CRYSTALMON™ Series

CM-RK17

TFT/LCD MONITOR
Installation and Operation Manual

TRADEMARK

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CHANGES

The material in this guide is for information only and is subject to change without notice. Network Technologies Inc reserves the right to make changes in the product design without reservation and without notification to its users.

Federal Communications Commission Radio Frequency Interference Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference and
(2) this device must accept any interference received, including interference that might cause undesired operation.

This device complies with Part 15 of the FCC rules. 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.

Warning: 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.

CE Compliance Statement

We, Network Technologies Inc, declare under our sole responsibility that the CM-RK17 is in conformity with European Standard EN55022.

TABLE OF CONTENTS

TABLE OF FIGURES

INTRODUCTION

Overview

The CM-RK17 CRYSTALMON TFT/LCD rack mount monitor provides the industrial or commercial user with superior picture quality, multiple video formats, and a sturdy industrial enclosure. It also offers the ability to integrate with existing NTI products.   It supports true plug-and-play functionality and does not require any additional video drivers or interface adapters.

Features

- An industrial 17" TFT/LCD flat panel monitor.
- Support of multiple video formats-VGA,SVGA, and XGA
- On Screen Display (OSD).
- Crisp and clear 1280x1024 video resolution.
- Rack Mount
    - Designed to fit in a standard 19" rack/cabinet.
    - Space-saving. Extra rack mounting space available behind the monitor.
    - 7RU (12.25") high.
- Power Supply Carriage
- Supports multiple languages

MATERIALS

Materials supplied with this kit:

- ✓ NTI CM-RK17 CRYSTALMON TFT/LCD Monitor
- ✓ 120 or 240VAC at 50 or 60Hz-12VDC/5A via AC Adapter
- ✓ Power Supply Holder
- ✓ 2- Cable clamps
- ✓ 4- #4-40 x 3/16" black Phillips-panhead screws
- ✓ 6 foot VGA cable-VEXT-6-MM (15HD male-male connectors)
- ✓ 6.5 foot DVI video cable-DVI-DS-2M-MM (DVI-D single link male-male connectors)
- ✓ CD with a pdf file of this owner's manual

Contact your nearest NTI distributor or NTI directly for all of your KVM needs at 800-742-8324 (800-RGB-TECH) in US & Canada or 330-562-7070 (Worldwide) or at our website at http://www.networktechinc.com and we will be happy to be of assistance.
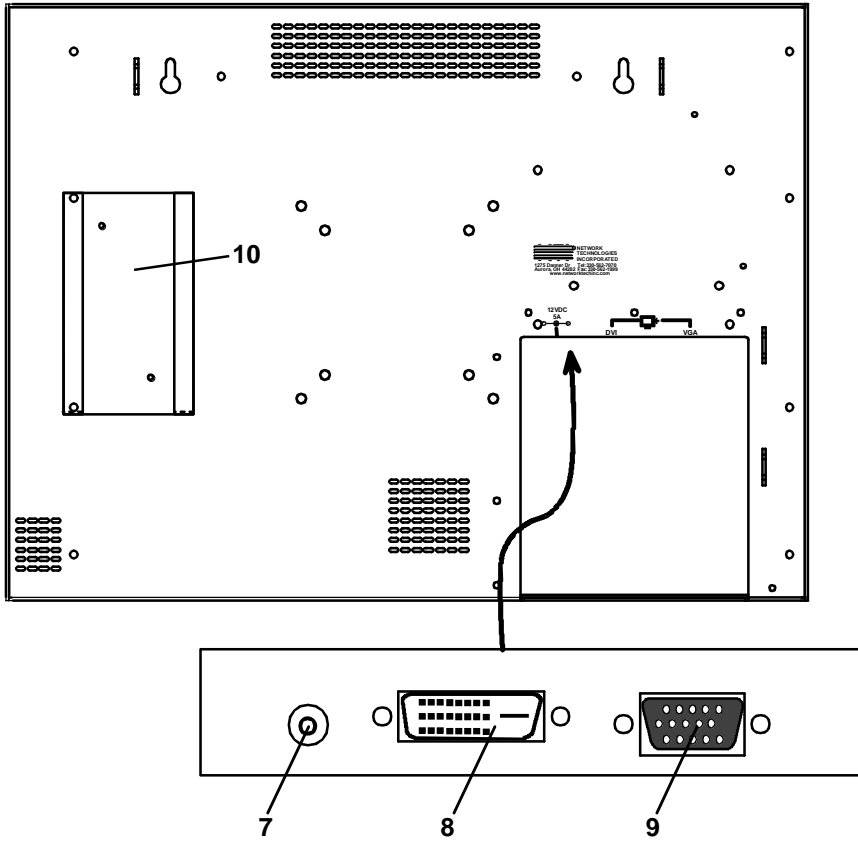
PRECAUTIONS

- Do not apply pressure to the display portion of the CRYSTALMON because the LCD panel and backlight can be easily damaged.
- Do not cover or block the vent holes in the case.
- Be sure to turn OFF the power supply before connecting and disconnecting video source cable(s).
- Be careful not to drop the CRYSTALMON. Handle it carefully.
- Do not store or install the CRYSTALMON where it can come in contact with moisture as moisture may damage the CRYSTALMON.
- Store the CRYSTALMON in an environment within a temperature range of 0ºC to 40ºC and where humidity will not exceed 90% relative humidity.   Excessive temperature and humidity may reduce the performance of the CRYSTALMON.
- Install the CRYSTALMON in a clean environment as dust and oil may cause electrical shorts or otherwise damage the CRYSTALMON.
- **<u>FOR INDOOR USE ONLY. DO NOT INSTALL OUTDOORS.</u>**
- The CRYSTALMON contains mercury (Hg).   Dispose of the CRYSTALMON in accordance with local ordinances.

Cleaning

- Use a soft cloth (such as microfiber) without chemicals for cleaning. The display surface of the CRYSTALMON is very soft and easily scratched.
- Do not apply excessive pressure to the display screen surface when cleaning. Excessive pressure may damage the LCD panel and backlight.

FEATURES AND FUNCTIONS

Main Controls
1. **Power Button**- to turn the LCD and backlight ON and OFF.
2. **Power LED**- to indicate the power status of the monitor   Green= Power On, Video Input OK
                                               Red= Suspend/Standby, or Input Out of Range
3. **Menu Button**- to open OSD menu (when OSD menu is OFF)
4. **Arrow Up Button**- to move the selection cursor in the OSD menu up in the list
5. **Arrow Down Button**- to move the selection cursor in the OSD menu down in the list
6. **Select Button**- to select a menu item (when OSD menu is ON) or press to auto adjust the video quality (when OSD menu is OFF)

REAR VIEW OF CRYSTALMON

7. **12VDC Power Jack**- for connection of AC adapter
8. **DVI Video Port**- DVI-D female- for connecting DVI type video source
9. **VGA Video Port**- 15HD female- for connecting VGA type video source
10. **Power Supply Holder** - for supporting the power supply (when desktop or rack-mounted)

INSTALLATION

Mounting

Mount the CRYSTALMON as intended for the application.

Rack Mount

Secure the CRYSTALMON to a rack using appropriate hardware through the holes provided (see Fig. 1).   Mount using at least two screws on each side.
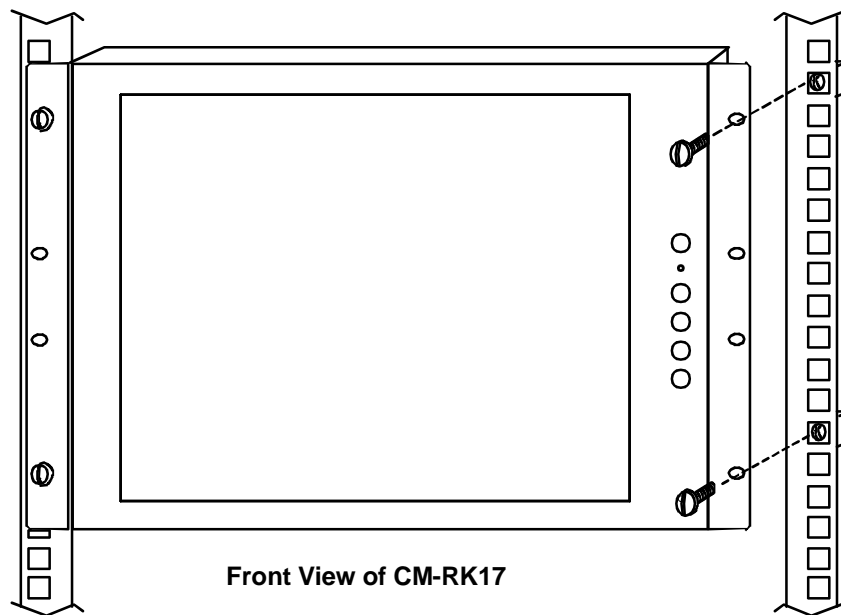
Front View of CM-RK17

Figure 1- Mount CM-RK17 to a rack

Wall Mount- with Arm

The CRYSTALMON also includes mounting holes for VESA mounting bracket if you choose to install it that way. Mount the selected Wall Mount LCD Arm or bracket assembly to the wall.   Attach the VESA mounting bracket from the selected Wall Mount LCD Arm to the four holes located in the back of the CRYSTALMON using the M4 x 10mm screws (4- not included).   A set of holes is provided for either the 100mm bracket, or the 75mm bracket, whichever is needed (see Fig. 2).   (The 75-100mm mounting adaptor that is sometimes provided will not be necessary.) Follow the instructions that came with the mounting arm or bracket to complete the assembly.
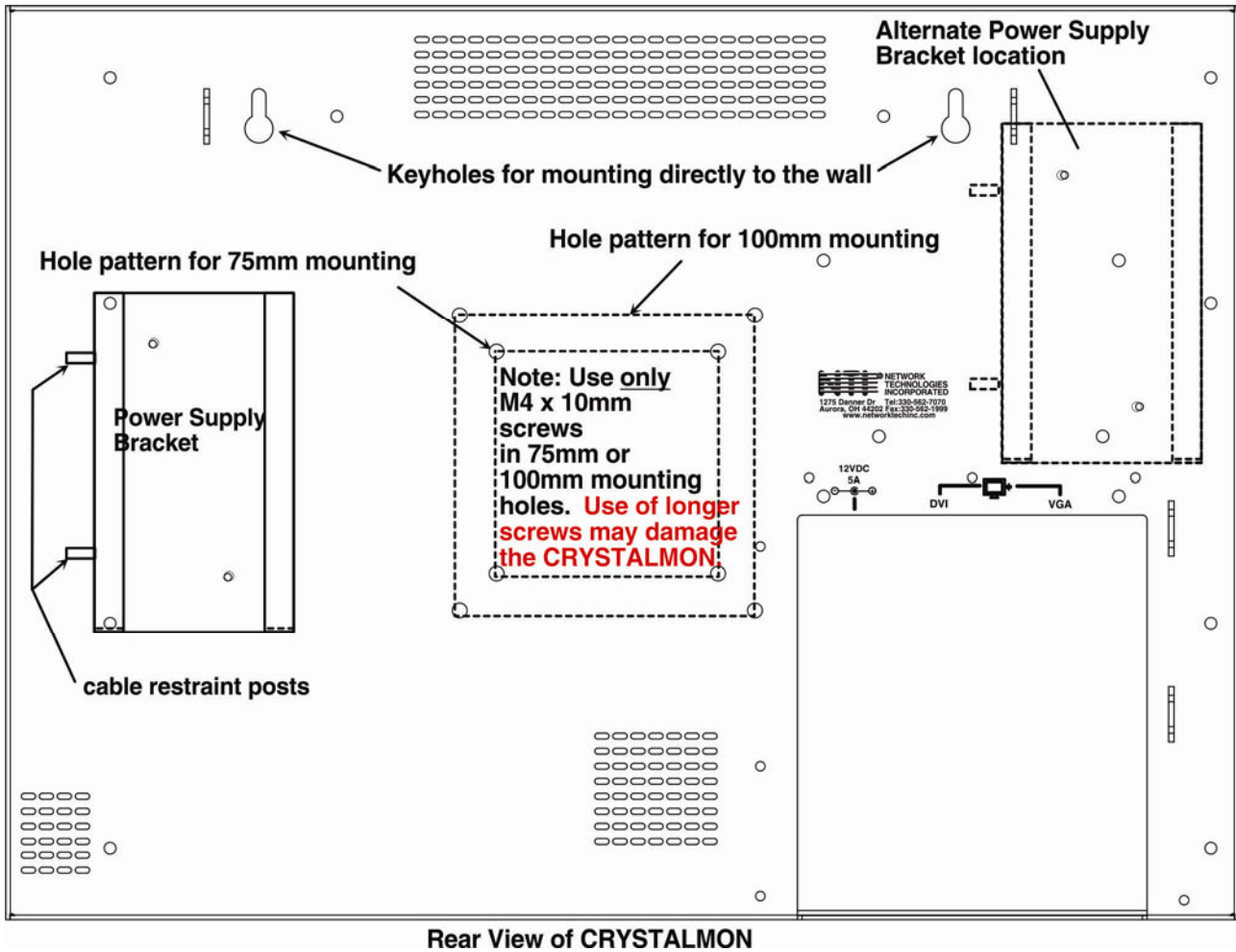
Figure 2- Rearview of CM-RK17

Wall Mount- Direct-To-Wall

If it is desired to mount the CRYSTALMON directly to the wall, two keyhole slots have been provided on the back of the CRYSTALMON for this purpose (see Fig. 2).

⚠ **CAUTION: Each fastener used for direct wall mounting must be rated for an object weighing at least 24 pounds.**

Power Supply Bracket

A power supply bracket has been supplied for the convenient mounting of the power supply for the CRYSTALMON. This bracket can be directly mounted to the CRYSTALMON. Two possible mounting locations are shown in Fig. 2 on Page 5.

Two #4-40 x 3/16" black screws have been supplied to secure the bracket to the back of the CRYSTALMON.   Two more #4-40 x 3/16" screws and cable clamps have been supplied to secure the cables to cable restraint posts on the power supply bracket (see Fig. 3.)
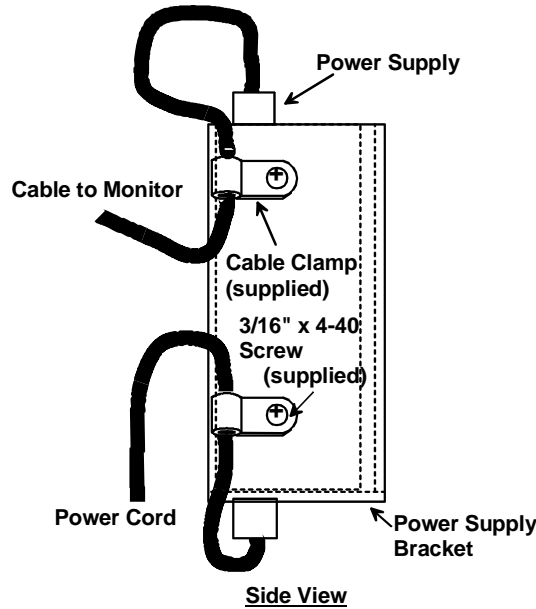
Figure 3- Secure cables to power supply bracket

Cable Connections

Connect the CRYSTALMON to a Video Source

The CRYSTALMON is provided with two different connectors for direct connection to video sources.   A video source of each type may be connected individually or both at the same time.   The sources can be either VGA or DVI. See Fig. 4 for illustration of each type of cable to be connected.
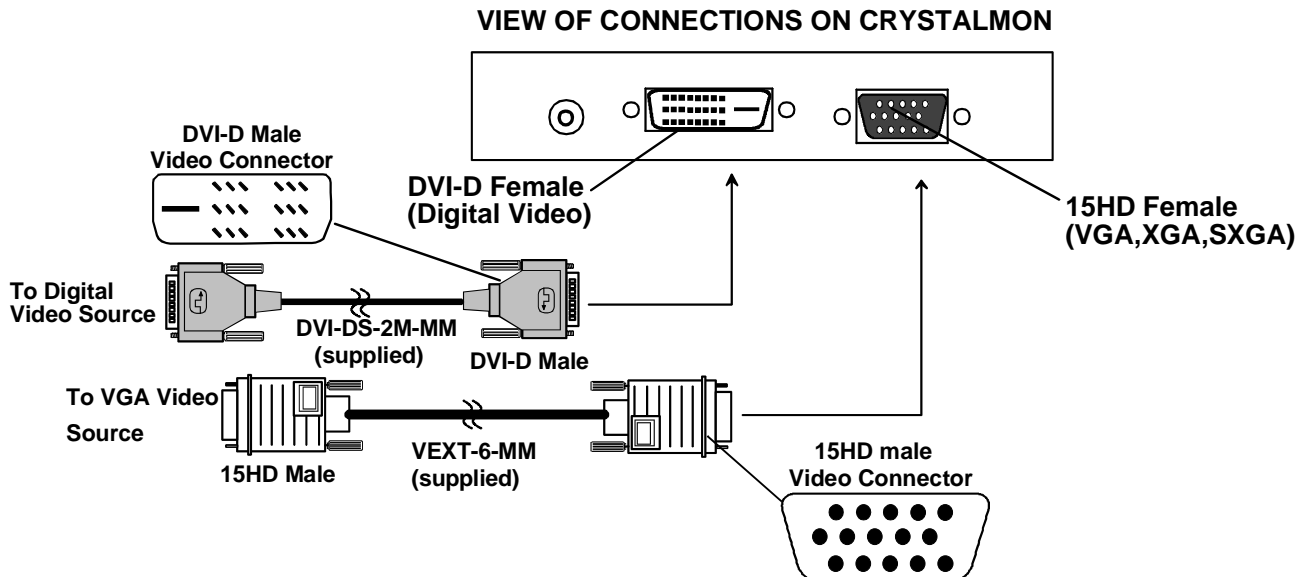
Figure 4- Connect VGA and/or DVI video sources

Power Up

1. Connect the AC adapter to the power jack on the CRYSTALMON. Make sure the power connector is fully inserted.
2. Plug the AC adapter into a power source and press the power button to power up the CRYSTALMON.
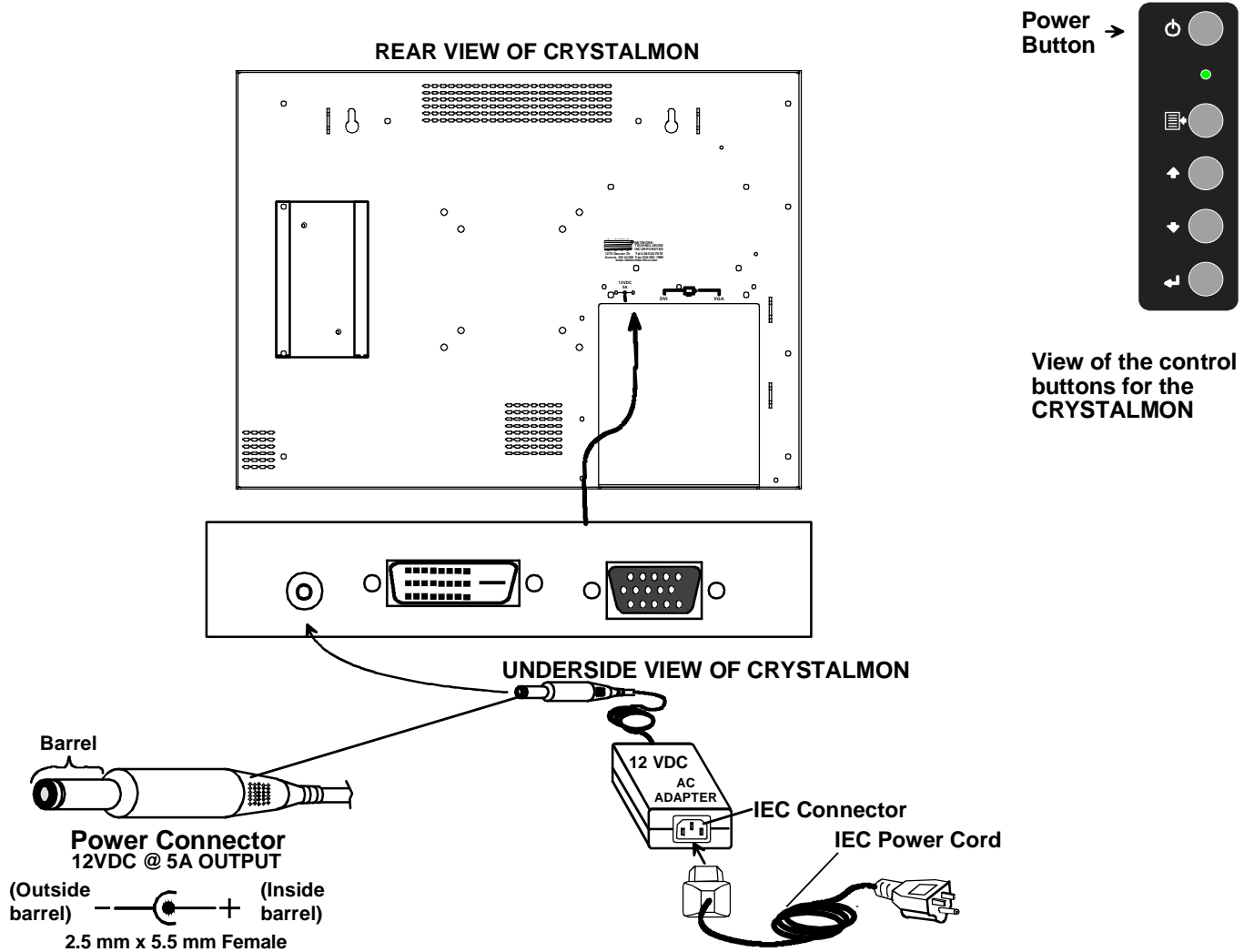3. If the video source(s) are not yet ON, apply power to them at this time.

Figure 5- Connect the AC adapter

DISPLAY FUNCTIONS

The CRYSTALMON 17" monitor supports resolutions up to SXGA (1280x1024) with a refresh rate at between 55 and 76Hz.   The quality of the image on the LCD monitor is adjustable using an On Screen Display (OSD) menu using the control buttons on the CRYSTALMON.

Standard Controls

- The CRYSTALMON has 5 standard control buttons and a power LED.   The 5 standard control buttons operate as follows:

- The **Power** button turns the CRYSTALMON LCD and backlight ON and OFF as desired.

- The **Power LED** located immediately below the Power button is a dual color LED.   It will illuminate with a green color when the CRYSTALMON is powered ON and working properly.   It will illuminate with a red color if the CRYSTALMON is powered ON but there is no input signal detected.   The LED will illuminate red only momentarily just before turning OFF.

- The **Menu** button is used to bring up the OSD menu where the various settings of the LCD display can be adjusted. Once the OSD screen is displayed, the Menu button is used to make selections within the menus.   See "OSD Control Menu" on page 10 for more on LCD display settings.

- The **Up and Down Arrow** buttons are used to navigate through the menus.   Move the cursor up or down as desired to highlight an item for selection.   Once an item is highlighted, pressing the Menu button will select it.
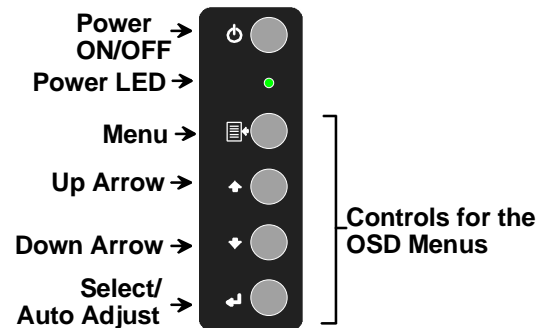
Power ON/OFF →

Power LED →

Menu →

Up Arrow →

Down Arrow →

Select/ Auto Adjust →

Controls for the OSD Menus

Figure 6- CRYSTALMON Controls

Note: When the OSD Menu is OFF, the Up Arrow is used to toggle between a "PC" (VGA) and "Digital" (DVI) input source.

- The **Select** button is used to make selections within the OSD menus when the OSD menu is ON. When the OSD menu is OFF, the Select button will act as an **Auto Adjust** button to keep the user from having to use the menus to adjust the quality of the image on the monitor.

Note: In order to display the OSD Menu, the CRYSTALMON must first be connected to a video source (see "Connect the CRYSTALMON to a Video Source" – page 7).

Note: If the message "NO SIGNAL" appears when the monitor is powered-ON, the monitor may be set for a "PC" (VGA) input source.   Press the Up Arrow button on the monitor to toggle the monitor input source setting to "Digital" (DVI).

OSD Control Menu

The OSD (On Screen Display) Menu enables the user to select the desired characteristics of the LCD display.   To activate the OSD Menu,   press the Menu button (above).   To turn the Menu back OFF, either select "EXIT" from the main menu or just wait 10-60 seconds and it will automatically be cleared from the screen.   Any changes made before exiting the menu will be saved.

OSD Main Menu

Note: In order to display the OSD Menu, the CRYSTALMON must first be connected to a video source (see "Connect the CRYSTALMON to a Video Source" – page 7).

Note: If menu does not appear when the Menu button is pressed, the monitor may be connected to a DVI input source but set for a "PC" (VGA) input source.   Press the Up Arrow button on the monitor to switch it to a "Digital" (DVI) input source.

Selection	Purpose	Range
Brightness/Contrast	Increase/decrease panel brightness/contrast level	1-100
Setup	• Control OSD Image position on screen • Set time OSD will stay on screen before auto shutoff • Select the language of the OSD menu • Select Input Source to display	• 0-4 • 10 to 60 seconds • English, Spanish, Deutsch, Italian, or French • Digital or PC
Exit	Exit from the OSD control menu	

Brightness/Contrast Menu

Selecting the Brightness/Contrast menu will bring up a screen in which the user can adjust the brightness and contrast levels of the LCD display.   Using the Up or Down arrows to navigate the menu, highlight either the BRIGHTNESS or CONTRAST sections and press the Select button to choose the option to adjust.   Then use the Up or Down Arrow to adjust the setting.

Select EXIT when finished to return to the Main Menu.
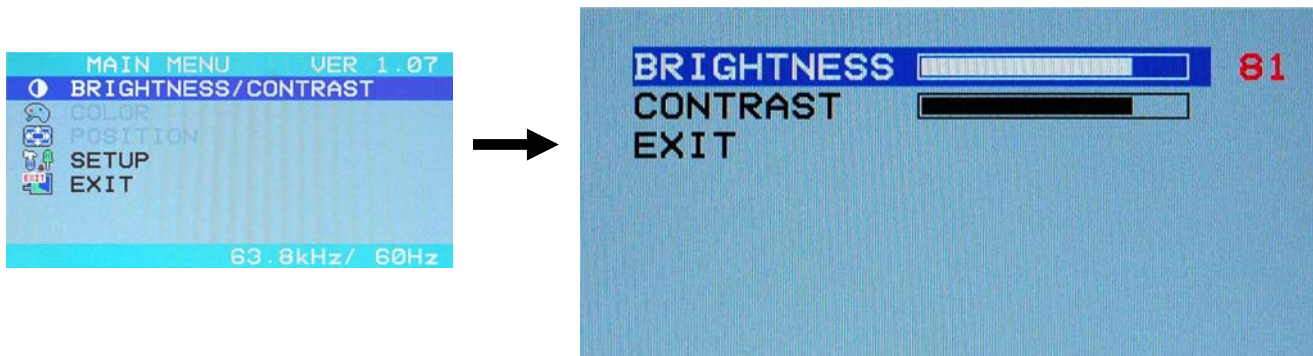
Setup Menu

Selecting the Setup menu will bring up a screen in which the user can adjust
- OSD POSITION-the position of the OSD menus on the LCD display (positions 0-4)
- OSD TIME-the length of time the user can be idle before the OSD menu automatically exits (adjustable from 10 to 60 seconds)
- LANGUAGE-the language that the OSD menus will be presented in
- INPUT SOURCE- the type of signal that is coming from the input source,   either Digital (DVI) or PC (VGA)

With the item highlighted,   (use the Up or Down arrow to move between them),   press the Select button to choose the option to adjust.   Then use the Up or Down Arrow to adjust the setting as needed.   Select EXIT when finished to return to the Main Menu.
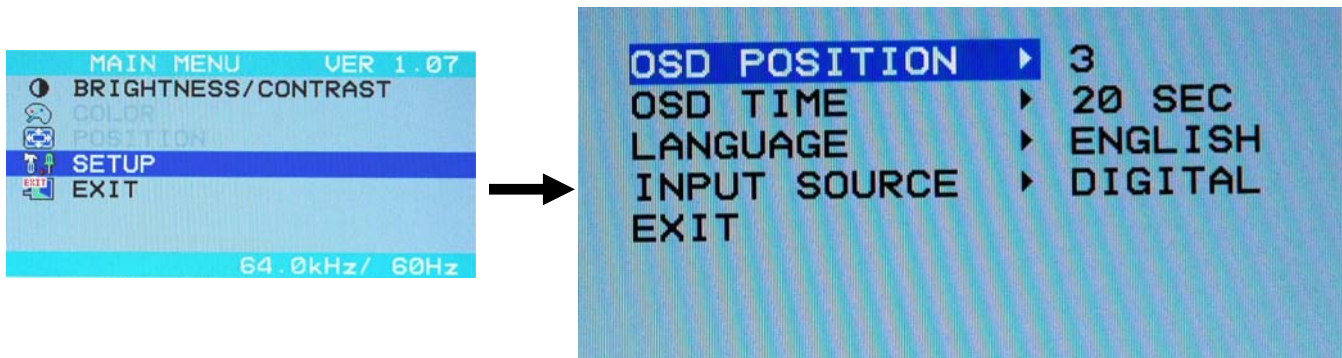
OSD Image can be moved to different points on the display
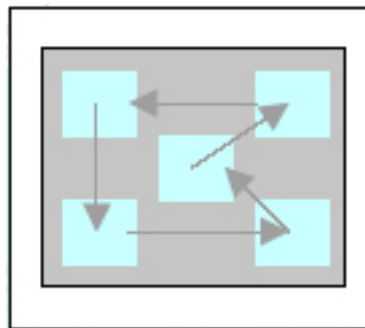
SPECIFICATIONS

LCD

Display area…………………………………..337.92mm (W)x270.336 (H) (17 inch diagonal)
Panel Type…………………………………TFT Active
Number of Pixels....................................1280 (H)x1024 (V)
Number of Colors ....16.2 Million (6 bits + FRC)
Pixel Pitch...0.264(H)x0.264(V)
Color Pixel Arrangement.........................RGB Vertical Stripe
Brightness..300cd/m^2 (Nits)
Response Time 5.5ms
Viewing Angle..Horizontal: 140º; Vertical: 130º (Typ.)
Optimum Viewing Direction.....................6 o'clock
Backlight Unit…………………………………CCFL, 4 Tables, Edge-Light (2 Top/2 Bottom)
Operating Lamp Life...............................40,000-50,000 hrs
Contrast Ratio…………………………….500:1

Display Controller

Connector…………………………………15HD, DVI-D, female
Video Format..VGA,SVGA, XGA, SXGA
Signal Input (from Video Source)……….Analog RGB (15HD), Digital TMDS (DVI)
Sync Range..H: 31 ~ 80KHz, V: 55 ~ 76Hz
OSD Control……………………………….Menu, Up, Down, Select, Power (5 keys)
Plug and Play ....VESA DDC 2B Ver1.3

OSD Control Board

OSD Control ....5 Keys
Power Key ....Power ON/OFF
Menu Key ....Activates Menu
Up, Down Keys.......................................Navigation Control
Select Key ....Select (when in Menu); Auto Adjust (not in menu)
LED..Indicates Operation Status
       ....Green = Power-ON, Video Input OK
       ....Red = Suspend / Stand-by, or Input Out of Range

Enclosure

Material..Electro-galvanized steel black powdercoated
Dimensions (WxDxH)……..………………19 x 3.7 x 12.25 (7RU)

General Specs

Power Supply ……………………………. .120 or 240VAC at 50 or 60 Hz-12VDC/5A via AC Adapter
Operating Temperature...........................0-40˚C
Weight……………………………………….12 lbs

Compliance Certifications

CE Mark..Complies with EN55022
FCC ....Part 15 (Class A Digital Device)

DIMENSIONS

19"

3.7"

12.25"

FRONT VIEW

SIDE VIEW
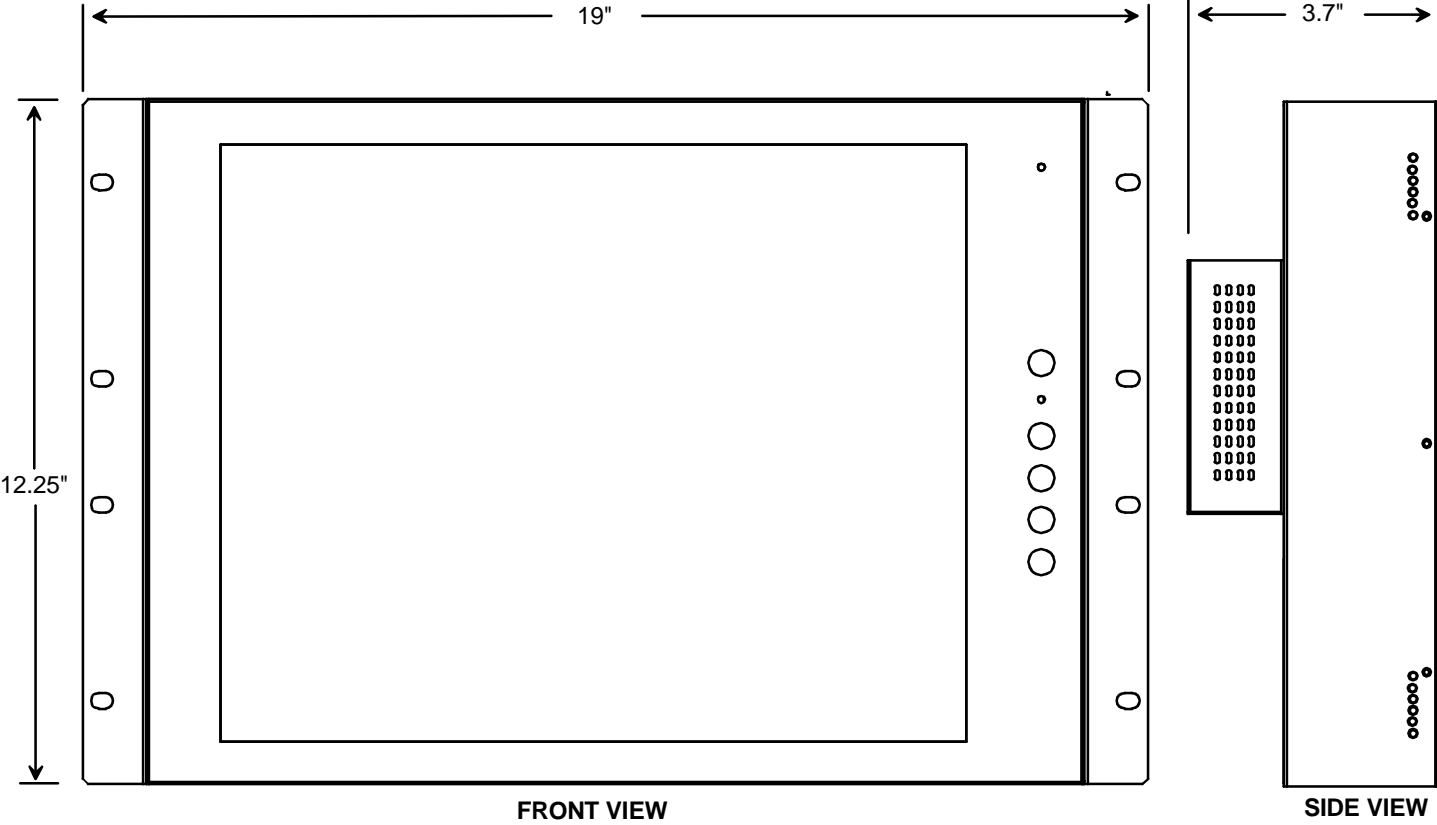
CM-RK17

TROUBLESHOOTING

Problem	Solution
Power LED is OFF	Check to see if AC adapter is fully inserted
Power LED is red	Check connections of video source cables Make sure video sources are switched ON
Power LED is green, but there's no picture	Check to see if Horizontal Sync is out of range. Also check brightness and contrast controls in OSD menu (see page 10)

INDEX

WARRANTY INFORMATION

The warranty period on this product (parts and labor) is two (2) years from the date of purchase. Please contact Network Technologies Inc at **(800) 742-8324** (800-RGB-TECH) or **(330) 562-7070** or visit our website at http://www.networktechinc.com for information regarding repairs and/or returns. A return authorization number is required for all repairs/returns.

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