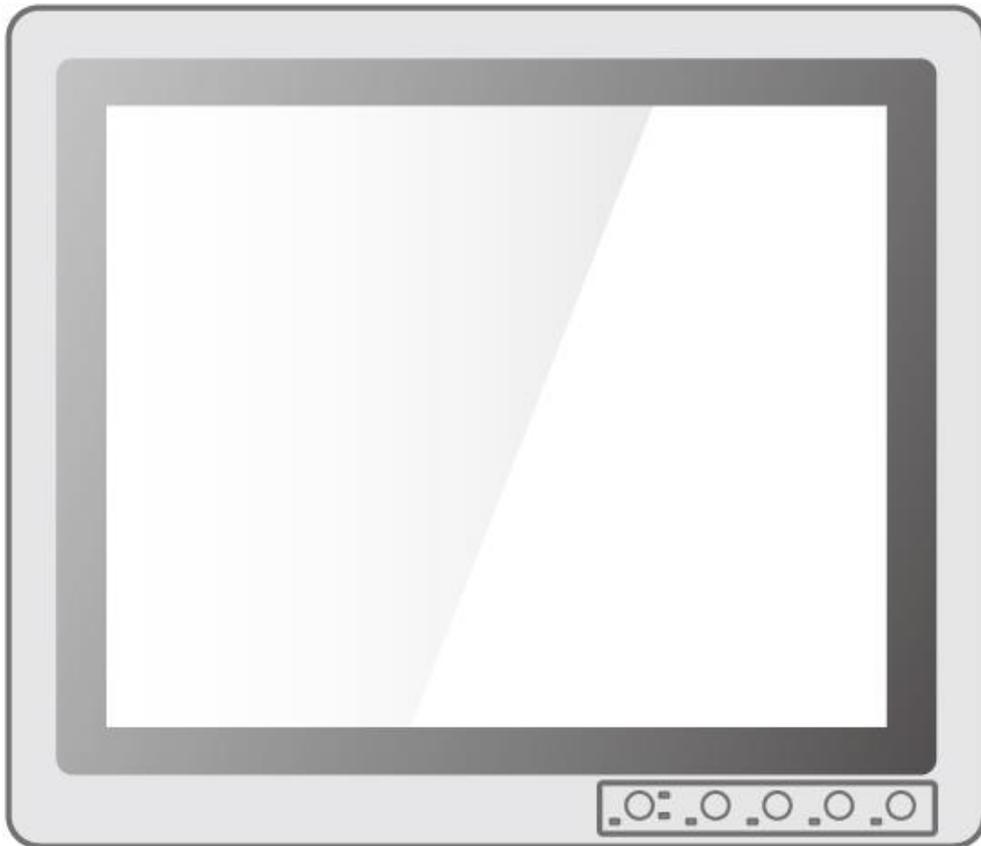


19" G-WIN Full IP67 Display

R19L100-67FTP



User Manual

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Preface

Copyright Notice

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Disclaimer

We reserve the right to make changes, without notice, to any product, including circuits and/or software described or contained in this manual in order to improve design and/or performance. We assume no responsibility or liability for the use of the described product(s) conveys no license or title under any patent, copyright, or masks work rights to these products, and make no representations or warranties that these products are free from patent, copyright, or mask work right infringement, unless otherwise specified. Applications that are described in this manual are for illustration purposes only. We make no representation or guarantee that such application will be suitable for the specified use without further testing or modification.

Warranty

Our warranty guarantees that each of its products will be free from material and workmanship defects for a period of one year from the invoice date. If the customer discovers a defect, we will, at his/her option, repair or replace the defective product at no charge to the customer, provide it is returned during the warranty period of one year, with transportation charges prepaid. The returned product must be properly packaged in its original packaging to obtain warranty service. If the serial number and the product shipping data differ by over 30 days, the in-warranty service will be made according to the shipping date. In the serial numbers the third and fourth two digits give the year of manufacture, and the fifth digit means the month (e. g., with A for October, B for November and C for December). For example, the serial number 1W16Axxxxxxx means October of year 2016.

Customer Service

We provide a service guide for any problem by the following steps: First, visit the website of our distributor to find the update information about the product. Second, contact with your distributor, sales representative, or our customer service center for technical support if you need additional assistance.

You may need the following information ready before you call:

- Product serial number
- Description of complete problem
- The exact wording of any error messages

In addition, free technical support is available from our engineers every business day. We are always ready to give advice on application requirements or specific information on the installation and operation of any of our products.

Advisory Conventions

Four types of advisories are used throughout the user manual to provide helpful information or to alert you to the potential for hardware damage or personal injury. These are Notes, Important, Cautions, and Warnings. The following is an example of each type of advisory.



Note:

A note is used to emphasize helpful information



Important:

An important note indicates information that is important for you to know.



Caution/ Attention

A Caution alert indicates potential damage to hardware and explains how to avoid the potential problem.

Unalerted' attention indique un dommage possible à l'équipement et explique comment éviter le problem potentiel.



Warning!/ Avertissement!

An Electrical Shock Warning indicates the potential harm from electrical hazards and how to avoid the potential problem.

Un Avertissement de Choc Électrique indique le potentiel de choc sur des emplacements électriques et comment éviter ces problèmes.



Alternating Current / Mise à la Terre

The Protective Conductor Terminal (Earth Ground) symbol indicates the potential risk of serious electrical shock due to improper grounding.

Le symbole de Mise à Terre indique le risqué potentiel de choc électrique grave à la terre incorrecte.

Safety Information

Warning!/ Avertissement!



Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on.

Sensitive electronic components can be damaged by sudden power surges.

Only experienced electronics personnel should open the PC chassis.

Toujours débrancher le cordon d'alimentation du chassis lorsque vous travaillez sur celui-ci. Ne pas brancher de connexions lorsque l'alimentation est présente. Des composantes électroniques sensibles peuvent être endommagées par des sauts d'alimentation. Seulement du personnel expérimenté devrait ouvrir ces chassis.

Caution/ Attention



Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

Toujours vérifier votre mise à la terre afin d'éliminer toute charge statique avant de toucher la carte CPU. Les équipements électroniques modernes sont très sensibles aux décharges d'électricité statique. Toujours utiliser un bracelet de mise à la terre comme précaution. Placer toutes les composantes électroniques sur une surface conçue pour dissiper les charge, ou dans un sac anti-statique lorsqu'elles ne sont pas dans le chassis.

Safety Precautions

For your safety carefully read all the safety instructions before using the device. Keep this user manual for future reference.

- Always disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.
- For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.
- Keep this equipment away from humidity.
- Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.
- The openings on the enclosure are for air convection and to protect the equipment from overheating.



Caution/ Attention

Do not cover the openings!

- Before connecting the equipment to the power outlet make sure the voltage of the power source is correct.
- Position the power cord so that people cannot step on it. Do not place anything over the power cord.
- If the equipment is not used for a long time, disconnect it from the power source to

avoid damage by transient over-voltage.

- Never pour any liquid into an opening. This could cause fire or electrical shock.
- Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.
- All cautions and warnings on the equipment should be noted.



Caution/ Attention

Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

About This User Manual

This User Manual provides information about using the Winmate® G-WN Military Display. The documentation set provides information for specific user needs, and includes:

- **G-WIN IP67 Display User Manual** – contains detailed description on how to use the display, its components and features.

Models

Size	Model Name
19"	R19L100-67FTP



Note:

Some pictures in this manual are samples and can differ from actual product.

Document Revision History

Version	Date	Note
1.0	18-Jan-2019	New document release

Chapter 1: Introduction

This chapter gives you product overview, describes features and hardware specification. You will find all accessories that come with the display device in the packing list. Mechanical dimensions and drawings included in this chapter.

1.1 About G-WIN IP67 Display

Congratulations on purchasing Winmate® G-WIN IP67 Display. Winmate 19" IP67 Display is designed to meet IP67/NEMA 6 with dust water resistant protection and anti-corrosion feature, the display could fulfill even the highest demands of all-day field use and fit into a wide variety of applications, such as avionics military, marine etc.

1.2 Product Features

Winmate® G-WIN IP67 Display features:

- 19-inch 1280x1024 panel with ITO EMI shielding protection glass
- Totally sealed Full IP67 aluminum compact housing design
- Fanless, streamlined enclosure for highly efficient heat dissipation
- Front control membrane keys Lockable by software
- Full IP67 male connectors with external female cables
- -10 to 60°C wide operating temperature

1.3 Package Overview

Carefully remove the box and unpack your display. Please check if all the items listed below are inside your package. If any of these items are missing or damaged contact us immediately.

Standard accessories:



- **Display**

Varies by product specifications



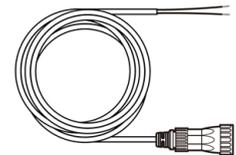
- **Quick Start Guide**

Part No. 91521110103X



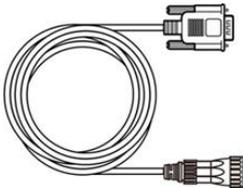
- **AC Adapter 12V/ 50W**

Part No. 90PO12050002



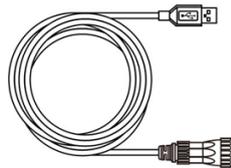
- **Power Cable**

Part No. 94J003L020K1



- **VGA Cable**

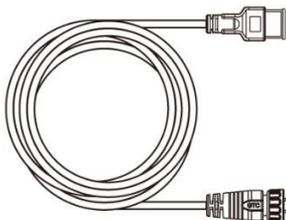
Part No. 944115010000



- **USB Cable**

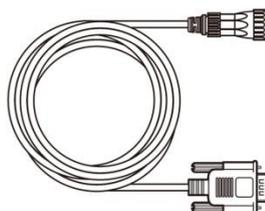
Part No. 948704010000

Optional Accessories:



- **HDMI Cable**

Part No. 9490191190K0



- **RS232 Cable**

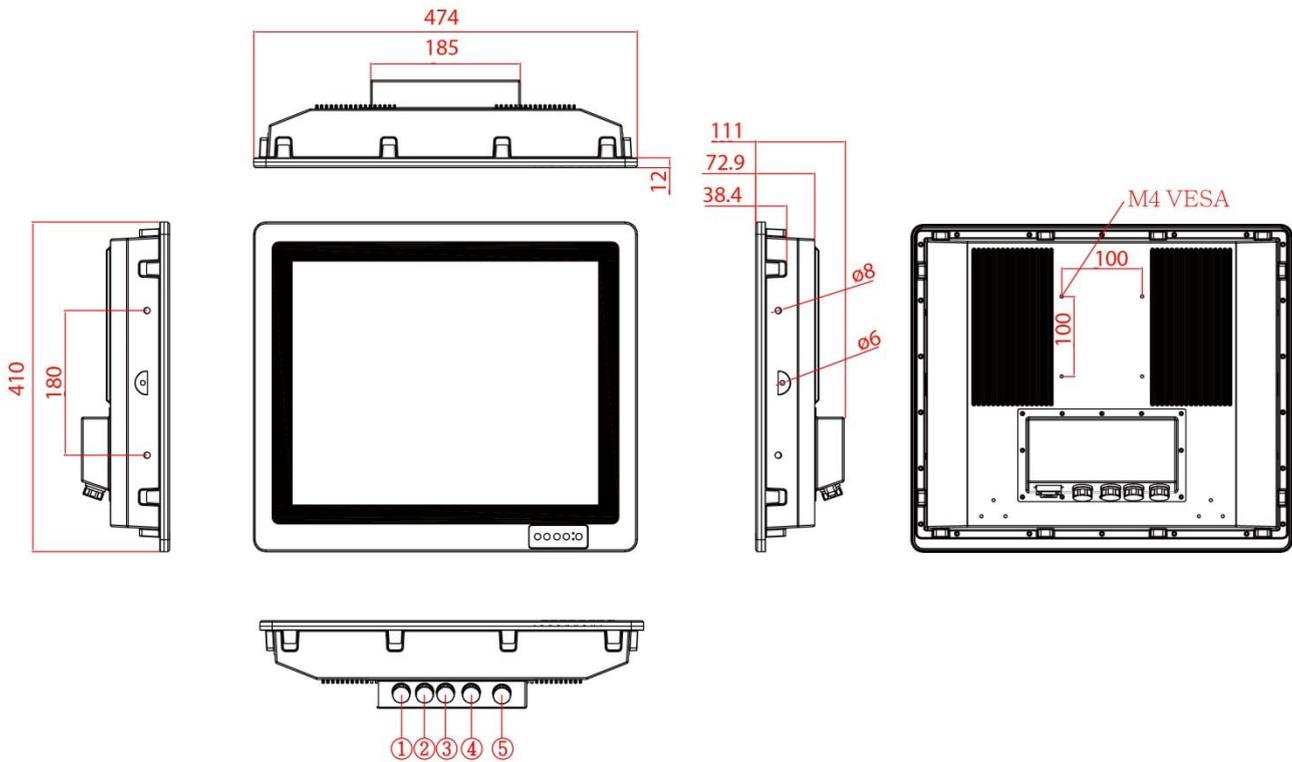
Part No. 94G409010000

1.4 Description of Parts

This section describes physical appearance of the G-WIN IP67 Display.

All dimensions shown in mm.

R19L100-67FTP

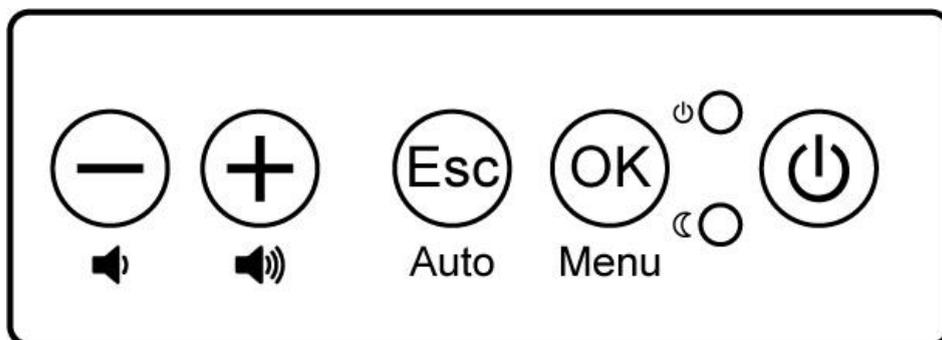


Item	Description
①	Power Input - Military grade lockable power connector (MS27467T9F98S) that accept 9-36V DC power input. <i>Example: DC power supply.</i>
②	USB for Touch – Connects touch to a monitor. <i>Example: A touch to a monitor.</i>
③	RS232 for Remote Control - Connects remote control to the monitor. Optional connector. <i>Example: A remote control to a monitor.</i>
④	VGA - Transmits video from a PC to a monitor. <i>Example: A notebook PC to a monitor.</i>
⑤	HDMI - Transmits video from a PC to a monitor. Optional connector. <i>Example: A notebook PC to a monitor.</i>

1.6 Physical Buttons

Physical buttons are located in front or on the rear side of the Display.

Physical Buttons



Icon	Function
	Decrease the value / Select up
	Increase the value / Select down
	Power switch
	Exit / Auto adjustment
	Enter / Call main OSD menu

1.7 LED Indicators

LED indicators are located on the OSD control panel the rear side of the display.

Icon	Description	Function
	Power Indicator	Lights up in "Green" when the monitor turn on
	Stand by Indicator	Lights up in "Orange" when the device cannot detect any input source

Chapter 2: Installation

This chapter provides hardware installation instructions and mounting guide for all available mounting options. Pay attention to cautions and warning to avoid any damages

2.1 Cable Mounting Considerations

For a nice look and safe installation, make sure cables are neatly hidden behind the display.



Warning!/ Avertissement!

Observe all local installation requirements for connection cable type and protection level.

Suivre tous les règlements locaux d'installations, de câblage et niveaux de protection.



Warning!/ Avertissement!

Turn off the device and disconnect other peripherals before installation.

Éteindre l'appareil et débrancher tous les périphériques avant l'installation.



Warning!/ Avertissement!

Follow mounting instructions and use recommended mounting hardware to avoid the risk of injury.

Suivez les instructions de montage et d'utilisation recommandé le matériel de montage pour éviter le risque de blessure.



Alternating Current !/ Mise a le Terre!

To prevent electrical shock, the Safety Ground location on the rear must be bonded to the local earth ground through a minimum 12 AWG wire as short as possible

Pour éviter les chocs électriques, l'emplacement de la prise terre à l'arrière doit être lié à terre locale, à travers un 12 AWG minimum et aussi court que possible.

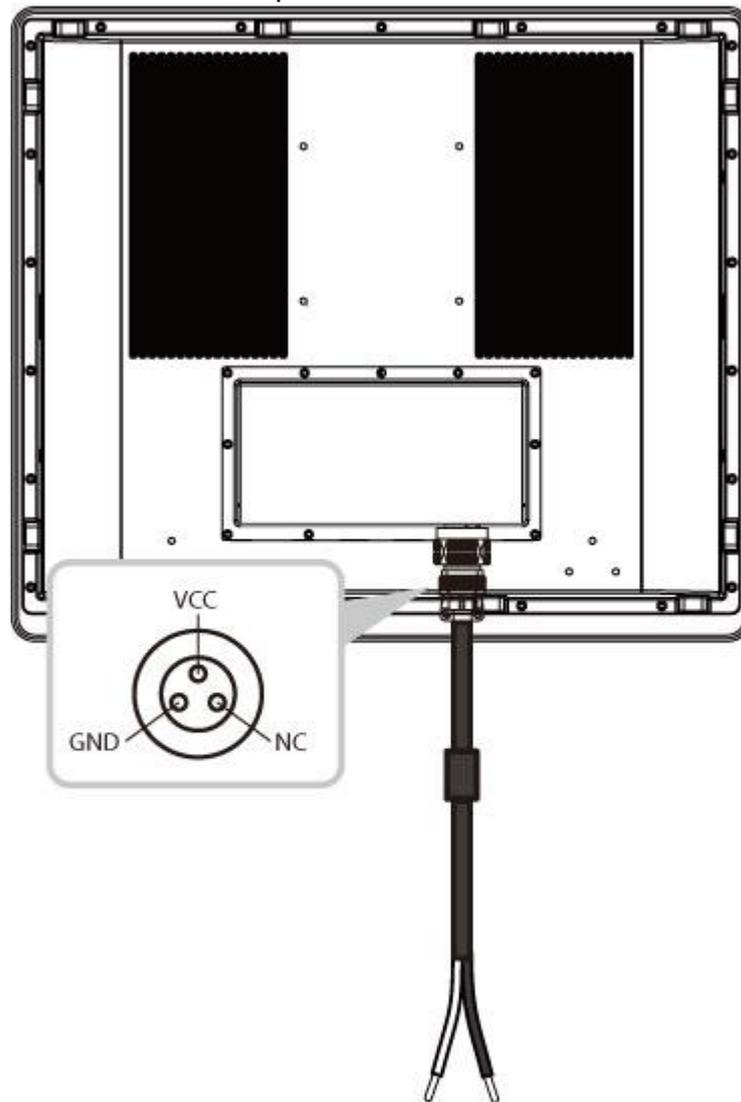
2.2 Connecting the Power

Safety Precautions:

- Do not use the adapter in a high moisture environment.
- Never touch the adapter with wet hands or foot.
- Allow adequate ventilation around adapter while using.
- Do not cover the adapter with paper or other objects that will reduce cooling.
- Do not use the adapter while it is inside a carrying case.
- Do not use the adapter if the cord is damaged.
- There are NO serviceable parts inside.
- Replace the unit if it is damaged or exposed to excess moisture.

Connecting to Power Source

1. Connect a power cable to military power connector located on the back side of the display.
2. Connect open wires to the source of power.



Warning!/ Avertissement!

Serious injury due to shock is possible if unit is wired incorrectly or connected to voltage exceeding the input voltage range.

Des blessures graves en raison du choc est possible si l'unité est mal câblé ou connecté à la tension maximale de la plage de tension d'entrée.



Warning!/ Avertissement!

Make sure that the polarization of the power lines is correct and complete including earth ground.

Assurez-vous que la polarisation des lignes électriques est correcte et complète, y compris la terre.

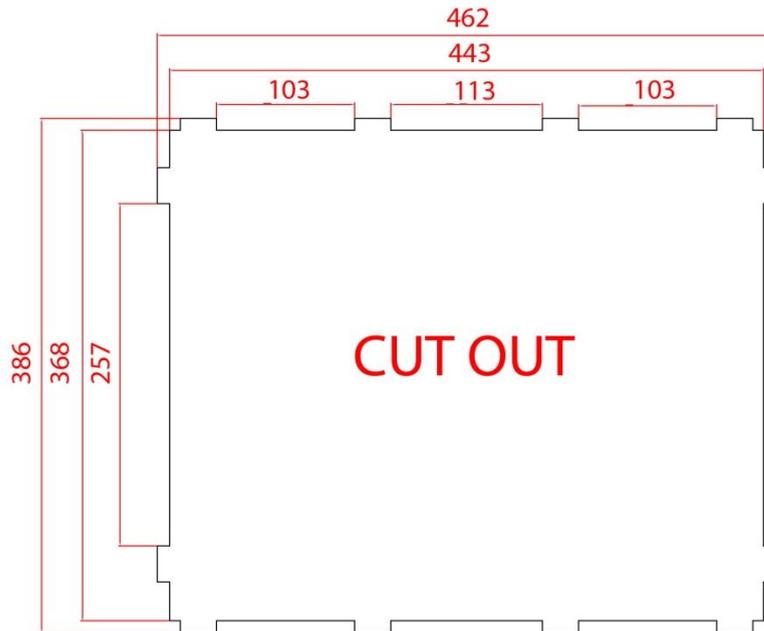
2.3 Mounting Guide

19 G-WIN IP67 Display supports panel mount and compatible with VESA mount solution. Follow the instruction below to complete mounting.

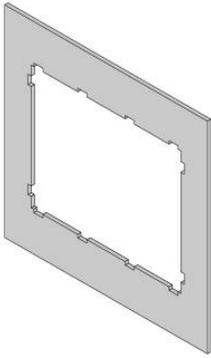
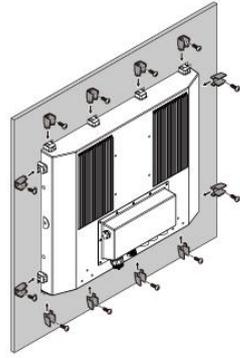
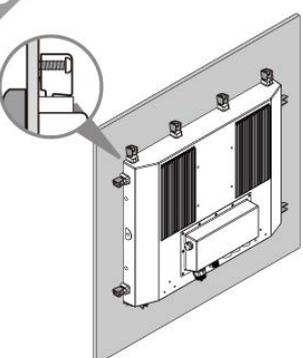
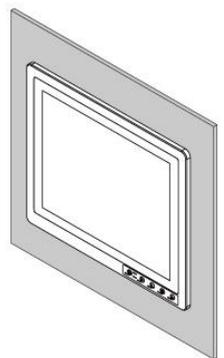
2.3.1 Panel Mount

Follow instructions below to mount 19" G-WIN IP67 Display into the wall.

Cutout Dimensions



Installation Instruction

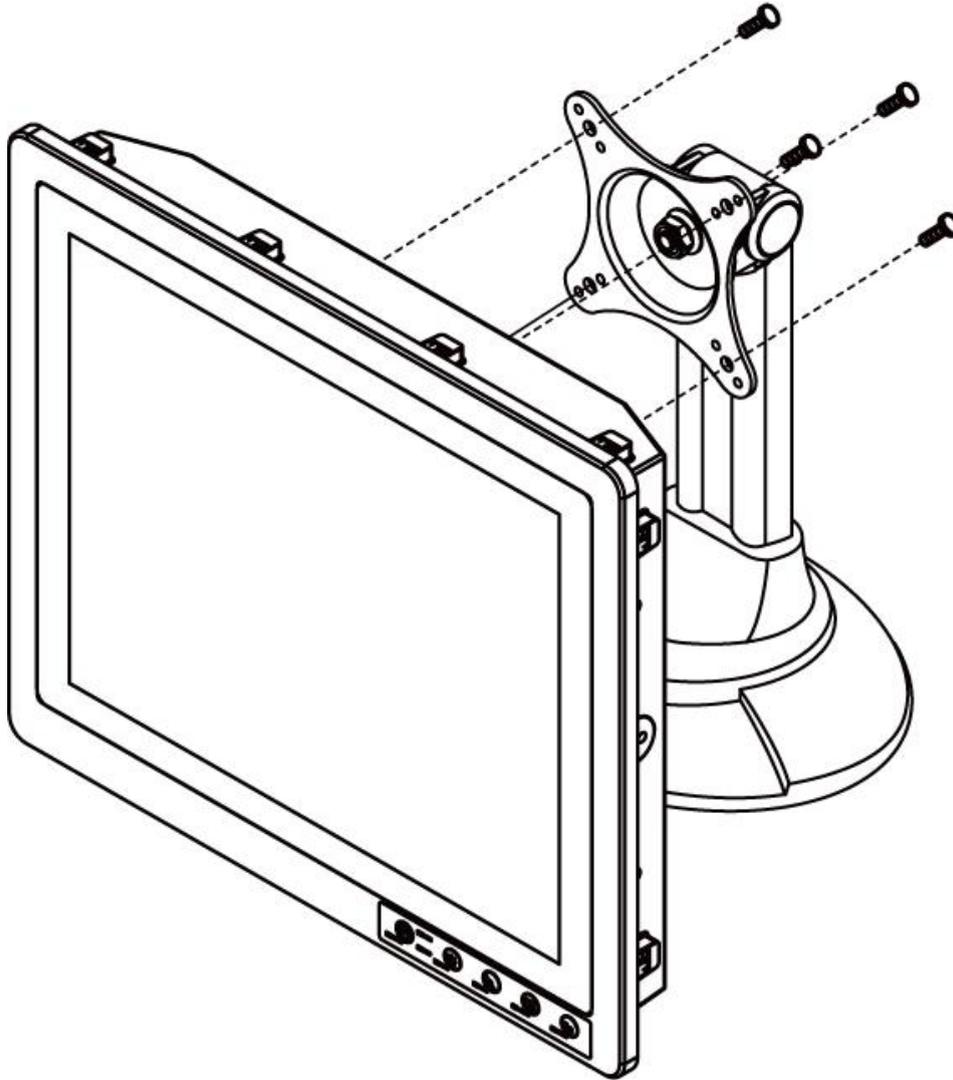
<p>1</p> 	<p>Prepare a cutout on a fixture according to the cutout dimensions.</p>	<p>2</p> 	<p>Select the mounting holes according to the wall thickness of the fixture and secure the mounting clips onto four sides of the HMI device.</p>
<p>3</p> 	<p>Secure the HMI to the fixture by screws.</p>	<p>4</p> 	<p>Connect power and other peripherals to the HMI unit.</p>

2.3.2 VESA Mount

Follow instructions below to mount 19" G-WIN IP67 Display on VESA compatible stand.

Installation Instruction

1. Screw VESA Bracket to the fixture (ex. wall) with M4 flathead screws.
2. Place the device on VESA bracket.
3. Carefully mount the device to the fixture (for ex. wall).
4. When the installation is complete, plug the power cord into a grounded AC outlet. Turn on the power.



**Notice that VESA stand and mounting kit are not provided by Winmate.*

2.4 Connecting Peripherals

This Display comes with VGA/ HDMI interface located on the bottom panel. For a nice look and safe installation, make sure cables are neatly hidden behind the device.



Caution/ Attention

Observe all local installation requirements for connection cable type and protection level.

Suivre tous les règlements locaux d'installations, de câblage et niveaux de protection.



Caution/ Attention

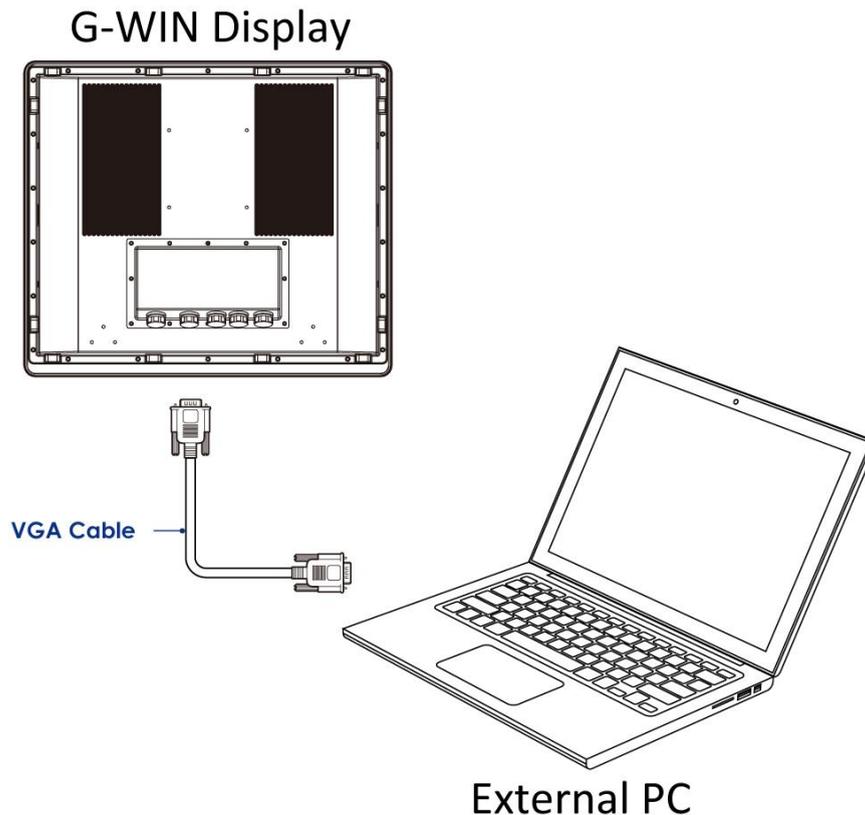
Turn off the device and disconnect other peripherals before installation.

Éteindre l'appareil et débrancher tous les périphériques avant l'installation.

To display video and sound from an external PC follow the instructions below.

1. Turn off your computer and unplug external computer's power cable.
2. Connect a VGA/ HDMI cable from your external PC to the VGA/ HDMI port on the display.
3. Connect the power cable to the display and the other side to power adapter.
4. Plug the power adapter into an electrical outlet.
5. Turn on external computer and display.

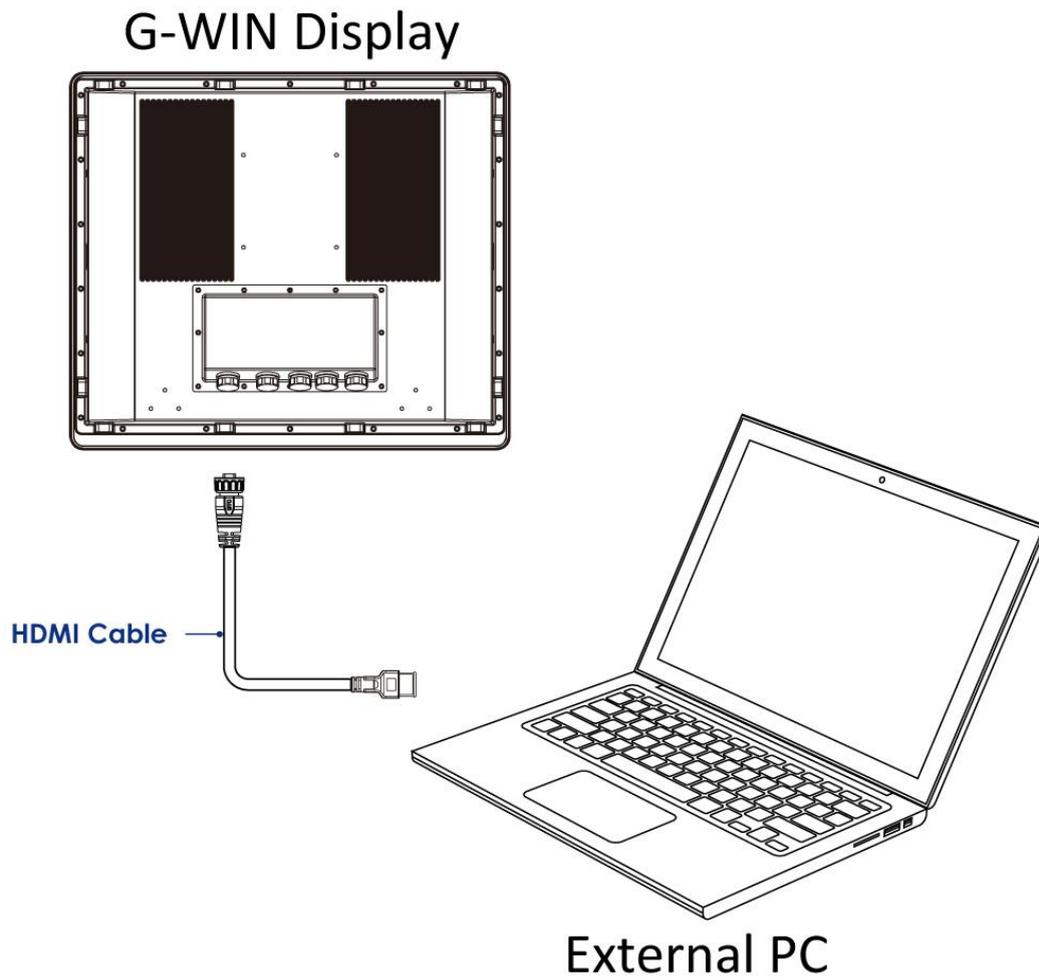
Connecting display to external PC via VGA:



Note:

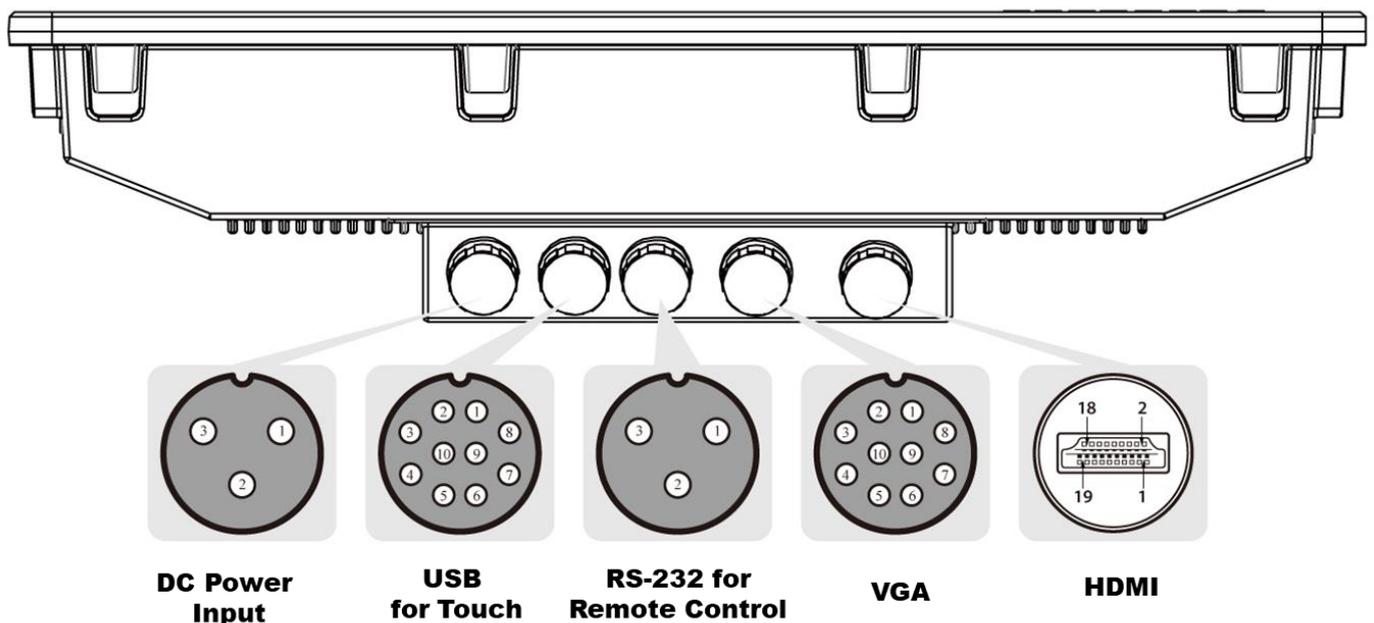
For the optimal results, select display native resolution as the external computer's input resolution.

Connecting display to external PC via HDMI:



2.5 Connector Description

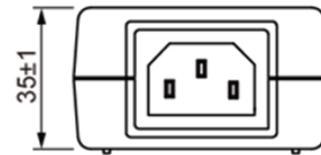
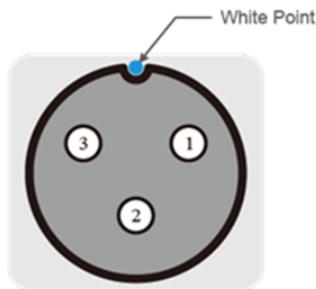
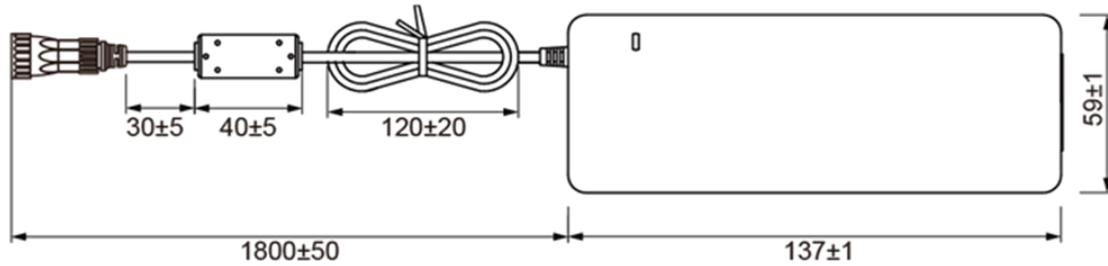
The panel control port is designed for monitors that work with a VGA/ HDMI video sources. Due to the possible deviations between these signal sources, you may have to make adjustments to the monitor settings from the OSD menu when switching between these sources.



2.5.1 Power Connector

The display has M25 type connectors. Use power cable to connect display to the source of power.

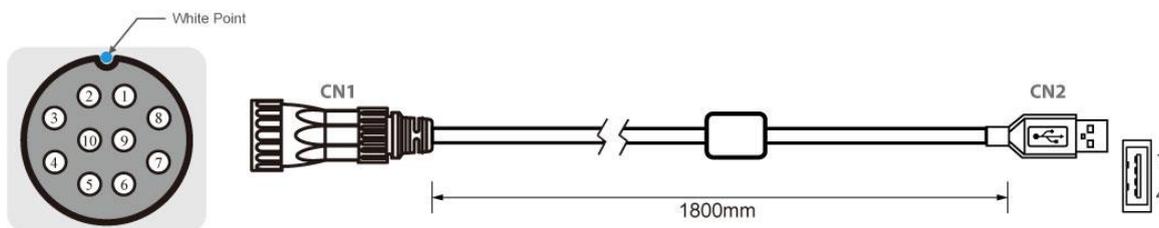
The display support 9-36V DC power input.



Pin No.	Symbols	Color
CN1-3	GND	Black
CN1-2	shield	
CN1-1	VCC	White

2.5.2 USB Cable for Touch

The display may have optional M25 type USB connector for touch based on your order. Use USB cable to connect touch.

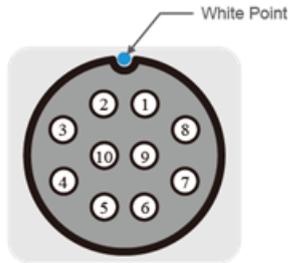
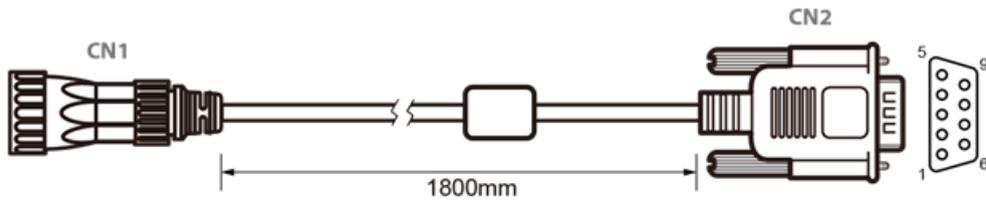


Pin No.	Symbols	Color	Pin No.	Symbols	Color
CN1-1	VCC	RED	CN2-1	VCC	RED
CN1-2	D-	WHITE	CN2-2	D-	WHITE
CN1-3	D+	GREEN	CN2-3	D+	GREEN
CN1-4	GND	BLACK	CN2-4	GND	BLACK
CN1-5	Shield		CN2	Shield	

} Twist

2.5.3 RS-232 Cable for Touch

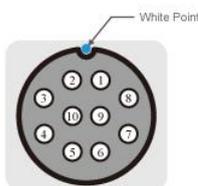
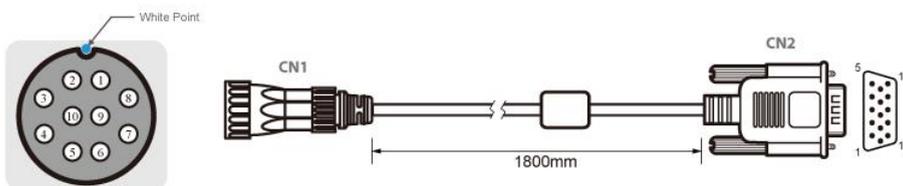
The display may have optional M25 type serial port connector based on your order. Use serial cable to connect touch.



Pin No.	Symbols	Color		Pin No.	Symbols	Color
CN1-1	DCD-CON2	Green	↔	CN2-1	DCD-CON2	Green
CN1-2	DSR-CON2	Brown	↔	CN2-6	DSR-CON2	Brown
CN1-3	RXD-CON2	Red	↔	CN2-2	RXD-CON2	Red
CN1-4	RTS-CON2	Orange	↔	CN2-7	RTS-CON2	Orange
CN1-5	TXD-CON2	Blue	↔	CN2-3	TXD-CON2	Blue
CN1-6	CTS-CON2	White	↔	CN2-8	CTS-CON2	White
CN1-7	DTR-CON2	Purple	↔	CN2-4	DTR-CON2	Purple
CN1-8	RI-CON2	Yellow	↔	CN2-9	RI-CON2	Yellow
CN1-9	GND-CON2	Black	↔	CN2-5	GND-CON2	Black
CN1-10	NC		↔	CN2-10	NC	

2.5.4 VGA Cable

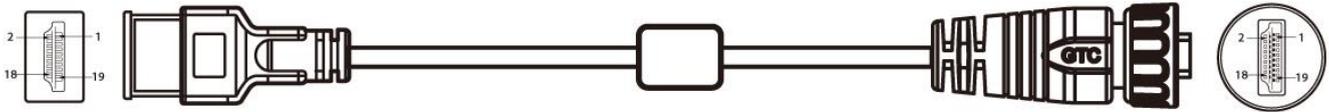
The display has M25 type VGA connector. Use VGA cable to connect the display to other external devices.



CN1				CN2		
Pin No.	Symbols	Color		Pin No.	Symbols	Color
1	R	Red	↔	1	R	Red
2	R-GND	Black	↔	6	R-GND	Black
3	G	Green	↔	2	G	Green
4	G-GND	Black	↔	7	G-GND	Black
5	B	Blue	↔	3	B	Blue
6	B-GND	Black	↔	8	B-GND	Black
7	SDA	Yellow	↔	12	SDA	Yellow
8	HS	Orange	↔	13	HS	Orange
9	VS	White	↔	14	VS	White
10	SCL	Brown	↔	15	SCL	Brown
				4	HS-GDN	
				5	NC	
				9	NC	
				10	NC	
				11	VS-GDN	

2.5.5 HDMI Cable

The display has M25 type HDMI connector. Use HDMI cable to connect the display to other external devices.



1	Brown	1
2	Drain	2
3	White	3
4	Red	4
5	Drain	5
6	White	6
7	Green	7
8	Drain	8
9	White	9

Plug Conn.

10	Blue	10
11	Drain	11
12	White	12
13	Black	13
14	Red	14
15	Orange	15
16	Yellow	16
17	Drain	17
18	Purple	18
19	White	19
Shell	Drain+Braid	Shell

Plug Conn.

Chapter 3: Operating the Device

In this chapter you will find instructions on how to operate the display.



3.1 Turning On/ Off the System

To turn on the system:

1. Connect VGA cable to the connector of your device.
2. Connect the other side of VGA cable to external computer.
3. Turn on the external computer.
4. The device will boot automatically when powered on.

To turn on the system:

1. Disconnect the Display from external computer to completely turn off the device.

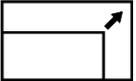
3.2 Troubleshooting Guide

If your monitor fails to operate correctly, check the following chart for possible solution before calling for repairs:

Condition	Check Point
The picture does not appear	<ul style="list-style-type: none"> • Check if the signal cable is firmly seated in the socket. • Check if the Power is ON at the computer • Check if the brightness control is at the appropriate position, not at the minimum.
The screen is not synchronized	<ul style="list-style-type: none"> • Check if the signal cable is firmly seated in the socket. • Check if the output level matches the input level of your computer. • Make sure the signal timings of the computer system are within the specification of the monitor.
The position of the screen is not in the center	<ul style="list-style-type: none"> • Adjust the H-position, and V-position, or Perform the Auto adjustment.
The screen is too bright (too dark)	<ul style="list-style-type: none"> • Check if the brightness or contrast control is at the appropriate position, not at the Maximum (Minimum).
The screen is shaking or waving	<ul style="list-style-type: none"> • Perform the Auto adjustment. • Moving all objects which emit a magnetic field such as motor or transformer, away from the monitor. • Check if the specific voltage is applied. • Check if the signal timing of the computer system is within the specification of monitor.
VGA signal got noise when using PIP function	<ul style="list-style-type: none"> • Change PIP mode again.

**If you are unable to correct the fault by using this chart, stop using your monitor and contact your distributor or dealer for further assistance*

3.3 On-Screen Display Menu Navigation

OSD Icon	Sub-menu	Settings	Note
 DISPLAY	BRIGHTNESS	slider bar	Default 50
	Use to adjust the screen's brightness. Range 0 to 100.		
	CONTRAST	slider bar	Default 50
	Use to adjust the screen's contrast. Range 0 to 100.		
	SHARPNESS	slider bar	
	Adjusts the crispness of the image.		
	ADC BRIGHTNESS	slider bar	
	Adjusts the ADC brightness. *VGA only.		
	COLOR TEMPERATURE I	USER/ 6500K/ 9300K	
	Adjusts the color temperature of the entire screen. A low color temperature will make the screen reddish. A high color temperature will make the screen bluish.		
	COLOR CONTROL	R/G/B/Y/M/C slider bar	
	Adjusts the levels of the Red, Green, Blue, Yellow, Magenta, Cyan.		
	GAMMA SELECTION	NATIVE/ 1.8/ 1.2	
	Select a display gamma value for best picture quality.		
SCHEME	USER/ GAME/ SPORT/VIVID/ CINEMA		
Select scheme for different default setting combination.			
DISPLAY RESET	YES/ NO		
Resets the following settings within the DISPLAY menu back to factory setting:			
 ADJUST	AUTO SETUP	PRESS YES TO AUTO SETUP	
	Automatically adjusts screen size, H position, V position, Clock, Clock Phase. *VGA only.		
	AUTO ADJUSTMENT	ON/OFF	
	H Position, V Position and Clock Phase are adjusted automatically upon power on. *VGA only.		
	H POSITION	slider bar	
	Controls the horizontal position of the image within the Display area of the LCD. Press + to move right. Press - to move left. *VGA only.		
	V POSITION	slider bar	
	Controls the vertical position of the image within the Display area of the LCD. Press + to move up. Press - to move down. *VGA only.		
	CLOCK	slider bar	
	Press + to expand the width of the image on the right of the screen. Press - to narrow the width of the image on the left. *VGA only.		
	PHASE	slider bar	
	Adjusts the visual "noise" on the image. *VGA only.		
	WHITE BALANCE	YES/OFF	
	Perform the white balance. *VGA CHANNEL ONLY		
SCALING	ASPECT/ OFF/ FULL		
Adjust the image scaling setting			
ADJUST RESET	YES/ NO		
Resets the following settings within the ADJUST menu back to factory setting.			
 AUDIO	VOLUME	slider bar	
	AUDIO INPUT	slider bar	
	MUTE	ON/ OFF	
	AUDIO RESET	YES/ NO	
	Resets "AUDIO" settings back to factory settings.		
 PIP	PIP SOURCE	VGA/ DVI	
	PIP MODE	OFF/ LARGE PIP/SMALL PIP/ SIDE BY SIDE ASPECT/ SIDE BY SIDE FULL	
	Selects the size of the sub-picture used in Picture-in-Picture (PIP) mode.		
	PIP POSITION	slider bar	
	Determines where the PIP appears on the screen.		
PIP RESET	YES/NO		
Resets the following settings within the PIP menu back to factory setting.			

OSD Icon	Sub-menu	Settings	Note
OSD SETTINGS	OSD TURN OFF	slider bar	
	Turns off the OSD after a period of inactivity. The preset choices are 0-60 seconds.		
	OSD POSITION	H/ V slider bar	
	Determines the location where the OSD appears on the screen.		
	OSD TRANSPARENCY	OFF/ TYPE1/ TYPE2	
	Set the transparency level of OSD.		
	OSD ROTATED	OFF/ 90/ 270	
	Set to rotate the OSD menu		
	MONITOR INFORMATION	Version/ Panel Resolution/ Main Resolution/ PIP Resolution	
	Show BIOS version & resolution info.		
PRO ADVANCED	OSD RESET	YES/ NO	
	Resets the following settings within the OSD menu back to factory setting.		
	CHANNEL SELECT	VGA/ DVI	
	Select the input signal source.		
	FLIP	OFF/ H-FLIP/ V-FLIP/ HV-FLIP	
	Adjust the flip settings		
	BRIGHTNESS MIN	Slider bar	
	ADVANCED RESET	YES/NO	
	Resets the following settings within the ADVANCED menu back to factory setting.		
	FACTORY RESET	YES/NO	
Resets OSD options back to factory settings EXCEPT FOR: CHANGE SECURITY PASSWORD and SECURITY PASSWORD.			

Appendix

This chapter contains additional product information, including troubleshooting guide and frequency table



Appendix A: Hardware Specifications

Model Name	R19L100-67FTP
Display	
Size/ Type	19-inch
Resolution	1280 x 1024
Brightness	400 nits, optional 1000 nits
Contrast Ratio	1000:1 (typ.)
Viewing Angle	-85~85 (H);-80~80 (V)
Max Colors	16.7M
Recommended Resolution	1280 x 1024 @ 60Hz~75Hz
Touch	Projected capacitive (Optional)
Touch Interface	USB
Input / Output Connectors	
Power	9~36V DC
Video Input	1 x VGA (D-Sub 15), 1 x HDMI (Optional)
Remote Control	1 x RS232 Remote control (Optional)
Power Specifications	
Power Input	9-36V DC
Mechanical Specifications	
Dimensions	474 x 410 x 111 mm
Cutout Dimensions	462 x 386 mm
Mounting	Panel Mount
Physical Buttons	Power On/ Off, Menu, Auto, Brightness up, Brightness down, LED adjustment
LED Indicators	Power , Sleep
Weight	13.5 kg (Gross)
Environment Considerations	
Operating Temp.	-10°C~60°C
Operating Humidity	5 to 95%
IP Rating	Front IP67
Vibration	MIL-STD-810F/G Method 514.5
Transit Drop	MIL-STD-810F/G Method 516.5
Certification	
Safety	MIL-STD-810F/G / IEC60068-2-27 for Vibration /Shock

Appendix B: Order Information

Model	Description
R19L100-67FTP	Standard
R19L100-67FTPHB	High brightness 1000 nits

Appendix C: Frequency Table

The choice of supported modes depends on the monitor native resolution. Refer to the table below for more information about available input signals.

Signal name	Vertical Frequency (Hz)	DVI	VGA
640 x 480	60	✓	✓
	72	✓	✓
	75	✓	✓
480P	60	✓	✓
	72	✓	✓
	75	✓	✓
800 x 600	60	✓	✓
	72	✓	✓
	75	✓	✓
1024 x 768	60	✓	✓
	72	✓	✓
	75	✓	✓
720P	60	✓	✓
	72	✓	✓
	75	✓	✓
1280 x 1024	60	✓	✓
	72	✓	✓
	75	✓	✓
1600 x 1200	60	✓	✓
	72	✓	✓
	75	✓	✓
1920 x 1080	60	✓	✓
	72	✓	✓
	75	✓	✓
1920 x 1200	60	✓	✓
2560 x 1440	60	✓	
3840 x 2160	30	✓	
	60		
4096 x 2160	60		

Appendix D: Military Grade Compliance

This section includes description of military grade compliance.

Military Grade EMC Compliance

EMC (MIL-STD 461E/F Compliance)			
EMC Test Spec	Type of Test	Frequency Range	Requirement
CE101	Conducted Emissions	30Hz ~10kHz	30Hz ~ 1kHz :110 dB 1k-10k:110-90 dB
CE102	Conducted Emissions	30Hz ~10kHz	10kHz ~ 500kHz: 100-66dB, 500kHz~10MHz:66dB
RE101	Radiated Emissions	30Hz ~100kHz	30~100k :180-110 dBpT
RE102	Radiated Emissions	10kHz ~-18GHz	2MHz~18G Hz: 44-89 dB

Military Grade Environmental Compliance

Environmental (MIL-STD 810F/G Compliance)		
High Temperature	Operating	30°C to 60°C, Method 501.5 / Procedure II
	Storage	30°C to 60°C, Method 501.5 / Procedure I
Low Temperature	Operating	-33°C, Method 502.5 / Procedure II
	Storage	-33°C, Method 502.5 / Procedure I
Thermal Shock	-33°C to 63°C, Method 503.5 / Procedure I-B	
Humidity	30°C to 60°C, 95 ± 2% RH, Method 507.5	
Low Pressure	Operating	15,000 ft, Method 500.5 / Procedure II
	Storage	15,000 ft, Method 500.5 / Procedure I
Salt Fog	Method 509.5	
Vibration	5 ~ 500 Hz, 1.48 & 1.90 & 2.24 Grms Method 514.6 / Procedure I	
Transit Drop	Method 516.6 / Procedure IV	
Shock	Method 516.6 / Procedure I	

Appendix E: Remote Control Commands

Remote Set Control Command

No.	Function	Length	Command	index	Value	Checksum(*1)
1	Auto	0x05	0x40	0x01	0=Auto	0xBA=Auto
2	Recall	0x05	0x40	0x02	0=Recall	0xB9=Recall
3	White Balance	0x05	0x40	0x03	0=White Balance	0xB8=White Balance
4	Mail Input Source	0x05	0x40	0x04	0=VGA 2=CVBS 1 12=CBVS2 7=HDMI 9=SDI	0xB7=VGA 0xB5=CVBS 1 0xA5=CVBS 2 0xB0=HDMI 0xAE=SDI
5	Brightness	0x05	0x40	0x10	0x00~0x64	0xAB=00 ~ 0x47=100
6	Contrast	0x05	0x40	0x11	0x00~0x64	0xAA=00 ~ 0x46=100
7	Gamma	0x05	0x40	0x31	0= GAMMA OFF 1= GAMMA 1.8 2= GAMMA 2.2	0x8A=Gamma 0 0x89=Gamma 1 0x88=Gamma 2
8	Color Temp	0x05	0x40	0x32	0=user 1=9300K 2=6500K	0x89=User 0x88=9300K 0x87=6500K
9	Color-R	0x05	0x40	0x33	0x00-0x64	0x88=00 ~ 0x24=100
10	Color-G	0x05	0x40	0x34	0x00-0x64	0x87=00 ~ 0x23=100
11	Color-B	0x05	0x40	0x35	0x00-0x64	0x86=00 ~ 0x22=100
12	Hue	0x05	0x40	0x12	0x00-0x64	0xA9=00 ~ 0x45=100
13	Saturation	0x05	0x40	0x13	0x00~0x64	0xA8=00 ~ 0x44=100
14	InterBright	0x05	0x40	0x14	0x00~0x64	0xA7=00 ~ 0x43=100
15	PIP	0x05	0x40	0x20	0=PIP Off 1=PIP 2=PAP	0x9B=PIP Off 0x9A=PIP 0x99=PAP
16	PIP Size	0x05	0x40	0x21	1=Small 2=Middle 3=Large	0x99=Small 0x98=Middle 0x97=Large
17	Volume	0x05	0x40	0x50	0x00-0x1F	0x6B=00 ~ 0x4C=31
18	Mute	0x05	0x40	0x54	0=Mute On 1=Mute OFF	0x67=Mute On 0x66=Mute Off

Remote Get Control Command

Command(Tx)					Acknowledgement(Rx)			
Function	Length	Command	index	Checksum (*1)	Length	index	Value	Checksum (*1)
Main Input Source	0x04	0x30	0x04	0xC8	0x04	0x04	0=VGA 2=CVBS 1 12=CVBS2 7=HDMI 9=SDI	0xF8=VGA 0xF6=CVBS 1 0xE6=CVBS 2 0xF1=HDMI 0xEF=SDI
Brightness	0x04	0x30	0x10	0xBC	0x04	0x10	0x00-0x64	0xEC=0 ~ 0x88=100
Contrast	0x04	0x30	0x11	0xBB	0x04	0x11	0x00-0x64	0xEB=0 ~ 0x87=100
Gamma	0x04	0x30	0x31	0x9B	0x04	0x31	0= OFF 1= GAMMA 1.8 2= GAMMA 2.2	0xCB= OFF 0xCA=1.8 0xC9=2.2
Color Temp	0x04	0x30	0x32	0x9A	0x04	0x32	0=user 1=9300K 2=6500K	0xCA=user 0xC9=9300k 0xC8=6500k
Color-R	0x04	0x30	0x33	0x99	0x04	0x33	0x00-0x64	0xC9=0 ~ 0x65=100
Color-G	0x04	0x30	0x34	0x98	0x04	0x34	0x00-0x64	0xC8=0 ~ 0x64=100
Color-B	0x04	0x30	0x35	0x97	0x04	0x35	0x00-0x64	0xC7=0 ~ 0x63=100
Hue	0x04	0x30	0x12	0xBA	0x04	0x12	0x00~0x64	0xEA=0 ~ 0x86=100
Saturation	0x04	0x30	0x13	0xB9	0x04	0x13	0x00-0x64	0xE9=0 ~ 0x85=100
InterBright	0x04	0x30	0x14	0xB8	0x04	0x14	0x00-0x64	0xE8=0 ~ 0x84=100
PIP	0x04	0x30	0x20	0xAC	0x04	0x20	0=Pip Off 1=PIP 2=PAP	0xDC=PIP Off 0xDB=PIP 0xDA=PAP
PIP Size	0x04	0x30	0x21	0xAB	0x04	0x21	1=Small 2=Middle 3=Large	0xDA=Small 0xD9=Middle 0xD8=Large
Volume	0x04	0x30	0x50	0x7C	0x04	0x50	0x00-0x1F	0xAC=0 ~ 0x8D=31
Mute	0x04	0x30	0x54	0x78	0x04	0x54	0=Mute On 1=Mute OFF	0xa8=Mute On 0xa7=Mute OFF

Appendix F: Maintenance

This equipment is extremely rugged and does not require a lot of maintenance. Remember that electrical equipment should be handled with care and used accordingly to its specifications.

Cleaning the Display Screen

- Wipe the screen with a clean, soft, lint-free cloth. This removes dust and other particles. Do not use acetone, ethyl alcohol, toluene, ethyl acid or methyl chloride to clear the panel. It may permanently damage the display screen.
- You can apply a small amount of non-ammonia; non-alcohol based glass cleaner onto a clean, soft, lint-free cloth and wipe the screen.
- Never spray or pour any liquid directly on the screen or case.
- **Do Not** use water or oil directly on the display screen. If droplets are allowed to drop on the screen, permanent staining or discoloration may occur.

Cleaning the Casing

Use the following procedure to clean the equipment.



Caution/ Attention

Always turn off the device and disconnect other peripherals before cleaning and maintenance procedures.

Toujours éteindre l'appareil et débrancher tous les périphériques avant que les procédures de nettoyage et d'entretien.

Before Cleaning:

- Make sure the device is turned off.
- Disconnect the power cable from any AC outlet.

When Cleaning:

- Wipe dust off the outside casing with a cloth slightly moistened with water or mild ammonia-based cleaning solution. Do not use this cloth on a display screen!
- Do not use an abrasive cleaner or high pressure washer on the screen.
- Do not rub the unit with a dry cloth. This action can result in a static charge being built up and cause a spark. Always use damp cloth while cleaning the unit.



Warning!/ Avertissement!

POTENTIAL ELECTROSTATIC CHARGE HAZARD – SEE INSTRUCTIONS

POTENTIEL ÉLECTROSTATIQUE CHARGE DANGER - VOIR INSTRUCTIONS

