Service Manual

ViewSonic VP2330wb-1

Model No. VS10813-1W

23” Color TFT LCD Display

(VP2330wb_SM Rev. 1a Feb. 2006)

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Revision History

Revision	SM Editing Date	ECR Number	Description of Changes	Editor
1a	02/16/2006		Initial Release	Jamie Chang

TABLE OF CONTENTS

1. Precautions and Safety Notices

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.

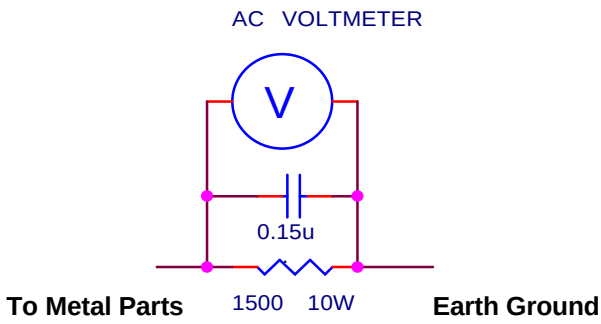
   4-2 Connect a 1500 ohm , 10 watt resistor , paralleled by a 0.15uF capacitor between each metallic part and a good earth ground

   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.

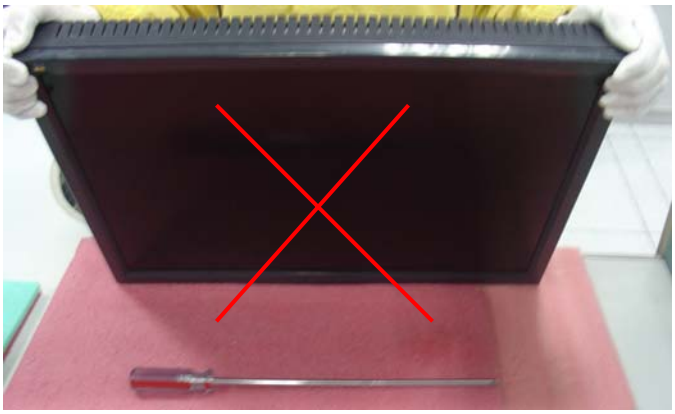
   4-5 Reverse the polarity of the AC plug in the AC outlet and repeat the above measurement.

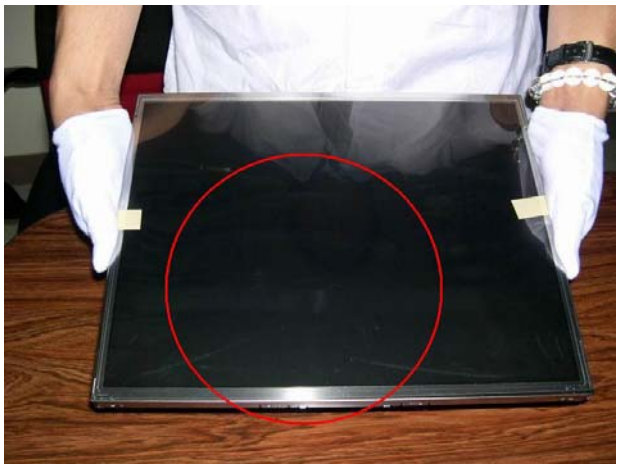
   4-6 Voltage measured must not exceed 1.5 volt RMS, from any exposed metallic part to the ground. A leakage current tester may be used in the above hot check, in which case any circuit measured must not exceed 1.0 milliamp. In the case of a measurement exceeding the 1.0 milliamp value, a rework is required to eliminate the chance of a shock hazard .



VP20”/21”/23”W series handling Notice

Correct Method	Incorrect method
	

Correct Method	Incorrect method
	

Correct Method	Incorrect method
	

Correct Method	Incorrect method
	

Correct Method	Incorrect method
	

2. Specification

GENERAL specification

Test Resolution & Frequency	1920x1200 @ 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-1 = 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, 640 x 870, 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 ADP-120UB B
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	TBD 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 < 81 W (Typ) / 85 W (max) Active Off < 4 W
Recovery Time	On Mode = N/A, Active Off < 3 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 -	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 (primary = 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 (primary = 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 (primary = 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 (primary = 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 (primary = 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 (primary = 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 (primary = 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 $\geqq$ ±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

1920x1200 @ 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

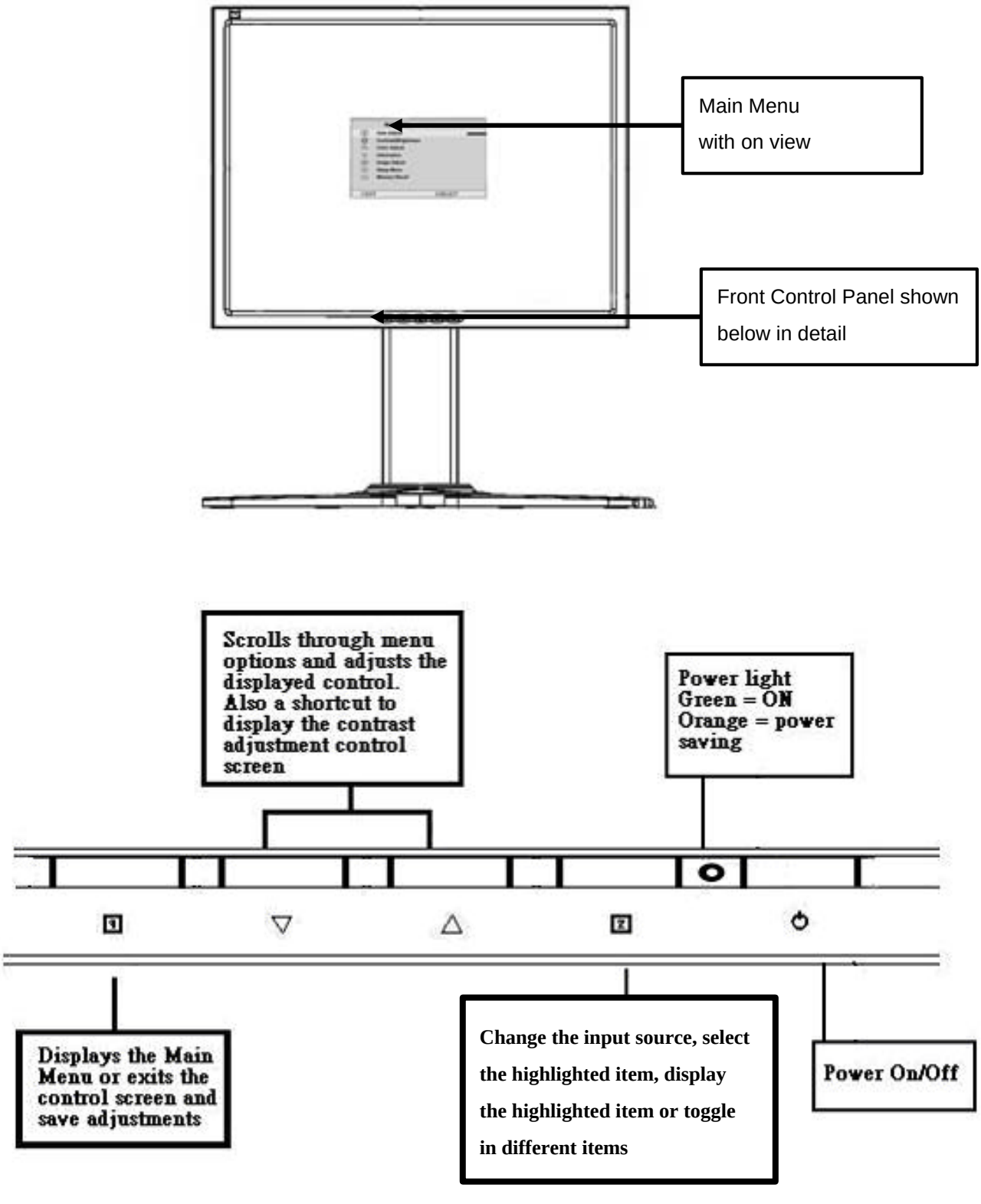
The panel code “A” for AUO panel should be shown on following position,

(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 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.

4. Circuit Description

1. Outline

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

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

1.3 OSD menu includes the following function;

Auto Image Adjust (only active under analog input)

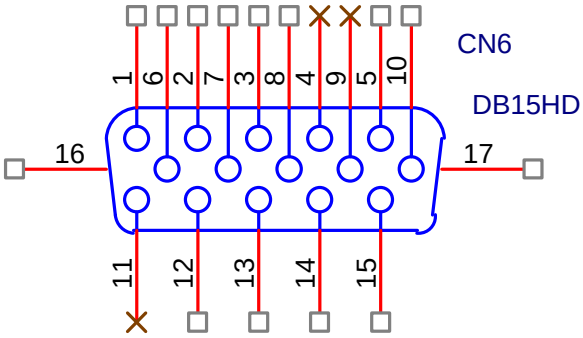
- **Contrast/Brightness**
- **Input Select**
- **Color Adjust**
- **Information**
- **Manual Image Adjust**
- **Setup Menu**
- **Memory Recall**

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

2. Connectors

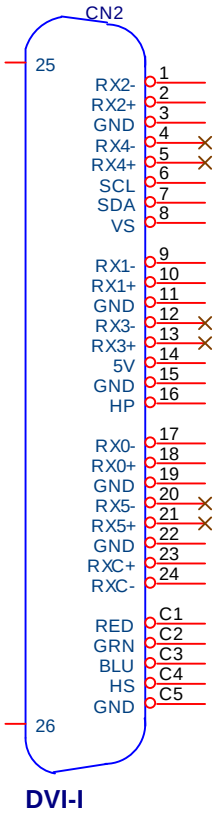
2.1 AC inlet : CEE22 typed connector

2.2 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

2.3 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

3.1 Standard conditions

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

3.2 POWER

3.2.1 Power supply

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

3.2.2 Power Management

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

3.3 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

3.4 Signal level and input impedance

3.4.1 Video Signal level: 0.7Vp-p Video signal.

3.4.2 Sync Signal level

H/V Separate: TTL level

3.4.3 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

VIEWSONIC CORPORATION
EDID Version # 1, Revision # 3
DDCTest For: ViewSonic VP2330wb

EDID Block 0, Bytes 0-127

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	3C	01	01	01	01	01	0F	01	03
20	0E	32	1F	78	2E	EC	11	A3	54	47
30	9B	25	13	50	54	BF	EF	F0	D1	00
40	B3	00	A9	40	90	40	81	80	81	40
50	71	4F	01	01	28	3C	80	A0	70	B0
60	23	40	30	20	36	00	EF	36	11	00
70	00	1A	00	00	00	FF	00	50	55	35
80	30	35	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	4B	1E	52	11
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	50	32	33	33	30	77
120	62	0A	20	20	20	20	00	BA		

(08-09) ID Manufacturer Name _____ = VSC
(11-10) Product ID Code _____ = 3C1C
(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 _____ = 500 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 - 0.640 Green X - 0.280 Blue X - 0.145 White X - 0.313
Red Y - 0.330 Green Y - 0.605 Blue Y - 0.075 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:

1920 X 1200 @60Hz
1680 X 1050 @60Hz
1600 X 1200 @60Hz
1400 X 1050 @60Hz
1280 X 1024 @60Hz
1280 X 960 @60Hz
1152 X 864 @75Hz
Not Used

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

1920x1200 Pixel Clock: 154.00 MHz

Horizontal Image Size: 495 mm Vertical Image Size: 310 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1920 pixels Blanking Time: 160 pixels

Sync Offset: 48 pixels Sync Pulse Width: 32 pixels
Border: 0 pixels Frequency: 74.04 KHz

Vertical:
Active Time: 1200 lines Blanking Time: 35 lines
Sync Offset: 3 lines Sync Pulse Width: 6 lines
Border: 0 lines Frequency: 59.95 Hz

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

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

Monitor Serial Number:
PU5050100001

(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 - 82 KHz
Pixel Clock - 170 MHz
Secondary GTF - Not Supported

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

Monitor Name:
VP2330wb

(126) No Extension EDID Block(s)
(127) CheckSum OK

Digital

VIEWSONIC CORPORATION
EDID Version # 1, Revision # 3
DDCTest For: ViewSonic VP2330wb

EDID Block 0, Bytes 0-127
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	3C	01	01	01	01	01	0F	01	03
20	80	32	1F	78	2E	EC	15	A3	54	47
30	9B	25	13	50	54	BF	EF	80	D1	00
40	B3	00	A9	40	90	40	81	80	81	40
50	71	4F	31	0A	28	3C	80	A0	70	B0
60	23	40	30	20	36	00	EF	36	11	00
70	00	1A	00	00	00	FF	00	50	55	35
80	30	35	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	4B	1E	52	11
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	50	32	33	33	30	77
120	62	0A	20	20	20	20	01	7A		

(08-09) ID Manufacturer Name _____ = VSC
(11-10) Product ID Code _____ = 3C1C
(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 _____ = 500 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 - 0.640 Green X - 0.280 Blue X - 0.145 White X - 0.313
        Red Y - 0.330 Green Y - 0.605 Blue Y - 0.075 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:
        1920 X 1200 @60Hz
        1680 X 1050 @60Hz
        1600 X 1200 @60Hz
        1400 X 1050 @60Hz
        1280 X 1024 @60Hz
        1280 X 960 @60Hz
        1152 X 864 @75Hz
        640 X 400 @70Hz
_____________________________________________________________________

(54-71) Detailed Timing / Descriptor Block 1:
                1920x1200  Pixel Clock: 154.00 MHz
_____________________________________________________________________

        Horizontal Image Size: 495 mm    Vertical Image Size: 310 mm
        Refreshed Mode: Non-Interlaced   Normal Display - No Stereo

Horizontal:
        Active Time: 1920 pixels        Blanking Time: 160 pixels
        Sync Offset: 48 pixels          Sync Pulse Width: 32 pixels
        Border: 0 pixels               Frequency: 74.04 KHz
```

Vertical:

Active Time: 1200 lines Blanking Time: 35 lines

Sync Offset: 3 lines Sync Pulse Width: 6 lines

Border: 0 lines Frequency: 59.95 Hz

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

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

Monitor Serial Number:

PU5050100001

(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 - 82 KHz

Pixel Clock - 170 MHz

Secondary GTF - Not Supported

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

Monitor Name:

VP2330wb

(126) Extension EDID Block(s): 1

(127) CheckSum OK

VIEWSONIC CORPORATION

EDID CEA-861B Timing Extension Version 3

EDID Block 1, Bytes 128-255

Block Type: CEA EDID Timing Extension

	0	1	2	3	4	5	6	7	8	9
0	02	03	0D	01	48	90	05	04	03	1F
10	14	13	12	02	3A	80	18	71	38	2D
20	40	58	2C	45	00	EF	36	11	00	00
30	1F	01	1D	00	72	51	D0	1E	20	6E
40	28	55	00	EF	36	11	00	00	1F	8F
50	0A	D0	8A	20	E0	2D	10	10	3E	96
60	00	EF	36	11	00	00	19	01	1D	80
70	18	71	1C	16	20	58	2C	25	00	EF
80	36	11	00	00	9F	01	1D	00	BC	52
90	D0	1E	20	B8	28	55	40	EF	36	11
100	00	00	1E	8C	0A	D0	90	20	40	31
110	20	0C	40	55	00	EF	36	11	00	00
120	18	00	00	00	00	00	00	87		

---

(2)Detailed Timing Start at - 13

(3)DTV Does Not Support Underscan, DTV Does Not Support Basic Audio , DTV Does Not Support YCbCr 4:4:4, DTV Does Not Support YCbCr 4:2:2 , Native Format: 1

(4)Video Data Block/Short Video Descriptors, Number of Data Byte to Follow: 8

(5) 1920x1080p 59.94/60Hz 16:9 New Native

(6) 1920x1080i 59.94/60Hz 16:9 861

(7) 1280x720p 59.94/60Hz 16:9 861

(8) 720x480p 59.94/60Hz 16:9 861

(9) 1920x1080p 50Hz 16:9 New

(10) 1920x1080i 50Hz 16:9 861A

(11) 1280x720p 50Hz 16:9 861A

(12) 720x576p 50Hz 16:9 861A

(13-30) Detailed Timing / Descriptor Block 1:

1920x1080p Pixel Clock: 148.50 MHz

Horizontal Image Size: 495 mm Vertical Image Size: 310 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1920 pixels Blanking Time: 280 pixels
Sync Offset: 88 pixels Sync Pulse Width: 44 pixels
Border: 0 pixels Frequency: 67.50 KHz

Vertical:
Active Time: 1080 lines Blanking Time: 45 lines
Sync Offset: 4 lines Sync Pulse Width: 5 lines
Border: 0 lines Frequency: 60.00 Hz

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

(31-48) Detailed Timing / Descriptor Block 2:
1280x720p Pixel Clock: 74.25 MHz

Horizontal Image Size: 495 mm Vertical Image Size: 310 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:
Active Time: 1280 pixels Blanking Time: 370 pixels
Sync Offset: 110 pixels Sync Pulse Width: 40 pixels
Border: 0 pixels Frequency: 45.00 KHz

Vertical:
Active Time: 720 lines Blanking Time: 30 lines
Sync Offset: 5 lines Sync Pulse Width: 5 lines
Border: 0 lines Frequency: 60.00 Hz

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

(49-66) Detailed Timing / Descriptor Block 3:
720x480p Pixel Clock: 27.03 MHz

Horizontal Image Size: 495 mm Vertical Image Size: 310 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:
Active Time: 720 pixels Blanking Time: 138 pixels
Sync Offset: 16 pixels Sync Pulse Width: 62 pixels
Border: 0 pixels Frequency: 31.50 KHz

Vertical:

Active Time: 480 lines Blanking Time: 45 lines

Sync Offset: 9 lines Sync Pulse Width: 6 lines

Border: 0 lines Frequency: 60.01 Hz

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

(67-84) Detailed Timing / Descriptor Block 4:

1920x1080i Pixel Clock: 74.25 MHz

Horizontal Image Size: 495 mm Vertical Image Size: 310 mm

Refreshed Mode: Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1920 pixels Blanking Time: 280 pixels

Sync Offset: 88 pixels Sync Pulse Width: 44 pixels

Border: 0 pixels Frequency: 33.75 KHz

Vertical:

Active Time: 540 lines Blanking Time: 22 lines

Sync Offset: 2 lines Sync Pulse Width: 5 lines

Border: 0 lines Frequency: 60.05 Hz

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

(85-102) Detailed Timing / Descriptor Block 5:

1280x720p Pixel Clock: 74.25 MHz

Horizontal Image Size: 495 mm Vertical Image Size: 310 mm

Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:

Active Time: 1280 pixels Blanking Time: 700 pixels

Sync Offset: 440 pixels Sync Pulse Width: 40 pixels

Border: 0 pixels Frequency: 37.50 KHz

Vertical:

Active Time: 720 lines Blanking Time: 30 lines

Sync Offset: 5 lines Sync Pulse Width: 5 lines

Border: 0 lines Frequency: 50.00 Hz

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

(103-120) Detailed Timing / Descriptor Block 6:
720x576p Pixel Clock: 27.00 MHz

Horizontal Image Size: 495 mm Vertical Image Size: 310 mm
Refreshed Mode: Non-Interlaced Normal Display - No Stereo

Horizontal:
Active Time: 720 pixels Blanking Time: 144 pixels
Sync Offset: 12 pixels Sync Pulse Width: 64 pixels
Border: 0 pixels Frequency: 31.25 KHz

Vertical:
Active Time: 576 lines Blanking Time: 49 lines
Sync Offset: 5 lines Sync Pulse Width: 5 lines
Border: 0 lines Frequency: 50.00 Hz

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

(121-126) No Data:
(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… Gm1601H(U21)

The heart of the system board is the Realtek Gm1601H. The Gm1601H 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 Gm1601H chip has three ADC's (analog-to-digital converters), one for each color (red, green and blue) .The analog RGB signals are connected to Gm1601H 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 Gm1601H 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 Gm1601H 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 substitute 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. Adjustment 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

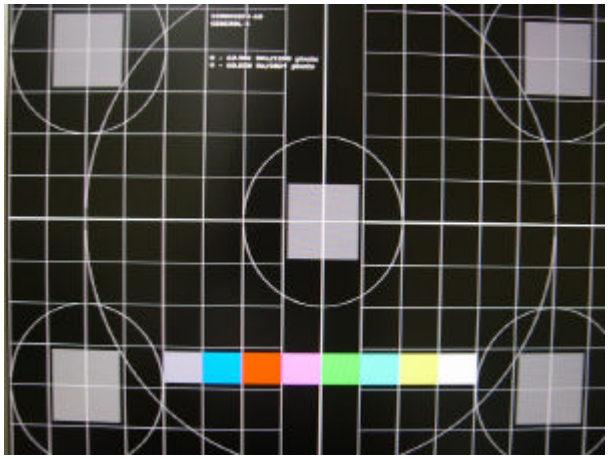
Number of User Presets (recognized timings) Available: 10 presets total in FIFO configuration

Changing Modes

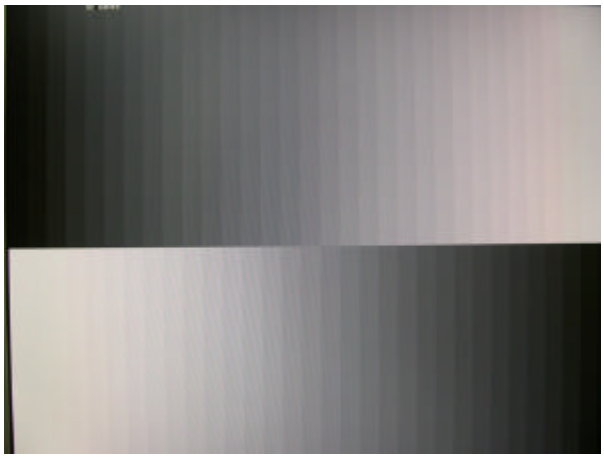
- Maximum Mode Change Blank Time for image stability : 3 seconds (Max), excluding “Auto Adjust” time
- Under DOS mode (640 x 350, 720 x 400 & 640 x 400), it should recall factory setting when execute “Auto Adjust”
- The monitor needs to do “Auto Adjust” the first time a new mode is detected (see section “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

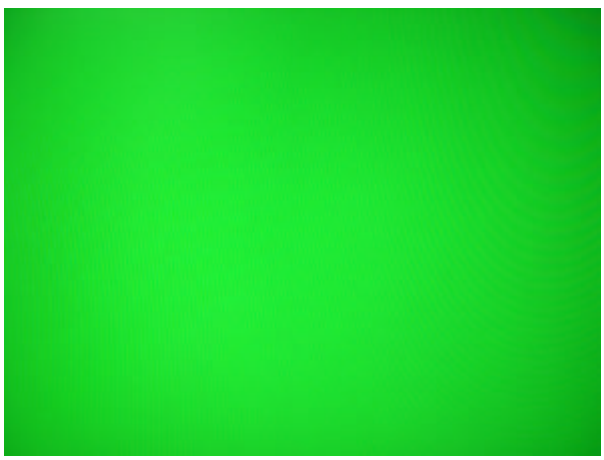


Pattern 1

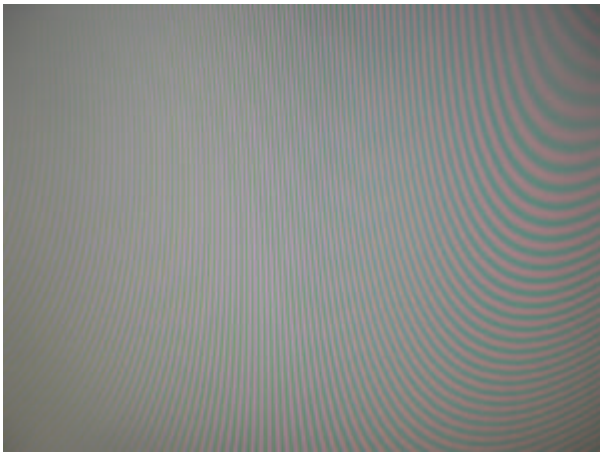
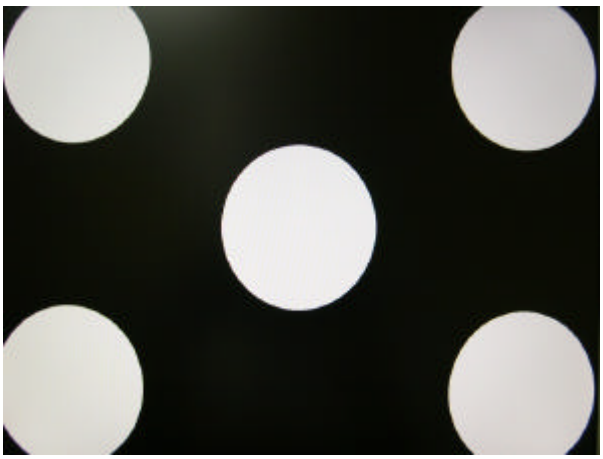


Pattern2

Pattern 3



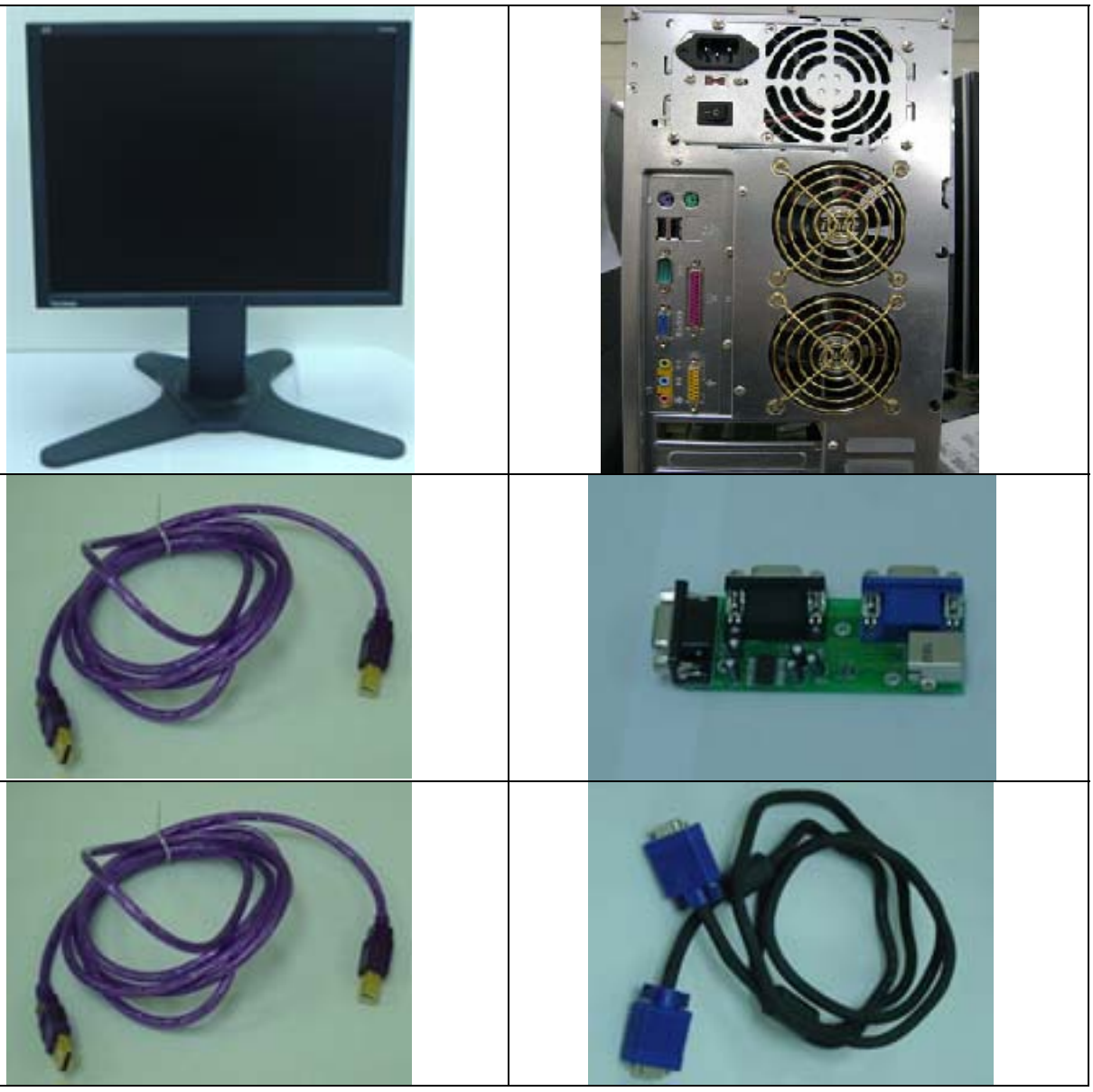
Pattern4

 Pattern 5	 Pattern6
 Pattern 7	 Pattern 8
 Pattern 9	

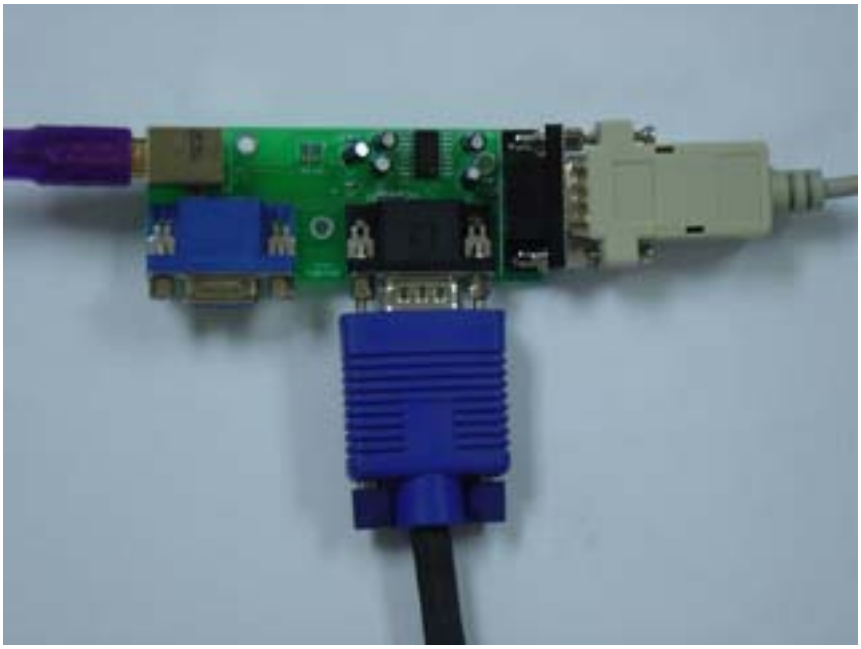
Firmware update procedure :

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 :
   - VP2330wb
   - 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. VP2330wb 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

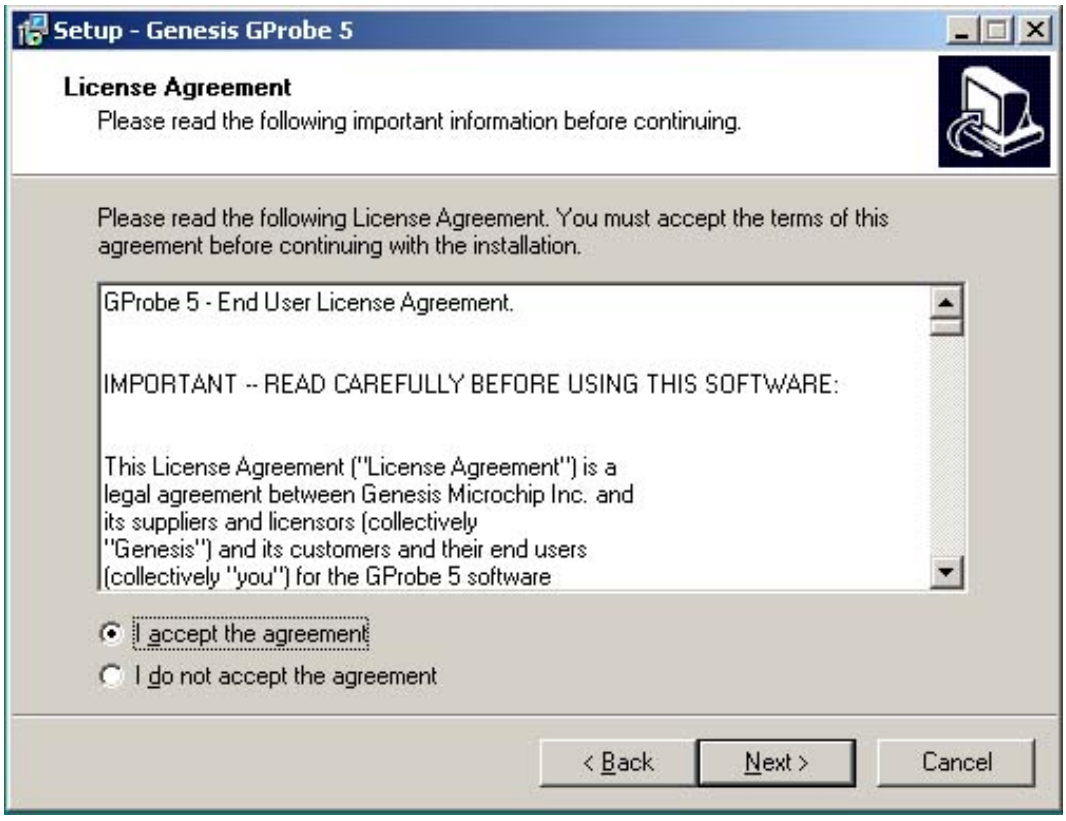


Fig. 0.2

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

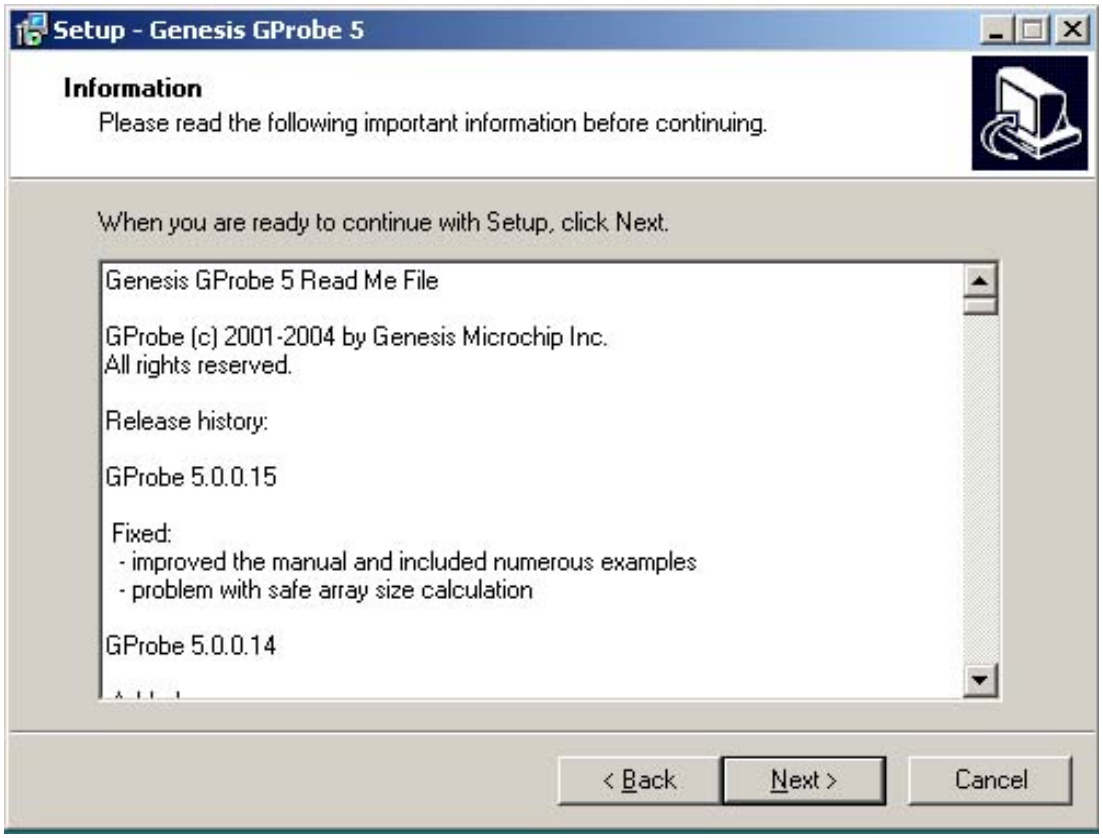


Fig. 0.3

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

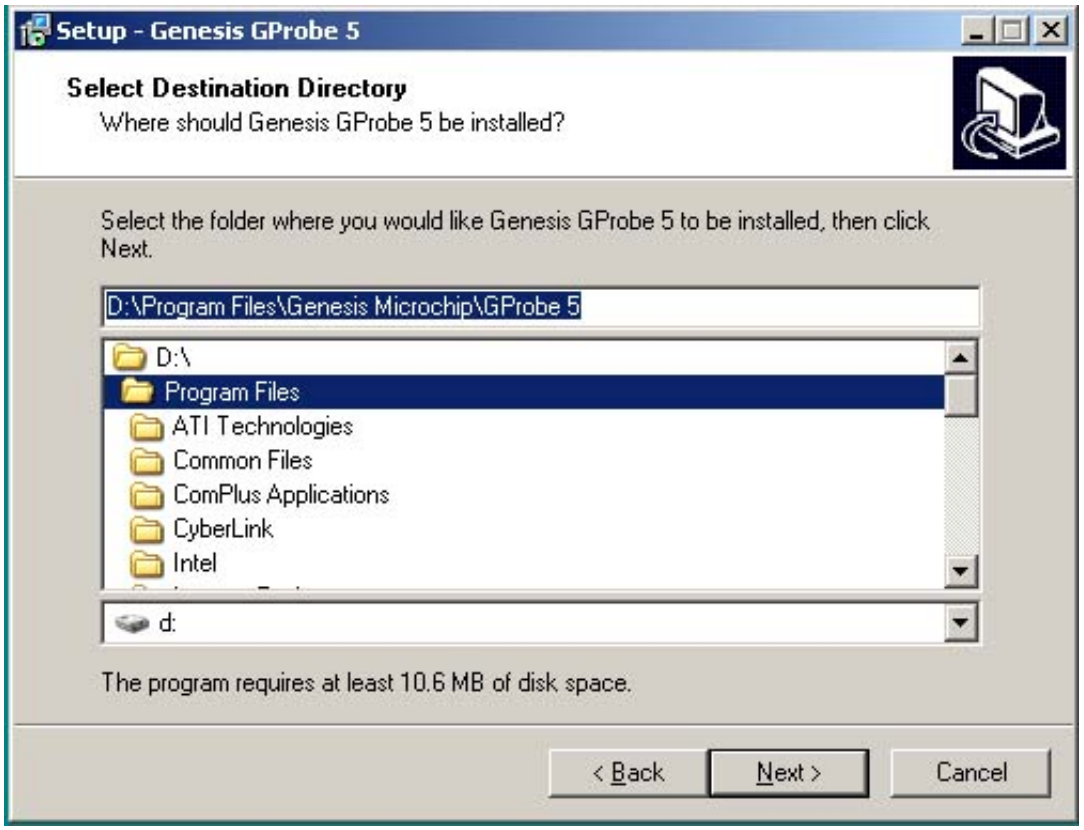


Fig. 0.4

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

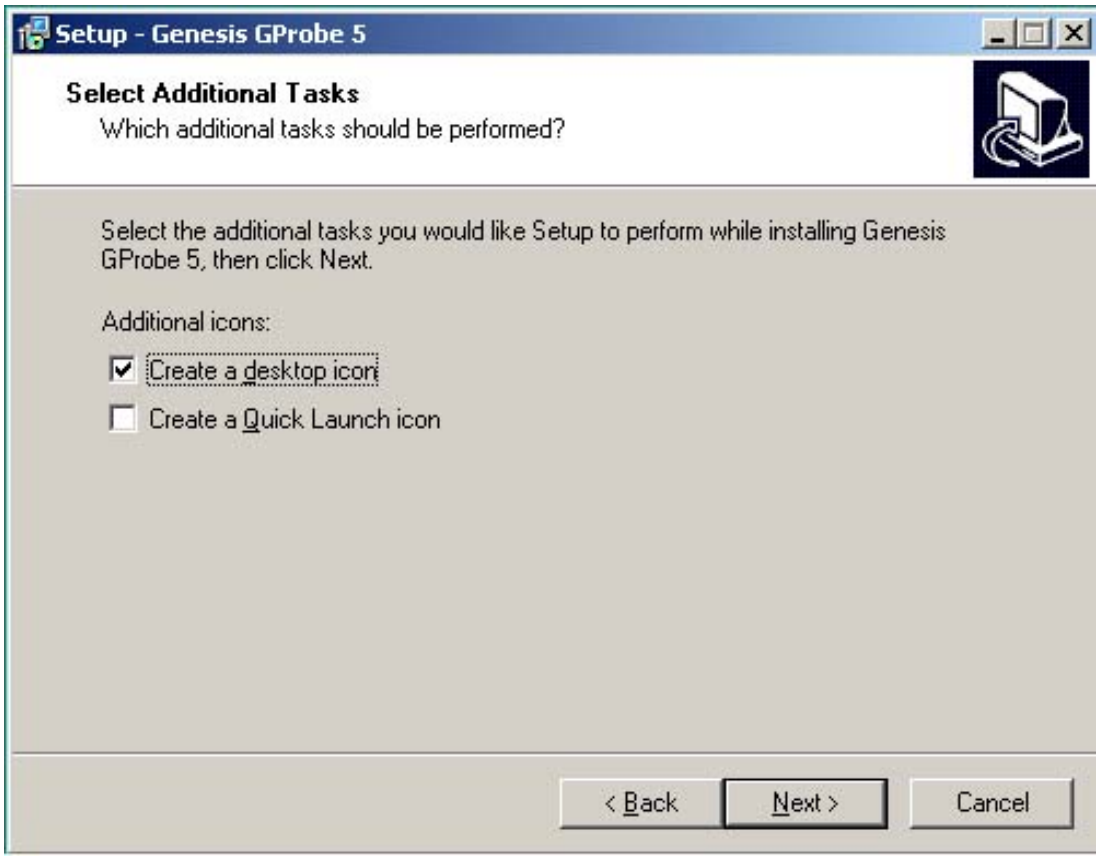


Fig. 0.5

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

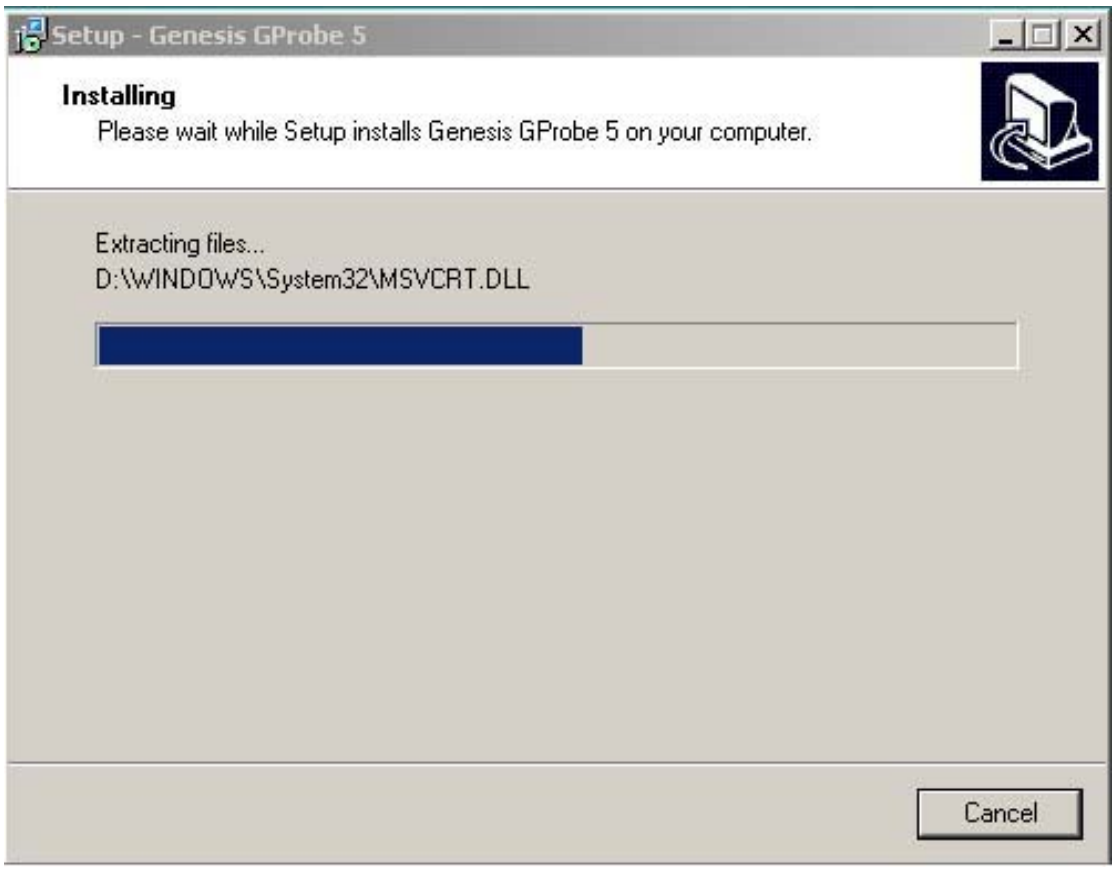


Fig. 0.6

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

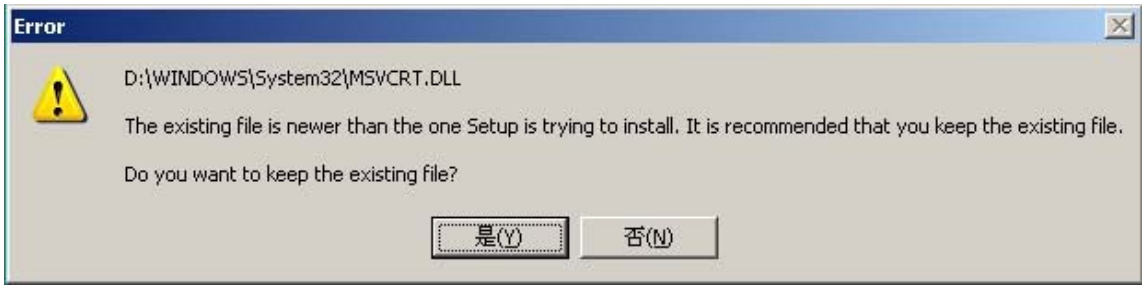


Fig. 0.7

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

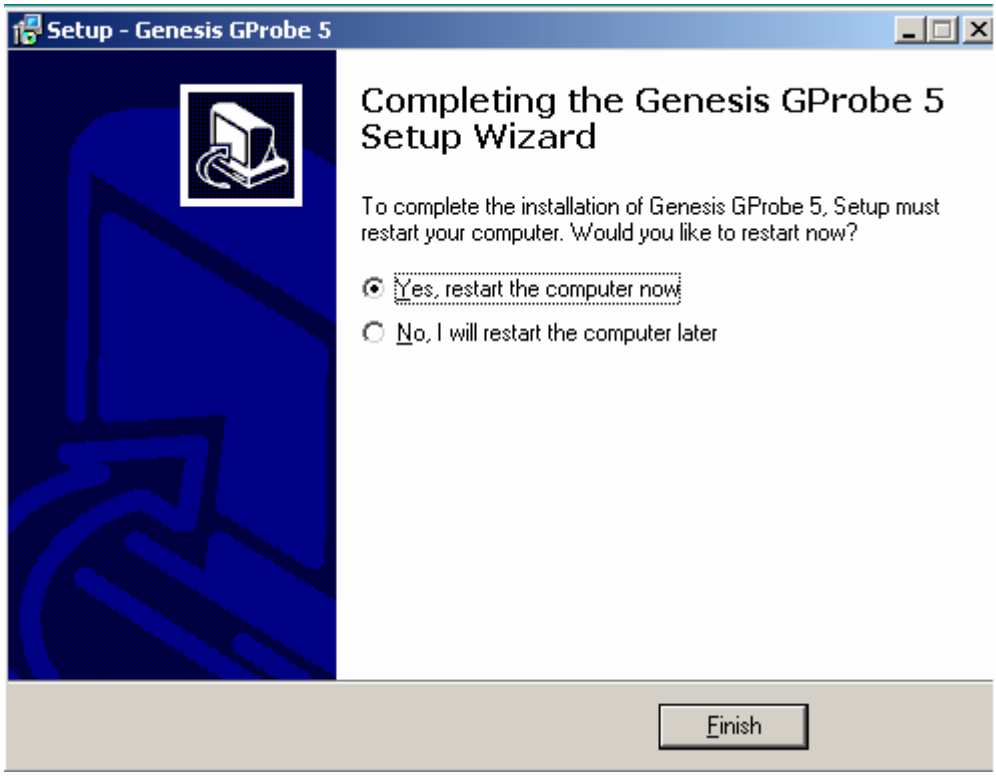


Fig. 0.8

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

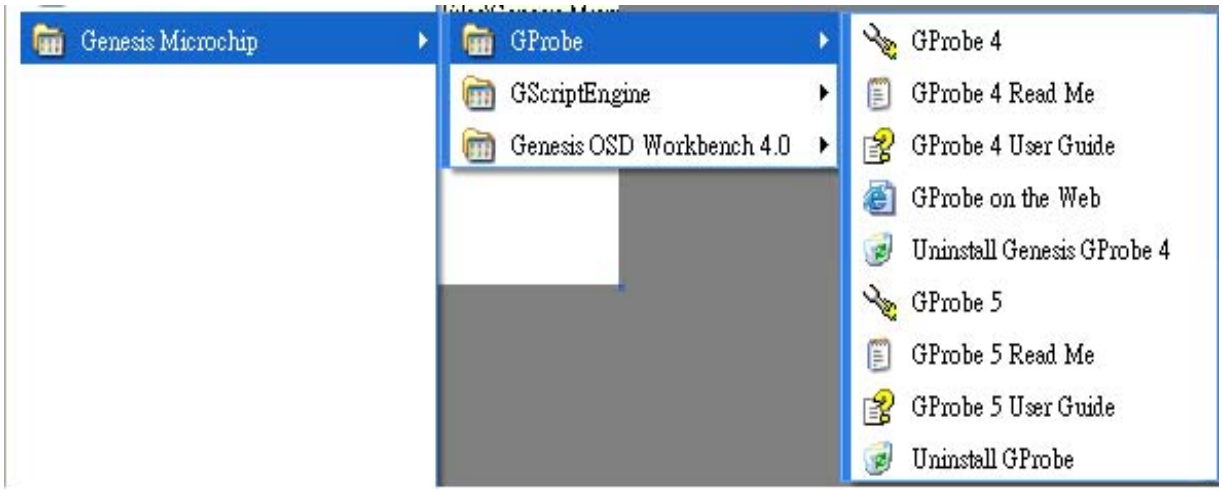


Fig. 1.1

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

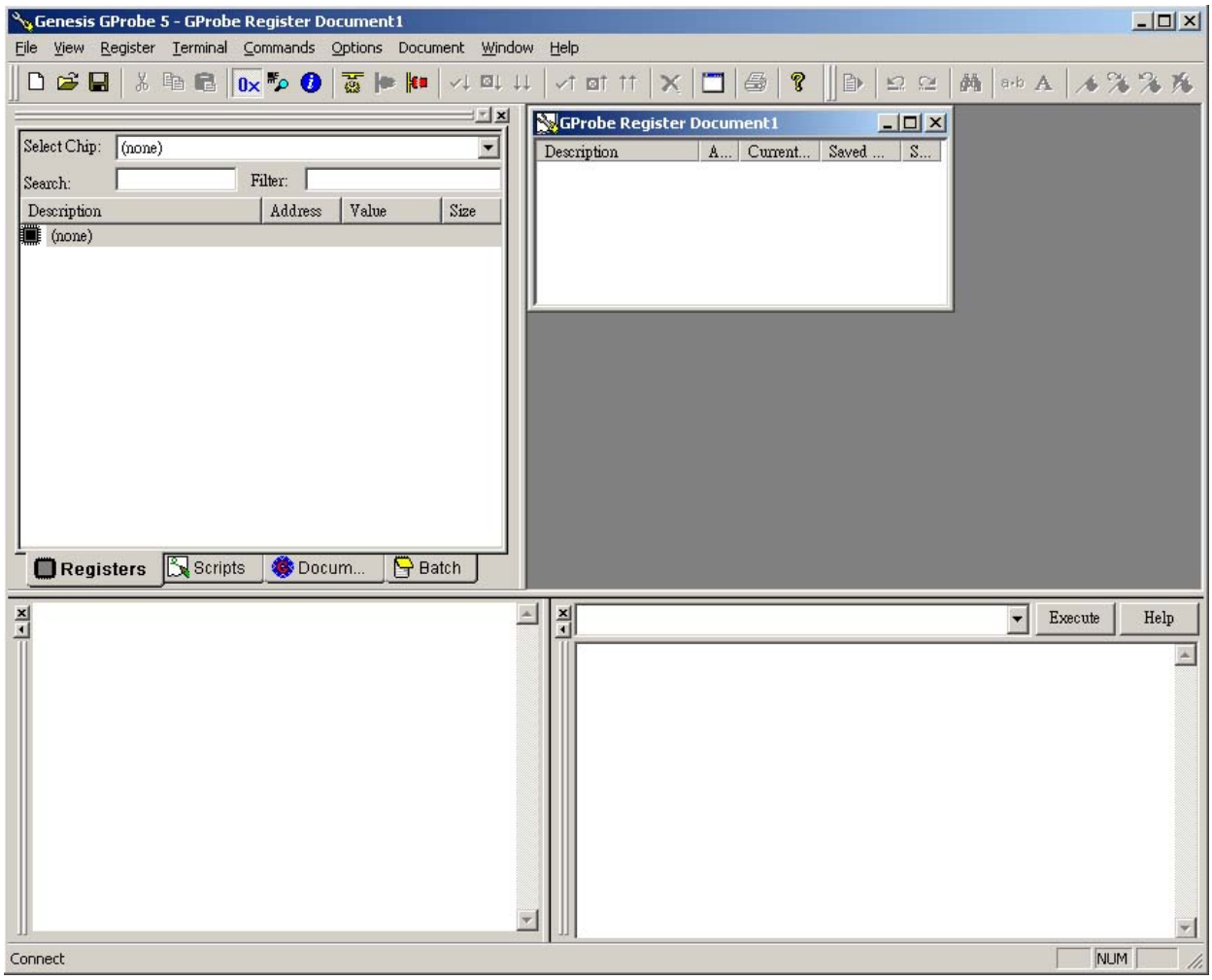


Fig. 1.2

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.

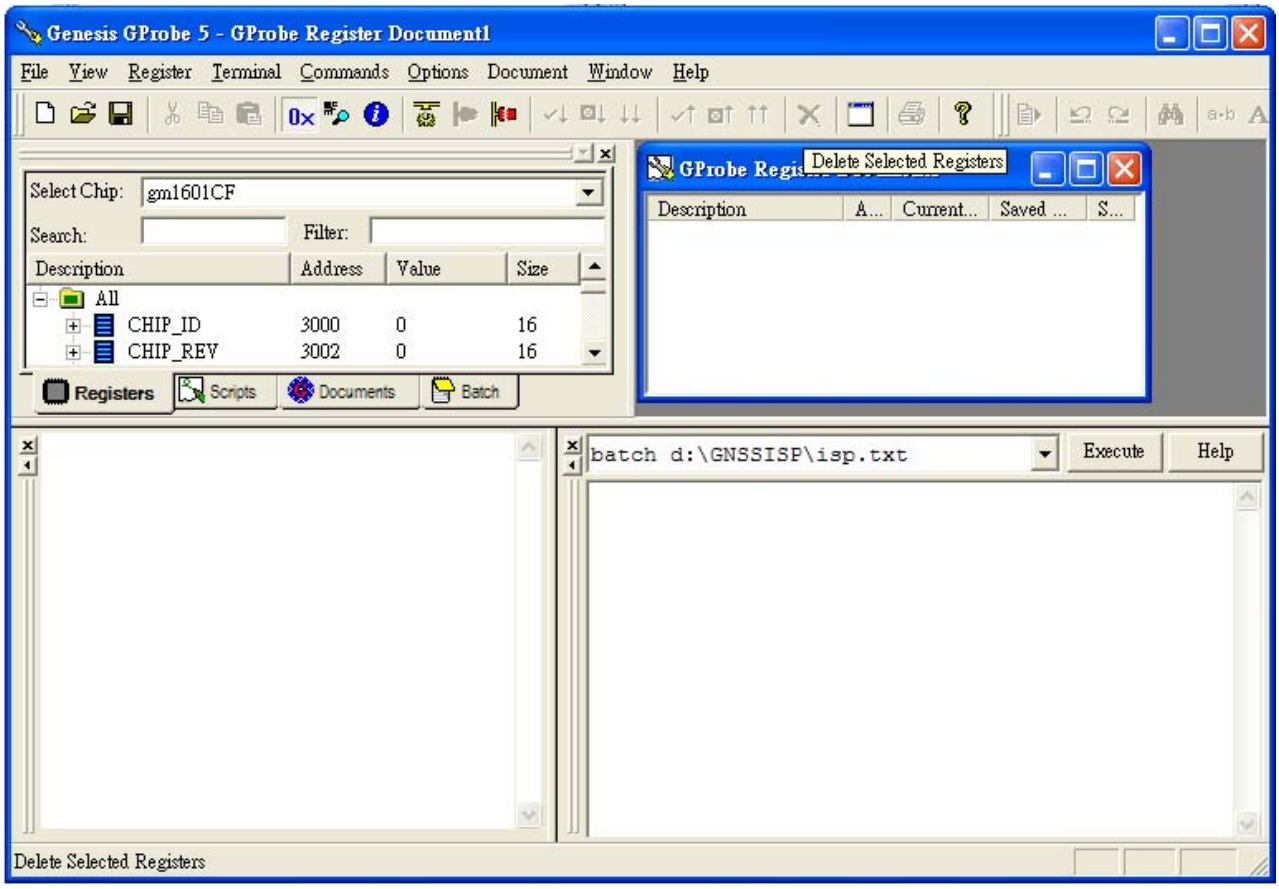


Fig. 1.3

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.

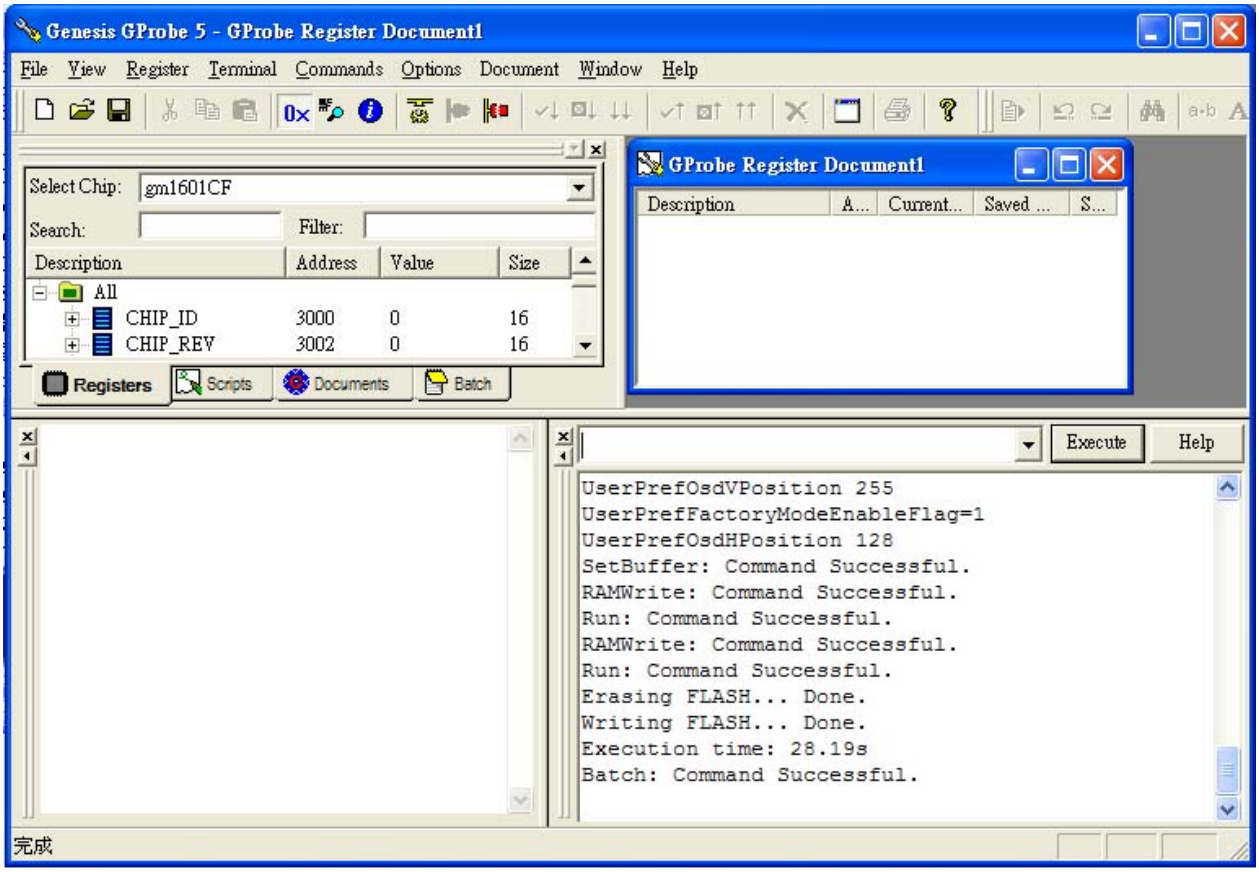
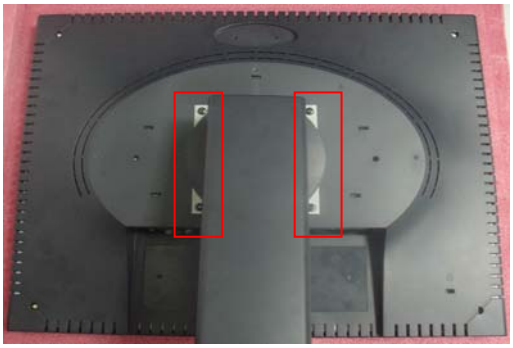
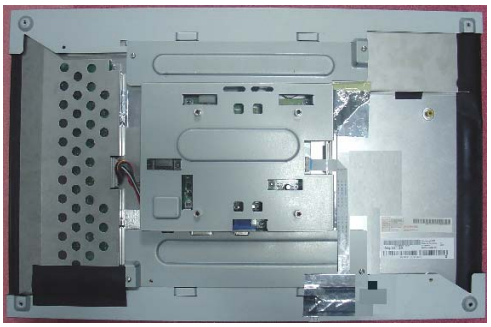
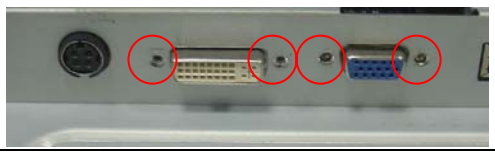


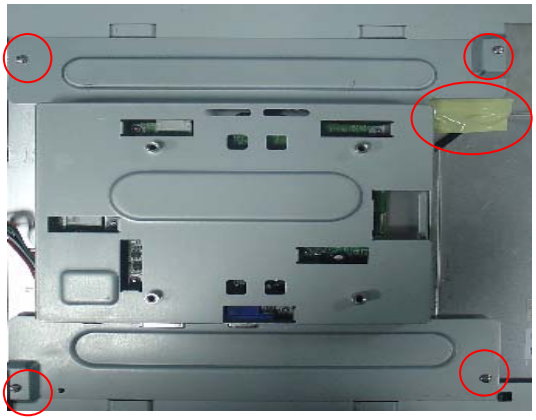
Fig. 1.4

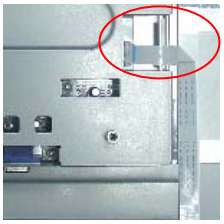
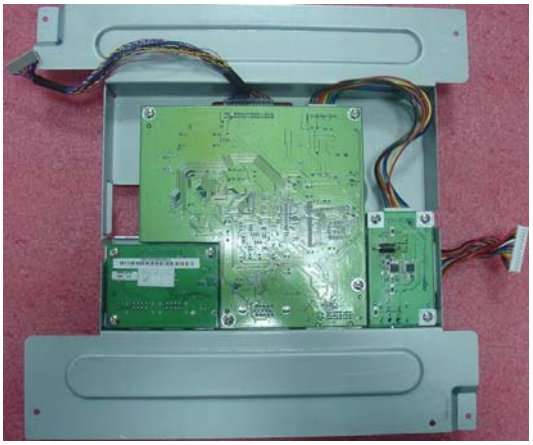
VP2330wb series de-assembling procedure

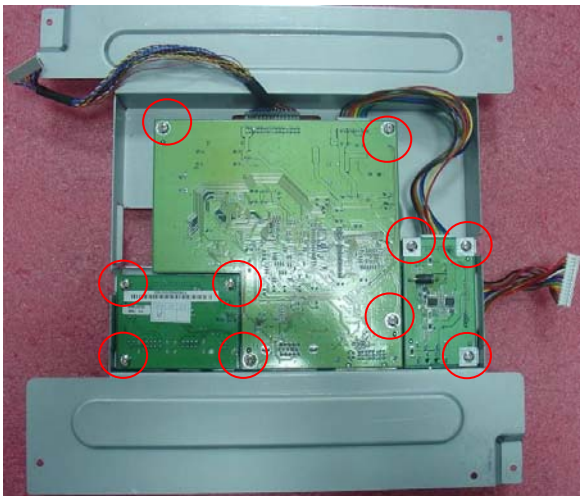
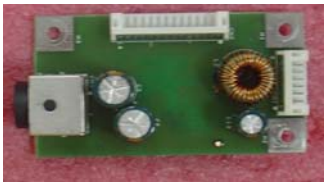
1. Move the monitor our from carton	2. Put the monitor on desk & face down
	

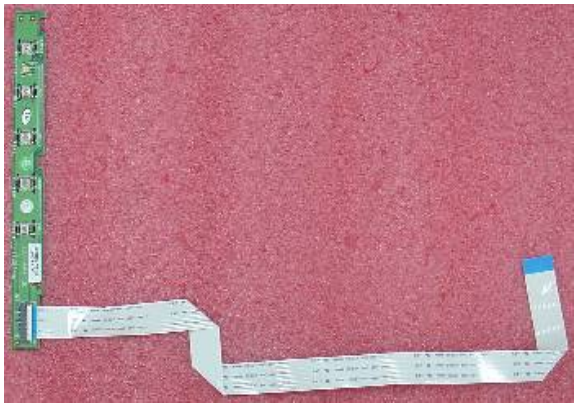
3. Remove the I/O cover	4. Loose the screws & remove the stand
	

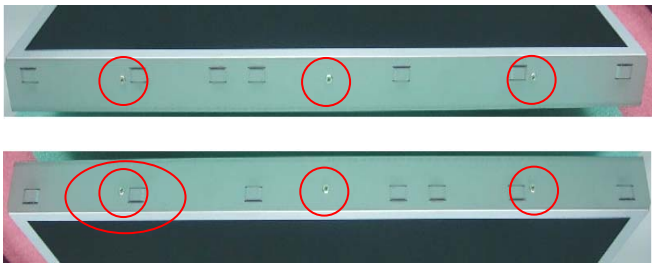
5. Separate the hook by tool (coin or screw-driver)	6.Remove the Back cover & Loose the I/O-nut screw
	 

7. Remove the AL FOIL & MYLAR	8. Loose the shielding screw & Tear off the yellow tape
	

9. Pull out the CCFL cables & LVDS & BUTTON/B CABLE	10. Loose the shield
  	

11. Loose the POWER/B & M/B & USB/B screw	12. Move the POWER/B & M/B & USB/B
	  

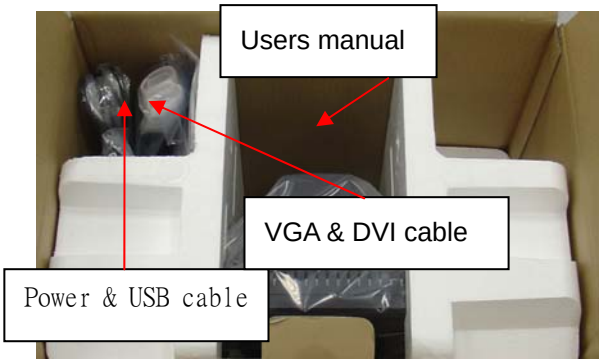
13. Loose the bezel	14. Move the BUTTON/B
	

15. Loose the BKT screw T/B	16.Remove the MYLAR
	

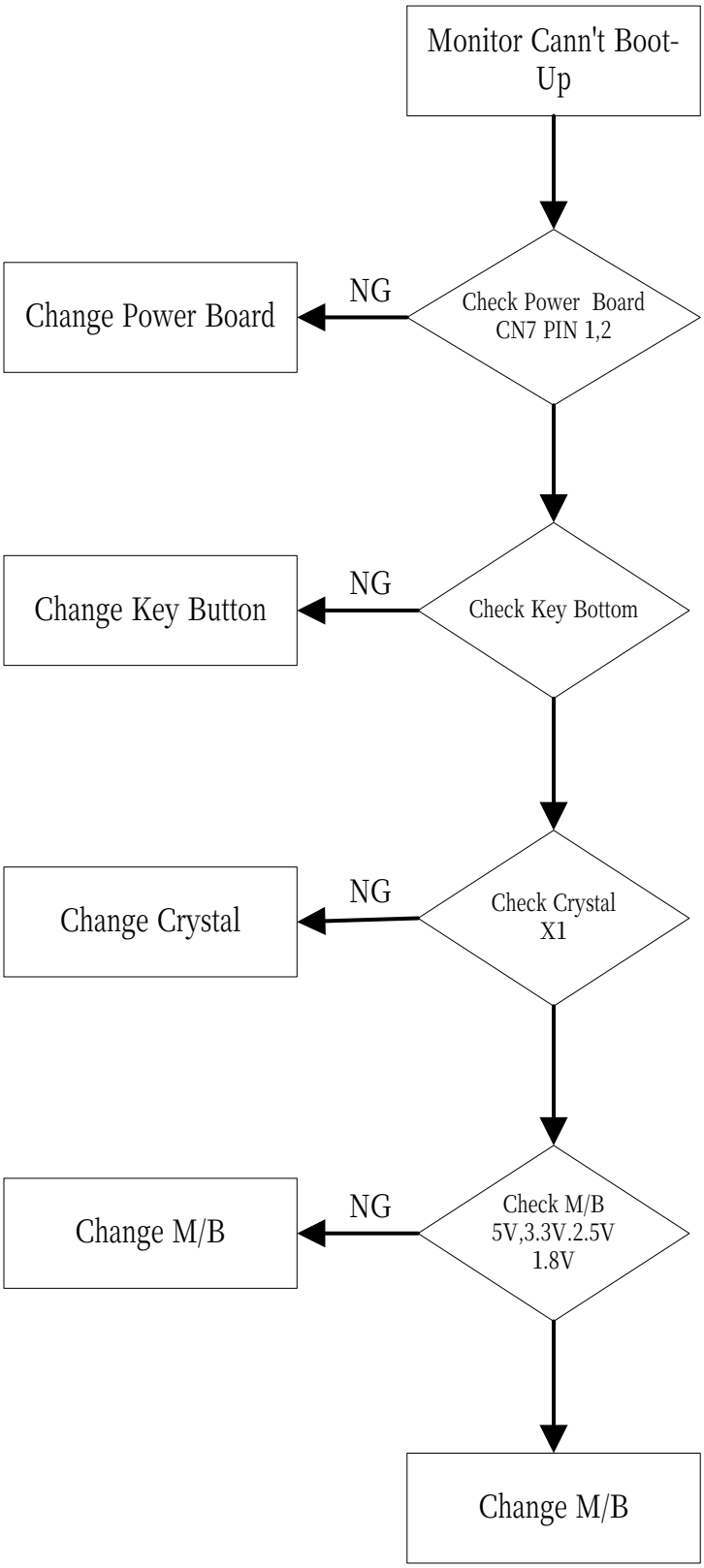
VP20” / VP21” / VP23”W series packing method

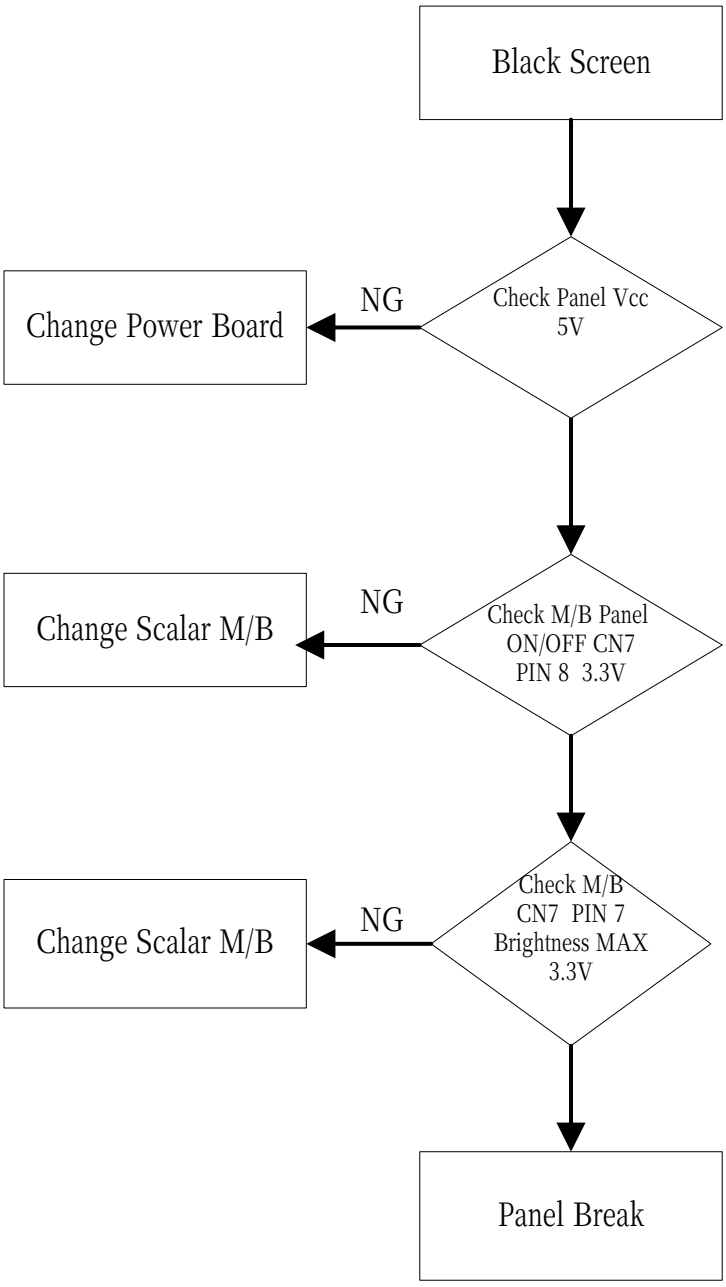
1. Sticker on LCD protection film	2. Put the monitor into the PE or EPE bags
	

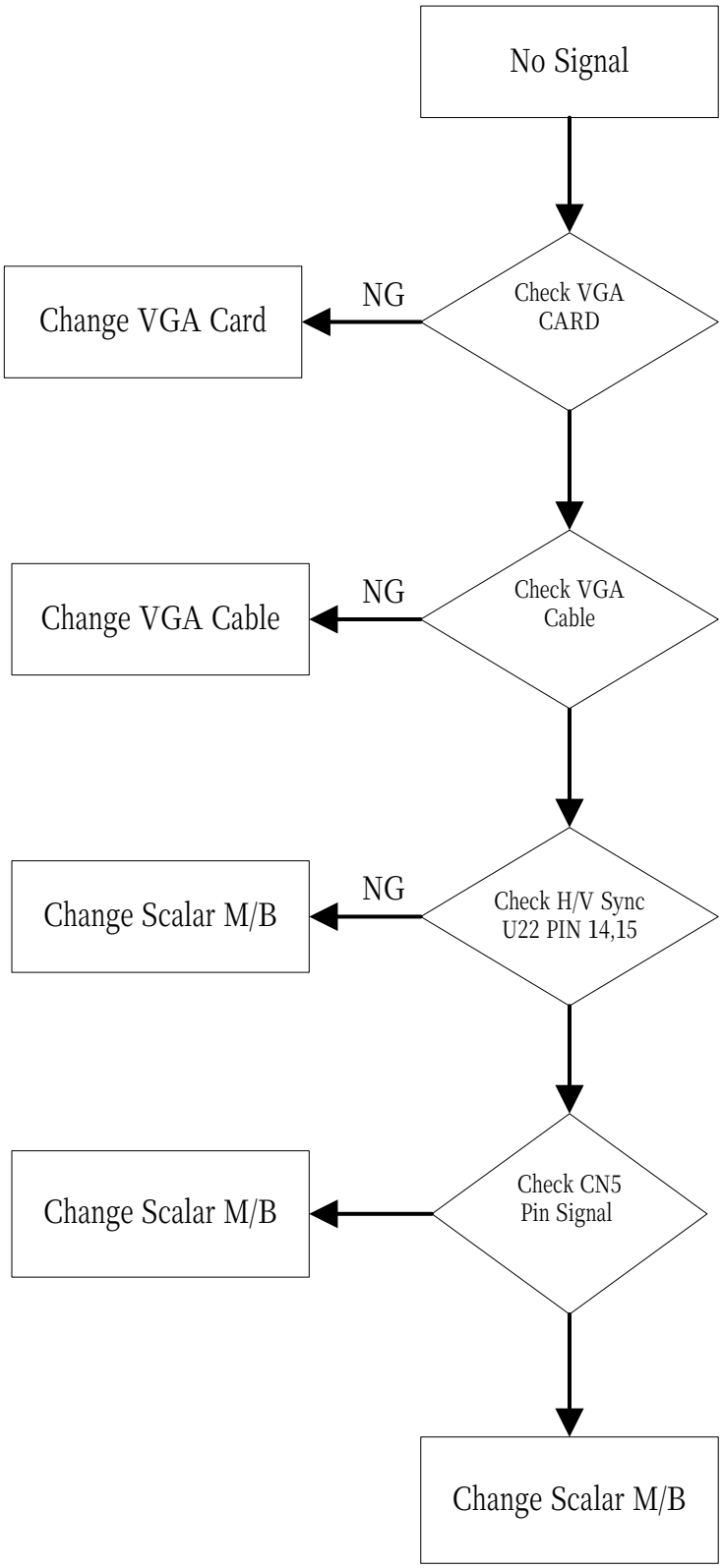
3. Put on the end-cap left / right	4. Put the monitor into carton
	

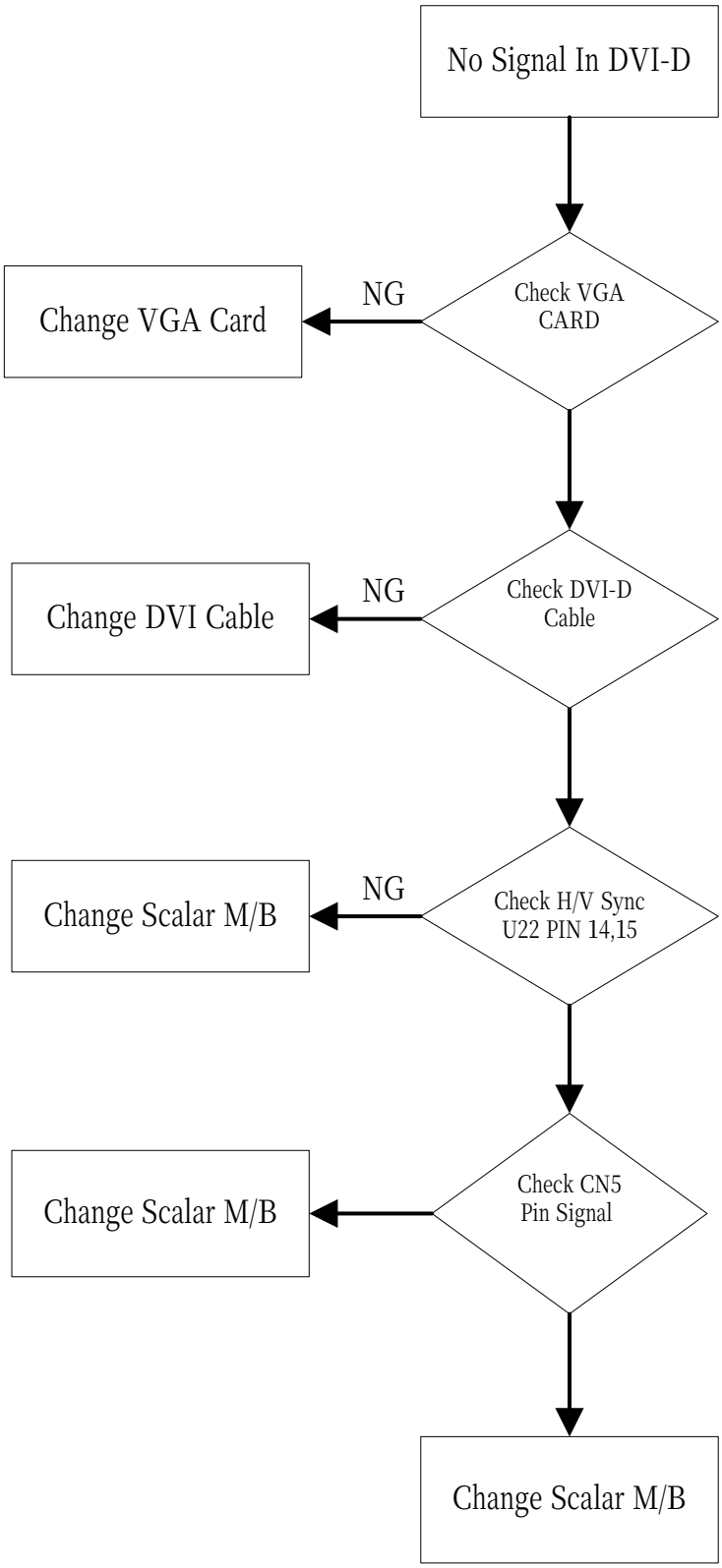
5. Put all accessories into carton	6. Seal the monitor
	

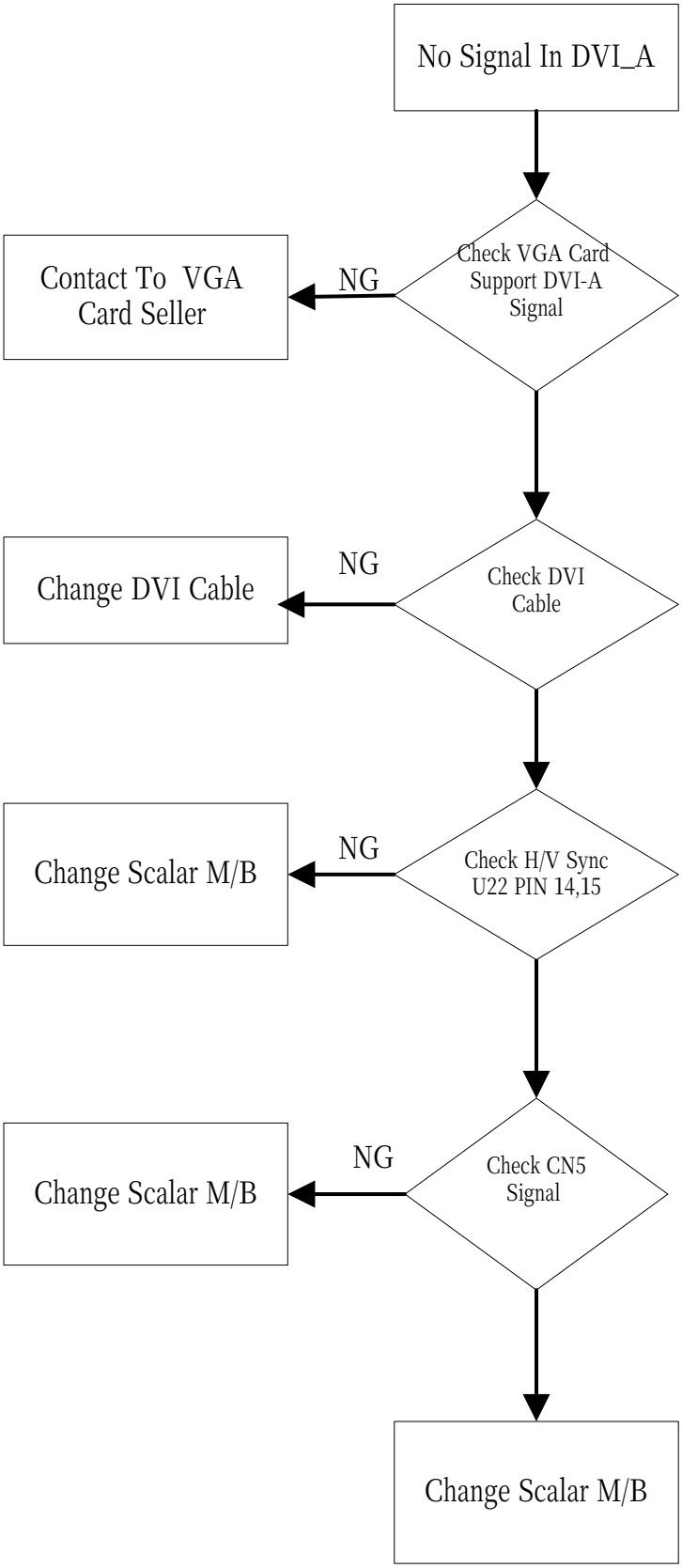
6. Troubleshooting Flow Chart

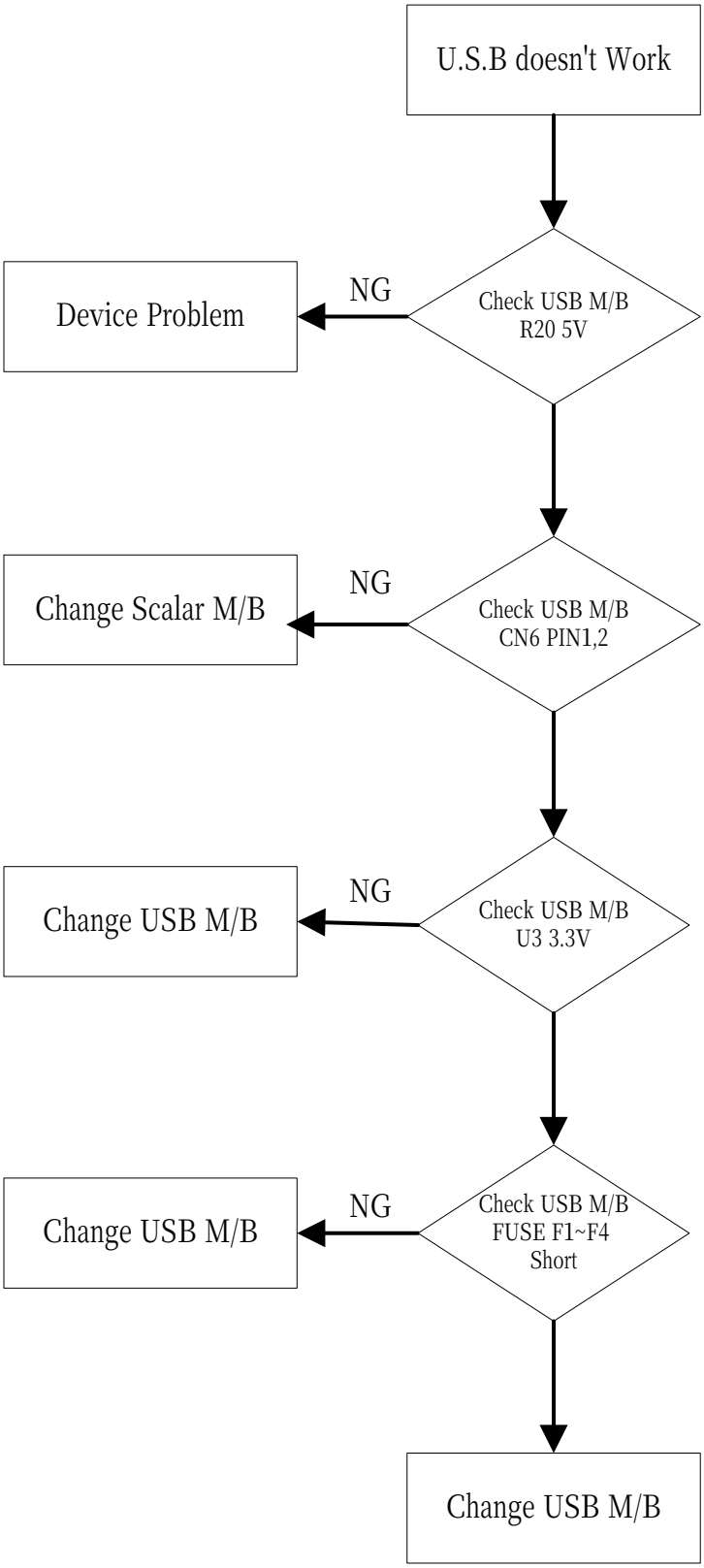


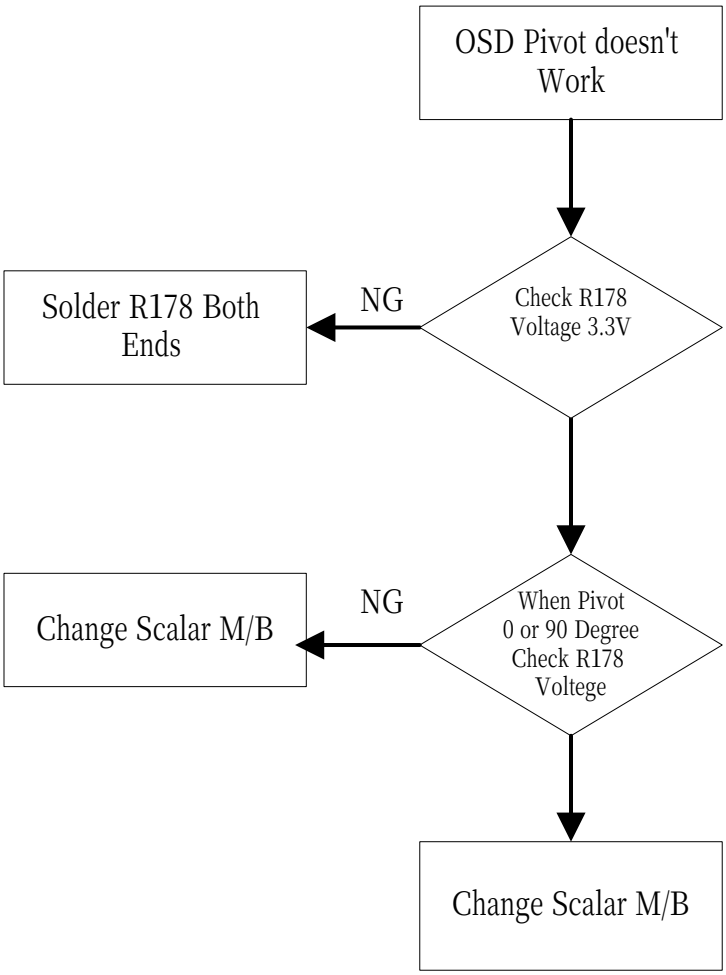

Black Screen
Check Panel Vcc
5V
NG
Change Power Board
Check M/B Panel
ON/OFF CN7
PIN 8 3.3V
NG
Change Scalar M/B
Check M/B
CN7 PIN 7
Brightness MAX
3.3V
NG
Change Scalar M/B
Panel Break


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 (VP2330wb-1)

ViewSonic Model Number: VS10813-1W
Rev: 1a
Serial No. Prefix: PU5

Item	Description		ECR/ECN	ViewSonic P/N	Ref. P/N	Location	Universal number#	Q'ty
1	**Accessories:**	Power cable		A-PC-0106-0224	DM333181G97	Power cable		1
2		Power adaptor		A-00005180	AG240500004	Adaptor		1
3	**Board Assembly:**	Power board		B-00005181	22WCVPPB001	Power board		1
4		main board		B-00005182	21LAVPMB011	Main board		1
5		Button board		B-00004350	23L0VPBB007	Button board		1
6		USB board		B-00004351	22L0VPUB005	USB board		1
7	**Cabinets:**	Front bezel assy		C-00005183	24WCVPLB006	front bezel ass'y		1
8		back cover assy		C-00005184	25WCVPLC033	back cover assy		1
9		Base sub assy		C-00005185	38LAVPBS008	Base sub assy		1
10	**Cables:**	FFC Cable MB-BB		CB-00005186	DEFC3609005	Cable MB-BB		1
11		VGA cable		CB-00004360	DD0M7TPC005	VGA cable		1
12		DVI cable		CB-00004361	DDWCVPDV019	DVI-I cable		1
13		USB cable		CB-00005187	DD0W0EUB005	USB cable		1
14		Cable POWER-MB		CB-00005188	DDLAVPPB007	Cable POWER-MB		1
15		Cable MB-LCD		CB-00005189	DDWCVPLC002	Cable MB-LCD		1
16	**Documentation:**	User manual + CD wizard + PerfectSuite		DC-00005190	HGWCVP01010	User manual		1
17	**Electronic Components:**	23" AUO TFT LCD M230UW01 V.1 (8ms)		E-00005191	AAM230UW014	LCD panel		1
18	**Hardware:**	Screw		HW-00003997	MM30060BBJ6	SCREW M3.0*6.0-B(NI)		15
19		Screw		HW-00005192	MM30080IBJ7	SCREW M3.0*8.0-I(NI)		6
20	**Miscellaneous:**	LCD film		M-00005193	JXWCVP01016	LCD FILM		1
21	**Packing Material:**	PE bags		P-00005194	HAWCVP01014	PE bags		1
22		Carton		P-00005195	HFWCVP01019	carton		1
23		End cap (L)		P-00005196	HBWCVP01015	cushion		1
24		End cap (R)		P-00005197	HBWCVP02011	cushion		1
25	**Plastics:**	Handle		PL-00005198	JXLM5003011	Handle		1
26		Stand sub assy		PL-00005199	37LAVPSU009	Stand sub assy		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 repeated cross checks of each item between this version and prior versions.

BOM LIST (VP2330wb-1)

ViewSonic Model Number: VS10813-1W

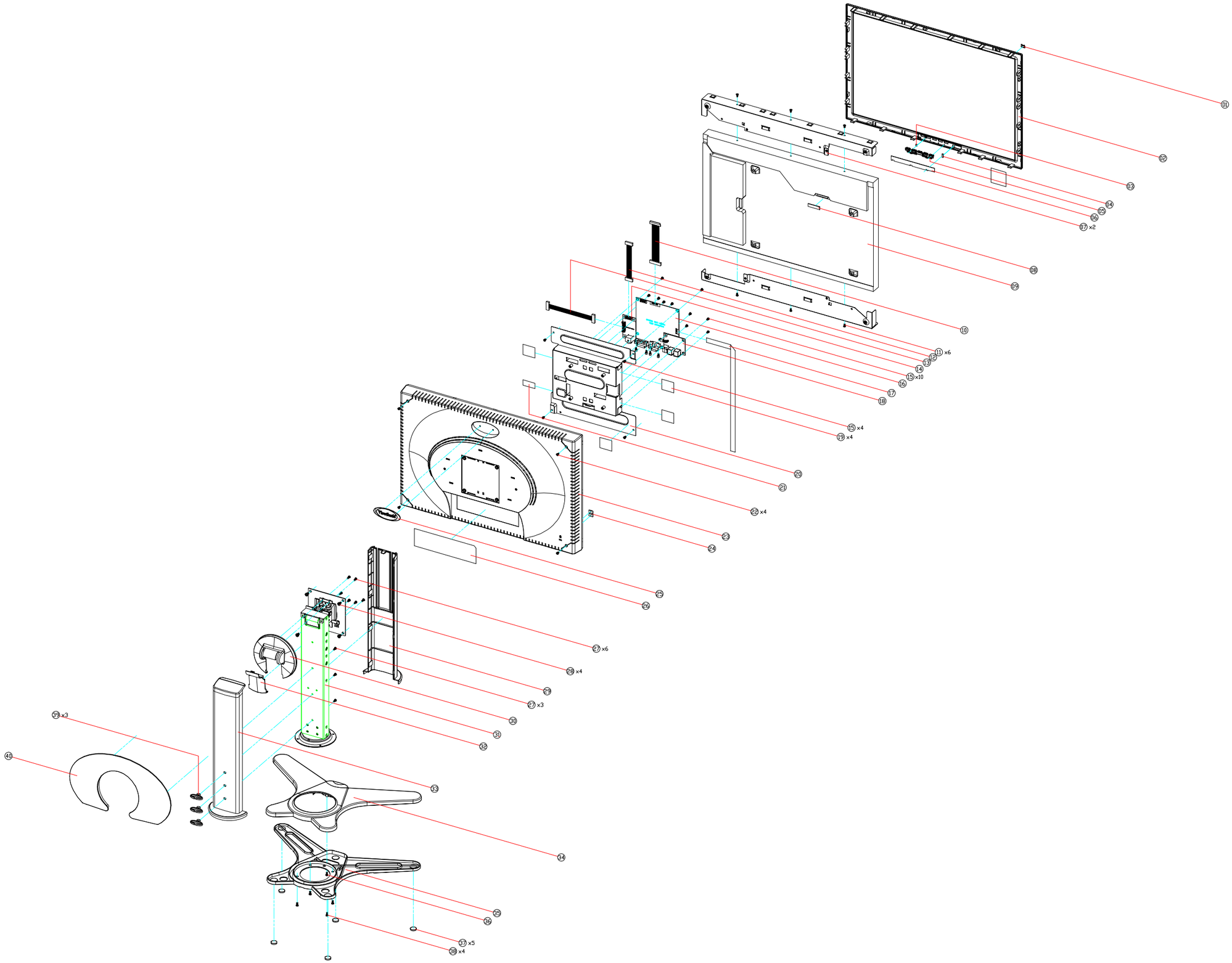
Rev: 1a

Serial No. Prefix: PU5

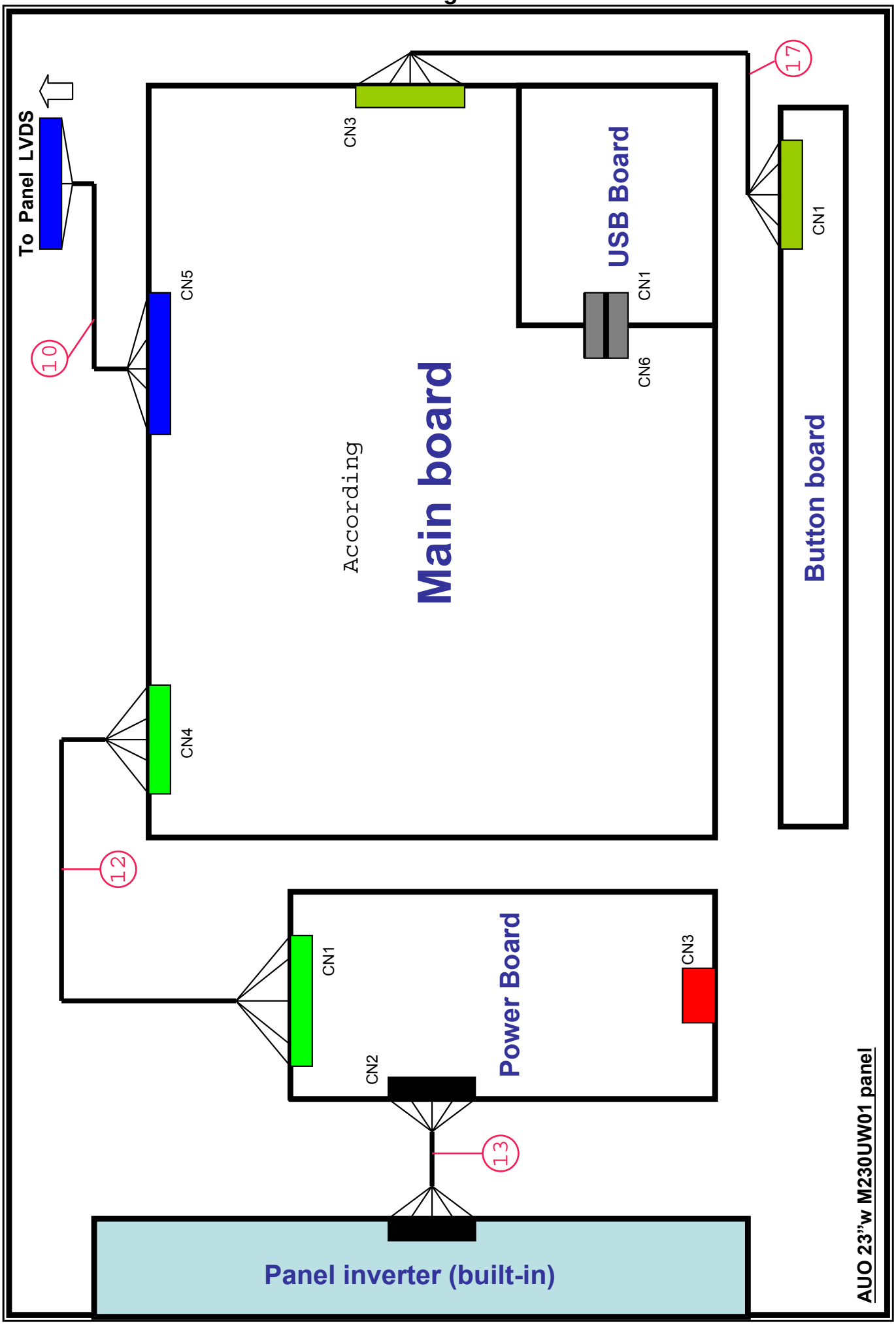
Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
0	#N/A	1LWCVPXVS01	WCVP LCD MONITOR(USA) GP			
1	B-00005182	21LAVPMB011	LAVP M/B ASSY(FOR WCVP GM1601H) GP			1
2	#N/A	31LAVPSS017	LAVP M/B S/S ASSY(FOR WCVP GM1601H) GP			1
3	#N/A	CC647T1MD05	CAP EC 47U 10V(+-20%,105C,5*11,2000H)GP	C5,C6,C28,C29,C44,C46,C47 ,C59,C62,C64,C76,C77,C96, C100,C103,C107,C119,C126, C134,C137,C138		21
4	#N/A	CC71004MD09	CAP ELEC DIP 100U 25V(+-20%,105C,6*7) GP	C124		1
5	#N/A	CC73303MD69	CAP ELEC DIP 330U 16V(+-20%,105C,8*9) GP	C170,C174,C204,C205		4
6	#N/A	CC810T1MD13	CAP EC 1000U6.3V(+-20%,105C,8*15,2KH)GP	C206,C216		2
7	#N/A	CC71004MD68	CAP EC 100U 25V(+-20%,105C,6*11,LESR) GP	C180,C181,C184,C185,C187, C188		6
8	#N/A	DC11050K007	CHOKE COIL 100UH(5A,+-10%,HKH050-101K)GP	L28		1
9	#N/A	DFHD08MR319	CONN DIP HEADER 8P 1R MR(P2.0,H4.1) GP	CN7		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	B-00005181	22WCVPPB001	WCVP POWER/B ASSY GP			1
17	#N/A	WCVP203-02	22WCVPPB001 WCVP POWER/B Schematic(B3A)			0
18	#N/A	32WCVPSS005	WCVP POWER/B S/S ASSY GP			1
19	#N/A	DFHD08MR319	CONN DIP HEADER 8P 1R MR(P2.0,H4.1) GP	CN1		1
20	#N/A	DFHD14MR004	CONN DIP HEADER 14P 1R MR(P2.0,H4.8)GP	CN2		1
21	#N/A	DFPJ09FR011	CONN POWER DIN DIP 9P 2R FR(P5.8,H15) GP	CN3		1
22	#N/A	CC733T6MD07	CAP EC 330U50V(+-20%,105C,10*19,3KH) GP	C5,C6		2
23	#N/A	CC73303MD51	CAP EC 330U 16V(+-20%,105C,8*11,2KH)GP	C13		1
24	#N/A	DC04725K011	CHOKE COIL 47UH(2.5A,+-10%,T07473 GP) GP	L2		1
25	B-00004350	23L0VPBB007	L0VP BUTTON/B ASSY GP			1
26	#N/A	DAL0VPTB011	PCB(BUTTON) L0VP TB(2L,111*13,REVA) GP			1
27	#N/A	DHPTMG53311	SWITCH PU-BUTTON TMG-533-T/R(160+-50G)GP	SW1,SW2,SW3,SW4,SW5		5
28	#N/A	DFFC11FR001	CONN SMD FFC 11P 1R FR(P 1,H1.55) GP	CN1		1
29	#N/A	BEYG0003ZA5	LED(SMD) Y/G(KPB-3025NSGC-F01) GP	LED1		1
30	#N/A	FCLAVP06012	BUTTON/B MYLAR LAVP(FCLAVP06,R3A) GP			1
31	B-00004351	22L0VPUB005	L0VP USB/B ASSY(GP)			1
32	#N/A	32L0VPSS007	L0VP USB/B S/S ASSY(GP)			1
33	#N/A	CC71004MD09	CAP ELEC DIP 100U 25V(+-20%,105C,6*7) GP	C1,C7,C13,C16,C26,C27		6
34	#N/A	DFUB08MR009	CONN DIP USB A-T D-8P 2R MR(P2,H15.35)GP	J1,J2		2
35	#N/A	DFUB04MR001	CONN DIP USB B-T 4P 2R MR(P2.5,H11.3) GP	USB1		1
36	#N/A	BG612000202	XTAL DIP 12MHZ(+-30PPM,HC-49/S TYPE) GP	X1		1
37	#N/A	DFHD04MR001	CONN DIP HEADER 4P 2R MR(P2.54,H5) GP	CN1		1
38	C-00005183	24WCVPLB006	WCVP LCD BEZEL ASSY GP			1
39	#N/A	34WCVPLB006	WCVP LCD BEZEL SUB ASSY GP			1
40	#N/A	EAWCVP01014	LCD BEZEL WCVP(EAWCVP01,REV3A) GP			1
41	#N/A	EBLAVP01010	LED LENS LAVP(EBLAVP01,REV3A)GP			1
42	#N/A	EBWCVP01015	CONTROL BUTTON WCVP(EBWCVP01,R3A) GP			1
43	#N/A	FEWCVP01018	BIRD LOGO WCVP(FEWCVP01,REV3A) GP			1
44	#N/A	FCWCVP01016	BUTTON PCB EVA WCVP(FCWCVP01,REV3A) GP			1
45	#N/A	FCWCVP02012	LCD CONN SPACER WCVP(FCWCVP02,REV3A) GP			1
46	#N/A	FAWCVP02011	LCD BKT WCVP(FAWCVP02,REV3A) GP			2
47	HW-00005192	MM30080IBJ7	SCREW M3.0*8.0-I(NI) GP			6
48	M-SCW-0824-0813	MF30060BBJ6	SCREW F3.0*6-B(NI)GP			14
49	#N/A	FCM7T004014	AL FOIL M7T(FCM7T004,REV3A) GP			4
50	#N/A	FCH0E005016	EMI AL FOIL H0E(FCH0E005,REV3A)GP			1
51	M-MS-0808-8986	MBLI1004018	IO NUT LI1(MBLI1004,REV3A)GP			4
52	#N/A	FAWCVP01014	PCB SHIELDING WCVP(FAWCVP01,REV3A) GP			1
53	CB-00005189	DDWCVPLC002	CABLE MB-LCD(30P,170MM,AU)WCVP GP			1
54	CB-00005188	DDLAVPPB007	CABLE POWER-MB(8P,150MM)LAVP GP			1
55	#N/A	DEFC2809005	FFC CABLE MB-BUTTOM(11P,280MM)WCVP GP			1
56	#N/A	DDWCVPPB002	CABLE P/B-INV(14P,70MM)WCVP GP			1
57	#N/A	FCWCVP03019	LCD INV MYLAR WCVP(FCWCVP03,REV3A) GP			1
58	#N/A	FCWCVP04015	LCD LAMP MYLAR WCVP(FCWCVP04,REV3A) GP			1
59	#N/A	25WCVPLC003	WCVP LCD COVER ASSY GP			1
60	#N/A	35WCVPLS005	WCVP LCD COVER SUB ASSY GP			1
61	#N/A	EAWCVP02011	LCD COVER WCVP(EAWCVP02,REV3A) GP			1
62	M-MS-0808-9411	FBL70008014	LOCK METAL L70B(FBL70008,REV3A) GP			1
63	#N/A	EBWCVP02011	VSC ELLIP LOGO POLISH(EBWCVP02,REV3A) GP			1
64	#N/A	26WCVPSA004	WCVP STAND ASSY GP			1

Item	ViewSonic P/N	Ref. P/N	Description	Location	Universal number#	Q'ty
65	#N/A	37WCVPSU009	WCVP STAND SUB ASSY GP			1
66	#N/A	FAWCVP04013	HINGE ASSY WCVP(FAWCVP04,R3A) GP			1
67	#N/A	EALAVP04018	STAND TOP LAVP((EALAVP04,REV3A)GP			1
68	#N/A	EALAVP05014	STAND BOTTOM LAVP((EALAVP05,REV3A)GP			1
69	#N/A	EALAVP06011	HINGE COVER FRONT LAVP(EALAVP06,REV3A)GP			1
70	#N/A	EALAVP07017	HINGE COVER BACK LAVP((EALAVP07,REV3A)GP			1
71	#N/A	EBLAVP02016	CLAMP LAVP(EBLAVP02,REV3A)GP			3
72	M-SCW-0824-0725	MF30050IBJ6	SCREW F3*5-I(NI)GP			9
73	#N/A	38WCVPBS008	WCVP BASE SUB ASSY GP			1
74	#N/A	FAWCVP03017	STAND BASE WCVP(FAWCVP03,REV3A) GP			1
75	#N/A	EAWCVP03017	STAND BASE COVER WCVP(EAWCVP03,R3A) GP			1
76	#N/A	GAWCVP01014	RUBBER FT D24*H2 WCVP(GAWCVP01,REV3A) GP			5
77	M-SCW-0824-6797	MF40080BJ29	SCREW F4.0*8-B(BNI) GP			1
78	M-SCW-0824-0795	MM40080BCI5	SCREW M4.0*8-B(NI,NYLOK)GP			4
79	#N/A	27WCVPCS002	WCVP CHASSIS ASSY GP			1
80	#N/A	MF30080BJ27	SCREW F3.0*8,B(BNI) GP			4
81	#N/A	MM40100B244	SCREW M4.0*10-B BLACK (NYLOK)GP			4
82	C-00004642	EALAVP03011	STAND VISA COVER LAVP(EALAVP03,REV3A)GP			1
83	#N/A	2AWCVPPTA01	WCVP PANEL DEPENDENT KIT ASSY(AU) GP			1
84	E-00005191	AAM230UW014	LCD 23" M230UW01 V.1(1920*1200,WUXGA) GP			1
85	#N/A	AZWCVPBA001	WCVP SW BIOS IMAGE(AU)GENESIS 1601H N/A			1
86	#N/A	28WCVPPK000	WCVP PACKING ASSY GP			1
87	CB-00004360	DD0M7TPC005	CABLE ASSY M7T MB-VGA(15/15P,REV1A) GP			1
88	CB-00004361	DDWCVPDV019	CABLE DVI-I(29/29P,1.8M)WCVP GP			1
89	A-00005180	AG240500004	ADP 24V 5A ES-120UB B 90~264V GP			1
90	P-00005194	HAWCVP01014	PE BAG WCVP(HAWCVP01,REV3A) GP			1
91	P-00005196	HBWCVP01015	END CAP-L WCVP(HBWCVP01,REV3A) GP			1
92	P-00005197	HBWCVP02011	END CAP-R WCVP(HBWCVP02,REV3A) GP			1
93	M-LB-0813-0747	HCL7V004013	CORE LABEL(HCL7V004,REV3A)GP			1
94	#N/A	HCWCVP01016	ID LABEL WCVP(HCWCVP01,REV3A) GP			1
95	M-LB-0813-0745	HCL7V002011	SERIAL LEBAL L7V(HCL7V002,REV3A) GP			1
96	M-LB-0813-1042	HCL7V019011	CARTON LABEL L7VC(HCL7V019,REV3B) GP			1
97	P-00005195	HFWCVP01019	CARTON WCVP(HFWCVP01,REV3A) GP			1
98	DC-00005190	HGWCVP01010	CD+QSG WCVP(HGWCVP01,REV3A) GP			1
99	PL-00005198	JXLM5003011	HANDLE LM5S(JXLM5003,REV 3B) GP			1
100	M-00005193	JXWCVP01016	LCD FILM WCVP(JXWCVP01,REV3A) GP			1
101	M-LB-0813-1043	HCL70021011	HI-POT LABEL L70L(HCL70021,REV3A)GP			1
102	#N/A	HFWCVP02015	SPACE PLATE WCVP(HFWCVP02,REV3A) GP			0.084
103	#N/A	HDWCVP01017	23" SERV. PAPER WCVP(HDWCVP01,R3A) GP			1
104	#N/A	HDWCVP01	SERVICE PAPER			0
105	DC-00003536	HCL9V009011	HG LABEL L9VD(HCL9V009,REV3A)GP			1
106	A-PC-0106-0224	DM333181G97	POWER CORD 3P 1.8M(USA)V04VS350012180 GP			1

8. Exploded Diagram and Exploded Parts List



VP2330wb Cable connection drawing



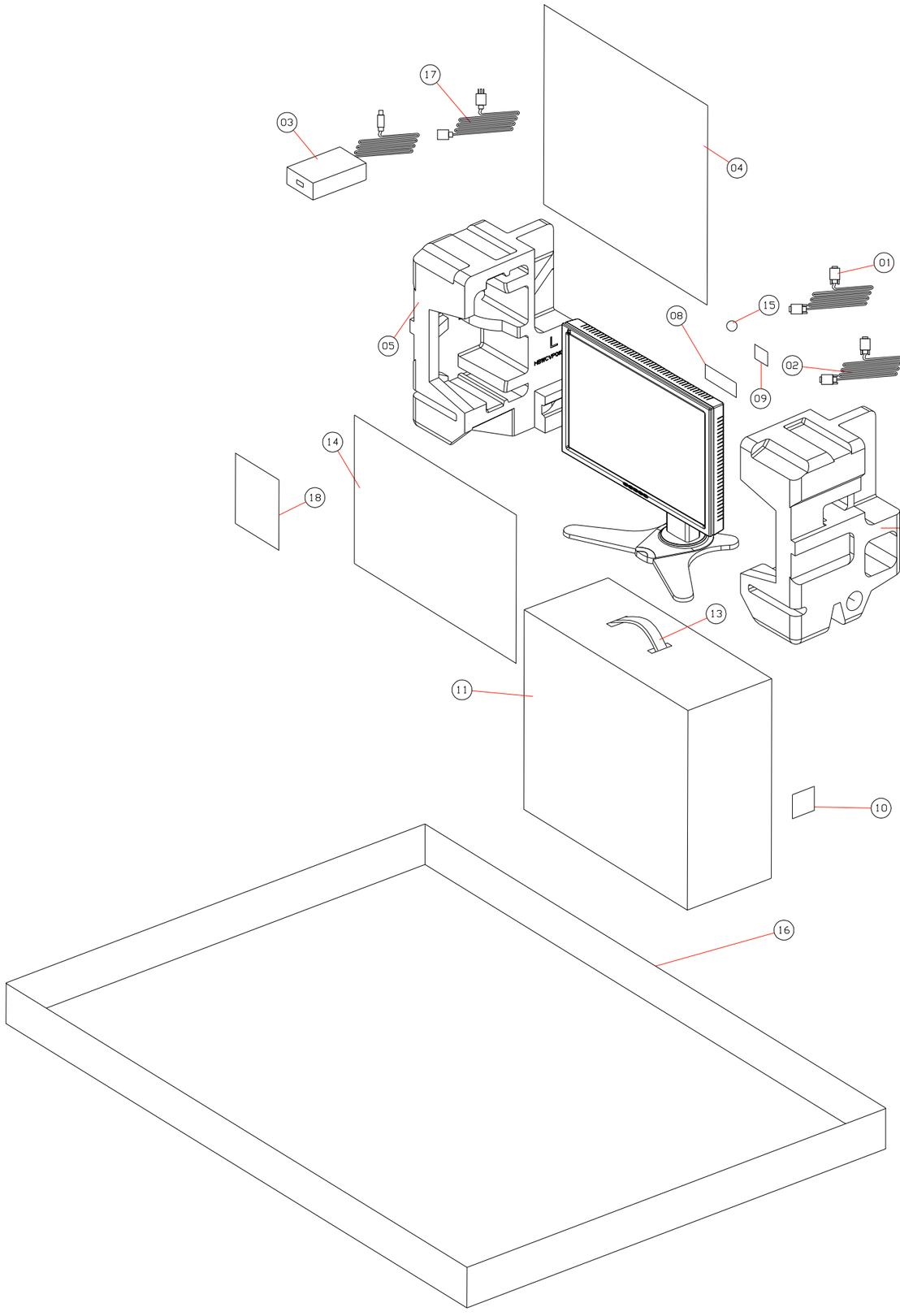
EXPLODED PARTS LIST (VP2330wb-1)

ViewSonic Model Number: VS10813-1W

Rev: 1a

Serial No. Prefix: PU5

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	#N/A	FEWCVP01018	BIRD LOGO WCVP(FEWCVP01,REV3A) GP	1
2	#N/A	EAWCVP01014	LCD BEZEL WCVP(EAWCVP01,REV3A) GP	1
3	#N/A	EBLAVP01010	LED LENS LAVP(EBLAVP01,REV3A)	1
4	#N/A	FCWCVP01016	BUTTON PCB EVA WCVP(FCWCVP01,REV3A) GP	1
5	#N/A	EBWCVP01015	CONTROL BUTTON WCVP(EBWCVP01,R3A) GP	1
6	B-00004350	23L0VPBB007	L0VP BUTTON/B ASSY GP	1
7	#N/A	FAWCVP02011	LCD BKT WCVP(FAWCVP02,REV3A) GP	2
8	#N/A	FCWCVP02012	LCD CONN SPACER WCVP(FCWCVP02,REV3A) GP	1
9	E-00005191	AAM230UW014	LCD 23" M230UW01 V.1(1920*1200,WUXGA) GP	1
10	CB-00005189	DDWCVPLC002	CABLE MB-LCD(30P,170MM,AU)WCVP GP	1
11	HW-00005192	MM30080IBJ7	SCREW M3.0*8.0-I(NI) GP	6
12	CB-00005188	DDLAVPPB007	CABLE POWER-MB(8P,150MM)LAVP GP	1
13	#N/A	DDWCVPPB002	CABLE P/B-INV(14P,70MM)WCVP GP	1
14	B-00005181	22WCVPPB001	WCVP POWER/B ASSY GP	1
15	M-SCW-0824-0813	MF30060BBJ6	SCREW F3.0*6-B(NI)GP	14
16	B-00005182	21LAVPMB011	LAVP M/B ASSY(FOR WCVP GM1601H) GP	1
17	#N/A	DEFC2809005	FFC CABLE MB-BUTTOM(11P,280MM)WCVP GP	1
18	B-00004351	22L0VPUB005	L0VP USB/B ASSY(GP)	1
19	#N/A	FCM7T004014	AL FOIL M7T(FCM7T004,REV3A) GP	4
20	#N/A	FAWCVP01014	PCB SHIELDING WCVP(FAWCVP01,REV3A) GP	1
21	#N/A	FCH0E005016	EMI AL FOIL H0E(FCH0E005,REV3A)GP	1
22	#N/A	MF30080BJ27	SCREW F3.0*8,B(BNI) GP	4
23	#N/A	EAWCVP02011	LCD COVER WCVP(EAWCVP02,REV3A) GP	1
24	#N/A	EBWCVP02011	LOCK METAL L70B(FBL70008,REV3A) GP	1
25	#N/A	FAL9V004017	VSC ELLIP LOGO POLISH(EBWCVP02,REV3A) GP	1
26	#N/A	HCWCVP01016	ID LABEL WCVP(HCWCVP01,REV3A) GP	1
27	M-SCW-0824-0725	MF30050IBJ6	SCREW F3*5-I(NI)GP	9
28	#N/A	MM40100B244	SCREW M4.0*10-B BLACK (NYLOK)GP	4
29	#N/A	EALAVP06011	HINGE COVER FRONT LAVP(EALAVP06,REV3A)GP	1
30	#N/A	EALAVP04018	STAND TOP LAVP((EALAVP04,REV3A)GP	1
31	#N/A	FAWCVP04013	HINGE ASSY WCVP(FAWCVP04,R3A) GP	1
32	#N/A	EALAVP05014	STAND BOTTOM LAVP((EALAVP05,REV3A)GP	1
33	#N/A	EALAVP07017	HINGE COVER BACK LAVP((EALAVP07,REV3A)GP	1
34	#N/A	EAWCVP03017	STAND BASE COVER WCVP(EAWCVP03,R3A) GP	1
35	#N/A	FAWCVP03017	STAND BASE WCVP(FAWCVP03,REV3A) GP	1
36	M-CV-0830-2589	EAL9V005013	SCREW F4.0*8-B(BNI) GP	1
37	PL-PD-0714-0118	GAL70001019	RUBBER FOOT L70B(GAL70001,REV3A)	5
38	M-SCW-0824-0795	MM40080BCI5	SCREW M4.0*8-B(NI,NYLOK)GP	4
39	#N/A	EBLAVP02016	CLAMP LAVP(EBLAVP02,REV3A)GP	3
40	C-00004642	EALAVP03011	STAND VISA COVER LAVP(EALAVP03,REV3A)GP	1



PACKING PART LIST (VP2330wb-1)

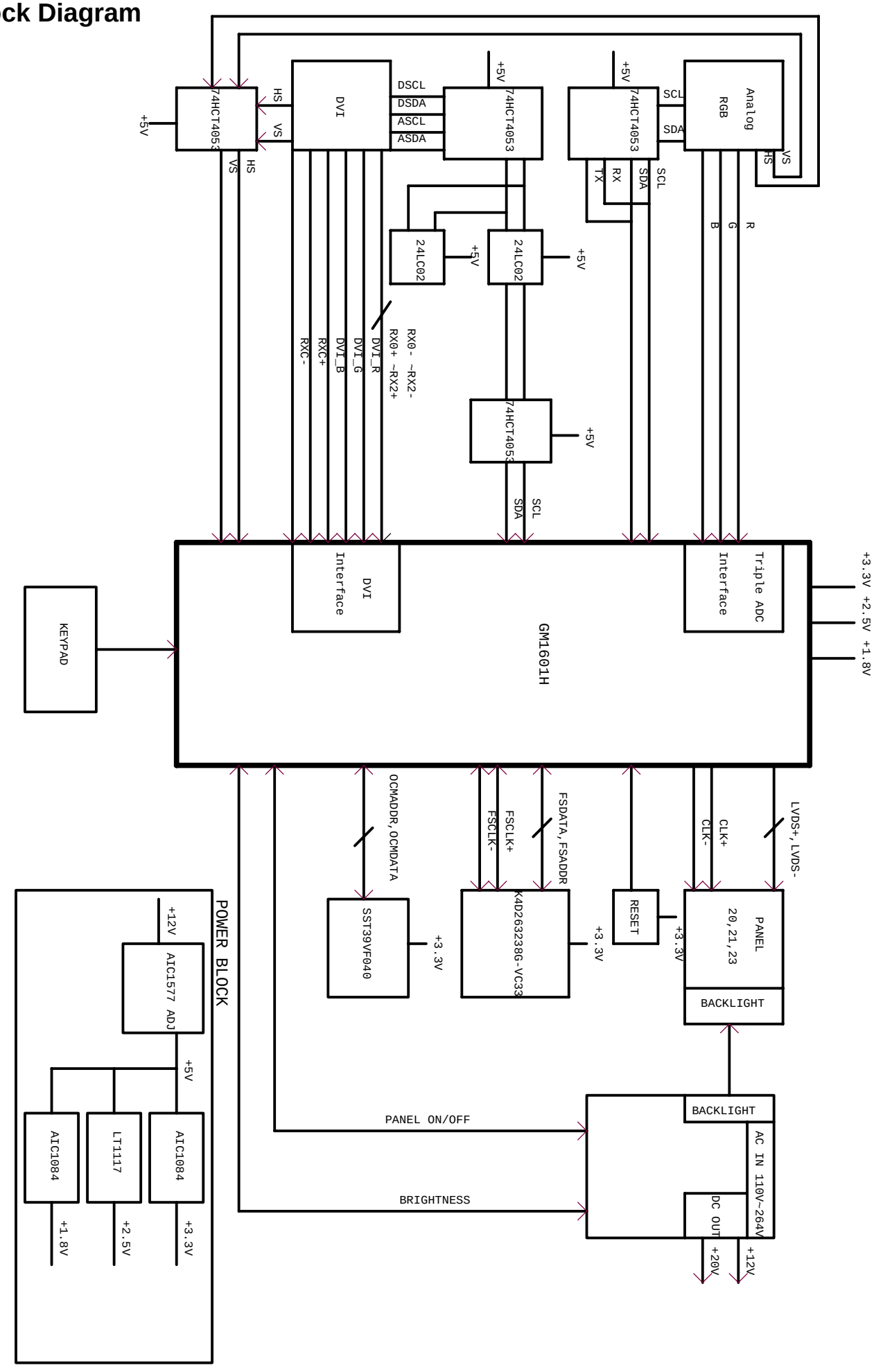
ViewSonic Model Number: VS10813-1W

Rev: 1a

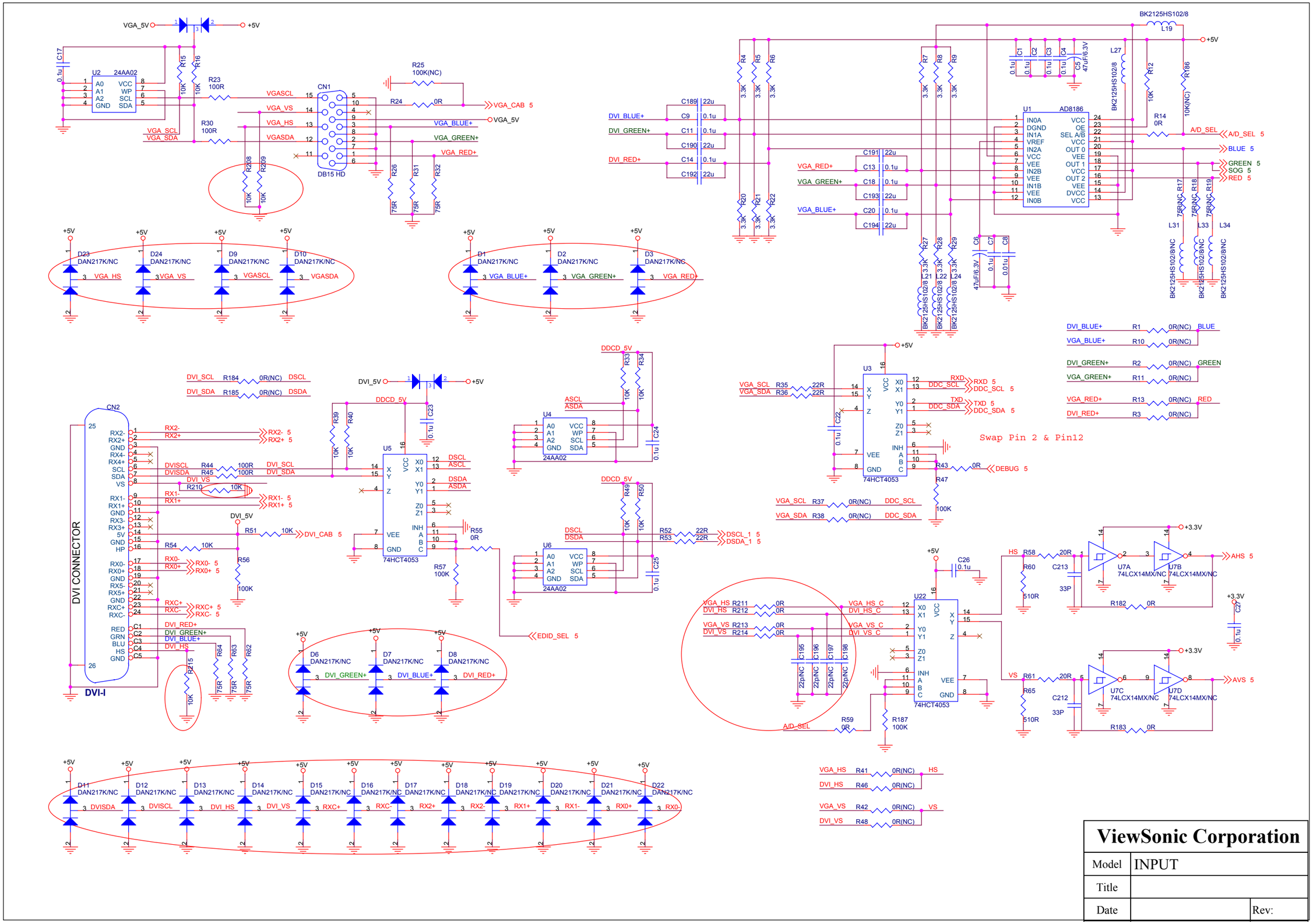
Serial No. Prefix: PU5

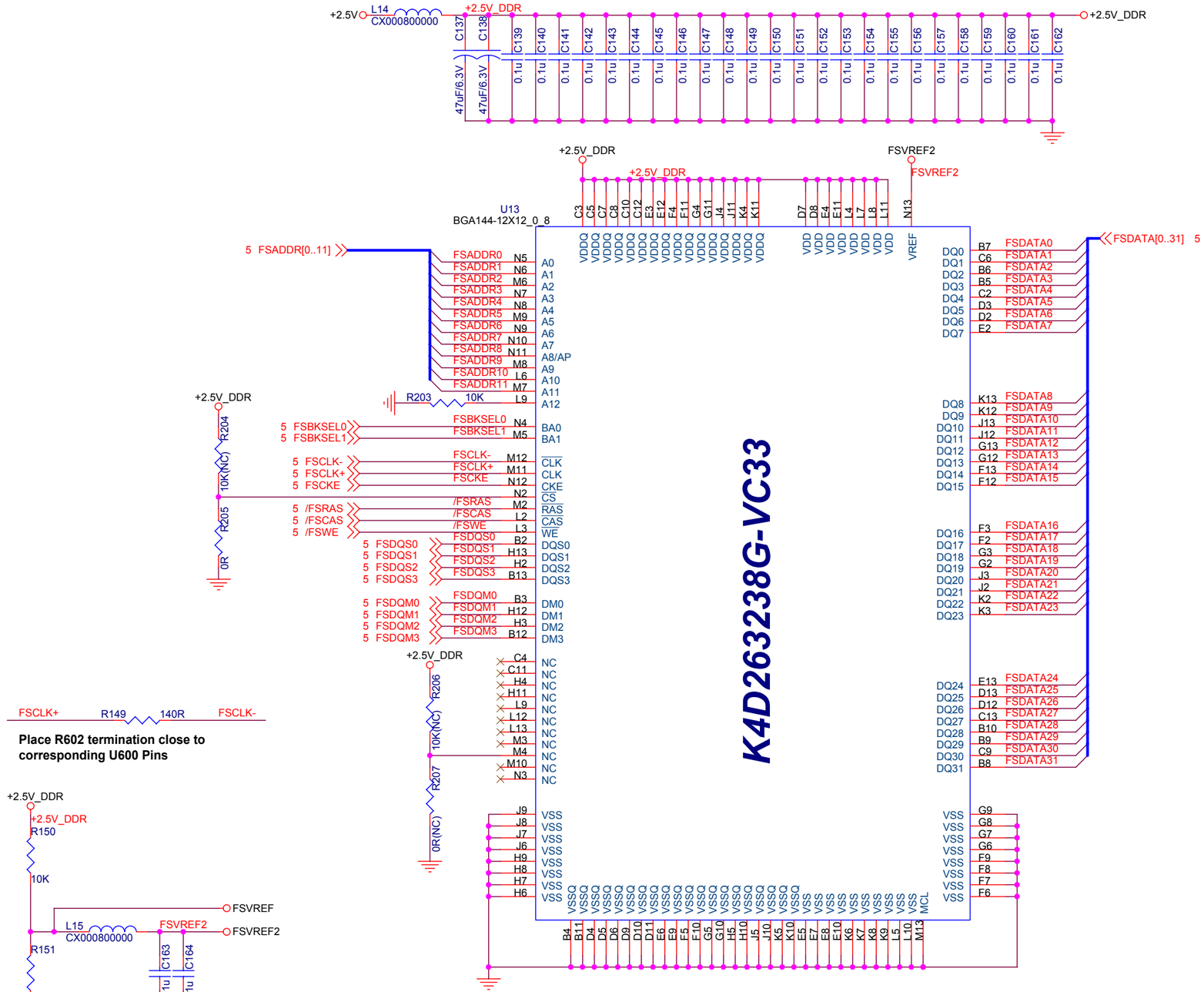
Item	ViewSonic P/N	Ref. P/N	Location	Q'ty
1	CB-00004360	DD0M7TPC005	CABLE ASSY M7T MB-VGA GP	1
2	CB-00004361	DDWCVPDV019	CABLE DVI-I(29/29P,1.8M)WCVP GP	1
3	A-00005180	AG240500004	ADP 24V 5A ES-120UB B 90~264V GP	1
4	P-00005194	HAWCVP01014	PE BAG WCVP GP	1
5	P-00005196	HBWCVP01015	END CAP-L WCVP GP	1
6	P-00005197	HBWCVP02011	END CAP-R WCVP	1
7	M-LB-0813-0747	HCL7V004013	CORE LABEL GP	1
8	#N/A	HCWCVP01016	ID LABEL WCVP GP	1
9	M-LB-0813-0745	HCL7V002011	SERIAL LEBAL L7V GP	1
10	M-LB-0813-1042	HCL7V019011	CARTON LABEL L7VC GP	1
11	P-00005195	HFWCVP01019	CARTON WCVP GP	1
12	DC-00005190	HGWCVP01010	CD+QSG WCVP GP	1
13	PL-00005198	JXLM5003011	HANDLE LM5S GP	1
14	M-00005193	JXWCVP01016	LCD FILM WCVP GP	1
15	M-LB-0813-1043	HCL70021011	HI-POT LABEL L70 GP	1
16	#N/A	HFWCVP02015	SPACE PLATE WCVP GP	0.084
17	A-PC-0106-0224	DM333181G97	POWER CORD 3P 1.8M(USA) GP	1
18	#N/A	HDWCVP01017	23" SERV. PAPER WCVP GP	1

9. Block Diagram



10. Schematic Diagrams



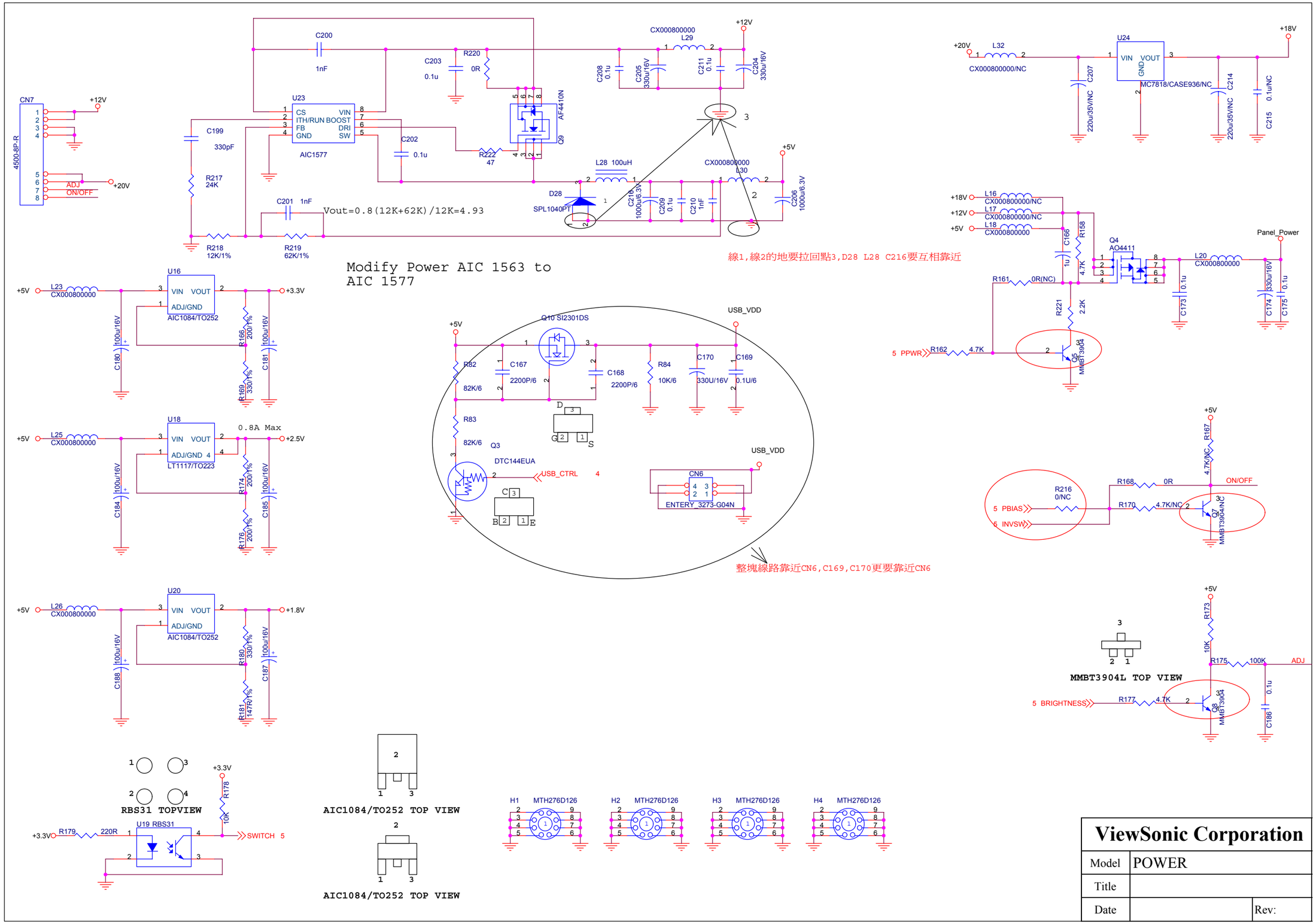


ViewSonic Corporation		
Model	DDR	
Title		
Date		Rev:

Gm1601

LCD TV / MONITOR CONTROLLER

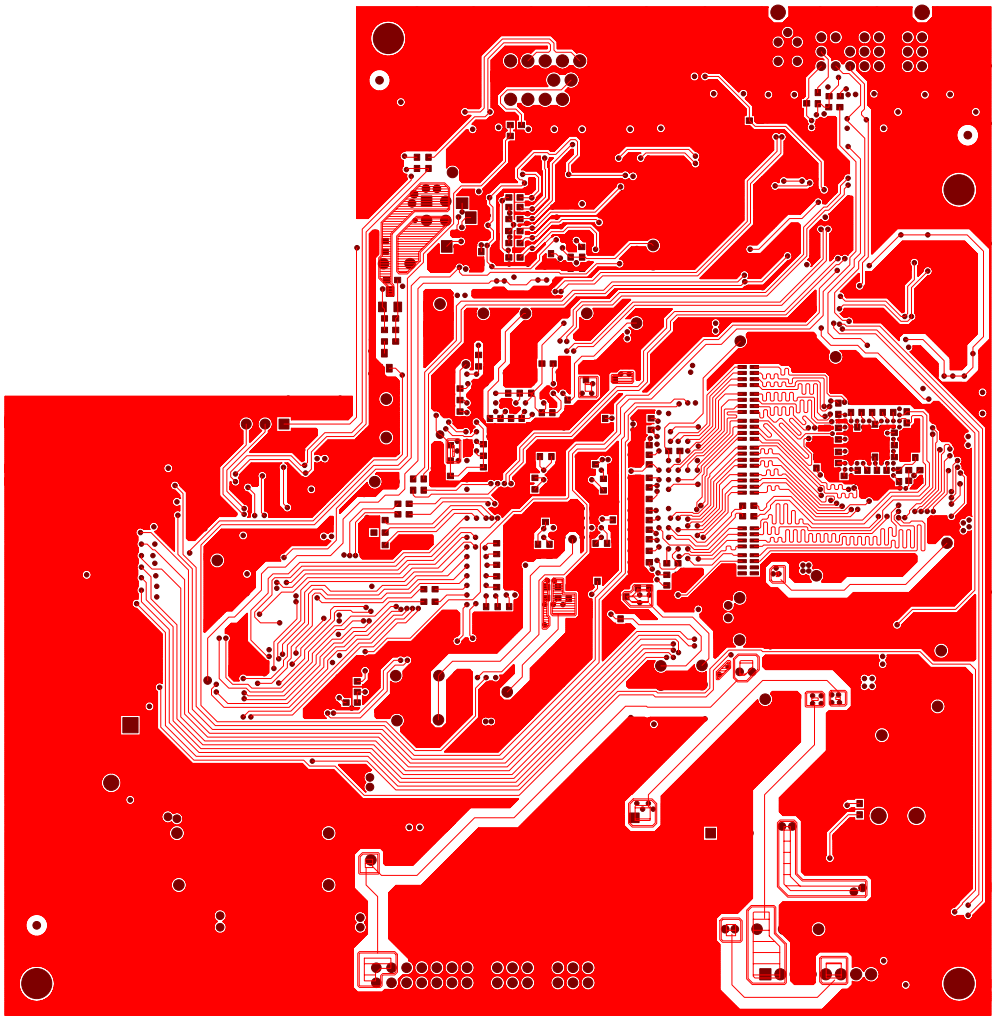
ViewSonic Corporation	
Model	CONTROLLER
Title	
Date	Rev:



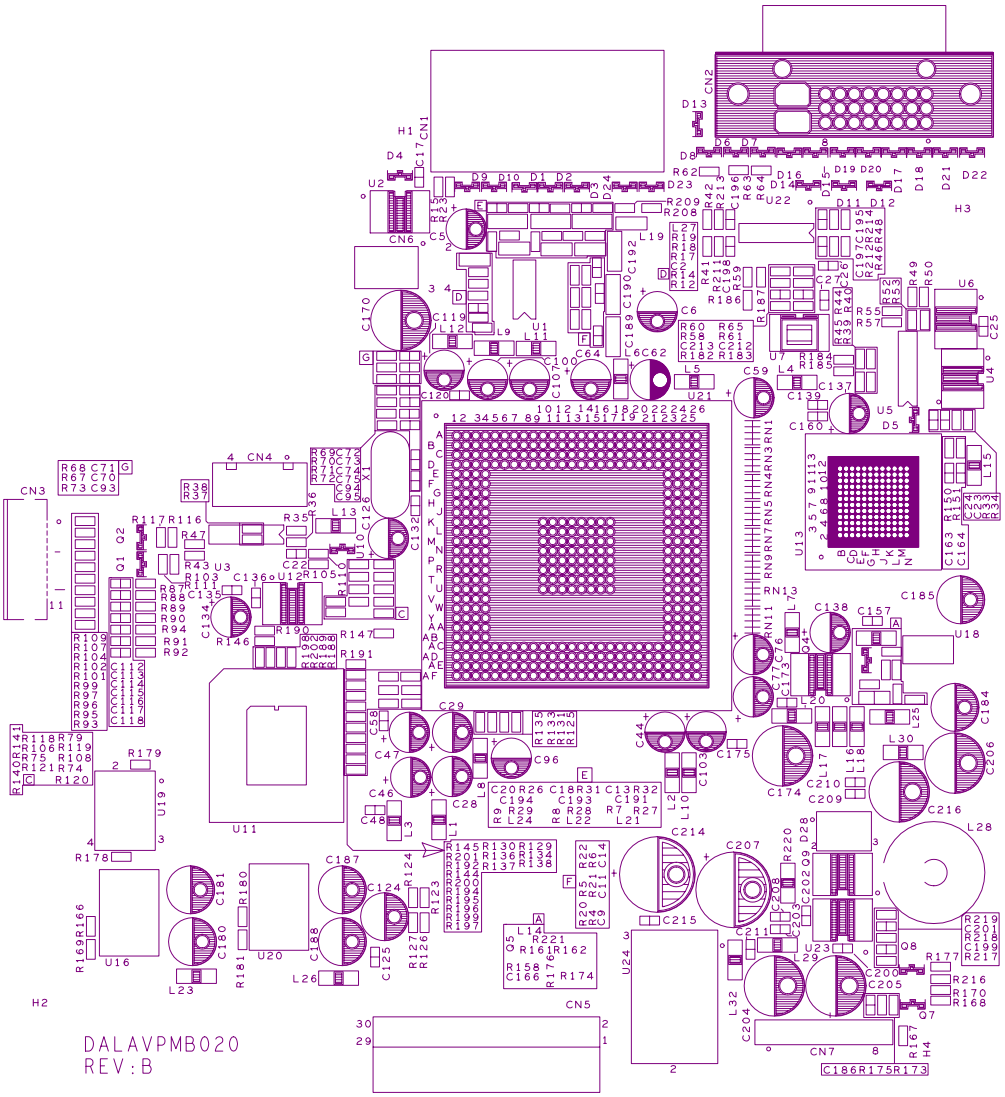
ViewSonic Corporation		
Model	POWER	
Title		
Date		Rev:

11. PCB Layout Diagrams

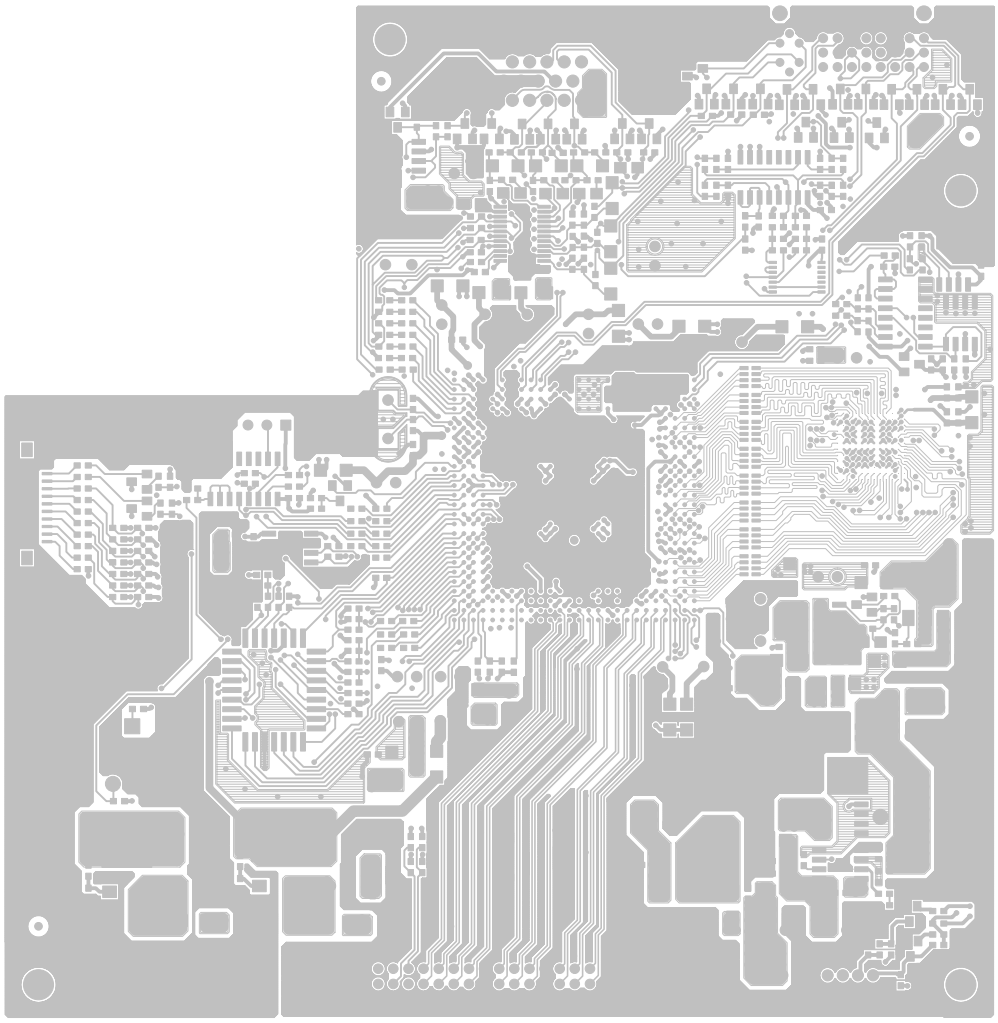
11.1 BOTTOM



11.2 BK TOP



11.3 TOP



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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?

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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)