

User Manual

Panoramic Display

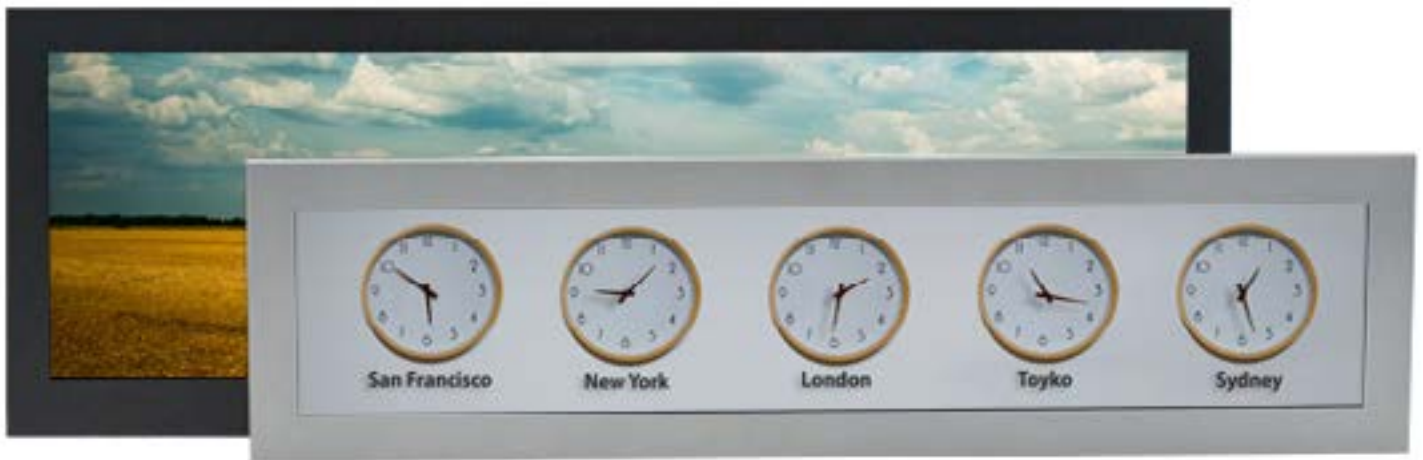


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Notice

1. When disconnecting the display from an electrical outlet, the plug must be pulled out from the socket. Do not remove power cord from outlet by pulling from the cord. Pull from the plug head.
2. **WARNING** – To reduce the risk of fire or electric shock, do not expose this appliance to rain or other forms of moisture.
3. Display must not be exposed to liquids via dripping or splashing. Please do not place liquid-filled items such as vases near the display.
4. Use only a properly grounded plug and receptacle.
5. **CAUTION** – These instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any service other than that contained in the operating instructions unless you are qualified to do so.

	CAUTION	
RISK OF ELECTRIC SHOCK DO NOT OPEN		
<p>CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		



This symbol is intended to alert the user to the presence of insulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this product near water.
6. Clean only with dry microfiber cloth.
7. Use alcohol-free screen cleaner if dry cloth is insufficient.
8. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
9. Do not install near any heat sources such as radiators, heat registers, stoves, or other display (including amplifiers) that produce heat.
10. Do not remove ground prong from three-pronged plugs. If your outlet will not accept three-pronged plugs, consult an electrician for replacement.
11. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the display.
12. Only use attachments/accessories specified by the manufacturer.
13. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the display. When a cart is used, exercise caution when moving the cart/display combination to avoid injury from tip-over.
14. Unplug this display during lightning storms or when unused for long periods of time.
15. Refer all servicing to qualified service personnel. Servicing is required when the display has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the display, the display has been exposed to rain or moisture, does not operate normally, or has been dropped.
16. Do not expose this display to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the display.
17. To completely disconnect this display from the wall outlet, disconnect the power supply cord plug from the AC receptacle/wall socket
18. The mains plug of the power supply cord shall remain readily operable.
19. An display with CLASS I construction shall be connected to a wall socket outlet with a protective grounding connection.
20. Note: Prolonged use of headphones at a high volume may cause damage your ears.
21. Notice to users : This is a Class A digital device
22. This device is designed for commercial use and features safety certificates for electromagnetic interference (EMI). Users should be mindful of EMI issues.

Environmental Conditions for Installation

As the LCD panel is very sensitive to physical impact, installation requires considerable caution. Minimum clearance (20cm) must be secured for smooth ventilation. Installation must avoid air tight or near air tight places. Improper ventilation causes malfunction and shortens product lifetime by rapid internal temperature rise. If Product has to installed at the improper ventilation, additional ventilation openings or fans must be provided to keep the internal temperature between 0~40°C.

- For ground of Product and application devices, it should be connected as frame ground
- **Please refer to the special installation instruction guide carefully if the display monitor shall install on not enough solid and/or unevenness surface wall and build into wall.**
- Ensure that electrical outlet(s) are capable of supporting this product's power consumption

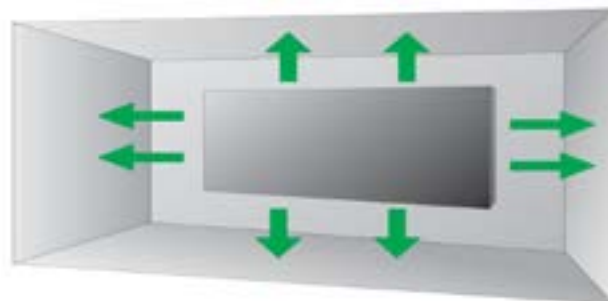
Clearance for Ventilation

When installing the product, make sure there is at least 10cm clearance on all sides for proper ventilation and do not seal the product in an enclosed space.

If the product is installed in a location with poor ventilation, the internal temperature can increase rapidly, and it can cause frequent malfunctions and rapid reduction of the product lifespan.

Embedded Product

In cases where less clearance is provided than the recommendations below, make sure to add cooling fans near the upper part of the set to reduce inner temperature



Clearance

Without Trim	With Trim	Note
2" (~5cm)	4" (~10cm)	If installing with minimal clearance, use short screwdriver to affix trim screws.

Mounting on a Wall Surface

Please secure minimum clearance as shown in the picture for adequate ventilation and technical service.

- **Ventilation space in front of Product must be furnished for heat dispersion. If the front space of Product must be sealed, there must be consideration for the heat dispersion in the rear side of Product**



Storage & Packing

To ensure optimal performance and longevity of your display, it is important to follow the proper storage and packing procedures.

Packing

- Before packing the display, make sure it is turned off and unplugged from the power source.
- The panoramic display should be packed in the same box and packing materials that it came with. This includes the foam, foam/anti-static bag, and edge protectors.
- Place the display carefully inside the foam or anti-static bag and wrap it neatly around the display.
- Insert the display into the foam case inside the box.
- Make sure the screen of the display is facing the front as marked on the box.
- Make sure that the control buttons are on the bottom.
- Store the accessories behind the display in the pocket between the foam case and the box on the left or right side of the display.
- Store the wall mount in the rear pocket (opposite of the display screen) between the box and the foam case.
- Insert the top foam.
- Place the trim kit on top of the top foam.
- Close and tape the box.
- Keep the box upright at all times.



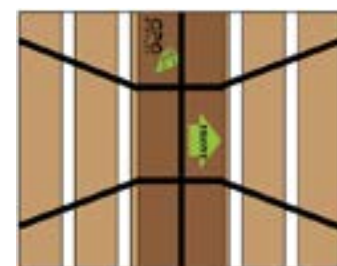
[Fig.1] Single display strapped onto a pallet.



[Fig.2] Multiple displays strapped onto a pallet.

Palletizing

- Use a standard wooden pallet that can support the weight and size of the displays. The pallet should be in good condition and free of nails, splinters, or cracks. The original pallet that the display was shipped with will always be the best option.
- If there are multiple displays, arrange the displays so that the largest are at the bottom.
- Have the front of the displays facing inward towards the middle of the pallet. This will reduce the risk of damage to the screen during transportation.
- The displays can be stacked up to three rows if necessary. (See Fig. 2)
- Strap the displays securely to the pallet. Use the edge protectors to protect the boxes from the straps.
- Use two straps going across vertically and two straps going across horizontally. For a single-unit pallet, fewer straps are required (see Fig. 3).
- The straps should be tight enough to prevent the displays from moving, but not too tight to cause pressure or deformation. (Fig. 3)



[Fig.3] Top View of strapping on a single display.

Storage

- Store the displays in a cool, dry, and well-ventilated area. Avoid direct sunlight, heat sources, and moisture. See Fig. 4 for storage and operating parameters.
- The displays can only be stacked on top of each other in 3 rows maximum.
- If you need to store the displays for a long time, check them periodically for any signs of deterioration or malfunction.
- If you need to transport the displays, use a pallet to avoid any potential damage. Follow the instructions above.

Parameter	Value		Unit
	Min.	Max.	
Operating Temperature	0	40	°C
Operating Ambient Humidity	20	80	%RH
Storage Temperature	-20	60	°C
Storage Humidity	5	90	%RH

[Fig.4] Storage & Operating Parameters of the Display

Accessories



HDMI Cable



RS232 Cable



Remote Controller



Batteries (AAA x 2)



Power cord



AC/DC Power Adapter

- ✓ **Wall Mount**
- ✓ **Trim**
- ✓ **Adapter Bracket**

NOTE: image not provided as appearance of above items varies by screen size/model

Remote Controller



Key	Function	Data Code
POWER	Turn on or turn off display power.	0x1A
MENU	Display the OSD menu on no menu status or Exit a menu of sub-menu	0x05
OK	Select highlighted function.	0x13
↑	Select previous menu item / Decrease slider value.	0x11
↓	Select next menu item / Increase slider value.	0x10
←	Decrease the audio volume.	0x15
→	Increase the audio volume.	0x14

Buttons & Display Position

OSD Controls

Button	Function
POWER	Powers display On or Off
MENU	Displays/toggles the OSD menu, exits sub-menus
SELECT	Select highlighted menu function
DOWN	Navigate downward in OSD menu, Decrease slider value
LEFT	Navigate leftward in OSD menu, Decrease slider value
UP	Navigate upward in OSD menu, Increase slider value
RIGHT	Navigate rightward in OSD menu, Increase slider value

LED Indicator Status

LED Status	Color
Power Input (Initial)	Amber
Power On, Active Input	Green
Power Saving (DPMS)	Amber
No Cable	Amber
No Signal	Amber
Power Off / Standby Mode	Red
No Power Input	Off/ No color

Selecting Display Position

a. Panoramic Displays will accept signal resolutions with 4:3 and 16:9 aspect ratios. However, they will only display the top one-third, two-fifths, or one-half of this signal, depending on the display model. For example, when a 1920x1080 signal is sent to PA28H, the top half (1920x540) of the image is displayed on the panel. The exception to this is when a signal resolution equivalent to the native resolution of the display is used (e.g. 1920x360 for PA48H, 1920x540 for PA50H).

b. To change the display position, press the “down” directional button on the remote controller four times in quick succession. This will toggle your view between the top and bottom portions (half, third, or two-fifths) of the 4:3 or 16:9 content being displayed.

c. Signal resolutions equivalent to the displays’ native resolution is supported for all models.

Connectivity and Power Requirements

Input Signal Connector (PA12H-PA19H)

DVI x1	DVI-D
HDMI x1	HDMI 1.4a
RS232 x1	D-Sub 9pin female, Straight-through
VGA x 1	15pin D-Sub

Input Signal Connector (PA20H-PA50H)

VGA x1	15pin D-Sub
HDMI x2	HDMI 1.4a
RS232 x1	D-Sub 9pin female, Straight-through

Power Supply Rating

Model	Power Consumption	Adaptor DC Output	Adaptor AC Input
PA12H	7.2 Watt (Typ.)	12V 3.5A (Max)	100~240VAC
PA16H	6 Watt (Typ.)	12V 3.5A (Max)	100~240VAC
PA19H	15.6 Watt (Typ.)	12V 3.5A (Max)	100~240VAC
PA20H	22 Watt (Typ.)	12V 3.5A (Max)	100~240VAC
PA27H	27 Watt (Typ.)	24V 2.5A (Max)	100~240VAC
PA28H	36 Watt (Typ.)	24V 2.5A (Max)	100~240VAC
PA37H	56 Watt (Typ.)	24V 3.3A (Max)	100~240VAC
PA48H	46 Watt (Typ.)	24V 2.5A (Max)	100~240VAC
PA50H	46 Watt (Typ.)	24V 3.3A (Max)	100~240VAC

User Controls

OSD Key Button	5-Key
OSD Language	English

Supported Timing

Scanning Frequency

Horizontal	31 ~ 95KHz
Vertical	56 ~ 75Hz

Input Resolution [Analog RGB, HDMI, DP]

Recommended Resolution	1024x256 @60Hz (for PA12H) 1280x398 @60Hz (for PA14H) 1366x238 @60Hz (for PA16H) 1920x360 @60Hz (for PA19H, PA27H, PA48H) 1920x540 @60Hz (for PA20H, PA28H, PA37H, PA50H)
Supported Input Resolution	720x400p @70Hz - IBM VGA 640x480p @60Hz - IBM VGA 640x480p @67Hz - Apple Mac II 640x480p @72Hz - VESA 640x480p @75Hz - VESA 800x600p @56Hz - VESA 800x600p @60Hz - VESA 800x600p @72Hz - VESA 800x600p @75Hz - VESA 1024x768i @87Hz - IBM 1024x768p @60Hz - VESA 1024x768p @70Hz - VESA 1024x768p @75Hz - VESA 1280x1024p @75Hz - VESA 1152x870p @75Hz - Apple Mac II 1280x720p @60Hz - VESA STD 1680x1050p @60Hz - VESA STD 1280x1024p @60Hz - VESA STD 1440x900p @60Hz - VESA STD 1600x900p @60Hz - VESA STD 1680x1050p @60Hz - VESA STD 1152x864p @60Hz - VESA STD 1920x1080p @60Hz - VESA STD

Content Layout

Standard/Common Signal Resolutions

In cases where signal resolution equivalent to the displays' native resolution (FULL) cannot be supported, more standard resolutions such as those listed below may be used. The table below is a guide for content layouts with these more standard/common signal resolutions:

Model	Size	Signal Resolution	Content Res*	Native Portion	Content Position	
PA12H	12"	1024x768	1024x256	1/3	 1/2	
PA14H	14"	1280x960	1280x398	2/5		
PA16H	16"	1366x768	1366x238	1/3		
PA19H	19"	1920x1080	1920x360	1/3	Content is created using the top or bottom half of the optimal input resolution.	
PA20H	20"	1920x1080	1920x539	1/2		
PA27H	27"	1920x1080	1920x360	1/3		 1/3
PA28H	28"	1920x1080	1920x540	1/2		
PA37H	37"	1920x1080	1920x540	1/2		
PA48H	48"	1920x1080	1920x360	1/3		
PA50H	50"	1920x1080	1920x540	1/2	 FULL	
* This "Content resolution" refers to the portion of a 16:9 or 4:3 signal that is to be displayed on the screen. For example, when creating content for POE48D, one must establish a zone within the top or bottom 1920x360 portion of a 1920x1080 signal where their content will reside. See below for more info.						
** Signal resolutions equivalent to the displays' native resolution is supported for all models.					**Content is created using the same signal resolution as display's native resolution (Fixed EDID).	

Examples of Content Layouts

- a. Content for 1/2 the portion native portion is created using the top or bottom half of the input resolution.
 1/2 Native Portion of Panoramic Display



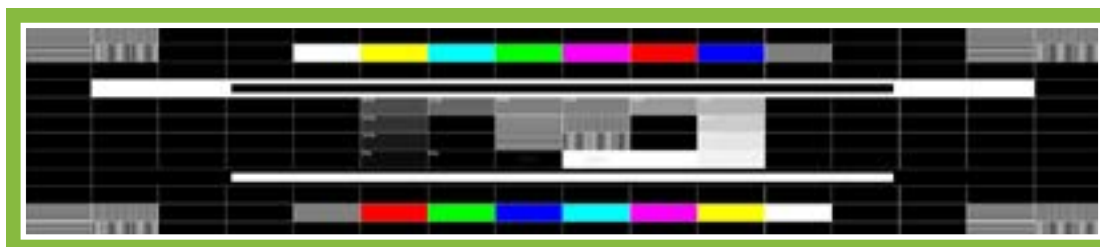
- b. Content created for a fixed EDID is created using the full 1920x540 input resolution.
 Fixed EDID/"FULL"



Test Pattern Appearance

“FULL” vs. Standard/Common Signal Resolutions

A standard test pattern sent w/1920x360 signal resolution would appear similar to fig. 10:



[Fig.10]

The same test pattern with more common 16:9 or 4:3 aspect ratio (1920x1080, 1680x1050 ~ 640x 480) would appear similar to fig 11 & fig. 12:



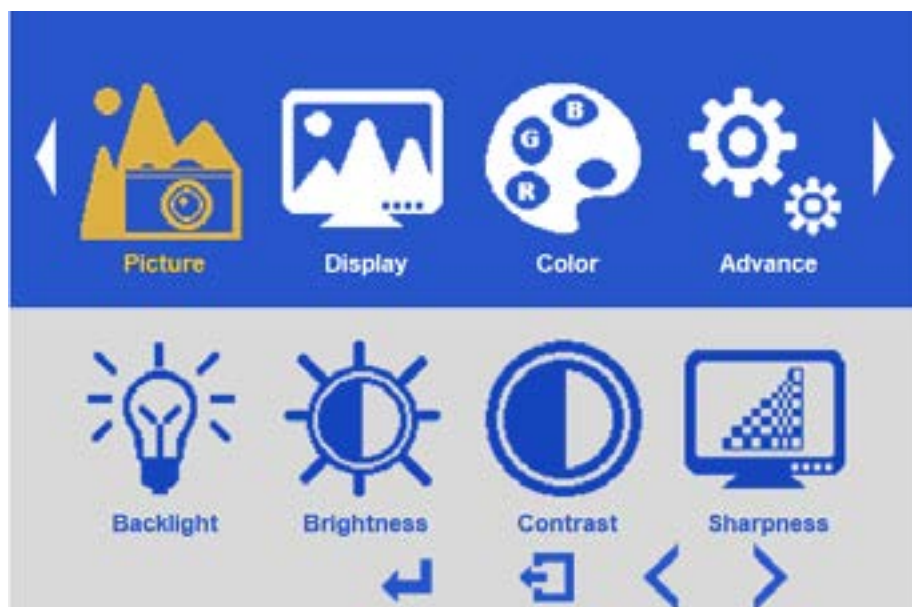
[Fig.11] Top portion of test pattern










Press OSD Down Key
(4 times quick succession):
Top/Bottom Toggle

















[Fig.12] Bottom portion of test pattern

OSD Menu Structure (PA20H-PA50H)
















 <p>Picture</p>	 <p>Backlight</p>	Backlight control Range 0 ~ 100	Default: 100
	 <p>Brightness</p>	Brightness control Range 0 ~ 100	Default: 50
	 <p>Contrast</p>	Contrast control Range 0 ~ 100	Default: 50
	 <p>Sharpness</p>	Sharpness control Range 0 ~ 4	Default: 3
 <p>Display</p>	 <p>H Position</p>	Screen H position control Range 0~100 VGA Only	
	 <p>V Position</p>	Screen V position control Range 0~100 VGA Only	
	 <p>Clock</p>	Screen clock control Range 0~100 VGA Only	





OSD Menu Structure, cont.

 Display, cont.	 Phase	Screen phase position control Range 0~100 VGA Only	
	 Disp Rotate	Display rotation control 0, 180, LR Mirror, UD Mirror	Default: 0
	 Set ID	RS232 set id setting 0 ~ 100	Default: 1
 Color	 Gamma	Display gamma setting Off, 1.8, 2.0, 2.2, 2.4	Default: Off
	 Temperature	Display temperature setting 9300, 7500, 6500, 5800, 5500, User	Default: User
	 Color Effect	Display color effect setting Standard, Game, Movie, Photo, Vivid, User	Default: Standard
 Advance	 Aspect Ratio	Display aspect ratio setting Full, 16:9, 4:3, 5:4, 1:1, User	Default: Full
	 Over Scan	Display over scan setting On, Off	Default: Off
	 Over Drive	Display over drive and gain setting On/OFF, OD Gain	Default: Off, 50
	 DDCCI	DDCCI control On/Off	Default: On
	 Ultra Vivid	Ultra vivid setting Off, L, M, H	Default: Off

OSD Menu Structure, cont.

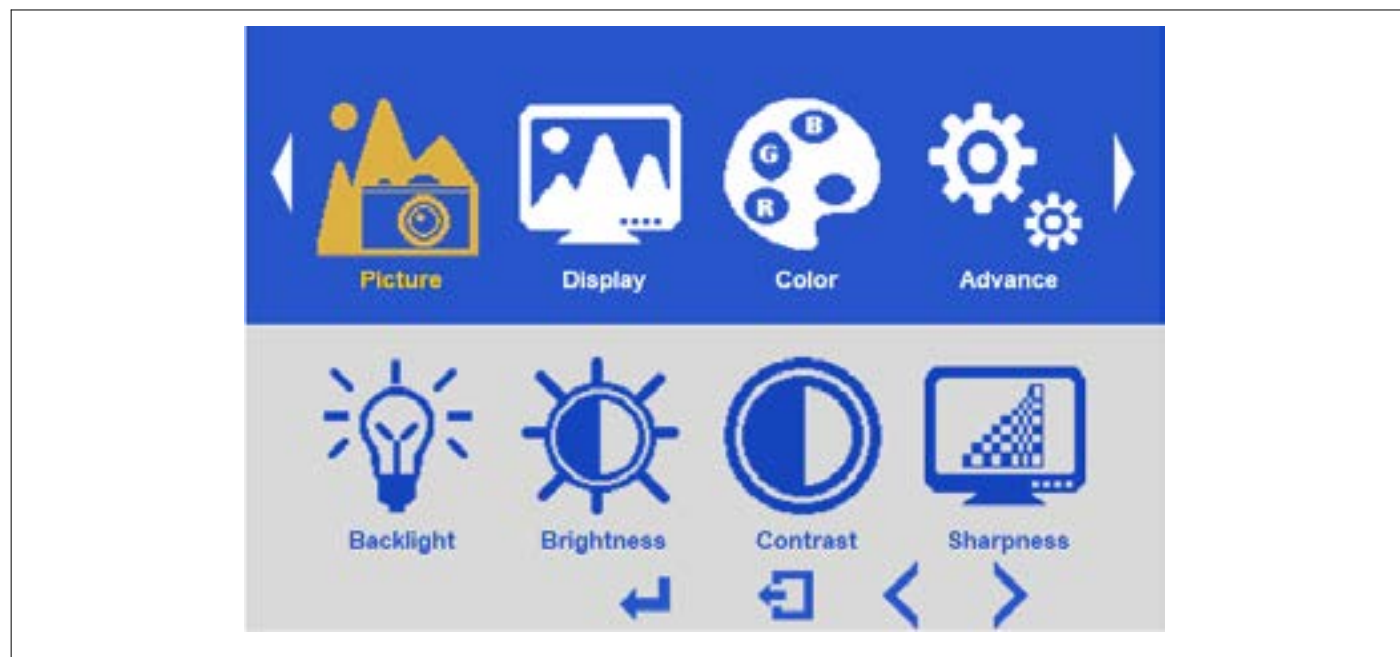
 Advance, cont.	 DP Option	DP version setting 1.1, 1.2	Default: 1.1
	 DP MST	DP Multi-Stream Transport (MST) On/Off	Default: Off
	 Clone Mode	DP clone mode on/off	Default: Off
 Input		Auto Select, D1:DP, D2:HDMI	Default: Auto Select
 Audio (Option)	 Volume	Volume control Range 0~100 <i>VGA does not support audio</i>	Default: 50
	 Mute	Mute on/off	Default: Off
 Other	 Reset	OSD Setting Reset / Factory Reset	
	 Menu Time	OSD menu disable time Range 0~60[sec]	Default: 10
	 OSD H Position	OSD menu H position control Range 0~100	Default: 50
	 OSD V Position	OSD menu V position control Range 0~100	Default: 50

OSD Menu Structure, cont.

 Other, cont.	 Transparency	OSD transparency control Range 0~255	Default: 0
	 Rotate	OSD menu rotation control 0, 180	Default: 0
 Information		Display input information / Firmware (FW) Version (e.g. PA48H-A10-231010)	

OSD Menu Structure (PA12H-PA19H)

In this menu system, there are several ways to adjust the menu settings provided.



ITEM	Sub Menu	Description	Default	
Picture	Backlight	0 ~ 100	100	
	Brightness	0 ~ 100	50	
	Contrast	0 ~ 100	50	
	Sharpness	0 ~ 4	3	
Display	VGA Only	Auto Adjust		
		H Position	0 ~ 100	
		V Position	0 ~ 100	
		Clock	0 ~ 100	
		Phase	0 ~ 100	
	Set ID	1 ~ 100	1	
Color	VGA Only	Auto Color		
		Gamma	OFF, 1.8, 2.0, 2.2, 2.4	OFF
		Temperature	9300, 7500, 6500, 5800, 5500, User	User
		Color Effect	Standard, Game, Movie, Photo, Vivid, User	Standard

Troubleshooting



Before contacting GPO Display Customer Support, review the troubleshooting steps below. Be prepared to provide the following information when contacting Support:

- Model number
- Serial Number
- Connected Equipment (sources, processing, switchers, transmitters/receivers, etc.)

No image is displayed

Problem	Action
No image onscreen, LED indicator is green or amber.	Disconnect power adapter DC cord from display, reconnect and power on.
	Swap power adapter for known working adapter if above step is unsuccessful.
No image onscreen, LED indicator is flashing red	Check cable connection.
	Replace HDMI or DP cable.
	Attempt connection with different source device.
"No Signal" message visible onscreen, LED indicator is flashing red.	Check cable connection.
	Replace HDMI or DP cable.
	Attempt connection with different source device.

Screen issues

Problem	Action
Screen Flickering	Check to ensure that HDMI or DP connection is secure.
	Replace HDMI or DP cable.
	Connect alternate source (e.g. laptop) directly to display (no signal extension, distribution, active optical cables).
	Power cycle display.
Vertical Line(s) <i>NOTE: The most common cause of this symptom is physical damage to the LCD panel.</i>	Check to ensure that HDMI or DP connection is secure.
	Replace HDMI or DP cable.
	Connect alternate source (e.g. laptop) directly to display (no signal extension, distribution, active optical cables).
	Power cycle display.
Horizontal Line(s)	Check to ensure that HDMI or DP connection is secure.
	Replace HDMI or DP cable.
	Connect alternate source (e.g. laptop) directly to display (no signal extension, distribution, active optical cables).
	Power cycle display.

Quick Installation Guide

1. Wall Mount Installation

- Note direction of hook openings (inverted triangles). They should appear as shown below:
- Ensure mount is level and insert lag screws into wall/backing at positions indicated by red arrows.
**Note: Mount appearance varies by model*



2. Install Power Adapter with Mounting Bracket

(optional power adapter sold separately for PoE Models)

27" - 37": Locate on right side of mount

All Others: Locate on left side of mount

Note: Above placement recommendations are not hard requirements. Users may rearrange as needed to accommodate input source devices (e.g. media players, receivers)



Quick Install Guide, cont.

3. Display Installation

- a. Insert cables (HDMI, RS232, DC power) before hanging display in wall mount.
- b. Align hooks with corresponding openings in wall mount bracket as shown below. Ensure that display is parallel to mount. The mount width is equal to the display's rear cover – use this as a reference/guide during hanging of the display.



- c. Affix trim pieces shown below with small screws provided in bag.



Tip: Attach bottom cover first so that media players and other loose devices can be supported, followed by side and top pieces.