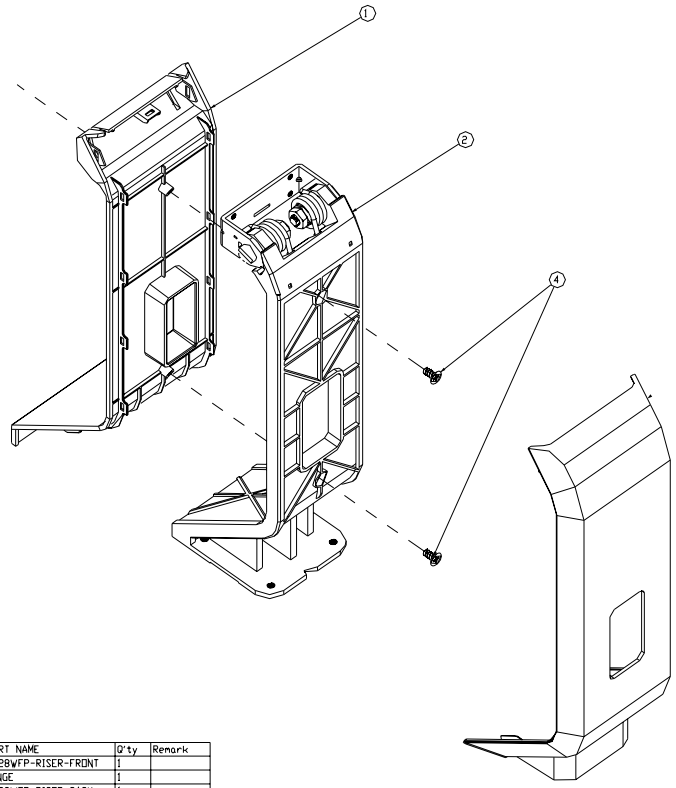
ITEM	PART NO	PART NAME	Q'ty	Remark
1	A34G0152-1	E228WFP-BACK-COVER	1	
2	15G8146-1	KENSINGTON BKT	1	
3	A33G0025-VH-1L	VESA_RELEASE_BUTTON	1	



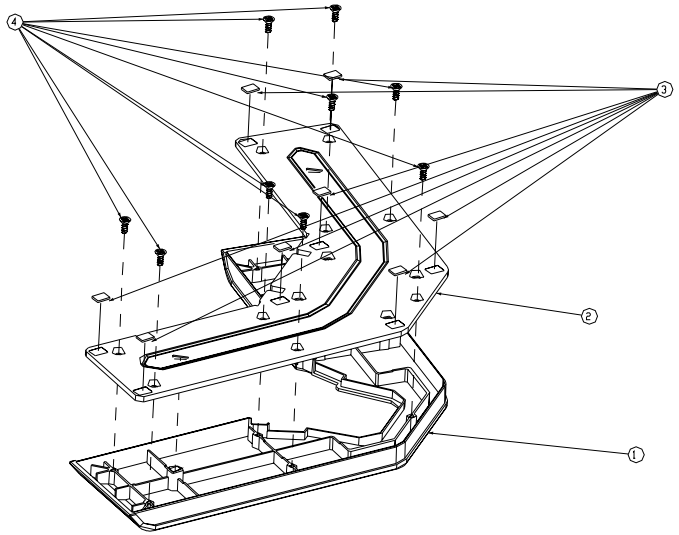
ITEM	PART NO	PART NAME	Q'ty	Remark
1	A34G0152 VH 1B	BACK-COVER	1	
2		KENSINGTON BKT	1	
3	A33G0025 VH 1L	VESA_RELEASE_BUTTON	1	



ITEM	PART NO	PART NAME	Q'ty	Remark
1		ARM-ASSY	1	
2		BASE-ASSY	1	
3		VESA-COVER-ASSY	1	
4	M1G130-6	SCREW-M1G130-6	4	
5	M1G140-8	SCREW-M1G140-8	4	



ITEM	PART NO	PART NAME	Q'ty	Remark
1	A34G0154-1	E228WFP-RISER-FRONT	1	
2	A37G0019-1	HINGE	1	
3	A34G0155-1	E228WFP-RISER-BACK	1	
4	Q1G140-8	SCREW-Q1G140-8	2	



ITEM	PART NO	PART NAME	Q'ty	Remark
1	A34G0156 VH 1B	BASE	1	
2	A15G0113-1	BASE-PLATE	1	
3	12G6206-1	FOOT-PORON-9MM	8	
4	Q1G130-8-120	SCREW-Q1G130-8	9	

13. BOM List

TC8SGHHKWDDNHC

Location	Part No.	Description
	011G6036 1	SPACER SUPPORT SCC-24
	012G6059 1	RUBBER
	015G6261 1	BRACKET
	023G3178700 3A	LOGO
	041G 68508 A	CONTROL CARD
	044G6002728 1A	PAPER BOARD
	044G9003109	CORNER PAPER
	045G 77 3	PE PACKING
	051G 200500	LUBE
	052G 1150 C	INSULATING TAPE
	052G 1150 C	INSULATING TAPE
	052G 1185 1	BIG TAPE
	052G 1186	SMALL TAPE
	052G6019 1	INSULATING TAPE
	052G6022 1500	SMALL TAPE
	052G6022 1500	SMALL TAPE
	070GHDCP500HDC	HDCP CODE
E08902	089G 728LAA 2D	SIGNAL CABLE
E08903	089G1748LAA 1D	DVI CABLE
	089G402A18NYHD	POWER CORD
	0M1G 130 4 47 CR3	SCREW
	0M1G 130 4 47 CR3	SCREW
	0M1G1730 6120	SCREW,42-D020523
	0M1G2940 10225 CR3	SCREW
	0M1G2940 10225 CR3	SCREW
	0M1G3030 5125	SCREW
	705GQ734561	20" DELL MAIN FRAME ASS'Y
	015G8185 1	HOLDER BRACKET L
	015G8186 1	HOLDER BRACKET R
	019G 588 3	SPRING -HOLDER
	0M1G 130 4 47 CR3	SCREW
M015	A15G0112 4	MAINFRAME
	A20G0007 1	STAND HOLDER
	705GQCK0P34002	STAND-BASE ASS'Y
	012G6206 1	PORON
	012G6206 1	PORON
	0M1G 130 6125	SCREW

	0M1G 140 8225 CR3	SCREW
	0Q1G 130 5120	SCREW 3*5MM
	0Q1G 130 8 47 CR3	SCREW
	0Q1G 140 8120	SCREW T4X8
	A15G0113 1	BRACKET-BASE
	A15G0133 1	VESA-PLATE
	A34G0153 VH 1B	VESA_COVER
	A34G0154 SN 1B	STAND_FRONT
	A34G0155 VH 1B	STAND_BACK
	A34G0156 VH 1B	BASE
M037	SA37G00191	HINGE
	004F061210M 00	METAL WASHERS12.0*6.03*4.70H
	004F061210T 00	METAL WASHERS12.0*8.00*1.6H
	004F061210T 01	METAL WASHERS12.0*4.72*1.0T
	004F0612051 00	WASHER
	020F0019120	DIECASTING
	015F0019110	BRACKET
	028F0625080	SHAFT
	019F25183L1	SPRING
	019F25183R1	SPRING
	027F0605 00	RING
	002F0604100	NUT
	750GLSC0L0132D000D	PANEL LTM220M1-L01 CLB(10S) SZ SEC
	A33G0025 VH 1L	RELEASE BUTTON
	A33G0049 SNA2L	CONTROL BUTTON
	A34G0151 VH 2B	BEZEL E228WFPC
	A34G0152 VH 1B 30	REAR_COVER
	A85G0036 1	SHIELDING-LIGHT
	A85G0041 1	SHIELDING-COVER
	CBPC7SGHDDQ1	MAIN BOARD
	040G 45762412B	CBPC LABEL
CN403	033G8019 8Z J	WAFER
CN501	033G8043 24 BH W	CONNECTOR
CN601	033G804312B W	CONNECTOR
C601	067G215V221 4R	LOW E.S.R 220UF +/-20% 2
C611	067G215V221 4R	LOW E.S.R 220UF +/-20% 2
C602	067G215V221 4R	LOW E.S.R 220UF +/-20% 2
C319	067G215Y2207NV	KY50VB22M-CC3 5*11
C325	067G215Y2207NV	KY50VB22M-CC3 5*11
C316	067G215Y2207NV	KY50VB22M-CC3 5*11

C309	067G215Y2207NV	KY50VB22M-CC3 5*11
C301	067G215Y2207NV	KY50VB22M-CC3 5*11
C615	067G215Y2207NV GP	KY50VB22M-CC3
C610	067G215Y2207NV GP	KY50VB22M-CC3
C501	067G215Y2207NV GP	KY50VB22M-CC3
CN202	088G 35315F HJ	SOC SUBD H 15P F
CN201	088G 35424F J	DVI 24PIN CONN F ATTACHED SCREW
X301	093G 22 53 H	14.31818MHZ/30PF/49US
	040G 457624 1B	LABEL-CPU
U401	056G 562132	IC GM5766H-LF PQFP-128 GENESIS
U601	056G 563 21	AP1084K33LA
U602	056G 563 31	IC AZ1117D-1.8-E1
U302	056G 643 13	G691L400T73UF SOT-23 GMT
U201	056G1133 34	M24C02-WMN6TP
U202	056G1133 34	M24C02-WMN6TP
U403	056G1133 56	M24C16-WMN6TP
U402	056G1133 81(WDLGHTCSHQ3)	SST25LF020A-33-4C-SAE
Q202	057G 417 12 T	KEC 2N3904S-RTK/PS
Q403	057G 417 12 T	KEC 2N3904S-RTK/PS
Q404	057G 417 12 T	KEC 2N3904S-RTK/PS
Q601	057G 417 12 T	KEC 2N3904S-RTK/PS
Q603	057G 417 12 T	KEC 2N3904S-RTK/PS
Q201	057G 758 1	2N7002ESOT23 SILICONIX
Q602	057G 763 1	A03401 SOT23 BY AOS(A1)
R606	061G0603000	RST CHIPR 0 OHM +-5% 1/10W
R331	061G0603000	RST CHIPR 0 OHM +-5% 1/10W
R243	061G0603000	RST CHIPR 0 OHM +-5% 1/10W
R301	061G0603100	RST CHIPR 10 OHM +-5% 1/10W
R209	061G0603100	RST CHIPR 10 OHM +-5% 1/10W
R208	061G0603100	RST CHIPR 10 OHM +-5% 1/10W
R207	061G0603100	RST CHIPR 10 OHM +-5% 1/10W
R206	061G0603100	RST CHIPR 10 OHM +-5% 1/10W
R205	061G0603100	RST CHIPR 10 OHM +-5% 1/10W
R204	061G0603100	RST CHIPR 10 OHM +-5% 1/10W
R203	061G0603100	RST CHIPR 10 OHM +-5% 1/10W
R202	061G0603100	RST CHIPR 10 OHM +-5% 1/10W
R230	061G0603101	RST CHIPR 100 OHM +-5% 1/10W
R224	061G0603101	RST CHIPR 100 OHM +-5% 1/10W
R222	061G0603101	RST CHIPR 100 OHM +-5% 1/10W

R309	061G0603101	RST CHIPR 100 OHM +-5% 1/10W
R310	061G0603101	RST CHIPR 100 OHM +-5% 1/10W
R311	061G0603101	RST CHIPR 100 OHM +-5% 1/10W
R407	061G0603101	RST CHIPR 100 OHM +-5% 1/10W
R408	061G0603101	RST CHIPR 100 OHM +-5% 1/10W
R617	061G0603102	RST CHIPR 1K OHM +-5% 1/10W
R604	061G0603102	RST CHIPR 1K OHM +-5% 1/10W
R603	061G0603102	RST CHIPR 1K OHM +-5% 1/10W
R201	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R211	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R214	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R244	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R262	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R319	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R322	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R329	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R416	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R417	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R418	061G0603103	RST CHIPR 10 KOHM +-5% 1/10W
R415	061G0603152	RST CHIPR 1.5 KOHM +-5% 1/10W
R414	061G0603152	RST CHIPR 1.5 KOHM +-5% 1/10W
R413	061G0603152	RST CHIPR 1.5 KOHM +-5% 1/10W
R412	061G0603152	RST CHIPR 1.5 KOHM +-5% 1/10W
R411	061G0603152	RST CHIPR 1.5 KOHM +-5% 1/10W
R210	061G0603221	RST CHIPR 220 OHM +-5% 1/10W
R228	061G0603221	RST CHIPR 220 OHM +-5% 1/10W
R232	061G0603221	RST CHIPR 220 OHM +-5% 1/10W
R237	061G0603221	RST CHIPR 220 OHM +-5% 1/10W
R238	061G0603221	RST CHIPR 220 OHM +-5% 1/10W
R239	061G0603221	RST CHIPR 220 OHM +-5% 1/10W
R241	061G0603222	RST CHIPR 2.2 KOHM +-5% 1/10W
R240	061G0603222	RST CHIPR 2.2 KOHM +-5% 1/10W
R217	061G0603223	RST CHIPR 22 KOHM +-5% 1/10W
R420	061G0603223	RST CHIPR 22 KOHM +-5% 1/10W
R421	061G0603223	RST CHIPR 22 KOHM +-5% 1/10W
R302	061G0603249 0F	RST CHIPR 249 OHM +-1% 1/10W
R422	061G0603303	RST CHIPR 30 KOHM +-5% 1/10W
R419	061G0603303	RST CHIPR 30 KOHM +-5% 1/10W
R218	061G0603333	RST CHIPR 33KOHM +-5% 1/10W
R216	061G0603470	RST CHIPR 47 OHM +-5% 1/10W

R215	061G0603470	RST CHIPR 47 OHM +-5% 1/10W
R318	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R317	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R316	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R315	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R312	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R308	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R307	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R306	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R305	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R303	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R324	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R424	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R501	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R601	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R213	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R225	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R226	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R227	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R242	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R212	061G0603472	RST CHIPR 4.7K OHM +-5% 1/10W
R409	061G0603473	RST CHIPR 47 KOHM +-5% 1/10W
R410	061G0603473	RST CHIPR 47 KOHM +-5% 1/10W
R605	061G0603473	RST CHIPR 47 KOHM +-5% 1/10W
R608	061G0603473	RST CHIPR 47 KOHM +-5% 1/10W
R609	061G0603473	RST CHIPR 47 KOHM +-5% 1/10W
R235	061G0603750 9F	RST CHIPR 75 OHM +-1% 1/10W
R234	061G0603750 9F	RST CHIPR 75 OHM +-1% 1/10W
R233	061G0603750 9F	RST CHIPR 75 OHM +-1% 1/10W
R229	061G0603750 9F	RST CHIPR 75 OHM +-1% 1/10W
R223	061G0603750 9F	RST CHIPR 75 OHM +-1% 1/10W
R220	061G0603750 9F	RST CHIPR 75 OHM +-1% 1/10W
L501	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
C619	065G0603102 31	CHIP 1000PF 50V NPO
C607	065G0603102 31	CHIP 1000PF 50V NPO
C503	065G0603102 31	CHIP 1000PF 50V NPO
C620	065G0603102 31	CHIP 1000PF 50V NPO
C413	065G0603102 32	1000PF +-10% 50V X7R
C412	065G0603102 32	1000PF +-10% 50V X7R
C411	065G0603102 32	1000PF +-10% 50V X7R

C262	065G0603102 32	1000PF +-10% 50V X7R
C201	065G0603102 32	1000PF +-10% 50V X7R
C216	065G0603103 32	CAP CHIP 0603 0.01UF K 50V X7R
C215	065G0603103 32	CAP CHIP 0603 0.01UF K 50V X7R
C213	065G0603103 32	CAP CHIP 0603 0.01UF K 50V X7R
C212	065G0603103 32	CAP CHIP 0603 0.01UF K 50V X7R
C211	065G0603103 32	CAP CHIP 0603 0.01UF K 50V X7R
C210	065G0603103 32	CAP CHIP 0603 0.01UF K 50V X7R
C209	065G0603104 12	CER2 0603 X7R 16V 100N P
C214	065G0603104 12	CER2 0603 X7R 16V 100N P
C219	065G0603104 12	CER2 0603 X7R 16V 100N P
C220	065G0603104 12	CER2 0603 X7R 16V 100N P
C221	065G0603104 12	CER2 0603 X7R 16V 100N P
C321	065G0603104 12	CER2 0603 X7R 16V 100N P
C322	065G0603104 12	CER2 0603 X7R 16V 100N P
C323	065G0603104 12	CER2 0603 X7R 16V 100N P
C324	065G0603104 12	CER2 0603 X7R 16V 100N P
C326	065G0603104 12	CER2 0603 X7R 16V 100N P
C330	065G0603104 12	CER2 0603 X7R 16V 100N P
C333	065G0603104 12	CER2 0603 X7R 16V 100N P
C408	065G0603104 12	CER2 0603 X7R 16V 100N P
C502	065G0603104 12	CER2 0603 X7R 16V 100N P
C603	065G0603104 12	CER2 0603 X7R 16V 100N P
C604	065G0603104 12	CER2 0603 X7R 16V 100N P
C608	065G0603104 12	CER2 0603 X7R 16V 100N P
C612	065G0603104 12	CER2 0603 X7R 16V 100N P
C613	065G0603104 12	CER2 0603 X7R 16V 100N P
C614	065G0603104 12	CER2 0603 X7R 16V 100N P
C320	065G0603104 12	CER2 0603 X7R 16V 100N P
C222	065G0603104 12	CER2 0603 X7R 16V 100N P
C302	065G0603104 12	CER2 0603 X7R 16V 100N P
C303	065G0603104 12	CER2 0603 X7R 16V 100N P
C304	065G0603104 12	CER2 0603 X7R 16V 100N P
C305	065G0603104 12	CER2 0603 X7R 16V 100N P
C306	065G0603104 12	CER2 0603 X7R 16V 100N P
C307	065G0603104 12	CER2 0603 X7R 16V 100N P
C308	065G0603104 12	CER2 0603 X7R 16V 100N P
C310	065G0603104 12	CER2 0603 X7R 16V 100N P
C311	065G0603104 12	CER2 0603 X7R 16V 100N P
C312	065G0603104 12	CER2 0603 X7R 16V 100N P

C313	065G0603104 12	CER2 0603 X7R 16V 100N P
C314	065G0603104 12	CER2 0603 X7R 16V 100N P
C317	065G0603104 12	CER2 0603 X7R 16V 100N P
C318	065G0603104 12	CER2 0603 X7R 16V 100N P
C403	065G0603152 32	1500PF +-10% 50V X7R 06
C404	065G0603152 32	1500PF +-10% 50V X7R 06
C405	065G0603152 32	1500PF +-10% 50V X7R 06
C406	065G0603152 32	1500PF +-10% 50V X7R 06
C407	065G0603152 32	1500PF +-10% 50V X7R 06
C217	065G0603220 32	CHIP 22PF 50V X7R
C218	065G0603220 32	CHIP 22PF 50V X7R
C331	065G0603224 12	CAP CHIP 0603 220N 16V X7R +/-10%
C332	065G0603224 12	CAP CHIP 0603 220N 16V X7R +/-10%
C618	065G0603224 17	CAP:CER 0.22UF-20%-80% 16V
C327	065G0603330 31	CER1 0603 NP0 50V 33P PM
C328	065G0603330 31	CER1 0603 NP0 50V 33P PM
L307	071G 56K121 M	CHIP BEAD
L306	071G 56K121 M	CHIP BEAD
L305	071G 56K121 M	CHIP BEAD
L304	071G 56K121 M	CHIP BEAD
L303	071G 56K121 M	CHIP BEAD
L302	071G 56K121 M	CHIP BEAD
L301	071G 56K121 M	CHIP BEAD
FB204	071G 59B431	BK1608 HW 431
FB203	071G 59C600	CHIP BEAD
FB202	071G 59C600	CHIP BEAD
FB201	071G 59C600	CHIP BEAD
D201	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D202	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D203	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D204	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D205	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D206	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D207	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D208	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D211	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D212	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D213	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D209	093G 64 42 P	BAV70 SOT23 BY PAN JIT
D210	093G 64 42 P	BAV70 SOT23 BY PAN JIT

ZD207	093G 39P599 T	MM3Z5V6B
ZD208	093G 39P599 T	MM3Z5V6B
ZD209	093G 39P599 T	MM3Z5V6B
ZD201	093G 39P599 T	MM3Z5V6B
ZD202	093G 39P599 T	MM3Z5V6B
ZD203	093G 39P599 T	MM3Z5V6B
ZD204	093G 39P599 T	MM3Z5V6B
ZD210	093G 39P599 T	MM3Z5V6B
ZD211	093G 39P599 T	MM3Z5V6B
ZD212	093G 39P599 T	MM3Z5V6B
ZD301	093G 39P599 T	MM3Z5V6B
	715G2089 1	MAIN BOARD PCB
	KEPC7QDE	KEY BOARD G2746-1-2-X-1-080202
SW1	077G 500 5 XL	DOME SWITCH 5PCS ARRAY
CN1	089G176J 8524	FFC CABLE
	Q52G6022 28	TAPE
C2	065G0603104 12	CER2 0603 X7R 16V 100N P
C1	065G0603104 12	CER2 0603 X7R 16V 100N P
LED1	081G 14501 GP	LED GPTD1210YGC3-HB GUANGPU
	715G2746 1 2	KEY BOARD PCB
	PWPC7C42LAA1	POWER G2594-1-4-X-14-080303
	040G 45762412B	CBPC LABEL
GND3	009G6005 1	GROUND TERMINAL
GND2	009G6005 1	GROUND TERMINAL
GND1	009G6005 1	GROUND TERMINAL
	011G6091 1	NYLON-SPACER SUPPORT
CN804	033G8021 2E F	WAFER
CN803	033G8021 2E F	WAFER
CN802	033G8021 2E F	WAFER
CN801	033G8021 2E F	WAFER
	044G3231 15571	EVA WASHER
	051G 6 4503	GLUE_RTV
IC902	056G 139 3A	IC PC123Y22FZ0F
C909	063G107K474 US	0.47UF +-10%
C812	065G 6J5096ET	CAP CER 5PF J 6KV
C801	065G 6J5096ET	CAP CER 5PF J 6KV
C902	065G305M1022EM	Y2 1000PF +-20% 250VAC
C901	065G305M1022EM	Y2 1000PF +-20% 250VAC
C903	065G306M1022BP	1000PF Y1.CAP
C900	065G306M2222BP	2200PF +-20% 400VAC

C925	067G215D4714KV	E.C 105℃ CAP 470UF M 25V ED SERIES
C811	067G215D4714KV	E.C 105℃ CAP 470UF M 25V ED SERIES
C805	067G215D4714KV	E.C 105℃ CAP 470UF M 25V ED SERIES
C922	067G215D6814KV	CAP 105℃ 680UF M 25V
C923	067G215D6814KV	CAP 105℃ 680UF M 25V
C924	067G215D6814KV	CAP 105℃ 680UF M 25V
C927	067G215S4713KV	EC 105℃ CAP 470UF M 16V
C932	067G215V102 3N	EC CAP 105 度 1000UF M 16V NCC
C926	067G215V102 3N	EC CAP 105 度 1000UF M 16V NCC
C907	067G215Z12115K	ELCAP 105℃ 120UF M 450V
L901	073G 174 76 L	CHOKE COIL LI TAI LF-002923
L921	073G 253191 YS	CHOKE COIL 1.1UH YS04110055
L922	073G 253191 YS	CHOKE COIL 1.1UH YS04110055
L902	073L 174 40 HG	GBQM4.778.391
PT801	080GL22T 1 DN	X'FMR 86.7UH TK.2003U.101
PT802	080GL22T 1 DN	X'FMR 86.7UH TK.2003U.101
CN901	087G 501 32 S	AC SOCKET
BD901	093G 50460 28	BRIDGE DIODE KBP208G LITEON
CN902	095G 825 9W507	WIRE HARNESS 9P(SCN)-12P 140MM
	705GQ761018	NR901 ASS'Y
NR901	061G 58 9T	RST NTCR 10 OHM +-20% 5A THINKING
	096G 29 10	H.S. TUBE
	705GQ793015	D921 ASS'Y
HS2	090G6263 1	HEAT SINK
D921	093G 60526	SCHOTTKY MBRF1060CT ITO-220AB
	0M1G1730 8120	SCREW
	705GQ9KP 57001	Q900 ASS"Y
Q900	057G 667 21	STP10NK70ZFP
HS1	090G6264 1	HEAT SINK
	0M1G1730 8120	SCREW
	705GQ9KP 93001	D920 ASS"Y
HS5	090G6241 1 GP	HEAT SINK
D920	093G 60276	DIODE SBT150-10LST SANYO
	0M1G1730 8120	SCREW
IC801	056G 379 22	IC TL494IDR SOIC-16
IC901	056G 379 61	LD7575PS SOP-8
Q803	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q807	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q810	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q811	057G 417 4	PMBS3904/PHILIPS-SMT(04)

Q902	057G 417 4	PMBS3904/PHILIPS-SMT(04)
Q805	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q806	057G 417 6	PMBS3906/PHILIPS-SMT(06)
Q809	057G 600 55	P5506 HVG SO-8
Q804	057G 600 55	P5506 HVG SO-8
Q808	057G 759 2	RK7002
Q812	057G 759 2	RK7002
Q801	057G 760 4B	PDTA144WK SOT346
Q802	057G 760 5B	PDTC144WK SOT346
R842	061G0603000	RST CHIPR 0 OHM +-5% 1/10W
R832	061G0603000	RST CHIPR 0 OHM +-5% 1/10W
R830	061G0603000	RST CHIPR 0 OHM +-5% 1/10W
R804	061G0603000	RST CHIPR 0 OHM +-5% 1/10W
R801	061G0603000	RST CHIPR 0 OHM +-5% 1/10W
R806	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R807	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R811	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R812	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R827	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R834	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R835	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R839	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R841	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R848	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R849	061G0603100 1F	RST CHIPR 1 KOHM +-1% 1/10W
R853	061G0603100 2F	RST CHIPR 10K OHM +-1% 1/10W
R852	061G0603100 2F	RST CHIPR 10K OHM +-1% 1/10W
R840	061G0603100 2F	RST CHIPR 10K OHM +-1% 1/10W
R838	061G0603100 2F	RST CHIPR 10K OHM +-1% 1/10W
R833	061G0603100 2F	RST CHIPR 10K OHM +-1% 1/10W
R831	061G0603100 2F	RST CHIPR 10K OHM +-1% 1/10W
R819	061G0603100 2F	RST CHIPR 10K OHM +-1% 1/10W
R808	061G0603100 2F	RST CHIPR 10K OHM +-1% 1/10W
R805	061G0603100 2F	RST CHIPR 10K OHM +-1% 1/10W
R813	061G0603101	RST CHIPR 100 OHM +-5% 1/10W
R821	061G0603105	RST CHIPR 1M OHM +-5% 1/10W
R836	061G0603105	RST CHIPR 1M OHM +-5% 1/10W
R815	061G0603150 2F	RST CHIPR 15 KOHM +-1% 1/10W
R817	061G0603150 3F	RST CHIPR 150 KOHM +-1% 1/10W
R844	061G0603220	RST CHIPR 22 OHM +-5% 1/10W

R847	061G0603220	RST CHIPR 22 OHM +-5% 1/10W
R824	061G0603240 1F	RST CHIPR 2.4 KOHM +-1% 1/10W
R803	061G0603242	RST CHIPR 2.4 KOHM +-5% 1/10W
R845	061G0603330	RST CHIPR 33 OHM +-5% 1/10W
R846	061G0603330	RST CHIPR 33 OHM +-5% 1/10W
R828	061G0603470 2F	RST CHIPR 47 KOHM +-1% 1/10W
R822	061G0603473	RST CHIPR 47 KOHM +-5% 1/10W
R820	061G0603564	RST CHIPR 560 KOHM +-5% 1/10W
R814	061G0603680 2F	RST CHIPR 68K OHM +-1% 1/10W
R816	061G0603680 2F	RST CHIPR 68K OHM +-1% 1/10W
R829	061G0603680 2F	RST CHIPR 68K OHM +-1% 1/10W
R930	061G0805100 1F	RST CHIPR 1K OHM +-1% 1/8W
R928	061G0805100 1F	RST CHIPR 1K OHM +-1% 1/8W
R927	061G0805100 1F	RST CHIPR 1K OHM +-1% 1/8W
R925	061G0805100 1F	RST CHIPR 1K OHM +-1% 1/8W
R913	061G0805100 1F	RST CHIPR 1K OHM +-1% 1/8W
R915	061G0805100 2F	RST CHIPR 10KOHM +-1% 1/8W
R923	061G0805100 2F	RST CHIPR 10KOHM +-1% 1/8W
R911	061G0805100 3F	RST CHIPR 100KOHM +-1% 1/8W
R802	061G0805101	RST CHIPR 100 OHM +-5% 1/8W
R908	061G0805102	RST CHIPR 1K OHM +-5% 1/8W
R826	061G0805180 3F	RST CHIPR 180 KOHM +-1% 1/8W
R929	061G0805240 1F	RST CHIPR 2.4K OHM +-1% 1/8W
R924	061G0805360 1F	RST CHIPR 3.6K OHM +-1% 1/8W
R926	061G0805430 2F	RST CHIPR 43 KOHM +-1% 1/8W
R922	061G0805471	RST CHIPR 470 OHM +-5% 1/8W
R825	061G0805510 2F	RST CHIPR 51K OHM +-1% 1/8W
J908	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
J907	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
J818	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
J816	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
J815	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
J814	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
J813	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
J807	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
D812	061G1206000	RST CHIPR 0 OHM +-5% 1/4W
F902	061G1206000 4	RST CHIPR 0 OHM +-5% 1/4W
R912	061G1206100	RST CHIPR 10 OHM +-5% 1/4W
R905	061G1206103	RST CHIPR 10K OHM +-5% 1/4W
R931	061G1206103	RST CHIPR 10K OHM +-5% 1/4W

ZD801	061G1206103	RST CHIPR 10K OHM +-5% 1/4W
R810	061G1206150	RST CHIPR 15 OHM +-5% 1/4W
R837	061G1206150	RST CHIPR 15 OHM +-5% 1/4W
R850	061G1206150	RST CHIPR 15 OHM +-5% 1/4W
R851	061G1206150	RST CHIPR 15 OHM +-5% 1/4W
R900	061G1206334	RST CHIPR 330KOHM +-5% 1/4W
R901	061G1206334	RST CHIPR 330KOHM +-5% 1/4W
R902	061G1206334	RST CHIPR 330KOHM +-5% 1/4W
R910	061G1206339	3.3 1206
R956	061G1206470	RST CHIPR 47 OHM +-5% 1/4W
R955	061G1206470	RST CHIPR 47 OHM +-5% 1/4W
R954	061G1206470	RST CHIPR 47 OHM +-5% 1/4W
R953	061G1206470	RST CHIPR 47 OHM +-5% 1/4W
R952	061G1206470	RST CHIPR 47 OHM +-5% 1/4W
R951	061G1206470	RST CHIPR 47 OHM +-5% 1/4W
C904	065G0603102 32	1000PF +-10% 50V X7R
C804	065G0603103 12	CHIP 0.01UF 16V X7R
C814	065G0603104 12	CER2 0603 X7R 16V 100N P
C807	065G0603104 12	CER2 0603 X7R 16V 100N P
C810	065G0603104 22	CAP CHIP 0603 0.1UF K 25V X7R
C806	065G0603105 12	CHIP 1UF 16VX7R 0603
C802	065G0603105 12	CHIP 1UF 16VX7R 0603
C818	065G0603222 22	CHIP 2200PF 25V X7R
C815	065G0603222 22	CHIP 2200PF 25V X7R
C817	065G0603222 22	CHIP 2200PF 25V X7R
C813	065G0603222 22	CHIP 2200PF 25V X7R
C823	065G0805104 22	0.1UF +-10% 25V X7R 080
C824	065G0805104 22	0.1UF +-10% 25V X7R 080
C928	065G0805104 32	CAP CHIP 0805 0.1UF K 50V X7R
C912	065G0805104 32	CAP CHIP 0805 0.1UF K 50V X7R
C929	065G0805104 32	CAP CHIP 0805 0.1UF K 50V X7R
C916	065G0805104 32	CAP CHIP 0805 0.1UF K 50V X7R
C930	065G0805104 32	CAP CHIP 0805 0.1UF K 50V X7R
C931	065G0805104 32	CAP CHIP 0805 0.1UF K 50V X7R
C822	065G0805152 32	CHIP 1500PF 50V X7R 0805
C821	065G0805152 32	CHIP 1500PF 50V X7R 0805
C816	065G0805152 32	CHIP 1500PF 50V X7R 0805
C803	065G0805152 32	CHIP 1500PF 50V X7R 0805
C913	065G0805221 31	CAP CHIP 0805 220PF J 50V NPO
C809	065G080522131G	CAP CHIP 0805 220PF G 50V NPO

C808	065G0805225 12	CAP CHIP 0805 2.2UF K 16V X7R
C914	065G0805471 21	CAP CHIP 0805 470PF J 25V NPO
D801	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D802	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D809	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D810	093G 64 33	DIO SIG SM BAV99 (PHSE)R
D806	093G 64 38 D	DIODE BAW56 DIODES
D808	093G 64 38 D	DIODE BAW56 DIODES
ZD922	093G 39S 25 T	RLZ5.1B LLDS
ZD920	093G 39S 61 T	DIODE RLZ16B ROHM
ZD921	093G 39S 61 T	DIODE RLZ16B ROHM
D916	093G 64S511SEM	IN4148W
D915	093G 64S511SEM	IN4148W
D807	093G 64S511SEM	IN4148W
D803	093G 64S511SEM	IN4148W
D910	093G 64S511SEM	IN4148W
D813	093G 64S511SEM	IN4148W
D811	093G 64S511SEM	IN4148W
NR901	006G 31 4	1.7MM RIVET
CN901	006G 31500	EYELET
T901	006G 31502	1.5MM RIVET
IC903	056G 158 12	KIA431A-AT/P TO-92
R907	061G 20815152T	RST MOFR 150 OHM +-5% 1W
R909	061G152M10452T	RST MOFR 100KOHM +-5% 2WS
R916	061G152M43852T	RST MOF 0R43 5% 2W
C910	065G 2K152 1T6921	1.5NF/2KV Y5P +-10%
C920	065G517K102 5T	1000PF 10% Y5P 500V
C921	065G517K102 5T	1000PF 10% Y5P 500V
C911	067G 2152207NT	KY50VB22M-TP5 5*11
FB901	071G 55 29	FERRITE BEAD
FB903	071G 55 29	FERRITE BEAD
F901	084G 56 4W	FUSE 4.0A 250V
D901	093G1020 752T	UF4003PT DO-41 CHENMKO
D900	093G1100 1152T	DIODE PR1007R 1A/1000V DO-41
	715G2594 1 4	POWER BOARD PCB
	Q52G6025 13154	INSULATE SHEET
HS4	Q85G0053 1 S	SHIELD
	Q01G6019 2	SCREW
	Q05G6055 1	SHEET
	Q11G0017 1	NYLON-WIRE CLAMP

	Q40G 22N700 4A	RATING LABEL
	Q40G0001624 4A	PALLET LABEL
	Q41G780070070B	QSG
	Q41G780070071A	DVI SHEET
	Q41G780070098A	PIG FOR DAO
	Q44G600022D 1A MKD	22 MKD CARTON
	Q44G600027V 9A	CARTON
	Q44GC005 3	EPS
	Q44GC039101	EPS(L)
	Q44GC039201	EPS(R)
	Q44GC039700 1A	22" LCD DELL CARTON
	Q44GC053101EPE	EPE
	Q44GC053201EPE	EPE
	Q44GSLIP10031A	PLASTIC SLIPSHEET
	Q44GSLIP10031A	PLASTIC SLIPSHEET
	Q44GSLIP10040A	PLASTIC SLIPSHEET
	Q44GSLIP10072A	PLASTIC SLIPSHEET
	Q44GSLIP10073A	PLASTIC SLIPSHEET
	Q45G 88609 60 R	EPE BAG FOR MONITOR
	Q45G 88609 61 R	EPE BAG FOR STAND
	Q52G 1185 91	BIG TAPE FOR DELL CARTON
	Q52G6020 2D03	PROTECT FILM
	Q52G6020 2D03	PROTECT FILM
	Q52G6025 13156	MYLAR
	Q70G2200700 1F	CD MANUAL
	S95G80183608	LVDS ASS'Y
	033F206H24JWT0	A2006H00-2*12PHK
	033F303SM24K30	PK2407P30/TD00-30LH
	071F 100510 HS	FERRITE CORE
	033F206T2JWTOP	A2006TOP-2
	033F303TTD1	TD00-T 2407PS-00
	040G 45762412B	CBPC LABEL
	Q40G 582813 3A	S/N LABEL
	Q40G0001700 1A	LABEL
	Q40G0001700 4A	DELL CARTON LABEL

14. Different Parts List

Diversity of TC8SGHHKWDDDHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	Q40G 22N700 1D	RATING LABEL

Diversity of TC8GGHHKWDDDHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	705GQ734535	20" DELL MAIN FRAME ASS'Y
M015	SQ15G01733	MAIN FRAME
	002F6570105 M4	RIVET
	002F6354168 M3	RIVET
	002F6354273 M3	RIVET
	002F6354238 M3	RIVET
	002F6354268 M3	RIVET
	015F0112 0	LOCK
	015F 008200 A1	SGCC
E750	750GLGC0W1D32D000D	PANEL LM220WE1-TLD3 NJ LPL
	CBPC7GGHDDQ1	MAIN BOARD
U402	056G1133 81(WDLGHTCGHQ3)	SST25LF020A-33-4C-SAE
	Q40G 22N700 1D	RATING LABEL

Diversity of TC8MGHHKWDDDHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	044G6002695 2A	PALLET PLATE
	044G6002728 1A	PAPER BOARD
	052G6019 1	INSULATING TAPE
E750	750GLMC0Z1112D000D	PANEL M220Z1-L01 C1 NB CMO
	CBPC7MGHDDQ1	CONVERSION G2089-1-DEL-X-2-080421
	SMTC7MGHDDQ1	MAIN BOARD FOR SMT
U402	056G1133 81(LDEGHTCMHQ3)	SST25LF020A-33-4C-SAE
	Q40G 22N700 1D	Rating label
	Q44GC039700 1B	22 DELL LCD CARTON
	026G 800700 6A	S/N LABEL

Diversity of TC8SGHHMWDDZHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	041G 68623 1A	Certificated card
	044G6002695 2A	PALLET PLATE
	044G6002728 1A	PAPER BOARD
	044G9003210	CORNER PAPER
	052G6019 1	INSULATING TAPE
	Q07G 1 5D31	WOODEN PALLET
	Q07G 1 5D32	WOODEN PALLET
	Q40G 22N700 1D	Rating label
	Q41G780070081A	dell rohs card
	Q44G6002CP217A	paper cap
	Q44GC039700 4A	22 LCD DELL CARTON

Diversity of TC8GGHHMWDDDHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	041G 68623 1A	Certificated card
	044G6002695 2A	PALLET PLATE
	044G6002728 1A	PAPER BOARD
	044G9003210	CORNER PAPER
	052G6019 1	INSULATING TAPE
	705GQ734535	20" DELL MAIN FRAME ASS'Y
M015	SQ15G01733	MAIN Frame
	002F6570105 M4	RIVET
	002F6354168 M3	RIVET
	002F6354273 M3	RIVET
	002F6354238 M3	RIVET
	002F6354268 M3	RIVET
	015F0112 0	LOCK
	015F 008200 A1	SGCC
E750	750GLGC0W1D32D000D	PANEL LM220WE1-TLD3 NJ LPL
	CBPC7GGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421
U402	056G1133 81(WDLGHTCGHQ3)	SST25LF020A-33-4C-SAE
	Q07G 1 5D31	WOODEN PALLET
	Q07G 1 5D32	WOODEN PALLET

	Q40G 22N700 1D	Rating label
	Q41G780070081A	dell rohs card
	Q44G6002CP217A	paper cap
	Q44GC039700 4A	22 LCD DELL CARTON

Diversity of TC8SGHHLWDDZHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	052G6019 1	INSULATING TAPE
	089G412A18NIS3	POWER CORD/32E1818058
	Q40G 22N700 1D	Rating label
	Q41G780070090A	tech sheet
	Q44GC039700 1B	22 DELL LCD CARTON

Diversity of TC8GGHHLWDDDHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	052G6019 1	INSULATING TAPE
	089G412A18NIS3	POWER CORD/32E1818058
	705GQ734535	20" DELL MAIN FRAME ASS'Y
M015	SQ15G01733	MAIN Frame
	002F6570105 M4	RIVET
	002F6354168 M3	RIVET
	002F6354273 M3	RIVET
	002F6354238 M3	RIVET
	002F6354268 M3	RIVET
	015F0112 0	LOCK
	015F 008200 A1	SGCC
E750	750GLGC0W1D32D000D	PANEL LM220WE1-TLD3 NJ LPL
	CBPC7GGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421
U402	056G1133 81(WDLGHTCGHQ3)	SST25LF020A-33-4C-SAE
	Q40G 22N700 1D	Rating label
	Q41G780070090A	tech sheet
	Q44GC039700 1B	22 DELL LCD CARTON

Diversity of TC8MGHHKWDDNHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	044G6002728 1A	PAPER BOARD
	044G9003 13	CORNER PAPER
	052G6019 1	INSULATING TAPE
E750	750GLMC0Z1112D000D	PANEL M220Z1-L01 C1 NB CMO
	CBPC7MGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421
	026G 800700 6A	S/N LABEL
U402	056G1133 81 (LDEGHTCMHQ3)	SST25LF020A-33-4C-SAE

Diversity of TC8MGHHKWDDDHN compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	044G6002695 2A	PALLET PLATE
	052G6019 1	INSULATING TAPE
	750GLMC0Z1112Z000D	PANEL M220Z1-L01 C1 NB CMO
	CBPC7MGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421
	Q40G 22N700 1D	RATING LABEL
	Q44GC039700 1B	22 DELL LCD CARTON
	026G 800700 6A	S/N LABEL
U402	056G1133 81 (LDEGHTCMHQ3)	SST25LF020A-33-4C-SAE

Diversity of TC8GGHHKWDDNHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	705GQ734535	20" DELL MAIN FRAME ASS'Y
M015	SQ15G01733	MAIN FRAME
E750	750GLGC0W1D32D000D	PANEL LM220WE1-TLD3 NJ LPL
	CBPC7GGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421

Diversity of TC8MGHHMWDDDHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	052G6019 1	INSULATING TAPE
	089G412A18NIS3	POWER CORD/32E1818058
E750	750GLMC0Z1112D000D	PANEL M220Z1-L01 C1 NB CMO
	CBPC7MGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421
U402	056G1133 81 (LDEGHTCMHQ3)	SST25LF020A-33-4C-SAE
	Q40G 22N700 1D	RATING LABEL
	Q41G780070090A	TECH SHEET
	Q44GC039700 1B	22 DELL LCD CARTON
	026G 800700 6A	S/N LABEL

Diversity of TC8MGHHLWDDDHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	052G6019 1	INSULATING TAPE
	089G412A18NIS3	POWER CORD/32E1818058
E750	750GLMC0Z1112D000D	PANEL M220Z1-L01 C1 NB CMO
	CBPC7MGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421
	Q40G 22N700 1D	RATING LABEL
	Q41G780070090A	TECH SHEET
	Q44GC039700 1B	22 DELL LCD CARTON
	026G 800700 6A	S/N LABEL
U402	056G1133 81(WDLGHTCGHQ3)	SST25LF020A-33-4C-SAE

Diversity of TC8MGHHJWDDDHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	052G6019 1	INSULATING TAPE
	089G401A18NHRA	POWER CORD
E750	750GLMC0Z1112D000D	PANEL M220Z1-L01 C1 NB CMO
	CBPC7MGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421
U402	056G1133 81 (LDEGHTCMHQ3)	SST25LF020A-33-4C-SAE
	Q40G 22N700 2C	RATING LABEL
	Q44GC039700 1B	22 DELL LCD CARTON

Diversity of TC8MGHHMWDDFHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	052G6019 1	INSULATING TAPE
E750	750GLMC0Z1112D000D	PANEL M220Z1-L01 C1 NB CMO
	CBPC7MGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421
U402	056G1133 81 (LDEGHTCMHQ3)	SST25LF020A-33-4C-SAE
	Q40G 22N700 1D	RATING LABEL
	Q44GC039700 1B	22 DELL LCD CARTON

Diversity of TC8MGHHFWDDDHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
E750	750GLMC0Z1112D000D	PANEL M220Z1-L01 C1 NB CMO
	CBPC7MGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421
U402	056G1133 81 (LDEGHTCMHQ3)	SST25LF020A-33-4C-SAE
	Q40G 22N700 1D	RATING LABEL
	Q44GC039700 1B	22 DELL LCD CARTON

Diversity of TC8MGHHBWDDD4C compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581654 3A	CARTON LABEL
	Q44G600022D 1A	CARTON
	Q44GC039624 1A	22" CARTON
	705GQ8SK021	22" DELL SKD KITS ASS'Y
	CBPC7MGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421
U402	056G1133 81 (LDEGHTCMHQ3)	SST25LF020A-33-4C-SAE
	705GQ8SK023	22" DELL SKD BEZEL ASS'Y
	Q40G 22N700 3A	RATING LABEL

Diversity of TC8SGHHFWDDZHC compared with TC8SGHHKWDDNHC		
Location	**Part No.**	**Description**
	040G 581 26704	SHIPPING LABEL
	044G9003109	CORNER PAPER
	052G6019 1	INSULATING TAPE
	Q40G 22N700 1D	Rating label
	Q41G780070090A	tech sheet
	Q44GC039700 1B	22 DELL LCD CARTON

Diversity of TC8SGHHJWDDZHC compared with TC8SGHHKWDDNHC			
Location	**Part No.**	**Description**	**Remark**
	040G 581 26704	SHIPPING LABEL	
	044G6002695 2A	PALLET PLATE	
	044G6002728 1A	PAPER BOARD	
	044G9003210	CORNER PAPER	
	052G6019 1	INSULATING TAPE	
	089G401A18NHRA	POWER CORD	
	Q07G 1 5D31 X	WOODEN PALLET	
	Q07G 1 5D32 X	WOODEN PALLET	
	Q40G 22N700 2C	Rating label	
	Q44G6002CP226A	PAPER CAP	
	Q44GC039700 1B	22 DELL LCD CARTON	

Diversity of TC8GGHHFWDDDHC compared with TC8SGHHKWDDNHC			
Location	**Part No.**	**Description**	**Remark**
	040G 581 26704	SHIPPING LABEL	
	044G9003109	CORNER PAPER	
	052G6019 1	INSULATING TAPE	
	705GQ734535	20" DELL MAIN FRAME ASS'Y	
M015	Q15G0173 3	MAINFRAME	2nd source
M015	SQ15G01733	MAIN Frame	
E750	750GLGC0W1D21D000D	PANEL LM220WE1-TLD2 KR LPL	2nd source
E750	750GLGC0W1D32D000D	PANEL LM220WE1-TLD3 NJ LPL	
	CBPC7GGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421	
	Q40G 22N700 1D	Rating label	
	Q41G780070090A	tech sheet	
	Q44GC039700 1B	22 DELL LCD CARTON	

Diversity of TC8GGHHJWDDDHC compared with TC8SGHHKWDDNHC			
Location	**Part No.**	**Description**	**Remark**
	040G 581 26704	SHIPPING LABEL	
	044G6002695 2A	PALLET PLATE	
	044G6002728 1A	PAPER BOARD	
	044G9003210	CORNER PAPER	
	052G6019 1	INSULATING TAPE	
	089G401A18NHRA	POWER CORD	
	705GQ734535	20" DELL MAIN FRAME ASS'Y	
M015	Q15G0173 3	MAINFRAME	2nd source
M015	SQ15G01733	MAIN Frame	
E750	750GLGC0W1D21D000D	PANEL LM220WE1-TLD2 KR LPL	2nd source
E750	750GLGC0W1D32D000D	PANEL LM220WE1-TLD3 NJ LPL	
	CBPC7GGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421	
	Q07G 1 5D31 X	WOODEN PALLET	
	Q07G 1 5D32 X	WOODEN PALLET	
	Q40G 22N700 2C	Rating label	
	Q44G6002CP226A	PAPER CAP	
	Q44GC039700 1B	22 DELL LCD CARTON	

Diversity of TC8GGHHMWDDFHC compared with TC8SGHHKWDDNHC			
Location	**Part No.**	**Description**	**Remark**
	040G 581 26704	SHIPPING LABEL	
	044G9003109	CORNER PAPER	
	052G6019 1	INSULATING TAPE	
	705GQ734535	20" DELL MAIN FRAME ASS'Y	
M015	Q15G0173 3	MAINFRAME	2nd source
M015	SQ15G01733	MAIN Frame	
E750	750GLGC0W1D21D000D	PANEL LM220WE1-TLD2 KR LPL	2nd source
E750	750GLGC0W1D32D000D	PANEL LM220WE1-TLD3 NJ LPL	
	CBPC7GGHDDQ1	MAIN BOARD G2089-1-DEL-X-2-080421	
	Q40G 22N700 1D	Rating label	
	Q41G780070090A	tech sheet	
	Q44GC039700 1B	22 DELL LCD CARTON	

Diversity of TC8SGHHMWDDEHC compared with TC8SGHHKWDDNHC			
Location	**Part No.**	**Description**	**Remark**
	040G 581 26704	SHIPPING LABEL	
	044G9003109	CORNER PAPER	
	052G6019 1	INSULATING TAPE	
	Q40G 22N700 1D	Rating label	
	Q41G780070090A	tech sheet	
	Q44GC039700 1B	22 DELL LCD CARTON	