Service Manual

ViewSonic VA270A-H

Model No. VS19972

27″ Color TFT LCD Display

(VA270A-H_User_SM Rev. 1a. Feb. 2025)

ViewSonic 381 Brea Canyon Road, Walnut, California 91789 USA - (800) 888-8583

Copyright
Copyright© 2025 by ViewSonic Corporation. All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual or otherwise, without the prior written permission of ViewSonic Corporation.

Disclaimer
ViewSonic makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranty of merchantability or fitness for any particular purpose. Further, ViewSonic reserves the right to revise this publication and to make changes from time to time in the contents hereof without obligation of ViewSonic to notify any person of such revision or changes.

Trademarks
Optiquest is a registered trademark of ViewSonic Corporation.
ViewSonic is a registered trademark of ViewSonic Corporation.
All other trademarks used within this document are the property of their respective owners.

Revision History

Revision	SM Editing Date	ECR Number	Description of Changes
1a	2/11/25		Initial Release.

Table of contents

1. Maintenance and Clean..... 3
2.Product Specifications.....4
3.OSD Settings and shortcut keys.....10
4.Tool& Equipment 20
5.Disassembly Procedure..... 23
6.Electronic Circuit Block Diagram..... 27
7.PCB Layout Diagrams 28
8.Firmware & EDID Programming SOP 30
9.Troubleshooting Guide 31
10. Exploded Diagram 33

1. Maintenance and Clean

Maintenance

General Precaution

- Make sure the monitor is turned off and the po er cable is unplugged from the power outlet.
- Never spray or pour any liquid directly onto the screen or case.
- Handle the monitor with care, as a darker-colored monitor, if scu ed, may show marks more clearly than a lighter-colored monitor.

Cleaning the Screen

- Wipe the screen with a clean, soft, li t-free cloth. This removes dust and other particles
- If the screen is still not clean, apply a small amou t of non-ammonia, non-alcohol based glass cleaner onto a clean, soft, li t-free cloth; then wipe the screen.

Cleaning the Case

- Use a soft, d y cloth.
- If the case is still not clean, apply a small amou t of non-ammonia, non-alcohol based, mild non-abrasive detergent onto a clean, soft, li t-free cloth, then wipe the surface.

Disclaimer

- ViewSonic® does not recommend the use of any ammonia or alcohol-based cleaners on the display screen or case. Some chemical cleaners have been reported to damage the screen and/or case of the monitor.
- ViewSonic® will not be liable for damage resulting f om use of any ammonia or alcohol-based cleaners.

2. Product Specifications

ViewSonic VA270A-H LCD Display

2024/10/21 Rev.1A (Draft)

27"W (27" Viewable) LCD monitor

P/N: VA270A-H

Model No: VS19972

INSTRODUCTION

1	**Sales Name**			<table><tr><td>Oracle P/N</td><td>Sales Name</td></tr><tr><td>VA270A-H</td><td>VA270A-H</td></tr></table>
2	**Display**	Panel P/N		BVT JS270LA-01 B2.8
		Drive Element		IPS Technology, a-si TFT Active Matrix LCD
		Border		3-Side Borderless Type
		Display Size		27 real diagonal / 69 cm
		Display Area		597.9 mm (H) x 336.3 mm (V)
		Dot Pitch		0.311 mm (H) x 0.311 mm (V)
		Resolution		FHD (Full HD) 1920 X 1080
		Aspect Ratio		16:9
		Backlight		LED
		Backlight MTBF		30000 Hrs (Min)
3	**OPTICAL PERFORMANCE**	Contrast Ratio	W/B	1500:1 (typ)
			DCR*1	50M:1
		Viewing Angle	H / V; CR ≧ 10	178 degree / 178 degree
		Color	Depth	16.7M, 8 bit (6 bit + FRC)
			Gamut	72% of NTSC (Size)
				SRGB 104.22% (Size) /
		Response Time	Tr+Tf (typ)	N/A
			GTG(AVR)	4 ms
			MPRT	1 ms
		Luminance		250 cd/m2
4	**SURFACE TREATMENT**	Cover Glass		N/A
		Treatment		Anti-Glare type, Hardness 3H, Haze 25%

5	**INPUT SIGNAL**	Summary	Resolution (Max)	1920 x 1080
			Fv (Max)	120 Hz
			Native Resolution Fv (Max)	120 Hz
		Analog	Video	RGB Analog
			Sync	Separate
			Frequency	Fh = 24 ~ 86 KHz; Fv = 48 ~ 75 Hz
			Bandwidth	180 Mhz
		Digital	Video	HDMI (v1.4)
			Sync	TMDS
			Frequency	Fh = 30 ~ 135 KHz; Fv = 48 ~ 120 Hz
			Bandwidth	340 Mhz
6	**CONTENT PROTECTION**			HDCP 1.4
7	**COMPATIBILLITY**	Display		Windows 10/11 certified; macOS tested
8	**RESOLUTION**	Native		FHD (Full HD) 1920 X 1080
		Maximun	RGB Analog	1920 X 1080 @ 75 Hz
			HDMI (v1.4)	1920 X 1080 @ 120 Hz
9	**Multimedia**	Audio		N/A
10	**CONNECTORS**	I/O		VGA In x1
				HDMI In (v 1.4) x1
		Internal power supply		DC Socket (Center Positive)
		Standard charge	Voltage (V)	N/A
			Current (mA)	N/A

<table>
<tr><td>11</td><td>POWER</td><td>Voltage</td><td></td><td>DC 12V</td></tr>
<tr><td></td><td></td><td>Frequency</td><td></td><td>N/A</td></tr>
<tr><td></td><td></td><td>Consumption</td><td>On Mode</td><td>Max = 30 Watt
Typ = 28 Watt
<table><tr><td colspan="2">Mode</td><td>w/ Speaker</td><td>w/o Speaker</td></tr><tr><td rowspan="2">Standard</td><td>Max (Watt)</td><td>N/A</td><td>30</td></tr><tr><td>Typ (Watt)</td><td>N/A</td><td>28</td></tr><tr><td>Optimize</td><td>Typ (Watt)</td><td>N/A</td><td>25</td></tr><tr><td>Conserve</td><td>Typ (Watt)</td><td>N/A</td><td>22</td></tr></table></td></tr>
<tr><td></td><td></td><td></td><td>Standby Mode</td><td>0.3 Watt (Max)</td></tr>
<tr><td></td><td></td><td></td><td>Off Mode</td><td>0.3 Watt (Max)</td></tr>
<tr><td>12</td><td>POWER ADAPTER</td><td>Input</td><td>Voltage</td><td>AC 100-240V</td></tr>
<tr><td></td><td></td><td></td><td>Frequency</td><td>50/60 Hz</td></tr>
<tr><td></td><td></td><td></td><td>Connector</td><td>Wall Type (Detachable plug)</td></tr>
<tr><td></td><td></td><td>Output</td><td>Voltage</td><td>DC 12V</td></tr>
<tr><td></td><td></td><td></td><td>Rated current</td><td>3.0A</td></tr>
<tr><td></td><td></td><td></td><td>Connector</td><td>Pig tail with DC Jack (Center Positive)</td></tr>
<tr><td>13</td><td>ERGONOMICS</td><td>Tilt Range (Degrees)</td><td></td><td>-3 ~ 15</td></tr>
<tr><td>14</td><td>CONTROLS</td><td>Physical</td><td>Key buttons</td><td>Key 1 (favorite), Key 2, Key 3, Key 4, Key 5 (power)</td></tr>
<tr><td></td><td></td><td>OSD</td><td>Language</td><td>15</td></tr>
<tr><td></td><td></td><td></td><td>Main Menu</td><td>Input Select, ViewMode, Color Adjust, Manual Image Adjust, Setup Menu</td></tr>
<tr><td></td><td></td><td></td><td>Blue Light Filter</td><td>Yes</td></tr>
<tr><td></td><td></td><td></td><td>ECO Mode</td><td>Yes</td></tr>
<tr><td></td><td></td><td></td><td>Game Mode</td><td>Yes</td></tr>
<tr><td></td><td></td><td></td><td>View Mode</td><td>Yes</td></tr>
<tr><td>15</td><td>OPERATING CONDITION</td><td>Temperature</td><td></td><td>32°F to 104°F (0°C to 40°C)</td></tr>
<tr><td></td><td></td><td>Humidity</td><td></td><td>20% to 90% (no condensation)</td></tr>
<tr><td>16</td><td>STORAGE/ SHIPPING CONDITION</td><td>Temperature</td><td></td><td>-4°F to 140°F (-20°C to 60°C)</td></tr>
<tr><td></td><td></td><td>Humidity</td><td></td><td>5% to 90% (no condensation)</td></tr>
</table>

17	**DIMENSIONS**	Physical	Display w/ Stand	613.19 mm (W) x 447.49 mm (H) x 188.97 mm (D) 24.14 " (W) x 17.62 " (H) x 7.44 " (D)
			Wall Mount	613.19 mm (W) x 362.99 mm (H) x 51.03 mm (D) 24.14 " (W) x 14.29 " (H) x 2.01 " (D)
		Packing		676 mm (W) x 458 mm (H) x 102 mm (D) 26.6 " (W) x 18 " (H) x 4 " (D)
18	**WEIGHT**	Net	Display w/ Stand	3.5 Kg (7.7 Lbs)
			Wall Mount	3.2 Kg (7.1 Lbs)
		Gross		4.7 Kg (10.4 Lbs)
19	**REGULATIONS**	VSA		N/A
		VSE		CE, CE EMC, CB, RoHS, ErP, REACH, WEEE, EAC, UkrSEPRO
		VSI		BSMI, KC, K-MEPS, BIS
		VSCN		N/A
20	**ENERGY EFFICIENCY**	Energy Star	PON	N/A
			Annual Energy Consumption	N/A
		EEI (After 2023)		

C	Energy Efficiency Class			E
D	Screen Size	E	Centimeters	69
		F	Inch	27
G	Energy Consumption (KWh/1000h)			18
I	Power Consumption Standby (less than)			0.3W
J	Power Consumption Off (less than)			0.3W
K	Native Resolution			1920x 1080

21	**RELIABILITY**	MTBF		70000 Hrs (Excluding panel)
22	**POWER SAVING FUNCTION**	On	Blue	Normal
		Actice Off	Amber Flicker	<= 0.3W
		Off		<= 0.3W

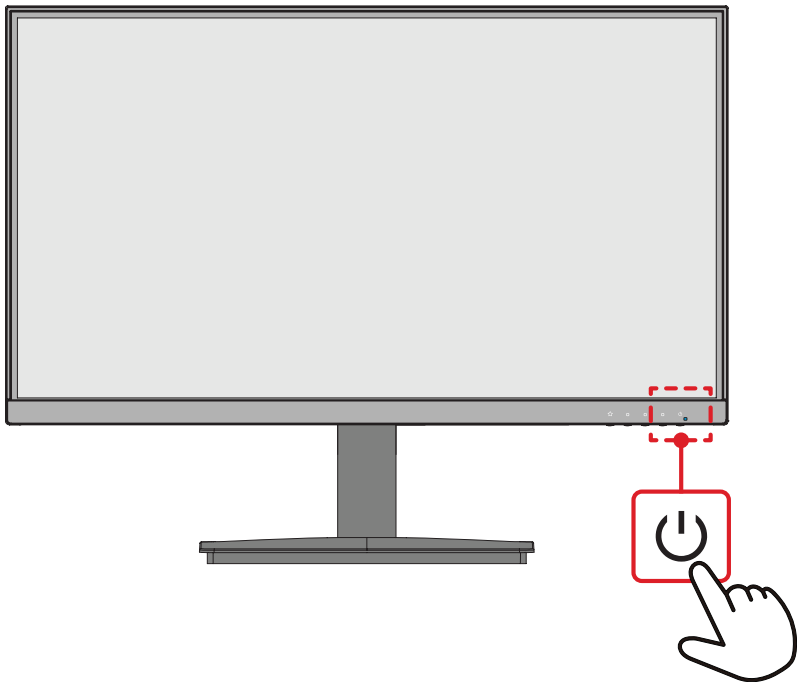
23	**LOGISTICS**	VSA	Pallet Load	N/A
			20' Container	N/A
			40' Container	N/A
			40'HQ Container	N/A
		VSE	Pallet Load	70 pieces
			20' Container	700 pieces -- (70 sets x 10 pallets)
			40' Container	1470 pieces -- (70 sets x 21 pallets)
			40'HQ Container	N/A
		VSI	Pallet Load	70 pieces
			20' Container	700 pieces -- (70 sets x 10 pallets)
			40' Container	1470 pieces -- (70 sets x 21 pallets)
			40'HQ Container	N/A
		VSCN	Pallet Load	N/A
			20' Container	N/A
			40' Container	N/A
			40'HQ Container	N/A
		VSHK	Pallet Load	N/A
			20' Container	N/A
			40' Container	N/A
			40'HQ Container	N/A
		VSJP	Pallet Load	N/A
			20' Container	N/A
			40' Container	N/A
			40'HQ Container	N/A
24	**ID Code**	UPC Code		76690703094 5
		EAN Code (WW)		076690703094 5
		EAN Code (China)		N/A
		JAN Code		N/A
		GLN Code		0766907110104
		S/N Prefix		XZ1
		EDID PID Code		42A5
25	**COUNTRY OF ORIGION**			CHINA
26	**WALL MOUNT**	VESA Compatible		75 x 75

27	**Eye ProTech**		Level Flicker Free Low Blue Light	Eye ProTech Yes Software solution
28	**CABINET COLOR**			Black
29	**OTHERS**			Variable Refresh Rate, MPRT 1ms, Security Slot, DDC/2B, DDC/CI, Detachable Base
30	**PACKAGE CONTENTS**	VA270A-H LCD Display x1 HDMI Cable (v1.4; Male-Male) -- 1.5m x1 AC/DC Adapter x1 Quick Start Guide x1 Power plug x1 or 2 (by country)		

3. OSD Settings and shortcut keys

Turning the Monitor On/Off

NOTE: The monitor will still consume power as long as the power cord is plugged in. If the monitor is not being used for extended periods, please unplug the power cord from the power outlet.



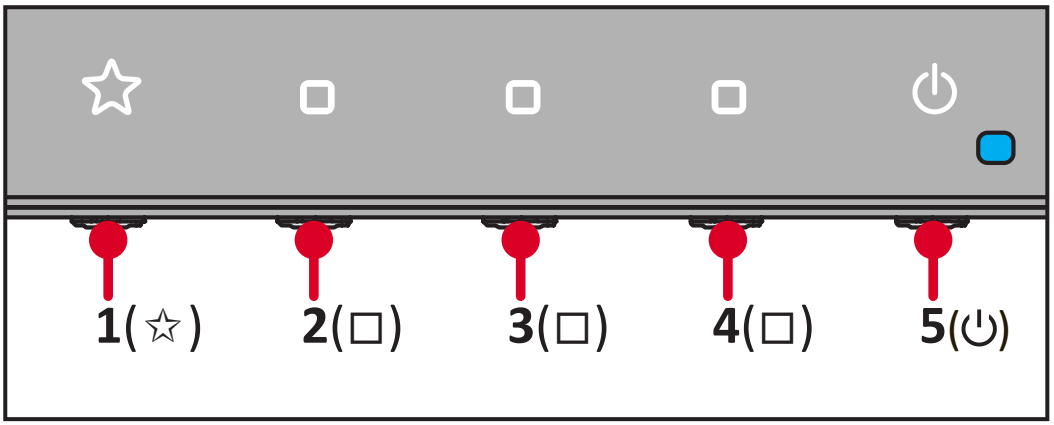
1. Plug the connected power adapter into a power outlet.

2. Press the **Power**( ) button to turn on the monitor.

3. To turn the monitor off, press the **Power**( ) button again.

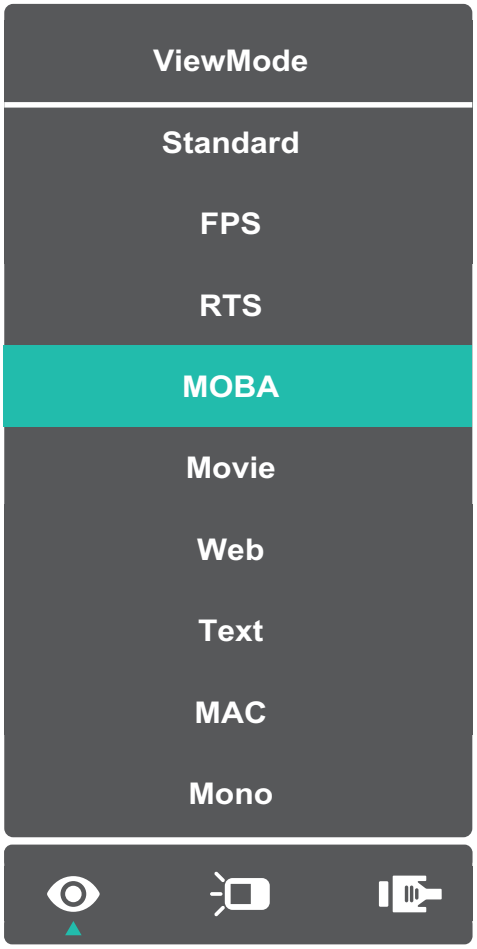
Using the Control Panel Keys

Activate Hot Keys, navigate the On-Screen Display (OSD) Menu, and change settings.



Quick Menu

Press the **1(☆)** key to activate the Quick Menu.

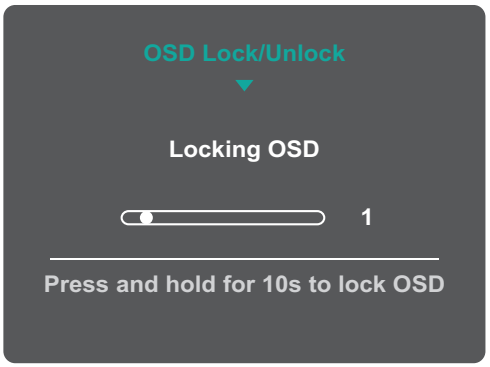
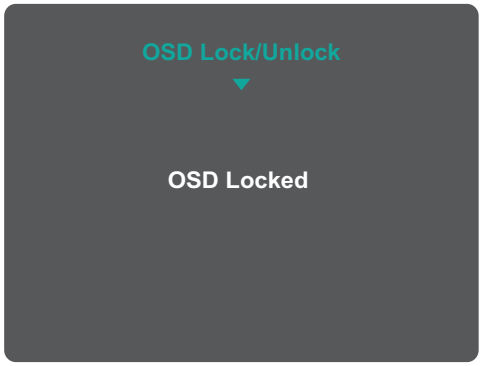


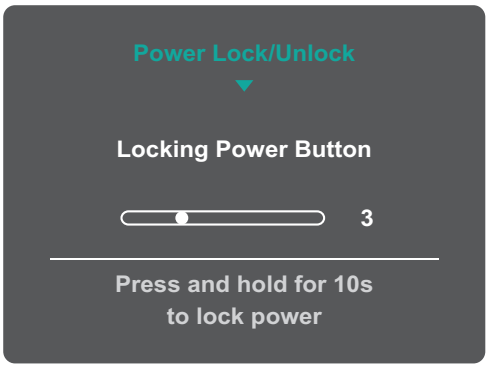
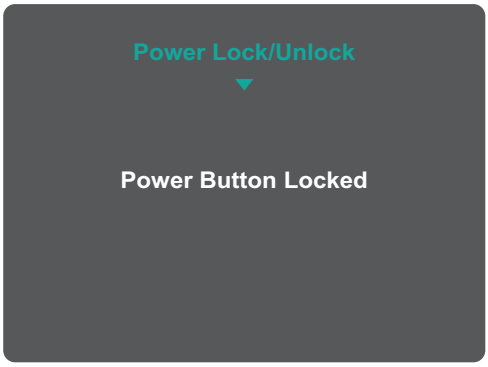
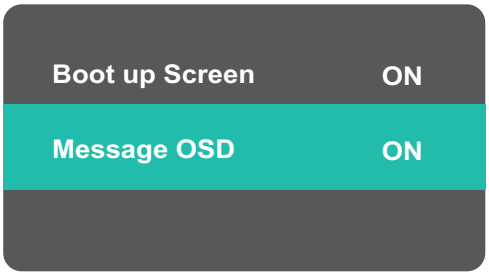
NOTE: Follow the key guide that appears on the screen to select the option or make adjustments.

Menu	Description
ViewMode	Select one of the preset color settings.
Contrast/Brightness	Adjust the contrast or brightness level.
Input Select	Select the input source.
Exit	Exit the Quick Menu.

Hot Keys

When the On-Screen Display (OSD) Menu is off, you can quickly access special functions by using the **Control Panel Keys**.

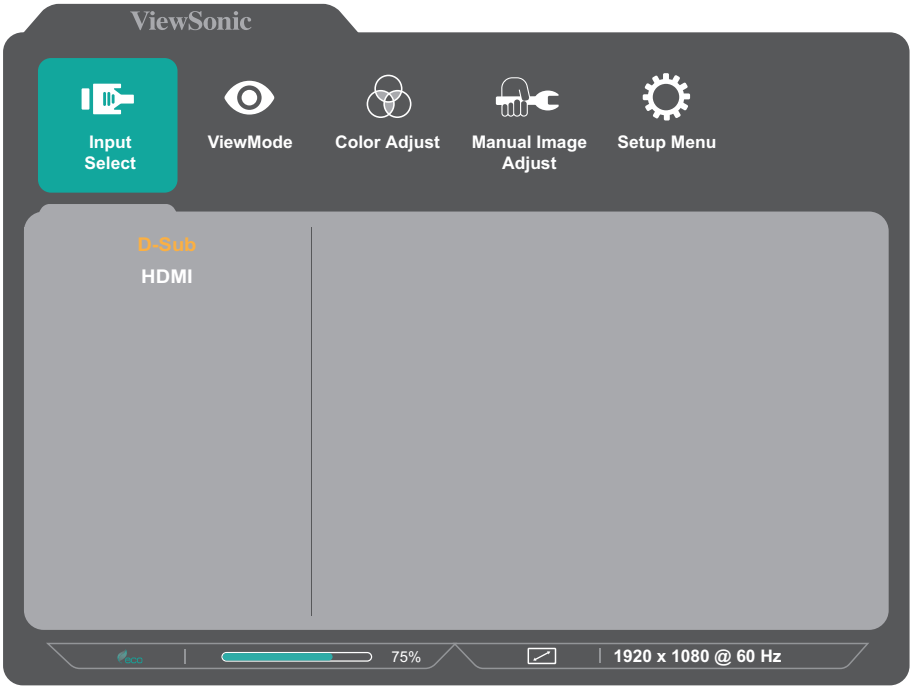
Key	Description
1 (☆) + 3	Press and hold the keys to lock/unlock the OSD Menu. When the menu appears on the screen, continue holding both keys for 10 seconds to lock/unlock the OSD Menu.  If the OSD Menu is locked, the below message will appear on the screen: 

Key	Description
2 + 3	Press and hold the keys to lock/unlock the **Power** (⏻) button. When the menu appears on the screen, continue holding both keys for 10 seconds to lock/unlock the **Power** (⏻) button.  If the **Power** (⏻) button is locked, the below message will appear on the screen: 
1 (☆) + 4	Press the keys to display/hide the Boot up Screen or Message OSD when the device is turned on. 

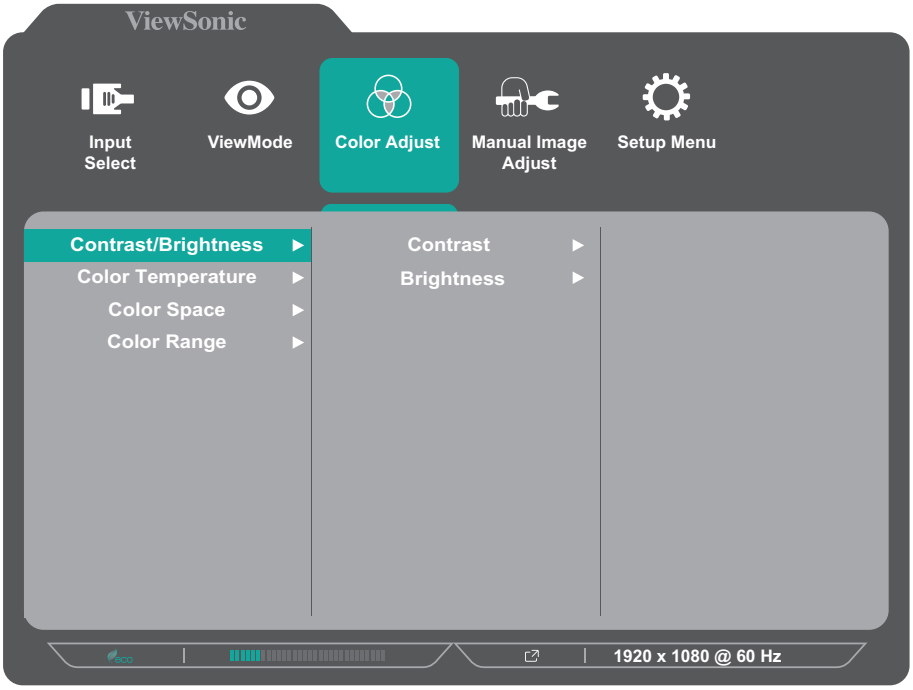
Configuring the Settings

General Operations

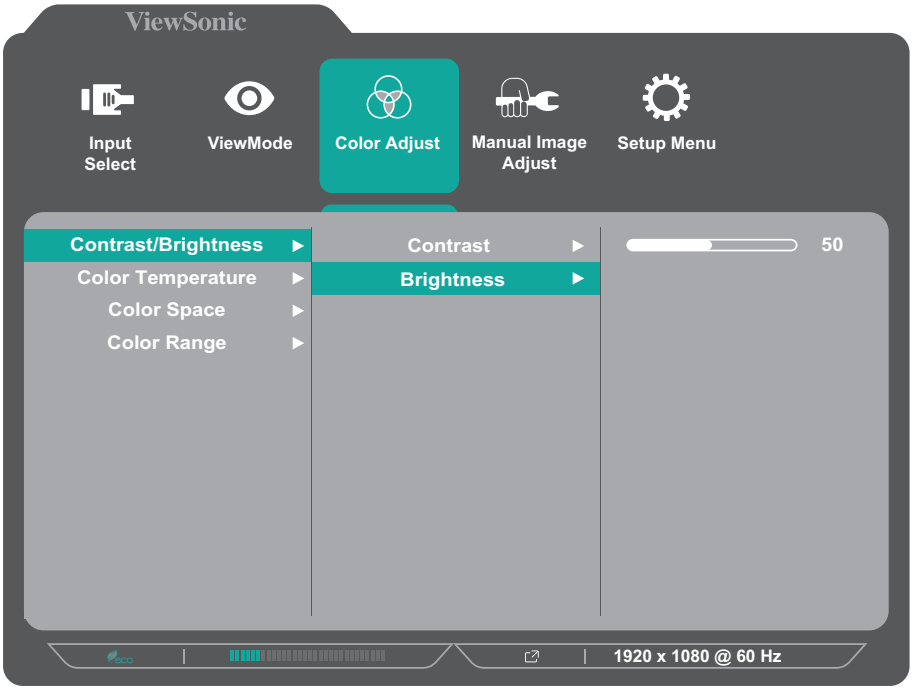
1. Press the **3** or **4** key to display the On-Screen Display (OSD) Menu.



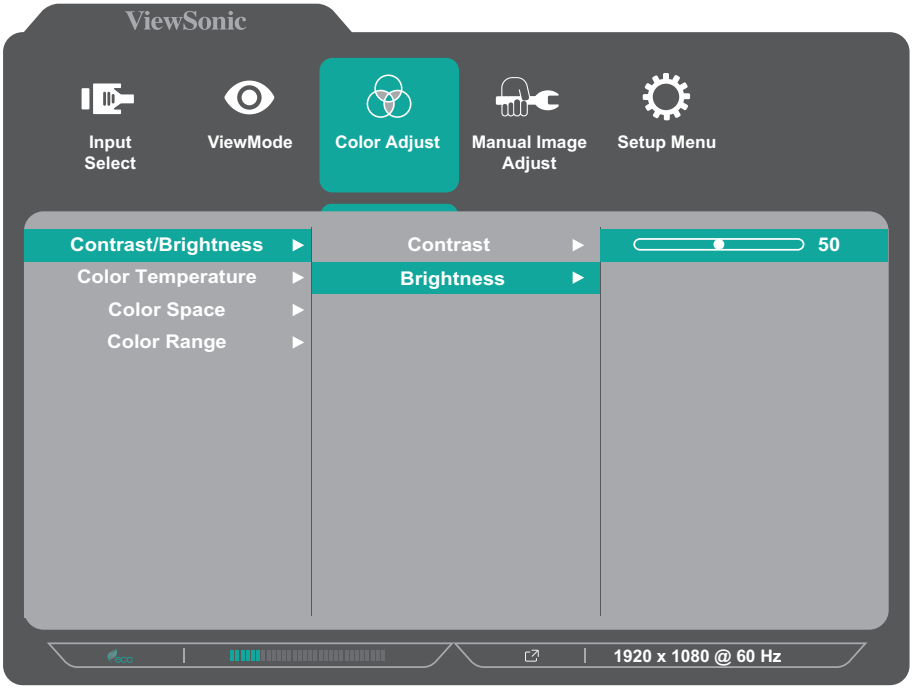
2. Press the **1 (☆)** or **2** key to select the main menu. Then press the **3** key to enter the selected menu.



3. Press the **1 (☆)** or **2** key to select the desired menu option. Then press the **3** key to enter the sub-menu.



4. Press the **1 (☆)** or **2** key to adjust/select the setting. Then press the **3** key to confirm.



NOTE: Certain menu option adjustments do not require the user to press the **3** key to confirm the selection. Follow the key guide that appears on the screen to select the option or make adjustments.

5. Press the **4** key to return to the previous menu.

NOTE: To exit the OSD Menu, press the **5** (⏻) key.

On-Screen Display (OSD) Menu Tree

Main Menu	Sub-menu	Menu Option		
Input Select	D-Sub			
	HDMI			
ViewMode	Standard			
	FPS			
	RTS			
	MOBA			
	Movie			
	Web			
	Text			
	MAC			
	Mono			
Color Adjust	Contrast/Brightness	Contrast	(-/+, 0~100)/1	
		Brightness	(-/+, 0~100)/1	
	Color Temperature	sRGB		
		Bluish		
		Cool		
		Native		
		Warm		
		User Color	Red	(-/+, 0~100)/1
			Green	(-/+, 0~100)/1
			Blue	(-/+, 0~100)/1
	Color Space (for HDMI only)	Auto		
		RGB		
		YUV		
	Color Range (for HDMI only)	Auto		
		Full Range		
		Limited Range		

Main Menu	Sub-menu	Menu Option		
Manual Image Adjust	Auto Image Adjust (for D-Sub only)			
	Horizontal Size (for D-Sub only)	(-/+, 0~100)/1		
	H./V. Position (for D-Sub only)	Horizontal Position	(-/+, 0~100)/1	
		Vertical Position	(-/+, 0~100)/1	
	Fine Tune (for D-Sub only)	(-/+, 0~100)/1		
	Sharpness	(-/+, 0~100)/25		
	Blue Light Filter	(-/+, 0~100)/1		
	Aspect Ratio	4:3		
		5:4		
		16:9		
		16:10		
	Overscan (for HDMI only)	On		
		Off		
	Black Stabilization	(-/+, 0~100)/10		
	Advanced DCR	(-/+, 0~100)/25		
	Response Time	Standard		
		Advanced		
		Ultra Fast		

Main Menu	Sub-menu	Menu Option	
Setup Menu	Language Select	English	
		Français	
		Deutsch	
		Español	
		Italiano	
		Suomi	
		Svenska	
		Русский	
		Türkçe	
		Česká	
		Tiếng Việt	
		日本語	
		한국어	
		繁體中文	
		简体中文	
	Variable Refresh Rate (for HDMI only)	On	
		Off	
	1ms Mode	On	
		Off	
	Resolution Notice	On	
		Off	
	Information		
	OSD Timeout	(-/+, 5/15/30/60)	

Main Menu	Sub-menu	Menu Option	
Setup Menu	OSD Background	On	
		Off	
	Power Indicator	On	
		Off	
	Auto Power Off	On	
		Off	
	Sleep (for HDMI only)	30 minutes	
		45 minutes	
		60 minutes	
		120 minutes	
		Off	
	ECO Mode	Standard	
		Optimize	
		Conserve	
	Auto Detect	On	
		Off	
	DDC/CI	On	
		Off	
	Memory Recall		

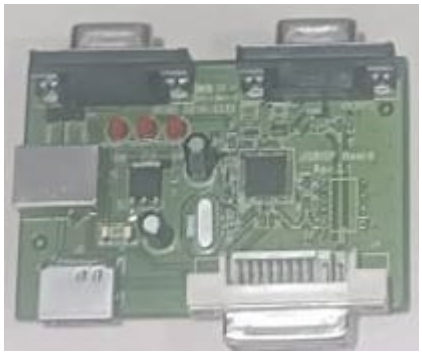
4. Tool& Equipment

2.1 Hardware tool

2.1.1 Cross screwdriver



2.1.2 FW tool



2.1.3 USB 2.0 cable



2.1.4 HDMI cable



2.1.5 Guide knife



2.2 Software tool

2.2.1 RTD tool V3.6

2.2.2 Sm_setup25.exe

2.3 Equipment

2.3.1 True RMS multimeter



2.3.2 Video pattern generator



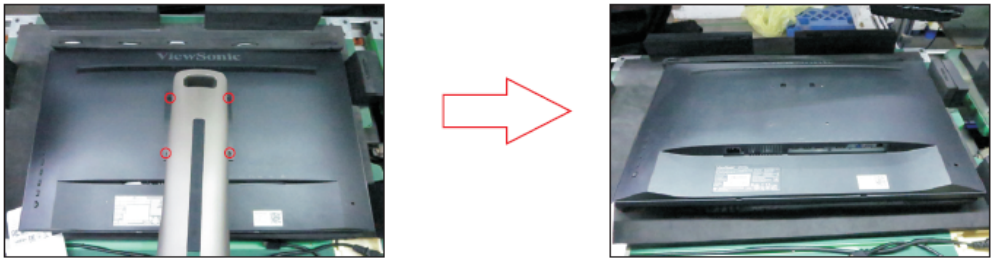
2.3.3 Oscilloscope



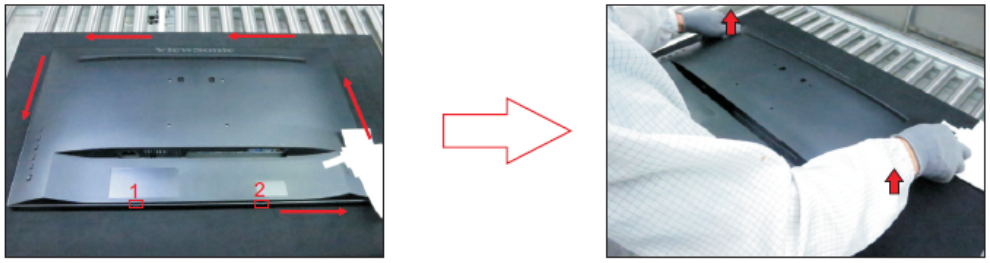
5. Disassembly Procedure

Disassembly Procedure

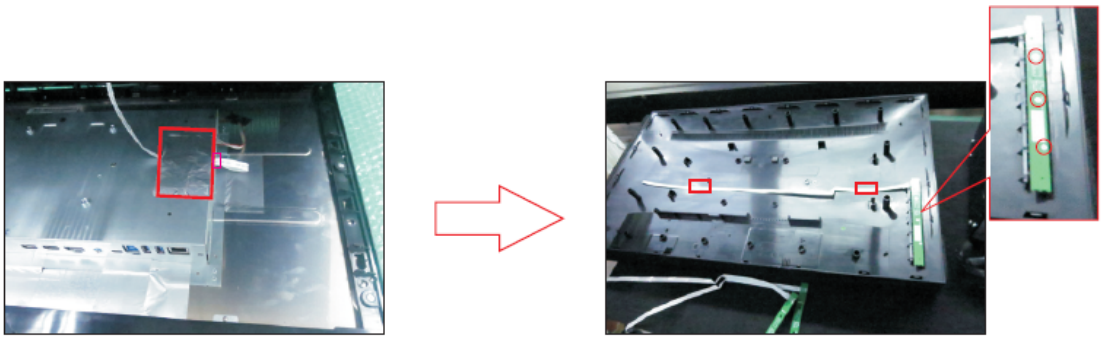
1. Take out the monitor from the bage and put the monitor on a protect cushion. Use a Phillips-head screwdriver to remove 4pcs screws for unlocking the stand away from the monitor.



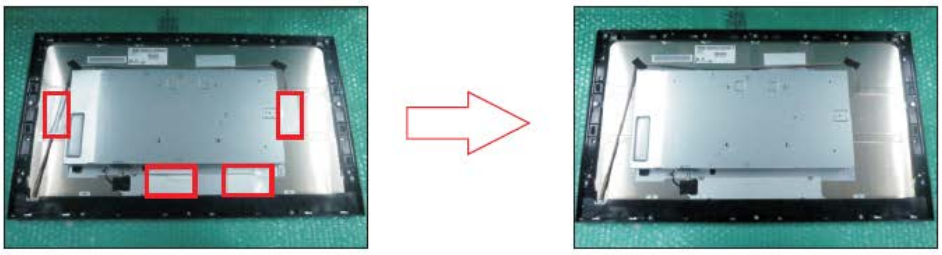
2. Use a small slot screwdriver to insert the two gaps(marked as No.1~2) on the bottom side of the rear cover to prize up the rear cover. Use one hand to press the panel module, the other hand to pull up the rear cover in order of arrow preference for unlocking mechanisms of rear cover.



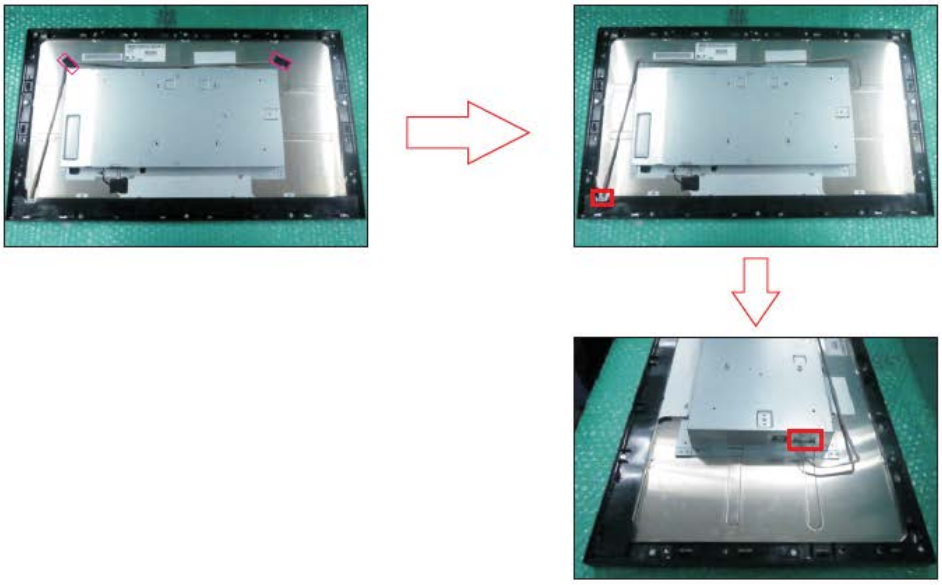
3. Lift up the rear cover carefully, then use a proper tool to disconnect the function key cable from the connector. Tear off 1pcs aluminum foil to release the key cable, and then remove the rear cover and put it on a protect cushion. Use a Phillips-head screwdriver to remove 3pcs screws for unlocking the key board, then tear off the double-faced adhesive tape which sticked on the back of the cable for releasing the cable from the rear cover, then release the function key board from the hooks of the rear cover.



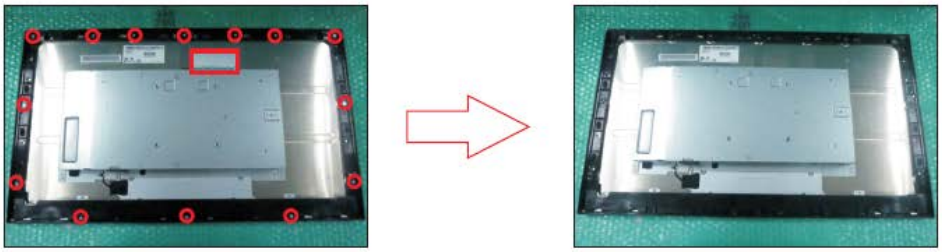
4. Tear off 4pcs aluminum foil which are sticked on the specific positions for resealing the bracket and panel lamp cable as the picture below shown.



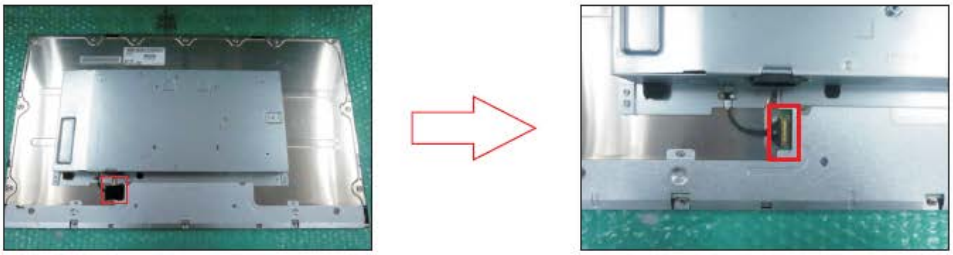
5. Tear off 2pcs adhesive tapes of releasing the panel lamp cable, and then disconnect the panel lamp cable from the connectors of panel module and board.



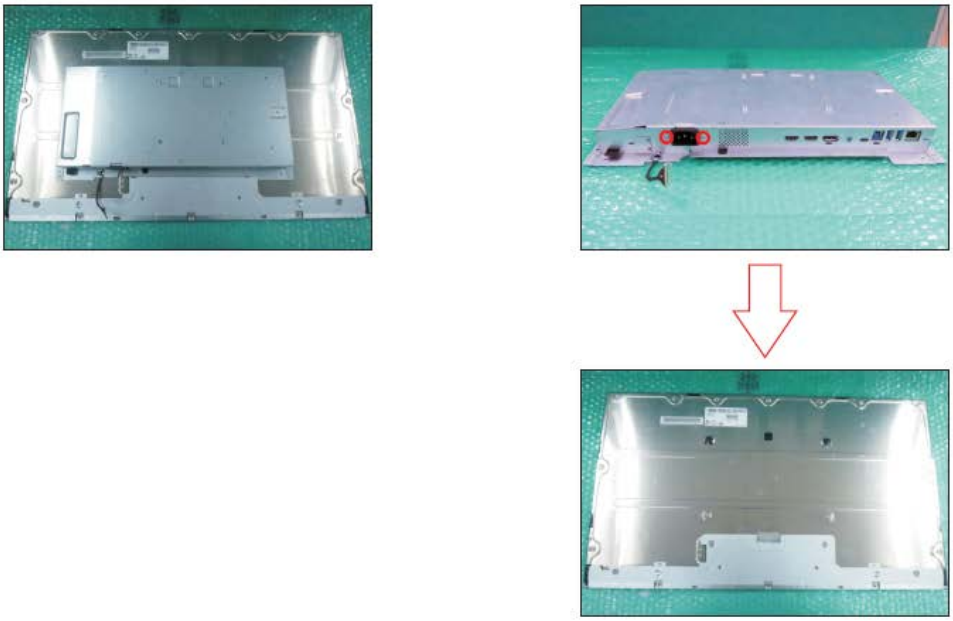
6. Use a Phillips-head screwdriver to remove 14pcs screws for unlocking the middle frame with the panel module, and then tear off 1pcs aluminum foil and remove the middle bezel.



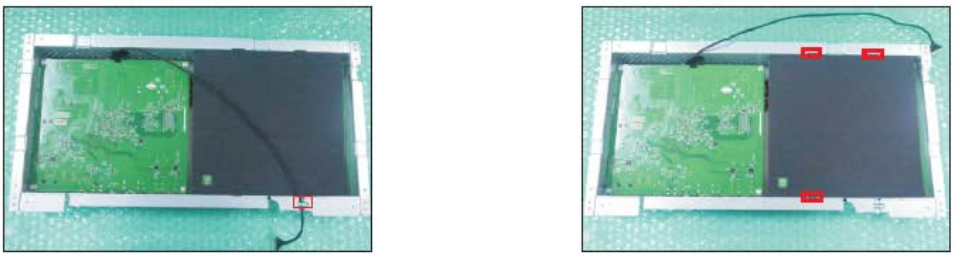
7. Tear off the acetate tape for uncovering the panel EDP connector, then remove the EDP cable from the connector of the panel module.



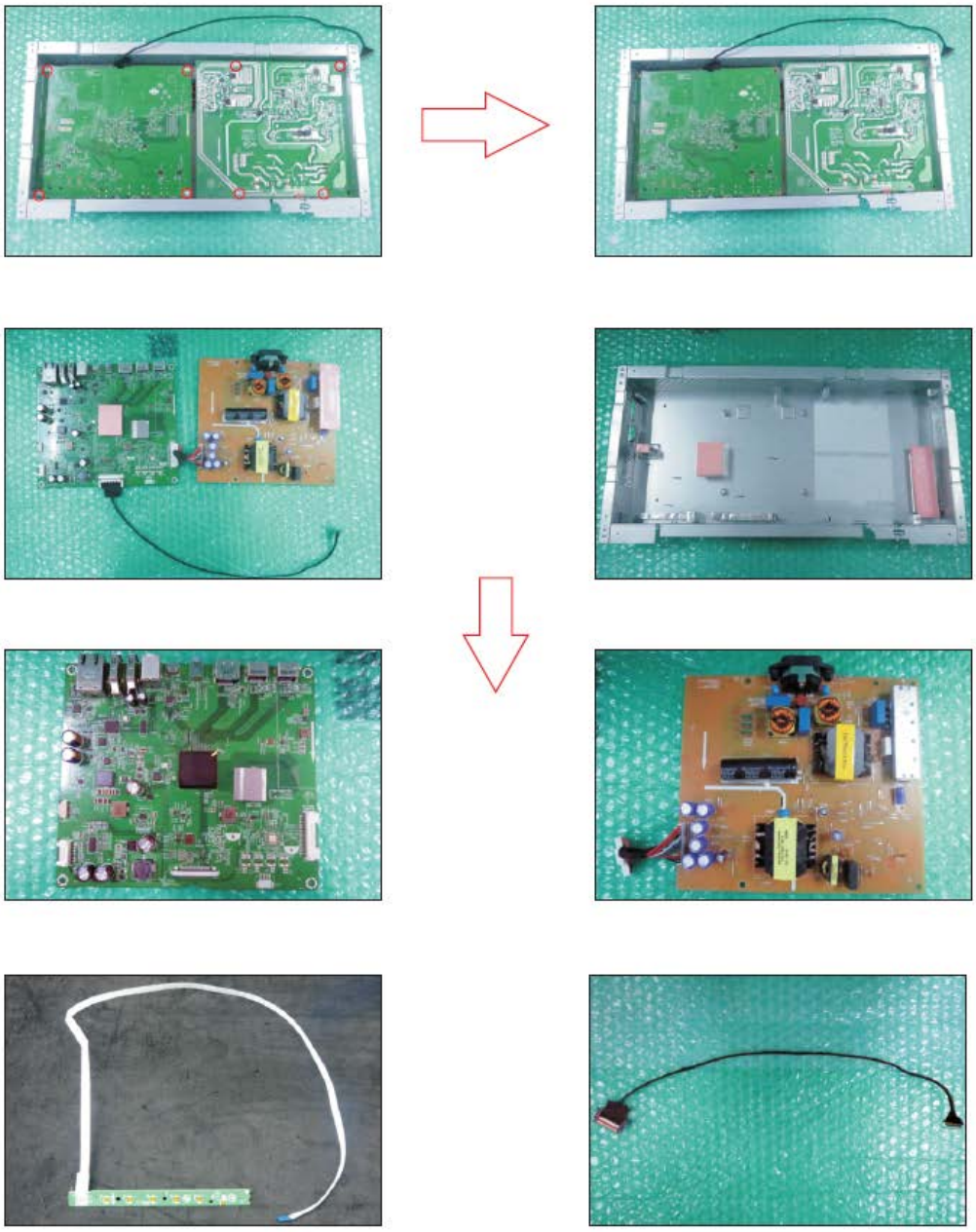
8. Lift up the bracket and put it on a protective cushion. Use a Phillips-head screwdriver to remove 2pcs screws for unlocking AC power outlet.



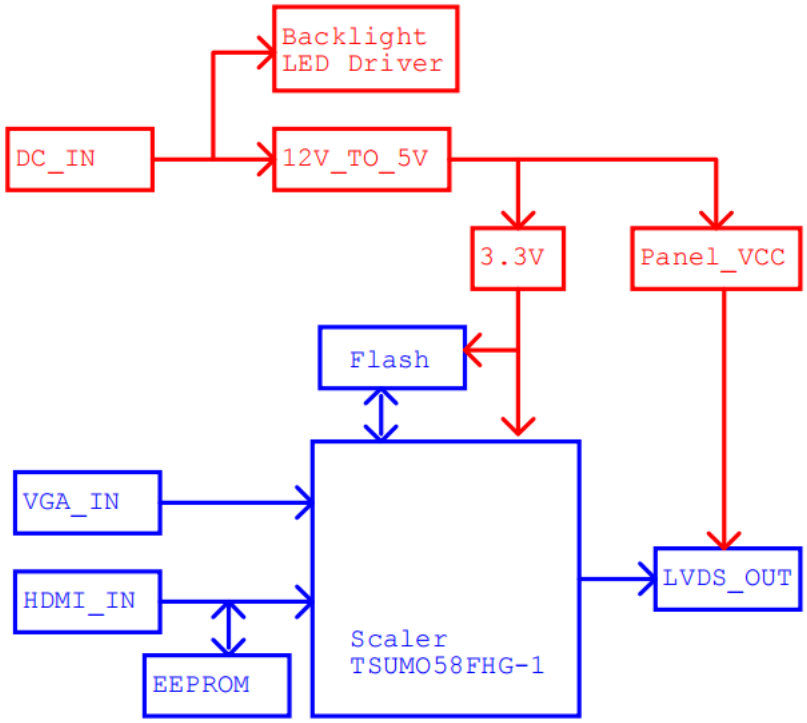
9. Put the bracket chassis module on a protective cushion, release the EDP cable from the hook of the bracket. Release the black Mylar from the hooks of the bracket chassis module.



10. Use a Phillips-head screwdriver to remove 8pcs screws for unlocking the power board and interface board. Remove the power board and interface board from the bracket chassis, then put them on a protective cushion, disconnect all the cables.

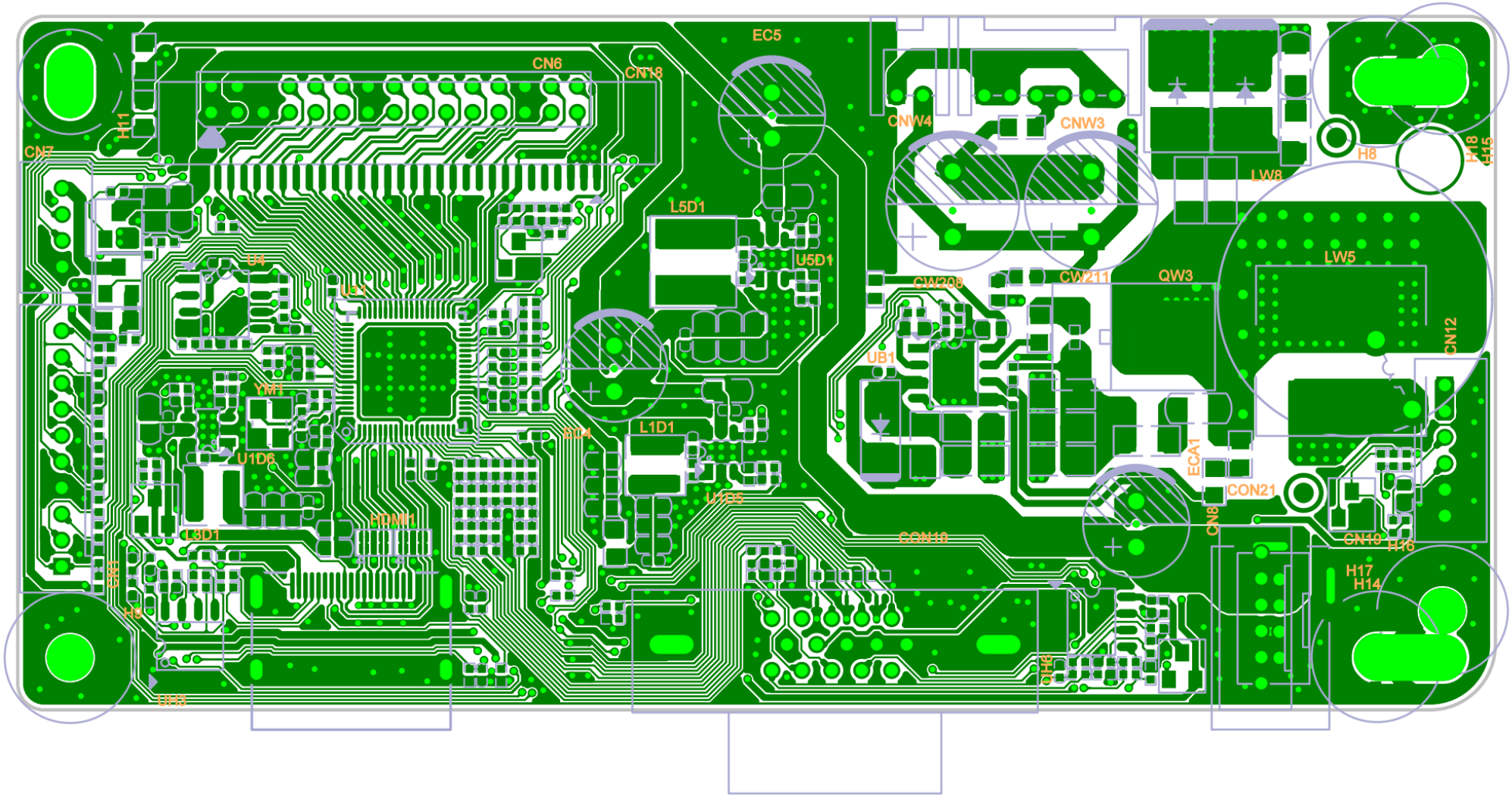


6. Electronic Circuit Block Diagram

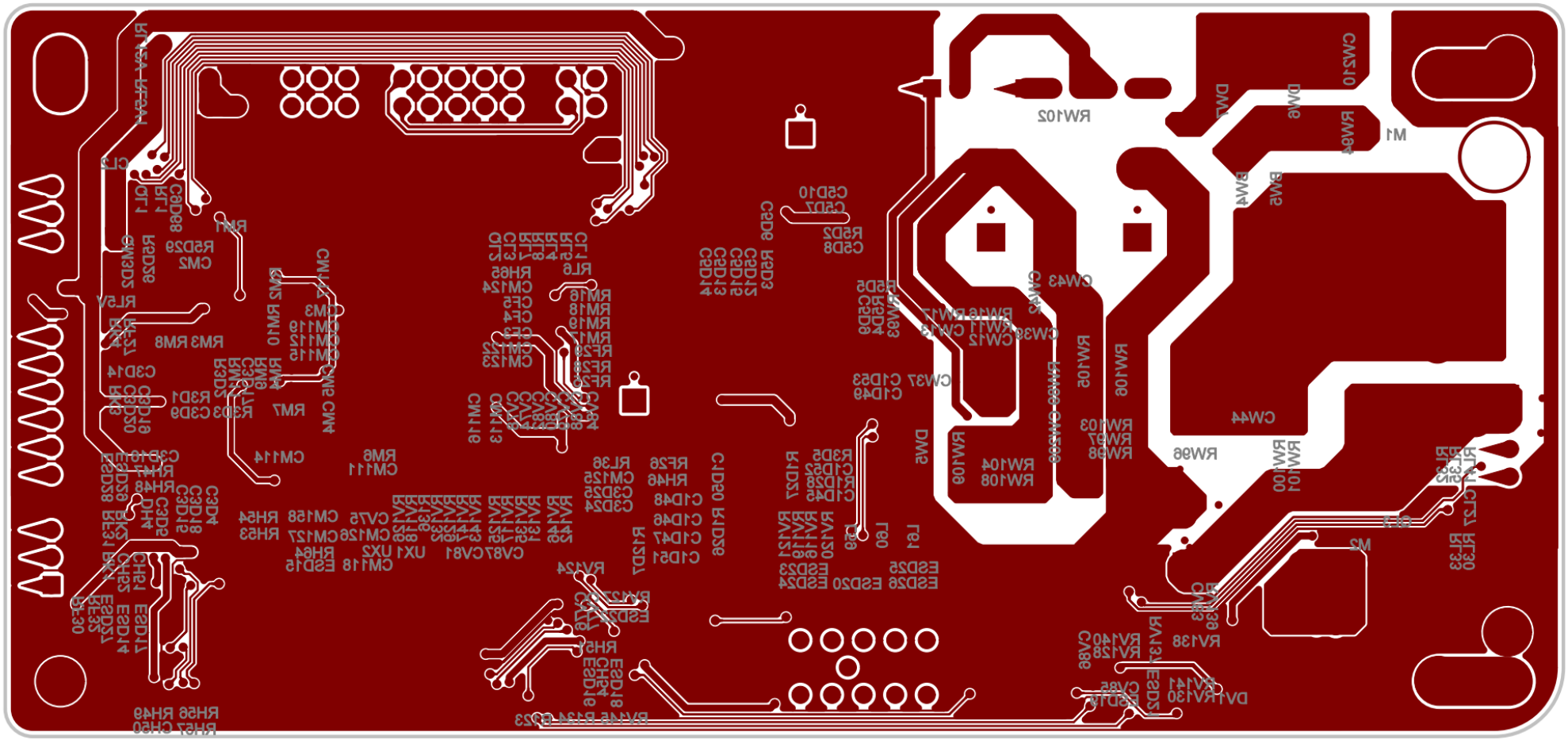


7. PCB Layout Diagrams

Main board
TOP



Bottom



8. Firmware & EDID Programming SOP

Firmware & EDID Programming Link

Please visit the website below for software or firmware updates and service support.

website: https://www.viewsonic.com/global/support/warranty/

9. Troubleshooting Guide

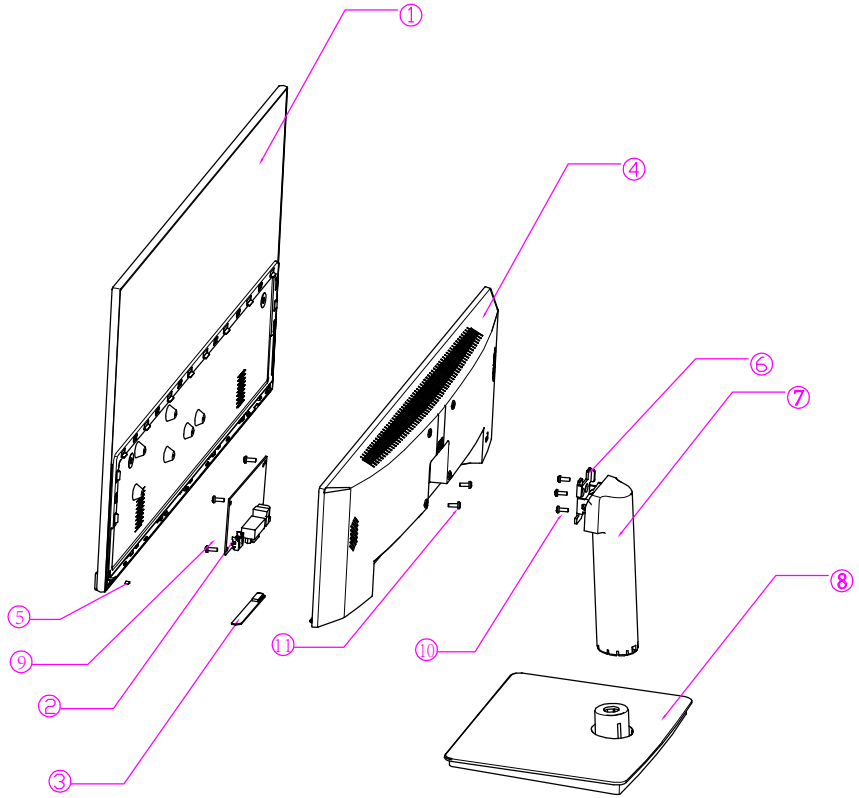
Troubleshooting

This section describes some common problems that you may experience when using the monitor.

Problem or Issue	Possible Solutions
No power	• Make sure you have turned on the monitor by pressing the **Power** (⏻) button. • Make sure the power cord is properly and securely connected to the monitor and power outlet. • Plug another electrical device into the power outlet to verify that the outlet is supplying power.
Power is On, but no image appears on screen	• Make sure the video cable connecting the monitor to the computer is properly and securely connected. • Adjust the brightness and contrast settings. • Make sure the correct input source is selected.
Wrong or abnormal colors	• If any colors (red, green, or blue) are missing, check the video cable to make sure it is properly and securely connected. Loose or broken pins in the cable connector could cause an improper connection. • Connect the monitor to another computer.
Screen image is too light or dark	• Adjust brightness and contrast settings via the OSD Menu. • Reset the monitor to factory settings.
Screen image cuts in and out	• Make sure the correct input source is selected. • Check for bent or broken pins in the video cable connector. • Make sure the video cable connecting the monitor to the computer is properly and securely connected.
Screen image is blurred	• Adjust the resolution to the correct Aspect Ratio. • Reset the monitor to factory settings.
The screen isn't centered correctly	• Adjust the horizontal and vertical controls via the OSD Menu. • Check the Aspect Ratio. • Reset the monitor to factory settings.
The screen appears yellow	• Make sure the "Blue Light Filter" is Off.

Problem or Issue	Possible Solutions
The OSD Menu does not appear on the screen/the OSD controls are inaccessible	• Check whether the OSD Menu is locked. • Turn off the monitor, unplug the power cord, plug it back in, and then turn on the monitor. • Reset the monitor to factory settings.
Control panel keys do not work	• Press only one key at a time. • Restart the computer.
Some menus aren't selectable in the OSD	• Adjust the ViewMode or the input source. • Reset the monitor to factory settings.
No audio output	• If using ear-/headphones, ensure the mini stereo jack is connected. • Make sure the volume is not muted, nor set to 0. • Check the Audio Input setting.
The monitor will not adjust	• Make sure there are no obstructions near or on the monitor, and that there is adequate spacing. • For more information, see "Adjusting the Viewing Angle".
USB devices connected to the monitor do not work	• Make sure the USB cable is connected properly. • Try changing to another USB port (if applicable). • Some USB devices require a higher electric current; connect the device directly to the computer.
The external device is connected, but no image appears on the screen	• Make sure the Power is On • Adjust brightness and contrast via the OSD Menu. • Check the connecting cable and make sure it is properly and securely connected. Loose or broken pins in the cable connector could cause an improper connection.

10. Exploded Diagram and Exploded Parts List



EXPLODED PARTS LIST (VA270A-H)

ViewSonic Model Number:VS19972

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	E-00015537	ABMPPJS0100334	Panel	1
2	B-00017811	ACMFWXXXX00365	Main Board	1
3	B-00017262	ACMPBXXXX00221	Key Pad	1
4	C-00016248	ACMSLLA2700216	Back Cover	1
5	PL-00009892	ACMSLLAXX00212	lens	1
6	HW-00012847	ACMWJLA2700211	Hinge	1
7	C-00016203	ACMSLLAXX00303	Stand Assembly	1
8	C-00014630	ACMSLXXXX00035	Pedestal	1
9	HW-00012843	ACMSWXXXX00068	screw	4
10	HW-00012844	ACMSWXXXX00072	screw	3
11	HW-00012846	ACMSWXXXX00071	screw	2

* *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. Maintenance and Clean				
2.Product Specifications				
3. OSD Settings and shortcut keys				
4.Tool& Equipment				
5. Disassembly Procedure				
6. Electronic Circuit Block Diagram				
7. PCB Layout Diagrams				
8. Firmware & EDID Programming SOP				
9.Troubleshooting Guide				
10 .Exploded Diagram				

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 Taiwan at facsimile 886-2-8242-3660.