Service Manual

ViewSonic VP2130b-1

Model No. VS10773

21” Color TFT LCD Display

(VP2130b-1_SM Rev. 1a Dec. 2005)

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Revision History

Revision	SM Editing Date	ECR Number	Description of Changes	Editor
1a	12/23/2005		Initial release	Jamie Chang

TABLE OF CONTENTS

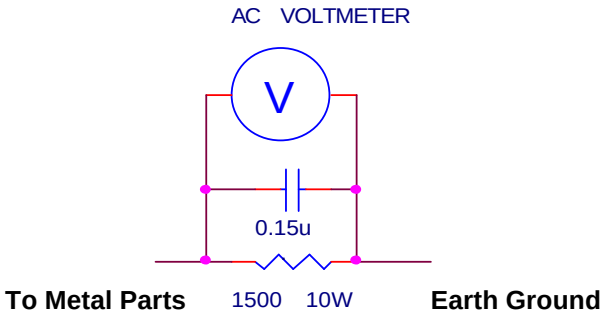
1. Precaution & Safety Notice

1. Caution :
   No modification of any circuit should be attempted . Service work should only be performed after you are thoroughly familiar with all of the following safety checks and servicing guide line

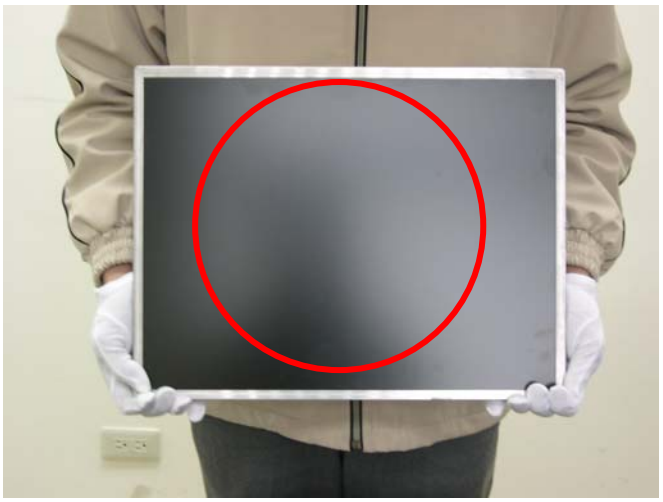
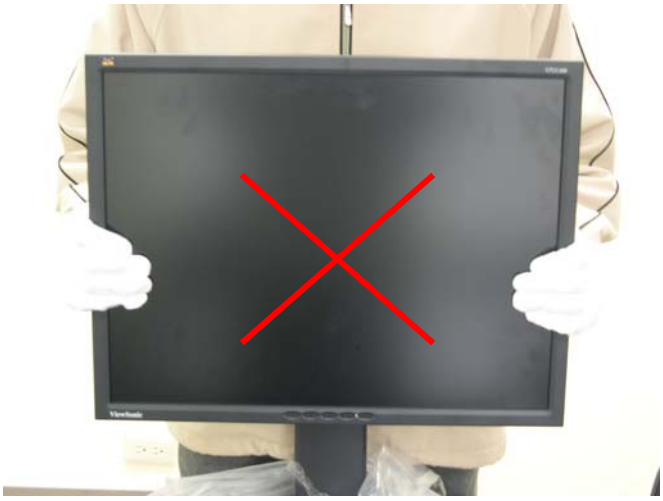
2. Safety Check :
   Care should be taken while servicing this LCD display. Because of the high voltage used in the inverter circuit. These voltage are exposed in such areas as the associated transformer circuits .

3. POWER SUPPLY REQUIREMENTS
   The external power converter for this display utilizes AC and DC cords , AC cord is detachable , but DC cord is permanently attached . Any attempt to replace another adapter could result in serious problem on the display .

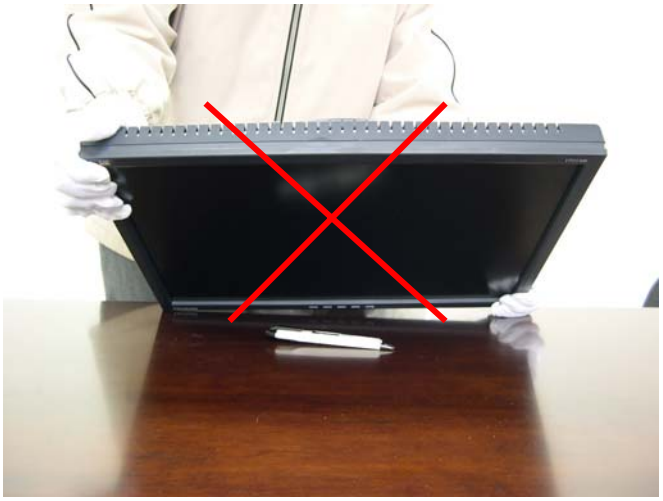
4. LEAKAGE CURRENT HOT CHECK
   4-1 Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during this check.
   4-2 Connect a 1500 ohm , 10 watt resistor , paralleled by a 0.15uF capacitor between each metallic part and a good earth ground
   4-3 Use an AC voltmeter with 1000 ohm / volt or more sensitivity and measure the AC voltage across the combination 1500 ohm resistor and 0.15uF capacitor.
   4-4 Move the resistor connection to each exposed metallic part and measure the voltage.
   4-5 Reverse the polarity of the AC plug in the AC outlet and repeat the above measurement.
   4-6 Voltage measured must not exceed 1.5 volt RMS, from any exposed metallic part to the ground. A leakage current tester may be used in the above hot check, in which case any circuit measured must not exceed 1.0 milliamp. In the case of a measurement exceeding the 1.0 milliamp value, a rework is required to eliminate the chance of a shock hazard .



Handling & Placing method

Correct methods :	Incorrect Methods :
Only touch the metal-frame of the panel or the front cover of the monitor . Do not touch the surface of the polarizer .	Surface of the panel is pressed by fingers & this may cause " MURA "
	
	

Correct methods :	Incorrect Methods :
Take out the monitor with cushion	Take out the monitor by grasping the LCD panel. This may cause “ MURA“.
	

Correct methods :	Incorrect Methods :
Place the monitor on a clean & soft foam pad .	Place the monitor on foreign objects . That could scratch the surface of panel
	

2. Specification

Test Resolution & Frequency	1600x1200 @ 60Hz
Test Image Size	Full Size
Contrast and Brightness Controls	Factory Default: Contrast = 70%, Brightness = 100%

VIDEO INTERFACE

Input Connector (refer the appendix A)	D-Sub = DB-15 (Analog) DVI-A = DVI-I (Analog) DVI-D = DVI-I (Digital)
Default Input Connector	Defaults to the first detected input
Video Cable Strain Relief	Equal to twice the weight of the monitor for five minutes
Video Cable Connector DB-15 Pin out	Compliant DDC/CI
Video Signals	Video RGB (Analog) Separate Sync / Composite Sync / SOG TMDS (Digital)
Video Impedance	75 Ohms (Analog), 100 Ohms (Digital)
Maximum PC Video Signal	950 mV with no damage to monitor
Maximum Mac Video Signal	1250 mV with no damage to monitor
Sync Signals	TTL
DDC/CI	Compliant with Revision 1.0
Sync Compatibility	Separate Sync / Composite Sync / SOG
Video Compatibility	Shall be compatible with all PC type computers, Macintosh computers, and after market video cards
Resolution Compatibility	640 x 350, 640 x 400, 640 x 480, 720 x 400, 720 x 480, 720 x 576, 800 x 600, 832 x 624, 1024 x 768, 1152 x 864, 1152 x 870, 1280 x 720, 1280 x 768, 1280 x 960, 1280 x 1024, 1360 x 768, 1400 x 1050, 1440 x 900, 1600 x 1200, 1680 x 1050, 1920 x 1080, 1920 x 1200
Exclusions	Not compatible with interlaced video

USB INTERFACE

Up Stream Connector	B type USB port x1
Down Stream Connector	A type USB port x4
Compatibility	Compliant with Revision 2.0
Power	The hub gets power from the display.

POWER SUPPLY

Internal Power Supply	Delta EADP-64BF
Input Voltage Range	90 to 264 VAC
Input Frequency Range	47.5 to 63 Hertz
Short Circuit Protection	Output can be shorted without damage
Over Current Protection	5.0 A typical at 12.0 VDC
Leakage Current	3.5mA (Max) at 254VAC / 60Hz
Efficiency	80 % typical at 115VAC Full Load
Fuse	Internal and not user replaceable
Power Dissipation	64 Watts (typ)
Max Input AC Current	1.5 Arms @ 90VAC, 0.75 Arms @180VAC
Inrush Current (Cold Start)	50 A (max) @ 115VAC 90 A (max) @ 230VAC
Power Supply Cold Start	Shall start and function properly when under full load, with all combinations of input voltage, input frequency, and operating temperature.
Power Supply Transient Immunity	Shall be able to withstand an ANSI/IEEE C62.41-1980 6000V 200 ampere ring wave transient test with no damage.
Power Supply Line Surge Immunity	Shall be able to withstand 1.5 times nominal line voltage for one cycle with no damage.
Power Supply Missing Cycle Immunity	Shall be able to function properly, without reset or visible screen artifacts, when ½ cycle of AC power is randomly missing at nominal input.
Power Supply Acoustics	The power supply shall not produce audible noise that would be detectable by the user. Audible shall defined to be in compliance with ISO 7779 (DIN EN27779:1991) Noise measurements of machines acoustics. Power Switch noise shall not be considered.
Power Saving Operation(Method)	VESA DPMS Signaling
Power Consumption	On Mode < 53 W (Typ) / 56 W (max) Active Off < 3 W
Recovery Time	On Mode = N/A, Active Off < 8 sec

ELECTRICAL REQUIREMENT

Horizontal / Vertical Frequency

Horizontal Frequency	24 – 92 KHZ
Vertical Refresh Rate	50 – 85* HZ.
Maximum Pixel Clock	165 MHz
Sync Polarity	Independent of sync polarity.

Timing Table

Item	Timing	Analog			Digital - TMDS	Remark
		Separated	Composite	SOG		
1	640 x 350 @ 70 Hz, 31.5 KHz	✓	✓	✓	✓	
2	640 x 350 @ 85 Hz, 37.9 KHz	✓	✓		✓	For Separated sync, Only horizontal full screen, The vertical position is at the center.
3	640 x 400 @ 60 Hz, 31.5 KHz	✓	✓	✓	✓	For SOG sync, switch 640x400@60Hz and 640x480@60Hz by [1]+[2] short cut key (primery = 640x480@60Hz)
4	640 x 400 @ 70 Hz, 31.5 KHz	✓	✓	✓	✓	For Separated Sync, Switch 640x400@70Hz and 720x400@70Hz by [1]+[2] short cut key (primery = 640x400@70Hz)
5	640 x 400 @ 85 Hz, 37.9 KHz	✓	✓	✓	✓	For Separated Sync, Switch 640x400@85Hz and 720x400@85Hz by [1]+[2] short cut key (primery = 640x400@85Hz)
6	640 x 480 @ 50 Hz, 24.7 KHz	✓	✓	✓		
7	640 x 480 @ 60 Hz, 31.5 KHz	✓	✓	✓	✓	For SOG sync, switch 640x400@60Hz and 640x480@60Hz by [1]+[2] short cut key (primery = 640x480@60Hz)
8	640 x 480 @ 67 Hz, 35 KHz	✓	✓	✓	✓	
9	640 x 480 @ 72 Hz, 37.9 KHz	✓	✓	✓	✓	

10	640 x 480 @ 75 Hz, 37.5 KHz	✓	✓	✓	✓	
11	640 x 480 @ 85 Hz, 43.3 KHz	✓	✓	✓	✓	
12	720 x 400 @ 70 Hz, 31.5 KHz	✓	✓	✓	✓	
13	720 x 400 @ 85 Hz, 37.9 KHz	✓	✓	✓	✓	For Separated Sync, Switch 640x400@85Hz and 720x400@85Hz by [1]+[2] short cut key (primery = 640x400@85Hz)
14	720 x 480 @ 60 Hz, 31.5 KHz			✓	✓	
15	720 x 576 @ 50 Hz, 31.3 KHz			✓	✓	
16	800 x 600 @ 50 Hz, 24.7 KHz	✓	✓	✓	✓	
17	800 x 600 @ 56 Hz, 35.1 KHz	✓	✓	✓	✓	
18	800 x 600 @ 60 Hz, 37.9 KHz	✓	✓	✓	✓	
19	800 x 600 @ 72 Hz, 48.1 KHz	✓	✓	✓	✓	
20	800 x 600 @ 75 Hz, 46.9 KHz	✓	✓	✓	✓	
21	800 x 600 @ 85 Hz, 53.7 KHz	✓	✓	✓	✓	
22	832 x 624 @ 75 Hz, 49.7 KHz	✓	✓	✓	✓	
23	1024 x 768 @ 50 Hz, 39.6 KHz	✓	✓	✓	✓	For Separated and Composite sync, Switch 1024x768@50Hz and 1280x768@50Hz by [1]+[2] short cut key (primery = 1024x768@50Hz)
24	1024 x 768 @ 60 Hz, 48.4 KHz	✓	✓	✓	✓	
25	1024 x 768 @ 70 Hz, 56.5 KHz	✓	✓	✓	✓	
26	1024 x 768 @ 72 Hz, 58.1 KHz	✓	✓	✓	✓	
27	1024 x 768 @ 75 Hz, 60 KHz	✓	✓	✓	✓	
28	1024 x 768 @ 75 Hz, 60.2 KHz	✓	✓	✓	✓	
29	1024 x 768 @ 85 Hz, 68.7 KHz	✓	✓	✓	✓	

30	1152 x 864 @ 75 Hz, 67.5 KHz	✓	✓	✓	✓	
31	1152 x 870 @ 75 Hz, 68.7 KHz	✓	✓	✓	✓	
32	1280 x 720 @ 50 Hz, 37.5 KHz			✓	✓	
33	1280 x 720 @ 60 Hz, 45 KHz			✓	✓	
34	1280 x 768 @ 50 Hz, 39.6 KHz	✓	✓	✓	✓	For Separated and Composite sync, Switch 1024x768@50Hz and 1280x768@50Hz by [1]+[2] short cut key (primery = 1024x768@50Hz)
35	1280 x 768 @ 60 Hz, 47.4 KHz	✓		✓	✓	For analog sync, Switch 1280x768@60Hz and 1360x768@60Hz by [1]+[2] short cut key (primery = 1280x768@60Hz)
36	1280 x 768 @ 60 Hz, 47.8 KHz	✓		✓	✓	
37	1280 x 768 @ 75 Hz, 60.3 KHz	✓	✓	✓	✓	
38	1280 x 768 @ 85 Hz, 68.6 KHz	✓	✓	✓	✓	
39	1280 x 960 @ 50 Hz, 49.4 KHz	✓	✓	✓	✓	
40	1280 x 960 @ 60 Hz, 59.7 KHz	✓	✓	✓	✓	
41	1280 x 960 @ 75 Hz, 75.2 KHz	✓	✓	✓	✓	
42	1280 x 960 @ 85 Hz, 85.9 KHz	✓	✓	✓	✓	
43	1280 x 1024 @ 50 Hz, 52.7 KHz	✓	✓	✓	✓	
44	1280 x 1024 @ 60 Hz, 64 KHz	✓	✓	✓	✓	
45	1280 x 1024 @ 75 Hz, 80 KHz	✓	✓	✓	✓	
46	1280 x 1024 @ 85 Hz, 91.1 KHz	✓	✓	✓	✓	
47	1360 x 768 @ 60 Hz, 47.7 KHz	✓	✓	✓	✓	For analog sync, Switch 1280x768@60Hz and 1360x768@60Hz by [1]+[2] short cut key (primary = 1280x768@60Hz)
48	1400 x 1050 @ 50 Hz, 54.1 KHz	✓	✓	✓	✓	

49	1400 x 1050 @ 60 Hz, 64.7 KHz	✓	✓		✓	For analog sync, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primary = 1400x1050@60Hz)
50	1400 x 1050 @ 60 Hz, 65.3 KHz	✓	✓			For Separated and Composite sync, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primary = 1400x1050@60Hz)
51	1400 x 1050 @ 75 Hz, 82.3 KHz	✓	✓	✓	✓	
52	1440 x 900 @ 60 Hz, 55.5 KHz	✓	✓	✓	✓	
53	1440 x 900 @ 60 Hz, 59.9 KHz	✓	✓	✓	✓	
54	1440 x 900 @ 75 Hz, 75 KHz	✓	✓	✓	✓	
55	1440 x 900 @ 85 Hz, 84.8 KHz	✓	✓	✓	✓	
56	1600 x 1200 @ 50 Hz, 61.8 KHz	✓	✓	✓	✓	
57	1600 x 1200 @ 60 Hz, 75 KHz	✓	✓	✓	✓	
58	1680 x 1050 @ 60 Hz, 64.7 KHz	✓	✓		✓	For analog sync, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primary = 1400x1050@60Hz)
59	1680 x 1050 @ 60 Hz, 65.3 KHz	✓	✓			For Separated and Composite sync, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primary = 1400x1050@60Hz)
60	1920 x 1080 @ 50 Hz, 28.1 KHz			✓	✓	
61	1920 x 1080 @ 60 Hz, 33.8 KHz			✓	✓	
62	1920 x 1200 @ 60 Hz, 74 KHz	✓	✓	✓	✓	

*1. Tolerance ≧ ±2KHz. (if the range dose not cover other timing mode)

*2. Any timing not in the list, it should display as normal or show on "OUT OF RANGE" OSD message without blanking.

*3. The image quality of 85Hz mode might be worse than 75Hz.

Primary Presets

1600x1200 @ 60Hz

User Presets

Number of User Presets (recognized timings) Available: 10 presets total in FIFO configuration

Changing Modes

- Maximum Mode Change Blank Time for image stability : 3 seconds (Max), excluding "Auto Adjust" time
- Under DOS mode (640 x 350, 720 x 400 & 640 x 400), it should recall factory setting when execute "Auto Adjust"
- The monitor needs to do "Auto Adjust" the first time a new mode is detected (see section "0-Touch™ Function Actions")
- While running Change Mode, Auto Adjust or Memory Recall, the image shall blank

TFT LCD PANEL

Panel Source Identify

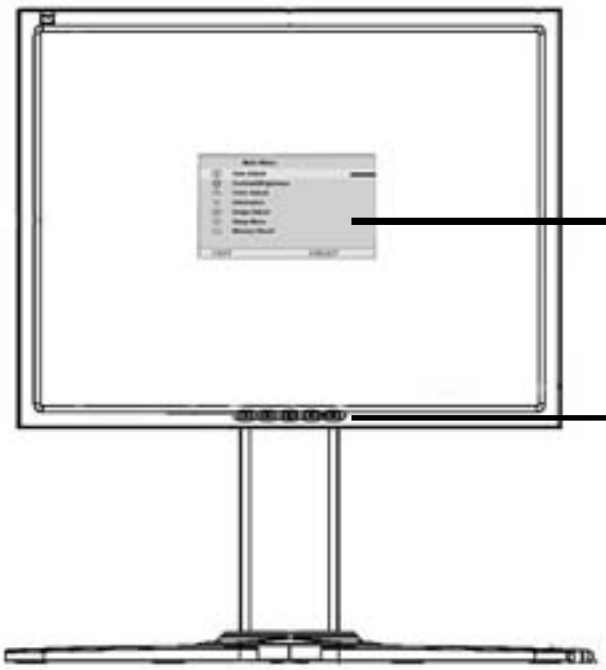
The panel code "S" for Samsung panel should be shown on following position,

(1) The lower right side of ID label. (see Figure 2)

(2) The lower right side of UPC label. (see Figure 3)

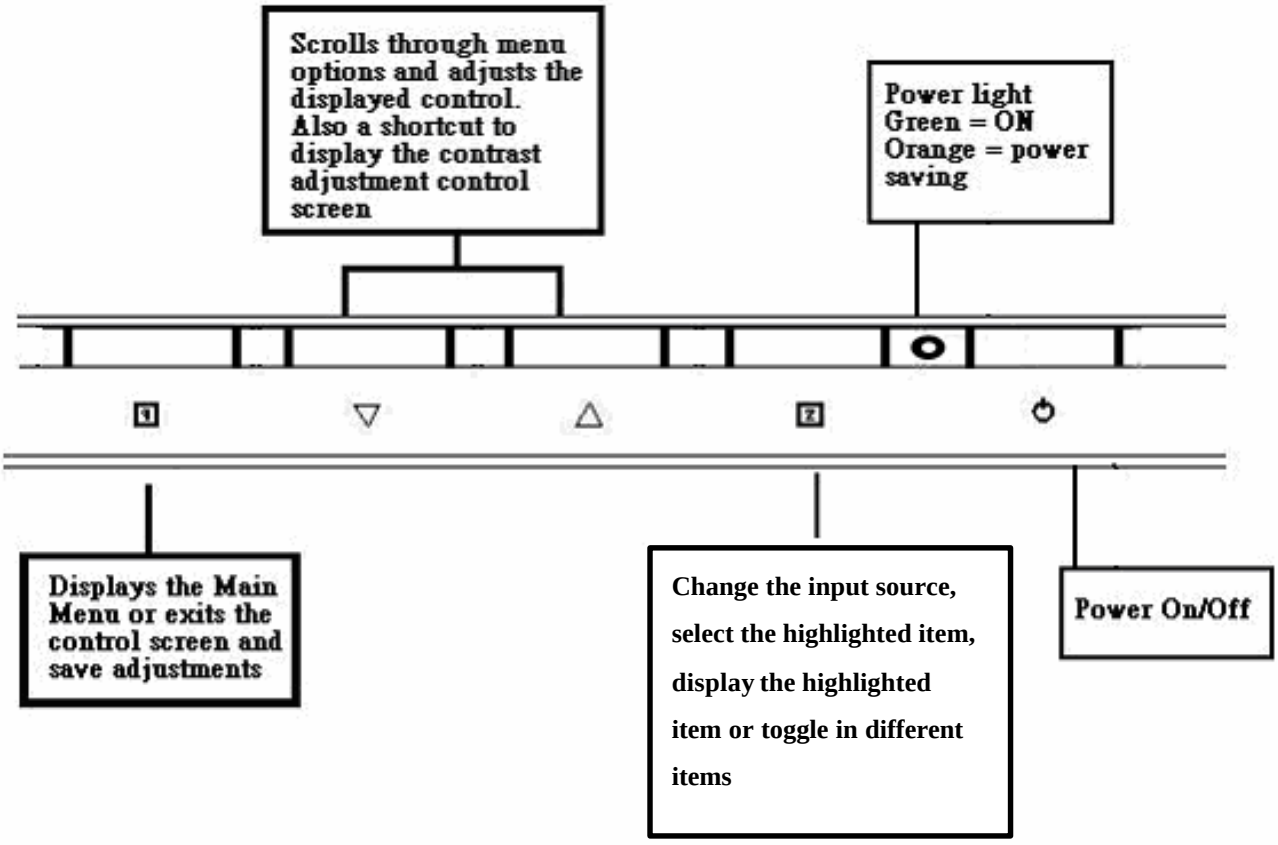
(3) The F/W version sticker or silkscreen on main board.

3. Front Panel Function Control Description



Main Menu
with on view

Front Control Panel
shown below in detail



Main Menu Controls

Adjust the menu items shown below by using the up and down buttons.

A. **Auto Image Adjust** automatically sizes, centers, and fine tunes the video signal to eliminate waviness and distortion. Press the [2] button to obtain a sharper image.

NOTE: Auto Image Adjust works with most common video cards. If this function does not work on your LCD display, then lower the video refresh rate to 60 Hz and set the resolution to its pre-set value.

B. **Contrast adjusts** the difference between the image background (black level) and the foreground (white level).

C. **Brightness adjusts** the lamps current to control the screen brightness.

D. **Color Adjust** provides several color options: preset color temperatures and Custom User Color which allows you to adjust red (R), green (G), and blue (B). The factory setting for this product is 6500K (6500° Kelvin).

sRGB — Standard color space proposed by Microsoft and HP.

9300K — Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).

7500K — Adds blue to the screen image for cooler white

5400K — Adds red to the screen image for warmer white and richer red.

5000K — Adds red to the screen image for warmer white and richer red.

Custom User Color — Individual adjustments for red, green, and blue.

1 To select color (R, G or B) press button [2].

2 To adjust selected color, press ▲ or ▼

3 When you are finished making all color adjustments, press button [1] twice.

E. **Information** displays the timing mode (video signal input) coming from the graphics card in your computer. See your graphic card's user guide for instructions on changing the resolution and refresh rate (vertical frequency). VESA 1280 x 1024 @ 60 Hz (recommended) means that the resolution is 1280 x 1024 and the refresh rate is 60 Hertz.

F. **Manual Image Adjust** controls are explained below:

PIP (Picture in Picture) features are explained below:

PIP enables Picture in Picture function.

PIP Position is for user to adjust the position of PIP. Press button [2] to enter the PIP H. Position and use ▲ or ▼ to adjust the PIP horizontal position. User can press [2] to enter V. Position and use ▲ or ▼ to adjust the PIP vertical position.

PIP SWAP is for user to swap the signal in main window to daughter window while the signal of daughter window will be displayed in main window.

H. Size (Horizontal Size) adjusts the width of the screen image.

NOTE: Vertical size is automatic with your LCD display.

H./V. Position adjusts horizontal and vertical position of the screen image. You can toggle between Horizontal and Vertical by pressing button [2]. Horizontal moves the screen image to the left or to the right. Vertical moves the screen image up and down.

Fine Tune sharpens focus by aligning the illuminated text and/or graphic characters.

Sharpness adjusts the clarity and focus of the screen image. This feature is disabled when the input signal is 1600x1200@60Hz analog signal.

Scaling features are explained below:

Fill All - the signal will be displayed on the whole screen and wide signal will be adjusted to 4:3 ratio.

Fill Aspect Ratio – the width of the signal will fit the screen horizontally while the vertical directions may not fit the screen (if the input is wide signal)

1:1 – the signal will be displayed on the center of the screen with 1:1 ratio. This means you may see the signal at the center of the screen while it is surrounded by black area.

G. **Setup Menu** controls are explained below:

Language allows you to choose the language used in the menus and control screens.

Resolution Notice displays the recommended resolution for this LCD display.

Enable allows the Resolution Notice to appear on-screen.

Disable will not allow the Resolution Notice to appear on-screen.

OSD Timeout sets the length of time an on-screen display screen is displayed. For example, with a"15 second" setting, if a control is not pushed within 15 seconds, the display OSD disappears.

OSD Position allows you to move the on-screen display menus and control screens.

H. Memory Recall returns adjustments to the original factory settings if the display is operating in a factory Preset Timing Mode listed in this user guide.

OSD Function Menu

A. When in Analog Input Mode

1. Main Menu

Press the [1] (Menu) button to enter the Main Menu:
Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.
Press the [1] (Menu) button to exit the Main Menu.

(1) Auto Image Adjust Page:

Press the [2] button to execute the auto image adjust function.
Press the [1] button to exit the page.

(2) Contrast/Brightness Page:

Press the [2] button to enter the contrast adjustment page.
Press the [1] button to exit the page.

1) Contrast Item

Press the [▲] button to increase the contrast.
Press the [▼] button to decrease the contrast.
Press the [2] button to enter the brightness adjustment page.
Press the [1] button to exit the page.

2) Brightness Item

Press the [▲] button to increase the brightness.
Press the [▼] button to decrease the brightness.
Press the [2] button to enter the contrast adjustment page.
Press the [1] button to exit the page.

(3) Input Select Page:

Press the [2] button to switch to digital input mode.

(4) Audio Adjust Page:

Press the [▲] button to increase the volume.
Press the [▼] button to decrease the volume.
Press the [2] button to enable or disable mute function .
Press the [1] button to exit the page.

(5) Color Adjust Page:

Press the [2] button to enter the color adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

1) sRGB Item
2) 9300K Item
3) 6500K Item
4) 5400K Item
5) 5000K Item

Press the [2] button to select the currently highlighted item.
Press the [1] button to exit the currently highlighted item.

6) User Color Item

Press the [2] button to enter the user color page.

Press the [1] button to exit the page.
Red, Green, Blue Options:
Press the [2] button to cycle among the colors.
Press the [1] button to exit the page.
Press the [▲] button to increase the selected color level.
Press the [▼] button to decrease the selected color level.

(6) Information Page:
Press the [2] button to enter the information page.
Press the [1] button to exit the information page.

(7) Manual Image Adjust Page:
Press the [2] button to enter the manual image adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

1) H./V. Position Item
Press the [2] button to enter the horizontal/vertical postion adjustment page.
Press the [1] button to exit the page.

a) Horizontal Position:
Press the [2] button to enter the vertical position adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to shift the image to the right.
Press the [▼] button to shift the image to the left.

b) Vertical Position:
Press the [2] button to return to the horizontal position adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to shift the image upward.
Press the [▼] button to shift the image downward.

2) Horizontal Size Item
Press the [2] button to enter the horizontal size adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to make the image wider.
Press the [▼] button to make the image narrower.

3) Fine tune Item
Press the [2] button to enter the fine tuning page.
Press the [1] button to exit the page.
Press "[▲]" Button to adjust character position in one direction.
Press "[▼]"Button to adjust character position in the other direction.

4) Sharpness Item
Press the [2] button to enter the sharpness adjustment page.
Press the [1] button to exit the page.
Press "[▲]" Button to increase image sharpness.
Press "[▼]" Button to decrease image sharpness.

(8) Setup Menu Page:

Press the [2] button to enter the setup menu page.
Press the [1] button to exit the page.
Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

1) Language Select Item

Press the [2] button to enter the language selection page.
Press the [1] button to exit the page.
Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

English, French… Option

Press the [2] button to select the language.
Press the [1] button to exit the page.

2) Resolution Notice Item

Press the [2] button to enter the resolution notice page.
Press the [1] button to exit the page.

Enable, Disable Option

Press the [2] button to select the highlighted option.
Press the [1] button to exit the page.
Press the [▲] button to highlight the previous option or the [▼] button to highlight the next option.

3) OSD Position Item

Press the [2] button to enter the OSD position adjustment page.
Press the [1] button to exit the page.

a) Horizontal Position Option

Press the [2] button to enter the vertical position adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to shift the menu to the right.
Press the [▼] button to shift the menu to the left.

b) Vertical Position Option:

Press the [2] button to enter the horizontal position adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to shift the menu upward.
Press the [▼] button to shift the menu downward.

4) OSD Time Out Item

Press the [2] button to enter the OSD time out adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to increase the OSD time out.
Press the [▼] button to decrease the OSD time out.

5) OSD Background Item

Press the [2] button to enter the OSD background selection page.
Press the [1] button to exit the page.

Enable, Disable Option

Press the [▲] button to highlight the previous option or the [▼] button to highlight the next option.
Press the [2] button to select the highlighted option.

Press the [1] button to exit the page.

(9) Memory Recall Page

Press the [2] button to execute the memory recall function.
Press the [1] button to exit the page.

2. Other Menu:

This "shortcut" menu is directly accessible without bringing up the OSD.

(1) Contrast Dialog

Press the [▲] or [▼] button to enter the Contrast Dialog.
Press the [1] button to exit the Contrast Dialog.
Press the [2] button to enter the Brightness Dialog.
Press the [▲] button to increase the contrast.
Press the [▼] button to decrease the contrast.

(2) Brightness Dialog

Press the [▲] or [▼] button to enter the Brightness Dialog.
Press the [1] button to exit the Brightness Dialog.
Press the [2] button to enter the Contrast Dialog.
Press the [▲] button to increase the brightness.
Press the [▼] button to decrease the brightness.

(3) Analog/Digital Dialog

Press the [2] button to toggle between analog and digital modes.

B. When in Digital Input Mode

1. Main Menu

Press the [1] (Menu) button to enter the Main Menu:
Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.
Press the [1] (Menu) button to exit the Main Menu.

(1) Auto Image Adjust Page:

Press the [2] button to execute the auto image adjust function.
Press the [1] button to exit the page.

(2) Contrast/Brightness Page:

Press the [2] button to enter the contrast adjustment page.
Press the [1] button to exit the page.

1) Contrast Item

Press the [▲] button to increase the contrast.
Press the [▼] button to decrease the contrast.
Press the [2] button to enter the brightness adjustment page.
Press the [1] button to exit the page.

2) Brightness Item

Press the [▲] button to increase the brightness.
Press the [▼] button to decrease the brightness.
Press the [2] button to enter the contrast adjustment page.
Press the [1] button to exit the page.

(3) Input Select Page:

Press the [2] button to switch to analog input mode.

(4) Audio Adjust Page:

Press the [▲] button to increase the volume.
Press the [▼] button to decrease the volume.
Press the [2] button to enable or disable mute function .
Press the [1] button to exit the page.

(4) Color Adjust Page:

Press the [2] button to enter the color adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

1) **sRGB Item**
2) **9300K Item**
3) **6500K Item**
4) **5400K Item**
5) **5000K Item**

Press the [2] button to select the currently highlighted item.
Press the [1] button to exit the currently highlighted item.

6) **User Color Item**

Press the [2] button to enter the user color page.
Press the [1] button to exit the page.
Red, Green, Blue Options:
Press the [2] button to cycle among the colors.
Press the [1] button to exit the page.
Press the [▲] button to increase the selected color level.
Press the [▼] button to decrease the selected color level.

(5) Information Page:

Press the [2] button to enter the information page.
Press the [1] button to exit the information page.

(6) Manual Image Adjust Page:

Press the [2] button to enter the manual image adjustment page.
Press the [1] button to exit the page.
Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

1) **Sharpness Item**

Press the [2] button to enter the sharpness adjustment page.
Press the [1] button to exit the page.
Press "[▲]" Button to increase image sharpness.
Press "[▼]" Button to decrease image sharpness.

(7) Setup Menu Page:

Press the [2] button to enter the setup menu page.
Press the [1] button to exit the page.

Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.

1) **Language Select Item**
   Press the [2] button to enter the language selection page.
   Press the [1] button to exit the page.
   Press the [▲] button to highlight the previous item or the [▼] button to highlight the next item.
   English, French… Option
   Press the [2] button to select the language.
   Press the [1] button to exit the page.

2) **Resolution Notice Item**
   Press the [2] button to enter the resolution notice page.
   Press the [1] button to exit the page.
   Enable, Disable Option
   Press the [2] button to select the highlighted option.
   Press the [1] button to exit the page.
   Press the [▲] button to highlight the previous option or the [▼] button to highlight the next option.

3) **OSD Position Item**
   Press the [2] button to enter the OSD position adjustment page.
   Press the [1] button to exit the page.
   a) **Horizontal Position Option**
      Press the [2] button to enter the vertical position adjustment page.
      Press the [1] button to exit the page.
      Press the [▲] button to shift the menu to the right.
      Press the [▼] button to shift the menu to the left.

   b) **Vertical Position Option:**
      Press the [2] button to enter the horizontal position adjustment page.
      Press the [1] button to exit the page.
      Press the [▲] button to shift the menu upward.
      Press the [▼] button to shift the menu downward.

4) **OSD Time Out Item**
   Press the [2] button to enter the OSD time out adjustment page.
   Press the [1] button to exit the page.
   Press the [▲] button to increase the OSD time out.
   Press the [▼] button to decrease the OSD time out.

5) **OSD Background Item**
   Press the [2] button to enter the OSD background selection page.
   Press the [1] button to exit the page.
   Enable, Disable Option
   Press the [▲] button to highlight the previous option or the [▼] button to highlight the next option.
   Press the [2] button to select the highlighted option.
   Press the [1] button to exit the page.

(8) Memory Recall Page

Press the [2] button to execute the memory recall function.
Press the [1] button to exit the page.

2. Other Menu:

This "shortcut" menu is directly accessible without bringing up the OSD.

(1) Contrast Dialog

Press the [▲] or [▼] button to enter the Contrast Dialog.
Press the [1] button to exit the Contrast Dialog.
Press the [2] button to enter the Brightness Dialog.
Press the [▲] button to increase the contrast.
Press the [▼] button to decrease the contrast.

(2) Brightness Dialog

Press the [▲] or [▼] button to enter the Brightness Dialog.
Press the [1] button to exit the Brightness Dialog.
Press the [2] button to enter the Contrast Dialog.
Press the [▲] button to increase the brightness.
Press the [▼] button to decrease the brightness.

(3) Analog/Digital Dialog

Press the [2] button to toggle between analog and digital modes.

C. Other Information

When the "No Signal" or "Out of Range" messages appear:

If no input signal is detected, the "No Signal" message will appear in the center of the screen.
If the V-Sync signal rate is greater than than 85Hz or its resolution is greater than SXGA, the "Out of Range" message will appear in the center of the screen.

Activating Factory Mode and Burn Mode:

While the device is in standby, press the [2] button, then press the power button to enter Factory Mode. While Factory Mode is active, an additional menu page titled "Factory Menu" will be accessible. Press the [2] button to enter the Factory Menu page, then press the [2] button to enter Burn Mode.

When Installing a New Main Board

1. Enter Factory Mode.
2. Use a PC or chrom to send a 32-tone gray scale signal to the monitor.
3. Select "Auto Color"

4. Circuit Description

1. Outline

Buttons on the front panel: Power On/Off button, button 2 (ENTER / INPUT SELECT), up arrow button, down arrow button, button 1 (MENU).

D-sub 15pin connector, DVI-I connector and AC-IN jack are located on the back side of the cabinet.

OSD menu includes the following function;

Auto Image Adjust (only active under analog input)

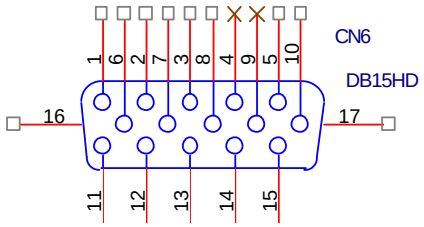
- **Contrast/Brightness**
- **Input Select**
- **Color Adjust**
- **Information**
- **Manual Image Adjust**
- **Setup Menu**
- **Memory Recall**

Contrast and Brightness can be directly controlled with UP / DOWN buttons.

2. Connectors

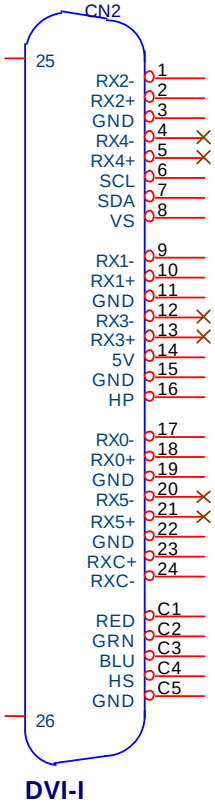
AC inlet : CEE22 typed connector

Video signal connector for analog input: 15P Mini D-Sub



PIN	MNEMONIC	SIGNAL
1	RV	Red Video
2	GV	Green Video
3	BV	Blue Video
4	NC	None
5	GND	Ground (DDC return)
6	RG	Red GND
7	GG	Green GND
8	BG	Blue GND
9	+5V	+5V (for DDC)
10	SG	Sync GND
11	NC	None
12	SDA	DDC Data
13	HS	Horizontal Sync
14	VS	Vertical Sync
15	SCL	DDC Clock

Video signal connector for digital input: 29pin DVI-D,DVI-A connector



DVI-I

Pin No.	Signal Name	Description
1	RX2-	TMDS negative differential input, channel 2
2	RX2+	TMDS positive differential input, channel 2
3	GND	Logic Ground
4	RX4-	Reserved. No connection
5	RX4+	Reserved. No connection
6	SCL	DDC2B Clock
7	SDA	DDC2B Data
8	VS	Reserved. No connection
9	RX1-	TMDS negative differential input, channel 1
10	RX1+	TMDS positive differential input, channel 1
11	GND	Logic Ground
12	RX3-	Reserved. No connection
13	RX3+	Reserved. No connection
14	+5V	Power
15	GND	Logic Ground
16	HP	SENSE Pin, Pull High
17	RX0-	TMDS negative differential input, channel 0
18	RX0+	TMDS positive differential input, channel 0
19	GND	Logic Ground
20	RX5-	Reserved. No connection
21	RX5+	Reserved. No connection
22	GND	Logic Ground
23	RXC+	TMDS positive differential input, reference clock
24	RXC-	TMDS negative differential input, reference clock
C1	RED	Red Video for DVI-A only
C2	GRN	Green Video for DVI-A only
C3	BLU	BlueVideo for DVI-A only
C4	HS	Horizontal Sync
C5	GND	GND

3. ELECTRICAL SPECIFICATIONS

Standard conditions

Display Area	**408.0 x 306.0 mm**
Video Signal	**0.7Vpp**
Contrast	**Default**
Brightness	**Max.**
Ambient	**20 +/- 5 ℃**
Input	**AC 110~ 240V**
Warming up	**> 30 min**
Display	**1600X1200**

POWER

Power supply

Input voltage	100~240Vac
Power frequency	50~60Hz
Input current Inrush current	<1.5Arms@90Vac
	80A(Max) at 230Vac(cold start)
Power consumption	52W(typical);56W(Max)

Power Management

State	Power	Indicator
On	56Watts	Green
Standby	< 3Watts	Amber
Off	<3Watts	Off

Acceptable timing

If the timing is within following specification, this LCD display can automatically function with a certain position.

Horizontal: Sync frequency: 24~92 kHz

Vertical: Sync frequency: 50~85Hz

Signal level and input impedance

Video Signal level: 0.7Vp-p Video signal.

Sync Signal level

H/V Separate: TTL level

Input impedance

Analog video input: 75 ohm

Digital video input: 100 ohm

Sync input: > 1 k ohm

4. SIGNAL CABLE: Signal cable with Mini D-Sub 15P connectors at both ends. Length: 1.8 meter.

5. EDID data

AUO

Analog EDID

```
                //////////Displaying Monitor EDID//////////
128 BYTES OF EDID CODE:
        0   1   2   3   4   5   6   7   8   9
     ___________________________________________
  0  |  00  FF  FF  FF  FF  FF  FF  00  5A  63
 10  |  1C  13  01  01  01  01  01  0F  01  03
 20  |  0E  29  1F  78  2E  30  85  A6  56  4A
 30  |  99  24  14  50  54  BF  EF  80  A9  40
 40  |  90  4F  90  40  81  80  81  40  71  4F
 50  |  01  01  01  01  48  3F  40  30  62  B0
 60  |  32  40  40  C0  13  00  98  32  11  00
 70  |  00  1E  00  00  00  FF  00  50  53  42
 80  |  30  35  30  31  30  30  30  30  31  0A
 90  |  00  00  00  FD  00  32  4B  1E  5C  11
100  |  00  0A  20  20  20  20  20  20  00  00
110  |  00  FC  00  56  50  32  30  33  30  20
120  |  53  45  52  49  45  53  00  FD
_____________________________________________________________________________
(08-09)  ID Manufacturer Name _________________  = VSC
(11-10)  Product ID Code ____________________  = 131C
(12-15)  Last 5 Digits of Serial Number ______  = Not Used
(16)     Week of Manufacture _________________  = 01
(17)     Year of Manufacture _________________  = 2005
(10-17)  Complete Serial Number _____________  = See Descriptor Block
(18)     EDID Version Number _________________  = 1
(19)     EDID Revision Number ________________  = 3
(20)     VIDEO INPUT DEFINITION:
         Analog Signal
         0.700, 0.300 (1.000 Vp-p)
         Separate Syncs, Composite Sync, Sync on Green
(21)     Maximum Horizontal Image Size _______________    =  410 mm
(22)     Maximum Vertical Image Size _________________    =  310 mm
(23)     Display Gamma _______________________________    =  2.20
(24)     Power Management and Supported Feature(s):
         Active Off/Very Low Power, Standard Default Color Space,
         Preferred Timing Mode
```

Display Type = R/G/B Color

(25-34) CHROMA INFO:

Red X - 0.648 Green X - 0.289 Blue X - 0.143 White X - 0.313

Red Y - 0.339 Green Y - 0.598 Blue Y - 0.078 White Y - 0.329

(35) ESTABLISHED TIMING I:

720 X 400 @ 70Hz (IBM,VGA)

640 X 480 @ 60Hz (IBM,VGA)

640 X 480 @ 67Hz (Apple,Mac II)

640 X 480 @ 72Hz (VESA)

640 X 480 @ 75Hz (VESA)

800 X 600 @ 56Hz (VESA)

800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:

800 X 600 @ 72Hz (VESA)

800 X 600 @ 75Hz (VESA)

832 X 624 @ 75Hz (Apple,Mac II)

1024 X 768 @ 60Hz (VESA)

1024 X 768 @ 70Hz (VESA)

1024 X 768 @ 75Hz (VESA)

1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:

1152 X 870 @ 75Hz (Apple,Mac II)

(38-53) Standard Timing Identification:

1600 X 1200 @60Hz

1400 X 1050 @75Hz

1400 X 1050 @60Hz

1280 X 1024 @60Hz

1280 X 960 @60Hz

1152 X 864 @75Hz

Not Used

Not Used

(54-71) Detailed Timing / Descriptor Block 1:

1600x1200 Pixel Clock: 162.00 MHz

Horizontal Image Size: 408 mm Vertical Image Size: 306 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1600 pixels Blanking Time: 560 pixels

Sync Offset: 64 pixels Sync Pulse Width: 192 pixels
Border: 0 pixels Frequency: 75.00 KHz

Vertical:
Active Time: 1200 lines Blanking Time: 50 lines
Sync Offset: 1 lines Sync Pulse Width: 3 lines
Border: 0 lines Frequency: 60.00 Hz

Digital Separate, Horizontal Polarity (+) Vertical Polarity (+)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:
PSB050100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:
Min Vertical Freq - 50 Hz
Max Vertical Freq - 75 Hz
Min Horiz. Freq - 30 KHz
Max Horiz. Freq - 92 KHz
Pixel Clock - 170 MHz
Secondary GTF - Not Supported

(108-125) Detailed Timing / Descriptor Block 4:

Monitor Name:
VP2030 SERIES

(126) No Extension EDID Block(s)

Digital EDID

128 BYTES OF EDID CODE:

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	5A	63
10	1C	13	01	01	01	01	01	0F	01	03
20	80	29	1F	78	2E	30	85	A6	56	4A
30	99	24	14	50	54	BF	EF	80	A9	40
40	90	4F	90	40	81	80	81	40	71	4F
50	31	0A	01	01	48	3F	40	30	62	B0
60	32	40	40	C0	13	00	98	32	11	00
70	00	1E	00	00	00	FF	00	50	53	42
80	30	35	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	4B	1E	5C	11
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	50	32	30	33	30	20
120	53	45	52	49	45	53	00	52		

(08-09) ID Manufacturer Name _____ = VSC

(11-10) Product ID Code _____ = 131C

(12-15) Last 5 Digits of Serial Number _____ = Not Used

(16) Week of Manufacture _____ = 01

(17) Year of Manufacture _____ = 2005

(10-17) Complete Serial Number _____ = See Descriptor Block

(18) EDID Version Number _____ = 1

(19) EDID Revision Number _____ = 3

(20) VIDEO INPUT DEFINITION:

Digital Signal

Non - VESA DFP 1.x Compatible

(21) Maximum Horizontal Image Size _____ = 410 mm

(22) Maximum Vertical Image Size _____ = 310 mm

(23) Display Gamma _____ = 2.20

(24) Power Management and Supported Feature(s):

Active Off/Very Low Power, Standard Default Color Space,

Preferred Timing Mode

Display Type = R/G/B Color

(25-34) CHROMA INFO:

Red X - 0.648 Green X - 0.289 Blue X - 0.143 White X - 0.313

Red Y - 0.339 Green Y - 0.598 Blue Y - 0.078 White Y - 0.329

(35) ESTABLISHED TIMING I:

720 X 400 @ 70Hz (IBM,VGA)

640 X 480 @ 60Hz (IBM,VGA)

640 X 480 @ 67Hz (Apple,Mac II)

640 X 480 @ 72Hz (VESA)

640 X 480 @ 75Hz (VESA)

800 X 600 @ 56Hz (VESA)

800 X 600 @ 60Hz (VESA)

(36) ESTABLISHED TIMING II:

800 X 600 @ 72Hz (VESA)

800 X 600 @ 75Hz (VESA)

832 X 624 @ 75Hz (Apple,Mac II)

1024 X 768 @ 60Hz (VESA)

1024 X 768 @ 70Hz (VESA)

1024 X 768 @ 75Hz (VESA)

1280 X 1024 @ 75Hz (VESA)

(37) Manufacturer's Reserved Timing:

1152 X 870 @ 75Hz (Apple,Mac II)

(38-53) Standard Timing Identification:

1600 X 1200 @60Hz

1400 X 1050 @75Hz

1400 X 1050 @60Hz

1280 X 1024 @60Hz

1280 X 960 @60Hz

1152 X 864 @75Hz

640 X 400 @70Hz

Not Used

(54-71) Detailed Timing / Descriptor Block 1:

1600x1200 Pixel Clock: 162.00 MHz

Horizontal Image Size: 408 mm Vertical Image Size: 306 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1600 pixels Blanking Time: 560 pixels

Sync Offset: 64 pixels Sync Pulse Width: 192 pixels

Border: 0 pixels Frequency: 75.00 KHz

Vertical:

Active Time: 1200 lines Blanking Time: 50 lines

Sync Offset: 1 lines Sync Pulse Width: 3 lines

Border: 0 lines Frequency: 60.00 Hz

Digital Separate, Horizontal Polarity (+) Vertical Polarity (+)

(72-89) Detailed Timing / Descriptor Block 2:

Monitor Serial Number:

PSB050100001

(90-107) Detailed Timing / Descriptor Block 3:

Monitor Range Limits:

Min Vertical Freq - 50 Hz

Max Vertical Freq - 75 Hz

Min Horiz. Freq - 30 KHz

Max Horiz. Freq - 92 KHz

Pixel Clock - 170 MHz

Secondary GTF - Not Supported

(108-125) Detailed Timing / Descriptor Block 4:

Monitor Name:

VP2030 SERIES

(126) No Extension EDID Block(s)

(127) CheckSum OK

6. THEORY OF OPERATION

This section describes the function of the LCD monitor per functional block.

This monitor includes MB board, power board and button board and USB board

6.1 MB BOARD

The MB board is a Four-layer, single-landed design with ground and internal planes provided. DC power from the power board enters the board through a 8P connector. The other connector on the board is for the button board. The VGA cable is a signal cable that carries the video, sync and DDC signals from the PC VGA adapter. This system board consists of 4 functional areas: flat panel controller, MCU with flash ROM, and power regulators

USB function.

. 6.1.1 Flat panel controller… Gm1601(U21)

The heart of the system board is the Realtek Gm1601. The Gm1601 is a graphics processing IC designed for LCD monitors. It provides all key IC functions required for LCD displays. On-chip functions include a high-speed triple-ADC, PLL, high scaling engine and OSD controller.

a) Clock Generation :

Crystal Input Clock (TCLK and XTAL). This is the input pair to an internal crystal oscillator and corresponding logic. A 14.318 MHz crystal is recommended.

b) Analog to Digital Converter:

The Gm1601 chip has three ADC's (analog-to-digital converters), one for each color (red, green and blue) .The analog RGB signals are connected to Gm1601 as described below

Pin Name	Pin Number
Red +	**D2**
Red -	**D1**
Green +	**C2**
Green -	**C1**
Blue +	**B2**
Blue -	**B1**

c) SST 39VF040 Micro Controller: The SST 39VF040 micro controller (MCU) serves as the system micro controller. It programs the Gm1601 and manages other devices in the system such as the keypad

Pin number	Pin Number Usage
AE24	Key / Power on ,off
P3	NV_RAM (U4) SDA
P4	NV_RAM (U4) SCL
AF24	Key_down
AF26	Key_right
AF25	Key_up
AE25	Key_left
AD24	Key_select
D25	LED_red
D26	LED_green
AC2	LCD panel power1 on / off control
C25	Backlight on / off control

d) Panel interface (Pin B1,B2,C1,C2,D1,D2,A6,B6,A8,B8,A9,B9,A10,B10,) : The Gm1601 driver interface is highly programmable.

6.1.2 Power Regulator AIC1577 (U23), AP1084 (U16,U20),LT1117(U18): The AIC1577 is a current switching regulator control IC containing the primary functions required for DC to DC converters and external NMOS STEP-DOWN PWM controller ,operating input voltaqge from 4.5V to 24V The desired output voltage is determined by the equation, Volt = 0.8[(R218+R219) / R218]. In this case, the output voltage is 5 Volts. The AIC1577 is a low dropout operation

6.1.3 Power Regulator AP1084 (U16,U20): The AP1084 is a low dropout positive adjustable or fixed mode regulator with minimum of 5A output current capability. Specifically designed to provide supply for low voltage IC and low current 3.3V logic supply. AP1084 is guaranteed to have lower than 1.4V dropout at full load current ,provide well-regulated output of 1.25 to 3.3 with 4.7 to 12V input supply.

6.1.4 Power Regulator LT1117(U18): The LT1117 is a low drop voltage regulator ,provide up to 800 mA of output current. Concerning fixed version, are offered the output voltage:1.2V,1.8V,2.5V,2.85V,3.0V,3.3V,the regulator to reach a very tight output voltage tolerance, within ±1% at 25℃. The adjustable LD1117 is pin to pin compatible with the other LD1117.

6.3 Power(Inverter) Board

This is a specific power (inverter) board for VP2030B monitor with output of 56W /12V / 2.4A and 20V/1.8A. It provides 20 VDC to drive the four cold cathode fluorescence tubes in the backlight.

6.3.1 The inverter's electrical specification is described below.

Input	Rated Input Voltage	20Vdc
	Input Voltage Range	19 ~ 21 Vdc
	Input Current	1.8A(MAX)
	On / Off control Voltage	2.5~5.25 for on , 0~1 for off
Output	Rated Output Strike-on Voltage	1800Vrms
	Rated Output Voltage	700~900Vrms
	Rate Output Frequency	35~80KHz
	Rated Output Current	5.5~8.0 mA

6.3.2 power

This is a general purpose AC / DC adapter which converts 90~240 Vac to a stabilized DC voltage: 12 Volts, with a rated output current of 2.4A. The electrical specification is described below.

	Rated Input Voltage	90~240 Vac , 50 / 60Hz
	Operation Input Voltage	90~260 Vac , 47 ~ 63Hz
	Input Current	<2.4A
	Inrush Current	<80A@230Vac
	Standby Input Voltage	12Vdc
	Output Voltage Regulation	+/-5%
	Output Ripple & Noise	300mVp-p
	Rate Output Current	<2.4A

6.4 USB Board: Include one Up-Stream port and four Down-Stream ports each one port cann't exceed **1A**

6.5 DDC/CI: VP2030B monitor can use Perfect Suit offer DDC/CI function, make use of Perfect Suit sofeware to ubstitute OSD function even more , for instance ,the adjustment of the color temperature, adjustment of the luminance ,the more special one is the rotation of the screen.

5. Adjusting Procedure

1. Function test

(1) Test equipment

Color video signal and pattern generator (or PC with WUXGA resolution)

(2) Test condition

Before function testing and alignment, the unit must warm up for at least 30 minutes under the following conditions:

1. Room temperature
2. With full-white screen , RGB , black pattern
3. with cycled display modes.

2. Test display modes

Timing Table

Item	Timing	Analog			Digital - TMDS	Remark
		Separated	Composite	SOG		
1	640 x 350 @ 70 Hz, 31.5 KHz	✓	✓	✓	✓	
2	640 x 350 @ 85 Hz, 37.9 KHz	✓	✓		✓	For Separated sync, Only horizontal full screen, The vertical position is at the center.
3	640 x 400 @ 60 Hz, 31.5 KHz	✓	✓	✓	✓	For SOG sync, switch 640x400@60Hz and 640x480@60Hz by [1]+[2] short cut key (primery = 640x480@60Hz)
4	640 x 400 @ 70 Hz, 31.5 KHz	✓	✓	✓	✓	For Separated Sync, Switch 640x400@70Hz and 720x400@70Hz by [1]+[2] short cut key (primery = 640x400@70Hz)
5	640 x 400 @ 85 Hz, 37.9 KHz	✓	✓	✓	✓	For Separated Sync, Switch 640x400@85Hz and 720x400@85Hz by [1]+[2] short cut key (primery = 640x400@85Hz)
6	640 x 480 @ 50 Hz, 24.7 KHz	✓	✓	✓		
7	640 x 480 @ 60 Hz, 31.5 KHz	✓	✓	✓	✓	For SOG sync, switch 640x400@60Hz and 640x480@60Hz by [1]+[2] short cut key (primery = 640x480@60Hz)
8	640 x 480 @ 67 Hz, 35 KHz	✓	✓	✓	✓	
9	640 x 480 @ 72 Hz, 37.9 KHz	✓	✓	✓	✓	

10	640 x 480 @ 75 Hz, 37.5 KHz	✓	✓	✓	✓	
11	640 x 480 @ 85 Hz, 43.3 KHz	✓	✓	✓	✓	
12	720 x 400 @ 70 Hz, 31.5 KHz	✓	✓	✓	✓	
13	720 x 400 @ 85 Hz, 37.9 KHz	✓	✓	✓	✓	For Separated Sync, Switch 640x400@85Hz and 720x400@85Hz by [1]+[2] short cut key (primery = 640x400@85Hz)
14	720 x 480 @ 60 Hz, 31.5 KHz				✓	
15	720 x 576 @ 50 Hz, 31.3 KHz			✓	✓	Use Hot Key to switch the color.
16	800 x 600 @ 50 Hz, 24.7 KHz	✓	✓	✓	✓	
17	800 x 600 @ 56 Hz, 35.1 KHz	✓	✓	✓	✓	
18	800 x 600 @ 60 Hz, 37.9 KHz	✓	✓	✓	✓	
19	800 x 600 @ 72 Hz, 48.1 KHz	✓	✓	✓	✓	
20	800 x 600 @ 75 Hz, 46.9 KHz	✓	✓	✓	✓	
21	800 x 600 @ 85 Hz, 53.7 KHz	✓	✓	✓	✓	
22	832 x 624 @ 75 Hz, 49.7 KHz	✓	✓	✓	✓	
23	1024 x 768 @ 50 Hz, 39.6 KHz	✓	✓	✓	✓	For Separated and Composite sync, Switch 1024x768@50Hz and 1280x768@50Hz by [1]+[2] short cut key (primery = 1024x768@50Hz)
24	1024 x 768 @ 60 Hz, 48.4 KHz	✓	✓	✓	✓	
25	1024 x 768 @ 70 Hz, 56.5 KHz	✓	✓	✓	✓	
26	1024 x 768 @ 72 Hz, 58.1 KHz	✓	✓	✓	✓	
27	1024 x 768 @ 75 Hz, 60 KHz	✓	✓	✓	✓	
28	1024 x 768 @ 75 Hz, 60.2 KHz	✓	✓	✓	✓	
29	1024 x 768 @ 85 Hz, 68.7 KHz	✓	✓	✓	✓	
30	1152 x 864 @ 75 Hz, 67.5 KHz	✓	✓	✓	✓	
31	1152 x 870 @ 75 Hz, 68.7 KHz	✓	✓	✓	✓	
32	1280 x 720 @ 50 Hz, 37.5 KHz			✓	✓	
33	1280 x 720 @ 60 Hz, 45 KHz			✓	✓	
34	1280 x 768 @ 50 Hz, 39.6 KHz	✓	✓	✓	✓	For Separated and Composite sync, Switch 1024x768@50Hz and 1280x768@50Hz by [1]+[2] short cut key (primery = 1024x768@50Hz)
35	1280 x 768 @ 60 Hz, 47.4 KHz	✓		✓	✓	For analog sync, Switch 1280x768@60Hz and 1360x768@60Hz by [1]+[2] short cut key (primery = 1280x768@60Hz)
36	1280 x 768 @ 60 Hz, 47.8 KHz	✓		✓	✓	
37	1280 x 768 @ 75 Hz, 60.3 KHz	✓	✓	✓	✓	

38	1280 x 768 @ 85 Hz, 68.6 KHz	✓	✓	✓	✓		
39	1280 x 960 @ 50 Hz, 49.4 KHz	✓	✓	✓	✓		
40	1280 x 960 @ 60 Hz, 59.7 KHz	✓	✓	✓	✓		
41	1280 x 960 @ 75 Hz, 75.2 KHz	✓	✓	✓	✓		
42	1280 x 960 @ 85 Hz, 85.9 KHz	✓	✓	✓	✓		
43	1280 x 1024 @ 50 Hz, 52.7 KHz	✓	✓	✓	✓		
44	1280 x 1024 @ 60 Hz, 64 KHz	✓	✓	✓	✓		
45	1280 x 1024 @ 75 Hz, 80 KHz	✓	✓	✓	✓		
46	1280 x 1024 @ 85 Hz, 91.1 KHz	✓	✓	✓	✓		
47	1360 x 768 @ 60 Hz, 47.7 KHz	✓	✓	✓	✓	For analog sync, Switch 1280x768@60Hz and 1360x768@60Hz by [1]+[2] short cut key (primery = 1280x768@60Hz)	
48	1400 x 1050 @ 50 Hz, 54.1 KHz	✓	✓	✓	✓		
49	1400 x 1050 @ 60 Hz, 64.7 KHz	✓	✓		✓	For analog sync, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primery = 1400x1050@60Hz)	
50	1400 x 1050 @ 60 Hz, 65.3 KHz	✓	✓			For Separated and Composite sync, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primery = 1400x1050@60Hz)	
51	1400 x 1050 @ 75 Hz, 82.3 KHz	✓	✓	✓	✓		
52	1440 x 900 @ 60 Hz, 55.5 KHz	✓	✓	✓	✓		
53	1440 x 900 @ 60 Hz, 59.9 KHz	✓	✓	✓	✓		
54	1440 x 900 @ 75 Hz, 75 KHz	✓	✓	✓	✓		
55	1440 x 900 @ 85 Hz, 84.8 KHz	✓	✓	✓	✓		
56	1600 x 1200 @ 50 Hz, 61.8 KHz	✓	✓	✓	✓		
57	1600 x 1200 @ 60 Hz, 75 KHz	✓	✓	✓	✓		
58	1680 x 1050 @ 60 Hz, 64.7 KHz	✓	✓		✓	For analog sync, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primery = 1400x1050@60Hz)	
59	1680 x 1050 @ 60 Hz, 65.3 KHz	✓	✓			For Separated and Composite sync, Switch 1400x1050@60Hz and 1680x1050@60Hz by [1]+[2] short cut key (primery = 1400x1050@60Hz)	
60	1920 x 1080 @ 50 Hz, 28.1 KHz			✓	✓		
61	1920 x 1080 @ 60 Hz, 33.8 KHz			✓	✓		
62	1920 x 1200 @ 60 Hz, 74 KHz	✓	✓	✓	✓		

*1. Tolerance ≧ ±2KHz. (if the range dose not cover other timing mode)

*2. Any timing not in the list, it should display as normal or show on "OUT OF RANGE" OSD message without

blanking.

*3. The image quality of 85Hz mode might be worse than 75Hz.

Primary Presets

1600x1200 @ 60Hz

User Presets

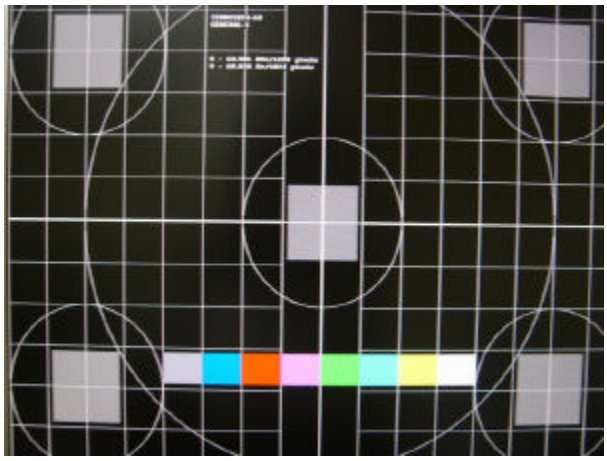
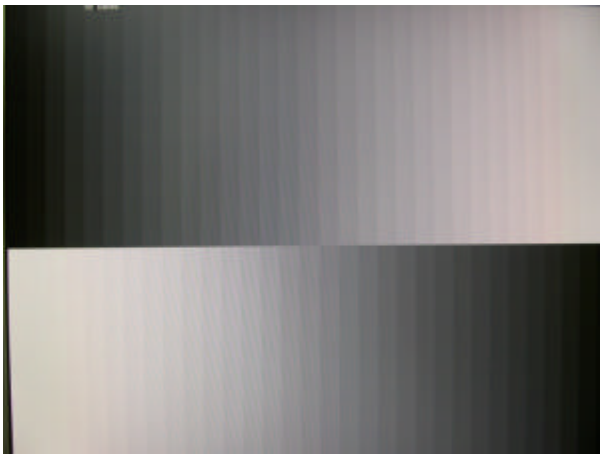
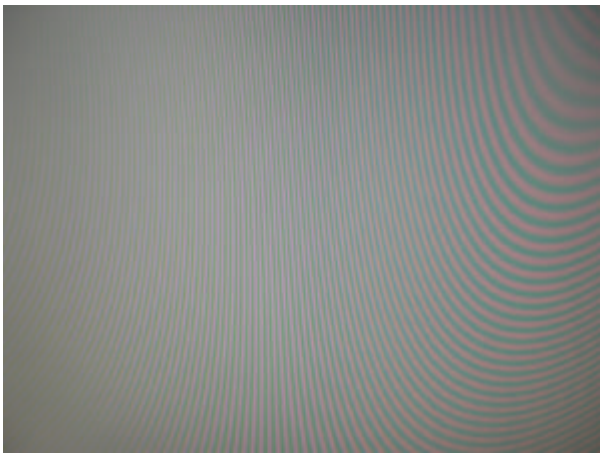
Number of User Presets (recognized timings) Available: 10 presets total in FIFO configuration

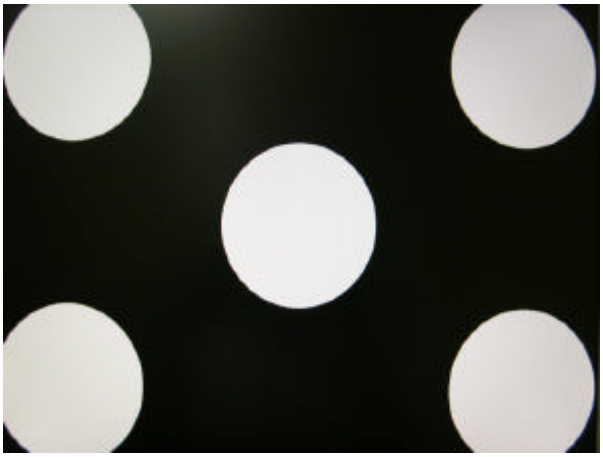
Changing Modes

- Maximum Mode Change Blank Time for image stability : 3 seconds (Max), excluding "Auto Adjust" time
- Under DOS mode (640 x 350, 720 x 400 & 640 x 400), it should recall factory setting when execute "Auto Adjust"
- The monitor needs to do "Auto Adjust" the first time a new mode is detected (see section "0-Touch™ Function Actions")
- While running Change Mode, Auto Adjust or Memory Recall, the image shall blank

3. Test pattern

Item	Test condition	Pattern	Specification	Remark
1	Frequency & performance	Cross-hatch pattern	No noise is allowed, all colors must be clear	Pattern 1
2	Monitor saturation	16-gray scale pattern	3 to 4 levels must be saturated when brightness and contrast are set to 100%	Pattern 2
3	RGB color performance	RGB color	Check the color temperature of RGB signal color	Pattern 3, 4, 5
4	Sub-pixel defect	RGB color	Check the sub-pixel defect	Pattern 3, 4 , 5
5	Full white	Full white	Check the brightness and contrast ratio, and check for bright pixel defects	Pattern 6
6	Full black	Full black		Pattern 7
7.	5-cycle pattern	5-cycle pattern	Check the BU	Pattern 8
8.	1-dot pattern	1-dot pattern	Check the flicker	Pattern 9

	
Pattern 1	Pattern2
	
Pattern 3	Pattern4
	
Pattern 5	Pattern6

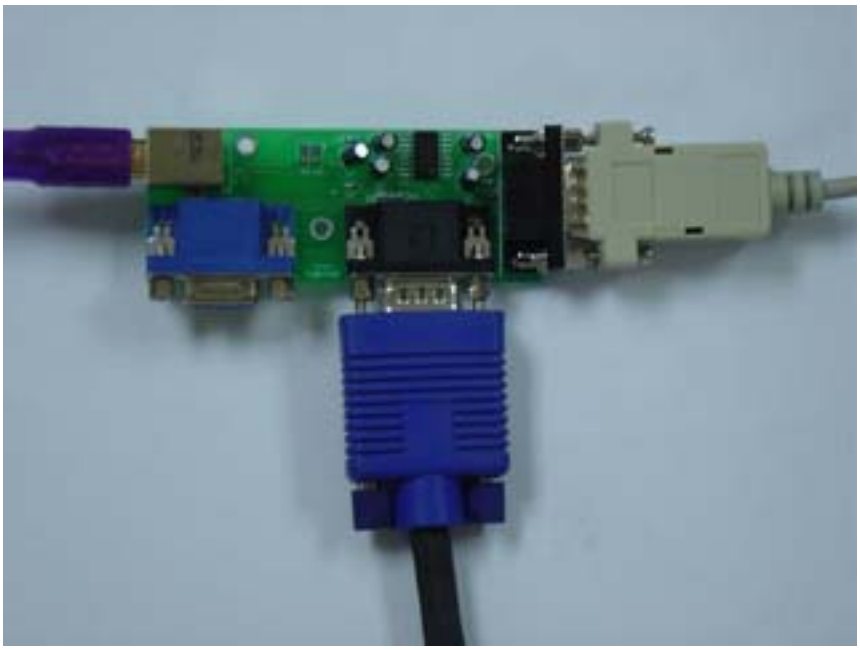
	
Pattern 7	Pattern 8
	
Pattern 9	

Firmware update procedure :

When you received a received monitor , please check whether the firmware version. If not , please following procedure to upgrade to the latest version .

1. Equipment needed :
   - VP2130
   - PC (Personal computer)
   - USB (A Male to B Male) cable
   - Genesis firmware update board
   - 9-Male to 9-Female serial cable
   - VGA cable

2. Connection :



The 9-pin serial cable connects the com port of PC and the Genesis firmware update board. VP2130 and the Genesis firmware update board is connected by VGA cable. The male A to male B USB cable connects the PC and Genesis firmware update board.

Appendix A : How to install the software for ISP :

0. To setup ISP environment :

Hardware:

PC or notebook, 9-pin serial cable, VGA cable and USB cable (Male A to Male B). If your PC does not have serial port, please get a USB to RS232 cable.

Software:

If the OS is Win2000 or WinXP , please install “GProbe”

In order to ensure can execute ISP program, please connect the USB to RS232 cable and set it as COM 1 in control panel if your PC does not have COM port

0.1 Double-click the “ GProbe5.0.exe” in Windows & install the program. , see Fig 0.1

Fig 0.1

0.2 Keep on press “ Next “ 4 times to go through the installation processes, see Fig. 0.2

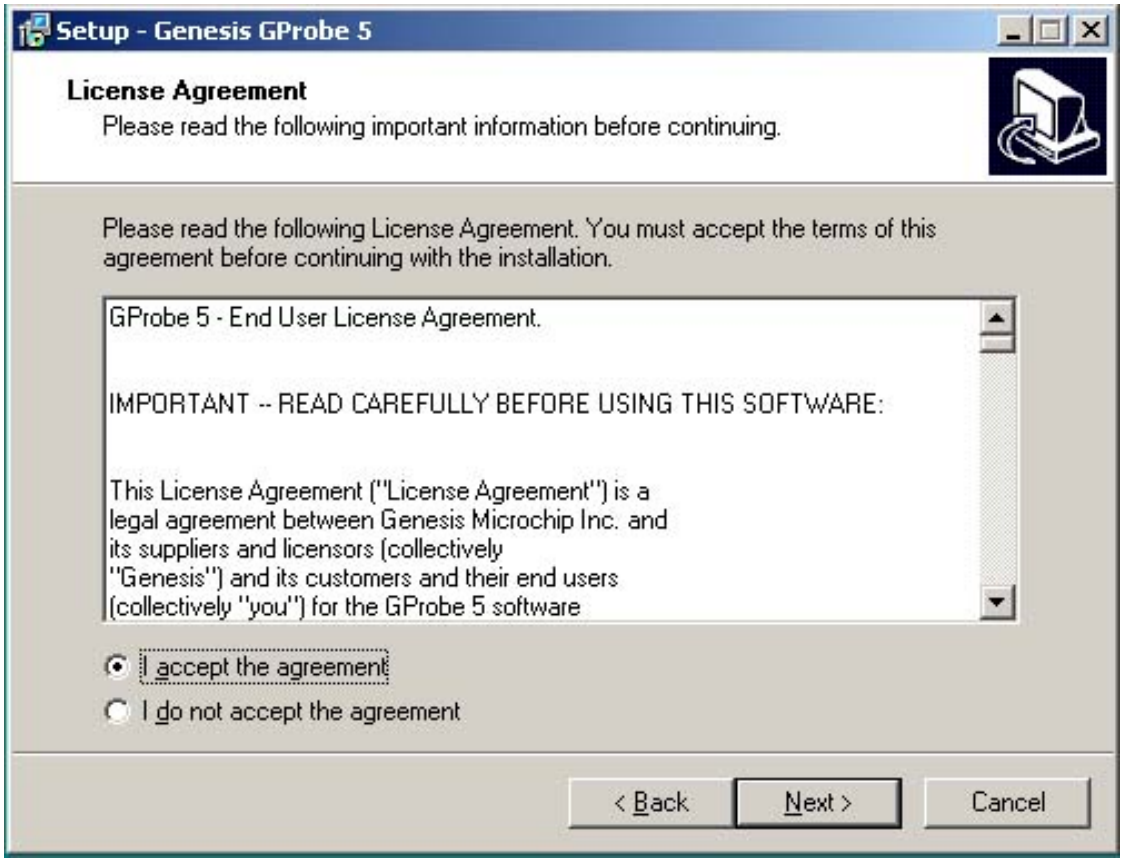


Fig. 0.2

0.3 Check the “I accept the agreement” then press “ Next “ , see Fig. 0.3

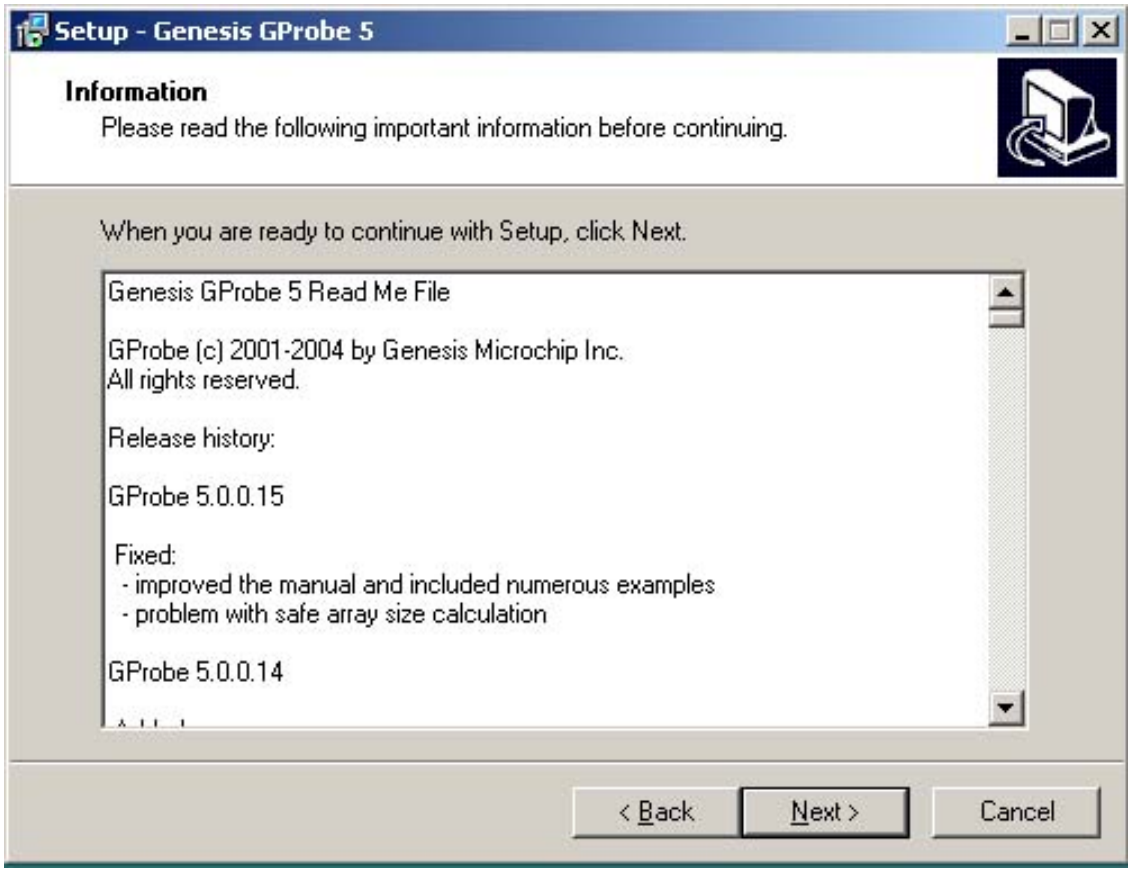


Fig. 0.3

0.4 Keep on press “ Next “ , see Fig. 0.4

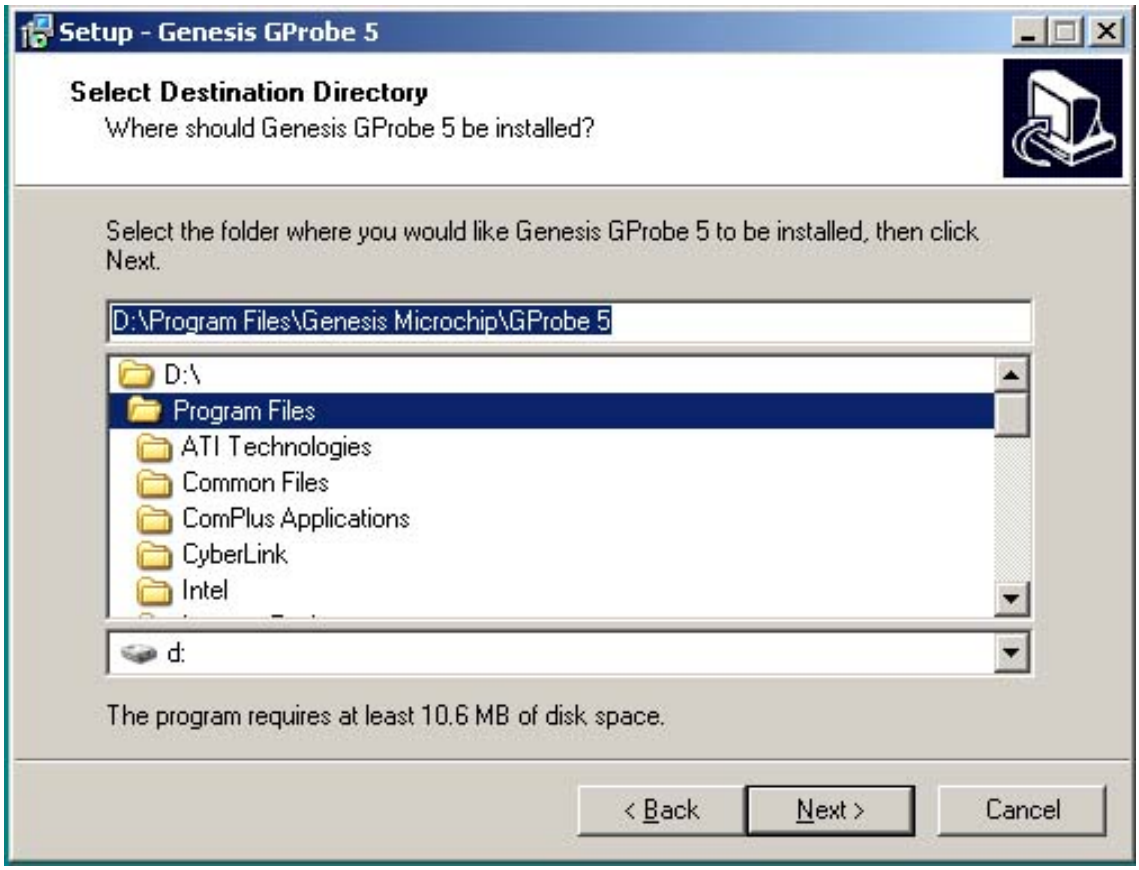


Fig. 0.4

0.5 Keep on press “ Next “ , see Fig. 0.5

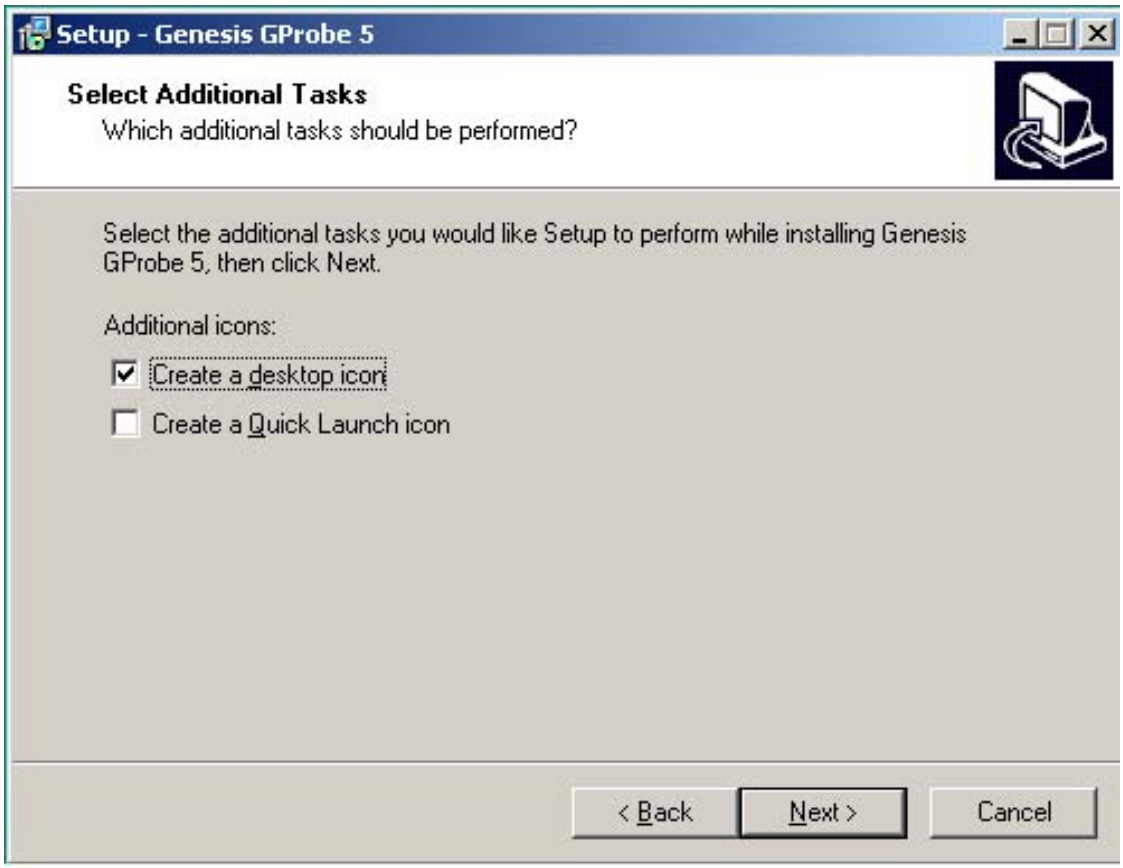


Fig. 0.5

0.6 Click “Next” to start the installation. See Fig 0.6

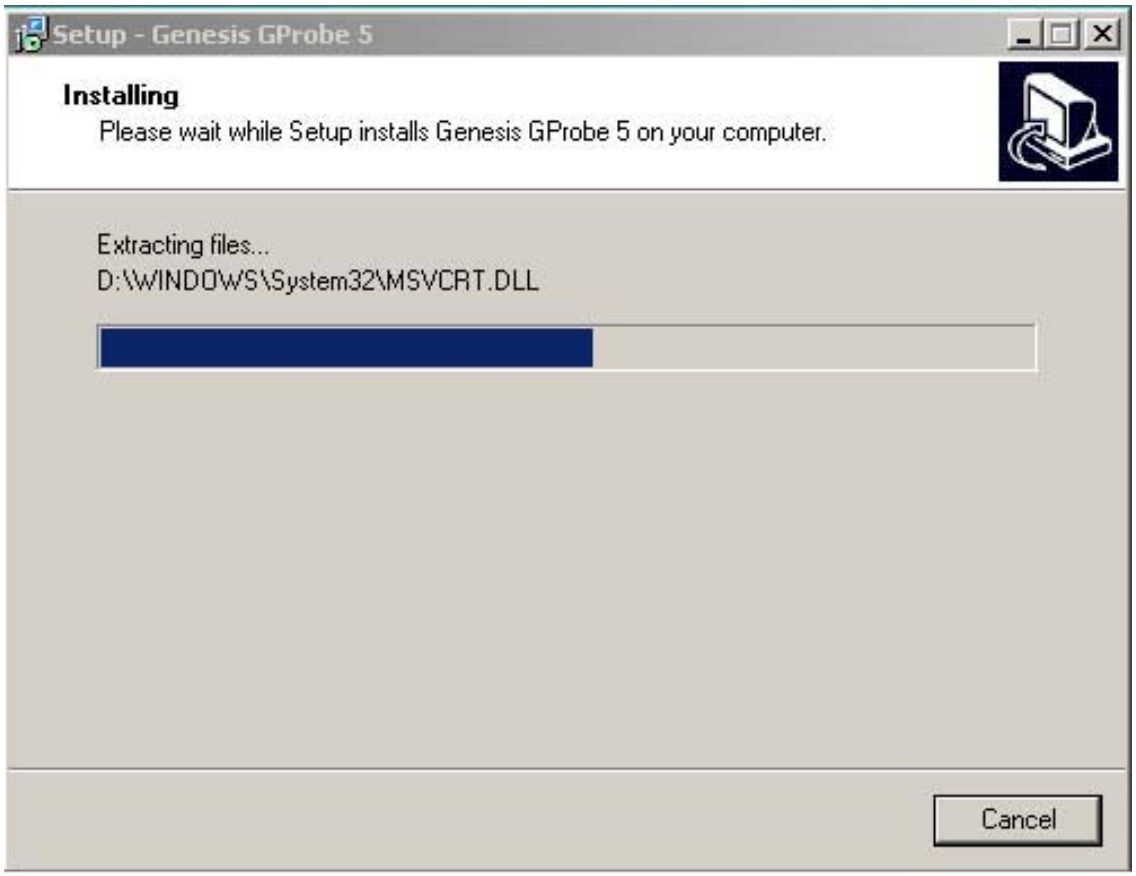


Fig. 0.6

0.7 If you see this message, click “Yes”. See Fig 0.7.

Fig. 0.7

0.8 If you see the Fig 0.8, click “Finich” button to restart the system.

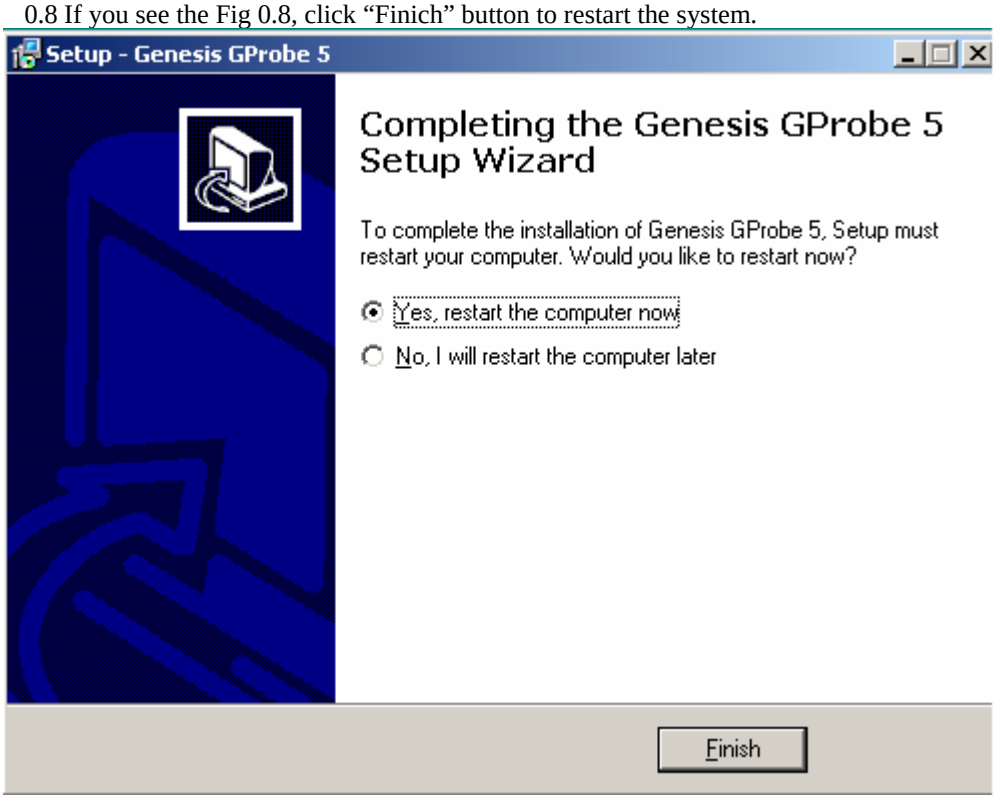


Fig. 0.8

0.9 Installation is completed

Appendix B : How to use software to upgrade the BIOS :

1.1 After installation , we could find the shortcut in the setting path or the program bar (default setting) , see Fig 1.1

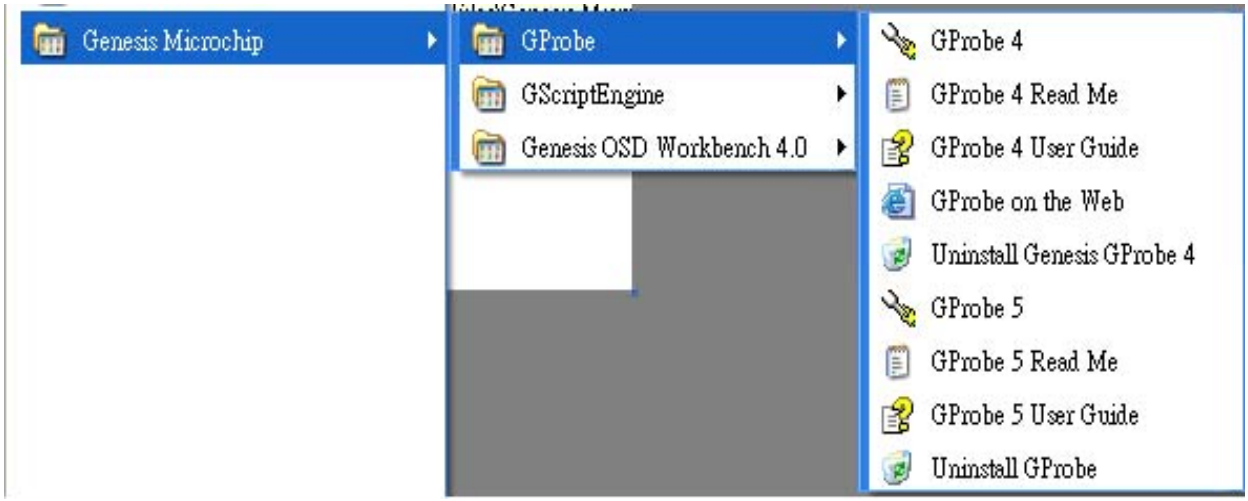


Fig. 1.1

1.2 Move your mouse cursor to GProbe 5 and click it. You will see the Fig. 1.2

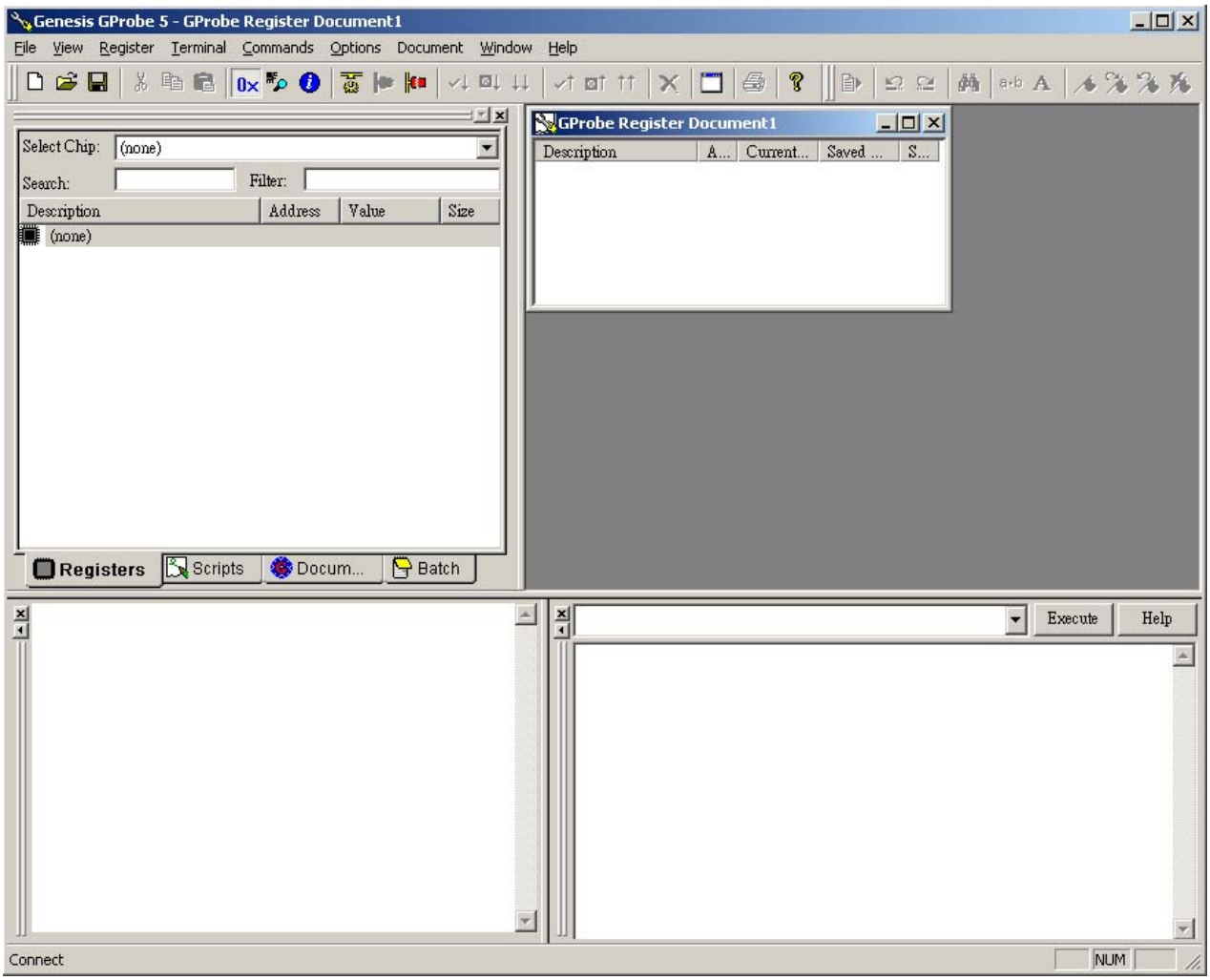


Fig. 1.2

1.3 Please create a directory such as “ISP” below the root directory (the path is “drive letter”:\ISP now).

1.4 Copy the create a text file with the following string and save it as “ISP.txt”

```
SetBuffer 0x1000 4096
RAMWrite d:\GNSSISP\loader.hex
Run 0x500
RAMWrite d:\GNSSISP\isp8.hex
Run 0x580
FlashErase
FastFlashWrite d:\GNSSISP\rd_monitor.hex
```

1.5 Set the monitor to Factory Mode by pressing “2” and “Power” at the same time.

1.6 Click the right-lower terminal window and type “batch d(or other drive letter):\ISP\isp.txt” in the upper blank area then click “Execute” button. See the Fig 1.3.

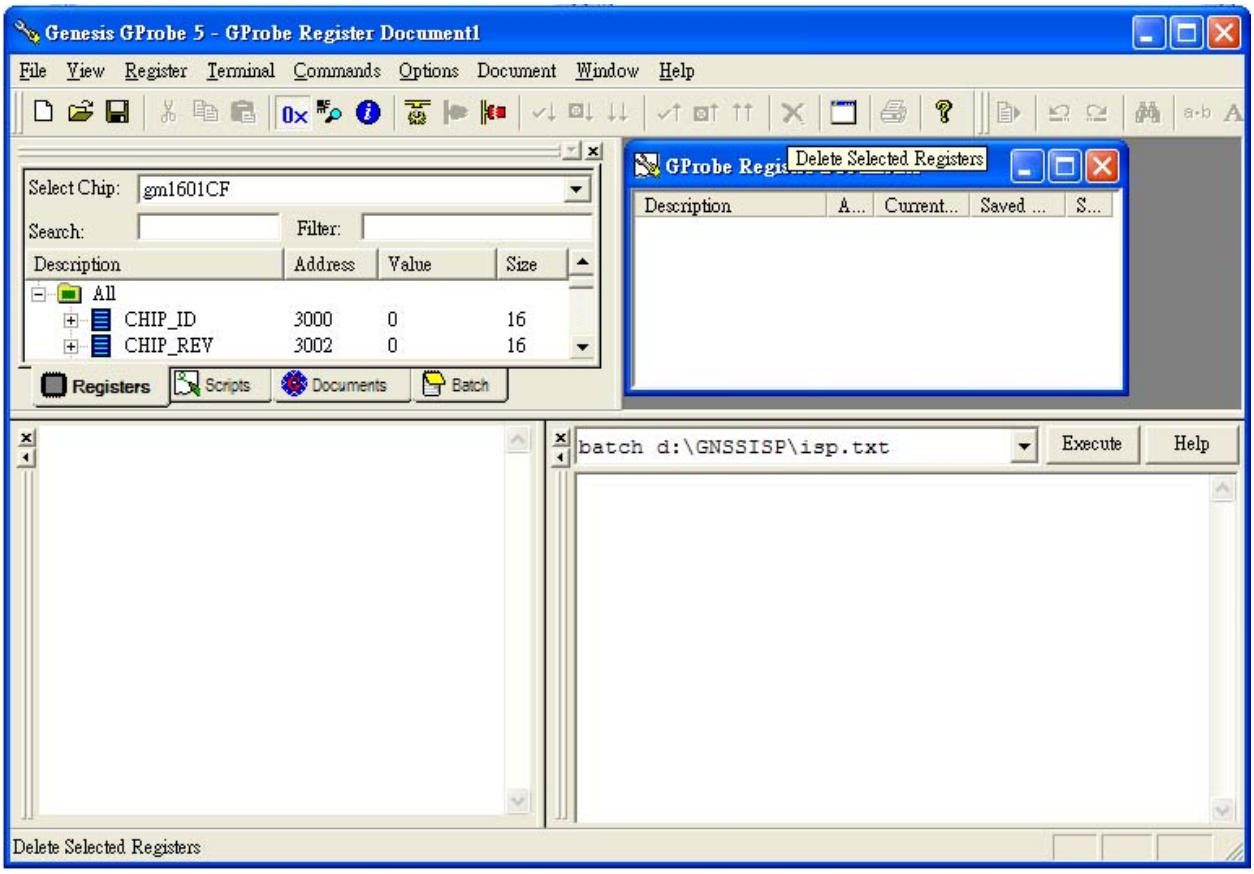


Fig. 1.3

1.7 After click the “Execute” button, you will see the terminal information in Fig. 1.4 . When the message “Batch: command successful” is shown, the flash progress is completed.

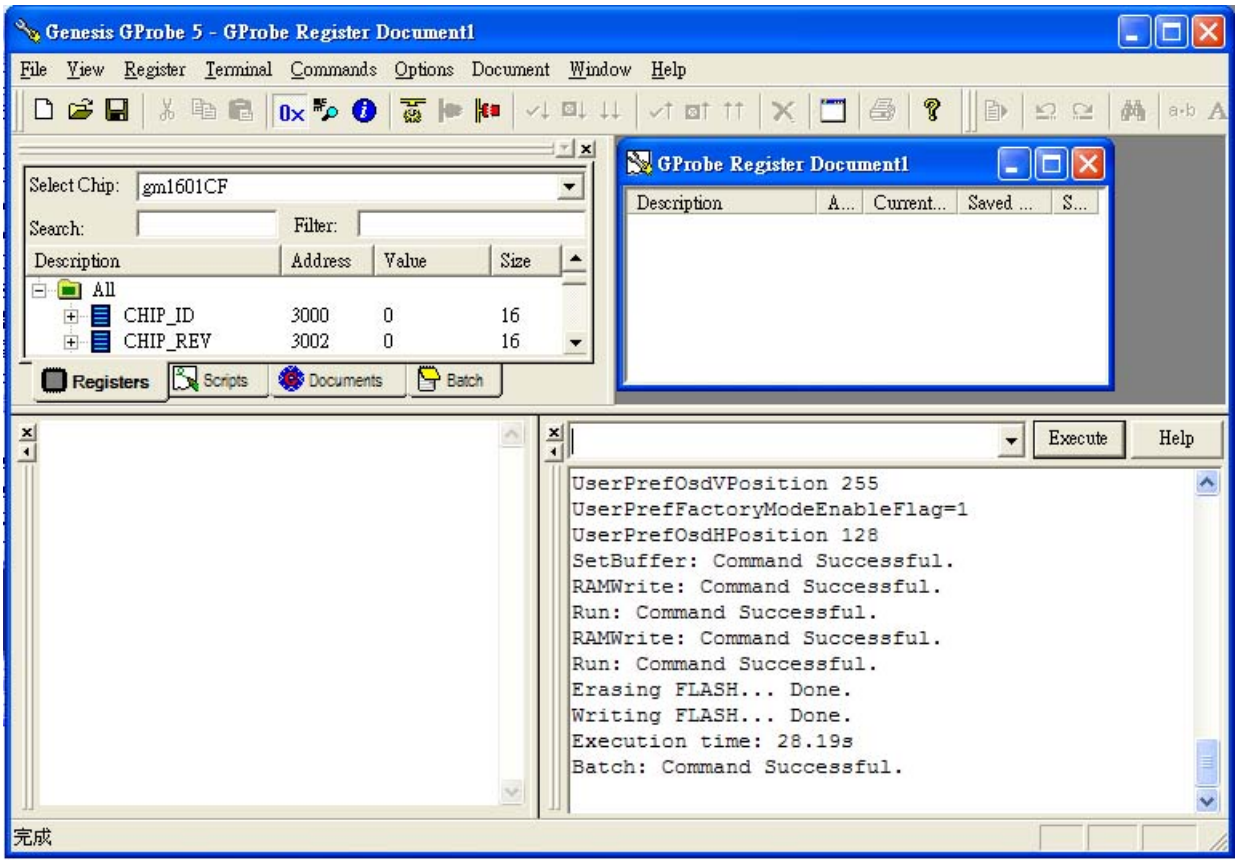
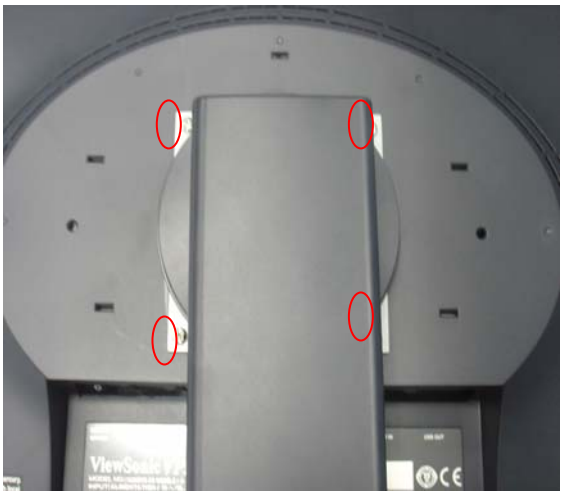


Fig. 1.4

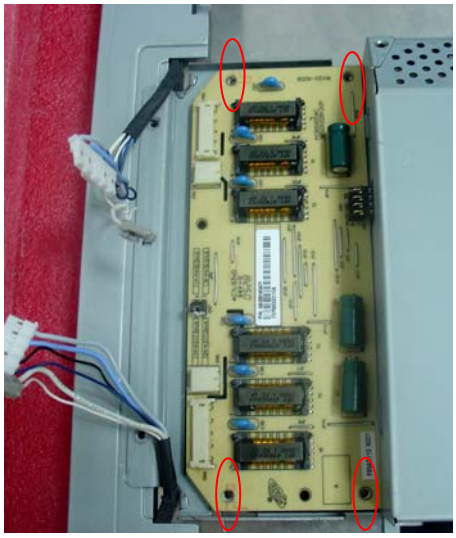
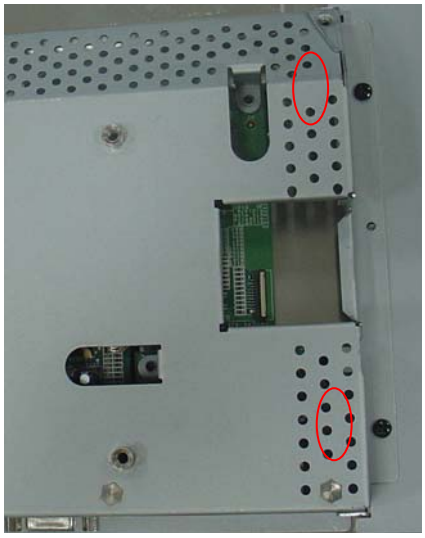
VP2130b-1 / VP2130b-1H series de-assembling procedure

1. Move the monitor our from carton	2. Put the monitor on desk & face down
	

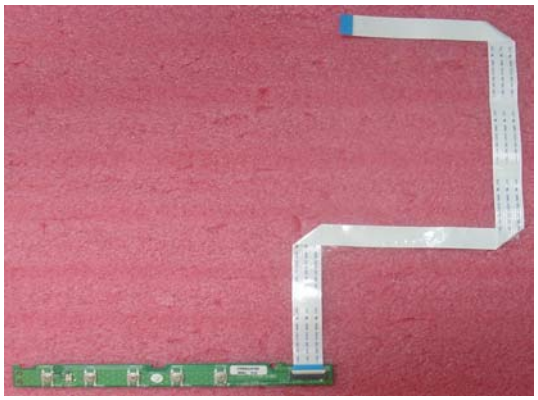
3. Remove the VESA cover	4. Loose the screws & remove the stand
	

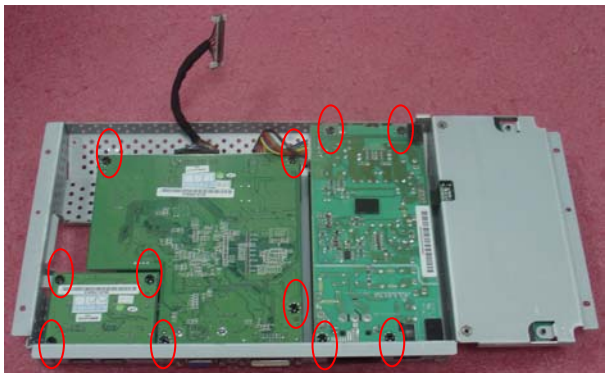
5. Separate the hook by tool (coin or screw-driver)	6. Remove the cover & AL-Foil &Mylar& Button/B CABLE
 	

7. Loose the INVERTER SHIELDING SCREW	8. Tear off the yellow tape &Pull out the CCFL cables
	

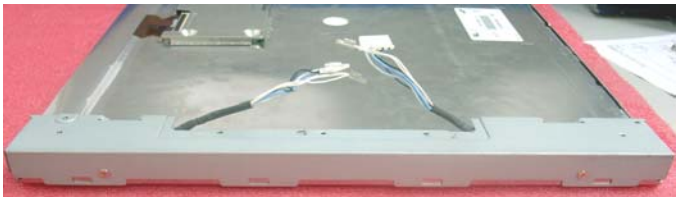
9. Loose the INVERTER/B screw	10. Loose the SHIELDING SCREW
	

11. Tear off the yellow tape &Pull out the LVDS CABLE	12.Remove the shielding
	

15. Loose the bezel	16.Remove the Button/B
	

17. Loose the shield	18. Remove the PCBA & mylar
	

19. Loose the IO-NUT SCREW	20. Take out PCBA & remove the cables
	

19. Loose the BKT-T/B SCREW	20. Loose the BKT-R/L SCREW
	 

VP2130b-1 / VP2130b-1H Series packing method

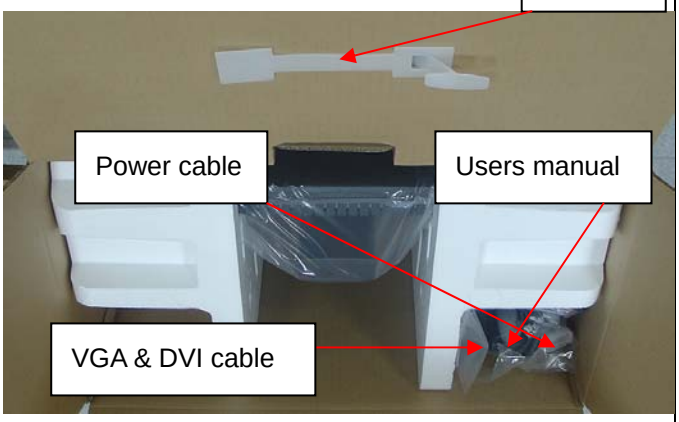
1. Sticker on LCD protection film

2. Put the monitor into the PE or EPE bags

3. Put on the end-cap left / right

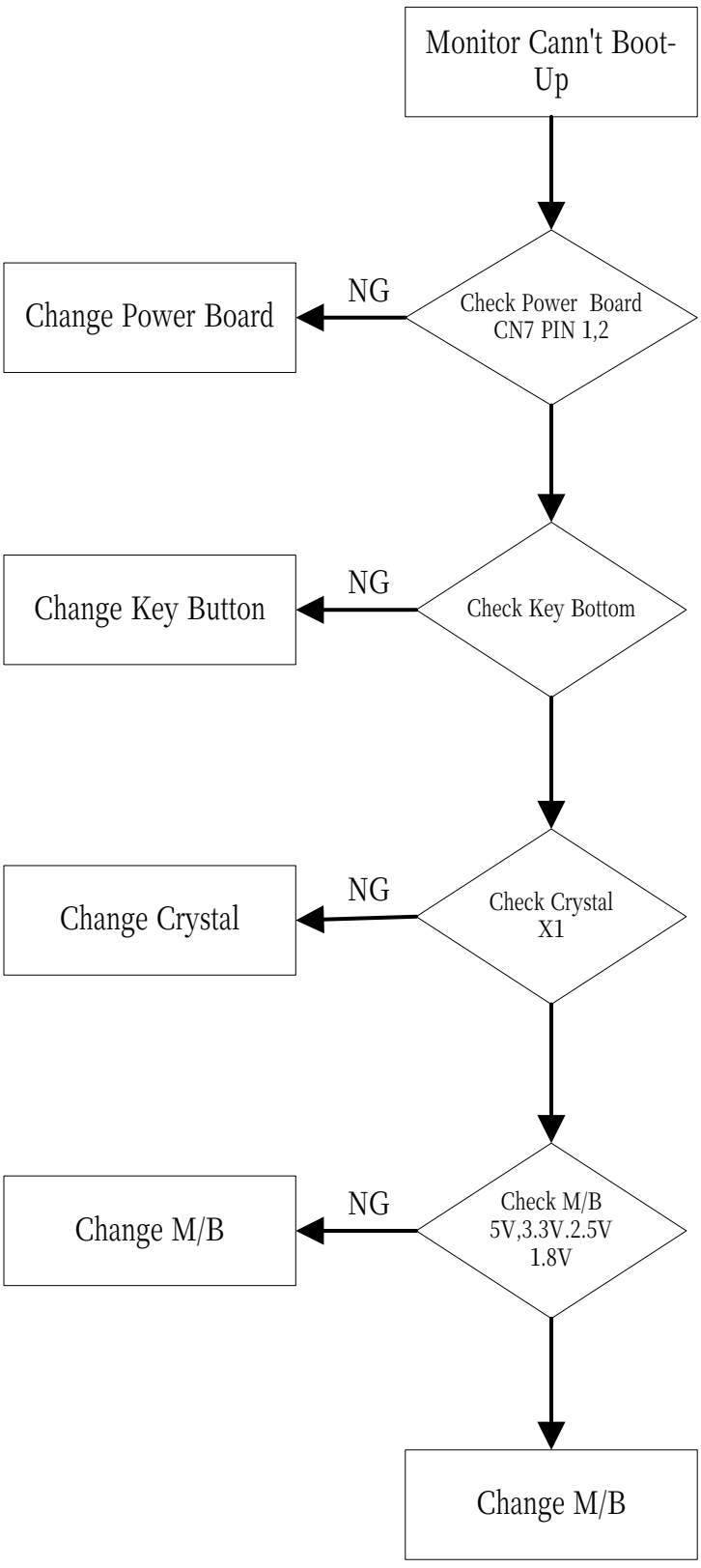
4. Put the monitor into carton

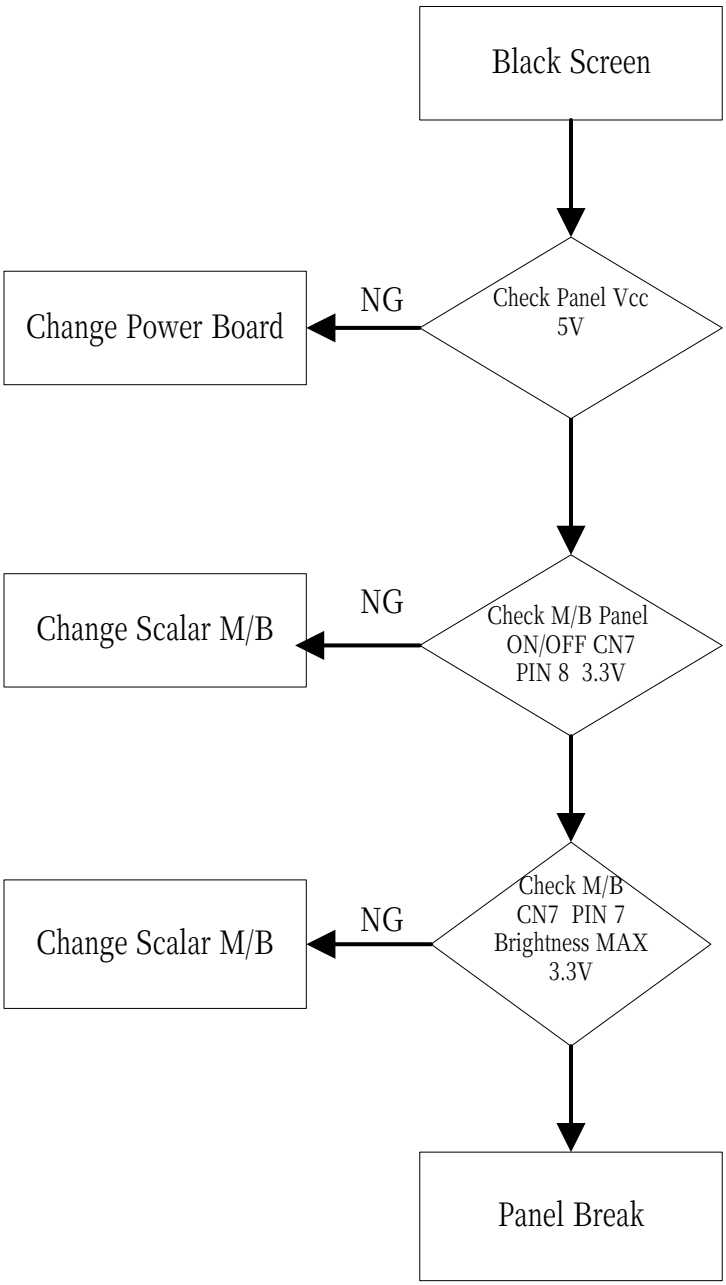
5. Put all accessories into carton

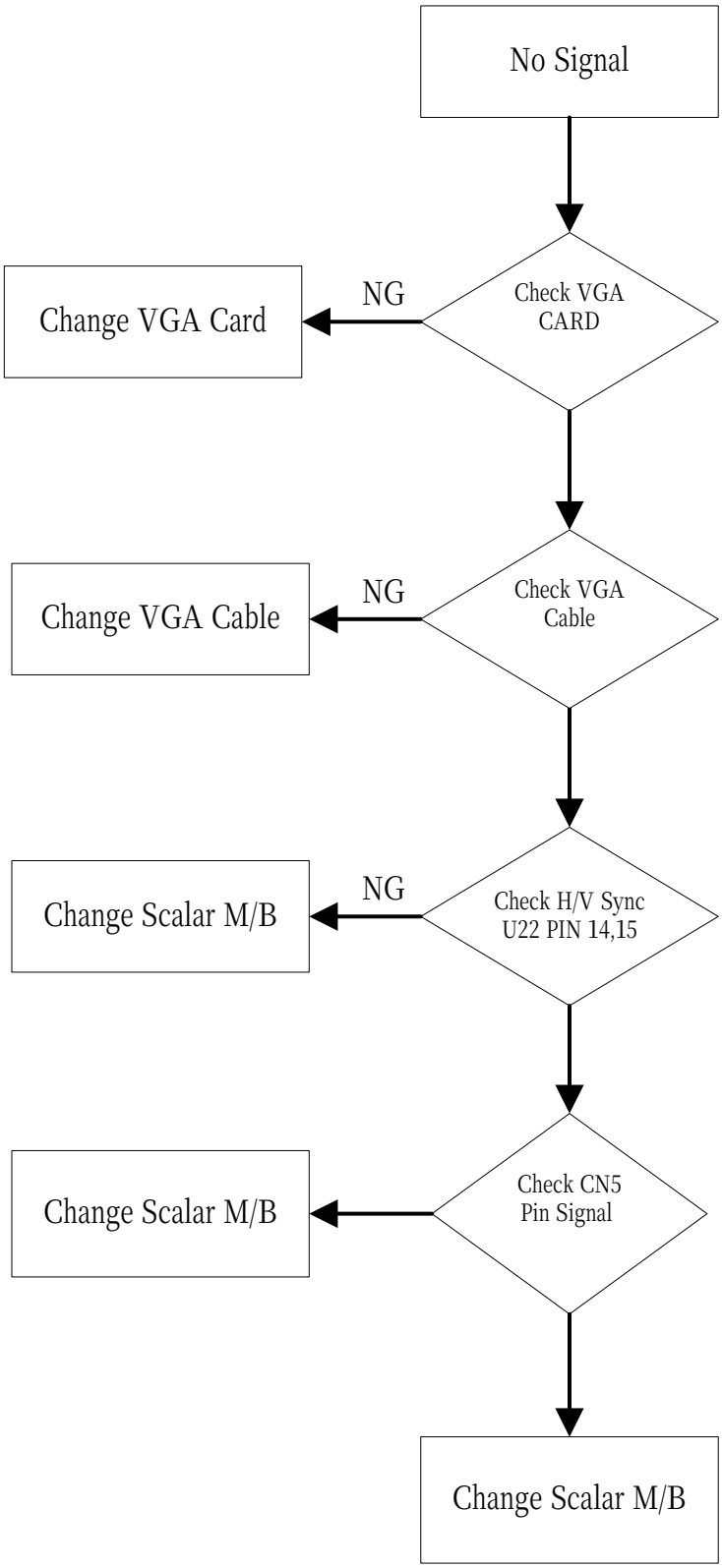


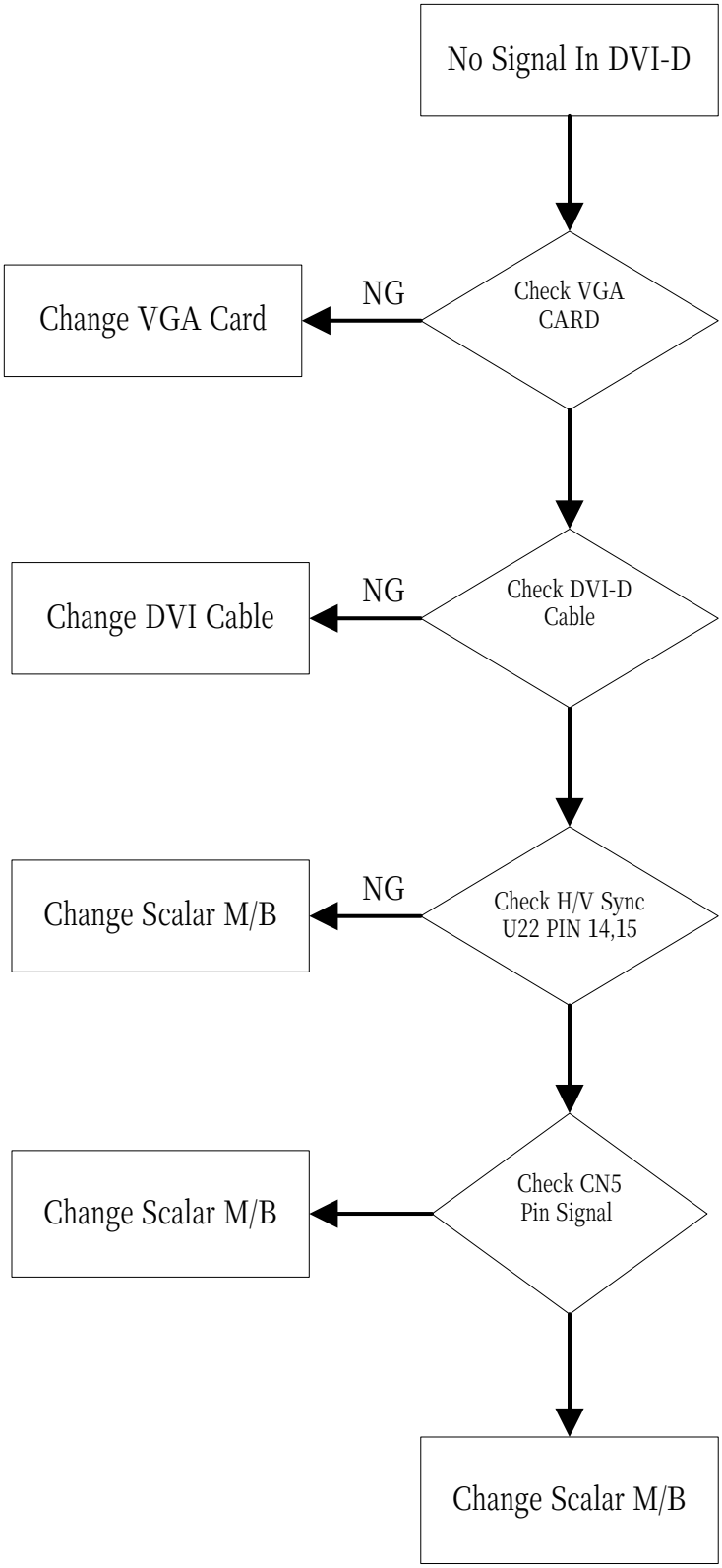
6. Seal the monitor

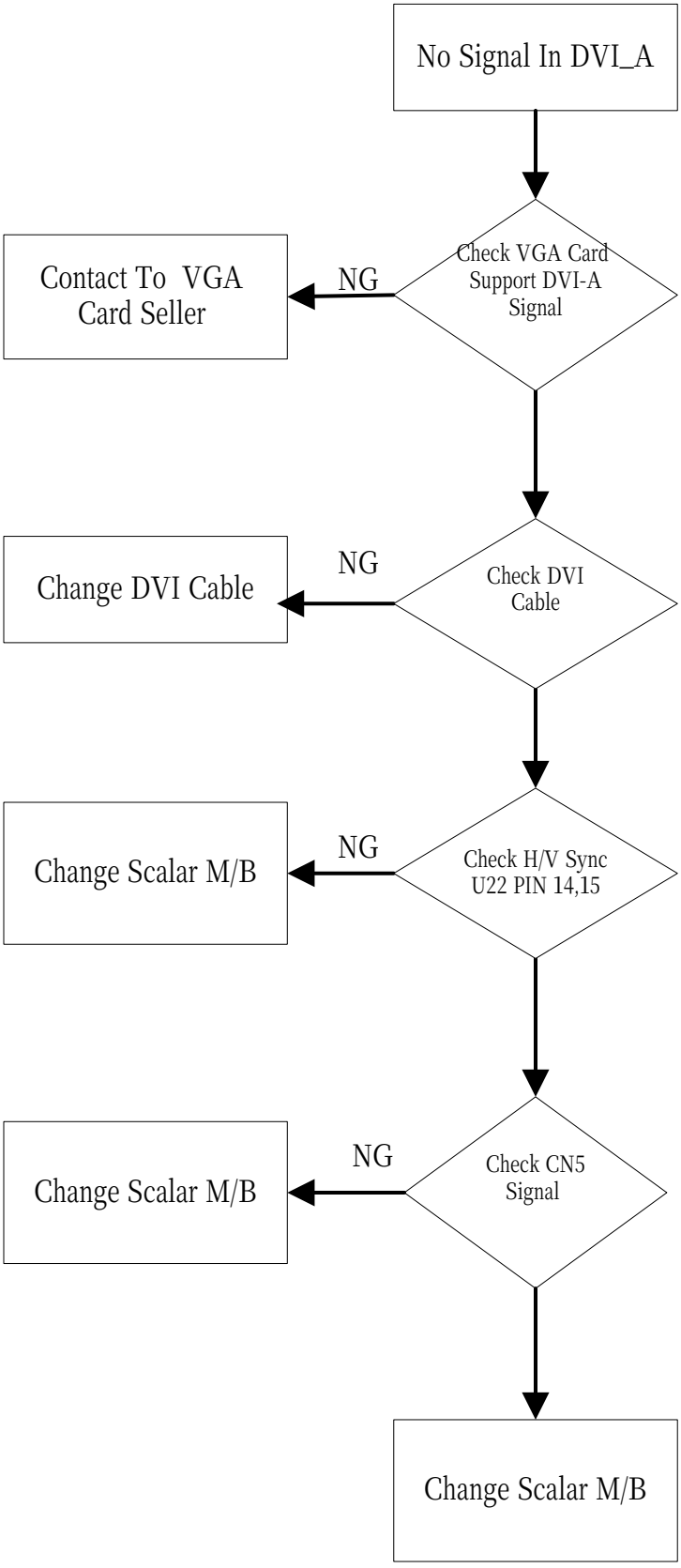
6. Trouble Shooting Flow Chart

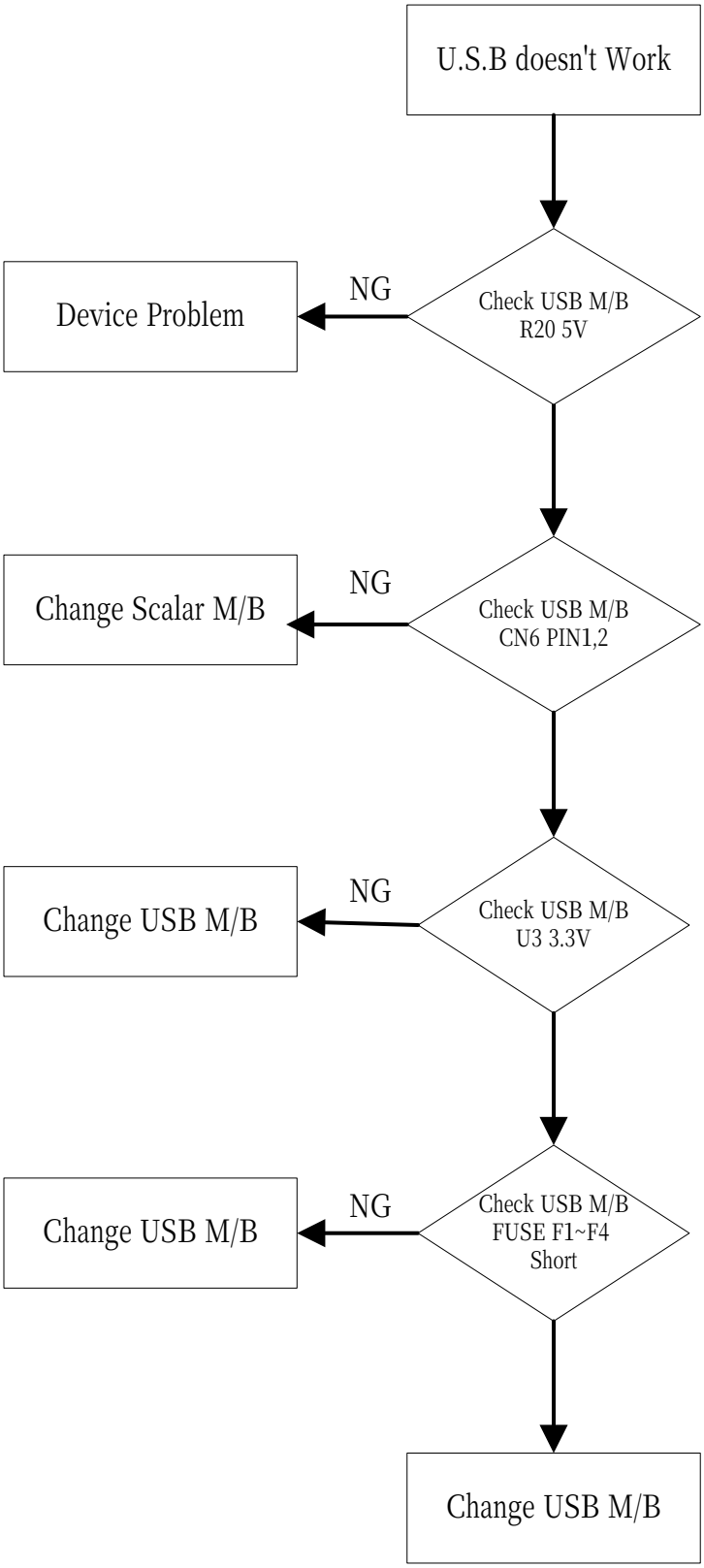


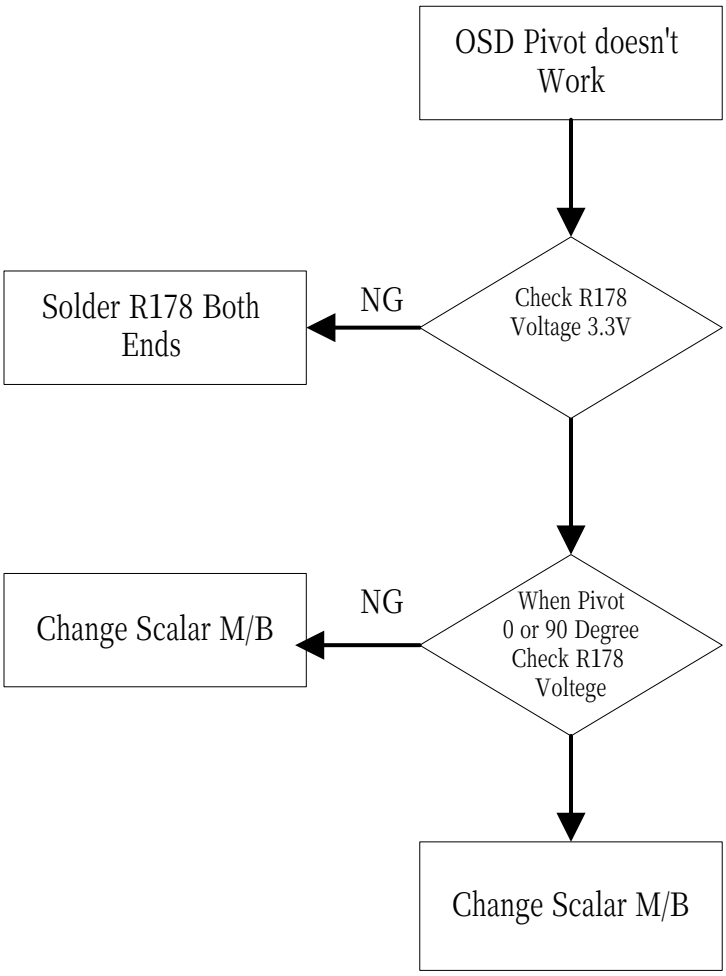

Black Screen
Check Panel Vcc
5V
NG
Change Power Board
Check M/B Panel
ON/OFF CN7
PIN 8 3.3V
NG
Change Scalar M/B
Check M/B
CN7 PIN 7
Brightness MAX
3.3V
NG
Change Scalar M/B
Panel Break


No Signal
Check VGA CARD
NG
Change VGA Card
Check VGA Cable
NG
Change VGA Cable
Check H/V Sync U22 PIN 14,15
NG
Change Scalar M/B
Check CN5 Pin Signal
Change Scalar M/B
Change Scalar M/B


No Signal In DVI-D
Check VGA CARD
NG
Change VGA Card
Check DVI-D Cable
NG
Change DVI Cable
Check H/V Sync U22 PIN 14,15
NG
Change Scalar M/B
Check CN5 Pin Signal
Change Scalar M/B
Change Scalar M/B


No Signal In DVI_A
Check VGA Card Support DVI-A Signal
NG
Contact To VGA Card Seller
Check DVI Cable
NG
Change DVI Cable
Check H/V Sync U22 PIN 14,15
NG
Change Scalar M/B
Check CN5 Signal
NG
Change Scalar M/B
Change Scalar M/B


U.S.B doesn't Work
Check USB M/B
R20 5V
NG
Device Problem
Check USB M/B
CN6 PIN1,2
NG
Change Scalar M/B
Check USB M/B
U3 3.3V
NG
Change USB M/B
Check USB M/B
FUSE F1~F4
Short
NG
Change USB M/B
Change USB M/B


OSD Pivot doesn't Work
Check R178 Voltage 3.3V
NG
Solder R178 Both Ends
When Pivot 0 or 90 Degree Check R178 Voltege
NG
Change Scalar M/B
Change Scalar M/B

7. Recommended Spare Parts List

RECOMMENDED SPARE PARTS LIST (VP2130b-1)

ViewSonic Model Number: VS10773-1W
Rev: 1b
Serial No. Prefix: PSD

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty
1	**Accessories:**	Power Cord		A-PC-0106-0224	DM333181G97	Power cable		1
2	**Board Assembly:**	Button Board L0VP BUTTON/B ASSY GP	12/08/05: Update Vendor P/N	B-00004350	~~23L0VPBB007~~ 1SL0VPBB001	Button board		1
3		Inverter module		B-00004352	AS023190407	Inverter board		1
~~4~~		~~Main Board~~	12/08/05: Removed & Replaced Part	~~B-00004349~~	~~21LAVPMB003~~	~~Main board~~		~~1~~
		Main Board LAVP (GM1601-LF-CF) GP		B-00004643	1SLAVPMB018	Main board		1
5		Power module DTA)EADP-64BF B,90~264V GP	12/08/05: Update Vendor P/N	B-00004348	~~AS08B50000~~ AS08B500000	Power board		1
6		USB Board 0VP ASSY(GP)	12/08/05: Update Vendor P/N	B-00004351	~~22L0VPUB005~~ 1SL0VPUB001	USB board		1
7	**Cabinets:**	Back Cover Assembly		C-00004422	25LAVPLC008	back cover assy		1
8		Base sub assy		C-00004356	38LAVPBS002	Base sub assy		1
9		Front Bezel assy LAVP GP	12/08/05: Update Vendor P/N	C-00004421	~~24LAVPLB001~~ 34LAVPLB001	front bezel ass'y		1
10		Stand sub assy		C-00004355	37LAVPSU003	Stand sub assy		1
11		STAND VESA COVER LAVP(EALAVP03,REV3A)GP	12/08/05: Added	C-00004642	EALAVP03011	stand vesa cover		1
12	**Cables:**	Cable MB-LCD		CB-00004424	DDLAVPLC104	Cable MB-LCD		1
13		Cable POWER-MB		CB-00004423	DDLAVPPB104	Cable POWER-MB		1
14		DVI cable		CB-00004361	DDWCVPDV019	DVI-I cable		1
15		FFC Cable MB-BB		CB-00004357	DEFC3609000	Cable MB-BB		1
16		VGA cable		CB-00004360	DD0M7TPC005	VGA cable		1
17	**Documentation:**	User manual + CD wizard		DC-00004425	HGLAVP01014	User manual		1
18	**Electronic Components:**	21.3" Samsung TFT LCD panel		E-00004426	AAM213U6008	LCD panel		1
19	**Hardware:**	Screw M3.0*5.0-B BLACK		HW-00004364	MM30050BJ21	Screw		25
~~20~~		~~Screw M4.0*8-B (NI, NYLOK)~~	12/08/05: Removed & Replaced Part	~~M-SCW-0824-0795~~	~~MM40080BCI5~~	~~Screw~~		~~8~~
		SCREW M3.0*3.0-I		M-SCW-0824-6761	MM30030IBJ4	panel to L/F BKT		4
21		IO NUT LI1(MBLI1004,REV3A)GP	12/08/05: Added	M-MS-0808-8986	MBLI1004018	DVI,D-SUB		4
22	**Miscellaneouse:**	LCD film		M-00004427	JXLAVP01011	LCD FILM		1
23	**Packing Material:**	Carton		P-00004428	HFLAVP01013	carton		1
24		End cap (L)		P-00004429	HBLAVP01010	cushion		1
25		End cap (R)		P-00004430	HBLAVP02016	cushion		1
26		PE bags		P-00004159	HAL0T002019	PE bags		1

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.
Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR approved by ViewSonic Corporation. This is to eliminate

RECOMMENDED SPARE PARTS LIST (VP2130b-1)

ViewSonic Model Number: VS10773-1W
Rev: 1b
Serial No. Prefix: PSD

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty
1	**Accessories:**	Power Cord		A-PC-0106-0224	DM333181G97	Power cable		1
2	**Board Assembly:**	Button Board L0VP BUTTON/B ASSY GP	12/08/05: Update Vendor P/N	B-00004350	~~23L0VPBB007~~ 1SL0VPBB001	Button board		1
3		Inverter module		B-00004352	AS023190407	Inverter board		1
~~4~~		~~Main Board~~	12/08/05: Removed & Replaced Part	~~B-00004349~~	~~21LAVPMB003~~	~~Main board~~		~~1~~
		Main Board LAVP (GM1601-LF-CF) GP		B-00004643	1SLAVPMB018	Main board		1
5		Power module DTA)EADP-64BF B,90~264V GP	12/08/05: Update Vendor P/N	B-00004348	~~AS08B50000~~ AS08B500000	Power board		1
6		USB Board 0VP ASSY(GP)	12/08/05: Update Vendor P/N	B-00004351	~~22L0VPUB005~~ 1SL0VPUB001	USB board		1
7	**Cabinets:**	Back Cover Assembly		C-00004422	25LAVPLC008	back cover assy		1
8		Base sub assy		C-00004356	38LAVPBS002	Base sub assy		1
9		Front Bezel assy LAVP GP	12/08/05: Update Vendor P/N	C-00004421	~~24LAVPLB001~~ 34LAVPLB001	front bezel ass'y		1
10		Stand sub assy		C-00004355	37LAVPSU003	Stand sub assy		1
11		STAND VESA COVER LAVP(EALAVP03,REV3A)GP	12/08/05: Added	C-00004642	EALAVP03011	stand vesa cover		1
12	**Cables:**	Cable MB-LCD		CB-00004424	DDLAVPLC104	Cable MB-LCD		1
13		Cable POWER-MB		CB-00004423	DDLAVPPB104	Cable POWER-MB		1
14		DVI cable		CB-00004361	DDWCVPDV019	DVI-I cable		1
15		FFC Cable MB-BB		CB-00004357	DEFC3609000	Cable MB-BB		1
16		VGA cable		CB-00004360	DD0M7TPC005	VGA cable		1
17	**Documentation:**	User manual + CD wizard		DC-00004425	HGLAVP01014	User manual		1
18	**Electronic Components:**	21.3" Samsung TFT LCD panel		E-00004426	AAM213U6008	LCD panel		1
19	**Hardware:**	Screw M3.0*5.0-B BLACK		HW-00004364	MM30050BJ21	Screw		25
~~20~~		~~Screw M4.0*8-B (NI, NYLOK)~~	12/08/05: Removed & Replaced Part	~~M-SCW-0824-0795~~	~~MM40080BCI5~~	~~Screw~~		~~8~~
		SCREW M3.0*3.0-I		M-SCW-0824-6761	MM30030IBJ4	panel to L/F BKT		4
21		IO NUT LI1(MBLI1004,REV3A)GP	12/08/05: Added	M-MS-0808-8986	MBLI1004018	DVI,D-SUB		4
22	**Miscellaneouse:**	LCD film		M-00004427	JXLAVP01011	LCD FILM		1
23	**Packing Material:**	Carton		P-00004428	HFLAVP01013	carton		1
24		End cap (L)		P-00004429	HBLAVP01010	cushion		1
25		End cap (R)		P-00004430	HBLAVP02016	cushion		1
26		PE bags		P-00004159	HAL0T002019	PE bags		1

Remark 1: Above listed items are examples, supplier can expand the rows to add more necessary items.
Remark 2: All revised RSPLs with newly added items or any change made should be highlighted and correlated with the ECN/ECR approved by ViewSonic Corporation. This is to eliminate

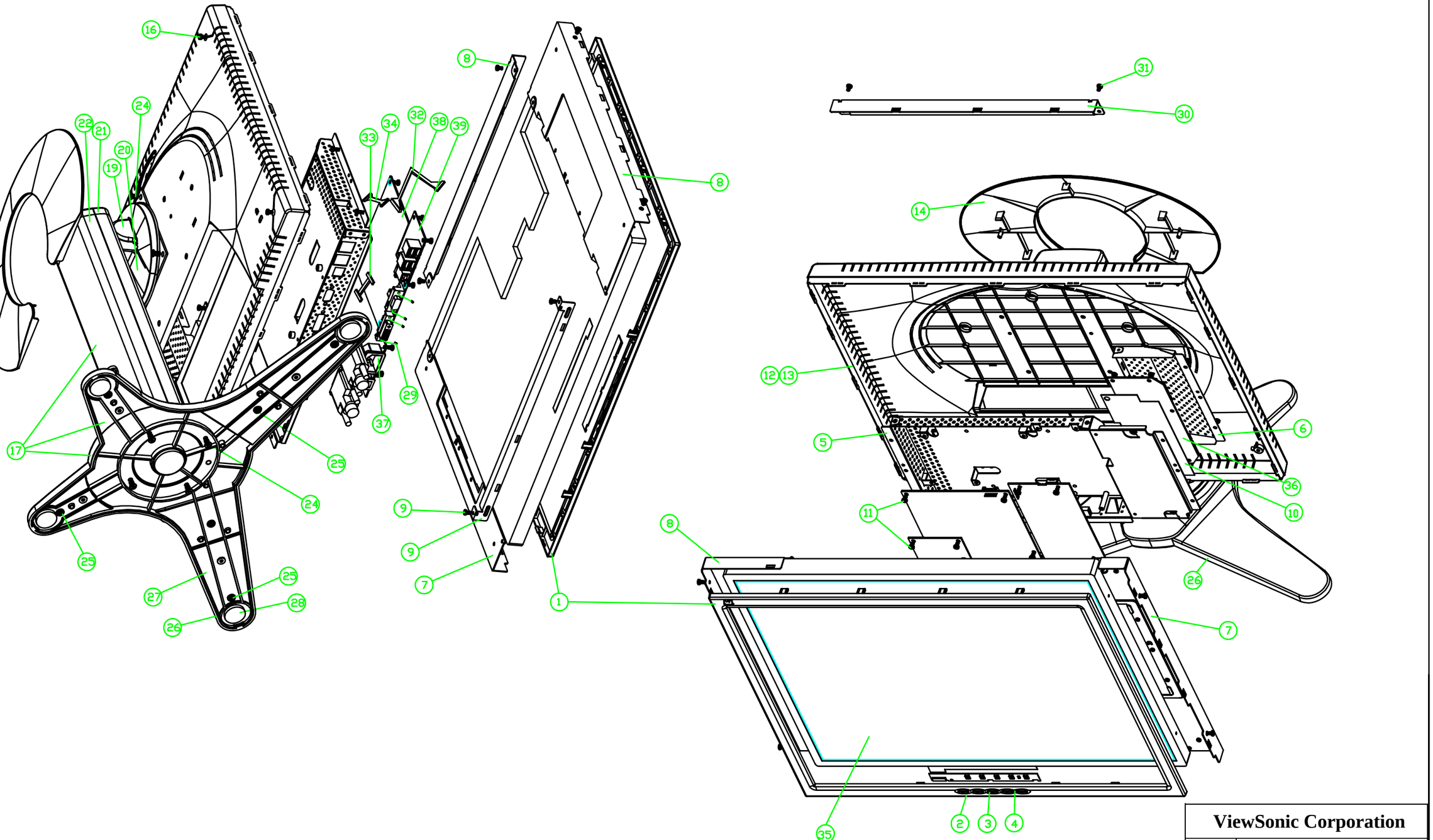
BOM LIST (VP2130b-1)

ViewSonic Model Number: VS10773-1W
Rev: 1a
Serial No. Prefix: PSD

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
1	#N/A	1LAVPZXVS09	LAVP LCD MONITOR(USA,VP2130) GP			
2	B-00004349	21LAVPMB003	LAVP M/B ASSY(GM1601-LF-CF) GP			1
3	#N/A	31LAVPSS009	LAVP M/B S/S ASSY(GM1601-LF-CF) GP			1
4	#N/A	CC647T1MD05	CAP EC 47U 10V(+-20%,105C,5*11,2000H)GP	C5,C6,C28,C29,C44,C46,C47,C59, C62,C64,C76,C77,C96,C100,C103, C107,C119,C126,C134,C137,C138		21
5	#N/A	CC71004MD09	CAP ELEC DIP 100U 25V(+-20%,105C,6*7) GP	C124		1
6	#N/A	CC73303MD69	CAP ELEC DIP 330U 16V(+-20%,105C,8*9) GP	C174,C204,C205		3
7	#N/A	CC810T1MD13	CAP EC 1000U6.3V(+-20%,105C,8*15,2KH)GP	C206		1
8	#N/A	CC710T3MD04	CAP EC 100U 16V +-20%,105C,6.3*5,1000 GP	C180,C181,C184,C185,C187,C188		6
9	#N/A	DC11050K007	CHOKE COIL 100UH(5A,+-10%,HKH050-101K)GP	L28		1
10	#N/A	DHR31110002	ROLL BALL SWITCH 4P RBS311100 GP	U19		1
11	#N/A	BG614318072	XTAL DIP 14.318MHZ(+-30PPM,49/US) GP	X1		1
12	#N/A	DFDI30FR103	CONN DVI-I DIP30P 3R FR(P1.905,H10.04)GP	CN2		1
13	#N/A	DFDS15FR076	CONN D-SUB 15P 3R FR(P1.15,H12.55) GP	CN1		1
14	#N/A	DFHD30MR267	CONN DIP HEADER 30P 2R MR(P2.0,H4.0) GP	CN5		1
15	#N/A	DFHD04FR007	CONN DIP HEADER 4P 2R FR(P2.5,H5) GP	CN6		1
16	#N/A	DFHD08MR319	CONN DIP HEADER 8P 1R MR(P2.0,H4.1) GP	CN7		1
17	B-00004350	23L0VPBB007	L0VP BUTTON/B ASSY GP			1
18	#N/A	DAL0VPTB011	PCB(BUTTON) L0VP TB(2L,111*13,REVA) GP			1
19	#N/A	DHPTMG53311	SWITCH PU-BUTTON TMG-533-T/R(160+-50G)GP	SW1,SW2,SW3,SW4,SW5		5
20	#N/A	DFFC11FR001	CONN SMD FFC 11P 1R FR(P 1,H1.55) GP	CN1		1
21	#N/A	BEYG0003ZA5	LED(SMD) Y/G(KPB-3025NSGC-F01) GP	LED1		1
22	#N/A	AS08B500000	PWR MODULE(DTA)EADP-64BF B,90~264V GP			1
23	B-00004351	22L0VPUB005	L0VP USB/B ASSY(GP)			1
24	#N/A	32L0VPSS007	L0VP USB/B S/S ASSY(GP)			1
25	#N/A	CC71004MD09	CAP ELEC DIP 100U 25V(+-20%,105C,6*7) GP	C1,C7,C13,C16,C26,C27		6
26	#N/A	DFUB08MR009	CONN DIP USB A-T D-8P 2R MR(P2,H15.35)GP	J1,J2		2
27	#N/A	DFUB04MR001	CONN DIP USB B-T 4P 2R MR(P2.5,H11.3) GP	USB1		1
28	#N/A	BG612000202	XTAL DIP 12MHZ(+-30PPM,HC-49/S TYPE) GP	X1		1
29	#N/A	DFHD04MR001	CONN DIP HEADER 4P 2R MR(P2.54,H5) GP	CN1		1
30	C-00004421	24LAVPLB001	LAVP LCD BEZEL ASSY GP			1
31	#N/A	34LAVPLB001	LAVP LCD BEZEL SUB ASSY GP			1
32	CB-00004357	DEFC3609000	FFC CABLE MB-BUTTOM(11P,360MM)LAVP GP			1
33	CB-00004423	DDLAVPPB104	CABLE POWER-MB(8P,55MM)LAVP GP			1
34	CB-00004424	DDLAVPLC104	CABLE MB-LCD(30P,100MM,SAM)LAVP/TAPE GP			1
35	#N/A	FALAVP01019	PCB SHIELD LAVP(FALAVP01,REV3A)GP			1
36	#N/A	FALAVP02015	INVER SHIELD LAVP(FALAVP02,REV3A)GP			1
37	#N/A	FALAVP03011	LCD BRACKET-R LAVP(FALAVP03,REV3A)GP			1
38	#N/A	FALAVP04018	LCD BRACKET-L LAVP(FALAVP04,REV3A)GP			1
39	#N/A	FALAVP05014	LCD BAK BOTTOM LAVP((FALAVP05,REV3A)GP			1
40	#N/A	FCLAVP01011	INVERTER MYLAR LAVP(FCLAVP01,REV3A)GP			1
41	HW-00004364	MM30050BJ21	SCREW M3.0*5.0-B BLACK GP			25
42	#N/A	FALAVP08013	LCD BRACKET TOP LAVP(FALAVP080,R3A) GP			1
43	#N/A	MBL9V001019	IO NUT L9VDA-5(MBL9V001,REV3A)M3*15*6 GP			4
44	#N/A	FCLAVP02017	AL FOIL LAVP(FCLAVP02,REV3A)210*10 GP			1
45	#N/A	FCLAVP03013	AL FOIL LAVP(FCLAVP03,REV3A)65*30 GP			3
46	#N/A	FCW0E002016	POWER MYLAR W0E-A1(FAW0E002, REV3A)GP			1
47	#N/A	FCLAVP04010	POWER MYLAR TOP LAVP(FCLAVP04,R3A) GP			1
48	#N/A	FCLAVP05016	SHIELD MYLAR LAVP(FCLAVP05,R3A) GP			1
49	#N/A	FCLAVP06012	BUTTON/B MYLAR LAVP(FCLAVP06,R3A) GP			1
50	#N/A	FCLAVP07019	BUTTON EVA LAVP(FCLAVP07,REV3A) GP			1
51	M-MS-0808-8984	FCL70004010	LCD MYLAR L70L-E(FCL70004,REV3A)GP			1
52	C-00004422	25LAVPLC008	LAVP LCD COVER ASSY GP			1
53	#N/A	35LAVPLC008	LAVP LCD COVER SUB ASSY GP			1
54	#N/A	26LAVPSA009	LAVP STAND ASSY GP			1
55	C-00004355	37LAVPSU003	LAVP STAND SUB ASSY GP			1
56	C-00004356	38LAVPBS002	LAVP BASE SUB ASSY GP			1

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
57	M-SCW-0824-0795	MM40080BCI5	SCREW M4.0*8-B(NI,NYLOK)GP			8
58	#N/A	27LAVPCS007	LAVP CHASSIS ASSY GP			1
59	#N/A	EALAVP03011	STAND VISA COVER LAVP(EALAVP03,REV3A)GP			1
60	M-SCW-0824-0814	MM30060BBJ3	SCREW M3.0*6,B(NI) GP			4
61	#N/A	2ALAVPPTS07	LAVP PANEL DEPENDENT KIT ASSY(SASN) GP			1
62	E-00004426	AAM213U6008	LCD 21" LTM213U6-L01(1600*1200,UXGA)GP			1
63	#N/A	AZLAVP0S009	LAVP SW BIOS IMAGE(SASN)GM1601-LF-CF N/A			1
64	B-00004352	AS023190407	INV MODULE(SEL)LAVP(20V,V=900V,MAX)GP			1
65	#N/A	28LAVPPK004	LAVP PACKING ASSY GP			1
66	CB-00004361	DDWCVPDV019	CABLE DVI-I(29/29P,1.8M)WCVP GP			1
67	CB-00004360	DD0M7TPC005	CABLE ASSY M7T MB-VGA(15/15P,REV1A) GP			1
68	P-00004159	HAL0T002019	PE BAG L0T(HAL0T002,REV3A)GP			1
69	P-00004429	HBLAVP01010	END CAP-L LAVP(HBLAVP01,REV3A)GP			1
70	P-00004430	HBLAVP02016	END CAP-R LAVP(HBLAVP02,REV3A)GP			1
71	M-LB-0813-0747	HCL7V004013	CORE LABEL(HCL7V004,REV3A)			1
72	#N/A	HCLAVP01011	ID LABEL LAVP(HCLAVP01,REV3A)GP			1
73	M-LB-0813-0745	HCL7V002011	SERIAL LEBAL L7V(HCL7V002,REV3A) GP			1
74	M-LB-0813-1042	HCL7V019011	CARTON LABEL L7VC(HCL7V019,REV3B) GP			1
75	P-00004428	HFLAVP01013	CARTON LAVP(HFLAVP01,REV3A)GP			1
76	DC-00004425	HGLAVP01014	CD+QSG LAVP(HGLAVP01,REV3A)GP			1
77	#N/A	JXLM5003011	HANDLE LM5S(JXLM5003,REV 3B) GP			1
78	M-00004427	JXLAVP01011	LCD FILM LAVP(JXLAVP01,REV3A)GP			1
79	M-LB-0813-1043	HCL70021011	HI-POT LABEL L70L(HCL70021,REV3A)			1
80	#N/A	HFL0VP02017	SPACE PLATE L0VP(HFL0VP02,REV3A)GP			0.083
81	#N/A	HDL7VC01019	SERVICR PAPER L7VC(HDL7VC01,REV3A) GP			1
82	DC-00003536	HCL9V009011	HG LABEL L9VD(HCL9V009,REV3A)			1
83	A-PC-0106-0224	DM333181G97	POWER CORD 3P 1.8M(USA)V04VS350012180 GP			1

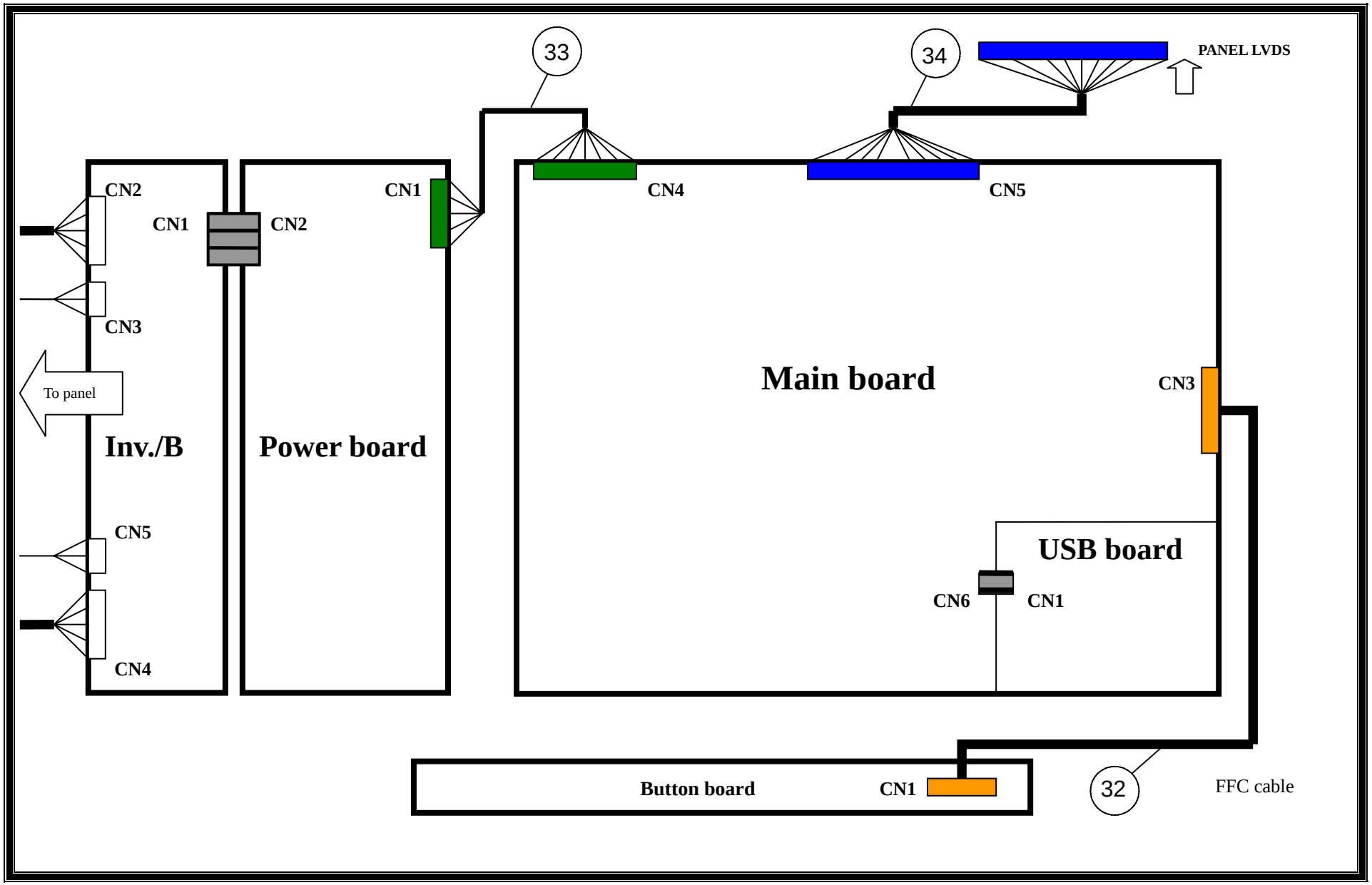
8.Exploded Diagram and Exploded Parts List



ViewSonic Corporation		
Model		
Title		
Date		Rev:

Confidential - Do Not Copy

Cable connection diagram



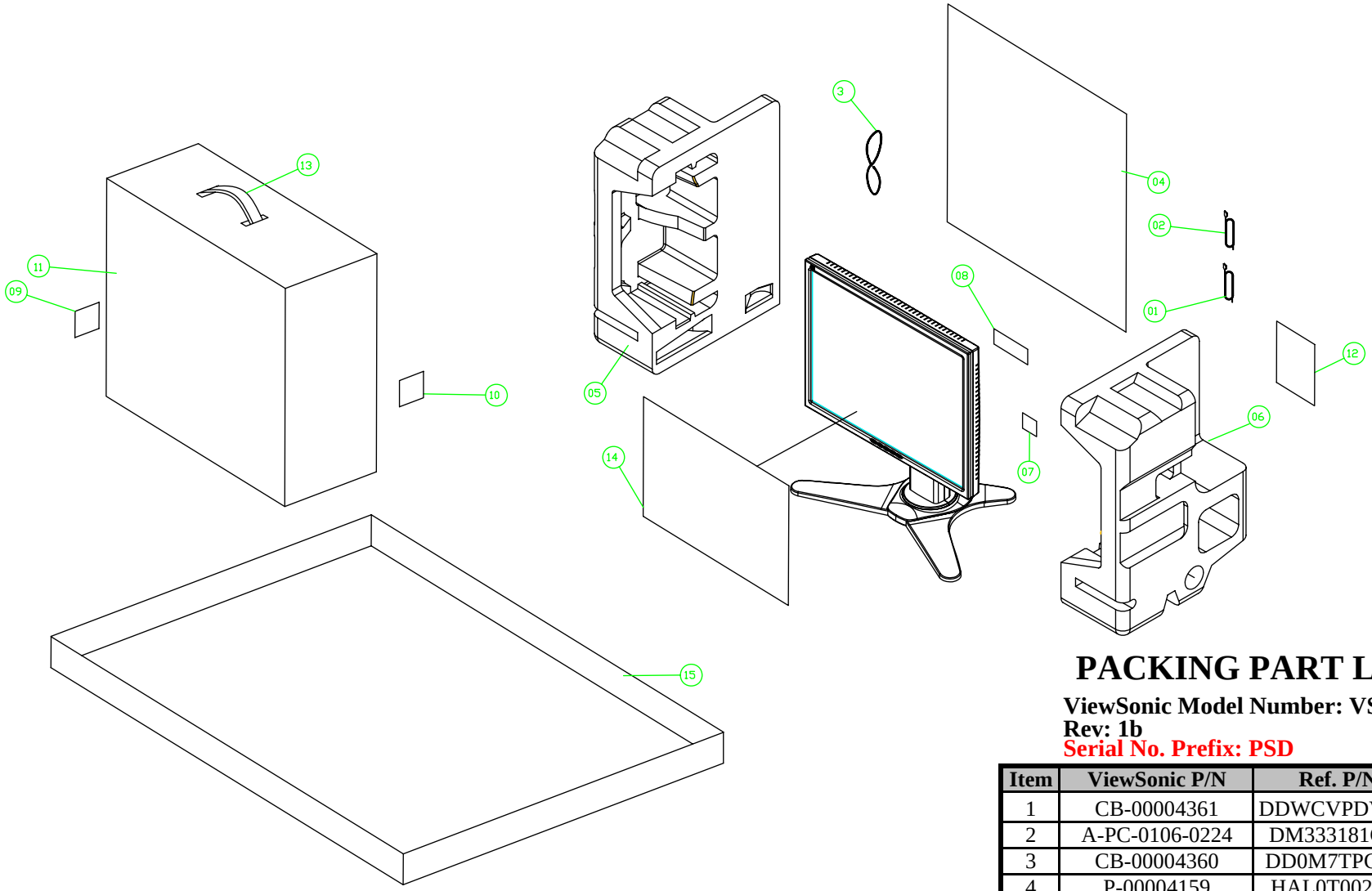
EXPLODED PARTS LIST (VP2130b-1)

ViewSonic Model Number: VS10773-1W

Rev: 1a

Serial No. Prefix: PSD

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	#N/A	34LAVPLB001E	LAVP BEZEL SUB ASSY	1
2	#N/A	EALAVP01019	LCD BEZEL L0VP	1
3	#N/A	ECL0VP01011	CONTROL BUTTON LAVP	1
4	#N/A	EBLAVP01010	LED LENS LAVP	1
5	#N/A	FALAVP01019	PCB SHILED LAVP	1
6	#N/A	FALAVP02015	INVER SHIELD LAVP	1
7	#N/A	FALAVP03011	LCD BRACKET-R	1
8	#N/A	FALAVP04018	LCD BRACKET-L	1
9	#N/A	FALAVP05014	LCD BRACKET BOTTOM LAVP	1
10	#N/A	FCLAVP01011	INVERTER MYLAR LAVP	1
11	M-SCW-0824-0728	MM30050IBJ3	SCREW M3.0*5.0-I(NI)	25
12	C-00004422	25LAVPLC008	LAVP LCD COVER ASSY	1
13	#N/A	EALAVP02015	LCD COVER LAVP	1
14	C-00004642	EALAVP03011	STAND VESA COVER LAVP	1
15	M-MS-0808-9411	FBL70008014	LOCK METAL L70B	1
16	M-SCW-0824-0814	MM30060BBJ3	SCREW M3*6-B (NI)	4
17	#N/A	26LAVPSA009	LAVP STAND ASSY	1
18	#N/A	FALAVP07017	HINGE ASSY LAVP	1
19	#N/A	EALAVP04018	STAND TOP LAVP	1
20	#N/A	EALAVP05014	STAND BOTTOM LAVP	1
21	#N/A	EALAVP06011	HINGE COVER FRONT	1
22	#N/A	EALAVP07017	HINGE COBER BACK LAVP	1
23	#N/A	EBLAVP02016	CLAMP LAVP	3
24	M-SCW-0824-0795	MM40080BCI5	SCREW M4.0*8-B(NI, NYLOK)	8
25	M-SCW-0824-0725	MF30050IBJ6	SCREW F3*5-I(NI)	15
26	#N/A	EALAVP08013	BASE LAVP	1
27	#N/A	FALAVP06011	BASE PLATE LAVP	1
28	#N/A	GALAVP01019	RUBBER FOOT LAVP	4
29	M-MS-0808-8986	MBLI1004018	IO NUT	4
30	#N/A	FALAVP08013	LCD BRACKET TOP	1
31	#N/A	MS30030I934	SCREW 3*3.0-I	4
32	CB-00004357	DEFC3609000	FFC CABLE MB-BUTTON	1
33	CB-00004358	DDLAVPPB104	CABLE POWER-MB	1
34	CB-00004424	DDLAVPLC104	CABLE MB-LCD	1
35	E-00004426	AAM213U6008	LCD LTM213U6-L01	1
36	B-00004352	AS023190407	INV MODULE(SEL)LAVP	1
37	B-00004348	AS08B500000	PWR MODULE(DTA)EADP-64BF B	1
38	B-00004349	21LAVPMB003	LAVP M/B ASSY	1
39	B-00004351	22L0VPUB005	L0VP USB/B ASSY(GP)	1

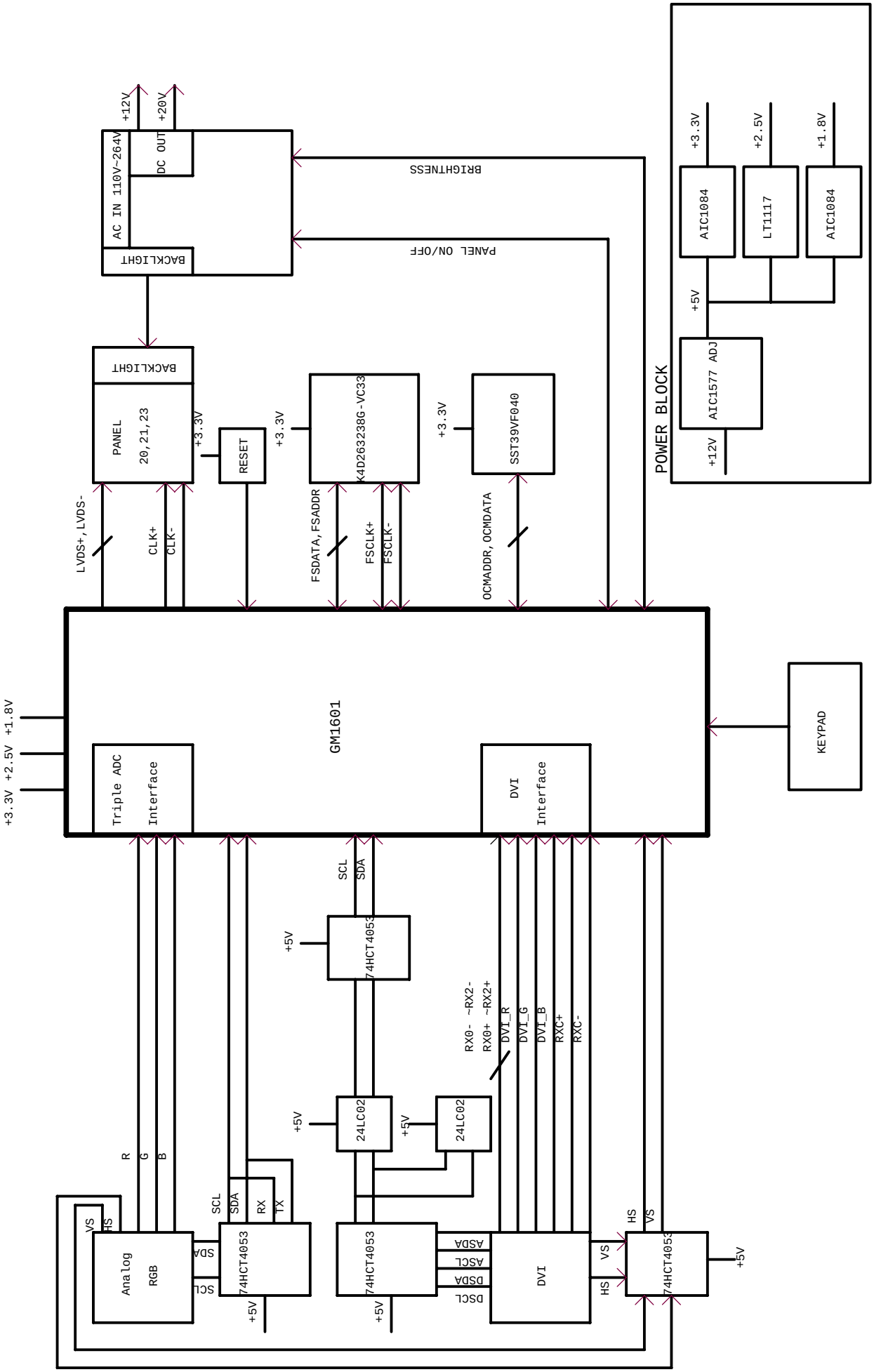


PACKING PART LIST (VP2130b-1)

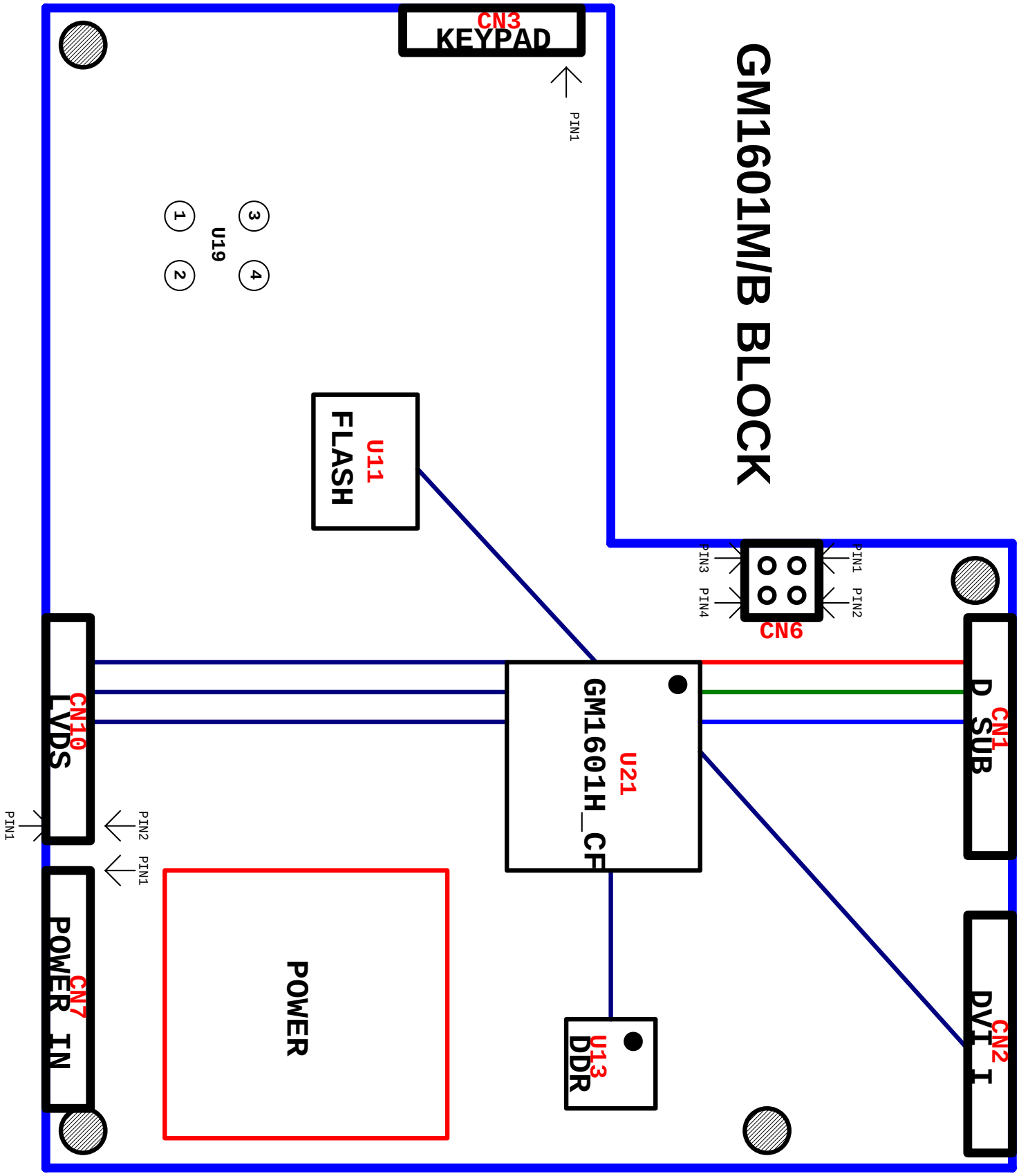
ViewSonic Model Number: VS10773-1W
Rev: 1b
Serial No. Prefix: PSD

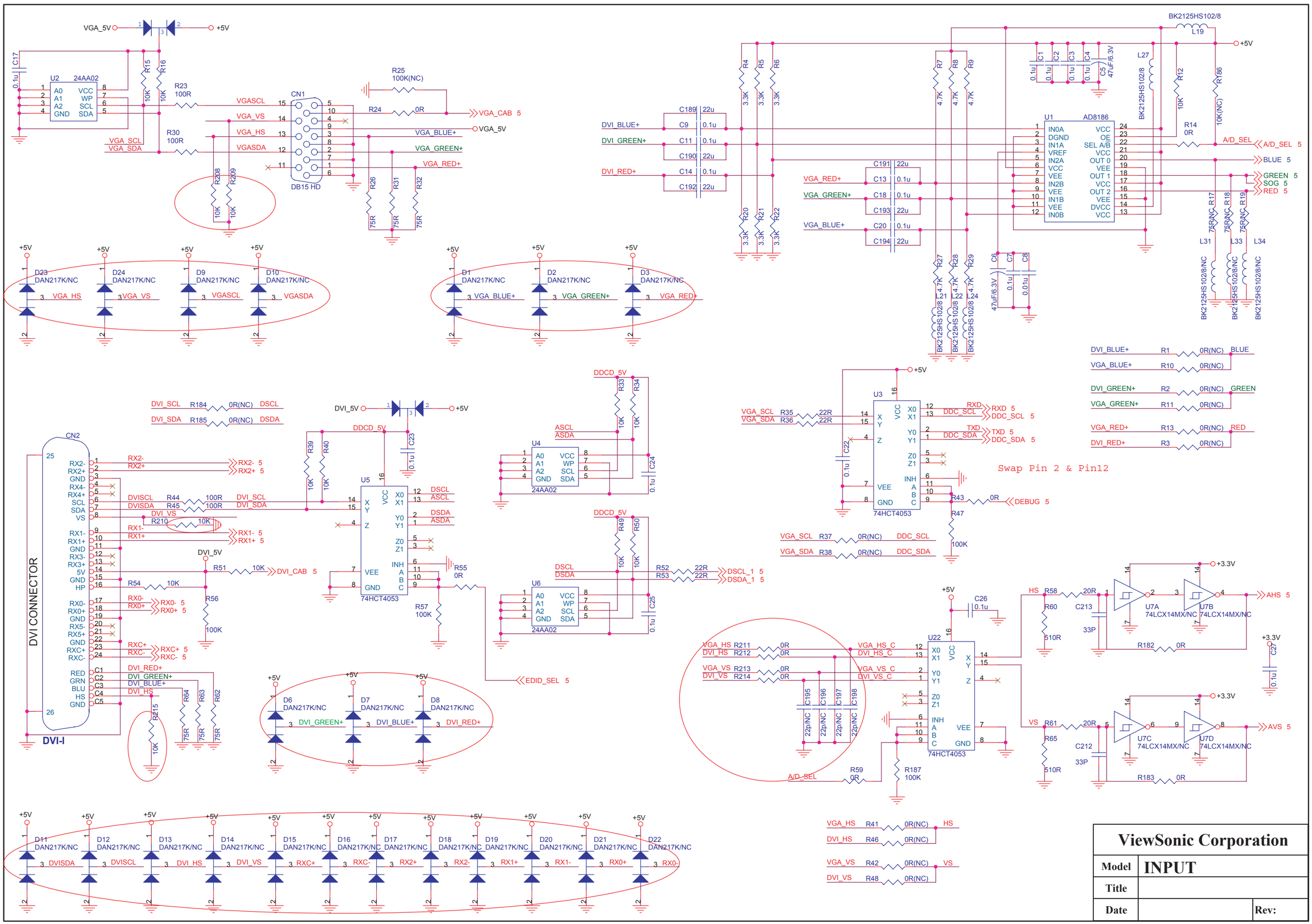
Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	CB-00004361	DDWCVPDV019	DVI cable	1
2	A-PC-0106-0224	DM333181G97	POWER CORD 3P 1.8M	1
3	CB-00004360	DD0M7TPC005	VGA CABLE	1
4	P-00004159	HAL0T002019	PE bag	1
5	P-00004429	HBLAVP01010	END CAP -L	1
6	#N/A	HBLAVP01016	END CAP R	1
7	M-LB-0813-0747	HCL7V004013	Core label	1
8	#N/A	HCLAVP01011	ID label	1
9	M-LB-0813-0745	HCL7V002011	S/N label	1
10	M-LB-0813-1042	HCL7V019011	Carton label	1
11	P-00004428	HFLAVP01013	Carton	1
12	DC-00004425	HGLAVP01014	CD+QSG	1
13	#N/A	JXLM5003011	Handle	1
14	M-00004427	JXLAVP01011	LCD film	1
15	#N/A	HFL0VP02017	Space Plate	1

9. Block Diagram



10. Schematic Diagrams

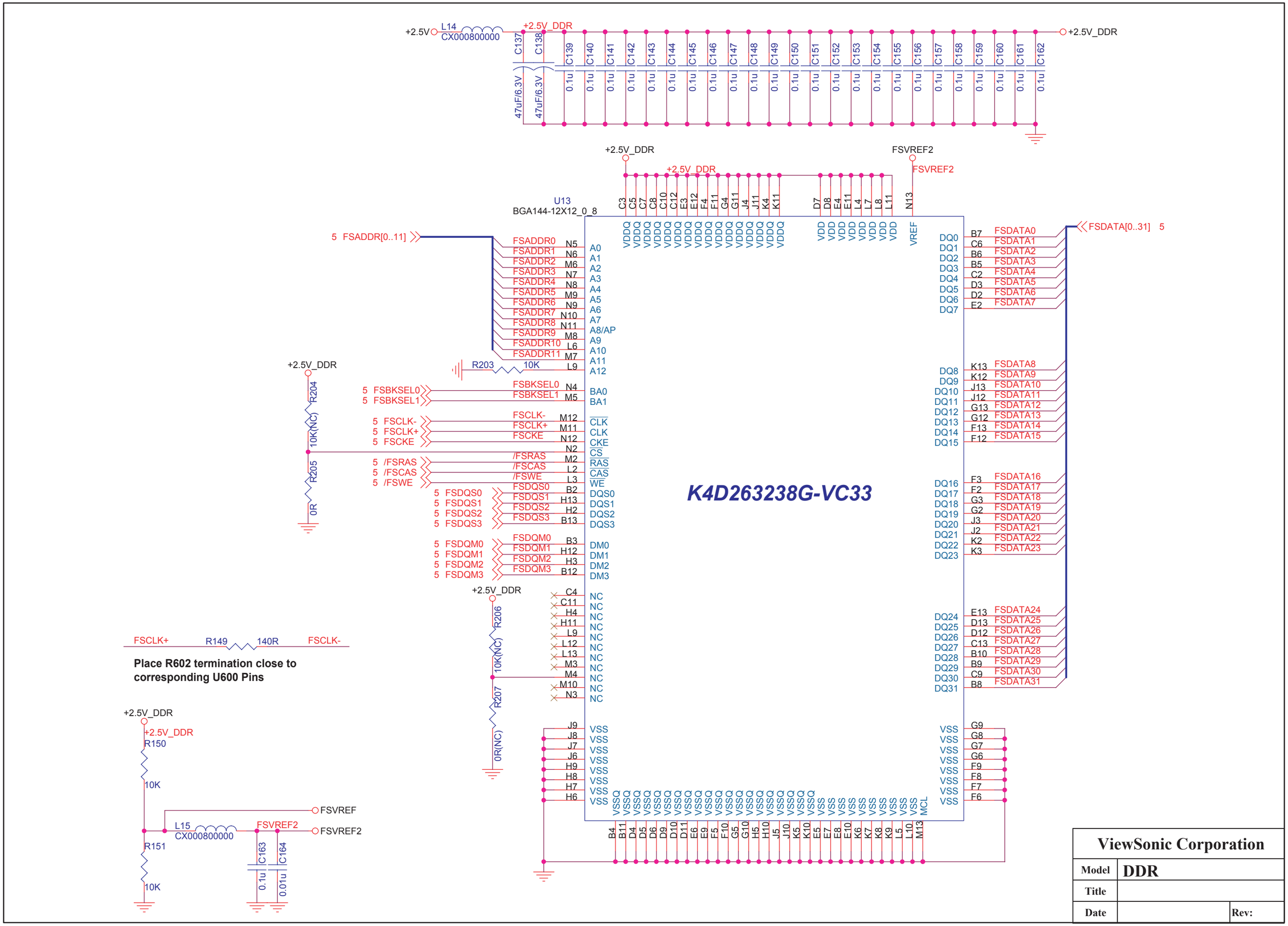



VGA_5V
+5V
U2 24AA02
C17 0.1u
R15 10K
R16 10K
R23 100R
R30 100R
VGA_SCL
VGA_SDA
VGASCL
VGA_VS
VGA_HS
VGASDA
CN1
DB15 HD
R25 100K(NC)
R24 0R
VGA_CAB 5
VGA_BLUE+
VGA_GREEN+
VGA_RED+
R208 10K
R209 10K
R26 75R
R31 75R
R32 75R
D23 DAN217K/NC
D24 DAN217K/NC
D9 DAN217K/NC
D10 DAN217K/NC
VGA_HS
VGA_VS
VGASCL
VGASDA
D1 DAN217K/NC
D2 DAN217K/NC
D3 DAN217K/NC
VGA_BLUE+
VGA_GREEN+
VGA_RED+
DVI_BLUE+
DVI_GREEN+
DVI_RED+
C189 22u
C9 0.1u
C11 0.1u
C190 22u
C14 0.1u
C192 22u
R4 3.3K
R5 3.3K
R6 3.3K
R20 3.3K
R21 3.3K
R22 3.3K
C191 22u
C13 0.1u
C18 0.1u
C193 22u
C20 0.1u
C194 22u
R7 4.7K
R8 4.7K
R9 4.7K
R27 4.7K
R28 4.7K
R29 4.7K
BK2125HS102/8
L19
L27
L31
L32
L34
L33
C1 0.1u
C2 0.1u
C3 0.1u
C4 0.1u
C5 47uF/6.3V
C6 47uF/6.3V
C7 0.1u
C8 0.01u
U1 AD8186
R12 10K
R186 10K(NC)
R14 0R
A/D_SEL
A/D_SEL 5
BLUE 5
GREEN 5
SOG 5
RED 5
R17 75R(NC)
R18 75R(NC)
R19 75R(NC)
DVI_SCL R184 0R(NC) DSCL
DVI_SDA R185 0R(NC) DSDA
CN2
DVI CONNECTOR
DVI-I
RX2- 5
RX2+ 5
RX1- 5
RX1+ 5
RX0- 5
RX0+ 5
RXC+ 5
RXC- 5
DVISCL
DVISDA
DVI_SCL
DVI_SDA
R44 100R
R45 100R
DVI_VS
R210 10K
DVI_CAB 5
R51 10K
R54 10K
R56 100K
R64 75R
R63 75R
R62 75R
R215 10K
DVI_5V
DDCD_5V
R39 10K
R40 10K
C23 0.1u
U5 74HCT4053
DSCL
DSDA
ASCL
ASDA
U4 24AA02
C24 0.1u
R33 10K
R34 10K
R49 10K
R50 10K
U6 24AA02
C25 0.1u
R52 22R
R53 22R
DSCL_1 5
DSDA_1 5
R55 0R
R57 100K
EDID_SEL 5
D6 DAN217K/NC
D7 DAN217K/NC
D8 DAN217K/NC
D11 DAN217K/NC
D12 DAN217K/NC
D13 DAN217K/NC
D14 DAN217K/NC
D15 DAN217K/NC
D16 DAN217K/NC
D17 DAN217K/NC
D18 DAN217K/NC
D19 DAN217K/NC
D20 DAN217K/NC
D21 DAN217K/NC
D22 DAN217K/NC
DVISDA
DVISCL
DVI_HS
DVI_VS
RXC+
RXC-
RX2+
RX2-
RX1+
RX1-
RX0+
RX0-
U3 74HCT4053
VGA_SCL R35 22R
VGA_SDA R36 22R
RXD
TXD
DDC_SCL
DDC_SDA
RXD 5
TXD 5
DDC_SCL 5
DDC_SDA 5
Swap Pin 2 & Pin12
R43 0R
DEBUG 5
R47 100K
VGA_SCL R37 0R(NC) DDC_SCL
VGA_SDA R38 0R(NC) DDC_SDA
DVI_BLUE+ R1 0R(NC) BLUE
VGA_BLUE+ R10 0R(NC)
DVI_GREEN+ R2 0R(NC) GREEN
VGA_GREEN+ R11 0R(NC)
VGA_RED+ R13 0R(NC) RED
DVI_RED+ R3 0R(NC)
U22
VGA_HS R211 0R
DVI_HS R212 0R
VGA_VS R213 0R
DVI_VS R214 0R
VGA_HS_C
DVI_HS_C
VGA_VS_C
DVI_VS_C
C195 22pNC
C196 22pNC
C197 22pNC
C198 22pNC
A/D_SEL
R59 0R
R187 100K
C26 0.1u
C27 0.1u
HS R58 20R
R60 510R
C213 33P
R182 0R
AHS 5
U7A 74LCX14MX/NC
U7B 74LCX14MX/NC
VS R61 20R
R65 510R
C212 33P
R183 0R
AVS 5
U7C 74LCX14MX/NC
U7D 74LCX14MX/NC
VGA_HS R41 0R(NC) HS
DVI_HS R46 0R(NC)
VGA_VS R42 0R(NC) VS
DVI_VS R48 0R(NC)
ViewSonic Corporation
Model INPUT
Title
Date
Rev:

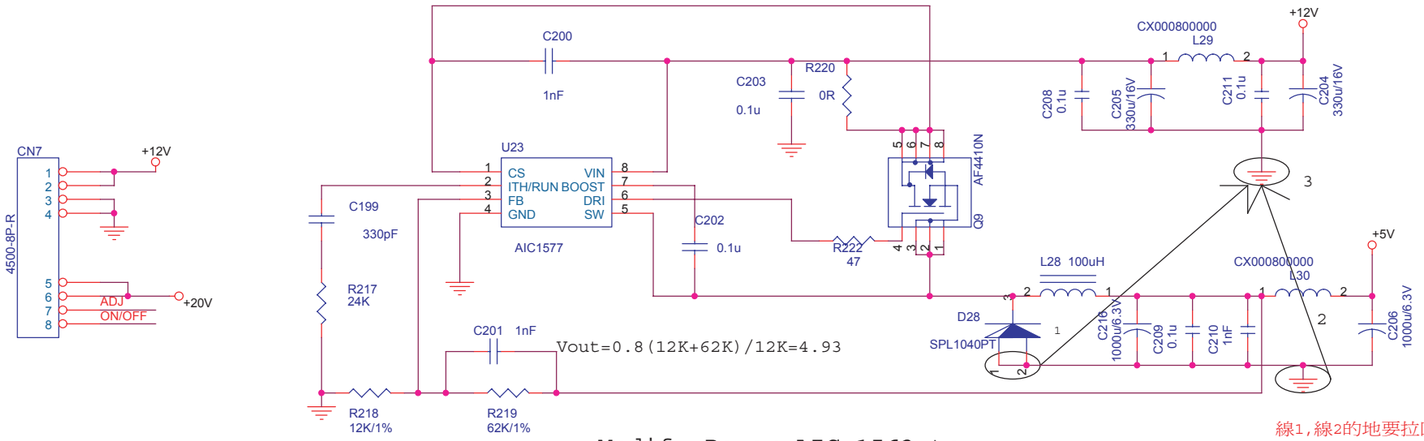
Gm1601

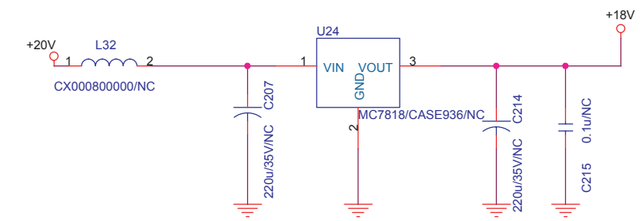
LCD TV / MONITOR CONTROLLER

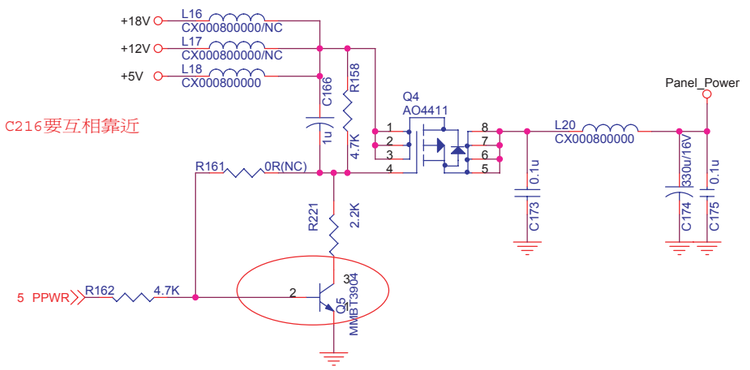
ViewSonic Corporation	
Model	**Controller**
Title	
Date	**Rev:**

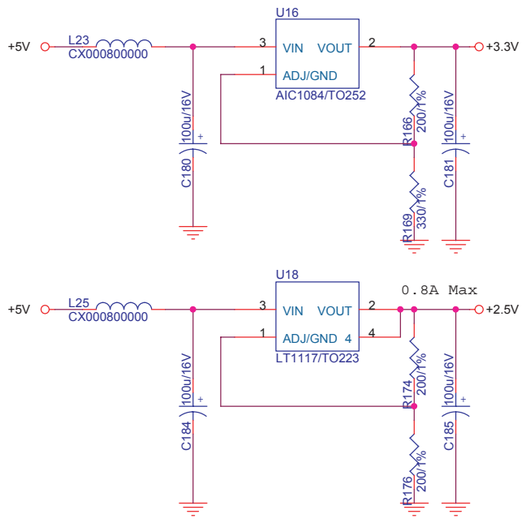


ViewSonic Corporation		
Model	DDR	
Title		
Date		Rev:

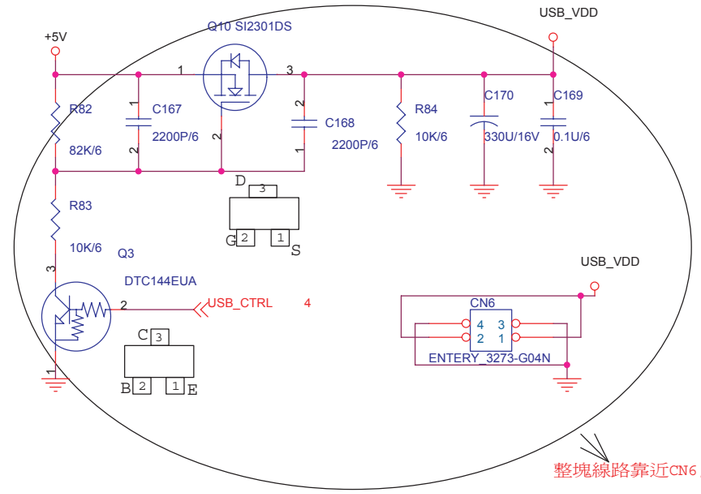






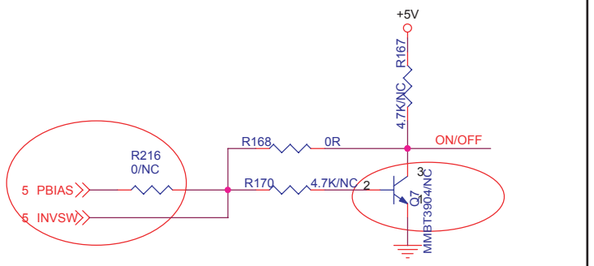


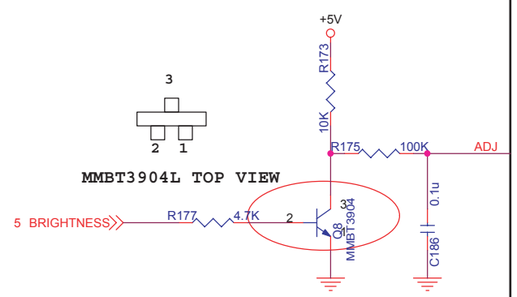
Modify Power AIC 1563 to
AIC 1577

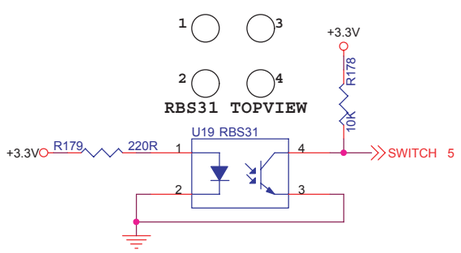


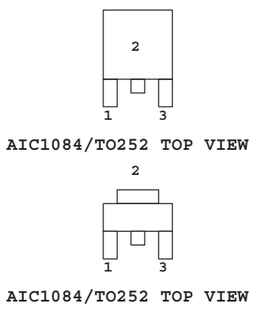
線1,線2的地要拉回點3,D28 L28 C216要互相靠近

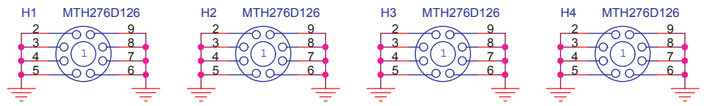
整塊線路靠近CN6,C169,C170更要靠近CN6







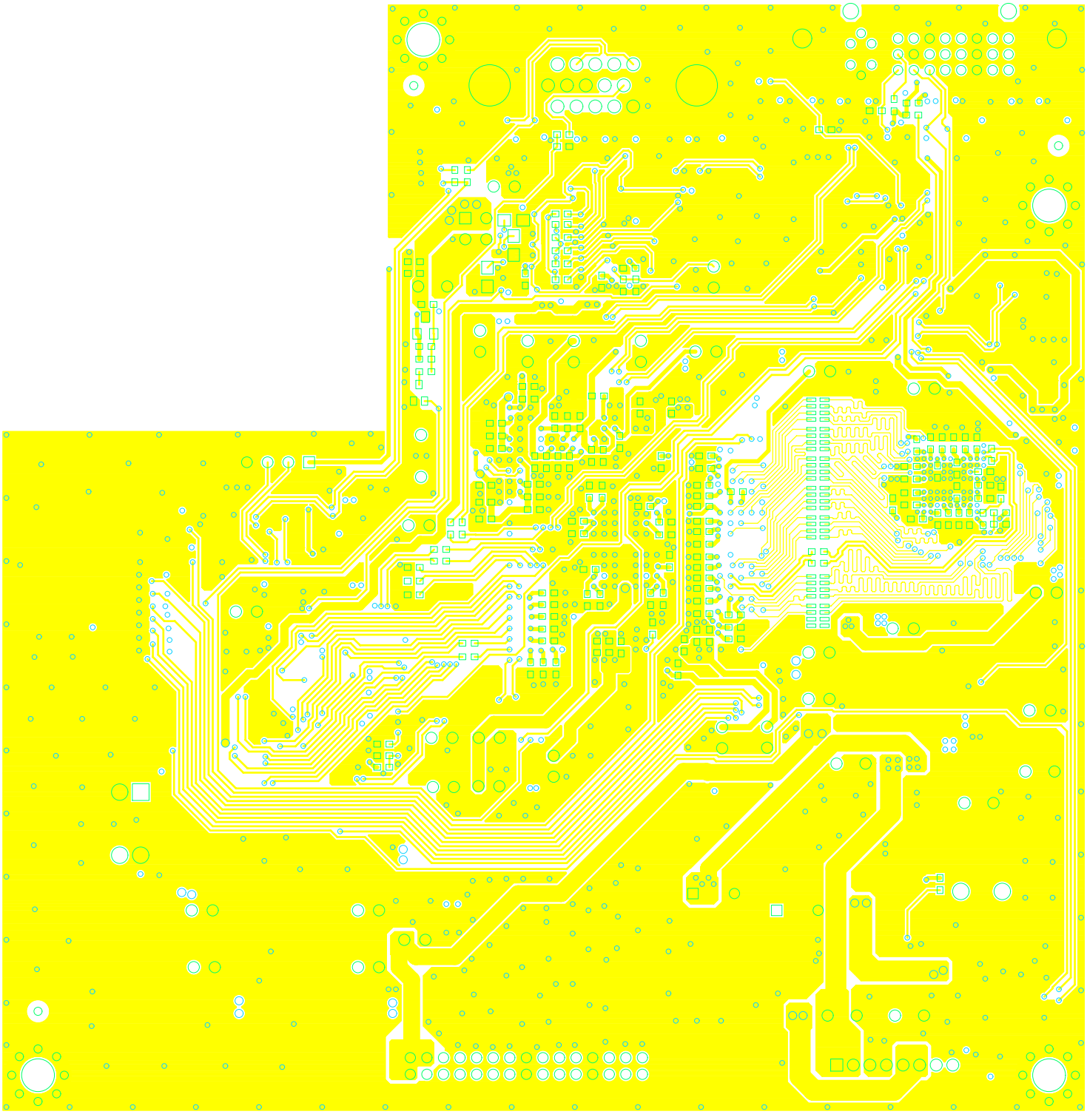




ViewSonic Corporation		
Model	POWER	
Title		
Date		Rev:

11. PCB Layout Diagrams

11.1 BOTTOM



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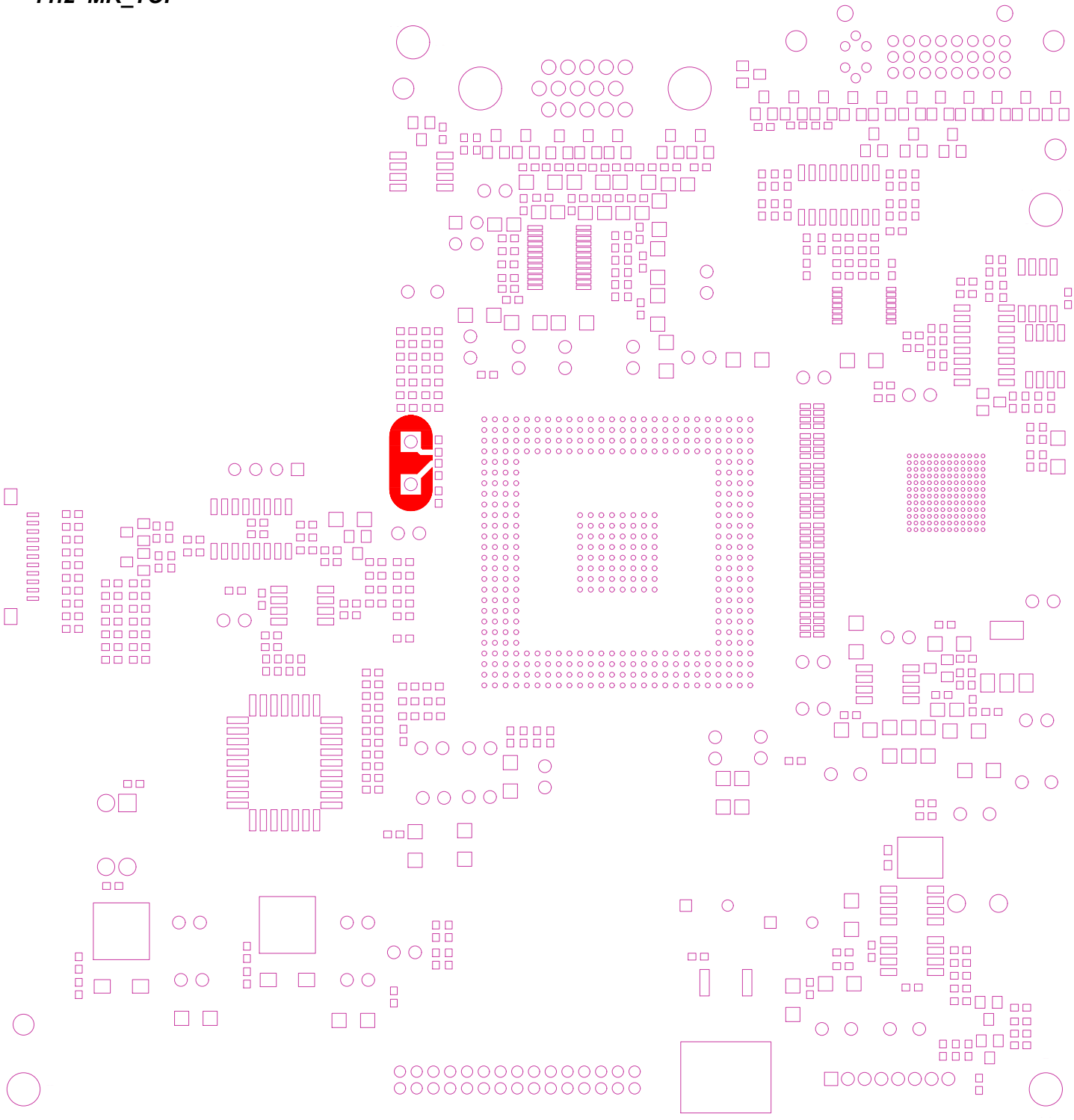
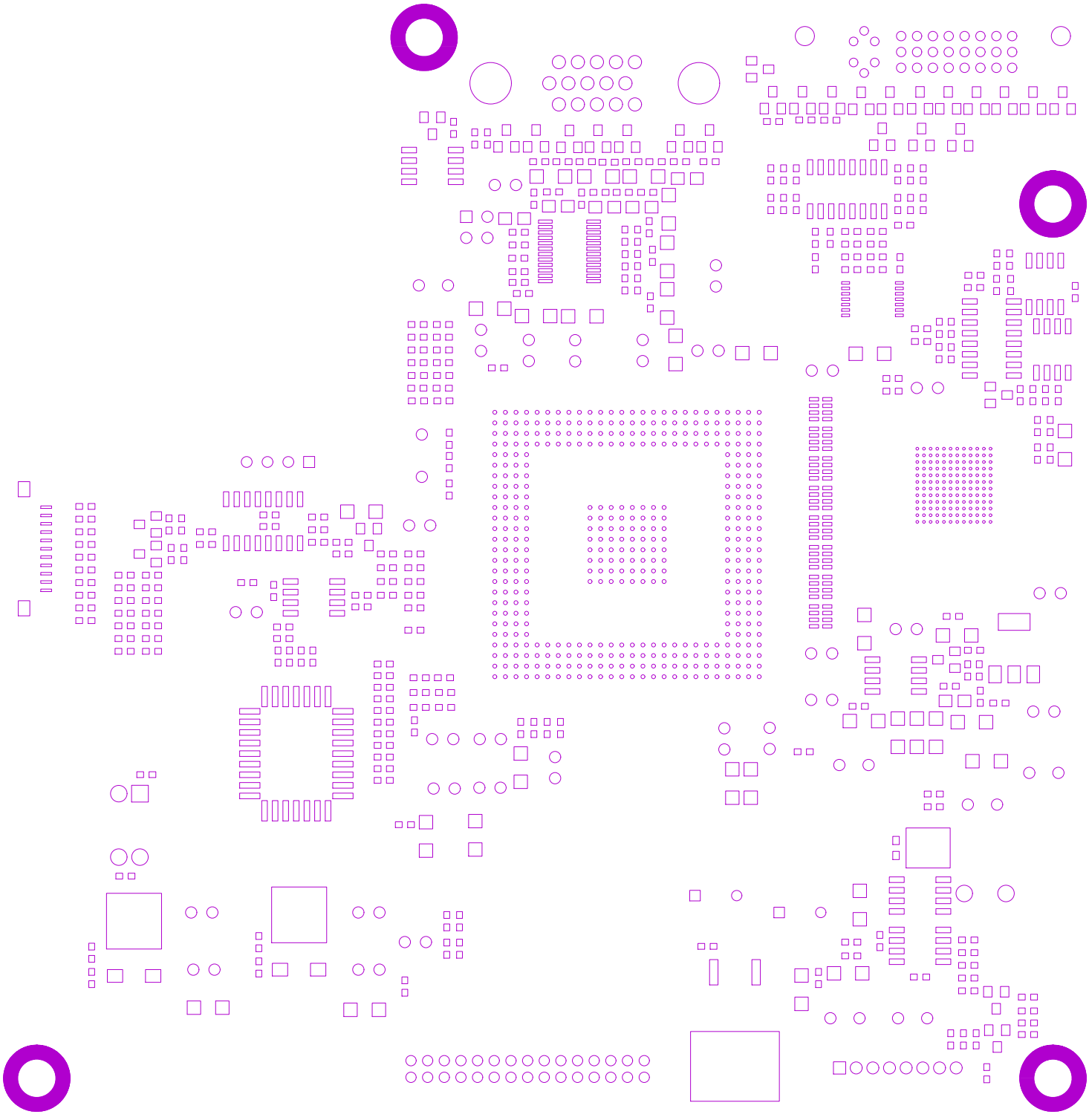
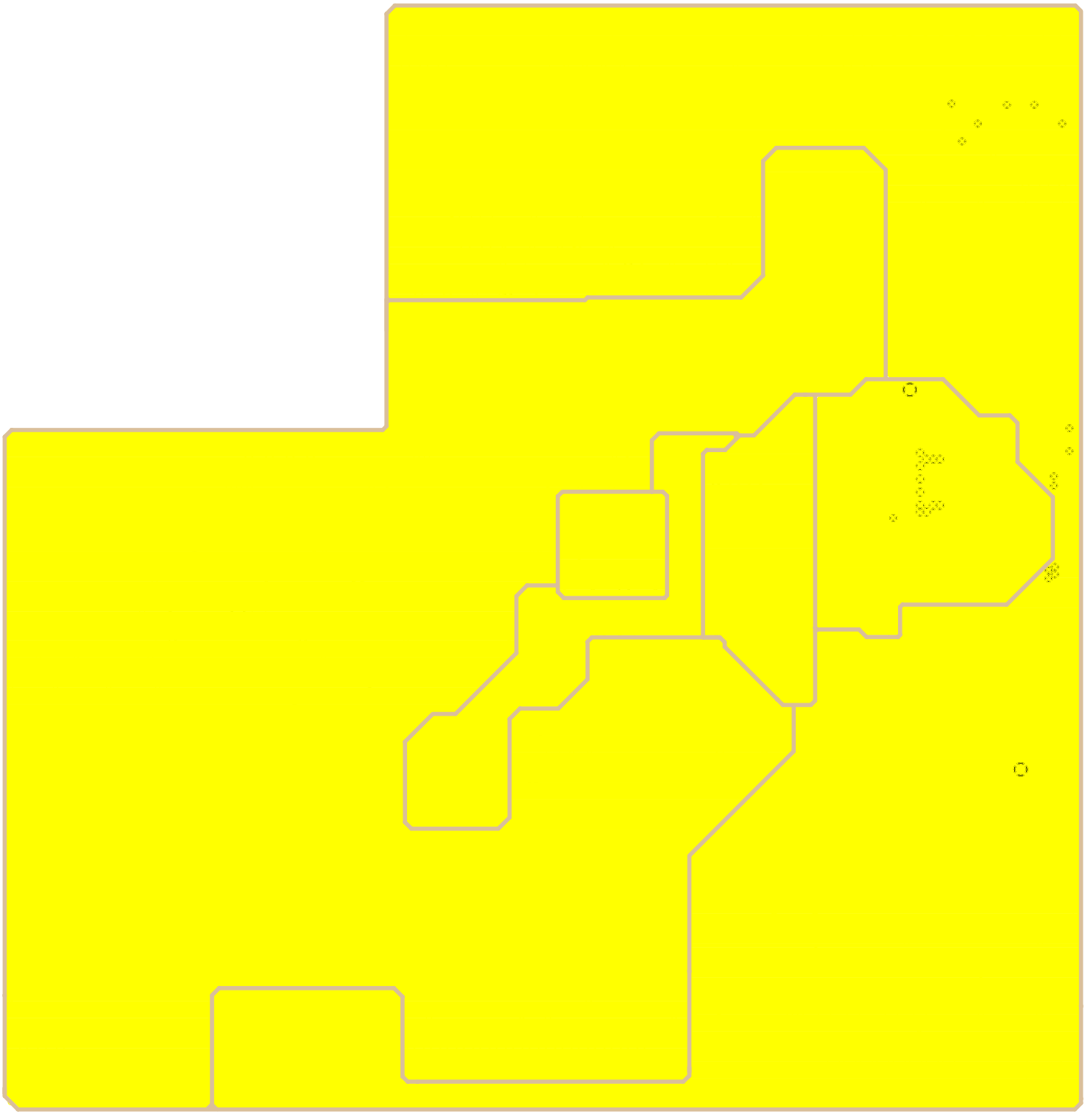


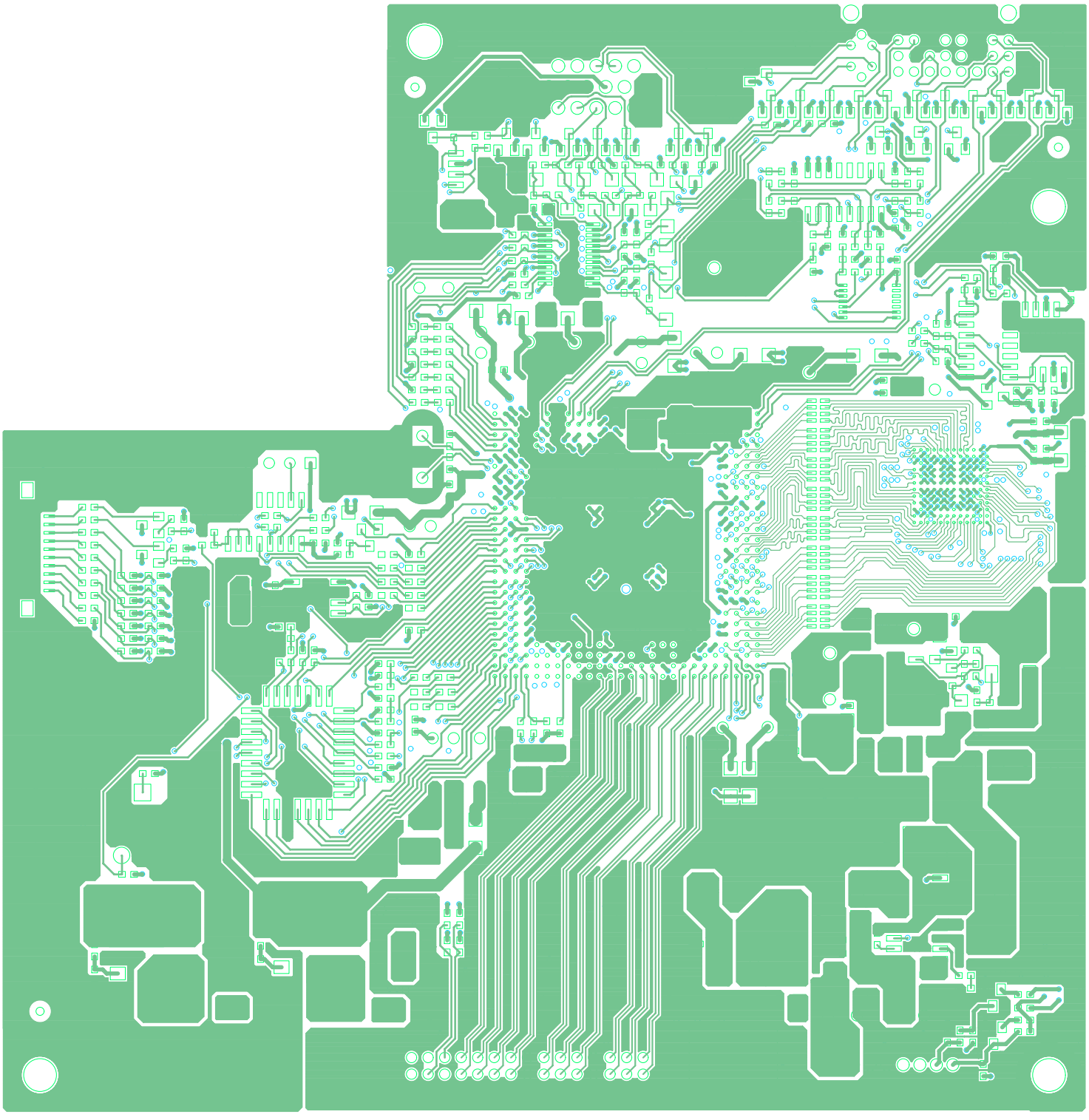
11.3 PAD_TOP



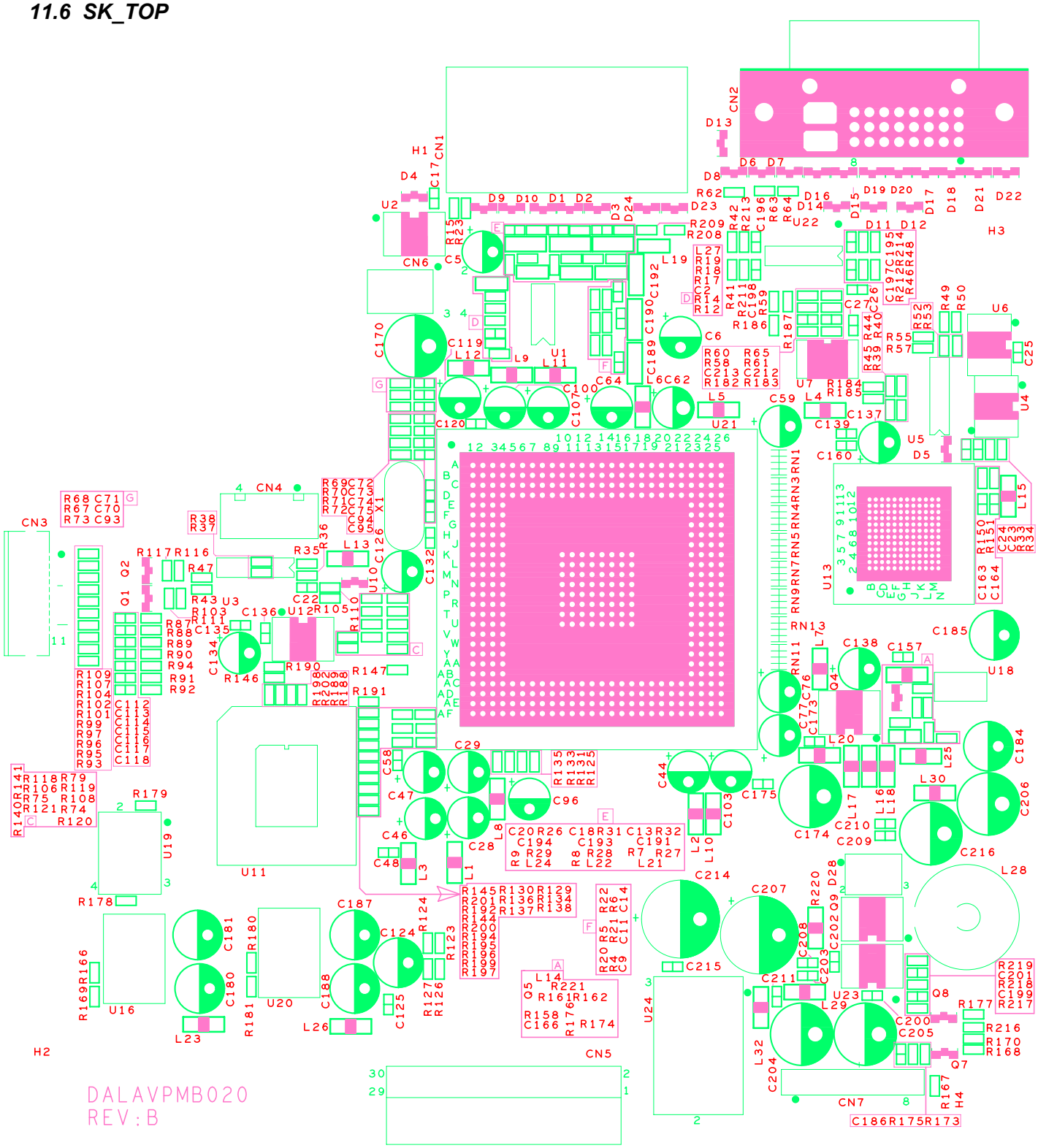
11.4 VCC



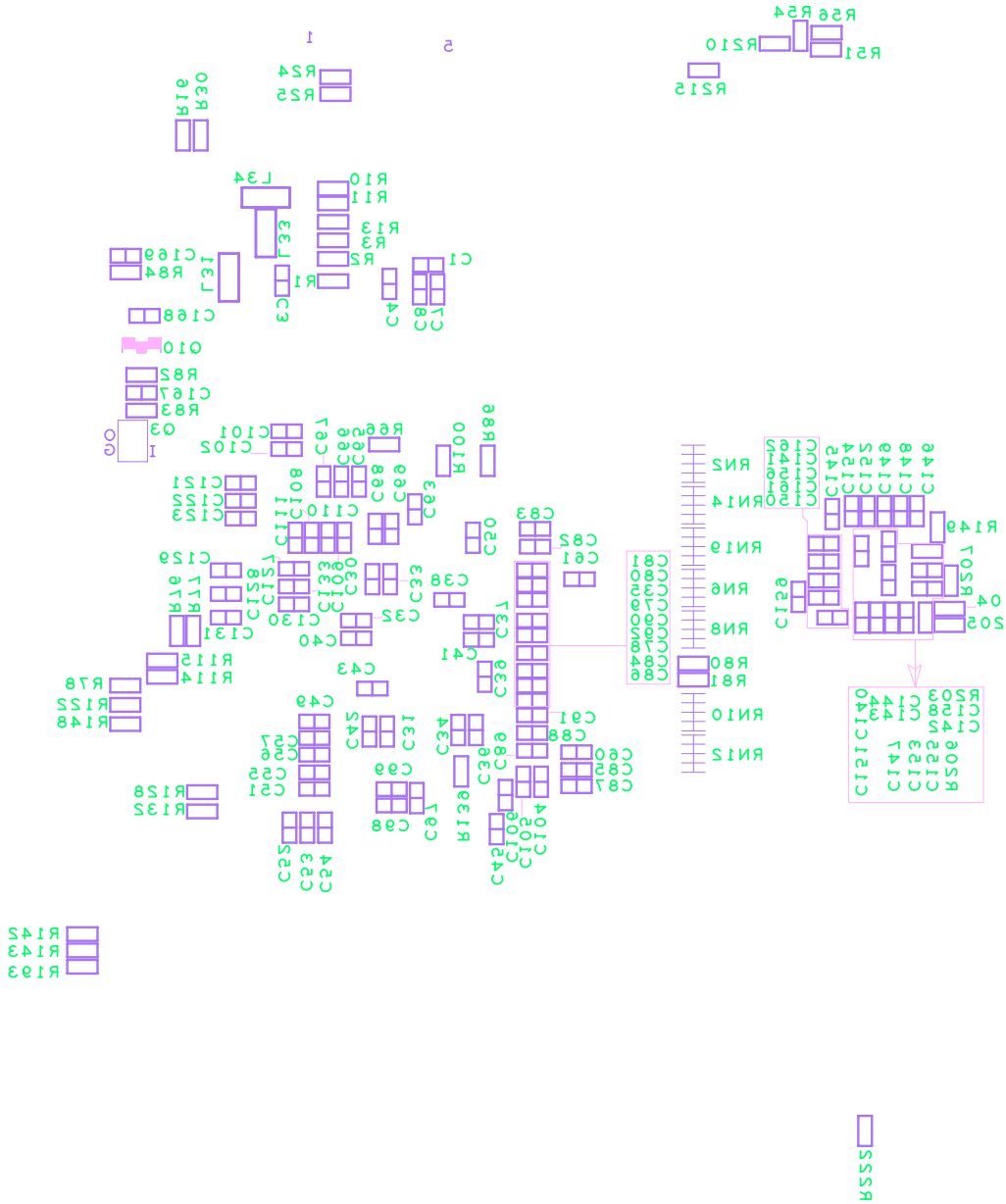
11.5 TOP



11.6 SK_TOP



11.7 SK_BOT



* Reader's Response*

Dear Readers:
Thank you in advance for your feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A. What do you think about the content of this Service Manual?

Unit	*Excellent*	*Good*	*Fair*	*Bad*
1. Precautions and Safety Notices				
2. Specification				
3. Front Panel Function Control Description				
4. Circuit Description				
5. Adjustment Procedure				
6. Troubleshooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram and Exploded Parts List				
9. Block Diagrams				
10. Schematic Diagrams				
11.PCB Layout Diagrams				

B. Are you satisfied with this Service Manual?

Item	*Excellent*	*Good*	*Fair*	*Bad*
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any other opinions or suggestions regarding this service manual?

Reader's basic dada:

Name:		Title:	
Company:			
Add:			
Tel:		Fax:	
E-mail:			

After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestions to the Director, Quality Systems & Processes (marc.maupin@viewsonic.com)