MAGENTA

MultiView™ II STx

Transmitter

Installation and User Guide

Magenta Research, Ltd.
128 Litchfield Road
New Milford, CT 06776 USA

Precautions

Safety Instructions • English

This symbol calls attention to important information.

This symbol is intended to alert the user of important maintenance (servicing) and operating information.

This symbol is intended to alert the user to the presence of un-insulated dangerous voltages or other conditions in or around the product enclosure which may present a risk of electric shock, damage to equipment or facilities.

This symbol is intended to alert the user of potentially dangerous invisible laser radiation.

Caution:

Read instructions: Read and understand all operating, installation and safety instructions before using this equipment.

Avoid Attachments: Do not use accessories, attachments, tools or materials that are not recommended by the equipment manufacturer. Doing so may compromise operating performance, create an unsafe condition, damage equipment, or violate the terms of usage or warranty.

Follow Warnings: Always follow all instructions and warnings marked on the equipment or as detailed in the related user documentations.

Contact Information

For sales or technical support, contact your nearest Magenta Research sales office.

REGION	CONTACT DETAILS
North, Central and South Americas: Magenta Research, LTD Corporate Headquarters 128 Litchfield Road New Milford, CT 06776 USA	Main: 800-805-0944 (USA only) or +1 860-210-0546 Fax: 1-860-210-1758 Web: www.magenta-research.com Sales: sales@magenta-research.com Support: techsupport@magenta-research.com Sales/Support phone hours: 8:30-17:30 (EST: GMT-0500)
Asia: Magenta Research Asia Limited Unit 1 21/F Cheung Tat Centre Chai Wan, Hong Kong	Main: 852.3105.1493 Fax: 852.3105.1491 Contact: awaung@magentaresearch-asia.com Sales: awaung@magentaresearch-asia.com
Pan European Office: Magenta Research, LTD	Main: +44 7708-850582 Contact: rmuddiman@magenta-research.com Sales: sales@magenta-research.com
For all RMA return shipments, use this address unless you are advised otherwise: Magenta Research, LTD RMA Department 128 Litchfield Road New Milford, CT 06776 USA	Prior to returning any products, please contact Magenta's support line to obtain an RMA number. This RMA number is essential for tracking your returns and for ensuring they are processed in a timely manner. Support Phone: 800-805-0944 (USA only) or +1 860-210-0546 Support e-mail: techsupport@magenta-research.com Support phone hours: 8:30-17:30 (EST: GMT-0500)

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Chapter 1 About This Manual

This manual contains information about the Magenta MultiView™ II STx transmitter (hereafter referred to simply as "STx"). This includes:

- Product overview (Chapter 2).
- Product specifications (Chapter 3).
- Installation and configuration instructions (Chapter 4).
- Troubleshooting (Chapter 5).
- Additional information (Appendices).

The Magenta MultiView™ II family of products introduces greater compatibility for handling HD video standards.

For information on the respective receiver units, please refer to the appropriate manual included with the receiver.

This equipment is not intended for, nor does it support, distribution through an Ethernet network. Do not connect these devices to any sort of networking or telecommunications equipment!

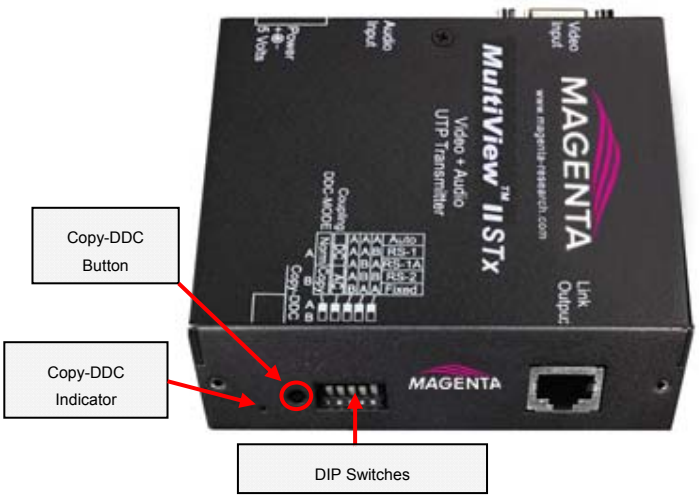
Use only Magenta Research LTD approved MultiView™ II power adapters. Failure to do so may damage this device and will void the warranty.

Chapter 2 Product Overivew

The STx transmitter is compatible with the entire Magenta MultiView™ family of products. It extends an analog video signal and summed (L+R) audio over CAT5 cable (also CAT5e and CAT6). There are user-configurable settings for video and DDC modes, which can be controlled from the front panel.

2.1 Front Panel

The front panel of the STx has the following ports, controls, and indicators:

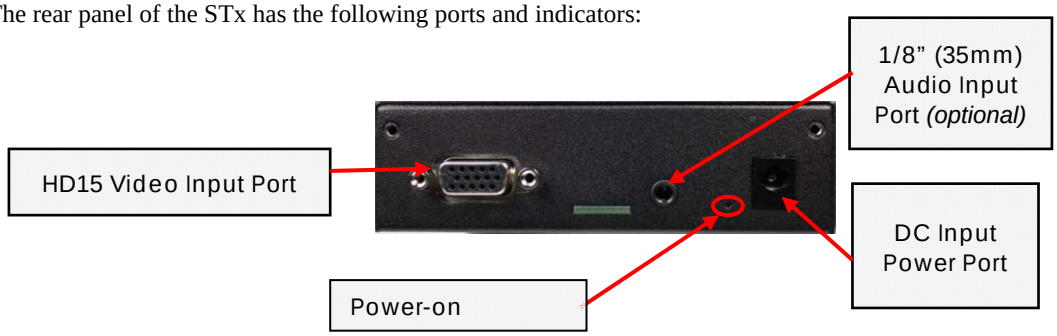


There is one button (**Copy-DDC** button), one LED (**Copy-DDC** indicator), and 5 DIP switches for device configuration. These are used to control the operating modes of the transmitter.

The DIP switches are set UP for the “A” position, and DOWN for the “B” position. **Factory default** is all DIP switches in the “A” position.

2.2 Rear Panel

The rear panel of the STx has the following ports and indicators:



Chapter 3 Specifications

ITEM	DESCRIPTION
Cable Required	Category 5, 5e, 6 cable. Shielded or unshielded twisted pair. Low-skew.
Compliance	CE, FCC Class A, IC Class / Class A, UL listed I.T.E Device, RoHS.
Video Support	RGBHV, RGB, Composite, S-Video, Component Video modes
Resolution & Refresh Rate	To 1920 x 1200 at 60 Hz (receiver dependent) See DDC chart located in Section 3.1
Required Source Impedance	**Video OUT:** 75 ohms **Audio OUT:** 600 ohms maximum
Required Destination Impedance	**Video IN:** 75 ohms **Audio IN:** 600 ohms minimum
Audio Characteristics	**Channels:** Left / Right summed audio Line level 600 ohm unbalanced
Connectors	(1) HD15 female (video input) (1) RJ-45: MultiView CAT5 link output (1) Coaxial (5.5mm OD, 2.5mm ID, 11mm L) jack: DC power input (1) 1/8” (3.5mm) audio connector
Temperature Tolerance	**Operating:** 32 to 104°F (0 to +40°C) **Storage:** -4 to +140°F (-20 to +60°C)
Humidity Tolerance	Up to 80% noncondensing
Enclosure	Steel, black powder-coat finish
Power	**Input voltage:** +5 VDC @ 260 mA maximum **Consumption:** 1.3 watts maximum
Size	1.23"H x 3.34"W x 4.19"D (3.1 x 8.5 x 10.6 cm)
Weight	0.62 lb (0.28 kg)
MTBF	100,000 hours

3.1 DDC Support

For best compatibility with source devices (ex: a PC), an extension device (STx in this case) should provide an appropriate DDC profile with the proper resolution and timing information. This helps ensure best compatibility with display devices connected at the remote end.

The STx supports a simple yet very flexible DDC management scheme:

- The built-in factory-default DDC profile supports a number of standard resolutions and timing information that is widely compatible with many displays.

- A specific DDC profile can be copied from a particular display and stored inside the STx's non-volatile memory. This method enables the best possible compatibility with a specific display that would otherwise not work properly if simply using the factory-default DDC profile.

DDC Parameter:	**Presented to the source when using the STx transmitter:**
Manufacturer name string	MRI
Monitor name string	Magic Display
Established timings	640x480@60Hz 800x600@60Hz 1024x768@60Hz 1280x1024@60Hz 1360x768@60Hz 1600x1200@60Hz 1920x1080@60Hz 1920x1200@60Hz
Detailed timings	1920x1080@60Hz , 1280x720@60Hz, 720x480@60Hz
CEA video formats	720x480p@(59.94,60Hz)@4:3 720x576p@50Hz@4:3 1280x720p@50Hz@16:9 1280x720p@(59.94,60Hz)@16:9 1920x1080p@50Hz@16:9 1920x1080p@(59.94,60Hz)@16:9
Specific timings	1280x720@60Hz 720x480@59.94Hz 1920x1200@59.94Hz

3.2 CAT5 Cable Compatibility

The MultiView™ family of products provides the highest quality video extension over common Category 5 (CAT5) cable. In some applications, system design or environmental factors can require the use of CAT5e and CAT6 cabling (with and without optional shielding). Each installation may have special requirements, and it is up to the system designer to determine the most appropriate type of cable to deploy with MultiView™ products. In any case, if there is any doubt with regards to a specific type of cable it is strongly advised that actual testing be performed using an appropriate length of the desired cable – BEFORE that cable is specified and installed.

The STx transmitter supports a daisy-chain CAT5 connection to multiple receivers. This allows one video source to be sent to multiple displays at the same time – with the absolute minimum amount of signal degradation possible.

Magenta Research products are compatible with standard CAT5/5e/6 data cabling as well as specialized “low skew” cabling manufactured primarily for video applications. Note that some “low skew” cabling is specific to a particular equipment vendor or application and may not be compatible with MultiView™ products. Please ensure any “low-skew” CAT5 cable is non-proprietary prior to purchase/installation.

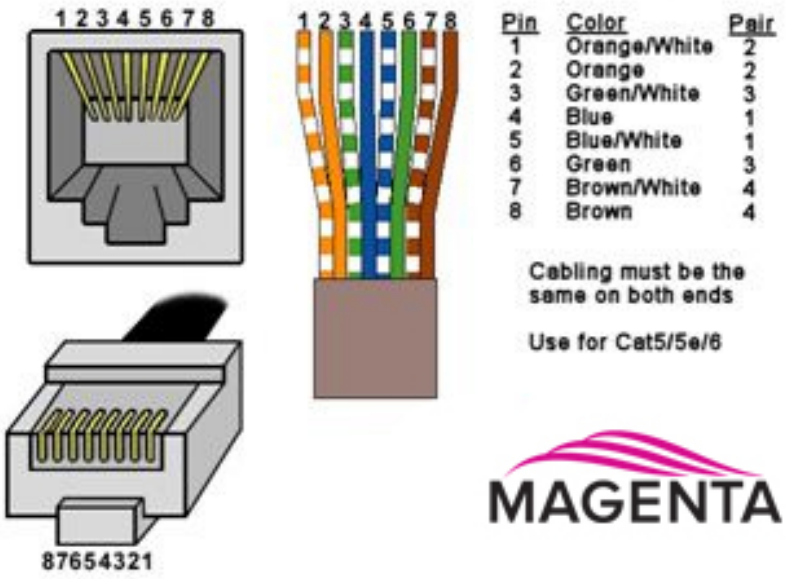
Standard CAT5E/6 cable, due to the manufacturing method, can exhibit much greater skew than standard CAT5 cable. MultiView™ receivers may be configured with optional skew compensation for these applications. Please contact Magenta Research for assistance.

The CAT5/5e/6 cable should be suitably rated Listed cable (DUZX) communication cables, TYPE CMP, CMR, CMG or CM as designated in the NEC. Cables are to be installed in accordance with the NEC and local building and electrical codes. This is the responsibility of the end user/installer of this product.

Chapter 4 Installation

CAT5/5e/6 cabling for the Magenta MultiView™ II Series must be pinned to the TIA-EIA T568B wiring specification.

Figure 4-4-1 T568B CAT5 Specification



We also highly recommend that all CAT5 cables be pre-terminated and tested. Cables terminated on-site or in an existing infrastructure should be tested before use to ensure compliance with the TIA-EIA T568B specification. Using incorrectly terminated CAT5 cables can damage the Magenta MultiView™ II Series.

This equipment is not intended for, nor does it support, distribution through an Ethernet network. Do not connect these devices to any sort of networking or telecommunications equipment!

Do not connect DC power until instructed to do so.

4.1 Prerequisites

Depending on the specific installation requirements, some common tools (screwdrivers, nut-drivers) and related hardware (mounting screws) may be required. These are not provided with Magenta products.

The following items may be necessary, which are available from Magenta Research:

- Appropriate audio cabling
- Video cable with HD15 connectors

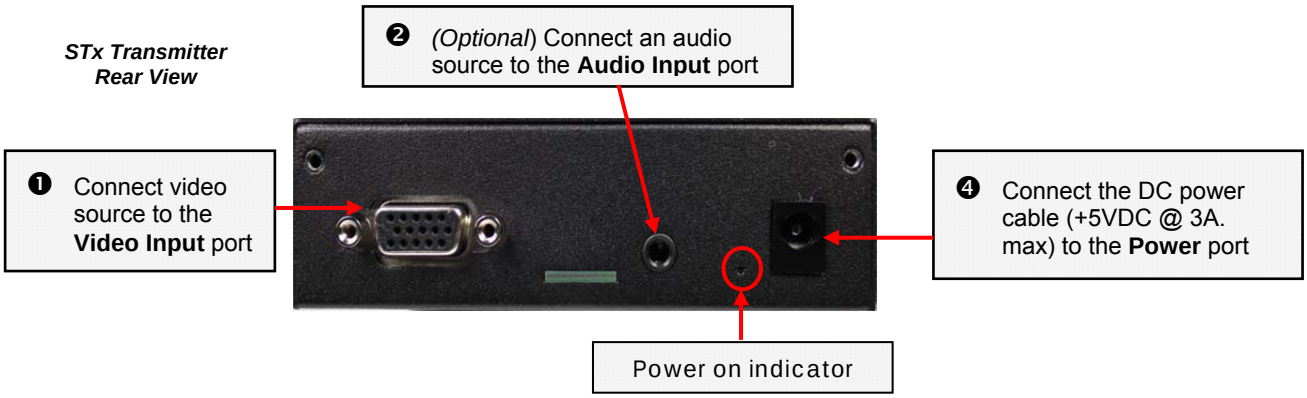
Of course, you will need appropriate CAT5 cable, as previously described, to connect the STx to MultiView™ receivers and other MultiView™ devices.

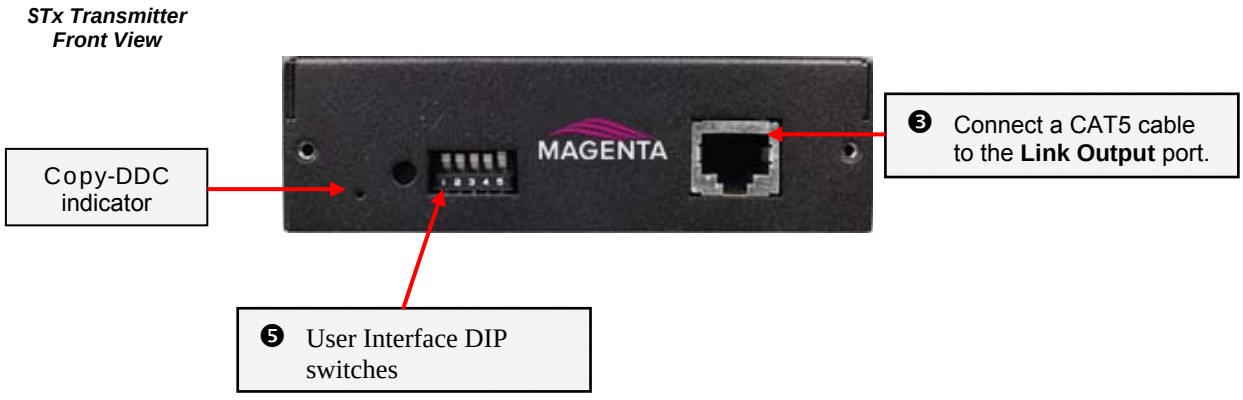
4.2 Installation Procedure

Ensure all connectors are clean and free of contaminants prior to making the connections. Appropriate connector locking hardware (screws/latches) should be used to prevent cables from disconnecting or causing intermittent operation.

At the STx transmitter end:

1. Connect the source video to the Magenta MultiView™ II STx transmitter video input port, which is an HD15 connector. Use the appropriate adapter as required.
2. Make your audio connections via the 1/8" (3.5mm) audio connector (*optional)*.
3. Connect the CAT5 cable to the transmitter.
4. Apply power to the transmitter.
   a. The power on and Copy-DDC LEDs should light up.
5. Remember to make any required configuration changes via the user-interface (DIP switches).





At the receiver end (these steps are generic - refer to the appropriate receiver manual):

1. Connect the VIDEO OUTPUT HD15 connector to the display unit.

2. Connect a 1/8” (3.5mm) audio cable to the AUDIO OUTPUT connection *(optional)*.

3. Connect the CAT5 cable to the UTP connection.

4. Apply power to the receiver.
    a. The power-on LED should turn on.

5. Make any required configuration changes via the user-interface, if the receiver is equipped with this capability.

6. Adjust the receiver’s EQ and/or SKEW (optional) settings. **If this adjustment is not made properly, it may result in poor image quality or no image on the display.**

4.3 Configuration

The STx has a number of configurable operating parameters, and the factory default settings will work in most applications. However, some applications may require configuration changes. All settings are available from the front-panel Copy-DDC button and DIP switches. The enclosure does not need to be opened.

To quickly reset all user-configurable options back to factory-default settings:

- Disconnect the DC power cable (or AC power)
- Set all DIP switches to the UP position
- Reconnect power

4.3.1 DDC Settings

The MultiView™ II STx features the ability to send DDC display identifiers to the video source in order to determine display capabilities. The DDC interface is a data communication channel used between *plug and play* devices to accurately report a display's capabilities and identify the manufacturer. If this data is not available, the video source may revert to a low resolution or not display at all.

The STx unit has two DDC modes of operation. These are selected utilizing **DIP Switch 1**.

NORM: Selects the *Magenta Magic* DDC profile

This is the factory default mode which uses generic DDC information stored within the transmitter. It is also referred to as the **Magenta Magic profile**, and it is comprised of a set of common video resolutions which are intended to support the most popular VESA standards in standard or widescreen formats.

To activate norm mode, ensure DIP switch 1 is in the UP (A) position.

COPY: Selects a previously stored copy of a DDC profile

In this mode, DDC information comes from a DDC profile that was previously copied into the STx’s non-volatile memory from a display device.

To use this mode, a DDC profile must already have been stored into the STx.

To perform a DDC-copy operation:

- Set DIP switch 1 to the DOWN (B) position.
- Connect a display to the VIDEO IN port. The display must be powered on.
- Push the **Copy-DDC** button and release.
- The copy-status indicator should turn off briefly, flash 3 times, then remain on. This indicates a successful operation.
- If it flashes less than 3 times or not at all, the operation failed and the previously stored DDC profile (if any) will remain unchanged.
- Once completed, you can disconnect the display and reconnect the video source.

4.3.2 Video Coupling

DC coupling is the preferred setting. AC coupling is sometimes used with YUV signals that contain a large amount of DC offset. This is indicated by loss of contrast and image clarity at the display.

Use DIP Switch 2 to select AC or DC coupling to be applied to the input video:

Up Position (A) **DC Coupling** *This is the factory default setting.*
Down Position (B) **AC Coupling**.

4.3.3 Video Sync Mode

The STx is factory-configured for auto-detecting the proper sync-mode (RepliSync-I normal/stretched). This mode is generally compatible with all existing MultiView™ receiver products that support RepliSync (if they are also using their factory-default settings). However, some video sources may require a custom sync-mode setting (especially at 1080p and 1920x1200 video resolutions). For these cases, one of the other available sync-modes can be selected.

Note that any connected MultiView™ receiver should generally be set to the same sync-mode and **may** require other configuration adjustments (such as sync-polarity). Otherwise, you may not get a proper video display output at that receiver, or none at all.

DIP Switch 3	DIP Switch 4	DIP Switch 5	Sync-mode Setting
A	**A**	**A**	**The STx will auto-detect the required RepliSync-I mode ("normal" or "stretched"). *This is the factory default setting.***
A	A	B	Force RepliSync-I normal Horizontal sync. pulse encoding.
A	B	A	Force RepliSync-I "stretched" Horizontal sync. pulse encoding.
A	B	B	Force RepliSync-II. *
B	A	A	Force fixed-sync mode. **NOTE:** A connected MultiView receiver must also be in fixed-sync mode and with H/V polarities selected at the receiver.

A = switch is in the UP position
B = switch is in the DOWN position

***NOTE**: RepliSync-II is capable of encoding and decoding a very narrow sync pulse (< 200 Nanoseconds). It may be required for 1080p or 1920 x 1200 resolutions. This new sync mode is not backward compatible with Repli-Sync-1, therefore you must have a MVII Tx and Rx in order to use it.

Chapter 5 Troubleshooting

In most cases, nearly every issue with the MultiView™ II CAT5 Video System can be resolved by checking the CAT5 termination and making sure that it's pinned to the TIA/EIA 568B wiring specification. However, there may be other problems that cause the system to not perform as it's designed. Below are solutions to the most common installation errors and their solutions. If additional assistance is required, please contact Magenta Research at 800-805-0944 (USA only) or +1-860-210-0546.

PROBLEM	SOLUTION
No video signal at the receiver	• Check that both units are powered. • Ensure receiver EQ and SKEW adjustments are set correctly. Change EQ settings slowly to allow the display to re-acquire a valid signal and display the image. • Make sure the CAT5 cable is terminated correctly per the TIA/EIA 568B wiring specification. • Is the display device powered on and functioning? • Check to ensure display settings (resolution, refresh rate, etc) are compatible with input signal. • There may be a DDC compatibility problem. Try changing the DDC mode setting, or copying the DDC profile directly from the display.
Poor video quality at receiver	• Ensure receiver EQ and SKEW adjustments are set correctly. Change EQ settings slowly to allow the display to re-acquire a valid signal and display the image. • Check all cable connections. • The video signal's refresh rate may be set too high. Reset to a lower refresh rate in your display-configuration menu (for example, under Windows on a PC). • There may be a video-skew delay issue. See section on skew adjustments in the applicable receiver manual. • There may be a DDC compatibility problem. Try changing the DDC mode setting, or copying the DDC profile directly from the display.
Poor audio quality	• The audio output at the receiver is line-level only. An amplifier or powered speakers are required. Make sure amplifier or speaker power is ON. • Check input source levels from the source device. Ensure the audio source level does not exceed the audio-input ratings for the STx. Clipping or distortion can result. • Audio is summed left and right for "-A" versions. If using a single channel, both audio inputs must be connected at the transmitter end to obtain proper audio gain through the link (1:1, input to output).

Appendix A Cabling Pinouts

A.1 Video Port

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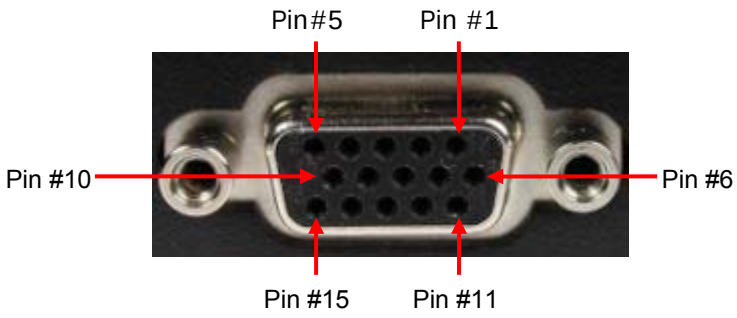
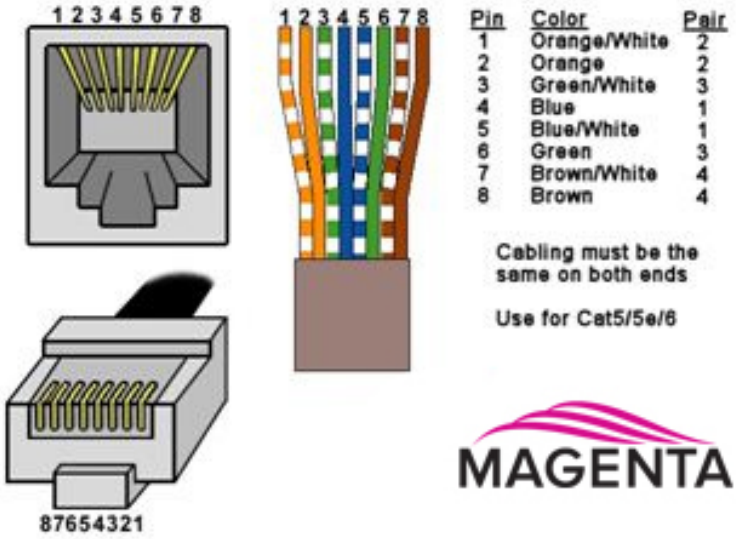


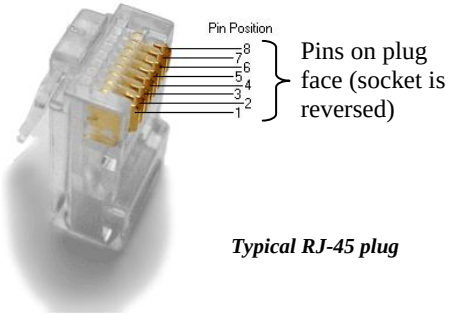
Table A-1 HD15 Video Connector

Pin	RGBHV (VGA)	RGBS	RGsB	Com-posite	SVHS (Y/C)	YUV	Composite Video & Stereo Audio
1	Red +	Red +	Red +		C+	V+	Audio Left
2	Green+	Green+	Green+	C+	Y+	Y+	C+
3	Blue+	Blue+	Blue+			U+	Audio Left
4	—	—	—				
5	Gnd	Gnd	Gnd				
6	Red-	Red-	Red-		C-	V-	Shield
7	Green-	Green-	Green-	C-	Y-	Y-	C-
8	Blue-	Blue-	Blue-			U-	Shield
9	—	—	—				
10	Gnd	Gnd	—				
11	Gnd	Gnd	—				
12	—	—	—				
13	H Sync	C Sync	—				
14	V Sync	—	—				
15	Gnd	Gnd	—				

A.2 RJ45 (MultiView Link) Wiring Standard



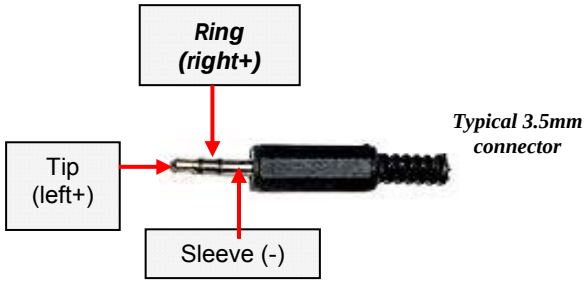
PIN #	COLOR	PAIR
1	White / Orange Stripe	2
2	Orange Solid	2
3	White / Green Stripe	3
4	Blue Solid	1
5	White / Blue Stripe	1
6	Green Solid	3
7	White / Brown Stripe	4
8	Brown Solid	4



Typical RJ-45 plug

Table A-2 1/8" (3.5mm) Audio Connection

Pin	Channel 1	Channel 2
Tip	+	
Ring		+
Sleeve	-	-



Typical 3.5mm connector

A.3 DC Power Connector

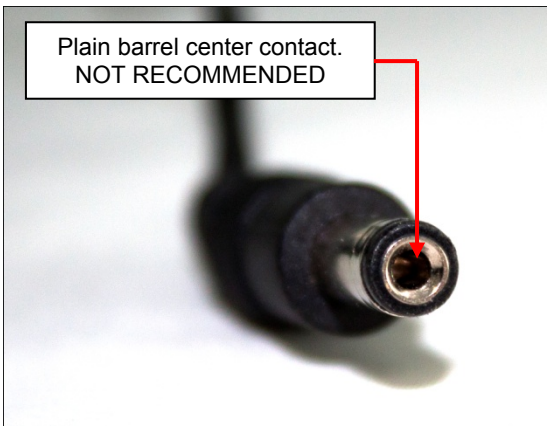
Magenta provides ready-to-use power supplies for MultiView™ II products. However, if there is a reason a substitute power supply must be used, then the following information is important for maintaining product reliability and performance:

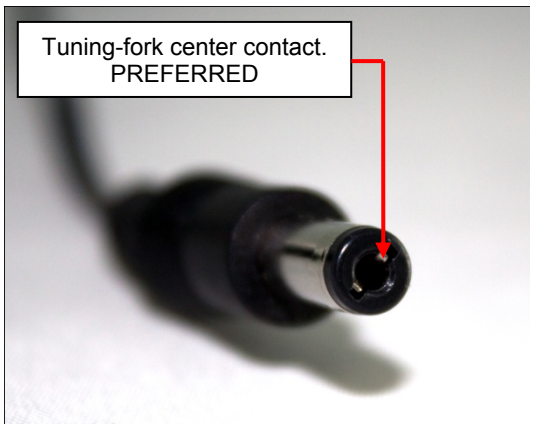
Magenta AC/DC Power supply output rating:	Regulated +5VDC @ 3Amps.
Power-input rating for MultiView™-STx:	5VDC, 260mA max.

The STx's DC power input connector accepts an industry-standard coaxial-DC plug with the following specifications:

- Coaxial power connector
- OD = 5.5mm
- ID = 2.5mm (accepted center-pin diameter)
- Length = 11mm (overall length of insertable plug end)
- Inner contact (pin-socket) = +5VDC
- Outer contact (sleeve) = Ground

It is highly recommended that the inner contact (center-pin contact) of any mating DC plug utilize a "tuning-fork" shaped design, rather than a plain barrel shape. The tuning-fork design greatly increases the reliability of the power connection. The plain barrel style connector can cause intermittent operation, often resulting in "mysterious" system problems that are difficult to identify.

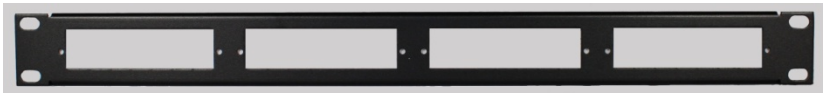
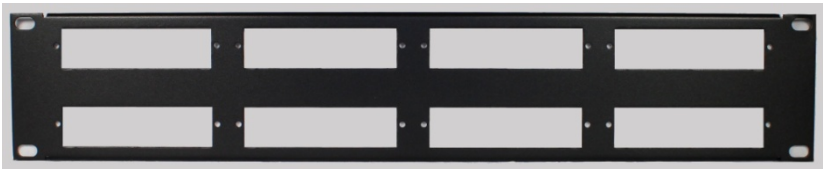




The Magenta-provided power supply already comes with the correct output ratings and DC-plug configuration

Appendix B Mounting Kits

There are several kits available for mounting the STx:

MOUNTING KIT #	DESCRIPTION
2211053-01	Rigid Mount Bracket. This mounts a single device to a surface (wall/desk/etc.). Comes with 4 self-tapping screws. 
8310207-02	1U Rack Mount Plate for standard 19” rack. Mounts 4 devices in a 1U space. Comes with (8) device-mounting screws, (4) rack-mounting screws. 
8310208-02	2U Rack Mount Plate for standard 19” rack. Mounts 8 devices in a 2U space. Comes with (16) device-mounting screws, (4) rack-mounting screws. 

Note: When installing STx devices in an area susceptible to elevated operating temperatures (near the maximum specified operating temperature), it is important to give careful consideration to maintaining adequate air flow. Within a rack assembly, cable bundles and other equipment in the same rack can impede proper cooling. In some rack-mount applications you may even need to leave a 1U gap (using a blank filler plate) between STx groups. For surface-mount applications, ensure the device will have adequate air circulation and that air-vents on the enclosure are not blocked.

STx with Rigid Mount Bracket

STx with 1U Rack Mount Plate

STx with 2U Rack Mount Plate

Appendix C System Design Drawings

The following drawings are available from Magenta Research as an aid in system design and configuration. You may download them from the Magenta website (www.magenta-research.com). There is no charge for obtaining these drawings.

DRAWING #	DESCRIPTION
2500005-02	MultiView-II STx Sales Drawing (.dwg and .pdf format)
2510006-01	MultiView-II STx Autocad Symbols (.dwg and .pdf format)

Appendix D Regulatory Compliance Information

FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA RADIO FREQUENCY INTERFERENCE STATEMENTS

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 may cause undesired operation.

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. 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. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Canada (ICES-003) notice: This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numerique de la classe A est conforme a la norme NMB-003 du Canada.

EUROPEAN UNION DECLARATION OF CONFORMITY

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Magenta Research (New Milford CT USA) declares under our sole responsibility that the Magenta MultiView video-extension products to which this declaration relates is in conformity with the following standard(s) or other normative documents:

EN 55022:2006 + A1:2007	Class A ITE emissions requirements.
EN61000-3-2:2006	Limits for harmonic current emissions (equipment input current up to and including 16A per phase).
EN 61000-3-3:1995/A1:2001/A2:2005	Limitation of voltage fluctuations and flicker on low-voltage supply systems for equipment with rated current up to and including 16A.
EN55024:2003	Immunity for ITE.

SAFETY WARNING

Connection: Not for direct connection to Telecommunication Network Circuitry (TNV)

Power sources: This equipment should be operated only from the power source indicated on the product. Disconnect all power sources before servicing.

Servicing: Refer all servicing to qualified service personnel. There are no user-serviceable parts inside.

Slots and openings: If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects or equipment.

Index: