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XTENDEX™ Series

ST-C5DVI-150

150 FOOT DVI VIDEO EXTENDER

Installation and Operation Manual

Software Version 1.2

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INTRODUCTION

The XTENDEX Series CAT5 DVI Video Extender (XTENDEX) is designed to enable the video output from one digital video source to be viewed by two users, one local and one remote. The remote monitor can be located as much as 150 feet away from a CPU via Category 5/5e/ or 6 (CAT5) twisted-pair cable. The local user monitor will be located near the video source CPU.

The XTENDEX Series Extender is extremely simple to install and has been thoroughly tested to insure reliable performance. Through the use of CAT5 cable it is possible to economically increase the flexibility of a computer system. Here are some of the features and ways this can benefit any workplace:

- Allows the placement of a DVI-enabled monitor in a location where only these parts are needed without having the video source there too, taking up valuable space
- Allows DVI video to be viewed by both a local and remote user (up to 150 feet away)
- Provides crisp and clear resolution up to 1920 x 1200 @ 100 feet (see page 7 for more details)
- Video quality, for varying lengths of cable, is automatically adjustable providing optimum image quality
- Transmits single link DVI-D signal over two CAT5 cables.
- Built-in surge protection.
- Only one power supply is necessary to power both the Local and Remote units.
- Supports local and remote DVI monitors.
- Compatible with DDWG DVI standard.
- HDCP Compliant
- Supports the DDC2B protocol.

MATERIALS

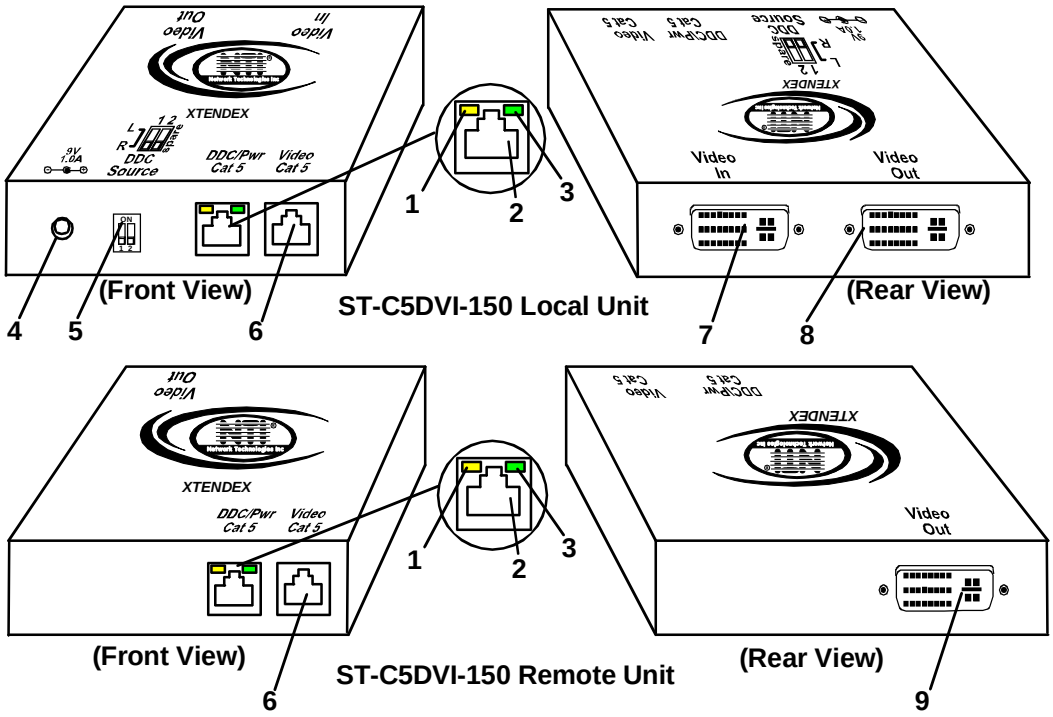
Materials Included with this kit:

- ✓ NTI XTENDEX Local Unit
- ✓ NTI XTENDEX Remote Unit
- ✓ DVI-D-MM-S-2M 2 meter male-male DVI video cable
- ✓ 120VAC or 240VAC at 50 or 60Hz-5VDC/2.0A AC Adapter
- ✓ This owner's manual

Additional materials may be required but are <u>not supplied</u>:

- ➢ CAT5 unshielded twisted-pair cables terminated with RJ45 connectors wired straight thru- pin 1 to pin 1, etc. (see pg. 8 for proper EIA/TIA 568 B wiring method)
- ➢ DVI male-male cables to connect the monitor(s) to the Remote and Local units (Order NTI # DVI-IS-xx-MM where x=3, 6, or 10 foot cable). Both DVI-I and DVI-D type cables can be used for this connection.

Contact your nearest NTI distributor or NTI directly for all of your KVM needs at 800-RGB-TECH (800-742-8324) 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.



FEATURES AND FUNCTIONS

1. Yellow LED- illuminates when video input is available and starts blinking when the input is synchronized
2. DDC/Pwr - RJ45 connector- for connecting the CAT5 cable between the Local and Remote units to carry DDC data from the remote video display and to carry power to the Remote unit.
3. Green LED- power indicator- illuminates when power has been supplied to the unit
4. 5VDC- 2.0A- connection jack for the AC adapter
5. Dipswitches- for configuring the DDC source to be either the local or remote video display device
6. Video- RJ45 connector- for connecting the CAT5 cable to carry the video signal between the Local and Remote units
7. Video In- DVI female video connector- for connecting a video cable between the Local Unit and the video source
8. Video Out- DVI female video connector- for connecting the local user's DVI display device
9. Video Out- DVI female video connector- for connecting the remote user's DVI display device

LIMITATIONS

- Hot-plugging of monitors is supported provided monitors were originally connected at power-up.
- CAT5 shielded cables are not recommended for use with this extender.

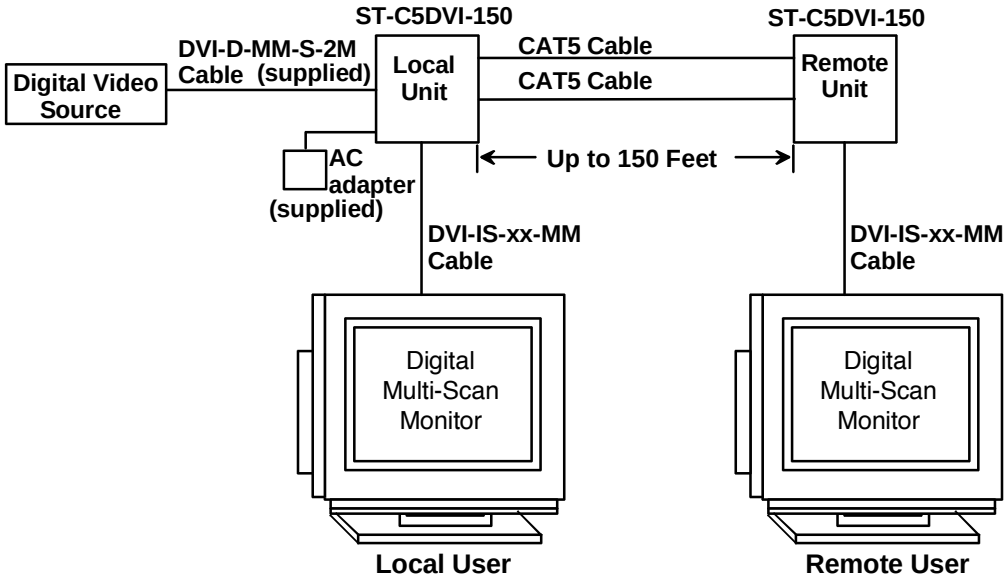
PREPARATION FOR INSTALLATION

- Locations should be chosen for the monitors that also have space to connect the Remote and Local units within the distance provided by the cables. If extension cables are needed, contact NTI for the cables required.

- The CAT5 cables must be run to the locations where the Remote and Local units will be connected. Be careful to route the cables away from any sources of magnetic fields or electrical interference that might reduce the quality of the video signal (i.e. AC motors, welding equipment, fluorescent lighting, etc.).

- All cables should be installed in such a way that they do not cause stress on their connections to the equipment. Extended lengths of cable hanging from a connection may interfere with the quality of that connection. Secure cables as needed to minimize this.

- Properly shut down and disconnect the power from the video source and monitors to be separated. If other equipment is involved whose connections are being interrupted, be sure to refer to the instruction manuals for that equipment for proper disconnection and re-connection procedures before proceeding.



TYPICAL APPLICATION

INSTALLATION

Installing The Remote Unit

1. Position the Remote Unit such that the CAT5 cable and the monitor cables can each reach the Remote Unit without putting strain on the cables.

2. Connect the monitor cable to the female DVI video connector labeled "Video Out" on the Remote Unit.

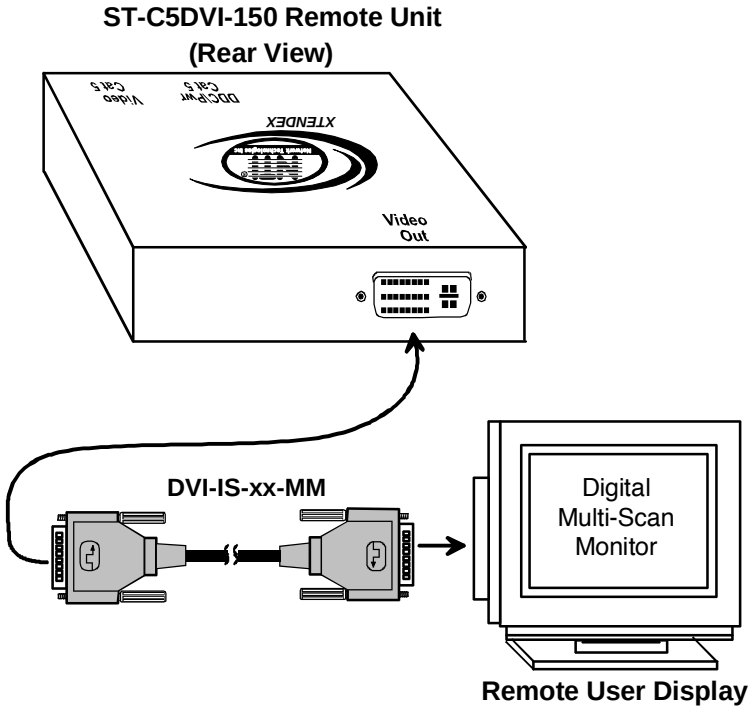


Figure 1- Connect the extended video display to the Remote Unit

Connect the CAT5 cables

Make sure the CAT5 cables (two required) have been installed in accordance with the "Preparation for Installation" instructions on page 3. Connect the CAT5 cables to the "Cat5" ports on the Remote Unit. (See Fig. 2.) When properly inserted the CAT5 cable ends should snap into place.

Note: The two cables must be connected to like ports at <u>each</u> end of the cables. I.e. It is important that one cable is connected between the "VIDEO" port at the Remote Unit <u>and</u> the same port at the Local Unit. The other CAT5 cable must connected between the "DDC/PWR" ports of the Remote and Local Units. Powering the units with the cables crossed may damage them.

WARNING: Never connect the XTENDEX to an Ethernet card, Ethernet router, hub or switch or other Ethernet RJ45 connector of an Ethernet device. Damage to devices connected to the Ethernet may result.

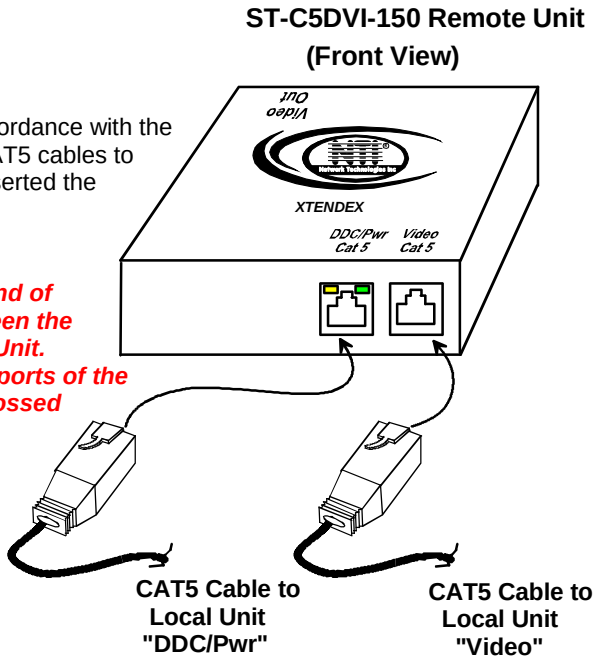


Figure 2- Connect the CAT5 cable to the Remote Unit

Installing The Local Unit

1. Make connections for a local user (optional). Connect the cable from the local user's DVI monitor to the female DVI "Video Out" port on the Local Unit.

2. Connect the DVI-D-MM-S-2M cable between the video source and the "Video In" connector on the Local Unit.

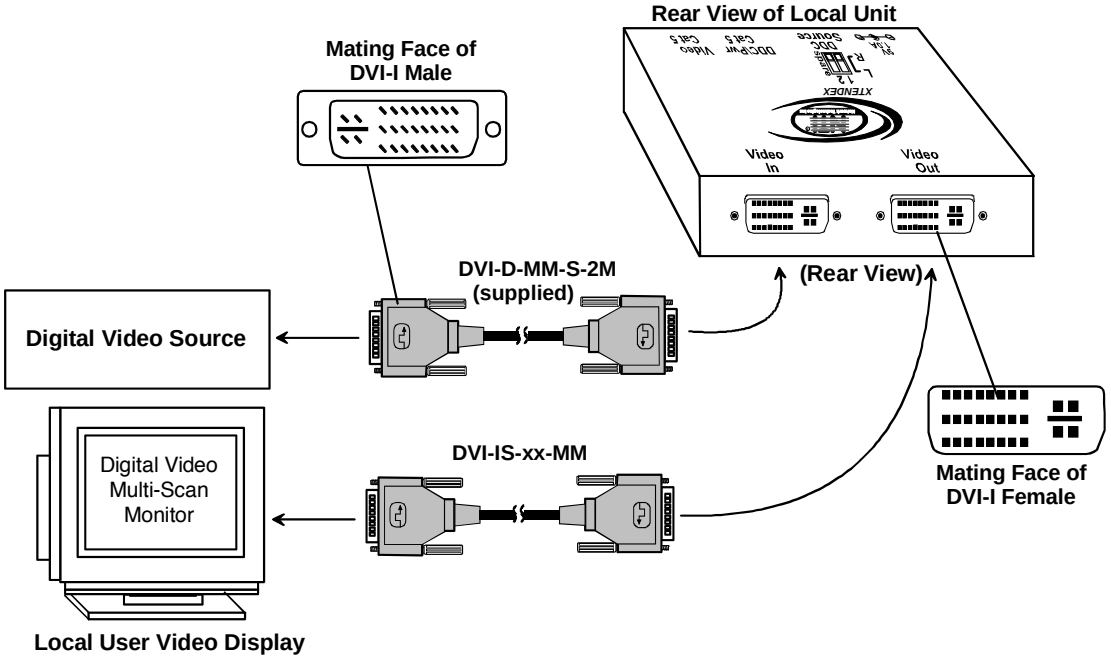


Figure 3- Connect the XTENDEX Local Unit to the source and local video display

Connect the CAT5 Cables

Connect the CAT5 cables to the "Cat5" ports on the Local Unit. (See Fig. 4.) When properly inserted the cable ends should snap into place. Be sure to connect the cable from the Remote Unit "Video Cat5" port to the "Video Cat5" port on the Local Unit and to connect the cable from the Remote Unit "DDC/PWR" port to the "DDC/PWR" port on the Local Unit. DO NOT get them mixed up or damage to the unit may occur.

Note: The two cables must be connected to like ports at <u>each</u> end of the cables. Powering the unit with the cables crossed may damage it.

WARNING: Never connect the XTENDEX to an Ethernet card, Ethernet router, hub or switch or other Ethernet RJ45 connector of an Ethernet device. Damage to devices connected to the Ethernet may result.

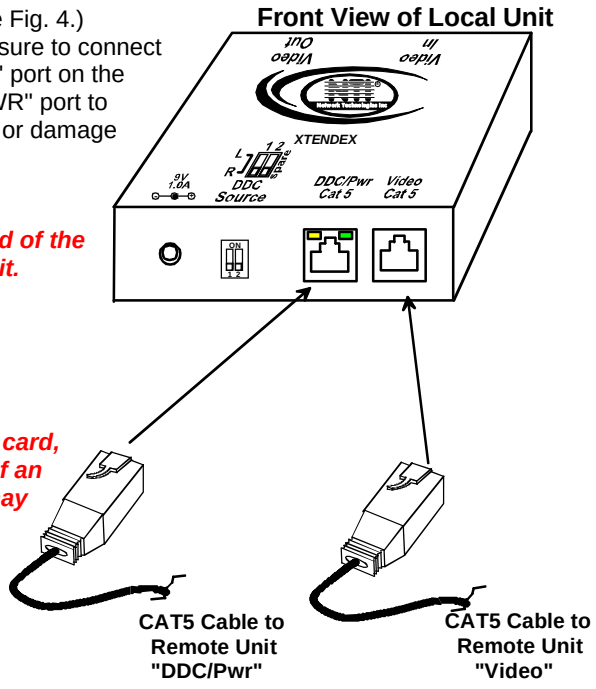


Figure 4- Connect CAT5 cable to Local Unit

Plug-in and Boot Up

1. Plug the power cord from the monitor into the power outlet.

2. Connect the AC adapter power connector to the 5VDC port on the Local Unit. Plug the AC adapter into a power outlet. The green Power LED on the RJ45 connector of both the Remote and Local Units should illuminate, indicating that a proper power connection has been made to them. (See Fig. 5.)

3. Turn ON the CPU and Monitors. They should each react as if they were directly connected to each other.

Note: The yellow LED on each RJ45 connector will illuminate when input video is available and starts blinking when the video is synchronized. (See Fig. 5)

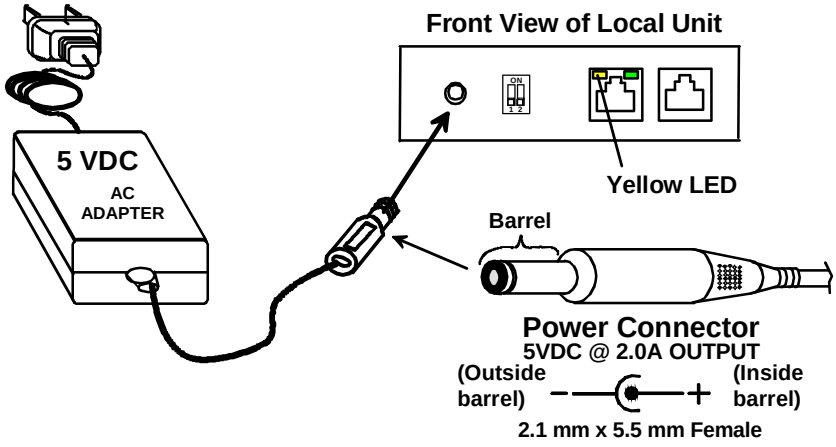


Figure 5- Connect the AC adapter to the Local Unit

DDC DATA CONFIGURATION

By default, the XTENDEX is configured to transfer DDC data to the CPU (when the video source is a CPU) from the monitor connected to the Remote Unit through the CAT5e cable attached to the "DDC/Pwr" port. In order for the CPU to receive this data, the monitor connected to the Remote Unit must be powered ON before the CPU is powered ON.

Alternatively, the XTENDEX can be configured to transfer the DDC data from the monitor attached to the Local Unit. Follow these steps to configure the XTENDEX:

1. Power OFF the CPU and monitors
2. Move the #1 slide switch on the front of the Local Unit up to "ON" (see Fig. 6).
3. Power ON the monitor connected to the Local Unit
4. Power ON the CPU.

FYI: The position of the #2 slide switch does not matter. It is not used.

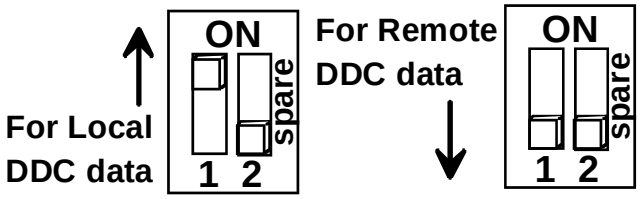


Figure 6- Configure the XTENDEX for Local Monitor DDC Data Transfer

TECHNICAL SPECIFICATIONS

Video	
Video Compatibility	PC Resolution up to 1920x1200 @60Hz / HDTV resolution up to 1080P
Video Connectors	DVI-I Female
Input / Output Impedance	100 ohm differential
Digital Video data rate	1.65 Gbits
DVI Single Link Range	1920 x 1200
Video Maximum I/O Levels	1.2Vp-p
General	
Interconnect Cable	CAT5/5e/6 Solid UTP EIA/TIA 568 B wiring w/ male RJ45 connectors
Operating Temperature	0-40º C
Local Unit Power	120V or 240V at 50 or 60Hz-5VDC/2.0A via AC Adapter
Remote Unit Power	powered by Local Unit through CAT5 cable
Local Current Consumption	700mA (max.)
Remote Current Consumption	700mA (max.)
Enclosure type	Electro-galvanized steel black powder coated
Size (In.) WxDxH	3.5x3.1x1.1

Distances and Resolutions for CAT5,CAT5e and CAT6 Cables
Unshielded Twisted Pair (UTP) Resolutions

STP CABLE	DISTANCE (feet)	RESOLUTION
CAT5/5e	150	1024x768 at 60Hz
CAT5/5e	125	1280x1024 at 60Hz
CAT5/5e	100	1920x1200 at 60Hz
CAT6	150	1280x1024 at 60Hz
CAT6	125	1600x1200 at 60Hz
CAT6	100	1920x1200 at 60Hz

INTERCONNECTION CABLE WIRING METHOD

The CAT5 connection cables between the remote and local are terminated with RJ45 connectors and must be wired according to the EIA/TIA 568 B industry standard. Wiring is as per the table and drawing below.

Pin	Wire Color	Pair	Function
1	White/Orange	2	T
2	Orange	2	R
3	White/Green	3	T
4	Blue	1	R
5	White/Blue	1	T
6	Green	3	R
7	White/Brown	4	T
8	Brown	4	R

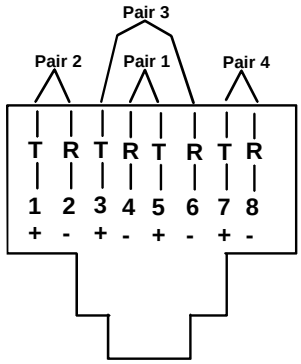


Figure 7- View looking into RJ45 female

TROUBLESHOOTING

Each and every piece of every product produced by Network Technologies Inc is 100% tested to exacting specifications. We make every effort to insure trouble-free installation and operation of our products. If problems are experienced while installing this product, please look over the troubleshooting chart below to see if perhaps we can answer any questions that arise. If the answer is not found in the chart, please check the FAQs (Frequently Asked Questions) at our website at http://www.networktechinc.com or contact us directly for help at 1-800-742-8324 (800-RGB-TECH) in US & Canada or 1-330-562-7070 worldwide. We will be happy to assist in any way we can.

Problem	Cause	Solution
Remote or Local Unit green power LED does not illuminate	• Power supply is not connected or plugged-in.	• Make sure outlet is live and AC adapter is plugged-in. • Make sure 5VDC jack is fully connected
No Video on monitor	• One or more video cables is loose or disconnected. • No power to Remote or Local Units. • Video Cable was not attached when CPU was booted. • CAT5 cable is not connected. • CAT5 cable is too long	• Check all video cable connections • Make sure green LEDs are illuminated for local and remote. If not, see solutions for first problem above. • With all the cables properly connected, reboot the CPU. Make sure yellow LEDs are blinking. • Check cable connections. Make sure they are snapped-in properly and completely and reboot. • Switch to shorter cable or lower resolution (see table on page 7)
Video Picture is noisy, lines, on pixels out of position on wiring color	• All Video Cables are not firmly seated. • CAT5 cable is too long. • The CAT5 cable is not properly connected.	• Check all connections. Make sure all cables are fully seated. • Switch to shorter cable or lower resolution (see table on page 7) • Check cable connections. Make sure they are snapped-in properly and completely.
Monitor sometimes loses sync, causing it to go blank for a second or two	• Electrical power system is very noisy, particularly the ground. • The CAT5 cable is not properly connected. • CAT5 cable is too long	• Make sure the interconnection cable is not near any power lines. • Check cable connections. Make sure they are snapped-in properly and completely. • Switch to shorter cable or lower resolution (see table on page 7)

WARRANTY INFORMATION

The warranty period on this product (parts and labor) is one (1) year 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.