WINMATE

15~32" P-Cap Rack Mount Military Display

Model No. **R15L600-MLA3FP**
R17L100-MLA1FP
R19L100-MLA3FP
W24L100-MLA2FP
W32L100-MLA3FP

User Manual

V1.0

For more information on this and other Winmate products, please visit our website at:
www.winmate.com

Document Part Number: 9152111I109B

Please read this instructions before operating the device and retain them for future reference.

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PREFACE

Copyright Notice

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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 1W18Axxxxxxxx means October of year 2018.

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
- Software (OS, version, application software, etc.)
- 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.

Federal Communications Commission Radio Frequency Interface Statement

This device complies with part 15 FCC rules.
Operation is subject to the following two conditions:
- This device may not cause harmful interference.
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class "B" digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at him own expense.
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European Union

This equipment is in conformity with the requirement of the following EU legislations and harmonized standards. Product also complies with the Council directions.

Electromagnetic Compatibility Directive (2014/30/EU)
- EN55024: 2010/ A1: 2015
    - IEC61000-4-2: 2009
    - IEC61000-4-3: 2006+A1: 2007+A2: 2010
    - IEC61000-4-4: 2012
    - IEC61000-4-5: 2014
    - IEC61000-4-6: 2014
    - IEC61000-4-8: 2010
    - IEC61000-4-11: 2004
- EN55032: 2012/AC:2013
- EN61000-3-2:2014
- EN61000-3-3:2013

Low Voltage Directive (2014/35/EU)
- EN 60950-1:2006/A11:2009/A1:2010/A12:2011/ A2:2013

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.
Unealerted' 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 Électriqueindique le potentiel de chocssur des emplacements électriques et comment éviterces problèmes.

ALTERNATING CURRENT / MISE À LE TERRE!
The Protective Conductor Terminal (Earth Ground) symbol indicates the potential risk of serious electrical shock due to improper grounding.
Le symbole de Miseà Terre indique le risqué potential de choc électrique grave à la terre incorrecte.

Safety Information

WARNING!
This monitor is equipped with Mini USB port, signals and power is obtained from standard USB 2.0 or USB 3.0 port. Do not expose this unit in the rain or moisture environment to damage the monitor.

CAUTION!
Do not touch the surface of the LCD panel. Pressure on the panel may cause non-uniformity of color or disorientation of the liquid crystals.

PRECAUTIONS:

•   Do not use the monitor near water.

•   Do not place the monitor on an unstable cart, stand, or table. If the monitor falls, it can injure a person and cause serious damage to the appliance. Use only a cart or stand recommended by the manufacturer or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacturer and follows the kit instructions.

•   The monitor should be operated with an USB cable with Mini USB B type connector on monitor end and standard USB A type connector on the other end to PC or USB signal source.

•   Normally it is packed with monitor.

•   Never spill liquids on the monitor.

•   Do not attempt to service the monitor yourself; opening or removing covers can damage to the monitor or panel. Please refer all servicing to qualified service personnel.

•   For Wall mount adaptor, wall socket shall be installed near the equipment and shall be easily accessible.

ABOUT THIS USER MANUAL

This User Manual provides information about using the 15~32" P-Cap Rack Mount Display. The documentation set provides information for specific user needs, and includes:

- **15~32" P-Cap Rack Mount Display User Manual** – contains detailed description on how to use the display, its components and features.

NOTE:
Some pictures in this guide are samples and can differ from actual product.

Document Revision History

Version	Date	Note
1.0	5-Mar-2018	New document release

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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.

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CHAPTER 1: INTRODUCTION

Congratulations on purchasing Winmate® 15~32" P-Cap Rack Mount Military Display. Military Grade Display features anti-corrosive coating with aluminum alloy housing withstands the harshest military environments. Armored power connector MIL-DTL-38999 Type I initially developed for aerospace industry perfectly fit in our Military grade product line.

Withstanding rigors of harsh environments and tough weather conditions these Displays meet the most demanding requirements. Suitable for Army Headquarters and being connected to mobile devices on the field Display can provide up-to-date information for immediate commands.
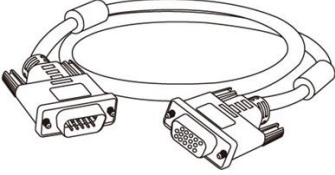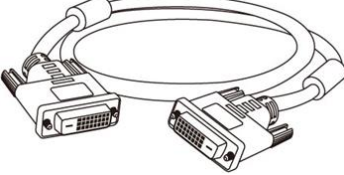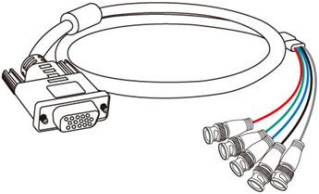
1.1 Product Features
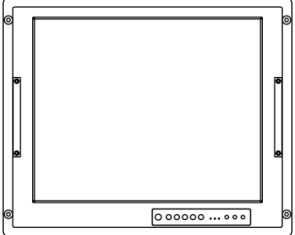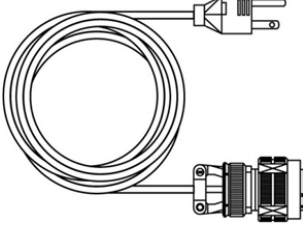
P-Cap Rack Mount Military Display features:

- 15~32" Projected Capacitive (P-Cap) multitouch screen
- Compliant with military standard MIL-STD-810G/F
- Anti-corrosion housing
- Flush and rack mount mechanical design (8U)
- Convenient on-screen display controls
- Built-in light sensor for auto brightness control
- Military grade power connector (MIL-DTL-38999/1)
- Default with Standard AR Glass
- DC 9~36V power input with isolation (Optional)

1.2 Package Contents

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 package includes:

Display	**User Manual (Hardcopy)**	**Power Cord MIL-DTL-38999/1 (2m)**
VGA Cable (2m)	**DVI Cable (2m)**	**VGA to 5 BNC Shielding Cable (2m)** *Not supplied for 32" model*

The package may include the following optional items based on your order:

1 x Touch Driver CD
1 x Touch RS-232 Shielding Cable, 2 meter
1 x RS-232 Remote Control Shielding Cable, 2 meter
1 x HDMI Cable

1.3 Rear Components

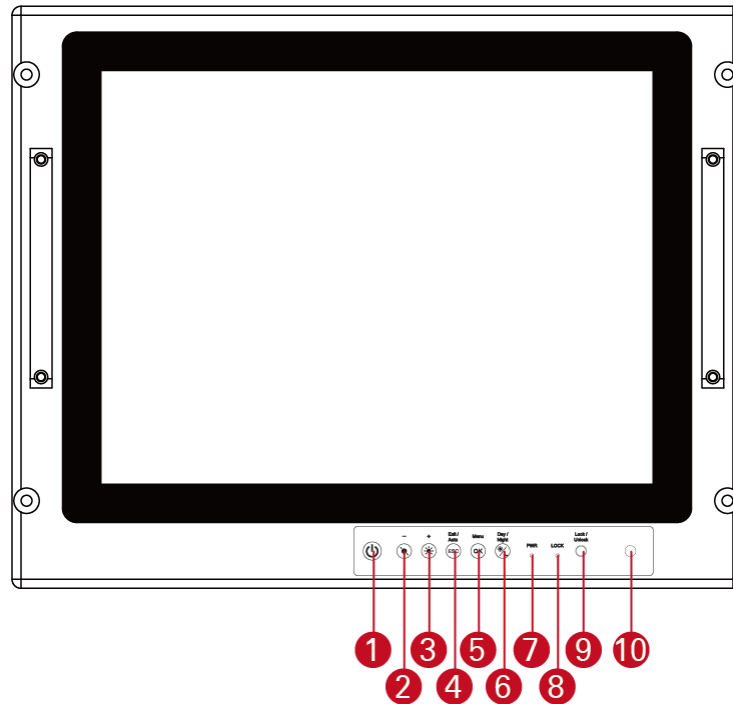Display connectors are located on the bottom rear side of the display.
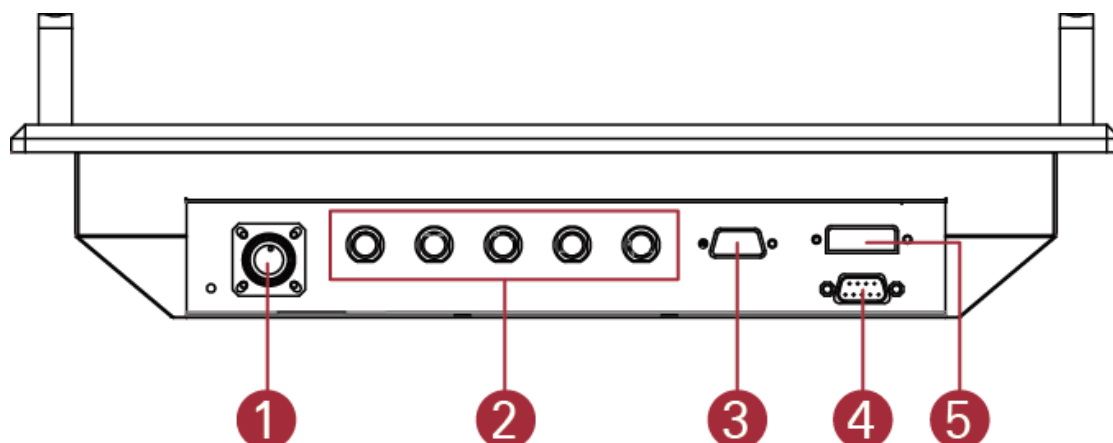
*Notice that this is a picture for reference. I/O position varies by display size. Refer to the section 1.5 Dimensions of this user manual to check mechanical drawing and I/O position.

	Component	Function
1	Power input connector	AC in 220V ±10%, 50 ± 3% Hz
2	BNC connectors	Transmits analog and serial digital interface video signals or composite video.
3	VGA connector	The 15-pin VGA connector transmits video from video source to display.
4	RS232 (Optional)	For touch interface.
5	DVI-D connector	Transmits uncompressed digital video from video source to display.

1.4 Panel Controls

Panel controls are located on the front side of the display.

| Control		Function
1	Power	Press to turn on or turn off the display.
2	Down	Press this key to decrease screen brightness. Use to navigate items of a single OSD menu.
3	Up	Press this key to increase screen brightness. Use to navigate items of a single OSD menu.
4	Exit/ Auto	Automatically adjusts brightness of the display screen, or allows user to exit the OSD menu.
5	Menu	Allows user to enter the main menu.
6	Day/ Night	Tap this button to enter DAY MODE. Tap this button to enter NIGHT MODE to increase visibility in low-light conditions.
7	Power LED	Lights up green when the display turns on; signalizes that display functions normally. Lights up orange when display is suspended.
8	Lock LED	Lights up red when OSD button locked. **OFF** Turns off when OSD button lock function disabled.
9	Lock/ Unlock	Tap this button to lock/ unlock the function of OSD panel.
10	Light Sensor	Detect light density.

1.5 Dimensions

15-inch Display, R15L600-MLA3FP

Unit: mm
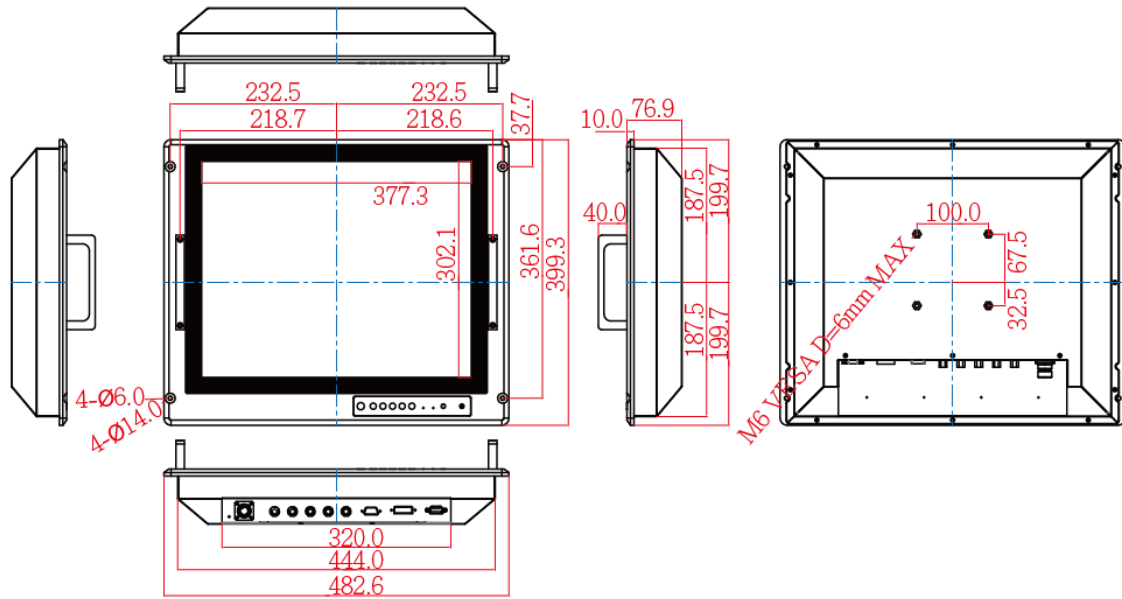*Dimensions: 402 x 321 x 70*
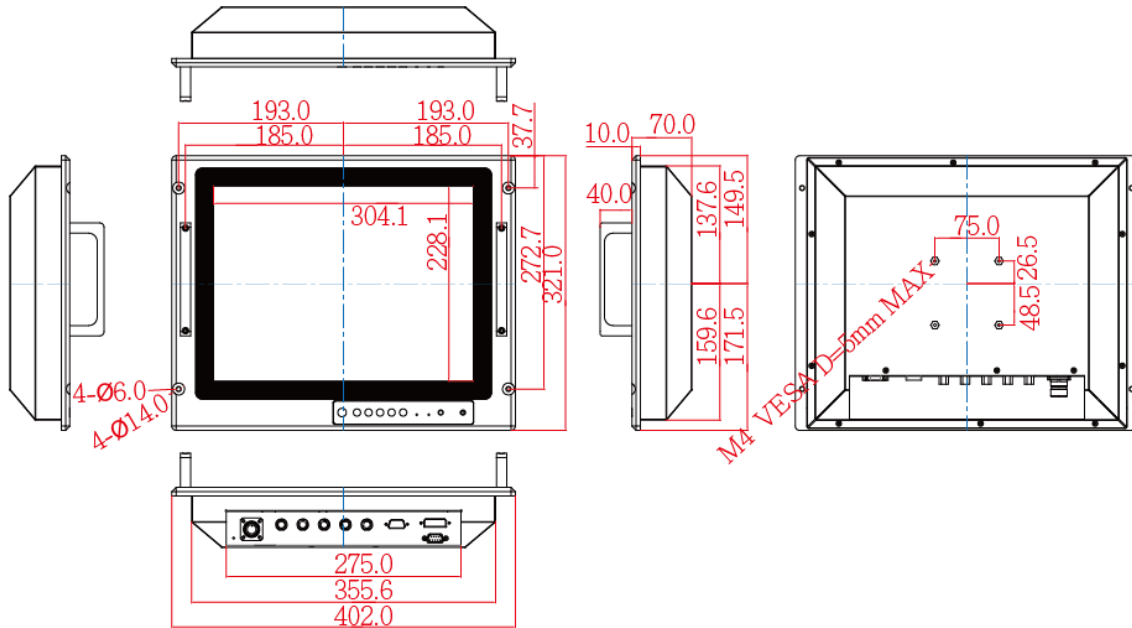
17-inch Display, R17L100-MLA1FP

Unit: mm
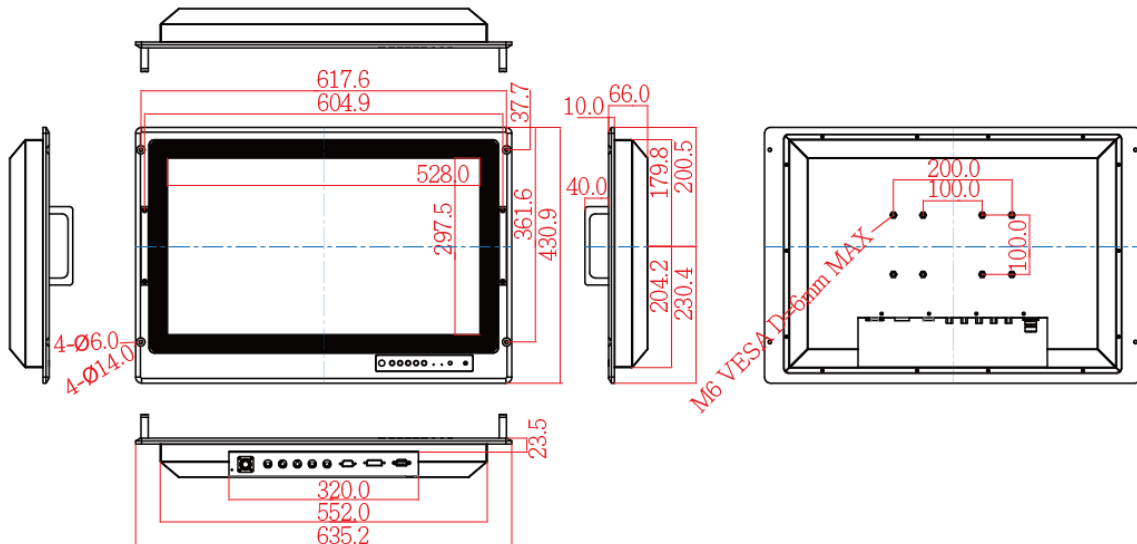*Dimensions: 482 x 399.3 x 79.6*
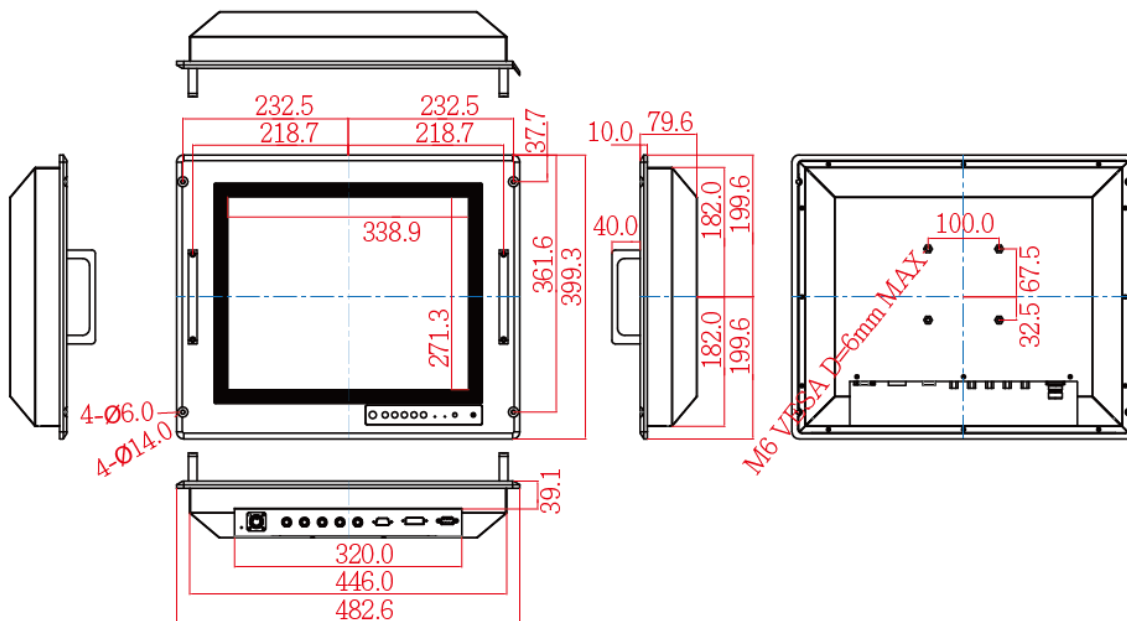
19-inch Display, R19L100-MLA3FP

Unit: mm
Dimensions: 482.6 x 399.3 x 76.9

24-inch Display, W24L100-MLA2FP

Unit: mm
Dimensions: 635.2 x 430.9 x 66

32-inch Display, W32L100-MLA3FP

Unit: mm
Dimensions: 825 x 486 x 88.5

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.

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.

CAUTION/ ATTENTION
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.

CAUTION/ ATTENTION
Turn off the device and disconnect other peripherals before installation.
Éteindre l'appareil et débrancher tous les périphériques avant l'installation.

2.1 Wiring Requirements

The following common safety precautions should be observed before installing any electronic device:

- Strive to use separate, non-intersecting paths to route power and networking wires. If power wiring and device wiring paths must cross make sure the wires are perpendicular at the intersection point.
- Keep the wires separated according to interface. The rule of thumb is that wiring that shares similar electrical characteristics may be bundled together.
- Do not bundle input wiring with output wiring. Keep them separate.
- When necessary, it is strongly advised that you label wiring to all devices in the system.
- Do not run signal or communication wiring and power wiring in the same conduit. To avoid interference, wires with different signal characteristics (i.e., different interfaces) should be routed separately.
- Be sure to disconnect the power cord before installing and/or wiring your device.
- Verify the maximum possible current for each wire gauge, especially for the power cords. Observe all electrical codes dictating the maximum current allowable for each wire gauge.
- If the current goes above the maximum ratings, the wiring could overheat, causing serious damage to your equipment.

Be careful when handling the unit. When the unit is plugged in, the internal components generate a lot of heat which may leave the outer casing too hot to touch.

2.2 Mounting the Display

The Military Display supports different mounting options. Refer to sub-sections below for more details.

2.2.1 Console/ Rack Mount

The main mounting approach for military applications is rack mount - very user-friendly in terms of installation.

Installation Instruction:
1. Prepare a fixture for the specific dimensions of the device.
2. Cut a hole on a sub frame or panel according to the cutout dimensions.
3. Install the device properly onto the cutout area of the sub frame or panel with the sides of the front bezel.
4. Fix the device from the outside to the fixture with four M6 truss head screws.

Console / Rack Mount Installation
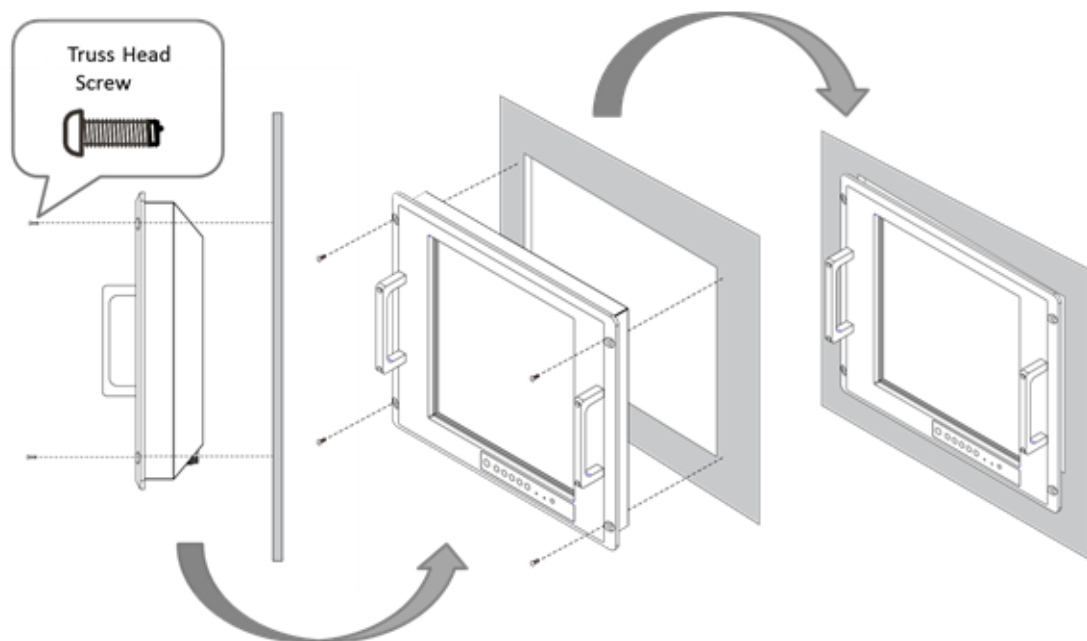
| Size	Cutout Dimensions (W x D)	Screw Size
15"	358.6 x 300.2 mm	M4 truss head (4 pcs)
17"	449 x 367 mm	M4 truss head (4 pcs)
19"	447 x 378 mm	M4 truss head (4 pcs)
23.8"	555 x 387 mm	M6 truss head (4 pcs)
32"	769.5 x 468 mm	M6 truss head (4 pcs)

2.2.2 VESA Mount

The Military Display supports VESA Mount installation. Notice that VESA Plate is not included in Winmate's standard accessories package.

Installation Instruction:
1. Turn off the display and disconnect peripherals.
2. Screw VESA bracket to the fixture (ex. swing arm) with four M4 VESA screws.
3. Place the device on VESA bracket.
4. Follow instructions supplied with your mounting kit.
5. Connect cables, power on the display.

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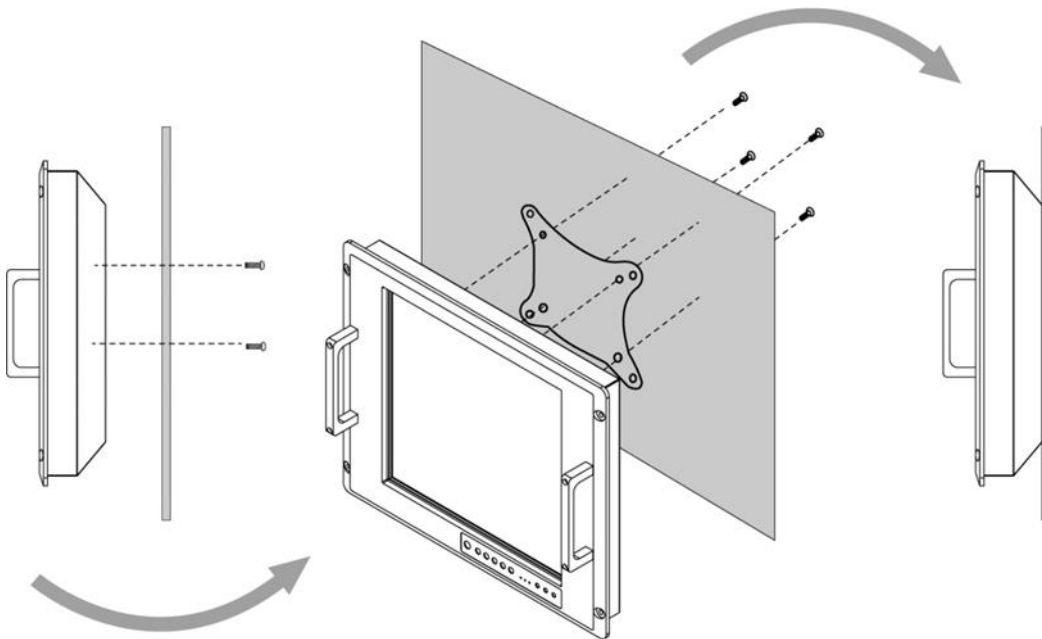
Notice that VESA stand and mounting kit are not provided by Winmate.

Size	VESA Plate	Screw Size
15"	75 x 75 mm	M4 VESA, D=5 mm (4 pcs)
17"	100 x 100 mm	M6 VESA, D=6 mm (4 pcs)
19"	100 x 100 mm	M6 VESA, D=6 mm (4 pcs)
24"	100 x 100 mm 100 x 200 mm	M6 VESA, D=6 mm (4 pcs)
32"	100 x 100 mm 100 x 200 mm	M6 VESA, D=6 mm (4 pcs)

2.2 Powering On

Follow the recommendations below when powering on the equipment.
- Plug-in the power cord to easy accessible AC outlet.
- Plug-in the AC adapter to a grounded outlet.

ALTERNATING CURRENT / MISE À LE TERRE!

This product must be grounded. Use only a grounded AC outlet. Install the additional PE ground wire if the local installation regulations require it.
If you do not use a grounded outlet while using the device, you may notice an electrical tingling sensation when the palms of your hands touch the device.

Ce produit doit être mis à la terre. Utiliser seulement un cordon d'alimentation avec mise à la terre. Si les règlements locaux le requiert, installer des câbles de mise à la terre supplémentaires.
Si vous n'utiliser pas une prise d'alimentation avec mise à la terre, vous pourriez remarquer une sensation de picotement électrique quand la paume de vos mains touche à l'appareil.

## 2.2.1 Connecting to AC Input Power Source (Default)

AC Power Input Requirements: AC 100~240V, Universal, ±10%
Connect one end of the Military Grade power connector MIL-DTL-38999/1 to the Display (CN2), and plug the other end of the power connector (CN1) in to a working AC outlet.

Note: Power cords vary in appearance by region and country.

Power Connector MIL-DTL-38999/1 →   AC Outlet
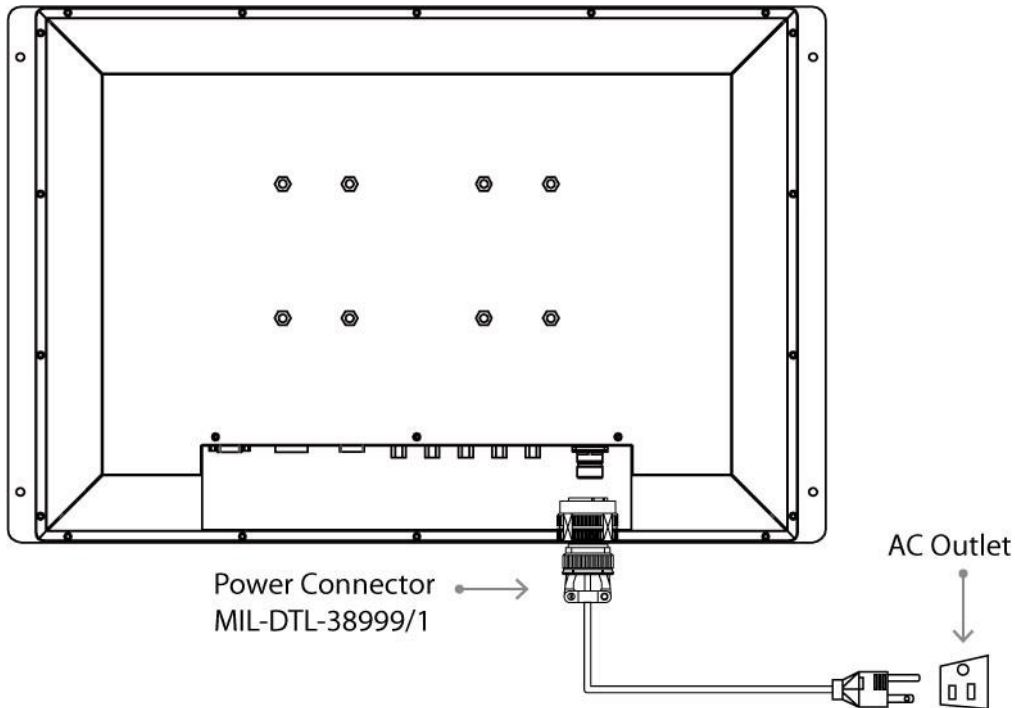
Connector Pinouts:
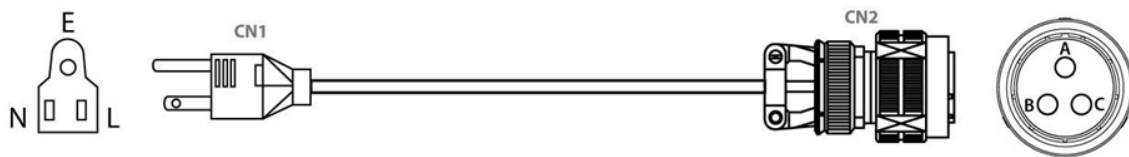
Pin №	Signal Name
A	VCC+
B	VCC-
C	GND

⚠ **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.

2.2.2 Connecting to DC Input Power Source (Optional)

DC Power Input Requirements: 9~36V DC.

1. Insert the exposed wires of the DC Power Cable to the appropriate connectors on the terminal block plug.
2. Plug the terminal block plug firmly to the DC IN Jack.
3. Connect the other end of the DC power cable (wires with lug terminals that are labeled **+** and **–** to the terminals of the 9-36V DC Power Source). Ensure that the power connections maintain the proper polarity.
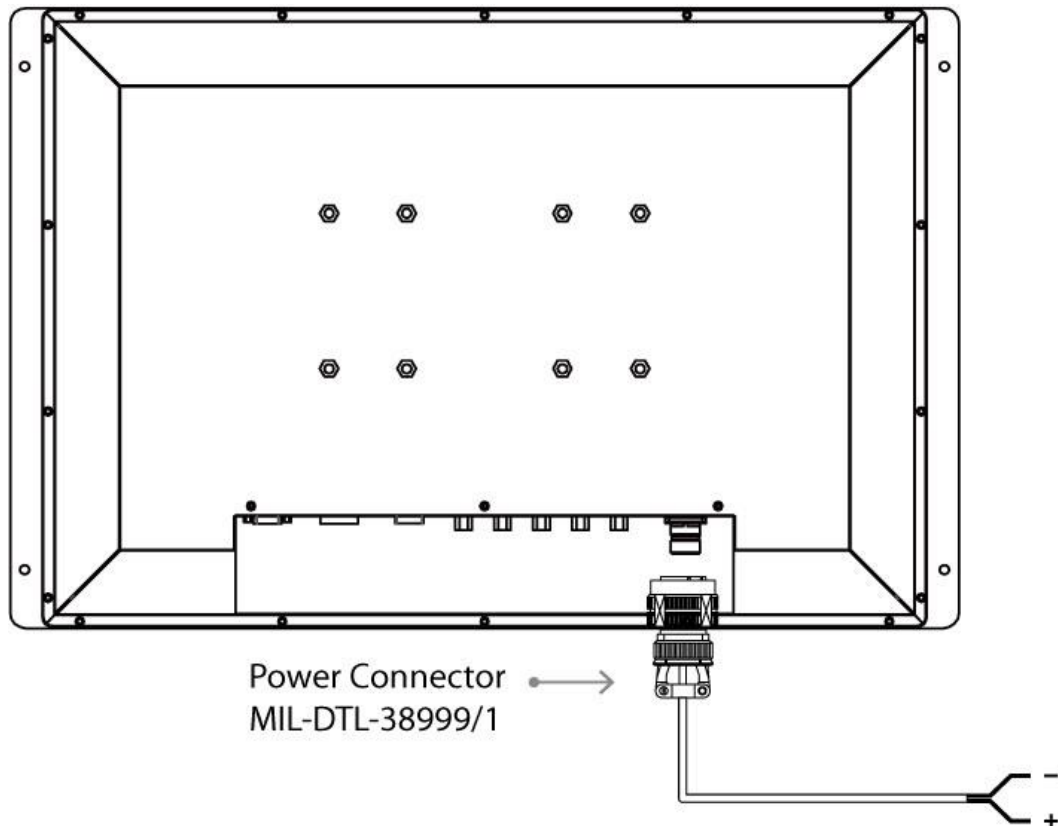
WARNING!/ AVERTISSEMENT!
Make sure that the polarization of the power lines is correct and complete including earth ground.
Assurez-vous que la polarisation des lignes électriques est correcte et complète, y compris la terre.

2.3 Connecting Other Devices

Use VGA, BNC or DVI-D cable to connect your display to external device.
Connect RS232 cable for touch capabilities.

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.

WARNING!/ AVERTISSEMENT!
Make sure the power is off when connecting and disconnecting the connectors.
Assurez-vous que l'alimentation est coupée lors de la connexion et la déconnexion des connecteurs.

2.3.1 VGA Connector

Plug one end of the 15-pin signal cable to the video signal connector at the rear of the PC system and the other end to the Display. Secure the connectors with the screws on the cable connector at both ends.

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

VGA Cable
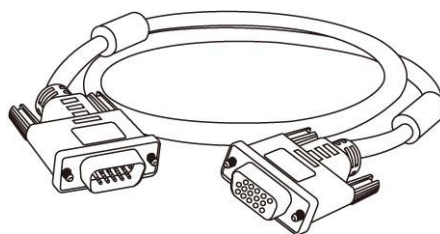
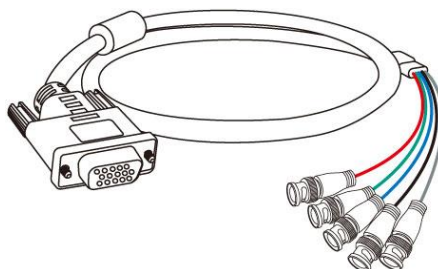
VGA Connector Pin Assignments
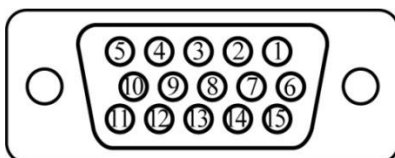
Pin №	Signal Name	Pin №	Signal Name
1	RED	2	GREEN
3	BLUE	4	ID2/RES
5	GND	6	RED_RTN
7	GREEN_RTN	8	BLUE_RTN
9	KEY/PWR	10	GND
11	ID0/RES	12	ID1/SDA
13	HSync	14	VSync
15	ID3/SCL		

2.3.2 BNC Connector

Plug one end of VGA signal cable to the rear side of the PC system and the other end of 5BNCs (R, G, B, H, V) signal connector to the Display.
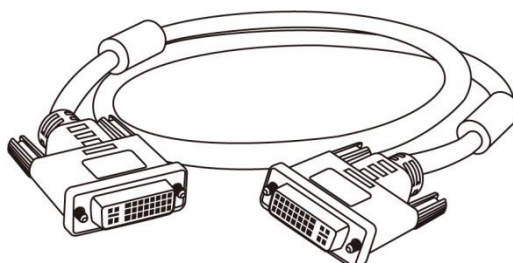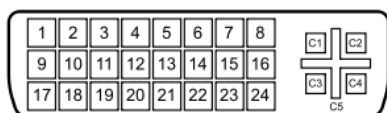
VGA to 5 BNCs Signal Shielding Cable

2.3.3 DVI-D Connector

Plug one end of the DVI signal cable to the video signal connector (DVI-D digital only) at the rear of the PC system and the other end to the Display.

DVI-D Cable

DVI-D Connector Pin Assignments

Pin №	Signal Name	Pin №	Signal Name
1	DVI_RX2-	2	DVI_RX2+
3	GND	4	NC
5	NC	6	DVI SCL
7	DVI SDA	8	NC
9	DVI_RX1-	10	DVI_RX1+
11	GND	12	NC
13	NC	14	+5V
15	DVI_CON_CABLE	16	DVI_CON_HP
17	DVI_RX0-	18	DVI_RX0+
19	GND	20	NC
21	NC	22	GND
23	DVI_CLKP	24	DVI_CLKN
C1	NC	C2	NC
C3	NC	C4	NC
C5	NC		

2.3.4 HDMI Connector

Plug HDMI signal cable to the HDMI connector on the rear side of PC system, and plug the other end to the monitor.

HDMI Cable
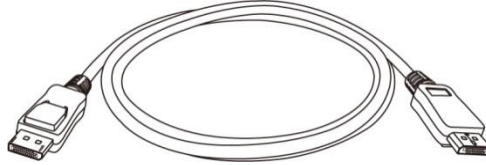
HDMI Connector Pin Assignment and Signal Names

Pin №	Signal Name	Pin №	Signal Name
1	HDMI_RX2+	2	GND
3	HDMI_RX2-	4	HDMI_RX1+
5	GND	6	HDMI_RX1-
7	HDMI_RX0+	8	GND
9	HDMI_RX0-	10	HDMI_RXC+
11	GND	12	HDMI_RXC-
13	HDMI_CON_CEC	14	NC
15	HDMI_CON_SCL	16	HDMI_CON_SDA
17	GND	18	+5V_HDMI
19	HDMI_CON_HP		

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OPERATING THE DEVICE

This chapter provides detailed information on how to operate the display.

3

CHAPTER 3: OPERATING THE DEVICE

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

3.1 Navigating the OSD Menu

This section describes how to navigate the OSD Menu.

OPTION	ACTION	EFFECT
Enter the main menu	Press the **MENU** button	Display the main menu on the screen.
Select the menu you want to adjust	Press the **+/ -** button	Shift the item selections up or down until it is desired, and then press the button again to enter the menu item.
Adjust item settings	Press the **+/ -** button	Adjust the value of setting. Once you adjust the value of setting, the value will be stored automatically.
Exit the OSD menu	Select the **EXIT OSD** item or press the Exit Key directly	Return the regular screen viewing. If there is no command respond for 30 seconds, OSD menu will be closed automatically.

3.2 OSD Menu in VGA Mode

This section describes how to navigate the OSD Menu in VGA Mode.

Navigation buttons in VGA Mode

☀	**BRICONTRAST**	BRIGHTNESS CONTRAST AUTO BRIGHTNESS LED LIGHT MIN BRIGHTNESS	🔊	**AUDIO**	VOLUME ADJUST SPEAK ON/OFF
▭	**POSITION**	H-POSITION V-POSITION	⌨/○	**CHANNEL**	ANALOG 1 ANALOG 2 DVI
↔	**IMAGE**	AUTO CLOCK PHASE WHITE BALANCE	↦	**RECALL**	YES NO
😀	**COLOR**	USER (RED/GREEN/BLUE) 9300K 6500K ADC BRIGHTNESS	EXIT	**OSD EXIT**	YES NO
	GAMMA	GAMMA 0 GAMMA 1 GAMMA 2 GAMMA 3			

Description of items in the navigation menu:

☀ BRICONTRAST

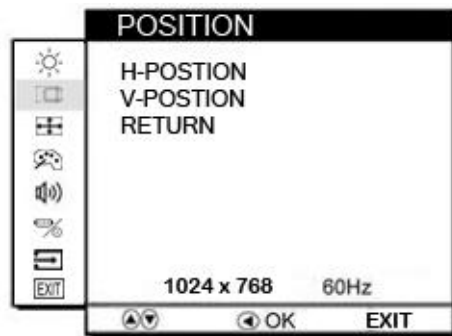Press "+" to increase or "-" to decrease the brightness or contrast.

*   BRIGHTNESS: Use to adjust the screen's brightness
*   CONTRAST: Use to adjust the screen's contrast
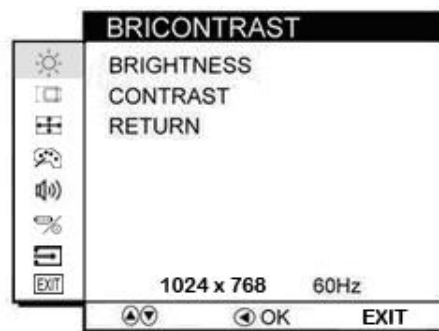
▭ POSITION

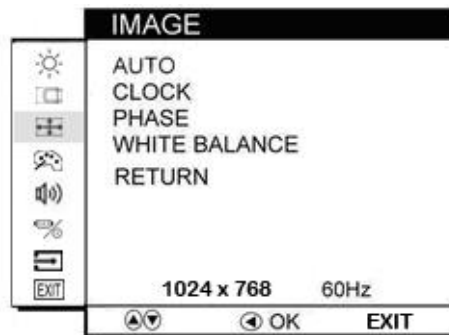You can adjust the screen's position by horizontal and vertical manually.

*   H-POSITION: Use to adjust the image to the left or right on the screen
*   V-POSITION: Use to adjust the image up or down on the screen

⟷ IMAGE

You can adjust the value of screen quality automatically.
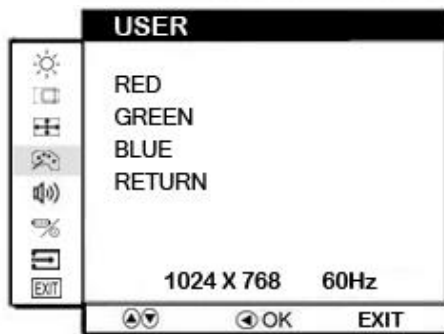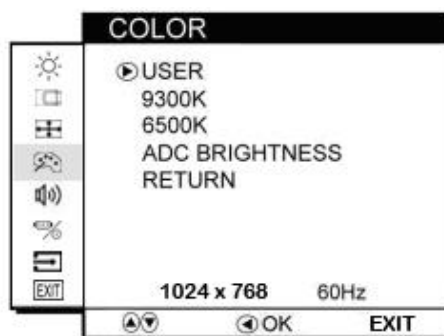
- AUTO: Use to choose the best settings for the current input signal
- CLOCK: Use to adjust the value of horizontal image
- PHASE: Use to adjust the phase control (Phase adjustment may be required to optimize the display quality)
- WHITE BALANCE: Use to set RGB signal voltage level

```
IMAGE
☼   AUTO
▢   CLOCK
⊞   PHASE
🎨   WHITE BALANCE
◁))  RETURN
%
⊟
EXIT         1024 x 768    60Hz
        ▲▼       ◀ OK      EXIT
```

🎨 COLOR

You can select the screen's color level of the white color field from the default color temperature settings. Also, you can fine tune the color temperature by USER option if necessary.
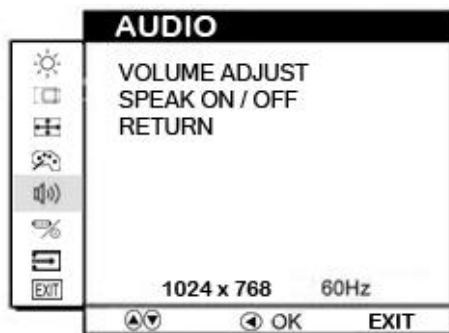
- USER: Choose RED/GREEN/BLUE to set value of color temperature brightness to suit your own preference
- 9300K: Use to set value of monitor for the CIE coordinate 9300 color temperature
- 6500K: Use to set value of monitor for the CIE coordinate 6500 color temperature
- ADC Brightness: Set value of monitor for ADC Brightness

```
COLOR
☼   ▶USER
▢   9300K
⊞   6500K
🎨   ADC BRIGHTNESS
◁))  RETURN
%
⊟
EXIT         1024 x 768    60Hz
        ▲▼       ◀ OK      EXIT
```

```
USER
☼   RED
▢   GREEN
⊞   BLUE
🎨   RETURN
◁))
%
⊟
EXIT         1024 X 768    60Hz
        ▲▼       ◀ OK      EXIT
```
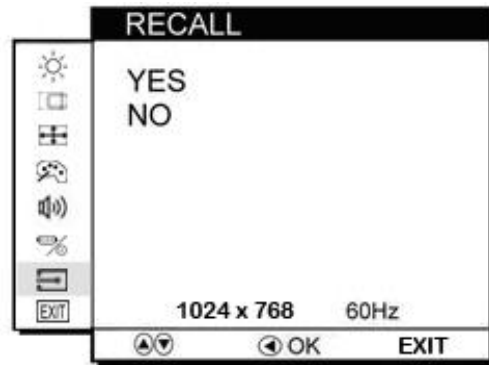
◁)) AUDIO (Optional)

You can adjust the setting of speaker, including volume and mute.

- VOLUME ADJUST: Use to adjust the volume of speaker
- SPEAK ON/OFF: Use to make the speaker work or mute

```
AUDIO
☼   VOLUME ADJUST
▢   SPEAK ON / OFF
⊞   RETURN
🎨
◁))
%
⊟
EXIT         1024 x 768    60Hz
        ▲▼       ◀ OK      EXIT
```
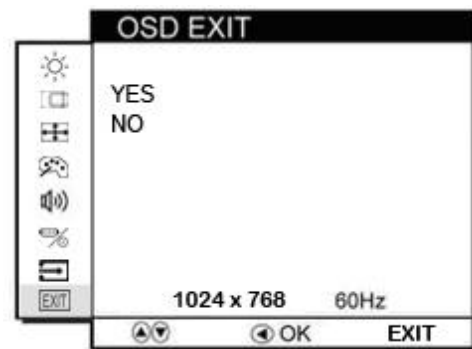
▱ RECALL

You can recall the factory default setting by selecting "YES". Select "NO" to return the main menu.

```
RECALL
YES
NO

              1024 x 768      60Hz
       ⊛⊛        ◔ OK        EXIT
```

EXIT OSD EXIT

You can exit the OSD menu by selecting "YES". Select "NO" to return the main menu.

```
OSD EXIT
YES
NO

              1024 x 768      60Hz
       ⊛⊛        ◔ OK        EXIT
```

3.3 OSD Menu in DVI Mode

This section describes how to navigate the OSD Menu in DVI Mode.

Navigation buttons in DVI Mode

☀	**BRICONTRAST**	BRIGHTNESS CONTRAST	🔊	**AUDIO**	VOLUME ADJUST SPEAK ON/OFF
▯	**POSITION**	Not available in DVI mode	🗨/⊙	**CHANNEL**	ANALOG 1 ANALOG 2 DVI
↔	**IMAGE**	Not available in DVI mode	⊟	**RECALL**	YES NO
😎	**COLOR**	USER (RED/GREEN/BLUE)	EXIT	**OSD EXIT**	YES NO

Description of items at the navigation menu:

✳ BRICONTRAST

Press "+" to increase or "-" to decrease the brightness or contrast.

- BRIGHTNESS: Use to adjust the screen's brightness
- CONTRAST: Use to adjust the screen's contrast
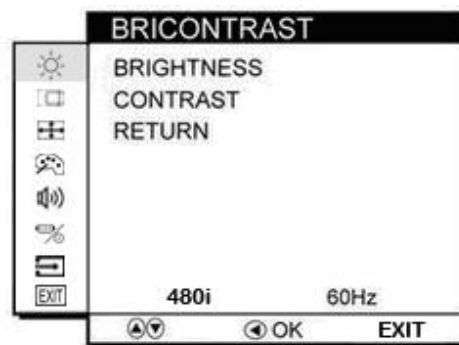
😎 COLOR

You can fine tune the color temperature by USER option if necessary.

- USER: Choose RED/GREEN/BLUE to set value of color temperature brightness to suit your own preference
- For 9300K, 6500K, and ADC BRIGHTNESS, these functions are not available under DVI mode.
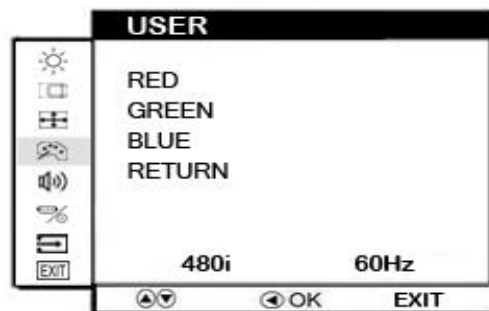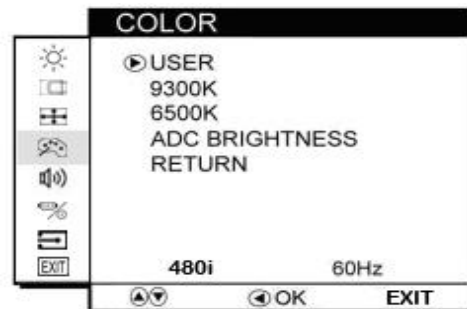
🔊 AUDIO (optional)

You can adjust the setting of speaker, including volume and mute.
- VOLUME ADJUST: Use to adjust the volume of speaker
- SPEAK ON/OFF: Use to make the speaker work or mute

AUDIO
VOLUME ADJUST
SPEAK ON / OFF
RETURN

480i   60Hz

⊙⊛   ◉ OK   EXIT

⊟ RECALL

You can recall the factory default setting by selecting "YES". Select "NO" to return the main menu.

RECALL
YES
NO

480i   60Hz

⊙⊛   ◉ OK   EXIT

EXIT OSD EXIT

You can exit the OSD menu by selecting "YES". Select "NO" to return the main menu.

OSD EXIT
YES
NO

480i   60Hz

⊙⊛   ◉ OK   EXIT

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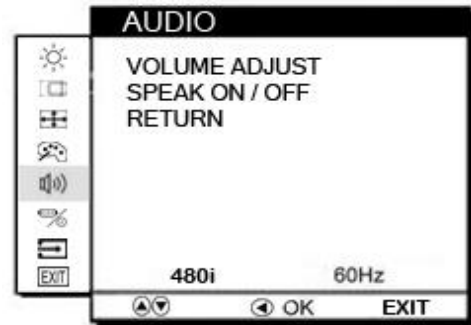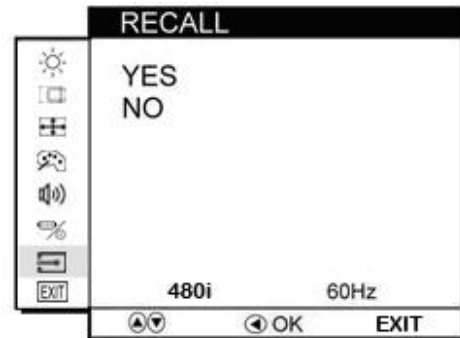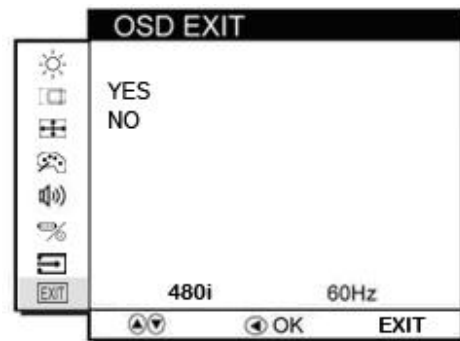
TECHNICAL SPECIFICATIONS

This section includes technical specifications.

Appendix A

APPENDIX A: TECHNICAL SPECIFICATIONS

|	R15L600-MLA3FP	R17L100-MLA1FP	R19L100-MLA3FP	W24L100-MLA2FP	W32L100-MLA3FP
Display:					
Size	15"	17"	19"	24" (Widescreen)	32" (Widescreen)
Resolution	1024 x 768	1280 x 1024	1280 x 1024	1920 x 1080	1920 x 1080
Active Display Area, mm	304.1 (H) x 228.1 (V)	337.92 (H) x 270.33 (V)	376.32(H) x 301.06 (V)	527.04(H) x 290.46(V)	698.4(H) x 392.85 (V)
Pixel Pitch, mm	0.297 (H) x 0.297 (V)	0.264 (H) x 0.264 (V)	0.294 (H) x 0.294 (V)	0.270 (H) x 0.270 (V)	0.3637(H) x 0.3637(V)
Contrast Ratio	700:1 (typ.)	800:1 (typ.)	1000:1 (typ.)	1000: 1(typ.)	3000:1(typ.)
Display Color	16.2M	16.7M	16.7M	16.7M	1.07 Billion
Brightness	300 nits	350 nits	350 nits	300 nits	350 nits
Viewing Angle (CR>=10)	-80~80(H);-80~80(V)	-85~85(H);-80~80(V)	-85~85(H);-80~80(V)	-89~89(H);-89~89(V)	-89~89(H);-89~89(V)
Input/ Output:					
Signal Connectors	1 x D-Sub 15 pin 5 x BNCs (R,G,B,H,V) 1 x DVI-D 1 x RS232 Touch Interface (Optional)	1 x D-Sub 15 pin 5 x BNCs (R,G,B,H,V) 1 x DVI-D 1 x RS232 Touch Interface (Optional)	1 x D-Sub 15 pin 5 x BNCs (R,G,B,H,V) 1 x DVI-D 1 x RS232 Touch Interface (Optional)	1 x D-Sub 15 pin 5 x BNCs (R,G,B,H,V) 1 x DVI-D 1 x RS232 Touch Interface (Optional)	1 x D-Sub 15 pin 1 x DVI-D 1 x HDMI
Environmental Considerations:					
Operating Temperature	-20°C to 60°C	-20°C to 60°C	-20°C to 60°C	0°C to 50°C, wide temp. by request	0°C to 50°C, wide temp. by request
Operating Humidity	95%RH ±3%	95%RH ±3%	95%RH ±3%	95%RH ±3%	95%RH ±3%
Shock	MIL-STD-810F/G Method 516.6 / Procedure I				
Vibration	MIL-STD-810F/G Method 514.6 / Procedure I				
IP Rating	IP Rating				
MIL-STD 810F/G Compliance	Vibration	MIL-STD-810F Method 514.5			
	Humidity	MIL-STD-810F Method 507.4			
	Transit Drop	MIL-STD-810F Method 516.5			
MIL-461E Compliance	RE	RE101 / RE102			
	CE	CE 101 / CE 102			
	Optional with EMI Glass / Touch				
	RS	RS101 / RS103			
	CS	CS 101 / CS 106 / CS 109 / CS 114			
Power Specifications:					
Power Source	Default: AC 100~240V, Universal,±10% Optional: DC 9~36V, ±10%				
Power Consumption	21W typical, normal operation	32W typical, normal operation	30W typical, normal operation	46W typical, normal operation	50W typical, normal operation
Power Management	VESA DPMS Compliant				
Play & Play	VESA DDC 1/2B				
Order Information (Optional):					
Touch	P-Cap Multi-Touch EMI ITO Glass				
Standards and Certifications					
CE, FCC Class B, compliance with MIL-STD 810F/G and MIL-STD 461E/F					

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MILITARY GRADE COMPLIANCE

This section includes description of military grade compliance.
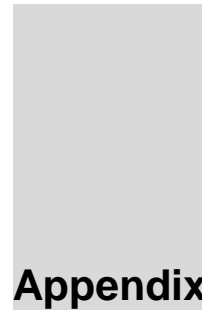
Appendix

B

APPENDIX B: 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)		
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	

MAINTENANCE

This section includes supported frequency range of available video inputs.

Appendix C

APPENDIX C: 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

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