CCTV
Monitor User Manual

Table Of Contents

User Manual

Information

FCC compliance

Class A: This equipment has been tested and found to comply with the limits for a Class A 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 his own expense.

This product was FCC verified under test conditions that included the use of shielded I/O cables and connectors between system components. To be in compliance with FCC regulations, the user must use shielded cables and connectors for all except power cables.

European Union directives

2004/108/EC (EMC directive): This device is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC.

2002/96/EC (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.

Important safeguards

1. **Installation cautions**:

   - Do not block any ventilation openings.

   - Always ensure that the monitor is located in a well-ventilated area to prevent the unit from overheating.

   - Only use accessories specified by the manufacturer or those sold with the product.

   - Avoid operating or placing the monitor in the following environments: extremes of temperatures, both hot and cold; high humidity; direct sunlight; excessively dusty surroundings; avoid close proximity to other equipment that generates a strong magnetic field

2. **Water and moisture**: Do not use this appliance near water. To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.

3. **Power cord and power cord protection**: Power cords should be routed so that they not likely to be walked on or pinched. Pay particular attention to the location of cords and plugs, convenience receptacles, and the point of exit from the appliance.

4. **Product care**: Do not touch the screen directly with fingers. The oils from your skin may leave marks on the surface of the screen, which are difficult to be removed and may damage the screen permanently. Do not apply pressure to the screen.

5. **Cleaning**: Clean only with a dry cloth.

6. **Servicing**: Do not attempt to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

7. **Lightning**: For added protection during a lighting storm or when this unit is left unattended and unused for long periods of time, unplug the unit from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power line surges.

8. **Mains plug** (2 pin/3 pin):

   - Do not remove the grounding or earth connection from the power supply / mains plug.

   - Always remember to unplug the monitor from the power supply under the following circumstances if the monitor will not be

used for a long period of time, if the power supply cable or plug/connector is damaged or if the monitor housing is damaged or broken.

CAUTION: Do not attempt to dismantle this product. Any attempt to dismantle or remove the covers from this product will invalidate the warranty and may also result in serious injury.

Introduction

This manual explains how to correctly install, operate and get the best performance from your monitor. Please read this user manual carefully before installing your monitor then keep it near your monitor for quick reference.

First, please check that the contents of the box correspond with the following checklist:

- Monitor
- Power cord
- VGA cable
- AC adaptor(only 27")
- User manual
- Remote Control (only 27")

If any item is missing or damaged, please contact your dealer. Please keep the box and packing materials so that you may properly store or transport your monitor.

Features

- The convenient and user-friendly on-screen display allows for easy and accurate adjustments of screen size, position and color.

- The monitor complies with the VESA Display Data Channel (DDC) specification for Plug and Play compatibility. Advanced micro circuitry makes setup and configuration fast and effortless.

- The monitor features Advanced Color Controls for fine-tuning to meet application requirements. Use the on-screen controls to adjust the color temperature and RGB gain value for the best possible screen color and intensity.
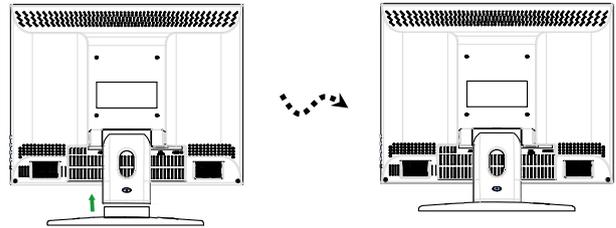
Assembling the monitor

The monitors are designed for use on a desktop.

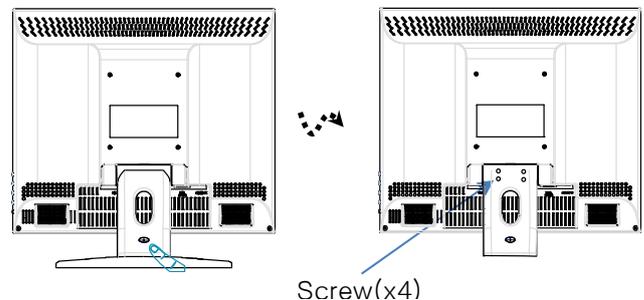The arm of the monitor stand is shipped pre-installed on the monitor.

Assembling the monitor (17",19")

1. Put a smooth pad or cloth on a level surface. Place the monitor on it facing downwards.

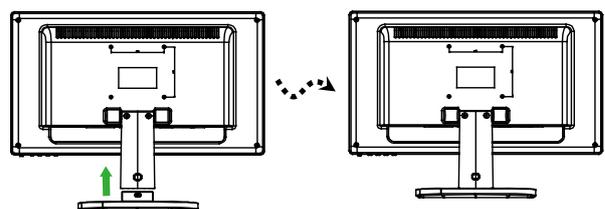2. Insert the arm of the monitor stand of the monitor into the pedestal foot provided.

Disassembling the monitor

1. Put a smooth pad or cloth on a level surface. Place the monitor on it facing downwards.

2. Press the groove on the back of protrude connected to the body. Detach the rear cover of the monitor stand with a screw driver.

3. Remove the four screws connecting the stand rear body.

4. Remove the connecting stand front body.
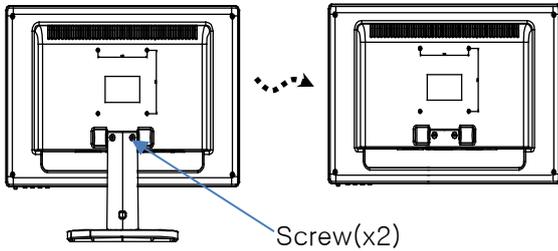

Screw(x4)

Assembling the monitor (19"W,22")

1. Put a smooth pad or cloth on a level surface. Place the monitor on it facing downwards.

2. Insert the arm of the monitor stand of the monitor into the pedestal foot provided.
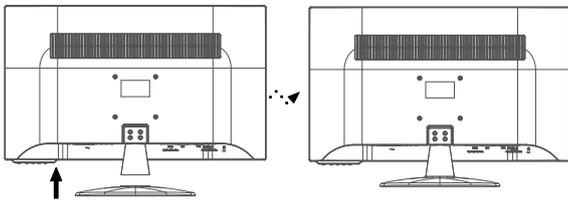
Disassembling the monitor

1. Put a smooth pad or cloth on a level surface. Place the monitor on it facing downwards.

2. Detach the rear cover of the monitor stand with a screw driver.

3. Remove the two screws connecting the stand and monitor body.

Screw(x2)

Assembling the monitor (24",27")

1. Put a smooth pad or cloth on a level surface. Place the monitor on it facing downwards.

2. Join the stand with the metal protrusion from the bottom of the monitor's main body.

3. Tighten the screw fully at the bottom of the stand by turning it clockwise three to four turns.

4. After fully tightening the screw, bend the knob of the screw onto the bottom of the stand.

Caution : Incomplete tightening of the screw may cause the monitor unstable.

Disassembling the monitor

1. Put a smooth pad or cloth on a level surface. Place the monitor on it facing downwards.

2. Remove the four screws connecting the stand rear body.

3. Remove the connecting stand front body.
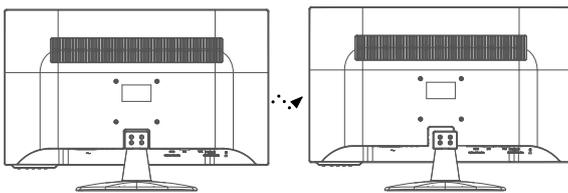
Connections

(17",19"W,19",22",24")
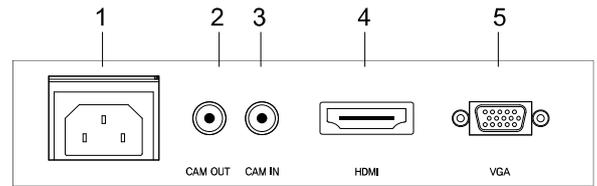
(27")

1. AC IN(17",19"W,19",22",24")

   DC 12V Input (27")

2. CAM OUT

   Composite signal output

3. CAM IN

   Composite signal input.

4. HDMI

   HDMI signal input.

5. VGA

   RGB signal input.

Front panel controls

Control panel

(17")

(19"W,22",24")

(27")

3

1. **MENU**

   Turns the OSD window on.

   Turns the OSD window off and moves from sub menu to top menu in the OSD window.

   *Push the menu button for 5seconds when you want to unlock the keypad lock.

2. ▲ (**Up Arrow**)

   Primary Function: Select the input source.

   Moves cursor to the up in the OSD window and increases the value of any selected menu.
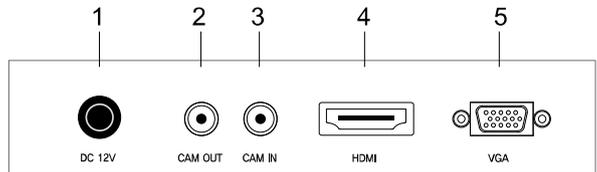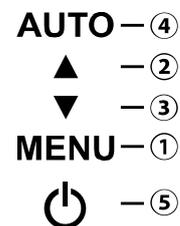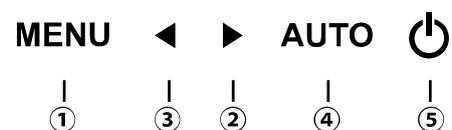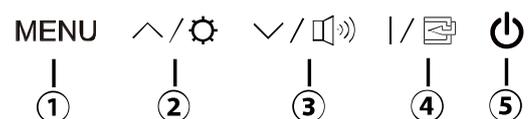
3. ▼ (**Down Arrow**)

   Moves cursor to the down in the OSD window and decreases the value of any selected menu.

4. **AUTO(*)**

   Primary Function: Automatically adjusts the display to the most optimal setting possible. (VGA mode only)

   Secondary Function:Select the sub menu.

5. **POWER**

   Switches the monitor on and off.

   *HOT KEY →(*)

(VGA mode only)

   Secondary Function: Allows for vertical scrolling in the OSD menu

6. ▼ (**Down Arrow**)

   Allows for vertical scrolling in the OSD (On-Screen Display) menu

7. **SOURCE (*)**

   Primary Function: Used to select from different input sources, to confirm selection, press the source button.

   Secondary Function: Select the sub menu.

8. **MENU**

   Turns the OSD window on.

   Turns the OSD window off and moves from sub menu to top menu in the OSD window.

   **Push the menu button for 5seconds when you want to unlock the keypad lock.*

(19")

MENU	— ⑦
SOURCE	— ⑥
▼	— ⑤
▲	— ④
◀	— ③
▶	— ②
⏻	— ①
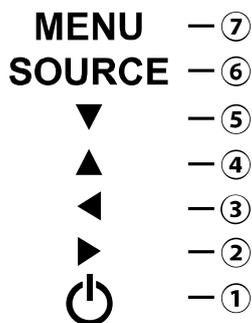
1. **POWER**

   Switches the monitor on and off.

2. ▶ (**Right Arrow**)

   Moves cursor to the right in the OSD window and increases the value of any selected menu

3. ◀ (**Left Arrow**)

   Decreases the value of any selected menu.

4. ▲ (**Up Arrow (*)**)

   Primary Function: Automatically adjusts the display to the most optimal setting possible.

Remote control (27" only)

R1   POWER
      Turn the monitor on from stand-by or off to stand-by mode.

R2   TV/AV
      Select input signal source.

R3   MUTE(optional)
      Mute or Unmute sound

R4   NUMBER Button
      Press the buttons in order of MENU,7,8,9,0 to unlock the remote control lock.(27" only)

R5   LAST CH
      Not used.

R6   INFO
      Information display.

R7   PICT MODE
      Selects your preferred picture settings.

R8   SLEEP
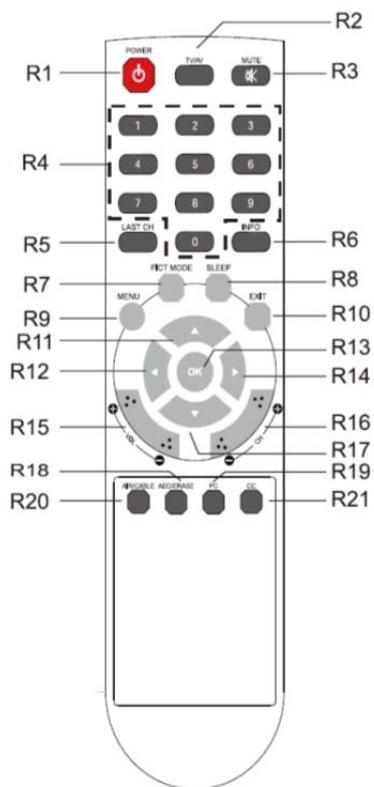   Set the sleep timer.

R9   MENU
      Display a main menu.

R10   EXIT
      Turns the OSD window off and moves from sub Menu to top menu in the OSD window.

R11/R17 UP/DOWN ▲ / ▼ Button
      Press UP/DOWN button to enter the Function menu.

R12/R14 LEFT/RIGHT ◀ / ▶ Button
      Press LEFT/RIGHT Button to adjust the volume.

R13   OK
      Select menu items.

R15   VOL +/- (optional)
      Adjust the sound level.

R16   PR +/-
      Not used.

R18   ADD/ERASE
      Not used.

R19   PC
      Select PC mode.

R20   AIR/CABLE
      Not used.

R21   CC
      Not used.

Inserting batteries into the remote control unit

Open the battery compartment of the remote control. Insert the batteries (two 1.5 V type R03 or AAA). Make sure that the polarity matches with the (+) and (-) marks inside of the battery compartment.

Note: To avoid damage from possible battery leakage, remove the batteries if you do not plan to use the remote control handset for an extended period of time.

Changing a monitor parameter

1. Press the **MENU** button on the front panel to obtain the OSD menu screen.

2. Use UP-DOWN buttons to select the menu.

3. Use AUTO button to select the submenus.

4. Use Up-Down buttons to select a submenu function.

5. Press AUTO/SELECT button, then using left-right buttons you can make adjustments as necessary

6. To exit, press **MENU**.

5

Adjustment procedure

```
┌─────────────────┐
│  Perform the    │
│  Auto tracking  │
└────────┬────────┘
         │
         ▼
    ◇ Is the H.Size ──No──> ┌──────────────────┐
      proper? ◇             │  Adjust the      │
         │                  │  Clock control.  │
        Yes                 └────────┬─────────┘
         │                           │
         ▼                           ▼
    ◇ Is the noise         ┌──────────────────┐
      displayed on <───────│  Perform the     │
      the screen? ◇        │  H - V Position. │
         │        \        └──────────────────┘
        Yes        No
         │          \
         ▼           \
┌────────────────────┐\
│ Adjust the Phase    │ \
│ until the screen    │  \
│ is cleared.         │   \
└─────────┬──────────┘    \
          │                \
          ▼                 ▼
    ◇ Is the noise ──────> ┌──────┐
      displayed on the     │ End  │
      screen yet? ◇        └──────┘
         │
        Yes (loop back)
```
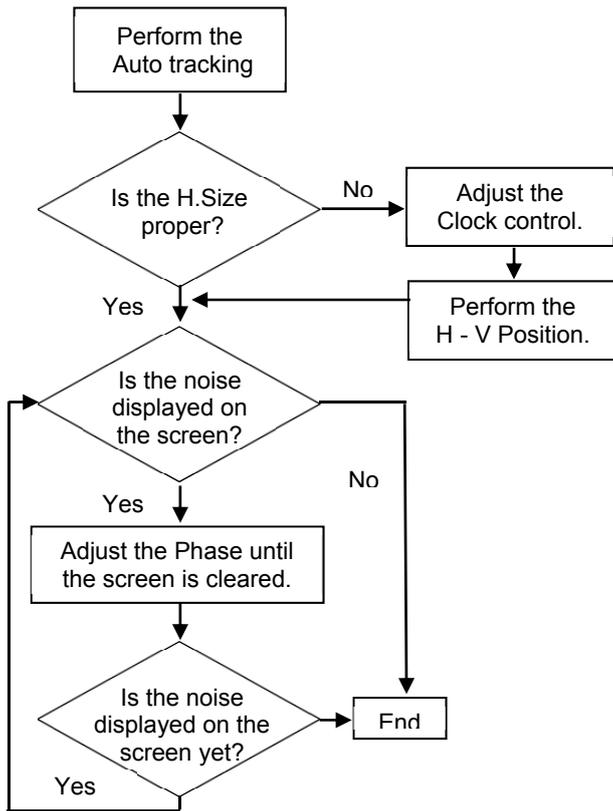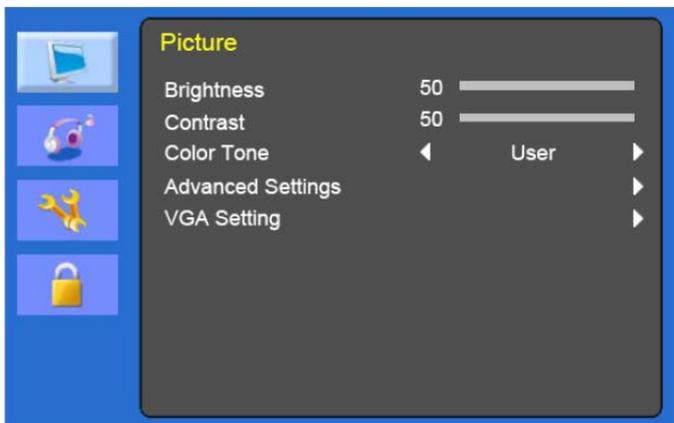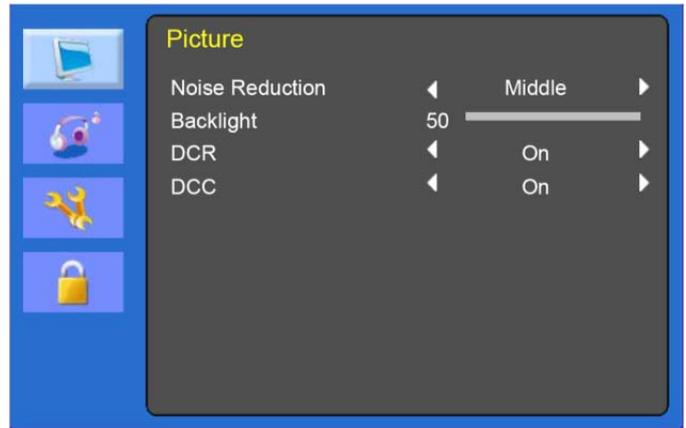
OSD function

Configure the monitor using the onscreen display (OSD) menus and submenus. Changes are immediately saved and implemented.

VGA menu

• **Picture**

(Advanced Setting)

(VGA setting)
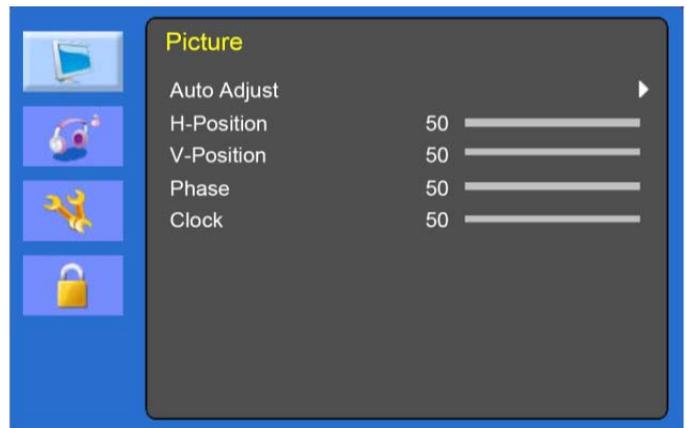
1. **Brightness**
   Adjust the brightness of the image.

2. **Contrast**
   Adjust the contrast of image, the difference between light and dark areas on the screen.

3. **Color Tone**
   Choose a different preset color temperatures or set your own customized color parameters. (Normal/Warm/Cool/User)

4. **Advanced Setting**

   4-1 Noise Reduction.

   Not used.

   4-2 Back Light

   Adjust the back light to be brighter or darker.

   4-3 DCR(Dynamic Contrast Ratio)

   Not used.

   4-4 DCC(Dynamic Contrast Control)

   Not used.

5. **VGA Setting**

   5-1 Auto adjust

6

Choose automatically the proper horizontal position and vertical position and size of the screen image.

5-2 H-Position
Adjust the position of the display horizontally (left or right).

5-3 V-Position

Adjust the position of the display vertically (up or down).

5-4 Phase

Remove any horizontal noise and clear or sharpen the image of the characters.

5-5 Clock

Adjust the width (horizontal size) of the screen image.

• **Sound(optional)**

1. Sound Mode
Choose a different preset sound mode or your own customized sound. (Standard/ Speech/ Music/ User)

2. Balance
Adjust the sound balance of the left and right speakers.

3. Bass
When you select the user mode, adjust the bass sound.

4. Treble
When you select the user mode, adjust the treble sound.

5. Equalizer

Provide an enhanced listening experience.

6. Auto Volume

Automatically remains on the same level of the volume if you change the program.

• **System**
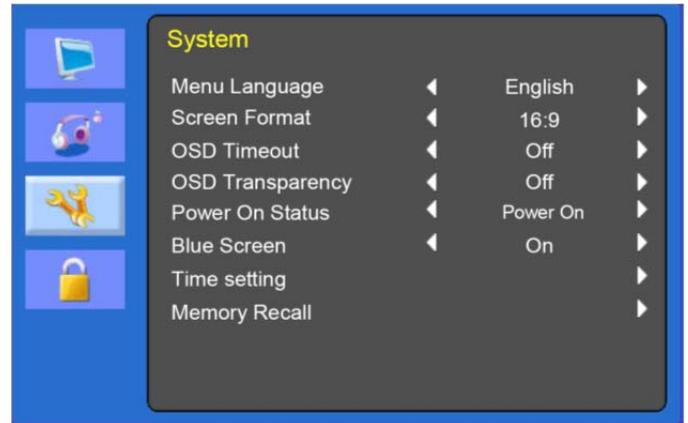
(Time setting)
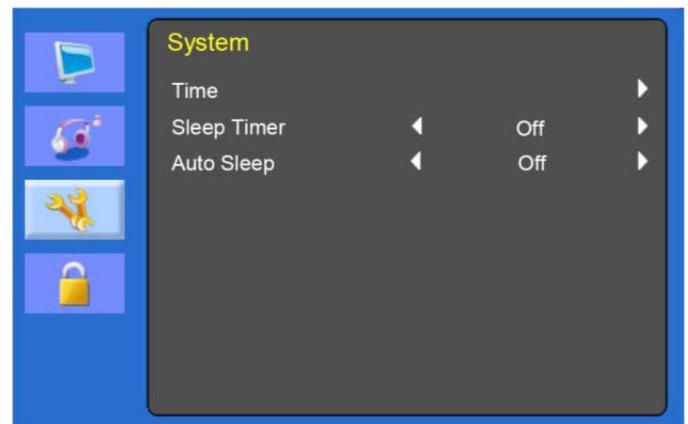
1. Menu Language

Select language for OSD.

2. Screen Format

Select the aspect ratio.

(FULL/16:9/4:3/ZOOM1/ZOOM2)

3. OSD Time out

Adjust the display of the OSD menu

4. OSD Transparency

Adjust the OSD. Transparency

5. Power status

Not used

6. Blue Screen

Select the background color.

7. Time Setting

7-1 Time

Not used.

7-2 Sleep Timer

Set sleep timer

7-3 Auto Sleep

7

Monitor is turned off when it did not receive any signal from remote control or any button within the time that you set .

(off/1Hour/2Hours/5Hours)

(The screen warning is showed before automatic shutdown time that you set up)

8. Memory Recall

Reset the screen to the factory pre-set display settings.

• Lock
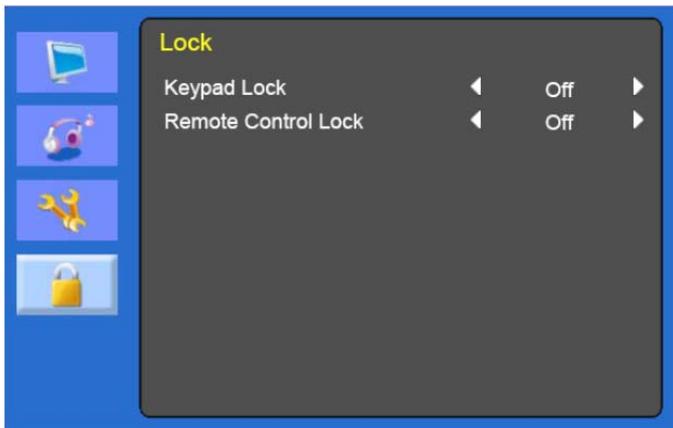
1. Keypad Lock

Turn keypad lock on or off

2. Remote Control Lock (optional)

Turn Remote Control lock on or off

Cam menu (HDMI)

• Picture
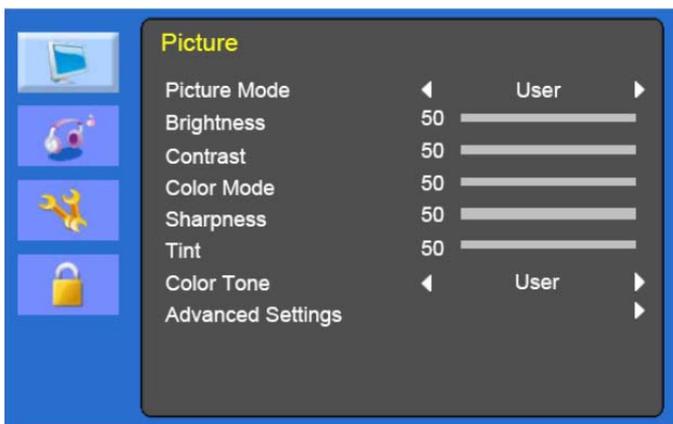
(Advanced Setting)
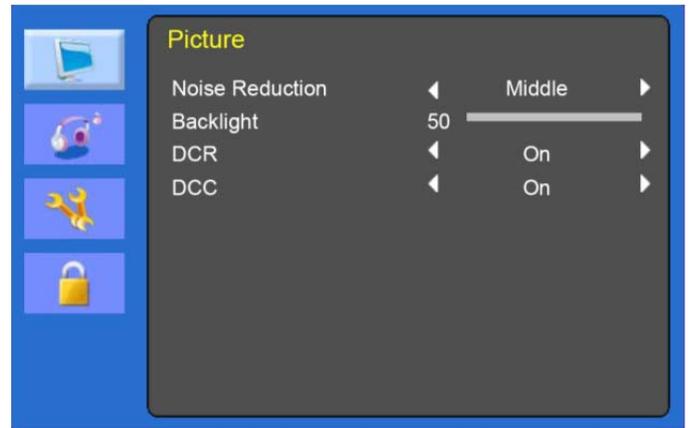
1. Picture Mode

Select the picture mode (Standard/Eco/Movie/Dynamic/User).

2. Brightness

Adjust the brightness of the image.

3. Contrast

Adjust the contrast of image, the difference between light and dark areas on the screen.

4. Color Mode

Adjust Color of image.

5. Sharpness

Adjust the display image quality (if the screen proceed to scaling up).

6. Tint(cam mode only)

Adjust the Tint of image.

7. Color Tone

Choose a different preset color temperatures or set your own customized color parameters. (Normal/Warm/Cool/User)

8. Advanced Setting

8-1 Noise Reduction

Reduce the noise in the picture due to poor reception or poor picture quality

(Off/ Low/ Middle/ High).

8-2 Back Light

Adjust the back light to be brighter or darker.

8-3 DCR(Dynamic Contrast Ratio)

Turn DCR on or off

8-4 DCC(Dynamic Contrast Control)

Turn DCC on or off

• Sound(optional)
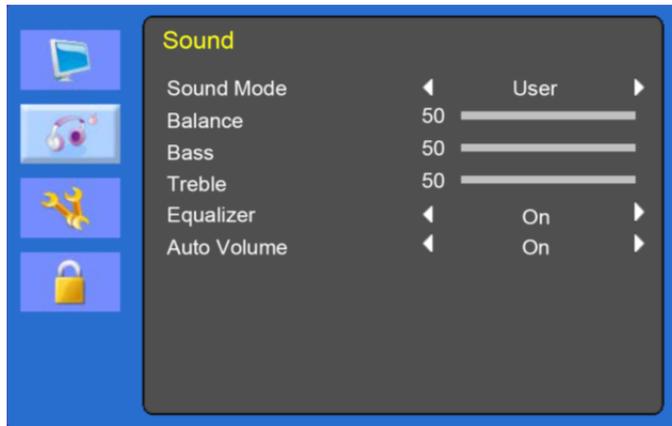
1. **Sound Mode**

   Choose a different preset sound mode or your own customized sound. (Standard/ Movie/ Music/ User)

2. **Balance**

   Adjust the sound balance of the left and right speakers.

3. **Bass**

   When you select the user mode, adjust the bass sound.

4. **Treble**

   When you select the user mode, adjust the treble sound.

5. **Equalizer**

   Provide an enhanced listening experience.

6. **Auto Volume**

   Automatically remains on the same level of the volume if you change the program

• System
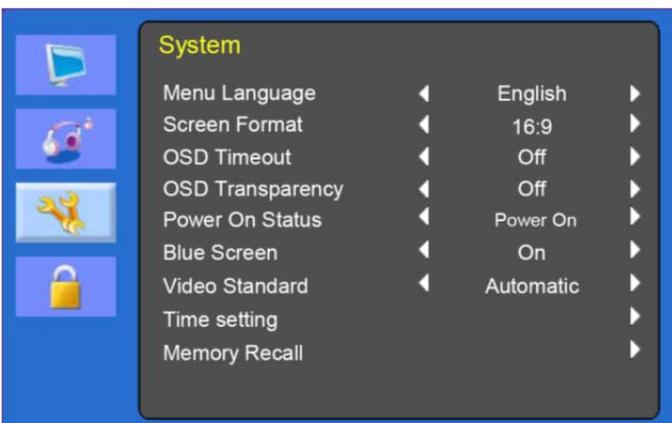
(Time Setting)
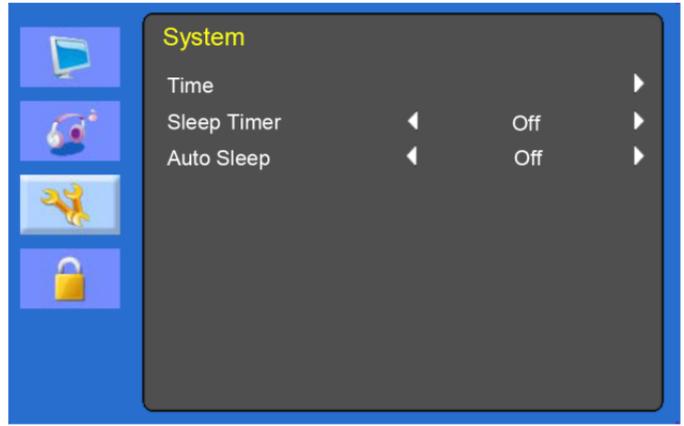
1. **Menu Language**

   Select language for OSD.

2. **Screen Format**

   Select the aspect ratio.

   (FULL/16:9/4:3/ZOOM1/ZOOM2)

3. **OSD Time out**

   Adjust the display of the OSD menu

4. **OSD Transparency**

   Adjust the OSD. Transparency

5. **Power status**

   Not used

6. **Blue Screen**

   Select the background color.

7. **Video Standard (cam mode only)**

   Select the picture mode

8. **Time Setting**

   8-1 Time

   Not used.

   8-2 Sleep Timer

   Set sleep timer

   8-3   Auto Sleep

   Monitor is turned off when it did not receive any signal from remote control or any button within the time that you set up

   off/1Hour/2Hours/5Hours)

   (The screen warning is showed before automatic shutdown time that you set up)

9. **Memory Recall**

   Reset the screen to the factory pre-set display settings.
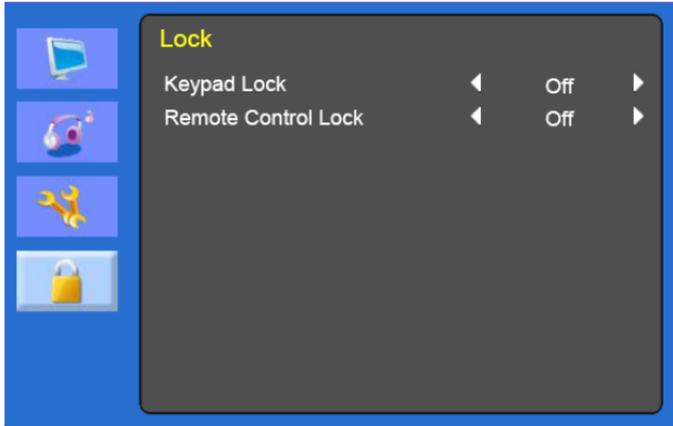
9

• Lock

1. Keypad Lock

Turn keypad lock on or off

2. Remote Control Lock (optional)

Turn Remote Control lock on or off

Self-diagnosis

If there is no image, the Self-Diagnosis screen will be displayed. The self-diagnosis function checks if the status of the monitor screen is No Signal, Out of Range or None Supported.

No Signal screen is displayed when the D- Sub signal connector is connected but the status of the monitor is on DPMS mode.

Out of Range screen is displayed when the applied frequency is under or over normal range.

Normal range (Non-interlaced mode only):

H: 30 to 80 kHz

V: 56 to 77 Hz

Press any key to cancel.

(Monitor is turned off when it did not receive any signal from remote control or any button within the time that you set up.)

10

Troubleshooting
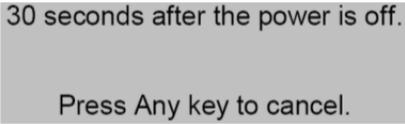
Symptom	Check
Picture is jittery	Adjust **Clock** to set the screen position and adjust Clock value carefully until a noise is no longer displayed.
No picture	Check if the power switch and computer power switch are in the On position
	Check if the signal cable is correctly connected to the video card.
	Check if the pins of D sub-connector are not bent.
	Check if the computer is in the power- saving mode.
POWER LED is not lite	Check if power switch is in the On position.
	Check if the power cord is correctly connected.
Image is unstable	Check if the signal cable is suitable to the video card
Image is not centered, too small or too large	Adjust **Clock** or **H&V Center** to get the proper image.
icture bounces or a wave pattern is present in the picture	Keep the devices that may cause electrical interference away from the monitor.
	See the FCC information at the front cover of the manual.
Picture is blurred	Adjust **Contrast** and **Brightness.**
VIDEO screen cannot be seen	Check if PICTURE mode has been set.
	Check if the video terminal is properly connected.
No video	Check if the video cable is correctly connected to the computer and set to **Functions** on the OSD picture menu.
Poor color in the video	Adjust the **Color** or **Tint** values on the OSD Picture menu.
Grainy picture in the video	Adjust the **Sharpness** on the OSD Picture menu.

Specifications

Items		17"	19"W
Panel	Screen size	17in (43.2cm)	18.5in (47cm)
	Pixel pitch	0.264 x 0.264 mm	0.300x0.300mm
	View angle (H/V)	170°/160°	170°/160°
	Contrast ratio	1000:1 (typ)	1000:1 (typ)
	Response time	5 ms	5 ms
	Brightness	250 cd/m² (typ)	250 cd/m² (typ)
	Recommended resolution	1280 x 1024 @ 60Hz	1366x768@ 60Hz
Interface	VGA in (15 Pin D-Sub)	1	1
	HDMI in	1	1
	BNC (in/out)	1/1	1/1
Power	Consumption	<20W	<20W
	Source	AC100-240V	AC100-240V
Dimensions	W x H x D (with stand)	384mm x 195mm x 358mm 15.12in x 7.68in x 14.1in	444mm x 172mm x 337mm 17.5in x 6.8in x13.3in
	W x H x D (box)	411mm x 130mm x 377mm 16.2in x 5.12in x 14.84in	498mm x 102mm x 390mm 19.6in x 4.0in x 15.4in
Weight	Net (with stand)	4.0Kg (8.8lb)	2.8Kg (6.1lb)
	Gross (box)	5.1Kg (11.3lb)	3.8Kg (8.4lb)
VESA mount Specifications Hole patterns	VESA standard	100mm x 100mm	100mm x 100mm
	Spacing screw size	M4 screw	M4 screw
	Length	12 mm	12 mm
Operating temperature	0 to 40 °C (32 to 104 °F)		

The specifications can change without any notice.

The panel may have some defective pixels (ex. slightly light or dark) due to a characteristic of the panel. But there is no defect in your panel product itself.

Items		19"	22"
Panel	Screen size	19 in. (48.3 cm)	21.5 in(54.6cm)
	Pixel pitch	0.294 x 0.294 mm	0.248(H) x 0.248(V)
	View angle (H/V)	170°/160°	170°/160°
	Contrast ratio	1000:1 (typ)	1000:1 (typ)
	Response time	5 ms	5 ms
	Brightness	250 cd/m² (typ)	250 cd/m² (typ)
	Recommended resolution	1280 x 1024 @ 60 Hz	1920 x 1080@60Hz
Interface	VGA in (15 Pin D-Sub)	1	1
	HDMI in	1	1
	BNC (in/out)	1/1	1/1
Power	Consumption	<20W	< 30 W
	Source	AC100-240V	AC100-240V
Dimensions	W x H x D (with stand)	422mm x 195mm x 388mm 16.6in x7.68in x15.28in	511 x 203 x 392 mm 20.1 x 8.0 x 15.4 in.
	W x H x D (box)	470mm x 132mm x 389mm 18.5in x 5.2in x 15.31in	564 x 436 x 144 mm 22.2 x 17.2 x 5.7 in.
Weight	Net (with stand)	4.8Kg (10.58lb)	3.9 kg (8.6 lb.)
	Gross (box)	5.9Kg (13.01lb)	5.3 kg (11.7 lb.)
VESA mount Specifications Hole patterns	VESA standard	100mm x 100mm	100mm x 100mm
	Spacing screw size	M4 screw	M4 screw
	Length	10 mm	10 mm
Operating temperature	0 to 40 °C (32 to 104 °F)		

The specifications can change without any notice.

The panel may have some defective pixels (ex. slightly light or dark) due to a characteristic of the panel. But there is no defect in your panel product itself.

Items		24"	27"
Panel	Screen size	23.6 in(59.95cm)	27 in(68.58cm)
	Pixel pitch	0.2715(H) x 0.2715(V)	0.3114(H) x 0.3114(V)
	View angle (H/V)	170°/160°	170°/160°
	Contrast ratio	1000:1 (typ)	1000:1 (typ)
	Response time	5 ms	5 ms
	Brightness	250 cd/m² (typ)	300 cd/m² (typ)
	Recommended resolution	1920 x 1080@60Hz	1920 x 1080@60Hz
Interface	VGA in (15 Pin D-Sub)	1	1
	HDMI in	1	1
	BNC (in/out)	1/1	1/1
Power	Consumption	< 30 W	< 40 W
	Source	AC100-240V	12 VDC, 3.33 A
Dimensions	W x H x D (with stand)	561mm x 399mm x 218mm (22in x 15.7in x 8.6in)	647mm x 447 mm x 249mm (25.5in x 17.6in x 9.8in)
	W x H x D (box)	614mm x 445mm x 109mm (24.2in x 17.5in x 4.3in)	703mm x 502mm x 110mm (27.7in x 19.8in x 4.3in)
Weight	Net (with stand)	4.5 kg (9.9lb)	4.0 kg (8.82 lb.)
	Gross (box)	5.2 kg (11.5lb)	6.5 kg (14.3lb)
VESA mount Specifications Hole patterns	VESA standard	100 x 100 mm (3.94 x 3.9 in.)	100 x 100 mm (3.94 x 3.9 in.)
	Spacing screw size	M4 screw	M4 screw
	Length	10 mm	12 mm
Operating temperature	0 to 40 °C (32 to 104 °F)		

The specifications can change without any notice.

The panel may have some defective pixels (ex. slightly light or dark) due to a characteristic of the panel. But there is no defect in your panel product itself.

Factory preset timings (VGA mode)

Pixel Format	Horizontal Freq.(KHz)	Vertical Freq.(Hz)	Remark
720 x 400	31.469	70.087	All models
640 x 480	31.469	59.940	All models
640 x 480	37.861	72.809	All models
640 x 480	37.500	75.000	All models
800 x 600	37.870	60.317	All models
800 x 600	48.077	72.188	All models
800 x 600	46.875	75.000	All models
1024 x 768	48.360	60.000	All models
1024 x 768	56.476	70.069	All models
1024 x 768	60.020	75.030	All models
1152 x 864	67.500	75.000	17",19",22",24",27"
1280 x 1024	63.981	60.020	17",19",22",24",27"
1280 x 1024	79.974	75.024	17",19",22",24",27"
1360 x 768	47.712	59.790	19"W,22",24",27"
1680 x 1050	65.290	59.954	22",24",27"
1920 x 1080	67.500	60.000	22",24",27"

Factory preset timings (HDMI mode)

Pixel Format	Horizontal Freq.(KHz)	Vertical Freq.(Hz)	Remark
640 x 480	31.500	60.000	All models
720 x 576	31.250	50.000	All models
1280 x 720	37.500	50.000	All models
1280 x 720	45.000	60.000	All models
1920 x 1080	28.120	50.000	22",24",27"
1920 x 1080	33.750	60.000	22",24",27"
1920 x 1080	56.250	50.000	22",24",27"
1920 x 1080	67.500	60.000	22",24",27"

MEMO.

MEMO.