



**Synergy Global Technology Inc**

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# User Manual

## SunReadable Solution

17", 19", 22" screen size



### SunReadable LCD Display

#### Models

LCDR7U17-04 / 8U19-04

### SunReadable Widescreen LCD Display

#### Models

LCDR7U19-03 / 8U22-03

**Options :** - BNC + S-Video      - DVI      - Touchscreen  
             - Audio                      - Quad Display      - DC power

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## 1.1 Important Safeguards

# Chapter 1

**Please read all of these instructions carefully before you use the device. Save this manual for future reference.**

### **What the warranty does not cover**

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
  - Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
  - Repair or attempted repair by anyone not authorized by us.
  - Any damage of the product due to shipment.
  - Removal or installation of the product.
  - Causes external to the product, such as electric power fluctuation or failure.
  - Use of supplies or parts not meeting our specifications.
  - Normal wear and tear.
  - Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

### Legal Information

First English printing, October 2002

Information in this document has been carefully checked for accuracy; however, no guarantee is given to the correctness of the contents. The information in this document is subject to change without notice. We are not liable for any injury or loss that results from the use of this equipment.

### Safety Instructions

- Unplug equipment before cleaning. Don't use liquid or spray detergent; use a moist cloth.
- Keep equipment away from excessive humidity and heat. Preferably, keep it in an air-conditioned environment with temperatures not exceeding 40° Celsius (104° Fahrenheit).
- When installing, place the equipment on a sturdy, level surface to prevent it from accidentally falling and causing damage to other equipment or injury to persons nearby.
- When the drawer is in an open position, do not cover, block or in any way obstruct the gap between it and the power supply. Proper air convection is necessary to keep it from overheating.
- Arrange the equipment's power cord in such a way that others won't trip or fall over it.
- If you are using a power cord that didn't ship with the equipment, ensure that it is rated for the voltage and current labeled on the equipment's electrical ratings label. The voltage rating on the cord should be higher than the one listed on the equipment's ratings label.
- Observe all precautions and warnings attached to the equipment.
- If you don't intend on using the equipment for a long time, disconnect it from the power outlet to prevent being damaged by transient over-voltage.
- Keep all liquids away from the equipment to minimize the risk of accidental spillage. Liquid spilled on to the power supply or on other hardware may cause damage, fire or electrical shock.
- Only qualified service personnel should open the chassis. Opening it yourself could damage the equipment and invalidate its warranty.
- If any part of the equipment becomes damaged or stops functioning, have it checked by qualified service personnel.

### Regulatory Notices Federal Communications Commission (FCC)

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.

Any changes or modifications made to this equipment may void the user's authority to operate this equipment. 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:

- Re-position 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.

- It is very important to locate the Rackmount LCD Drawer / Display in a suitable environment.
- The surface for placing and fixing the Rackmount LCD Drawer / Display should be stable and level or mounted into a suitable cabinet.
- Make sure the place has good ventilation, is out of direct sunlight, away from sources of excessive dust, dirt, heat, water, moisture and vibration.
- Convenience for connecting the Rackmount LCD Drawer / Display to the related facilities should be well considered too.

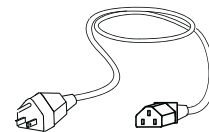
## 1.4 Unpacking

The Rackmount LCD Drawer / Display comes with the standard parts shown on the package contents. Check and make sure they are included and in good condition. If anything is missing, or damage, contact the supplier immediately.

## 1.5 Optional Accessories

### 1. Power Cord

- 1.1 IEC power cord
- 1.2 NEMA 5-15 power cord (US)
- 1.3 BS 1363 power cord (UK)
- 1.4 CEE 7/4 power cord (German)
- 1.5 AS 3112 power cord (Australia)

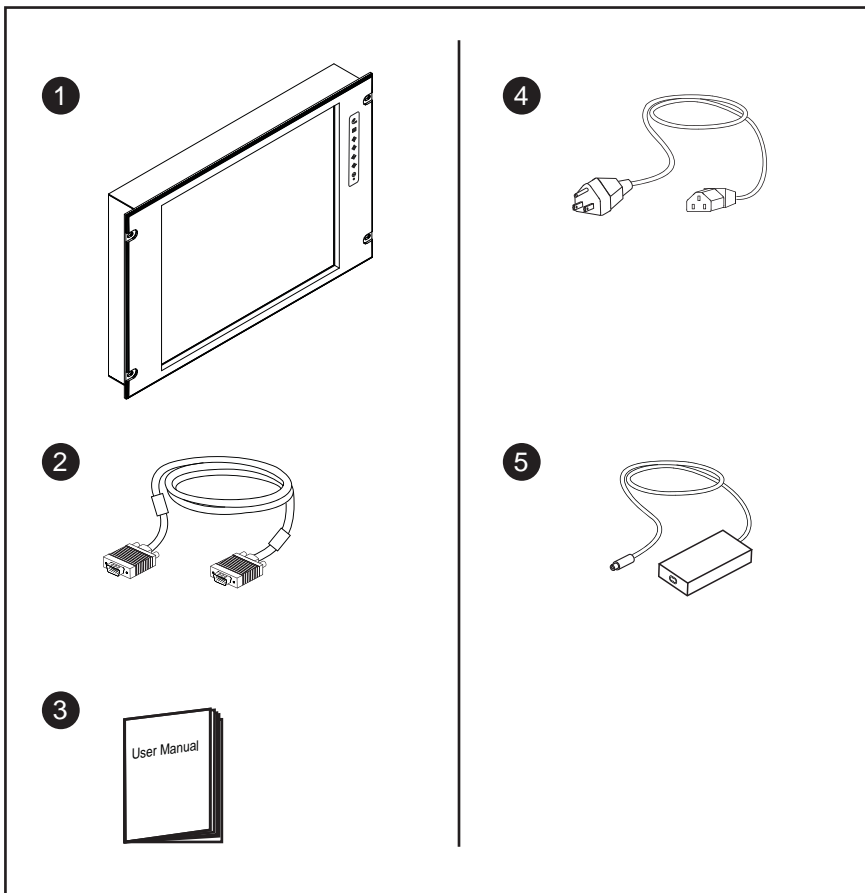


Item	Model No.	Description
<b>Matrix Cat6 KVM</b>	LCDK2006-2 / 3 / 4	Matrix Cat6 16 port KVM
	LCDK2012-31 / 41 / 42	Matrix IP Cat6 16 port KVM
	LCDK2007-2 / 3 / 4	Matrix Cat6 32 port KVM
	LCDK2013-31 / 41 / 42	Matrix IP Cat6 32 port KVM
<b>Matrix DB-15 KVM</b>	LCDK2004- 2 / 3 / 4	Matrix DB-15 8 port KVM
	LCDK2010-31 / 41 / 42	Matrix IP DB-15 8 port KVM
	LCDK2005-2 / 3 / 4	Matrix DB-15 16 port KVM
	LCDK2011-31 / 41 / 42	Matrix IP DB-15 16 port KVM
<b>Combo Cat6 KVM</b>	LCDK2001 / 2002 / 2003	Combo Cat6 8 port KVM
	LCDK1043 / 1045 / 1047	Combo Cat6 16 port KVM
	LCDK1044 / 1046 / 1048	Combo Cat6 32 port KVM
<b>Combo DB-15 KVM</b>	LCDK1020 / 1024 / 1038	Combo DB-15 8 port KVM
	LCDK1021 / 1025 / 1039	Combo DB-15 16 port KVM
<b>PS/2 DB-15 KVM</b>	LCDK1009 / 1010 / 1011	4 / 8 / 16 port PS/2 DB-15 KVM
<b>Keyboard Drawer</b>	LCDK1002	Rackmount keyboard drawer (with KVM options)
	LCDK1016	Rackmount keyboard drawer (short depth version)

## 2.1 Package Contents

LCDR7U17-04 / 8U19-04

## Chapter 2



- ① Rackmount LCD display x 1 pc
- ② 6' VGA cable (male to male) x 1 pc
- ③ User manual x 1 pc
- ④ Power cord x 1 pc
- ⑤ Auto switch power adapter x 1 pc

LCDR7U17-04 / 8U19-04

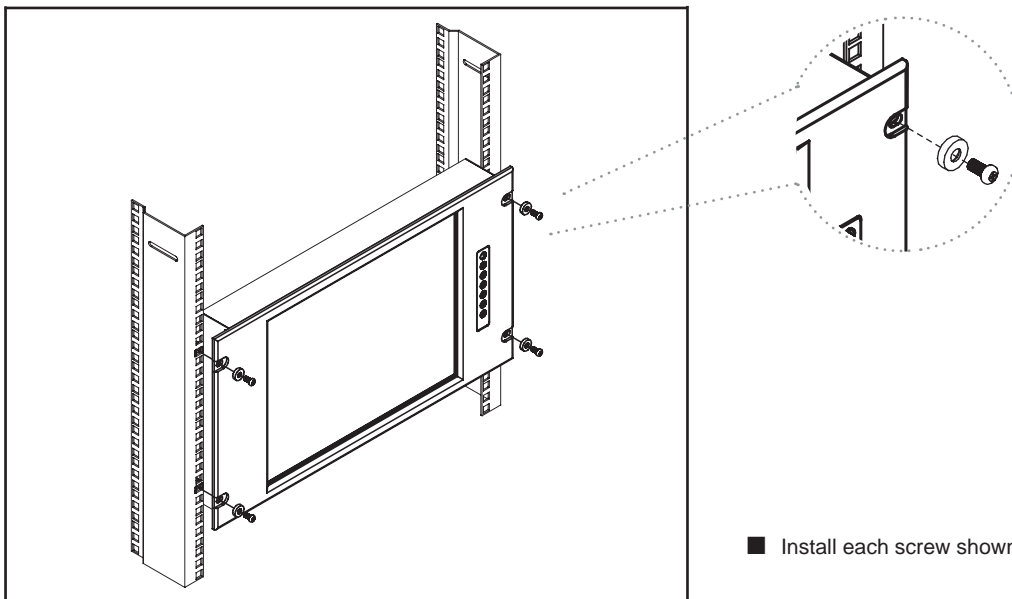


Figure 1.

■ Install each screw shown in Figure 1.

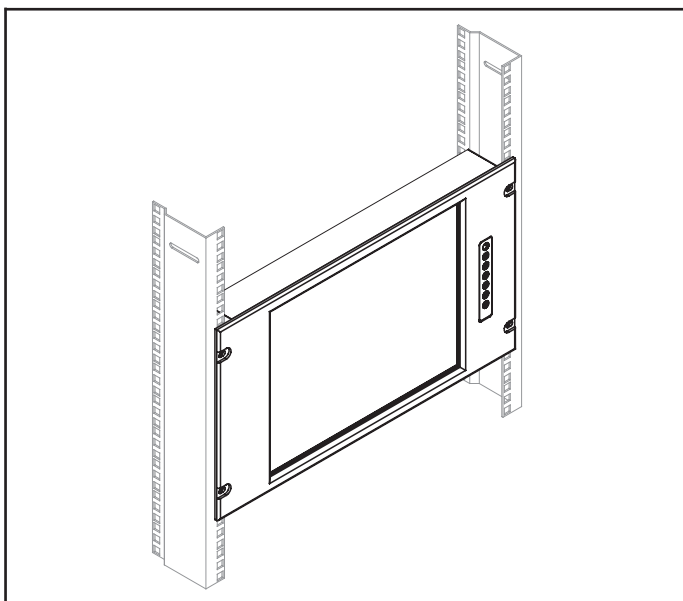
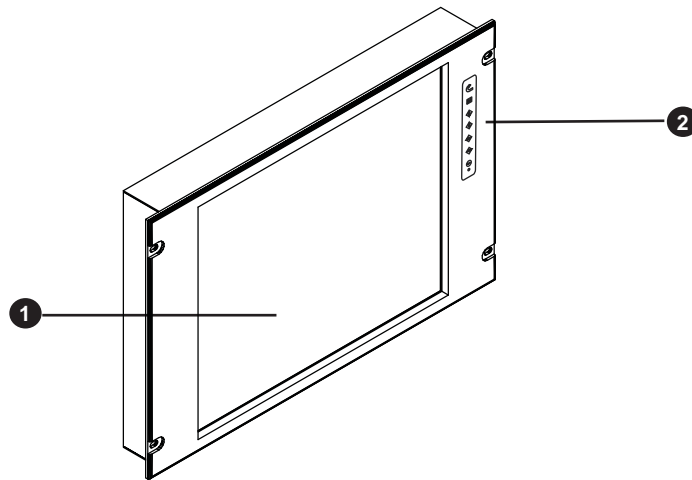


Figure 2.

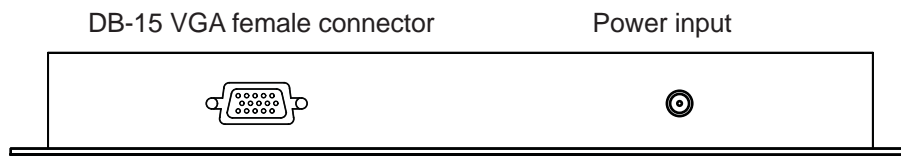
■ Fixed the LCD into the rack.

\* M6 screws are not provided.



- ① LCD interchangeable module kit
- ② LCD membrane

## 2.4 Connection

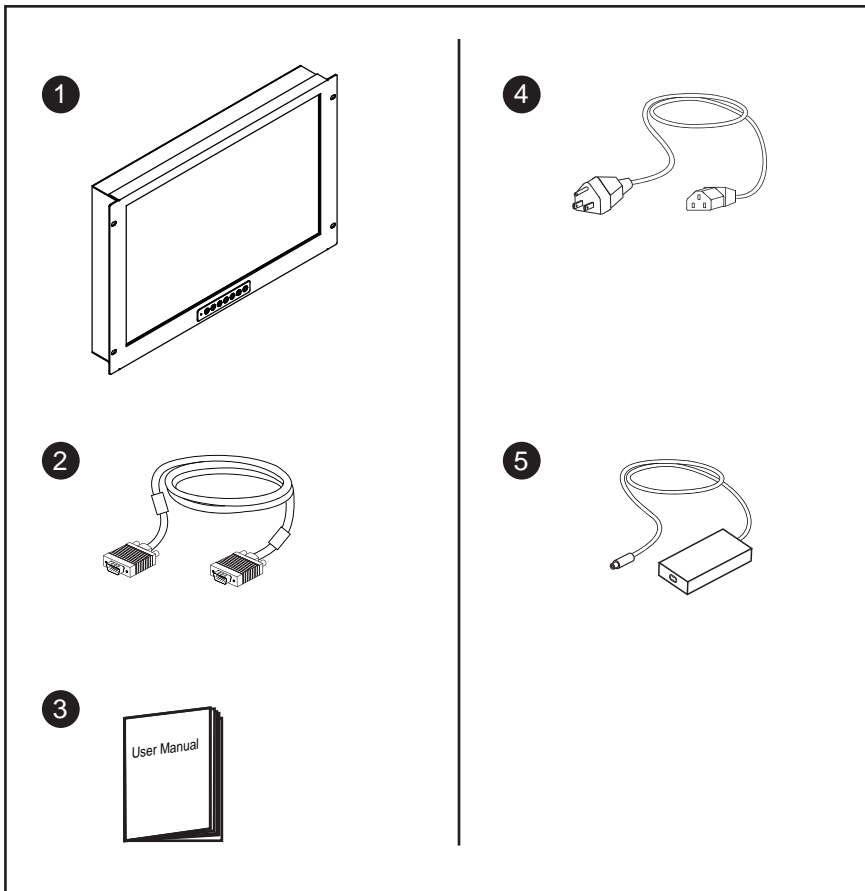


**Caution :** The Rackmount LCD Drawer & Display are hot-pluggable, but components of connected devices, such as the servers and KVM switch, may not be hot-pluggable. Plugging and unplugging cables while servers and KVM are powered on may cause irreversible damage of the servers, KVM and Rackmount LCD Drawer. Before attempting to connect anything to the Rackmount LCD Drawer, we suggest turning off power to all devices before connecting them. Apply power to connected devices again only after the Rackmount LCD Drawer is receiving power. The company is not responsible for damage caused in this way.

### 3.1 Package Contents

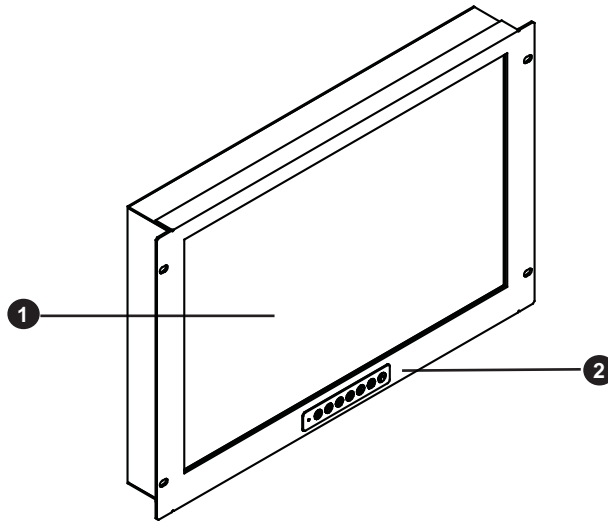
LCDR7U19-03 / 8U22-03

## Chapter 3



- ① Rackmount LCD display x 1 pc
- ② 6' VGA cable (male to male) x 1 pc
- ③ User manual x 1 pc
- ④ Power cord x 1 pc
- ⑤ Auto switch power adapter x 1 pc

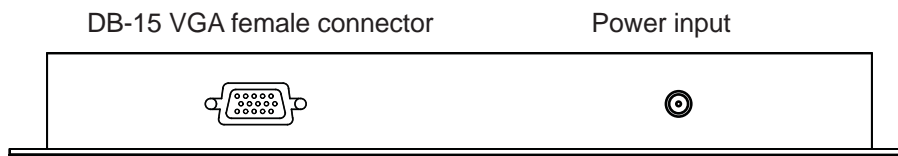
### LCDR7U19-03 / 8U22-03



- ① LCD interchangeable module kit
- ② LCD membrane

## 3.3 Connection

### LCDR7U19-03 / 8U22-03



**Caution :** The Rackmount LCD Drawer & Display are hot-pluggable, but components of connected devices, such as the servers and KVM switch, may not be hot-pluggable. Plugging and unplugging cables while servers and KVM are powered on may cause irreversible damage of the servers, KVM and Rackmount LCD Drawer. Before attempting to connect anything to the Rackmount LCD Drawer, we suggest turning off power to all devices before connecting them. Apply power to connected devices again only after the Rackmount LCD Drawer is receiving power. The company is not responsible for damage caused in this way.

LCDR7U19-03

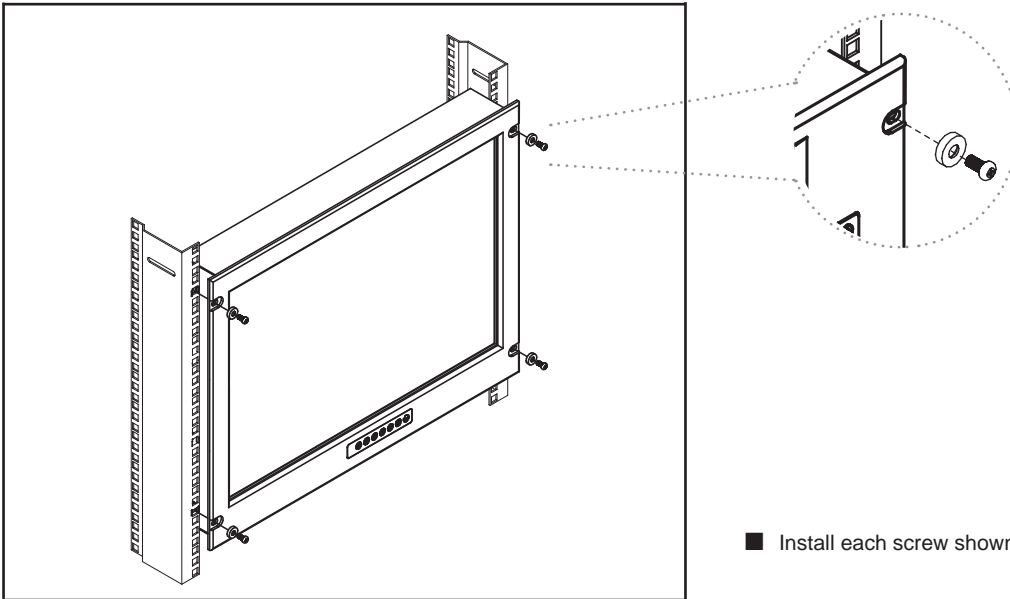


Figure 3.

■ Install each screw shown in Figure 3.

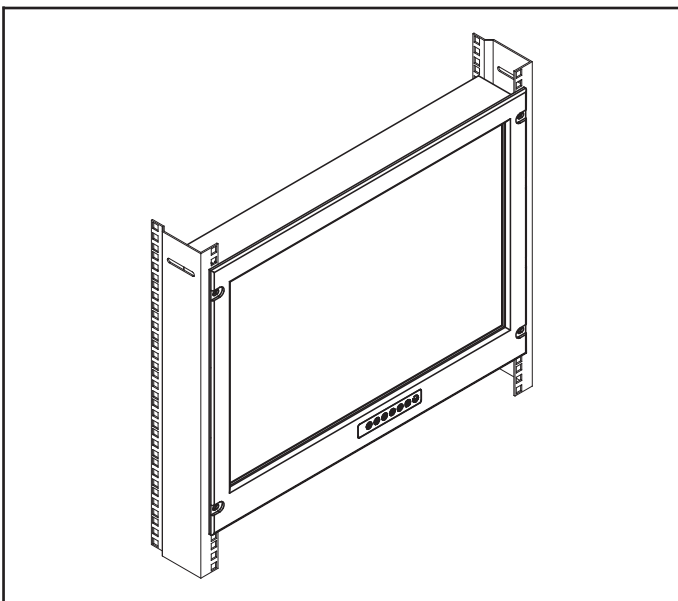


Figure 4.

■ Fixed the LCD into the rack.

\* M6 screws are not provided.

LCDR8U22-03

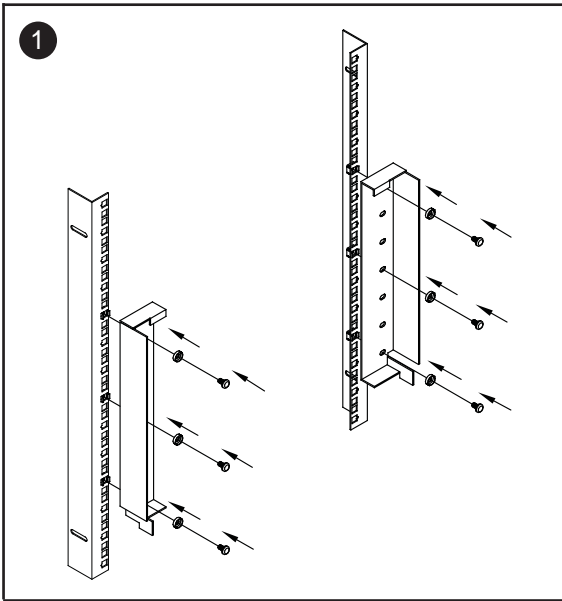


Figure 5.

■ Install each screw shown in **Figure 5**.

\* M6 screws are not provided.

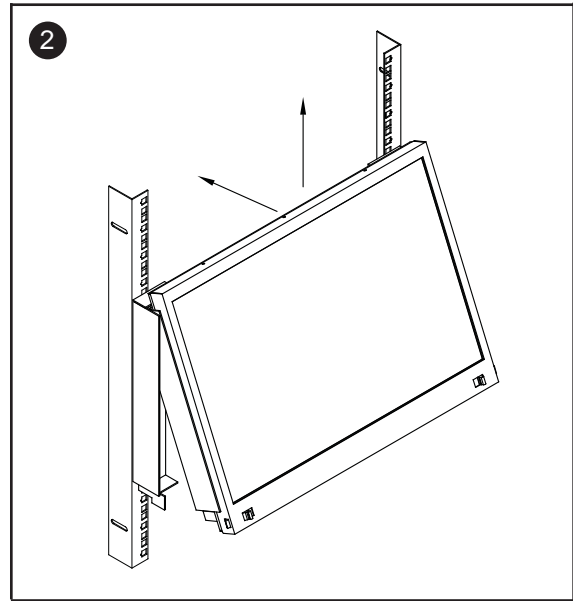


Figure 6.

■ Insert the upper part of the LCD display to the rack shown in **Figure 6**.

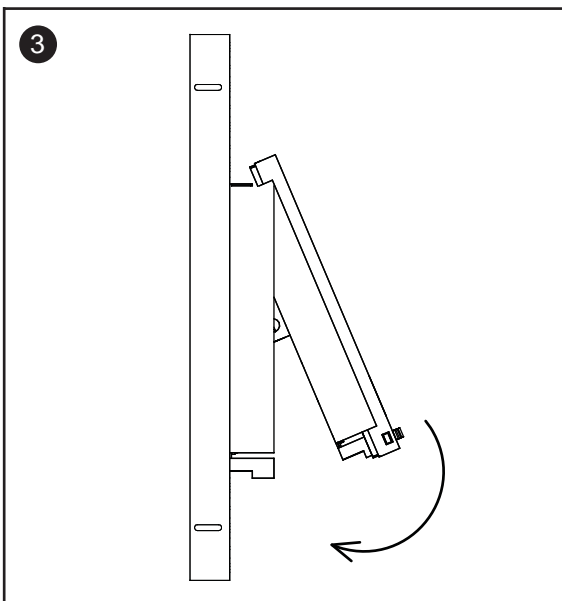


Figure 7.

■ Push the lower part of the LCD into the rack.

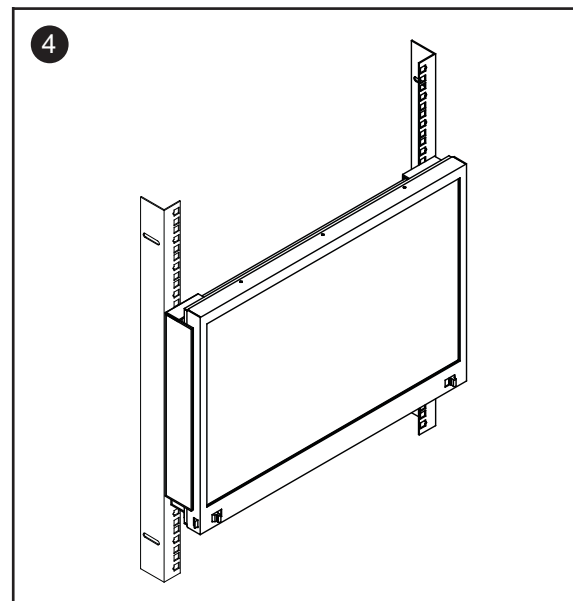
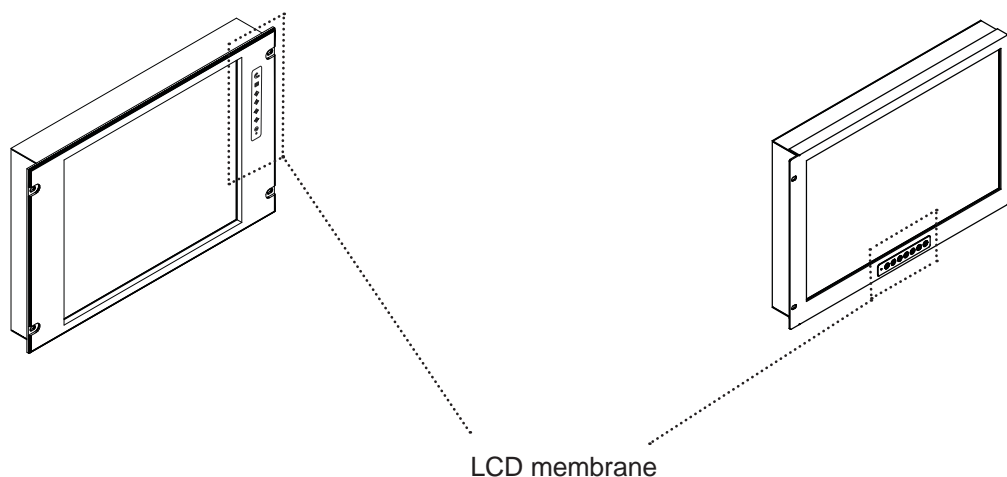







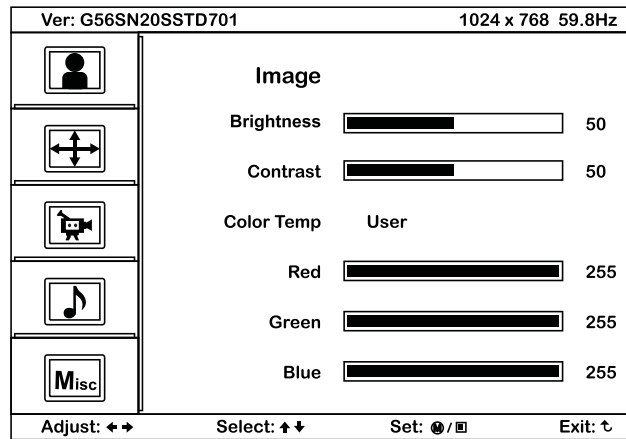


Figure 8.

■ Installation completed.



Membrane Switch	Function
<ul style="list-style-type: none"> <li>○</li> <li>●</li> <li>●</li> </ul>	Power light Green = On Orange = Power saving
⊖	Power on / off LCD
M 	Display the OSD menu
   	Scrolls through menu options and adjusts the displayed control (To auto adjustment by pressing the button  for 5 seconds)
	Exit the OSD screen Toggle analog, digital & video connection (DVI-D and video options only)



**OSD Configuration Page**



**Image:**

To enter into the brightness, contrast, color temp, red, green, and blue



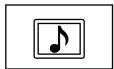
**Geometry:**

To enter into the auto adjust, H position, V position, phase and clock



**Video:**

To enter into the colour, tint, sharpness, noise reduction, DCDi and TV Setup



**Audio:**

To enter into volume, bass, treble, balance, AVL and mute



**Misc:**

To enter into the language, OSD position, graphic mode, ratio, reset and timer

## 5.1 DVI-D Option

## Chapter 5

LCDR7U17-04 / 8U19-04 / 7U19-03 / 8U22-03



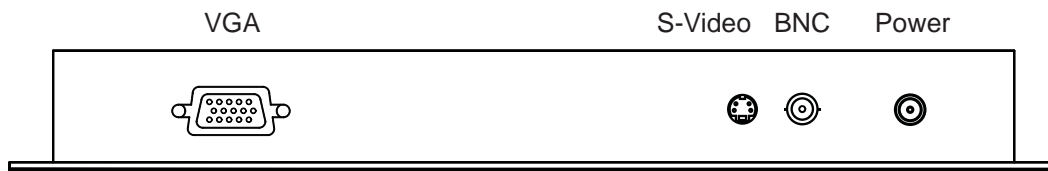
### Remarks

- Package includes 1 x 6ft DVI-D cable

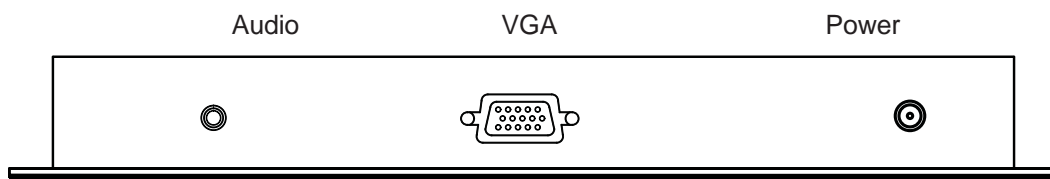
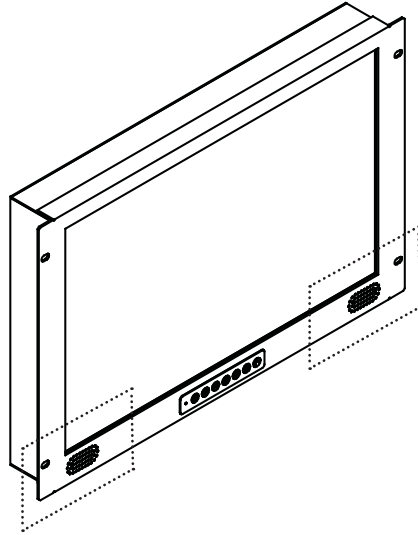
## 5.2 BNC + S-Video Option

## Chapter 5

LCDR7U17-04 / 8U19-04 / 7U19-03 / 8U22-03



LCDR7U17-04 / 8U19-04 / 7U19-03 / 8U22-03

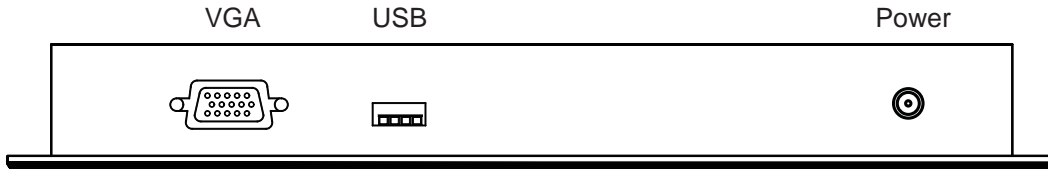


**Remarks**

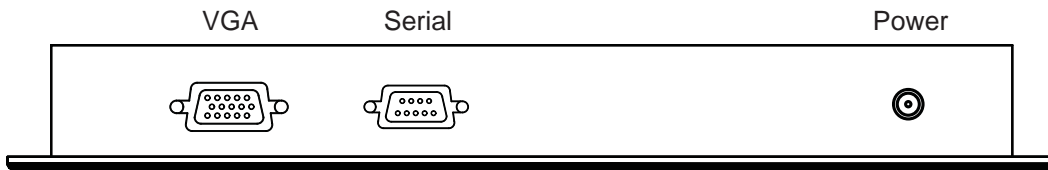
- Audio input is 35mm audio plug
- The speaker is sharing the same power with LCD.

LCDR7U17-04 / 8U19-04 / 7U19-03 / 8U22-03

**USB interface**



**Serial interface**



**e-Resistive**

Model	-17TRB / -17TRS	-19TRB / -19TRS	-19WTRB / -19WTRS	-22WTRB / -22WTRS
Screen size	17"	19"	19" wide	22" wide
Interface	USB / serial			
Optical transmittance	80% ± 3%			
Surface hardness	≥3H (JIS K5400)			
Operating system	Windows 98 / 2000 / ME / XP / NT / CE, DOS, Linux			

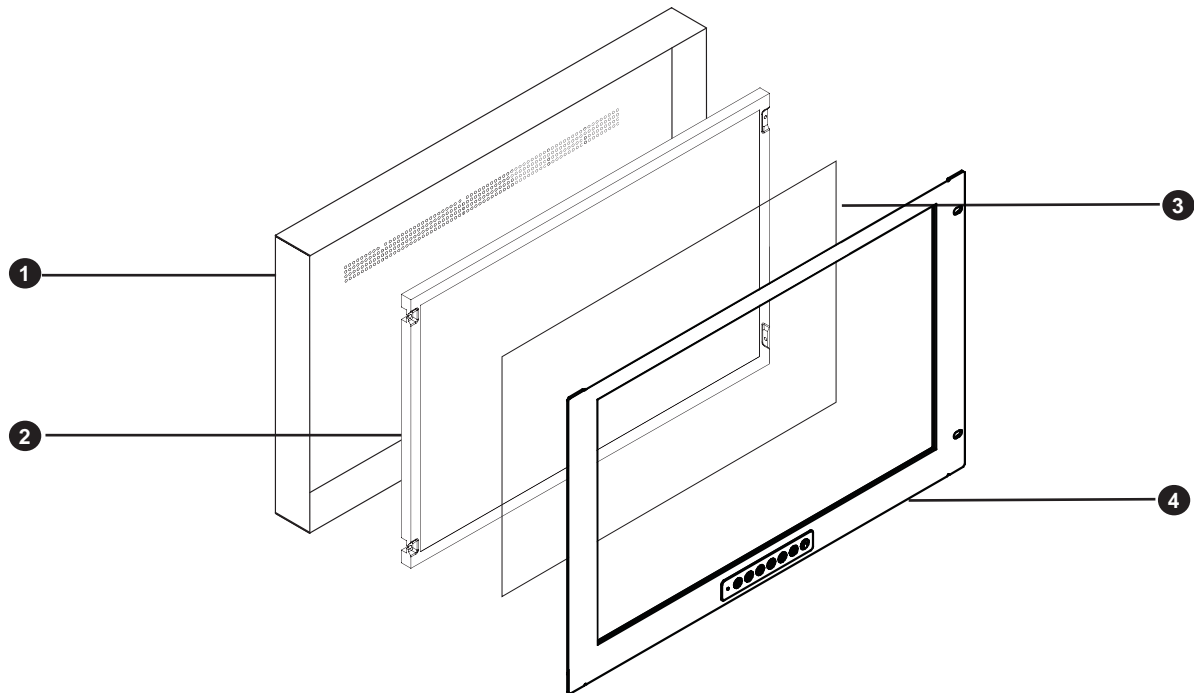
**e-Capacitive**

Model	-17TCB / -17TCS	-19TCB / -19TCS	-19WTCB / -19WTCS	-22WTCB / -22WTCS
Screen size	17"	19"	19" wide	22" wide
Interface	USB / serial			
Optical transmittance	93% ± 2%			
Surface hardness	>9H Surface hardness, withstand over 300 million touches			
Operating system	Windows 98 / 2000 / ME / XP / NT / CE, DOS, Linux			

**Remarks**

- USB touchscreen package includes 1 x 6ft USB cable, quick reference guideline and CD disc
- Serial touchscreen package includes 1 x 6ft serial cable, quick reference guideline and CD disc
- For detailed information, please refer to the attached CD disc
- As the touchscreen unit is not made of toughened glass, please handle it carefully
- Touchscreen in other brands are available on request

LCDR7U17-04 / 8U19-04 / 7U19-03 / 8U22-03



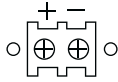
- ① Rear case
- ② LCD panel
- ③ 4mm protective glass (Front NEMA 4 / IP65 protection)
- ④ Aluminum front panel

### Remarks

- 4mm thickness of protective glass is not toughened one, please handle it carefully.

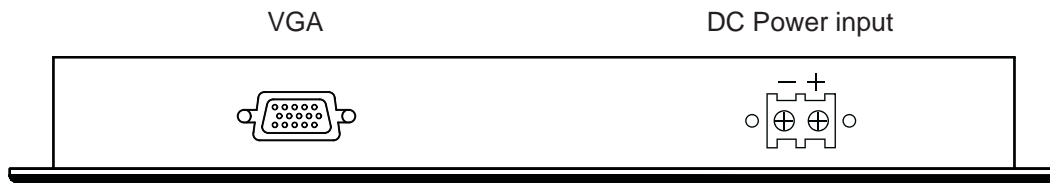


## 5.7 DC Power Options



## Chapter 5

LCDR7U17-04 / 8U19-04 / 7U19-03 / 8U22-03



Model	24V	48V
<b>Input rating</b>		
Input voltage:	24-Volt	48-Volt
Input range:	18 ~ 36V	36 ~ 75V
Input current		
- No load	50 mA	50 mA
- Full load	4880 mA	2442 mA
<b>Output rating</b>		
Output voltage:	12-Volt	12-Volt
Output current:	8.3A	8.3A
<b>Efficiency</b>	85%	86%

### Remarks

- Package does not include power cord and AC power adapter

## LCDR7U17-04 / 8U19-04

Item	Description	
LCD Grade	Grade A industrial TFT LCD panel	
Diagonal Size	17" TFT	19" TFT
Max. Resolution	1280 x 1024	1280 x 1024
Brightness (cd/m <sup>2</sup> )	800	800
Color Support	16.7 M	16.7 M
Contrast Ratio (typ.)	800:1	800:1
Viewing Angle (H/V)	170° x 160°	160° x 160°
Display Area (mm)	338 x 270	376 x 301
Tr Response Time (ms)	3.5	1.3
LCD Panel MTBF (hrs)	70,000	70,000
VGA Signal Input	Analog RGB, 0.7Vp-p	
Sync. Type	Separate H/V, Composite, SOG	
Resolution	720 x 400, 70 Hz	
	640 x 480, 60/ 70/ 72/ 75 Hz	
	800 x 600, 60/ 70/ 72/ 75 Hz	
	1024 x 768, 60/ 70/ 75 Hz	
	1152 x 864, 60/ 70/ 75 Hz	
	1280 x 720, 60/ 70/ 75 Hz	
	1280 x 1024, 60/ 70/ 72/ 75 Hz	
Plug & Play DDC	EDID 1.3	
Connector	DB-15 connector	
Power Input	Auto-sensing 100 to 240VAC, 50 / 60Hz	
Power Consumption	Max. 84 Watt, Standby 5 Watt	
Compatibility	Multi-platform - Mix PCs, SUNs, IBMs, HPs & DELLs.	

**Options**

Graphic Input	DVI-D, BNC, S-Video & quad display input
DC Power	DC power input with 12V, 24V, 48V selection
Touchscreen	Resistive & capacitive

**Environmental**

Operation	-20° to 50°C Degree
Storage	-5° to 60°C Degree
Relative Humidity	5~90%, non-condensing
Shock	10G acceleration (11ms duration)
Vibration	5~500Hz 1G RMS random vibration

LCDR7U19-03 / 8U22-03

Item	Description	
LCD Grade	Grade A industrial TFT LCD panel	
Diagonal Size	Wide 19" TFT	Wide 22" TFT
Max. Resolution	1440 x 900	1680 x 1050
Brightness (cd/m <sup>2</sup> )	800	600
Color Support	16.7 M	16.7 M
Contrast Ratio (typ.)	900:1	900:1
Viewing Angle (H/V)	160° x 160°	170° x 160°
Display Area (mm)	408 x 255	474 x 296
Tr Response Time (ms)	1.3	3.6
LCD Panel MTBF (hrs)	70,000	70,000
VGA Signal Input	Analog RGB, 0.7Vp-p	
Sync. Type	Separate H/V, Composite, SOG	
Resolution	720 x 400, 70 Hz	
	640 x 480, 60/ 70/ 72/ 75 Hz	
	800 x 600, 60/ 70/ 72/ 75 Hz	
	1024 x 768, 60/ 70/ 75 Hz	
	1152 x 864, 60/ 70/ 75 Hz	
	1280 x 720, 60/ 70/ 75 Hz	1280 x 720, 60/ 75 Hz
	1280 x 1024, 60/ 70/ 75 Hz	1280 x 1024, 60/ 75 Hz
	1440 x 900, 60 Hz	1680 x 1050, 60 Hz
Plug & Play DDC	EDID 1.3	
Connector	DB-15 connector	
Power Input	Auto-sensing 100 to 240VAC, 50 / 60Hz	
Power Consumption	Max. 84 Watt, Standby 5 Watt	
Compatibility	Multi-platform - Mix PCs, SUNs, IBMs, HPs & DELLs.	

**Options**

Graphic Input	DVI-D, BNC, S-Video & quad display input
DC Power	DC power input with 12V, 24V, 48V selection
Touchscreen	Resistive & capacitive

**Environmental**

Operation	-20° to 50°C Degree
Storage	-5° to 60°C Degree
Relative Humidity	5~90%, non-condensing
Shock	10G acceleration (11ms duration)
Vibration	5~500Hz 1G RMS random vibration

## 7.1 Troubleshooting

### 1. How do I adjust the resolution?

To change monitor resolution, click Start -> Control Panel -> Display. Select Setting tab to adjust the monitor resolution in Desktop Area. The available resolutions, "640 x 480", "800 x 600", "1024 x 768", "1152 x 864", "1280 x 1024", are determined by the display card in your computer.

### 2. Is interference signal appeared on LCD normal when shutting down the computer ?


In rare cases, interference may appear on the monitor. This may be caused by signal rate of VGA card and is considered normal. The image quality can be improved by adjusting the phase or pixel rate automatically or manually.

### 3. The membrane power light is not ON

Press the power On / Off on LCD membrane to check if the monitor is in the ON mode.

Check the power cord is properly connected to the LCD keyboard drawer and power outlet.

### 4. Screen image is not centered or sized properly

Press the  button for two seconds to automatically adjust the image.

Adjust the H-position and V-position settings via On-screen menu.

Model	Product Dimension (W x D x H)		Net Weight
LCDR7U17-04	480 x 57 mm 18.9 x 2.2"	7U	7 kg 15 lb
LCDR8U19-04	480 x 57 mm 18.9 x 2.2"	8U	8 kg 18 lb
LCDR7U19-03	480 x 57.5 18.9 x 2.3"	7U	8 kg 18 lbs
LCDR8U22-03	500.4 x 59.1 19.7 x 2.3"	8U	12 kg 26 lbs

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