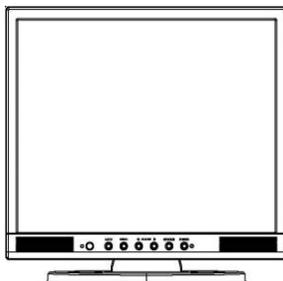




LTV15RS 15" LED Backlight LCD Monitor
LTV19RS 19" LCD Monitor



HDMI, BNC In, BNC Loop Out & RS485

USER MANUAL

FEATURES

- Compatible with VGA (640 x 480), SVGA (800 x 600), XGA (1024 x 768), SXGA (1280 x 1024) resolution -- SXGA for 19" LCD only
- Built-in RS485 function to operate PTZ dome or camera / DVR and monitor group management by remote controller
- Video input HDMI x1 / BNC x 1 / VGA x 1 ; Video output BNC x1
- Audio input RCA x2 / phone jack x 1
- Eco-friendly concept with LED backlight: Saves energy & power - **Only available for LTV15RS*
- Picture-In-Picture feature that allow multi-picture display
- High brightness level and contrast ratio with super wide viewing angle
- Built-in speaker x 2
- Built-in 3D comb filter and 3D de-interlace for crisp picture quality
- Fast response time and refresh rate without time lagging
- Provides 6500°K and 9300°K color temperature selection for user's preference
- Video looping Output supports 75ohm auto termination
- VESA standards (100mm x 100mm) bracket





Please read the Manual before attempting to use this product.

Specifications and appearance are subject to change without notice.

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN!	
TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.		

**TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.
DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS.**



Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

CAUTION

1. READ AND RETAIN INSTRUCTIONS

All the safety and operating instructions should be read before the unit is operated. The safety and operating instructions should be retained for future reference. All operating and usage instructions should be followed.

2. CLEANING

Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Clean only with a dry cloth.

3. ATTACHMENTS

The manufacturer of this unit does not make any recommendations for attachments, as they may cause hazards.

4. WATER AND MOISTURE

Do not use this unit near water. For example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.

5. ACCESSORIES

Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury, and serious damage to the unit. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

6. VENTILATION

Slots and openings at the rear cabinet and bottom are provided for ventilation, these are to ensure reliable operation of the unit, and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the unit on a bed, sofa, rug, or other similar surface. This unit should never be placed near or over a radiator or heat source. This unit should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

7. POWER SOURCE

This unit should be operated only from the type of power source indicated on the rating plate. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company.

8. POWER-CORD PROTECTION

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

9. LIGHTNING

To protect your unit from a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and power line surges.

10. POWER LINES

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall onto or against such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.

11. OVERLOADING

Do not overload wall outlets and extension cords, as this can result in a risk of fire or electric shock.

12. OBJECT AND LIQUID ENTRY

Do not push objects through any openings in this unit, as they may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill or spray any type of liquid into the unit.

13. HEAT

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

14. CONNECTING

When you connect the product to other equipment, turn off the power and unplug all of the equipment from the wall outlet. Failure to do so may cause a product damage. Read the owner's manual of the other equipment carefully and follow the instructions when making any connections.

15. LCD

Do not press on or jolt the LCD panel. Doing so may cause the LCD panel glass to break and injury may occur. Should the LCD panel be broken and liquid leaks out, do not inhale or swallow it. Doing so may cause poisoning. If you have got it into your mouth, wash it out and consult your doctor. If your hands or clothes have touched it, wipe them with alcohol and a cleaning cloth and then wash them well.

Federal Communications Commission (FCC) Statement

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 in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with Part 15 FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received including interference that may cause undesired operation

LIMITED WARRANTY

LIMITED ONE (1) YEAR WARRANTY AND EXCLUSIONS

Manufacturer warrants to the original consumer purchaser and not for the benefit of anyone else that this product at the time of its sale by Manufacturer is free of defects in materials and workmanship under normal and proper use for one (1) year from the purchase date.

Manufacturer's only obligation is to correct such defects by repair or replacement, at its option, if within such one (1) year period the product is returned prepaid, with proof of purchase date, and a description of the problem. This warrant excludes and there is disclaimed liability for labor for removal of this product or reinstallation. This warranty is void if this product is installed improperly or in an improper environment, overloaded, misused, opened, abused, or altered in any manner, or is not used under normal operating conditions or not in accordance with any labels or instructions. **There are no other implied warranties of any kind, including merchantability and fitness or a particular purpose**, but if any implied warranty is required by the applicable jurisdiction, the duration of any such implied warrant, including merchantability and fitness of or a particular purpose, is limited to one (1) year. **Manufacturer is not liable for incidental, indirect, special, or consequential damages, including without limitation, damage to, or loss of use of, any equipment, loss sales or profits or delay or failure to perform this warranty obligation.** The remedies, provided therein are the exclusive remedies under this warranty, whether based on contract, tort or otherwise.

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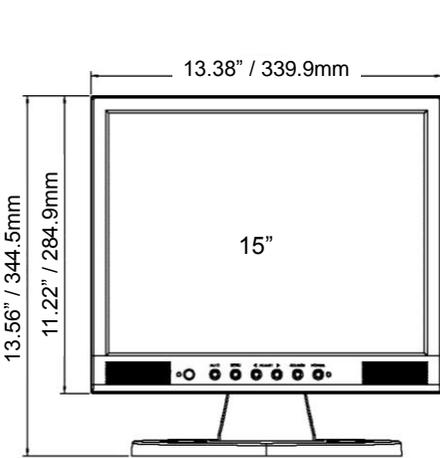
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LIST OF COMPONENTS

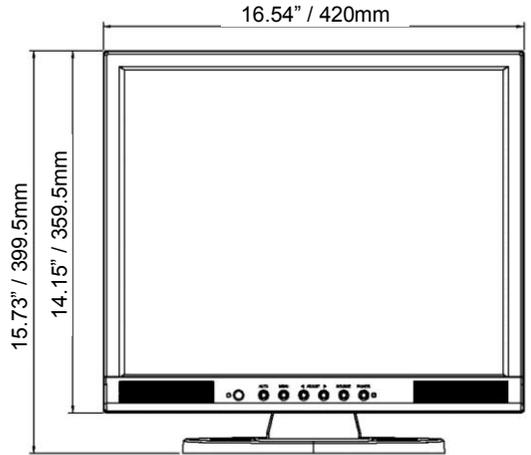
- A. One (1) LCD Color Monitor
- B. One (1) Power Cord
- C. One (1) VGA Cable
- D. One (1) PC Audio Cable
- E. One (1) Adapter
- F. One (1) Remote Controller
- G. One (1) User Manual

For any returns, please include all components listed above with original packaging in **Resalable Condition**. **Absolutely No Returns** will be accepted if any component is missing/damaged.

DIMENSIONS



LTV15RS

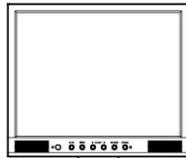


LTV19RS

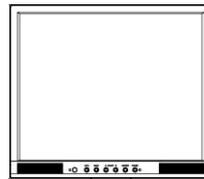
EXPLORING YOUR NEW MONITOR

You can operate your monitor by using the buttons on the front panel. The side panels provide the inputs to connect other equipment to your monitor.

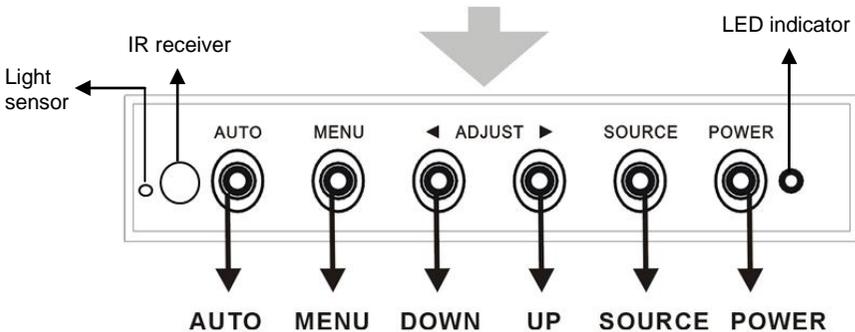
Front Panel



LTV15RS



LTV19RS



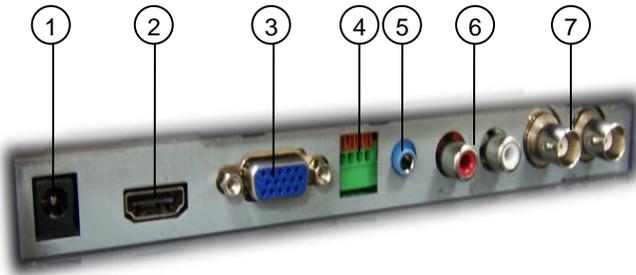
Rear



Side



REAR CONNECTIONS



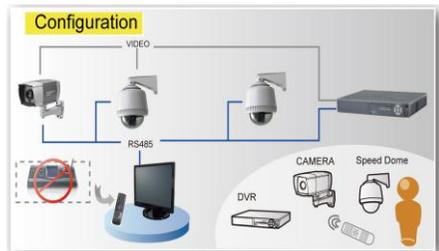
1. Power in :DC 12V input
2. HDMI: HDMI input(1080p)
3. VGA: VGA input
4. RS485 jack. Camera, P/T/Z dome or DVR connect
DC5V/GND power out.(DC5V/500mA/GND)
5. AUDIO IN: PC audio input
6. AUDIO IN: Audio input. RCA jack.
7. VIDEO IN: BNC input
VIDEO OUT: BNC Video looping output



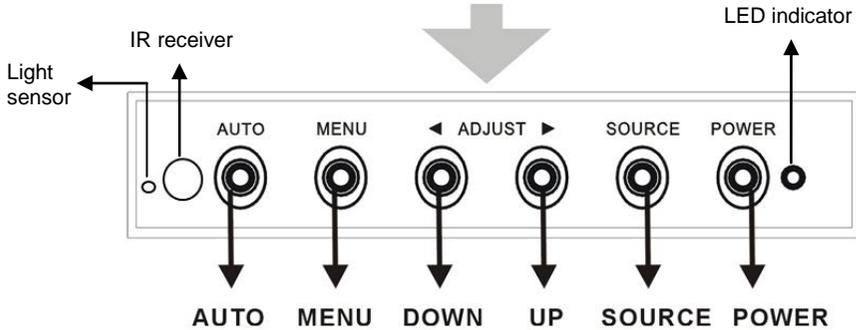
RS485

← RS485 A+

← RS485 B-



MONITOR SETUP



AUTO: Auto-optimize displaying picture under PC mode.
Enter: This “ Auto” Button can be either “Enter” function in OSD Menu)

MENU: OSD menu ON / OFF control.(EXIT Item)

ADJUST: Increase or decrease the value on OSD menu.
▶ **Up:** Increase value or turn ON / OFF function.
◀ **Down:** Decrease value or turn ON / OFF function

SOURCE: Select input signal from AV1 or VGA (PC).

POWER: Monitor power ON / OFF. At OFF mode, monitor will be at standby mode.
Green Light: ON Mode
Red Light: OFF Mode

RS485 Remote Controller



Before device control, please set the RS485 setup.

Press RS485 set button in to RS485 menu.

CAMERA ID	1
DVR ID	1
Protocol	Pelco D
Baud Rate	9600
Speed	Normal

LCD/DVR/CAM

Press  to change control mode

LCD mode

User operates the function by control remote. See LCD key define

DVR mode

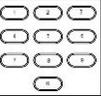
User operates the function by control remote. See DVR key define

PTZ mode

User operates the function by control remote. See Cam key define

Key	Define
	LCD power on / off
 RS485 SET	RS485 menu setup
	LCD / DVR / CAM OSD item select up/down/left/right key DVR playback status

<p>LCD/DVR/CAM</p> 	<p>LCD / DVR / CAM control mode switch</p>
	<p>Call desire LCD / DVR / CAM Device Menu</p>
<p>DISPLAY</p> 	<p>Displays the LCD source information</p>
<p>VOL</p> 	<p>LCD volume setup</p>
<p>MUTE</p> 	<p>LCD audio soundless</p>
<p>AUTO</p> 	<p>VGA mode auto adjust</p>
	<p>Quit desire DVR OSD setup or number wrong typing</p>
<p>LCD</p>	
	<p>Direct to select the AV1 source input</p>
	<p>N/A</p>
	<p>Direct to select the VGA source input</p>
	<p>For HDMI</p>
<p>PIP</p> 	<p>Jump to Picture in picture of screen display</p>
<p>PIP</p> 	<p>Picture in picture of screen source select</p>
<p>PIP</p> 	<p>Picture in picture of screen source exchange</p>

	Picture ratio under / full / over select
DVR	
	Channel sequence
	Quad screen select
	9 split screen select
	16 channel select
	Jump to playback mode
	Manual record
	Jump to time search of playback mode
	Jump to backup mode
CAM(PT/Z dome)	
	PTZ dome ID select / Set;Call;Clear preset DVR full channel select
FOCUS	
	PTZ dome's Lens in manual focus
	PTZ dome's Lens in manual focus

IRIS

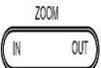


PTZ dome's Lens in manual Iris



PTZ dome's Lens in manual Iris

ZOOM



Control PTZ dome's Lens zoom in and out

PRESET



Set a preset point



Call a preset point

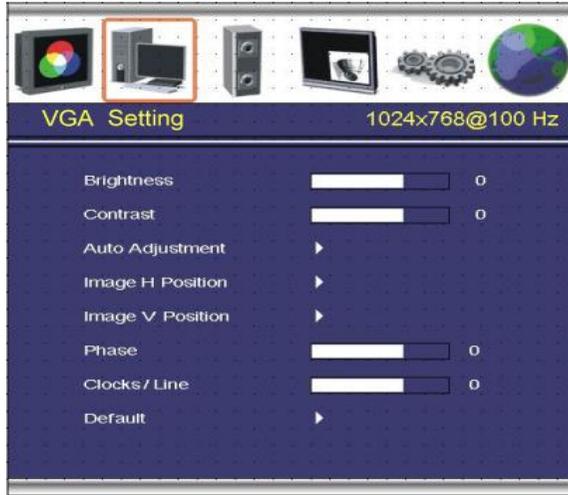


Clear a preset point



- Brightness:** Adjusts the overall picture shade and brightness.
- Contrast:** Permits adjustment of contrast between light and dark areas of the picture.
- Saturation:** Adjusts the intensity of the color.
- Hue:** To determine the lightness and colorfulness of the picture.
- Sharpness:** Sets the desired sharpening enhancement to the picture.
- Dynamic Contrast:** To determine the luminosity of motions of an object
- Image H Position:** Allows adjustment for horizontal position.
- Image V Position:** Allows adjustment for vertical position.
- Default:**

VGA SETTING



- Brightness:** Adjusts the overall picture shade and brightness.
- Contrast:** Permits adjustment of contrast between light and dark areas of the picture.
- Auto Adjustment:** Picture adjustment automatic correction, like clock and phase.
- Image H Position:** Allows adjustment for horizontal position.
- Image V Position:** Allows adjustment for vertical position.
- Phase:** Is used to adjust best picture quality. It adjusts the sampling phase across one pixel time. When the phase is not adjusted properly, the picture will be unclear. Therefore this value should be carefully adjusted.
Note: improper adjustment will cause image failure.
- Clock / Line :** Is used to adjust best picture quality. It adjusts the numbers of the pixel clock across one line time. Therefore it can affect the picture position and size.
Note: improper adjustment will caused image failure.
- Default:**

AUDIO SETTING

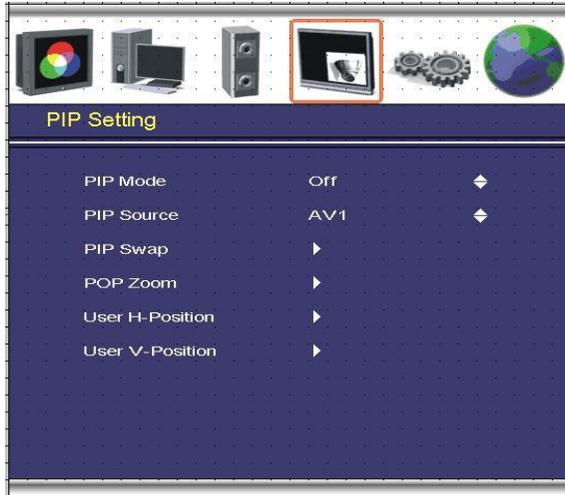


Volume: Controls built-in speakers' output volumes.

Balance: Adjusts the softness of loudness of notes in the sound.

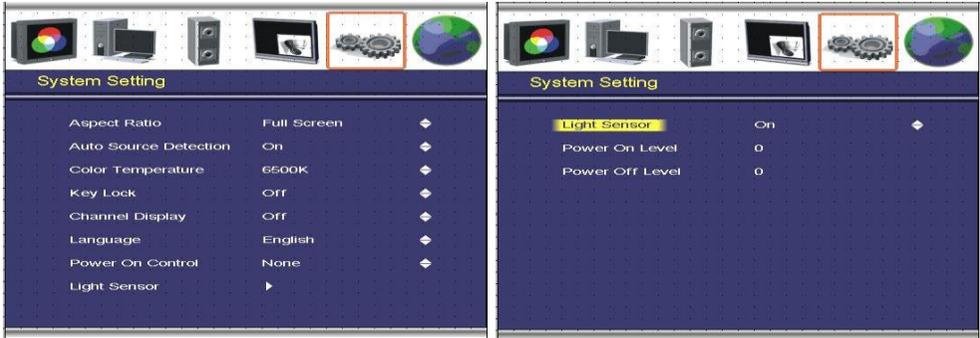
Mute: To disable the audio function. To enable, press MUTE again.

PIP SETTING

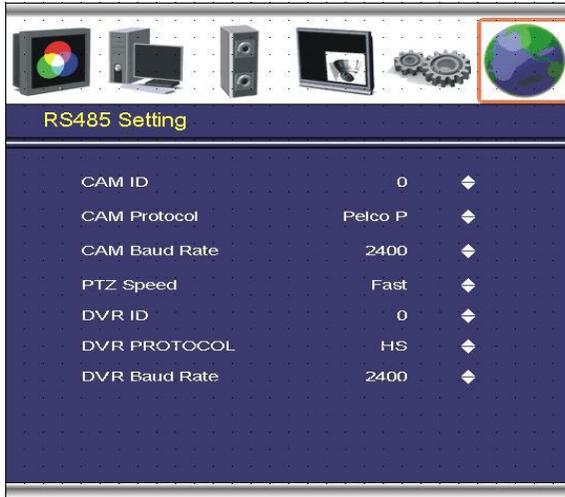


- PIP Mode:** This function allows the PIP mode to be selected.
- PIP Source:** This function allows the source of the PIP to be selected.
- PIP Swap:** This function allows the position of PIP to be exchanged.
- POP Zoom:** Only Operate under POP (Side By Side) mode.
- PIP Auto Close:** Detect PIP mode signal.
- PIP Switching:** Enable PIP source switching.
- Switching Time:** Control PIP source switching time.
- User H-Position:** Allows adjustment for horizontal position.
- User V-Position:** Allows adjustment for vertical position.

SYSTEM SETTING



- Aspect Ratio:** To change the display mode.
- Auto Source Detection:** The monitor will auto detect the video source when power ON.
- Color Temperature:** Selects color temperature of either 6500°K or 9300°K.
- Key Lock:** The Key-Lock function is provided to prevent tempering. To unlock, press **AUTO** and **MENU**.
- Channel Display:** This function is to allow the channel title to be displayed on the monitor.
- Language:** English.
- Power On Control:** This function is to assign a specific video signal when power ON.
- Light Sensor:** LCD monitor brightness will vary with the environment brightness. Light sensor on / off, power on level 50~80, power off level 0~30



CAM ID: Select PTZ dome ID address.

CAM Protocol: Select PTZ dome protocol.

CAM Baud Rate: Select PTZ dome baud rate.

PTZ Speed: Select PTZ control command speed.

DVR ID: Select DVR ID address.

DVR Protocol: Select DVR protocol. (now only HS) And customized protocol.

DVR Baud Rate: Select DVR baud rate.

TROUBLESHOOTING

Before calling a service technician, please check the following table for a possible cause of the problem and some solution.

Symptom	Solution
Monitor will not turn on	Make sure the power cord is plugged in, then press the POWER button
No picture, no sound	Check the cable connections
No sound, picture OK	Check the audio cable connections. Try pressing Volume up button in the Menu
Poor color, sound OK	Check cable connections Adjust video setup menu
Poor color or no color	Adjust color and/or TINT (NTSC only)

APPLICABLE TIMING

VGA Timing

There are a total of 11 timing modes that can be saved in memory by FIFO detecting architecture.

VGA Support Timing

Mode	Resolution	H Freq. (kHz)	V Freq. (Hz)	Pixel clock (MHz)	15"	19"
					1024x768 15Hz	1280x1024 4 75Hz
VGA	640x480@60	31.469	59.940	25.175	∨	∨
	640x480@72	37.861	72.809	31.500	∨	∨
	640x480@75	37.500	75.000	31.500	∨	∨
SVGA	800x600@60	37.879	60.317	40.000	∨	∨
	800x600@72	48.077	72.188	50.000	∨	∨
	800x600@75	46.875	75.000	49.500	∨	∨
XGA	1024x768@60	48.363	60.004	65.000	∨	∨
	1024x768@70	56.576	70.069	75.000	∨	∨
	1024x768@75	60.023	75.029	78.750	∨	∨
SXGA	1280x1024@60	63.980	60.000	108.000		∨
	1280x1024@75	79.976	75.025	135.000		∨

HDMI Timing

Format	Resolution	Type	Vertical frequency
480i/p	720x480	SD	60Hz
720p	1280x720	HD	60Hz
1080p	1920x1080	Full HD	60Hz

PC RGB Input

Input Signal	Analog RGB 0.7Vp-p
Input Impedance	75 Ohm \pm 2%
Polarity	Positive, Negative
Amplitude	0 ~0.7 \pm 0.05Vp
Multi-mode Supported	Horizontal Frequency: 30~80KHz Vertical Frequency: 50~75Hz

Power Supply

Input Voltage	100~240VAC, 50/60Hz
Output Voltage	+12V DC,5A

Environment

Operation Condition	Temperature	0°C to 50°C / 32°F to 122°F
	Relative Humidity	20% to 85%
Storage Condition	Temperature	-10°C to 60°C / 14°F to 140°F
	Relative Humidity	5% to 85%

SPECIFICATION

Model	LTV15RS	LTV19RS
Screen Size	15-inch	19-inch
LED Backlight	Yes	No
Button Control	Power / OSD Control / Source	
Display Resolution	640 x 480 @ 60/72/75 800 x 600 @ 56/60/72/75 1024 x 768 @ 60/70/75	640 x 480 @ 60/72/75 800 x 600 @ 56/60/72/75 1024 x 768 @ 60/70/75 1280 x 1024 @ 60/75
Active Area	304.1(H) x 228.1(V) mm	376.32(H) x 301.056(V) mm
LCD Panel Type	TN mode, Normally white	
Dot Pitch	0.297(H) x 0.297(V) mm	0.294(H) x 0.294(V) mm
Display Ratio	4:3	5:4
Display Color	16.2M colors	16.7M colors
Brightness (Central)	350 cd/m ²	250 cd/m ²
Contrast Ratio	700:1	1000:1
Viewing Angle	Left 70° / Right 70° Up 60° / Down 65° CR>10	Left 85° / Right 85° Up 75° / Down 85° CR>10
Response Time	12ms	5ms
Input Voltage	12V DC	
Input Signal	1Vp-p composite video	
Input Impedance	75 ohm	
Output Signal	1.0Vp-p±0.2Vp-p composite video (Auto Termination)	
Scanning system	NTSC: 525 lines, 60 fields / sec PAL:625 lines, 50 fields / sec	
Video Input / Output	HDMI x1, Video In x1 (BNC), Video Out x1 (BNC), VGA x1	
Audio Input	RCA jack x2(L/R), PC-Audio In x1	
RS485 jack	Built-in. Pin jack x 2, +/-	
Protocol	Pelco P / Pelco D / customized protocol	
Control device	Operate PTZ dome or camera / DVR and monitor group management by remote controller	
Control ID	PTZ dome or camera 1~255 / DVR 1~255 / Monitor 1~255	
Speaker	1W + 1W	
Power Consumption	30W	45W
Operating Temperature	14°F ~ 122°F / -10°C ~ 50°C	
Storage Temperature	-4°F ~ 140°F / -20°C ~ 60°C	
Dimension	13.38(W) x 13.56(H) x 2.11(D) in 339.9(W) x 344.5(H) x 53.5(D) mm	16.54(W) x 15.72(H) x 2.12(D) in 420(W) x 399.5(H) x 53.8(D)mm
Weight	6.17 lbs / 2.8 KG	9.04 lbs / 4.1 KG

*Specifications are subject to change without notice.



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