



NTI® NETWORK
TECHNOLOGIES
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XTENDEX® Series

ST-C6USB4K18GB-HDBT

4K 18Gbps HDMI USB KVM Extender over HDBase-T

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.

Note: CATx connection cable used between NTI XTENDEX Series Local and Remote or any XTENDEX Series products should not be run underground, outdoors or between buildings.

WARNING: Outdoor or underground runs of CATx cable could be dangerous and will void the warranty.

WARNING: The CATx connection cable used between NTI XTENDEX Series Local and Remote or any XTENDEX Series products must be wired straight through (pin 1 to pin 1, pin 2 to pin 2, etc.) The use of a Crossover Cable will damage the extender and void your warranty.

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INTRODUCTION

The XTENDEX® 4K 18Gbps HDMI USB KVM Extender over HDBase-T with RS232 transmits uncompressed digital Ultra-HD 4Kx2K 60Hz 4:4:4 HDMI signal, USB, IR, RS232, and power up to 328 feet over a single solid or stranded CAT6/6a/7 cable (not CAT5/5e) using HDBase-T technology. Each extender consists of a local unit that connects to a computer and provides local keyboard, monitor and mouse connections; and a remote unit that connects to a keyboard, monitor and mouse.

Features

- Transmits an uncompressed high speed HDMI signal over one CAT6/6a/7 cable.
- Supports resolutions up to Ultra-HD 4Kx2K (3840x2160 and 4096x2160 @24/30/60Hz YUV 4:4:4).
 - Extend a 4Kx2K signal up to 328 feet (100 meters) with solid or stranded CAT6/6a/7 cable.
 - Extend a 1080p signal up to 492 feet (150 meters) with solid or stranded CAT6/6a/7 cable.
- HDMI features supported:
 - HDMI 2.0
 - Up to 36-bit Deep Color
 - RGB, YUV 4:4:4, YCbCr 4:4:4, YCbCr 4:2:2
 - Dolby TrueHD, DTS-HD Master Audio, Dolby Digital, Dolby Digital+, Dolby Atmos, Dolby Digital 2/5.1CH, LPCM 2/5.1/7.1CH, LPCM 2CH, LPCM 5.1, DTS 5.1, DTS:X, and DTS 2/5.1CH.
 - Bandwidth up to 600 MHz (18 Gbps)
 - Support for CEC (consumer electronic control) compatible devices.
 - HDR10
- HDCP 2.2 and 1.4 compliant.
- Local unit provides local KVM access.
- Bi-directional Infrared Remote (IR) control of HDMI source or display. IR transport channel can be forward or backward per the installation.
- Supports full-duplex RS232 up to 115200 baud.
- USB ports for keyboard and mouse.
 - Keyboard and mouse are hot-pluggable.
- Only one power supply is necessary to power both the local and remote units.
- Use the DIP switch on the receiver to extract the digital HDMI audio signal and convert it to 2-channel analog stereo audio or multi-channel SPDIF digital audio.

MATERIALS

Materials supplied with this kit:

- Local and Remote Unit
- 100-240VAC, 50 or 60Hz-24VDC/1A AC Adapter w/ Adapters for US, EU, UK and AU
- USB Type A Male to USB Type B Male cable
- USB Type A male to USB Type Micro B male cable
- 2- Terminal Blocks
- IR Transmitter
- IR Receiver
- Mounting Brackets w/ screws
- URL Slip with path to this manual

Materials Not supplied but **REQUIRED**:

- CAT6/6a solid/stranded UTP; CAT7 solid/stranded STP (**referred to as "CATx" throughout this manual**) twisted-pair cables terminated with RJ45 connectors wired straight thru- pin 1 to pin 1, etc. (see page 8 for proper EIA/TIA 568 B wiring method). **CAT5/5e cable is NOT recommended for use with this product.**

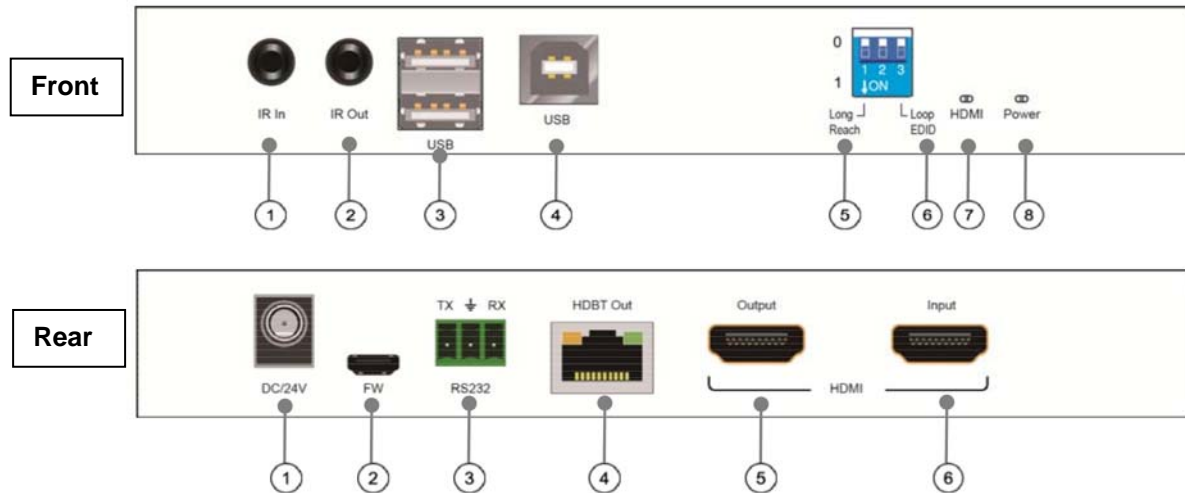
WARNING: The CATx connection cable used between NTI XTENDEX Series Local and Remote or any XTENDEX Series products must be wired straight through (pin 1 to pin 1, pin 2 to pin 2, etc.) The use of a CROSSOVER CABLE will damage the extender and void your warranty.

- HDMI male-male cable to connect a HDMI source or display (Order NTI # HD-xx-MM where xx=3, 6, 9,14,20,30, 50 and 100 foot cable).
- DVI to HDMI male-male cable to connect a DVI source or display (Order DVI-HD-xM-MM where xx=1,2,3 or 5 meters) (**Note:** Does not support 4Kx2K resolutions).

Always use the shortest possible cable for best performance.

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.

Local Unit (Front and Rear)

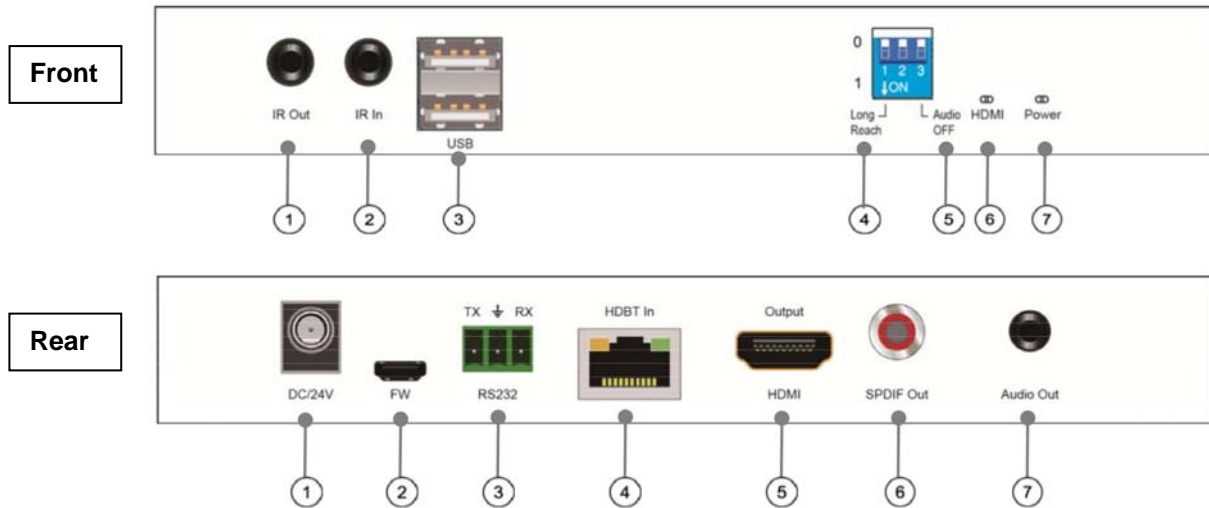


CONNECTORS AND LEDS

#	LABEL	CONNECTOR	DESCRIPTION
FRONT			
1	IR In	3.5mm Stereo Jack	For connecting IR Extender (Receiver) Place IR Receiver where IR Remote Control will have line-of-sight
2	IR Out	3.5mm Stereo Jack	For connecting the IR Emitter Place the IR blaster in direct line-of-sight of the equipment to be controlled.
3	USB	USB Type A female x 2	For connecting supported USB devices (keyboard, mouse, CAC Card Reader, Whiteboard, Touchscreen Monitor)
4	USB	USB Type B female	For connecting USB device cable from CPU
5	Long Reach	DIP Switch	Switch to "0" to transmit video up to 4K@60Hz up to 100m Switch to "1" to transmit video up to 1080P@60Hz up to 150m. (Before powering ON, TX and RX must be selected to 0 or 1 at the same time. Do not switch while powered ON.)
6	Loop EDID	DIP Switch	Switch to "0" to copy EDID from display connected to Remote Unit Switch to "1" to copy EDID from display connected to Local Unit Do not switch while powered ON.
7	HDMI	LED	HDMI Signal indicator
6	Power	LED	Power indicator
REAR			
1	DC24V	Power Jack	Connection jack for the AC adapter (only the Local or the Remote Unit needs to be powered, <u>not both</u>)
2	FW	USB Type Micro B	For connecting USB cable for Firmware Update
3	RS232	Terminal Block	For connecting RS232 cable from PC
4	HDBT Out	RJ45 female	For connecting the CAT6/6a/7 cable between the Local and Remote units
5	HDMI Output	HDMI female video	For connecting the local display device
6	HDMI Input	HDMI female video	For connecting HDMI cable from video/audio source

WARNING: If the CATx IN or CATx OUT ports of a powered Remote or Local extender are connected to the RS232 port of another Remote or Local unit, the CATx port will be damaged and render the XTENDEX unusable and void the warranty.

Remote Unit (Front and Rear)



CONNECTORS AND LEDS

#	LABEL	CONNECTOR	DESCRIPTION
FRONT			
1	IR Out	3.5mm Stereo Jack	For connecting the IR Emitter Place the IR blaster in direct line-of-sight of the equipment to be controlled, up to 1.5 meters from the equipment.
2	IR In	3.5mm Stereo Jack	For connecting IR Extender (Receiver) Place IR Receiver where IR Remote Control will have line-of-sight up to 7 meters away.
3	USB	USB Type A female x 2	For connecting support USB devices (keyboard, mouse, CAC Card Reader, Whiteboard, Touchscreen Monitor)
4	Long Reach	DIP Switch	Switch to "0" to receive video up to 4K@60Hz up to 100m Switch to "1" to receive video up to 1080P@60Hz up to 150m. (Before powering ON, TX and RX must be selected to 0 or 1 at the same time. Do not switch while powered ON.)
5	Audio Off	DIP Switch	Switch to "0" enable SPDIF/Audio Out port Switch to "1" disable analog audio and SPDIF Do not switch while powered ON
6	HDMI	LED	HDMI Signal indicator
7	Power	LED	Power indicator
REAR			
1	DC24V	Power Jack	Connection jack for the AC adapter (only the Local or the Remote Unit needs to be powered, <u>not both</u>)
2	FW	USB Type Micro B	For connecting USB cable for Firmware Update
3	RS232	Terminal Block	For connecting serial cable from controlled device
4	HDBT In	RJ45 female	For connecting the CAT6/6a/7 cable between the Local and Remote units
5	HDMI	HDMI female video connector	For connecting the remote display
6	SPDIF Out	RCA Jack	For connecting SPDIF audio cable
7	Audio Out	3.5mm Stereo Jack	For connecting stereo audio self-powered speakers

WARNING: If the CATx IN or CATx OUT ports of a powered Remote or Local extender are connected to the RS232 port of another Remote or Local unit, the CATx port will be damaged and render the XTENDEX unusable and void the warranty.

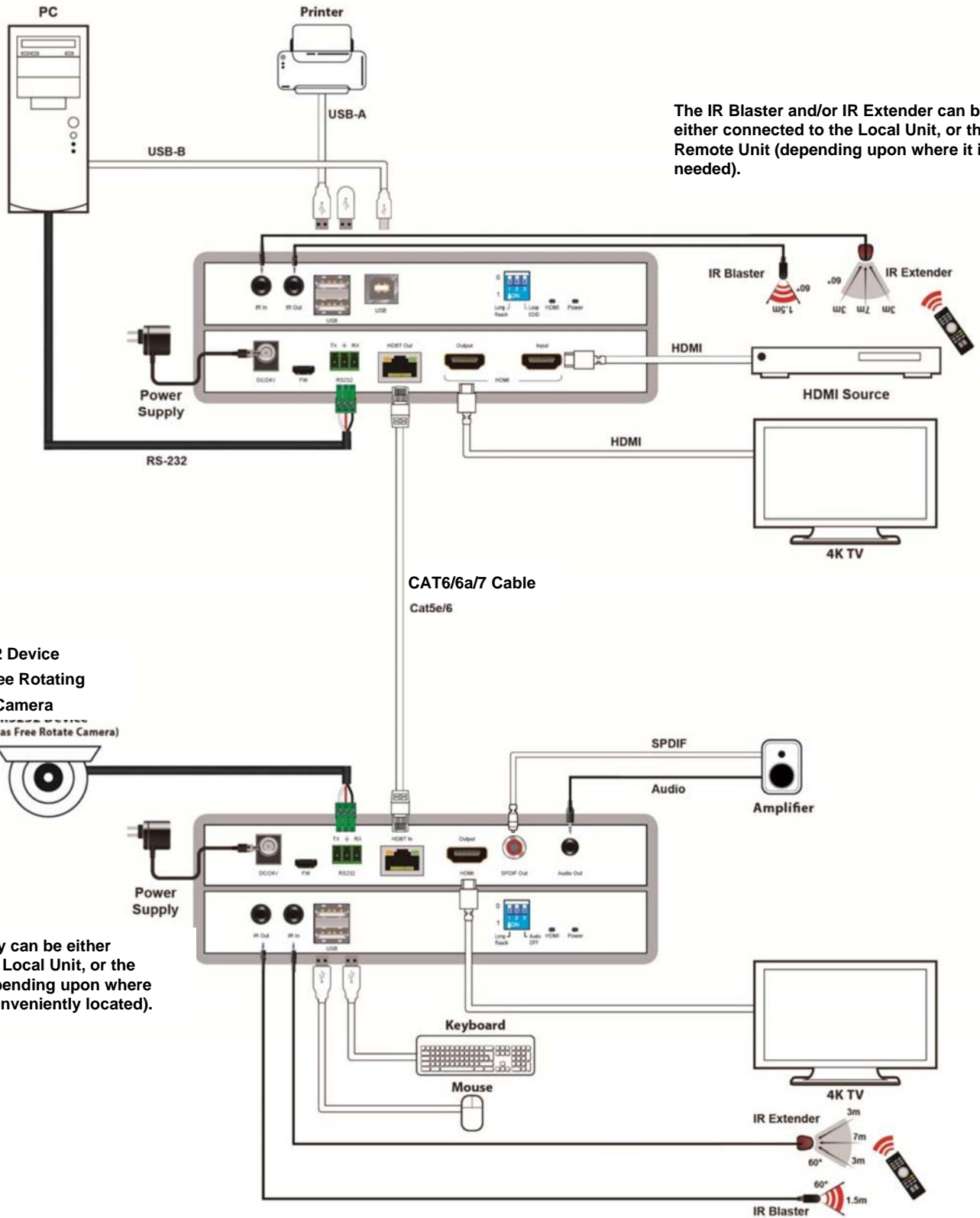
PREPARATION FOR INSTALLATION

- Locations should be chosen for the monitor that also has space to connect the Remote unit within the distance provided by the cables. If extension cables are needed, contact NTI for the cables required.
- The CATx 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 monitor 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 reconnection procedures before proceeding.

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INSTALLATION

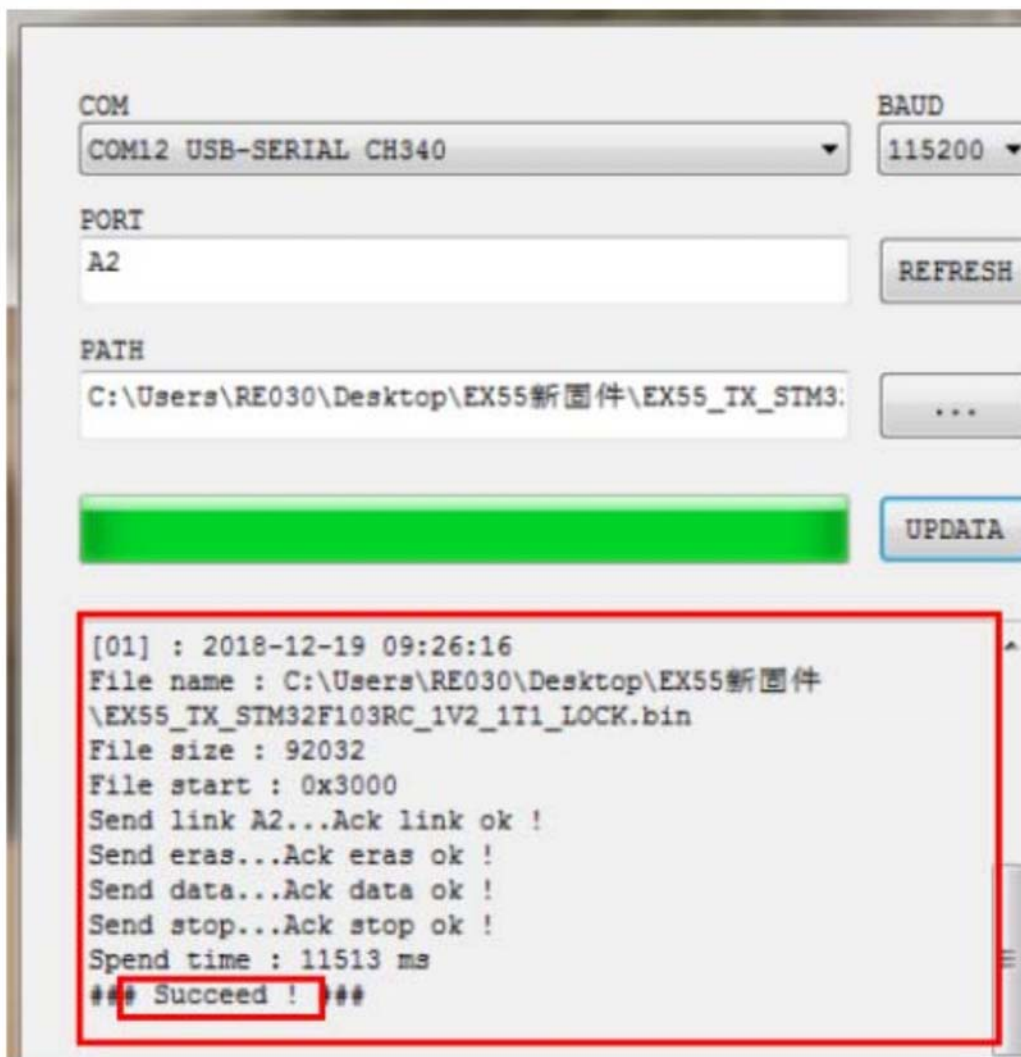
Make your cable connections as illustrated below.



FIRMWARE UPDATE

Note: No firmware updates are available as of this publication.

1. Download the firmware update zip file from our [website](#) and install the UART_ISP.exe to the PC that will be used to perform the firmware update. Copy the firmware files somewhere that will be easy for you to browse to.
2. Connect the PC to the Local unit at the "FW" port using a USB Type A male to USB Type Micro B male cable (supplied).
3. Open the *UART_ISP.exe* to perform the firmware update. The application will identify the USB port automatically.
4. Enter a port name (like "A2" in the image below).
5. Browse to the firmware file for the Local Unit. File with "TX" in the name goes to the Local Unit. **Be sure to select the correct one.**
6. Click "UPDATA" to begin the file transfer. The application will display "Succeed!" when complete.
7. Disconnect the USB cable from the Local Unit and connect it to the Remote Unit.
8. Repeat steps 5 and 6, this time using the file with "RX" in the name. **Be sure to select the correct one.**



TECHNICAL SPECIFICATIONS

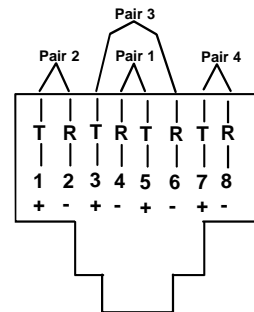
Items	Specifications
Operating Temperature	23 to 104 °F -5 to 40°C
Operating Humidity	5 to 90% RH (no condensation)
Input Video Signal	0.5-1.0 Volt p-p
Video Format Supported	DTV/HDTV; 4K/1080p/1080i/720p(50Hz),576p,480p,576i,480i
Output Video	HDMI 2.0 + HDCP 1.4/2.2
Output Audio	Support PCM, DTS-HD, Dolby-HD
Maximum Transmission Distance	492 feet for 1080p, 328 feet for 4K
Power Supply	100-240VAC 5/60Hz; 24VDC1A
POC	Power from TX to RX over CATx Cable
Power Consumption	14 Watts
Dimensions (WxDxH)	6.79 x 4.46 x 0.94 in 172.4 x 113.2 x 24 mm
Weight (Local and Remote)	1.147kg (2.52lb)
Maximum Extension Distance (using solid or stranded CAT6/6a/7 cable)	4K x 2K up to 328 feet (100 meters) 1080p up to 492 feet (150 meters)
Video Cable Lengths	Up to 20 Feet for 4Kx2K; 50 Feet for 1080p Longer distances possible using cables with built-in video equalizer ("Active HDMI cables")

INTERCONNECTION CABLE WIRING METHOD

The CATx connection cables (CAT6/6a/7 only) 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 per the table and drawing below.

Note: CAT5/5e cable is not recommended for use with this product.

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



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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.