



THE DISPLAY CHOICE OF PROFESSIONALS

MX-22 & MX-24 LED-Backlit Display

User Manual

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WEEE

Information for users applicable in European Union countries.



The symbol on the product or its packaging signifies that this product has to be disposed separately from ordinary household wastes at its end of life. Please kindly be aware that this is your responsibility to dispose electronic equipment at recycling centers so as to help conserve natural resources. Each country in the European Union should have its collection centers for electrical and electronic equipment recycling. For information about your recycling drop off area, please contact your local related electrical and electronic equipment waste management authority or the retailer where you bought the product.

Standard	Test item	Standard
	RAD & CON	EN55011(EMI)
	Harmonic	EN61000-3-2
	Flicker	EN61000-3-3
	ESD	IEC 61000-4-2: 2008
EN60601-1-2:2007	RS	IEC 61000-4-3: 2006+A1:2007+A2:2010
EN60601-1-2:2007	EFT	IEC 61000-4-4: 2012
	Surge	IEC 61000-4-5: 2005
	CS	IEC 61000-4-6: 2008
	PFM	IEC 61000-4-8: 2009
	DIP	IEC 61000-4-11: 2004

EMC Information

Essential performance of MX-22 and MX-24 is to display images and operate functions normally.

CAUTION

The MX-22 and MX-24 requires special precautions regarding EMC and need to be installed, put into service and used according to the following information.

Do not use any cables other than the cables that provided or specified by us. Using other cables may cause the increase of emission or decrease of immunity.

Do not put anyportable and mobileRF communications equipment close to the MX-22 and MX-24. Doing so may affect the MX-22 and MX-24.

The MX-22 and MX-24 should not be used adjacent to or stacked with other equipment. If adjacent or stacked use is necessary ,the equipment or system should be observed to verify normal operation in the configuration in which it will be used.

Anyone who connects additional equipment to the signal input part or signal output parts, configuring a medical system, responsible that the system complies with the requirements of IEC/ EN60601¬1¬2.

Guidance and manufacturer's declaration – electromagnetic emissions			
The MX-22 and MX-24 is intended for use in the electromagnetic environment specified below. The customer or the user of the MX-22 and MX-24 should assure that it is used in such an environment. Not Life-supporting Medical Equipment.			
Emissions test		Electromagnetic environment – guidance	
Harmonic emissions IEC/EN61000-3-2	Class A	The MX-22 and MX-24 is suitable for use in all establishments,including domestic establishments	
Voltage fluctuations / flicker emissions IEC/ EN61000-3-3	Class A	and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic pur poses.	

Guidance and manufacturer's declaration - electromagnetic immunity

The MX-22 and MX-24 is intended for use in the electromagnetic environment specified below. The customer or the user of The MX-22 and MX-24 should assure that it is used in such an environment. Not Life-supporting Medical Equipment.

Immunity test	IEC/EN60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC/EN61000-4-2	±6kV contact ±8kV air	±6kV contact ±8kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient / burst IEC/EN61000-4-4	±2kV for power supply lines ±1kV for input/output lines	±2kV for power supply lines ±1kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC/EN61000-4-5	±1kV line(s) to line(s) ±2kV line(s) to earth	±1kV line(s) to line(s) ±2kV line(s) to earth	Mains power quality should be that of a typical commercial or hospital environment.
	<5% UT (>95% dip in UT) for 0.5 cycle	<5% UT (>95% dip in UT) for 0.5 cycle	Mains power quality should be that of a typical commercial or hospital environment. If the user of the
Voltage fluctuations / flicker emissions	40% UT (60% dip in UT) for 5 cycles	40% UT (60% dip in UT) for 5 cycles	MX-22 and MX-24 requires continued operation during power mains
IEC/EN61000-3-3	70% UT (30% dip in UT) for 25 cycles	70% UT (30% dip in UT) for 25 cycles	interruptions, it is recommended that the MX-22 and MX-24 be powered
	<5% UT (>95% dip in UT) for 5 sec.	<5% UT (>95% dip in UT) for 5 sec.	from an uninterruptible power supply or a battery.
Power frequency (50/60Hz) magnetic field IEC/EN61000-4-8	3A/m	3A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE: UT is the a.c. mains voltage prior to application of the test level.

Mains power quality should be that of a typical commercial or hospital environment. If the user of the MX-22, MX-24 requires continued operation during power mains interruptions, it is recommended that the MX-22 MX-24 be powered from an uninterruptible power supply or a battery.

ESD declaration statement

There are flicker disturbance on the screen during the test, but auto recover after the test. This permissive loss of performance is specified by the manufacturer, and this phenomena will be put as a clear statement in the User's Manual to avoid misunderstanding.

DIP declaration statement

The EUT power off during the test, but self- recover after the test. This permissive loss of performance is specified by the manufacturer, and this phenomena will be put as a clear statement in the User's Manual to avoid misunderstanding.

Recommended separation distances between portable and mobile RF communications equipment and the MX-22 and MX-24

The MX-22 and MX-24 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the MX-22 and MX-24 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the MX-22 and MX-24 as recommended below, according to the maximum output power of the communications equipment.

Rated maximum output	Separation distance according to frequency of transmitter (m)			
power of transmitter (W)	150kHz to 80MHz 80MHz to 800MHz $d = 1.2 \sqrt{P}$ $d = 1.2 \sqrt{P}$		800MHz to 2.5GHz d = 2.3 √ P	
0.01	0.12	0.12	0.23	
0.1	0.38	0.38	0.73	
1	1.2	1.2	2.3	
10	3.8	3.8	7.3	
100	12	12	23	

For transmitters rated at a maximum output power not listed above, the recommended separation distance "d" in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where "P" is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Cable length	
Power Cord : Accessory	1.8m







Symbols used in this manual

lack	This icon indicates the existence		ISO 7010-M002: Follow instructions
4	of a potential hazard that could		for use
	result in personal injury or damage		
	to the product.		
A	This icon indicates important		This icon indicates complies with the
	operating and servicing		93/42/EEC, EN60601-1, EN 60601-1-2
	information.	<i>)</i>	of related European standards.
(1)	IEC 60417 -5009 : STAND- BY		IEC 60417 -5031 : Direct Current
	IEC 60417 -5032: Alternating		IEC 60417 -5021: Equipotentiality
$ (\sim) $	Current.		

Notice

- Read this User Manual carefully before using the LCD display and keep it for future reference.
- The product specifications and other information provided in this User Manual are for reference only. All
 information is subject to change without notice. Updated content can be downloaded from our web site at
 http://www.agneovo.com.
- To register online, go to http://www.agneovo.com.
- To protect your rights as a consumer, do not remove any stickers from the LCD display. Doing so may affect the determination of the warranty period.

Cautions When Setting Up



Do not place the LCD display near heat sources, such as a heater, exhaust vent, or in direct sunlight.



Do not cover or block the ventilation holes in the housing.



Place the LCD display on a stable area. Do not place the LCD display where it may subject to vibration or shock.



Place the LCD display in a well-ventilated area.



Do not place the LCD display outdoors.



Do not place the LCD display in a dusty or humid environment.



Do not spill liquid or insert sharp objects into the LCD display through the ventilation holes. Doing so may cause accidental fire, electric shock or damage the LCD display.

Cautions When Using

Use only the power cord supplied with the LCD display.



The power outlet should be installed near the LCD display and be easily accessible.



If an extension cord is used with the LCD display, ensure that the total current consumption plugged into the power outlet does not exceed the ampere rating.



Do not allow anything to rest on the power cord. Do not place the LCD display where the power cord may be stepped on.



If the LCD display will not be used for an indefinite period of time, unplug the power cord from the power outlet.



To disconnect the power cord, grasp and pull by the plug head. Do not tug on the cord; doing so may cause fire or electric shock.

The mains plug or appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable. Always completely disconnect the power cord set from your product whenever you are working or cleaning on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.



Do not unplug or touch the power cord with wet hands.

Cleaning and Maintenance

Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth. Keeping to clean your monitor by monthly.



The LCD display comes with NeoV[™] Optical Glass. Use a soft cloth to clean the glass surface and the housing. The display can be cleaned using a cloth moistened with 95% ethyl alcohol.



Do not rub or tap the surface of the glass with sharp or abrasive items such as a pen or screwdriver. This may result in scratching the surface of the glass.



Do not attempt to service the LCD display yourself, refer to qualified service personnel. Opening or removing the covers may expose you to dangerous voltage or other risks.



Warning:



Unplug the power cord from the power outlet and refer to qualified service

personnel under the following conditions:

- When the power cord is damaged.
- If the LCD display has been dropped or the housing has been damaged.
- If the LCD display emits smoke or a distinct odor.



Warning:



Ceiling mount or mount on any other horizontal surface overhead are not advisable.

Installation in contravention of the instructions may result in undesirable consequences, particularly hurting people and damaging property. Users who have already mounted the display on the ceiling or any other horizontal surface overhead are strongly advised to contact AG Neovo for consultations and solutions to help ensure a most pleasurable and fulfilling display experience.

Notice for the LCD Display

In order to maintain the stable luminous performance, it is recommended to use low brightness setting.

Due to the lifespan of the lamp, it is normal that the brightness quality of the LCD display may decrease with time.

When static images are displayed for long periods of time, the image may cause an imprint on the LCD display. This is called image retention or burn-in.

To prevent image retention, do any of the following:

- · Set the LCD display to turn off after a few minutes of being idle.
- Use a screen saver that has moving graphics or a blank white image.
- · Switch desktop backgrounds regularly.
- · Adjust the LCD display to low brightness settings.
- Turn off the LCD display when the system is not in use.

Things to do when the LCD display shows image retention:

- Turn off the LCD display for extended periods of time. It can be several hours or several days.
- Use a screen saver and run it for extended periods of time.
- · Use a black and white image and run it for extended periods of time.

When the LCD display is moved from one room to another or there is a sudden change from low to high ambient temperature, dew condensation may form on or inside the glass surface. When this happens, do not turn on the LCD display until the dew disappears.

Due to humid weather conditions, it is normal for mist to form inside the glass surface of the LCD display. The mist will disappear after a few days or as soon as the weather stabilizes.

There are millions of micro transistors inside the LCD display. It is normal for a few transistors to be damaged and to produce spots. This is acceptable and is not considered a failure.

The intended use of the MX-22,MX-24 is to serve as a LCD monitor for integration with the hospital system. It is designed for general purpose for adults using at hospital environment, continuous operation. For displaying and viewing of images for reference. The use of this device does not require any direct contact with patients.

Accessory equipment connected to the analog and digital interfaces must be in compliance with the respective nationally harmonized IEC standards (i.e. IEC 60950 for data processing equipment, IEC 60065 for video equipment, IEC 61010-1 for laboratory equipment, and IEC 60601-1 for medical equipment.) Furthermore all configurations shall comply with the system standard IEC 60601-1-1. Everybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 60601-1-1. The unit is for exclusive interconnection with IEC 60601-1 certified equipment in the patient environment and IEC 60XXX certified equipment outside of the patient environment. If in doubt, consult the technical services department or your local representative.

Grounding reliability can only be achieved when the equipment is connected to an equivalent receptacle marked "Hospital Only" or "Hospital Grade".

Notice for the LCD Display

Use a power cord that matches the voltage of the power outlet, which has been approved and complies with the safety standard of your particular country.

The single device output analog signals through ADC element (Analog DigitalConvert) conversion to become a digital signal and the video signal is via Video Decorder conversion. It has become the same digital signal, these signals via Scaler IC as zoom in or out action and digital image processing, then through the cable line transmission LVDS signals to one of the LCD module. The last by the clock controller (Timing Controller, TCON), the clock signal is transmitted to the drive IC on the panel and turn on Backlight for LCD module light source by Scaler control.

WARNING - No protection against the ingress of water: IPX0

WARNING – Do not modify this equipment without authorization of the manufacturer.

Installation and OSD adjusting should only be carried by manufacturer trained and authorized personnel.

WARNING – To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

CAUTION: This adapter Manufacturer/model is a forming part of the medical device.

Power by class I power supply.

♦ Adapter manufacturer/model:.

ADAPTER TECH: ATM065-P120/ATM065T-P120 Input/output: 100-240V~50-60Hz, 12V(===) 5A.

EDAC TECH:EM10681G

Input/output: 100-240V~50-60Hz, 12V(===) 4.16A.

WARNING: Use suitable mounting apparatus to avoid risk of injury.

WARNING: The equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous: Not AP or APG Category

CAUTION: No applied part.

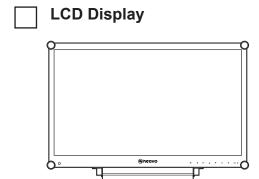
Make sure the user not to contact SIP/SOPs and the patient at the same time.

CAUTION: Transport should only be undertaken in a flat surface.

CHAPTER 1: PRODUCT DESCRIPTION

1.1 Package Contents

When unpacking, check if the following items are included in the package. If any of them is missing or damaged, contact your dealer.



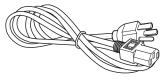




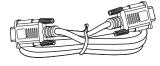
Power adapter



Power cord



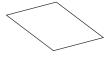
VGA cable



Audio cable



| Warranty card



Note:

Must use only the supplied power adapter:

- Adaptor Technology Model no.: ATM065-P120 Rating: 12V/5A
- ◆ Adaptor Technology Model no.: ATM065T-P120 Rating: 12V/5A
- EDAC Technologies Corporation Model no.: EM10681G Rating: 12V/4.16A

Note:

 The pictures are for reference only. Actual items may vary upon shipment.

PRODUCT DESCRIPTION

1.2 Wall Mounting Installation Preparation

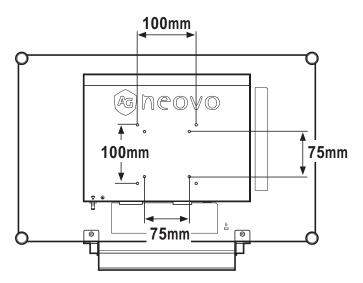
1.2.1 Wall Mounting

1 Remove the base stand.

See procedures below.

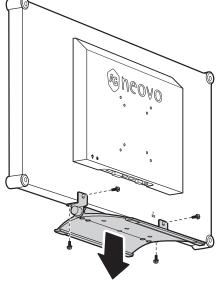
2 Wall mount the LCD display.

Screw the mounting bracket to the VESA holes at the rear of the LCD display.



1.2.2 Removing the Base Stand

- 1 Carefully place the product screen side down on a cushioned surface that will protect product and screen from damage.
- 2 Remove the four screws securing the base stand from the LCD display.
- 3 Detach the base stand.
- 4 Lock four screws back.



Note:

To protect the glass panel, place a towel or soft cloth before laying the LCD display down.



Warning:



Ceiling mount or mount on any other horizontal surface overhead are not advisable.

Installation in contravention of the instructions may result in undesirable consequences, particularly hurting people and damaging property. Users who have already mounted the display on the ceiling or any other horizontal surface overhead are strongly advised to contact AG Neovo for consultations and solutions to help ensure a most pleasurable and fulfilling display experience.

Note:

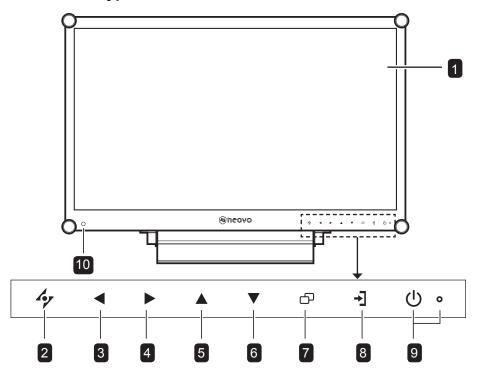
Take measures to prevent the LCD display from falling down and lessen possible injury and damage to the display in case of earthquakes or other disasters.

- Use only the 75 x 75 mm and 100 x 100 mm wall mount kit recommended by AG Neovo.
- Secure the LCD display on a solid wall strong enough to bear its weight.

PRODUCT DESCRIPTION

1.3 LCD Display Overview

1.3.1 Front View and Keypad Buttons



1 Display screen

The LCD display screen is protected by NeoV[™] Optical Glass.

2 AUTO

Hot Key: For VGA input signal source, press to perform auto adjustment.

 During OSD menu selection, press to close the OSD menu or exit a submenu.

3 LEFT

Hot Key: Volume Down

- Press to display the volume screen. Then press again to decrease the volume.
- During OSD menu selection, press to adjust the settings.

4 RIGHT

Hot Key: Volume Up

- Press to display the volume screen. Then press again to increase the volume.
- During OSD menu selection, press to select an option and adjust the settings.

5 UP

Hot Key: PIP Select

- · Press repeatedly to select PIP option.
- During OSD menu selection, press to move up a menu or submenu.

6 DOWN

Hot Key: DICOM Mode Select

- When PIP is on, press to SWAP the PIP main and sub picture.
- When PIP is off, press to select picture mode (STANDARD/DICOM)
- During OSD menu selection, press to move down a menu or submenu.

7 MENU

- · Press to display the OSD menu.
- Press again to hide the OSD menu.

8 SOURCE

· Press to select the input signal source.

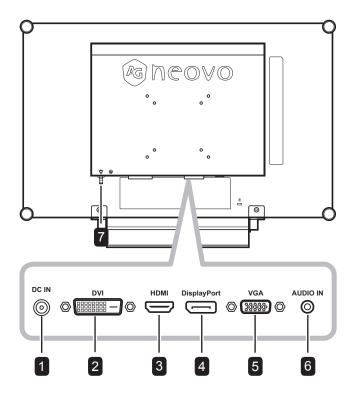
9 POWER / LED indicator

Press to turn the power on or off.
 Green - Power on
 Amber - Standby mode
 Off - Power off

EcoSmart sensor: Detect ambient lighting conditions and automatically adjust the brightness levels. Refer to page 46 "ECO SMART" for more information.

PRODUCT DESCRIPTION

1.3.2 Rear View



1 DC power input

Use to connect the power cord.

2 DVI connector

Use to connect a PC using a DVI cable for digital input signal.

3 HDMI connector

Use to connect an input device using an HDMI cable for digital input signal.

4 DisplayPort connector

Use to connect a PC using a DisplayPort cable for digital input signal.

5 VGA connector

Use to connect a PC using a VGA cable for analogue input signal.

6 Audio port

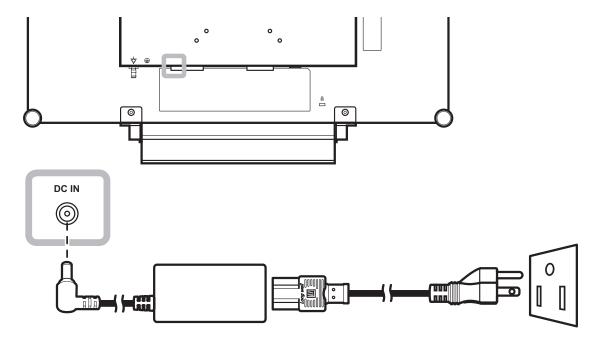
Use to connect an audio cable for the PC's audio input.

7 Potential Equalization Plug (Ø 6mm)

CHAPTER 2: MAKING CONNECTIONS

2.1 Connecting the Power

- 1 Connect the power cord to the power adapter.
- 2 Connect the power adapter to the DC power input at the rear of the LCD display.
- 3 Connect the power cord plug to a power outlet or a power supply.





Caution:

 Make sure that the LCD display is not connected to the power outlet before making any connections.
 Connecting cables while the power is ON may cause electric shock or personal injury.



Caution:

 When unplugging the power cord, hold the power cord by the plug head. Never pull by the cord.

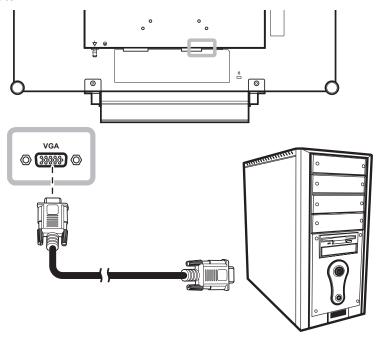
MAKING CONNECTIONS

2.2 Connecting Input Source Signals

2.2.1 Connecting a Computer

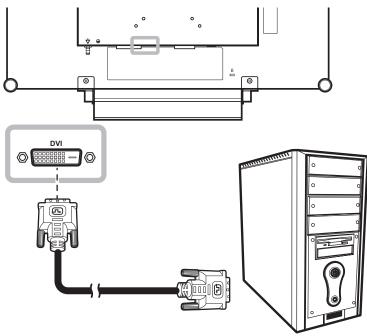
Using VGA Cables

Connect one end of a VGA cable to the VGA connector of the LCD display and the other end to the VGA connector of the computer.



Using DVI Cables

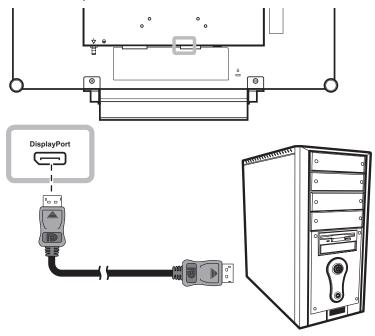
Connect one end of a DVI cable to the DVI connector of the LCD display and the other end to the DVI connector of the computer.



MAKING CONNECTIONS

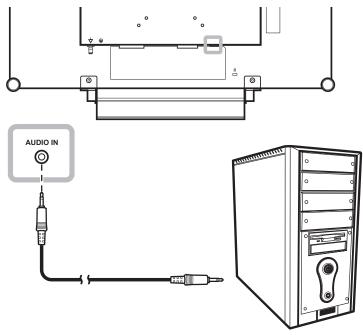
Using DisplayPort Cables

Connect one end of a DisplayPort cable to the DisplayPort connector of the LCD display and the other end to the DisplayPort connector of the computer.



Using Audio Cables

Connect one end of an audio cable to the audio port at the rear of the LCD display and the other end to the audio out port of the computer.

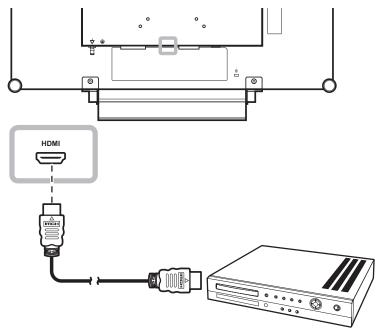


MAKING CONNECTIONS

2.2.2 Connecting a Video Device

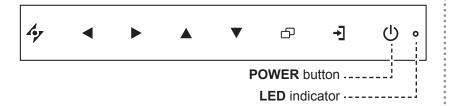
Using HDMI Cables

Connect one end of an HDMI cable to the HDMI connector of the LCD display and the other end to the HDMI connector of your device.



CHAPTER 3: USING THE LCD DISPLAY

3.1 Turning on the Power



- 1 Plug the power cord to a power outlet or power supply.
- 2 Touch the **POWER** button to turn the LCD display on.

The LED indicator turns GREEN.

When the LCD display is turned on, touch the POWER button to turn off the LCD display.

The LED indicator turns off.

3.2 Selecting the Input Source Signal



1 Touch the → button to call out the input source menu.



- 2 Touch the ▲ or ▼ button to highlight an input source.
- **3** Touch the ▶ button to select the input source.

Note:

◆ The LCD display still consumes power as long as the power cord is connected to the power outlet. Disconnect the power cord to completely cut off power.

Notes:

- This function works only if SOURCE DETECT is set to MANUAL. Refer to page 42.
- After selecting an input source signal, the input source signal message appears on the screen briefly.

For example, HDMI is selected the following message is displayed.



 If the selected input source signal is not connected to the LCD display or is turned off, the no signal message is displayed on the screen.



 If the resolution or the graphics card of the connected computer is set too high, the input out of range message is displayed.



3.3 Adjusting the Volume



1 Touch the ◀ or ▶ button to call out the volume bar.



2 Touch the ▶ button to increase volume or the ◀ button to decrease volume.

To mute the audio, set the volume to 0.

3.4 Locking the OSD Menu

Lock the OSD menu to protect the LCD display from unauthorised users or from accidentally pressing the keypad.

To lock the OSD, press and hold the keypad buttons listed below for at least 5 seconds or until the

message appears.

When the OSD is locked, all keypad buttons are inactivated.

Type of OSD Lock	Lock Operation	Unlock Operation
Lock all buttons	Touch and hold the ▶, ▲, and ▼ buttons for 5 seconds.	Touch and hold the ▶, ▲, and ▼ buttons for 5 seconds or until the OSD menu appears.
Lock all buttons except the POWER button.	Touch and hold the ◀, ▲, and ▼ buttons for 5 seconds.	Touch and hold the ◀, ▲, and ▼ buttons for 5 seconds or until the OSD menu appears.

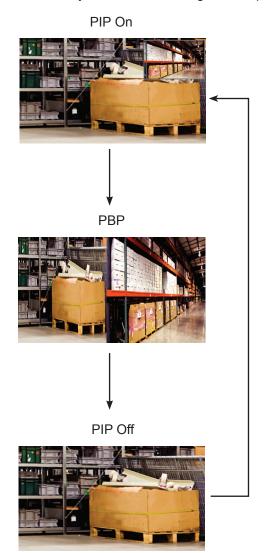
3.5 Using Picture-in-Picture (PIP)

The Picture-in-Picture (PIP) feature allows viewing of more than one input source signal on the LCD display.

3.5.1 PIP Options

Touch the ▲ button repeatedly to enable and scroll among the PIP options. Options are as follows:

- PIP On: The sub source signal is displayed within the main source signal.
- PBP (Picture-by-Picture): The main source and the sub source signals are displayed side by side with equal display size.
- PIP Off: PIP function is disabled, only the main source signal is displayed.



Note:

- The main source and sub source signals can be set in PIP Setting, see page 37.
- Some input source signal combinations do not support PIP. See PIP Compatibility table on page 38.

3.5.2 **PIP Swap**

The main and the sub source signals set in PIP Setting can be easily swapped using the keypad.



Touch the ▼ button to swap the main source and the sub source signals. See illustration below.



3.6 Using Auto Adjustment Function

Auto Adjustment function automatically tunes the LCD display to its optimal setting, including horizontal position, vertical position, clock, and phase.

Touch the 4 button to perform auto adjustment.

The message auto adjusting is displayed on the screen.



During auto adjustment, the screen will slightly shake for a few seconds.

When the message disappears, auto adjustment is completed.

Note:

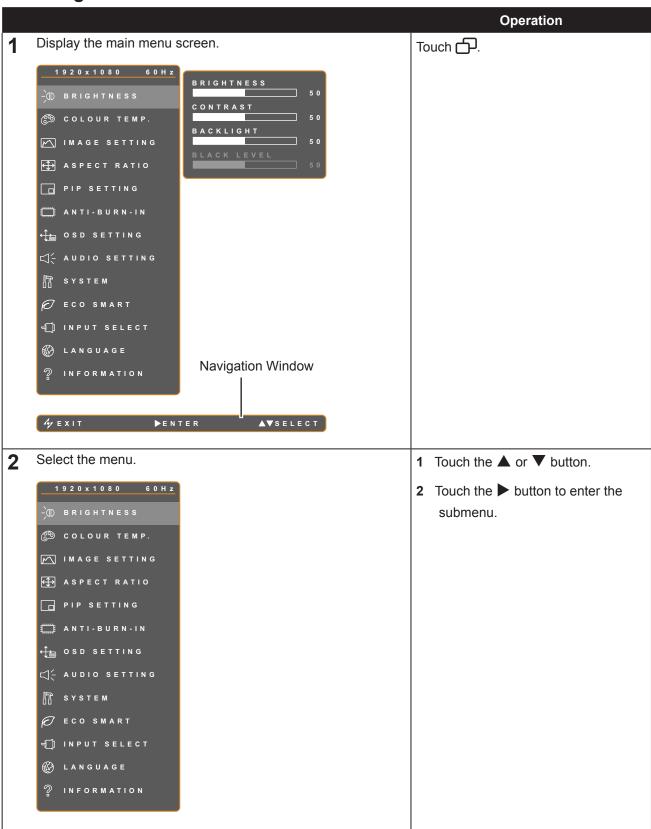
 PIP Swap can only be executed if PIP is enabled, see page 38.

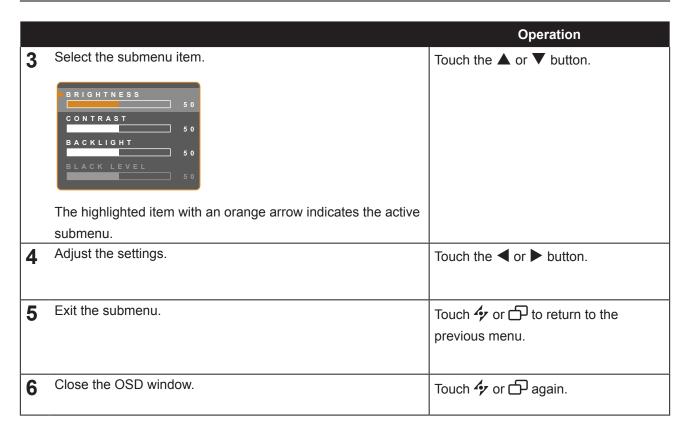
Note:

- Auto Adjustment function is available only during VGA input signals.
- It is recommended to use the auto adjustment function when using the LCD display for the first time or after a resolution or frequency change.

CHAPTER 4: ON SCREEN DISPLAY MENU

4.1 Using the OSD Menu



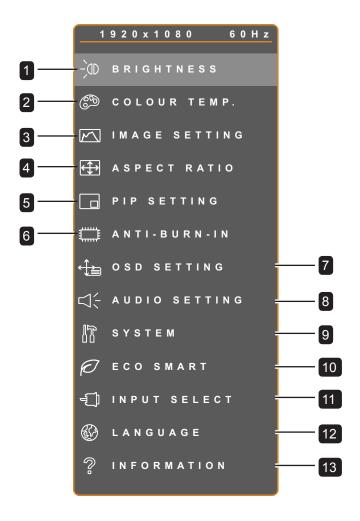


When settings are modified, all changes are saved when the user does the following:

- · Proceeds to the another menu.
- · Exits the OSD menu.
- · Waits for the OSD menu to disappear.

Note: Availability of some menu items depend on the input source signal. If the menu is not available, it is disabled and grayed out.

4.2 OSD Menu Tree



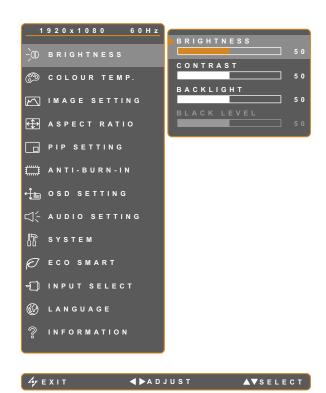
Main Menu	Submenu	Remarks
1. BRIGHTNESS	BRIGHTNESS	See page 32.
	• CONTRAST	
	BACKLIGHT	
	BLACK LEVEL	
2. COLOUR TEMP.	COLOUR TEMP.	See page 34.
	AUTO COLOUR	
3. IMAGE SETTING	• SHARPNESS	See page 35.
	SATURATION	
	• TINT	
	GAMMA	
	COLOUR RANGE	
	NOISE REDUCTION	
	PICTURE MODE	
	H. POSITION	
	V. POSITION	
	• PHASE	
	• CLOCK	

Main Menu	Submenu	Remarks
4. ASPECT RATIO	ASPECT RATIO H. ZOOM	See page 38.
	• V. ZOOM	
	OVERSCAN	
5. PIP SETTING	• PIP	See page 39.
	MAIN SOURCE	
	SUB SOURCE	
	SUB PICTURE SIZE	
	SUB PIC. POS.	
	• SWAP	
6. ANTI-BURN-IN	• ENABLE	See page 41
	INTERVAL (HOURS)	
	• MODE	
7. OSD SETTING	TRANSPARENCY	See page 42
	OSD H. POSITION	
	OSD V. POSITION	
	OSD TIMER	
8. AUDIO SETTING	• VOLUME	See page 43
	• AUDIO	
	• SOURCE	
9. SYSTEM	POWER SAVING	See page 44
	SOURCE DETECT	
	• MODE	
	• DDC/CI	
	DCR BLUE SCREEN	
	SIGNAL INFO	
	HDMI CEC	
	• LOGO	
	• RECALL	
10. ECO SMART	• ENABLE	See page 46
	• MODE	
	• LEVEL	
11. INPUT SELECT	• VGA	See page 47.
	• DVI	
	• HDMI	
	• DP	

Main Menu	Submenu	Remarks
12. LANGUAGE	Select the OSD language:	
	EN/FR/DE/ES/IT/PY/RO/PL/CS/	
	NL/简中/繁中	
13. INFORMATION	Displays settings information such as Input,	
	Resolution, Horizontal Frequency, Vertical	
	Frequency, Timing Mode, and Firmware	
	Version.	

CHAPTER 5: ADJUSTING THE LCD DISPLAY

5.1 BRIGHTNESS



- 1. Touch to call out the OSD window.
- 2. Select **BRIGHTNESS** menu, then touch the ▶ button.
- Touch the ▲ or ▼ button to select an option.

Item	Function	Operation	Range
BRIGHTNESS	Adjusts the luminance of the screen image.	Touch the ◀ or ▶ button to adjust the value.	
CONTRAST	Adjusts the difference between the black level and the white level.		0 to 100
BACKLIGHT	Adjusts the luminance of the screen image. Note: This menu option is not available if the ECO SMART function is enabled.		
BLACK LEVEL	Adjusts the black level of the screen image. Low brightness setting makes black colour darker.		

See comparison illustrations on page 31.

	Original Setting	High Setting	Low Setting
BRIGHTNESS			
CONTRAST			
BLACK LEVEL			

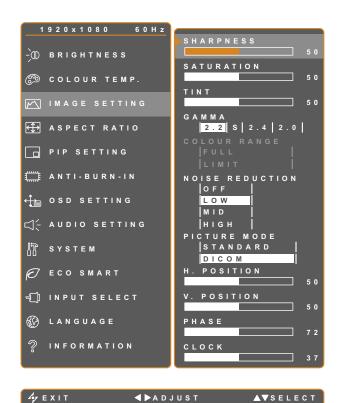
5.2 COLOUR TEMP.



- 1. Touch to call out the OSD window.
- 2. Select **COLOUR TEMP.** menu, then touch the ▶ button.
- 3. Touch the ▲ or ▼ button to select an option.

ltem	Function	Operation	Range	
	Provides several colour settings.	Touch the ◀ or ▶ button to select the setting.	NEUTRAL WARM COOL USER	
	Colour setting can be set to:			
	NEUTRAL - commonly used for normal lighting conditions.			
	WARM - Applies a reddish tint for warmer colours.			
COLOUR TEMP.	COOL - Applies a bluish tint for cooler colours.			
	USER - This allows users to set the colour temperature by adjusting the R, G, B settings according to one's preference.			
	1 Select USER , and touch the ▶ button.			
	2 Touch the ▲ or ▼ button to select the colour you want to adjust.			
	3 Touch the ◀ or ▶ button to adjust the values between 0 ~ 255.			
	Note: Activate RECALL to return the colour to its default setting.			
AUTO COLOUR	Operates the white balance and automatically adjusts the colour settings.	Touch the ▶ button to execute the function.	-	
	Note: This menu option is only available if the input source is VGA.	are function.		

5.3 IMAGE SETTING



- 1. Touch To call out the OSD window.
- 2. Select **IMAGE SETTING** menu, then touch the ▶ button.
- Touch the ▲ or ▼ button to select an option.

Item	Function	Operation	Range
SHARPNESS	Adjusts the clarity and focus of the screen image.	Touch the ◀ or ▶ button to	0.1.400
SATURATION	Adjusts the colour saturation.	adjust the value.	0 to 100
TINT	Adjusts the colour tint.		
GAMMA	Adjusts the non-linear setting for picture luminance and contrast. INPUT Display Gamma 2.2 Display Gamma 2.2	Touch the ◀ or ▶ button to select the setting. INPUT IN	

Item	Function	Operation	Range
	Adjusts black and white levels for		
	video.	Touch the ◀ or ▶ button to	FULL
	Note: This menu option is only available if the input source is HDMI.	select the setting.	LIMIT
	Signal source from PC - PC signal at a	a full range (Grayscale 0-255) stat	e:
COLOUR RANGE			
	Monitor OSD colour range: Full *Please	select Monitor OSD colour ra	nge: Limit
	Signal source from Video - Video signal	al at a limited range (Grayscale 16	6-235) state:
	Monitor OSD colour range: Limit *Please	select Monitor OSD colour ra	_
	Adjusts the noise reduction to help remove noise from images. This	Touch the ◀ or ▶ button to	OFF LOW
	helps produce clearer and crisper	select the setting.	MID
	images.		HIGH
NOISE REDUCTION	Noise Reduction Off	Noise Reduction	
PICTURE MODE	Selects a predefined picture mode setting.	Touch the ▼ button to select the setting.	STANDARD DICOM

Item	Function	Operation	Range
H. POSITION (Horizontal Position)	Moves the screen image to the left or right.	Touch the ◀ or ▶ button to adjust the value.	
V. POSITION (Vertical Position)	Moves the screen image up or down.		
PHASE	Adjusts the phase timing to synchronise with the video signal.		0 to 100
	Note: This menu option is only available if the input source is VGA.		
CLOCK	Adjusts the frequency timing to synchronise with the video signal.		
	Note: This menu option is only available if the input source is VGA.		

5.4 ASPECT RATIO

4y EXIT



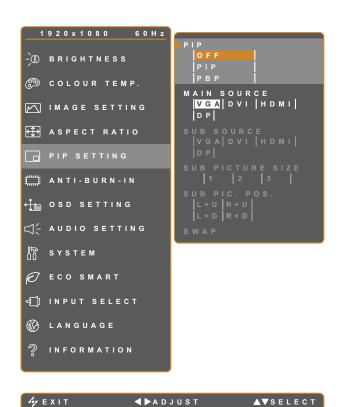
∢▶ADJUST

- 1. Touch to call out the OSD window.
- 2. Select **ASPECT RATIO** menu, then touch the **▶** button.
- 3. Touch the ▲ or ▼ button to select an option.

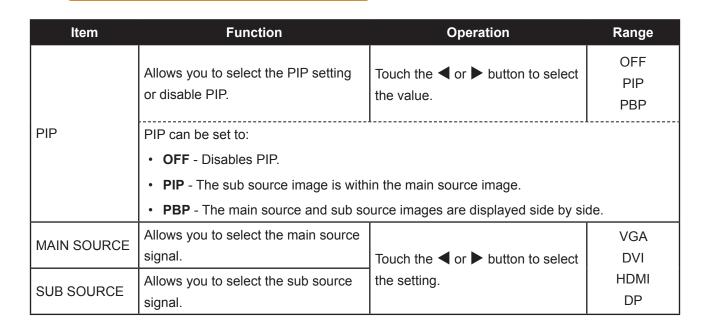
Item	Function	Operation	Range
ASPECT RATIO	Adjusts the aspect ratio of the screen image.	Touch the ◀ or ▶ button to select the setting.	FULL REAL ZOOM
H. ZOOM (Horizontal Zoom)	Adjusts the horizontal zoom. Note: This menu option is only available if the ASPECT RATIO setting is to ZOOM.		0 to 100
V. ZOOM (Vertical Zoom)	Adjusts the vertical zoom. Note: This menu option is only available if the ASPECT RATIO setting is to ZOOM.	Touch the ◀ or ▶ button to adjust the value.	0 to 100
OVERSCAN	Adjusts the overscan setting to fix the cut-off screen edges.		0 to 15

▲▼SELECT

5.5 PIP SETTING



- 1. Touch to call out the OSD window.
- 2. Select **PIP SETTING** menu, then touch the **▶** button.
- 3. Touch the ▲ or ▼ button to select an option.



Note: Any input signal may be set as the main or the sub source signal. However, some input signals are not supported to be paired together as the main and the sub source signals.

Refer to the following table for compatibility options.

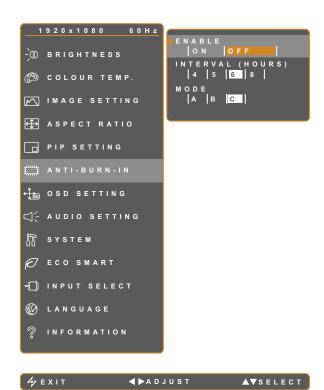
Table 5.1 PIP Compatibility Table

Input Source		Main Source			
		VGA	DVI	HDMI	DP
	VGA	X	0	0	0
Sub Source	DVI	0	X	0	0
Source	HDMI	0	0	X	0
	DP	0	0	0	X

Item	Function	Operation	Range
	Allows you to select the size of the		1
	sub source image.	Touch the ◀ or ▶ button to select	2
SUB PICTURE SIZE	Note: This menu option is only available if the PIP setting is to PIP .	the setting.	3
(Sub Picture	The size of the sub source image can	be set to:	
Size)	• 1 - Small image size.		
	• 2 - Medium image size.		
	• 3 - Large image size.		
	Allows you to select the position of		L+U
	the sub source image.	Touch the ◀ or ▶ button to select	R+U
	Note: This menu option is only	the setting.	L+D
SUB PIC. POS.	available if the PIP setting is to PIP		R+D
(Sub Picture	The position of the sub source image	can be set to:	
Position)	L+U - Sets the image on the upper left corner of the screen.		
	R+U - Sets the image on the upper right corner of the screen.		
	L+D - Sets the image on the lower left corner of the screen.		
	R+D - Sets the image on the lower right corner of the screen.		
SWAP	Swaps the main source and sub	Touch the ▶ button to execute the	
OVA	source signals.	function.	-

5.6 ANTI-BURN-IN

⁴∕ EXIT

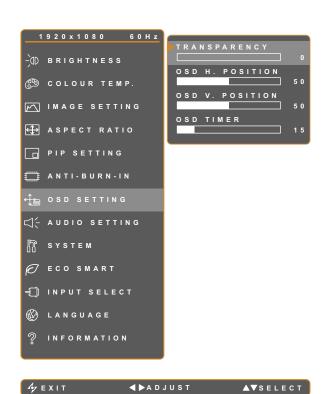


- 1. Touch to call out the OSD window.
- 2. Select ANTI-BURN-IN menu, then touch the button.
- 3. Touch the ▲ or ▼ button to select an option.

Item	Function	Operation	Range	
ENABLE	Enables or disables Anti-Burn-In	Touch the ◀ or ▶ button to select	ON	
LINABLE	function.	the setting.	OFF	
	Sate the interval time (hour)		4	
INTERVAL	Sets the interval time (hour) between activating the Anti-Burn-In	Touch the ◀ or ▶ button to adjust	5	
(HOURS)	function.	the value.	6	
	Tunction.		8	
		Touch the ◀ or ▶ button to select	Α	
	Selects the Anti-Burn-In mode.		В	
		the setting.	С	
MODE	Anti-Burn-In mode can be set to:			
	A - Executes fast.			
	B - Slower but more precise than mode A.			
	• C - Slowest but the most precise	anti-burn-in mode.		

▲▼SELECT

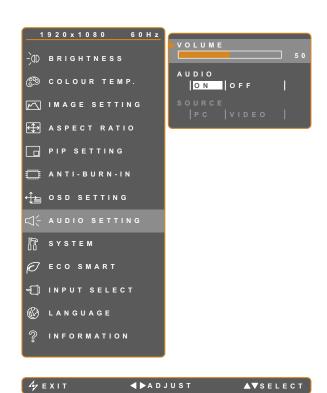
5.7 OSD SETTING



- 1. Touch to call out the OSD window.
- 2. Select **OSD SETTING** menu, then touch the **▶** button.
- 3. Touch the ▲ or ▼ button to select an option.

Item	Function	Operation	Range
TRANSPARENCY	Adjusts the transparency level of the		
TRANSPARENCT	OSD screen.		
OSD H. POSITION	Moves the OSD window to the left or		
(Horizontal	right of the screen.		0 to 100
Position)	right of the screen.		
OSD V. POSITION	Moves the OSD window up or down	Touch the ◀ or ▶ button to	
(Vertical Position)	the screen.	adjust the value.	
	Sets the length of time (in seconds)		
OSD TIMER	the OSD screen is displayed. When		5 to 100
OSD TIMER	the time elapses, the OSD screen is		3 10 100
	automatically inactivated.		

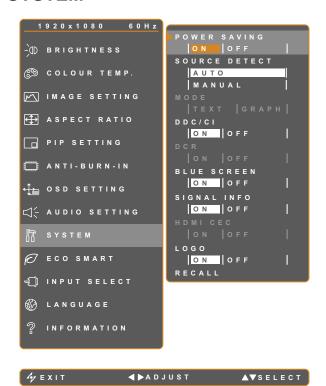
5.8 AUDIO SETTING



- 1. Touch to call out the OSD window.
- 2. Select **AUDIO SETTING** menu, then touch the **▶** button.
- 3. Touch the ▲ or ▼ button to select an option.

Item	Function	Operation	Range
VOLUME	Adjusts the volume level of the built-in speaker. Note: If volume is adjusted but AUDIO is set to OFF, no sound comes out from the speaker.	Touch the ◀ or ▶ button to adjust the value.	0 to 100
AUDIO	Turns the audio speaker ON or OFF.		ON OFF
SOURCE	Selects the audio source for the PC or Video input signal. Note: This menu option is only available if the input source is HDMI or DP.	Touch the ◀ or ▶ button to select the setting.	PC VIDEO

5.9 SYSTEM



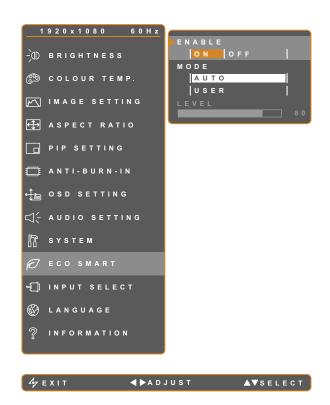
- 1. Touch to call out the OSD window.
- Select SYSTEM menu, then touch the ▶ button.
- 3. Touch the ▲ or ▼ button to select an option.

ltem	Function	Operation	Range
POWER SAVING	Enables or disables power saving mode. When the LCD display turns into power saving mode, the screen turns black and the LED indicator lights AMBER. Note: The amount of time for the display to enter power saving varies depending on the SOURCE DETECT setting. If the SOURCE DETECT is set to AUTO, the display checks all input source signals before entering power saving mode if no signal is detected; this takes up more time. If the SOURCE DETECT is set to MANUAL, the display enters power saving mode right away.	Touch the ◀ or ▶ button to select the setting.	ON OFF
SOURCE DETECT	Sets the display to automatically or manually detect the input source signal.		AUTO MANUAL

Item	Function	Operation	Range
	Sets the current mode for better image	Touch the ◀ or ▶ button to	TEXT
	display.	select the setting.	GRAPHIC
	Note: This menu option is only available if the	input source is VGA with the re	esolution is
	either of the following: 640 x 350, 640 x 400, 7	'20 x 350, or 720 x 400.	
MODE	For optimal performance, select:		
	TEXT - This mode is suitable for viewing te	ext documents when the resolut	ion is
	720 x 400 or 720 x 350.		
	• GRAPHIC - Graphics mode is suitable for v 640 x 350 or 640 x 400.	viewing images when the resol	ution is
	Activates the DDC/CI protocol to allow users		
DDC/CI	to configure the monitor by a software using		
	two wires on the VGA or DVI cables.		
	Activates DCR. This feature provides		
DCR	automatic adjustment of picture brightness		
(Dynamic Contrast Ratio)	and contrast at high speed and dynamic		
Contrast (Vallo)	contrast range, such as when watching movies. DCR is suitable for indoor viewing.		
BLUE	Enables or disables the blue screen feature. If the setting is set to ON , it displays a blue		
SCREEN	screen when no signal is available.		
	Enables or disables the signal information to	Touch the ◀ or ▶ button to	ON
SIGNAL INFO	be displayed on the screen.	select the setting.	OFF
	Enables or disables the HDMI CEC feature.		
	If the setting is set to ON , you can control the		
HDMI CEC	connected HDMI CEC-compatible device on		
	the same power on or power off status.		
	Note: This menu option is only available if the input source is HDMI.		
	Enables or disables the logo feature.		
LOGO	If the setting is set to ON , the AG Neovo		
	logo is briefly displayed after the display is		
	powered on.		
RECALL	Use to recall all to default settings, except	Touch the ▶ button to	
INLOALL	Language, PIP, and the input source.	execute the function.	_

5.10 ECO SMART

With the built-in EcoSmart sensor, users can enable the Eco Smart feature to automatically adjust the LCD screen brightness according to the ambient light. This feature comforts the eyes and helps optimise energy efficiency.



- 1. Touch to call out the OSD window.
- 2. Select **ECO SMART** menu, then touch the **▶** button.
- Touch the ▲ or ▼ button to select an option.

ltem	Function	Operation	Value		
ENABLE	Enables or disables the Eco Smart	Touch the ◀ or ▶ button to	ON		
LIVADEL	feature.	select the setting.	OFF		
	Sets the auto brightness mode.	Touch the ◀ or ▶ button to	AUTO		
	Sets the auto brightness mode.	select the setting.	USER		
MODE	The mode can be set to:				
IWODE	AUTO - This mode is the default mode. The LCD brightness automatically adjusts				
	to the ambient brightness.				
	USER - Allows you to manually adj	ust the LCD brightness.			
	Allows you to set the level of LCD				
	brightness.	Touch the ◀ or ▶ button to			
LEVEL	Note: This menu option is only available if the MODE setting is to USER.	adjust the value.	0 to 100		

5.11 INPUT SELECT



- 1. Touch to call out the OSD window.
- 2. Select **INPUT SELECT** menu, then touch the ▶ button.
- 3. Touch the ▲ or ▼ button to select an option.

Item	Function	Operation	Value
VGA	Sets VGA as the input source signal.		
DVI	Sets DVI as the input source signal.		
HDMI	Sets HDMI as the input source signal.	Touch the ▶ button to switch to the selected input source.	-
DP	Sets DP (DisplayPort) as the input source signal.		

CHAPTER 6: APPENDIX

6.1 Warning Messages

Warning Messages	Cause	Solution
INPUT SIGNAL OUT OF RANGE	The resolution or the refresh rate of the graphics card of the computer is set too high.	Change the resolution or the refresh rate of the graphics card.
	The LCD display cannot detect the input source signal.	Check if the input source is turned ON.
NO SIGNAL		Check if the signal cable is properly connected.
		Check if any pin inside the cable connector is twisted or broken.
OSD LOCK OUT	The OSD has been locked by the user.	Unlock the OSD. Refer to page 22.
ANTI-BURN-IN ON	The Anti-Burn-In function has been enabled by the user.	Disable the Anti-Burn-In function. Refer to page 39.

APPENDIX

6.2 Troubleshooting

Problem	Possible Cause and Solution
No picture.	Check if the LCD display is turned ON.
LED indicator is OFF.	Check if the power cord is properly connected to the LCD display.
	Check if the power cord is plugged into the power outlet.
LED indicator is	Check if the computer is turned ON.
AMBER.	Check if the computer is in standby mode, move the mouse or press any key to wake up the computer.
Image position is incorrect.	Adjust the H. POSITION and V. POSITION values. See IMAGE SETTING on page 33.
The displayed texts are blurry.	For VGA input, touch the button on the keypad to auto-adjust the display.
	Adjust the IMAGE SETTING (see page 33).
The OSD menu can't be called out.	The OSD is locked. To unlock the OSD, see page 22.
Red, blue, green, white dots appear on screen.	There are millions of micro transistors inside the LCD display. It is normal for a few transistors to be damaged and to produce spots. This is acceptable and is not considered a failure.
No audio output.	Check if the volume is set to 0 (see page 22 or 41).
	Check if the AUDIO SETTING > AUDIO setting is set to OFF (see page 41).
	For VGA or DVI input, check the audio setting of the computer.
	For HDMI or DP input, select the correct audio input source (see page 41).
PIP mode does not work.	The main and sub input source signals are not compatible to be displayed together in PIP mode. Check the PIP Compatibility Table for details (see page 38).
Cannot adjust the backlight setting.	The Eco Smart feature is enabled. Set the ECO SMART > ENABLE setting to OFF to disable the Eco Smart feature (see page 44).
The displayed picture looks distorted.	Adjust the aspect ratio (see page 36).
Dew formed on or inside the LCD display.	This normally happens when the LCD display is moved a cold room to a hot room temperature. Do not turn ON the LCD display, wait for the dew condensation to disappear.

APPENDIX

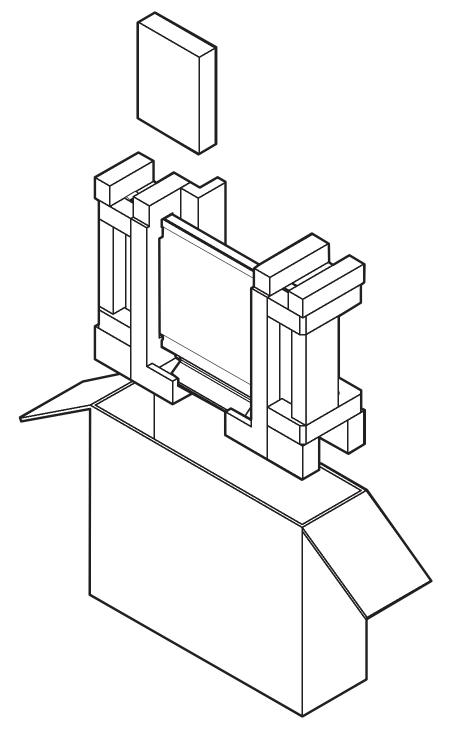
Problem	Possible Cause and Solution
Mist formed inside the glass surface.	This happens due to humid weather conditions. This is a normal occurrence. The mist will disappear after a few days or as soon as the weather stabilizes.
Faint shadows from a static image appear on the screen.	 Turn off the LCD display for extended periods of time. Use a screen saver or a black and white image and run it for extended periods of time.

APPENDIX

6.3 Transporting the LCD Display

To transport the LCD display for repair or shipment, place the display in its original packaging carton.

- 1 Put all the accessories in the box (if necessary). Place the two foam cushions on each side of the LCD display for protection.
- 2 Place the LCD display down in the box.
- 3 Place the accessories box on the designated area (if necessary).
- 4 Close and tape the box.



CHAPTER 7: SPECIFICATIONS

7.1 Display Specifications

		MX-22	MX-24
Panel	Panel Type	LED-Backlit TFT LCD (TN Technology)	LED-Backlit TFT LCD (TN Technology)
	Panel Size	21.5"	23.5"
	Max. Resolution	FHD 1920 x 1080	FHD 1920 x 1080
	Pixel Pitch	0.248 mm	0.272 mm
	Brightness	250 cd/m ²	300 cd/m ²
	Contrast Ratio	1000:1	1000:1
	Viewing Angle (H/V)	170°/160°	170°/160°
	Display Colour	16.7M	16.7M
	Response Time	3 ms	3 ms
Frequency (H/V)	H Freq.	24 kHz-83 kHz	24 kHz-83 kHz
	V Freq.	50 Hz-75 Hz	50 Hz-75 Hz
Input	DisplayPort	x 1	x 1
	HDMI	1.4 x 1	1.4 x 1
	DVI	24-Pin DVI-D	24-Pin DVI-D
	VGA	15-Pin D-Sub x 1	15-Pin D-Sub x 1
Audio	Audio In	Stereo Audio Jack (3.5 mm) x 1	Stereo Audio Jack (3.5 mm) x 1
	Internal Speakers	2W x 2	2W x 2
Power	Power Supply	External	External
	Power Requirements	DC 12V, 2.5A	DC 12V, 2.5A
	On Mode	21W (On)	19W (On)
	Stand-by Mode	< 0.5W	< 0.5W
	Off Mode	< 0.5W	< 0.5W
Glass	Thickness	3.0 mm (0.12")	3.0 mm (0.12")
	Reflection Rate	< 1%	< 1%
	Transmission Rate	> 97%	> 97%
	Hardness	> 9H	> 9H
Operating Conditions	Temperature	0°C-40°C (32°F-104°F)	0°C-40°C (32°F-104°F)
	Humidity	10%-90% (non-condensing)	10%-90% (non-condensing)
Storage Conditions	Temperature	-20°C-60°C (-4°F-140°F)	-20°C-60°C (-4°F-140°F)
	Humidity	5%-95% (non-condensing)	5%-95% (non-condensing)
Mounting	VESA FPMPMI	Yes (100 x 100 mm & 75 x 75 mm)	Yes (100 x 100 mm & 75 x 75 mm)
Stand	Tilt	0° to 15°	0° to 15°
Security	Kensington Security Slot	Yes	Yes
Dimensions	Product with Base	513.2 x 368.5 x 155.0 mm	562.4 x 396.8 x 155.0 mm
	(W x H x D)	(20.2" x 14.5" x 6.1")	(22.1" x 15.6" x 6.1")
	Packaging	614.0 x 477.0 x 204.0 mm	672.0 x 517.0 x 204.0 mm
	(W x H x D)	(24.2" x 18.8" x 8.0")	(26.5" x 20.4" x 8.0")
Weight	Product with Base	6.7 kg (14.7 lb)	7.8 kg (17.2 lb)
	Packaging	8.8 kg (19.4 lb)	10.1 kg (22.3 lb)

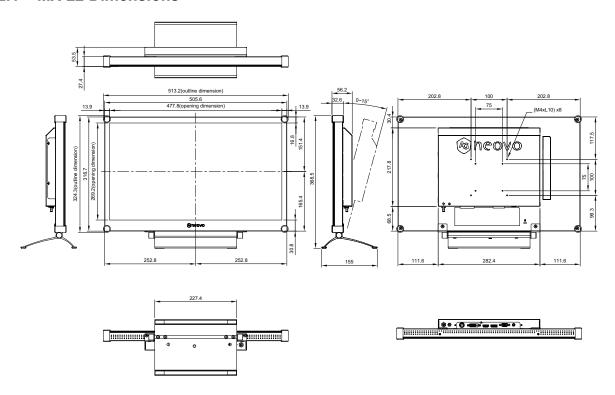
Note:

• All specifications are subject to change without prior notice.

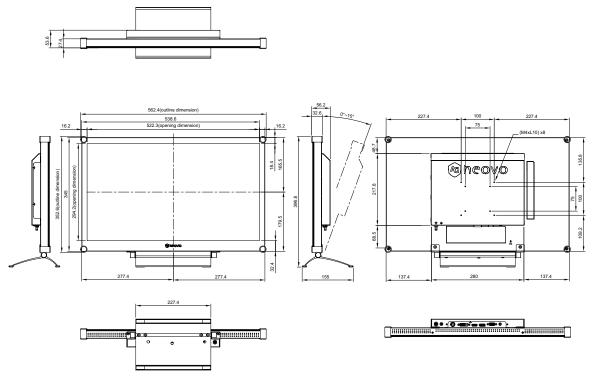
SPECIFICATIONS

7.2 Display Dimensions

7.2.1 MX-22 Dimensions



7.2.2 MX-24 Dimensions



AG Neovo

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