VidcasterIP
Virtual Video Matrix

DT-HDVD-IPSTR-ENC / DT-HDVD-IPSTR-RX

H.264 encoders/decoders

DATA-TRONIX®

User Manual

Version: V1.0.0

Important Safety Instructions

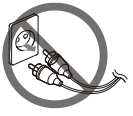
1. Do not expose this apparatus to rain, moisture, dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

6. Clean this apparatus only with dry cloth.

2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Ensure the unit is well ventilated.

7. Unplug this apparatus during lightning storms or when unused for long periods of time.

3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.



8. Protect the power cord from being walked on or pinched particularly at plugs.

4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Only use attachments / accessories specified by SecurityTronix

5. Do not place sources of flames, such as lighted candles, on the unit.

10. Refer all servicing to qualified service personnel.

Table of Contents

Introduction 2
Overview 2
Encoder 2
Decoder 3
Key Features 4
Encoder 4
Decoder 5
Package Contents 7
Encoder 7
Decoder 7
Specifications 8
Encoder 8
Decoder 10
Panel Description 13
Encoder 13
Front Panel 13
Rear Panel 13
Decoder 15
Front Panel 15
Rear Panel 15
Typical Applications 17
IP Matrix 17
Video Wall ..... **Error! Bookmark not defined.**
Hardware Installation 18
Operating the Encoders/Decoders 19
Upgrading the Encoders/Decoders 20
Troubleshooting 21
Warranty Terms and Conditions 25

Introduction

Overview

Encoder

DT-HDVD-IPSTR-ENC is a live H.264 encoder which is used with H.264 decoders to deliver streaming media over IP networks, providing complete end-to-end streaming systems. It offers one HDMI input, two streaming media outputs and one stereo audio de-embedding output. It employs standards-based H.264/MPEG-4 AVC encoding and supports input signals up to 1920 x 1200@60Hz. The encoder is capable of outputting two IP streams. One large IP stream supports a streaming resolution from 480p@60Hz to 1920 x 1200@60Hz to view a video on the decoder side, the other small one supports resolution 352x288@5Hz to easily fully-preview video from an encoder on PC software or iPad. Encoders support PoE and can remotely be powered by compatible power source equipment such as a PoE Ethernet switch, eliminating the need for a nearby power outlet. They offer integration-friendly control features such as PC configurator and IP controller providing simple, flexible control and management options. In addition, they include RS232 pass-through capacity to control a third party device such as a projector through IP configurator and IP controller on your computer. Encoding control provides adjustments for encoding bit rate and quality. By extending A/V signals over networks, A/V system capability is significantly expanded. The VidCasterIP system offers solutions for conference rooms, shopping malls, hotels, high resolution signage, monitoring centers, schools and corporate training environments, etc.

Decoder

DT-HDVD-IPSTR-RX is a live H.264 decoder that uses H.264 decoders to provide complete end-to-end streaming systems. It integrates one streaming media input and one HDMI output and one stereo de-embedding audio output. The decoder employs standards-based H.264/MPEG-4 AVC video decoding and supports streaming resolutions up to 1920 x 1200@60Hz. High performance signal processing scales and optimize video input signals to obtain the intended viewing effects. The output resolutions range from 480p@60Hz to 1920 x 1200@60Hz scaled based on the EDID of the display. Also, a fixed resolution can be selected from 480p@60Hz to 1920 x 1200@60Hz for output using PC configurator. Decoders support PoE function and can remotely be powered by compatible power source equipment such as a PoE Ethernet switch, eliminating the need for a nearby power outlet. They also feature CEC function, which allows you to make TV sets play and standby through PC configurator. They offer integration-friendly control features such as PC configurator and IP controller providing simple, flexible control and management options. In addition, they include RS232 pass-through capacity to control a third party device such as a projector through IP configurator and IP controller on your computer. The VidCasterIP system offers solutions for conference rooms, shopping malls, hotels, high resolution signage, monitoring centers, schools and corporate training environments, etc.

Key Features

Encoder

- Streams HDMI signals over IP networks
- Supports live IP video stream encoding
- Use with H.264 decoders to provide complete end-to-end streaming systems
- Features one HDMI input, two streaming media outputs and one stereo audio de-embedding output
- Supports the resolutions of input signals up to 1920 x 1200@60Hz
- Capable of outputting two IP streams. One large IP stream supports a streaming resolution from 480p@60Hz to 1920 x 1200@60Hz to view a video on the decoder side, the other small one supports resolution 352x288@5Hz to easily fully-preview a video from an encoder on PC software or iPad
- Offers integration-friendly control features such as PC configurator and IP controller
- Offers RS232 pass-through capacity to control a third party device such as a projector through IP configurator and IP controller on your computer
- Use with the IP controller for matrix control and management via LAN (Telnet & Web GUI), as well as for allowing the third party control system to configure and manage the streaming systems
- Supports PoE to be remotely powered by compatible power source equipment, eliminating the need for a nearby power outlet
- Employs standards-based H.264/MPEG-4 AVC video encoding
- Supports HDCP
- Configurable encoding data rate up to 30 Mbps

- Supports AutoIP, zero-configuration networking (zeroconf), a set of special technologies that automatically assign dynamic IP addresses to encoders on startup and a server-less method of choosing an IP address
- Supports communications protocols used on the Internet such as IP, TCP, UDP, IGMP and Telnet

Decoder

- Supports live IP video stream decoding
- Use with H.264 encoders to provide complete end-to-end streaming systems
- Integrates one streaming media input, one HDMI output and one stereo audio de-embedding output
- Supports streaming resolutions up to 1920 x 1200@60Hz
- Offers auto scaler function. The output resolutions range from 480p@60Hz to 1920 x 1200@60Hz scaled based on the EDID of the display. Also, a fixed resolution can be selected from 480p@60Hz to 1920 x 1200@60Hz for output using PC configurator
- Offers integration-friendly control features such as PC configurator and IP controller
- Offers RS232 pass-through capacity to control a third party device such as a projector through IP configurator and IP controller on your computer
- Use with the IP controller for matrix control and management via LAN (Telnet & Web GUI), as well as for allowing the third party control system to control and manage the streaming systems
- Employs standards-based H.264/MPEG-4 AVC video decoding

- Supports HDCP
- Supports PoE to be remotely powered by compatible power source equipment, eliminating the need for a nearby power outlet
- Features CEC function
- Supports AutoIP, zero-configuration networking (zeroconf), a set of special technologies that automatically assign dynamic IP addresses to decoders on startup and a server-less method of choosing an IP address
- Supports communications protocols used on the Internet such as IP, TCP, UDP, IGMP and Telnet
- Supports seamless switching

Package Contents

Encoder

- 1 x Encoder
- 1 x Power Adapter (12V 1A DC)
- 1 x Detachable Plug
- 2 x Phoenix Connector (Male, 3.5 mm, 3 pins)
- 2 x Mounting Ear

Decoder

- 1 x Decoder
- 1 x Power Adapter (12V 1A DC)
- 1 x Detachable Plug
- 2 x Phoenix Connector (Male, 3.5 mm, 3 pins)
- 2 x Mounting Ear

Specifications

Encoder

Video	
Input Video Port	1 x HDMI IN
Input Video Type	HDMI 1.3
Input Video Resolutions	**HDMI:** 640 x 480@60Hz, 720 x 480p@60Hz, 720 x 576p@50Hz, 800 x 600@60Hz, 1280 x 720p@50Hz, 1280 x 720p@60Hz, 1024 x 768@60Hz, 1360 x 768@60Hz, 1366 x 768@60Hz, 1280 x 800@60Hz, 1440 x 900@60Hz,1280 x 1024@60Hz, 1400 x 1050@60Hz, 1680 x 1050@60Hz, 1920 x 1080p@24Hz, 1920 x 1080p@25Hz, 1920 x 1080p@30Hz, 1920 x 1080p@50Hz, 1920 x 1080p@60Hz, 1920 x 1200@60Hz
Input Video Signal	0.5~1.2 V p-p
Encoding Data Rate	Up to 30 Mbps, configurable
Output Video Ports	1 x LAN
Output Video Type	H.264/MPEG-4 AVC
Output Video Resolutions	• Large IP stream: 480p@60Hz~1920 x 1200@60Hz • Small IP stream: 352 x 288@5Hz
Video Impendence	100 Ω
Input DDC Signal	5 V p-p (TTL)
End-to-End Time	• About 79 ms in average (Low latency

Latency	mode) • About 250 ms in average (High quality mode)
Audio	
Input Audio Port	1 x HDMI IN
Input Audio Format	Audio embedded in HDMI input
Output Audio Port	1 x Phoenix connector
Output Audio Format	Stereo analog line level signal
Control	
Control Method	PC configurator and IP controller

General	
Operating Temperature/ Humidity	+32°F ~ +113°F (0°C ~ +45°C) 10% ~ 90%, non-condensing
Storage Temperature/ Humidity	-4°F ~ 140°F (-20°C ~ +70°C) 10% ~ 90%, non-condensing
Power	12 VDC 1 A
Device Power Consumption	6 W (Max.) **Note:** Powered by PoE: 10 W (Min.) for safe operation
ESD Protection	Human body model: • ±8kV (air-gap discharge) • ±4kV (contact discharge)
Surge Protection	Voltage: ±1 kV

General	
Case Dimensions (W x H x D)	• 310 mm x 76 mm x 180 mm • 12.2'' x 3.0'' x 7.1''
Product Dimensions (W x H x D)	• 237 mm x 25 mm x 94.3 mm • 9.3'' x 1.0'' x 3.7''
Weight	0.48 kg
Certification	CE, FCC, RoHS compliant

Decoder

Video	
Input Video Port	1 x LAN
Input Video Type	H.264/MPEG-4 AVC
Input Video Resolutions	480p@60Hz~1920x1200@60Hz
Output Video Port	1 x HDMI
Output Video Type	HDMI 1.3
Output Video Resolutions	**HDMI:** 640 x 480@60Hz, 720 x 480p@60Hz, 720 x 576p@50Hz, 800 x 600@60Hz, 1280 x 720p@50Hz, 1280 x 720p@60Hz, 1024 x 768@60Hz, 1280 x 768@60Hz, 1366 x 768@60Hz, 1280 x 800@60Hz, 1440 x 900@60Hz, 1280 x 1024@60Hz, 1680 x 1050@60Hz, 1920 x 1080p@24Hz, 1920 x 1080p@25Hz, 1920 x 1080p@30Hz, 1920 x 1080p@50Hz, 1920 x 1080p@60Hz, 1600 x 1200@60Hz, 1920 x 1200@60Hz
Video	100 Ω

Video	
Impendence	
End-to-End Time Latency	• About 79 ms in average (Low latency mode) • About 250 ms in average (High quality mode)
Audio	
Input Audio Port	1 x LAN
Input Audio Format	Audio embedded in streaming media input
Output Audio Port	1 x Phoenix connector
Output Audio Format	Stereo
Control	
Control Method	PC configurator and IP controller

General	
Operating Temperature/ humidity	+32°F ~ +113°F (0°C ~ +45°C) 10% ~ 90%, non-condensing
Storage Temperature/ humidity	-4°F ~ 140°F (-20°C ~ +70°C) 10% ~ 90%, non-condensing
Power	12VDC 1A
Device Power Consumption	6 W (Max.) **Note:** Powered by PoE: 10 W (Min.) for safe operation

General	
ESD Protection	Human body model: • ±8 kV (air-gap discharge) • ±4 kV (contact discharge)
Surge Protection	Voltage: ±1 kV
Case Dimensions (W x H x D)	• 310 mm x 76 mm x 180 mm • 12.2" x 3.0" x 7.1"
Product Dimensions (W x H x D)	• 266 mm x 25 mm x 111.3 mm • 10.5" x 1" x 4.4"
Weight	0.60 kg
Certification	CE, FCC, RoHS compliant

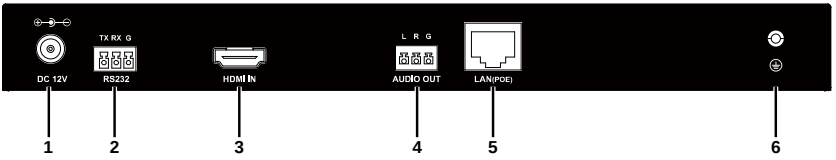
Panel Description

Encoder

Front Panel

No.	Indicator	Status	Description
1	POWER Indicator	On	Encoder is powered on.
		Off	Encoder is powered off.
2	STATUS Indicator	On	Encoder is working properly.
		Off	Encoder is not working properly

Rear Panel



No.	Name	Description
1	Power Input	Connects to a 12 V 1 A power supply. **Note:** We recommend that you power encoders/decoders using power adapters **or** a PoE switch; Do not connect the encoder to a PoE and power supplies at the same time. For example, if you want to use power adapters, ensure that PoE function of the connected LAN ports in the switch is disabled or a non-PoE switched is used.

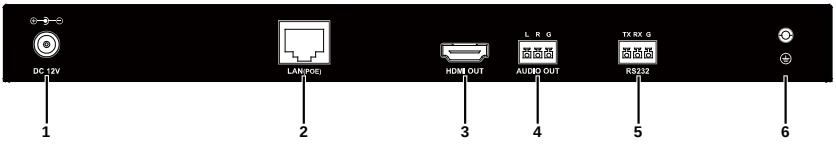
No.	Name	Description
2	RS232 Pass-through Control	**1 x RS232:** connects to a third party device such as a camera, which can be controlled by IP configurator and IP controller on your computer. **Note:** This is a phoenix connector (female, 3.5 mm, 3 pins).
3	Video Input	**1 x HDMI IN:** connects to an HDMI video source such as a DVD player and a computer.
4	Audio Output	**1 x AUDIO OUT:** connects to an audio output device such as an amplifier and a speaker. **Note:** This is a phoenix connector (female, 3.5 mm, 3 pins).
5	Video Output	**1 x LAN (POE):** connects to an Ethernet switch for streaming media output. **Note:** If you use a PoE Ethernet switch, encoders can be powered by this switch, eliminating the need for a nearby power outlet.
6	Grounding Screw	Connects to the ground for preventing electric shock and device damage.

Decoder

Front Panel

No.	Indicator	Status	Description
1	POWER Indicator	On	Decoder is powered on.
		Off	Decoder is powered off.
2	STATUS Indicator	On	Decoder is linked to encoder and is actively outputting video.
		Flashing	Decoder is not linked to encoder.

Rear Panel



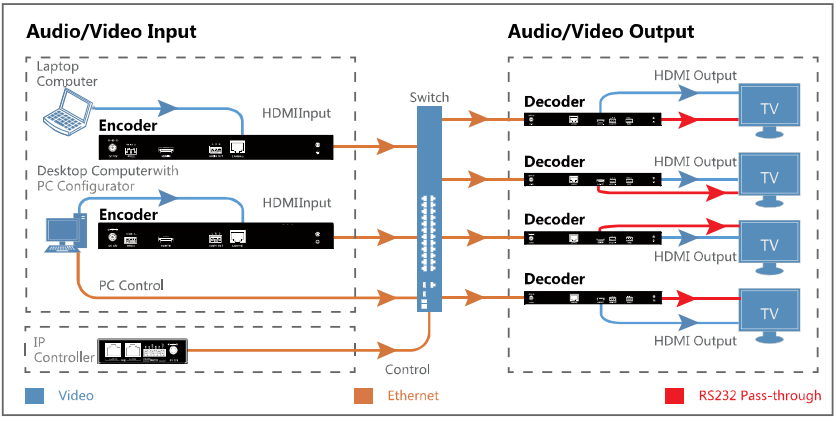
No.	Name	Description
1	Power Input	Connects to a 12 V 1 A power supply. **Note:** We recommend that you power encoders/decoders using power adapters **or** a PoE switch; Do not connect the encoder to a PoE and power supplies at the same time. For example, if you want to use power adapters, ensure that PoE function of the connected LAN ports in the switch is disabled or a non-PoE switched is used.
2	Video Input	**1 x LAN (POE):** connects to a switch for

No.	Name	Description
		streaming media input. **Note:** If you use a PoE Ethernet switch, decoders can be powered by this switch, eliminating the need for a nearby power outlet.
3	Video Output	**1 x HDMI OUT:** connects to an A/V device such as an HDMI display device.
4	Audio Output	**1 x AUDIO OUT:** connects to an audio output device such as an amplifier and a speaker. **Note:** This is a phoenix connector (female, 3.5 mm, 3 pins).
5	RS232 Pass-through Control	**1 x RS232:** connects to a third party device such as a projector, which can be controlled by IP configurator and IP controller on your computer. **Note:** This is a phoenix connector (female, 3.5 mm, 3 pins).
6	Grounding Screw	Connects to the ground for preventing from electric shock and device damage.

Typical Application

IP Matrix

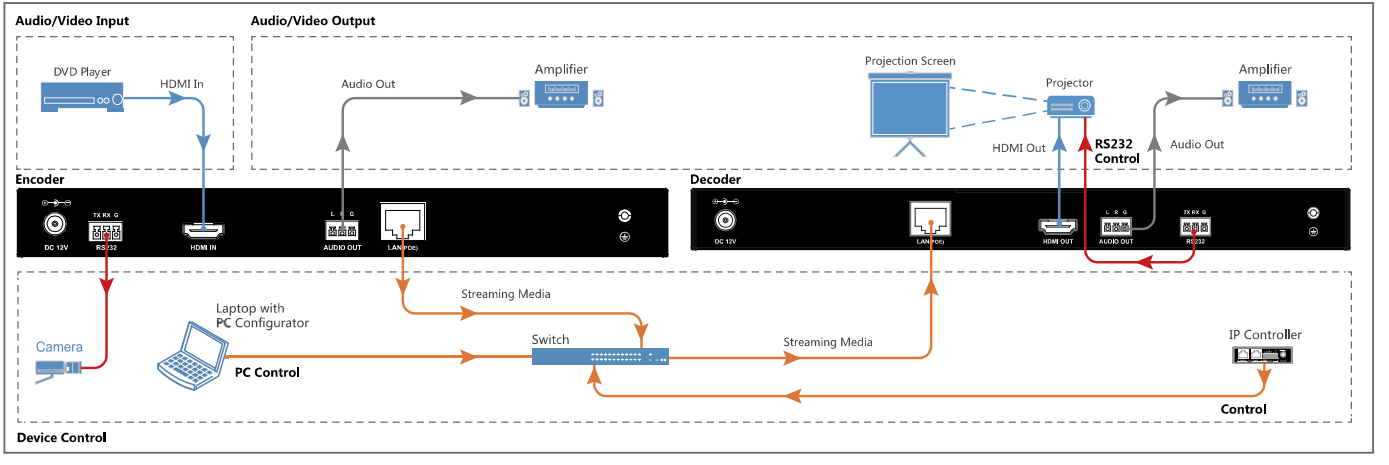
You can use encoders and decoders to build a network of IP matrix. With PC configurator and IP controller, you can configure and manage this function. For more information, see the respective software user guides.



Hardware Installation

Warning:

- Before the installation, disconnect the power supplies from all the devices.



Note:

- If the Ethernet switch doesn't support PoE, connect encoders and decoders to their power supplies.
- If the PoE switch is unable to provide enough power, connect encoders/decoders to the power adapters and disable PoE function of the connected LAN ports in the switch. We would recommend that you power encoders/decoders using power adapters or a PoE switch instead of using their power supplies at the same time.

Operating the Encoders/Decoders

For more information on how to configure and manage the streaming systems, see the user guides of PC configurator (HDMI over IP console) and IP controller.

Upgrading the Encoders/Decoders

You can use MaintainTool to upgrade the encoders/decoders to their latest versions to obtain new features. For more information, see the user guide of MaintainTool.

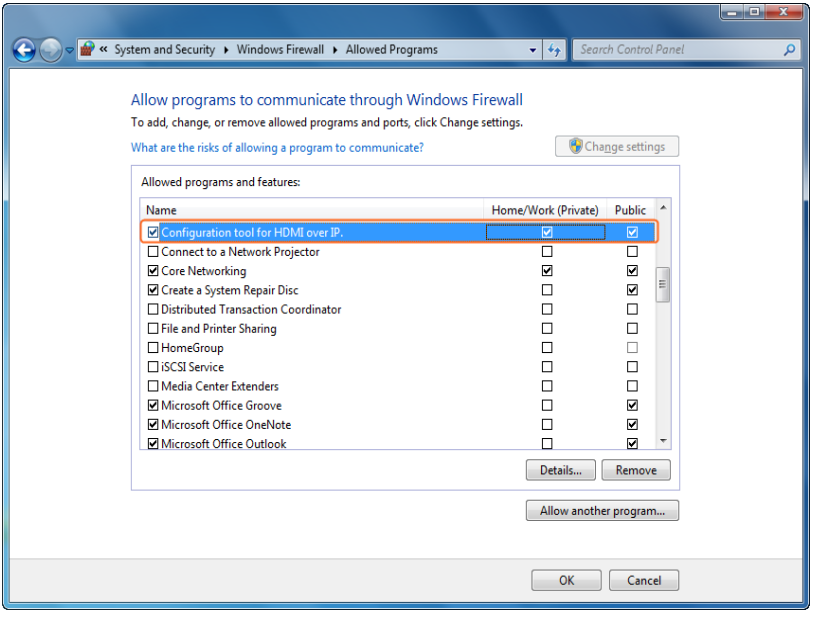
Troubleshooting

1. The **PC configurator** or **Maintain Tool** cannot find any encoder/decoder.

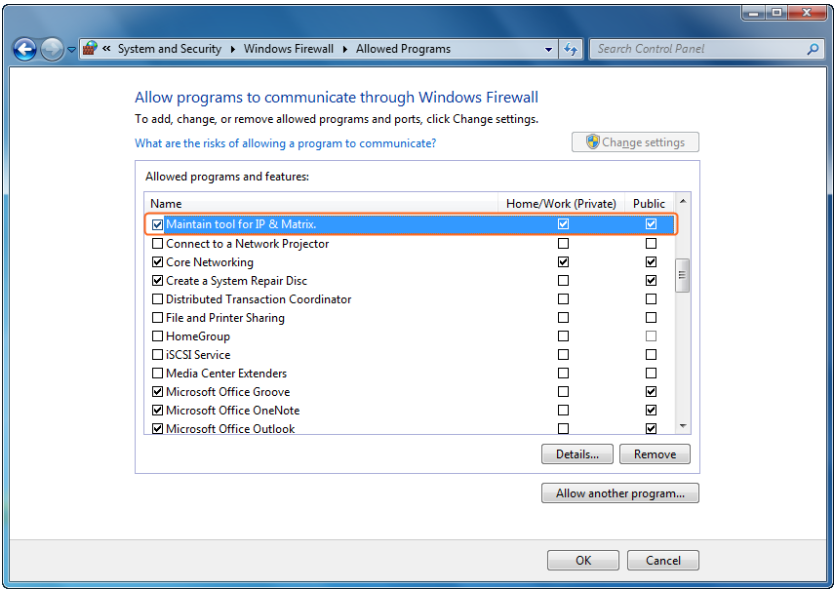
- Check the Windows Firewall.

  Taking Windows 7 as an example: Click **Start** menu, go to **Control Panel** > **System and Security** > **Windows Firewall** > **Allowed Programs**, select **Home/Work (Private)** and **Public** for PC configurator and Maintain Tool.

For PC configurator (HDMI over IP Console):



For Maintain Tool:



- Check the IP address and subnet mask of your computer. The computer, encoders/decoders and Ethernet switch should be on the same subnet. Therefore, set your computer's IP address as 169.254.X.X and subnet mask 255.255.0.0. For more information, see the user guide of MaintainTool.
- Check that Ethernet switch is configured properly, and that IGMP snooping and IGMP querier are enabled.

2. Why do the displays show no pictures?

- Check that all the devices are powered on.
- Check that all the cables are qualified and connected properly.
- Check the status of the **STATUS** indicators on decoders to see if encoders and decoders are linked correctly. If link exceptions occur, link them using the PC configurator or PC controller on

your computer. For more information about the **STATUS** indicators, see "Front Panel" of encoder. If exceptions still exist, see the other solutions to this question.

- Check that the displays work properly, and that source devices have normal signals output.
- Check that the displays are switched to the correct source input modes, for example switching to HDMI 1 if a display's HDMI 1 port is connected to a decoder via an HDMI cable.
- We would recommend that you power encoders/decoders using power adapters or a PoE switch instead of using their power supplies at the same time. For example, if you want to use power adapters, ensure that PoE function of the connected LAN ports in the switch is disabled or a non-PoE switched is used.
- Check that displays support HDCP if source videos are HDCP-encrypted.
- Check that no compatibility issues exist between displays and decoders. If so, replace the displays with other models.
- Check that encoders support the resolutions of the input signals. For more information about the resolutions, see "Specifications" section.
- Check that Ethernet switch is configured properly, and that IGMP snooping and IGMP querier are enabled.

3. Why do the A/V devices such as DVD players, TV sets, amplifiers or speakers have no sound output?

- Check that all the devices are powered on.
- Check that all the cables are qualified and connected properly.
- Check the status of the **STATUS** indicators on decoders to see if encoders and decoders are linked correctly. If link exceptions occur, link them using the PC configurator or PC controller on

your computer. For more information about the **STATUS** indicators, see "Front Panel" of encoder. If exceptions still exist, see the other solutions to this question.

- Check that the A/V devices work properly.
- Check that the A/V devices have normal signals output.
- Check that the A/V devices are not set to mute or 0 for volume.
- Check that encoders/decoders are not set to mute using PC configurator. For more information, see the user guide of PC configurator.
- We would recommend that you power encoders/decoders using power adapters or a PoE switch instead of using their power supplies at the same time. For example, if you want to use power adapters, ensure that PoE function of the connected LAN ports in the switch is disabled or a non-PoE switched is used.
- Check that displays support HDCP if source videos are HDCP-encrypted.
- Check that no compatibility issues exist between the A/V devices and encoders/decoders. If so, replace the A/V devices with other models.
- Check that encoders support the resolutions of the input signals. For more information about the resolutions, see "Specifications" section.
- Check that Ethernet switch is configured properly, and that IGMP snooping and IGMP querier are enabled.

Warranty Terms and Conditions

DATATRONIX 1-Year Limited Warranty

DATATRONIX. (the "Company") warrants to the Original Purchaser that the item purchased is free from defects in workmanship or material under normal use. This warranty starts on the date of shipment of the hardware to the Original Purchaser. During the warranty period, the Company agrees to repair or replace, at its sole option, without charge to Original Purchaser, any defective component. To obtain service, the Original Purchaser must return the item to the Company properly packaged for shipping. All defective products must be returned to the Company within thirty (30) days of failure. Products must be returned with a description of the failure and Return Merchandise Authorization (RMA) number supplied by the Company. To receive an RMA number and a return shipping address on where to deliver the hardware, call 610-429-1821. The shipping, and insurance charges incurred in shipping to the Company will be paid by Original Purchaser, and all risk for the hardware shall remain with the Original Purchaser until such time as Company takes receipt of the hardware. Upon receipt, the Company will promptly repair or replace the defective unit, and then return said unit to Original Purchaser, shipping prepaid. The Company may use reconditioned or like-new parts or units, at its sole option, when repairing any hardware. Repaired products shall carry the same amount of outstanding warranty as from original purchase. Any claim under the warranty must include dated proof of purchase or invoice. In any event, the Company's liability for defective hardware is limited to repairing or replacing the hardware. This warranty is contingent upon proper use of the hardware by Original Purchaser and does not cover: if damage is due to Acts of God (including fire, flood, earthquake, storm, hurricane or other natural disaster), accident, unusual physical, electrical, or electromechanical stress, modifications, neglect, misuse, operation with media not approved by the Company, tampering

with or altering of the hardware, riot, war, invasion, act of foreign enemies, hostilities (regardless of whether war is declared), civil war, rebellion, revolution, insurrection, military or usurped power or confiscation, terrorist activities, nationalization, government sanction, blockage, embargo, labor dispute, strike, lockout or interruption or failure of electricity, air conditioning, or humidity control, internet, network, or telephone service The warranties given herein, together with any implied warranties covering the hardware, including any warranties of merchantability or fitness for a particular purpose, are limited in duration to one year from the date of shipment to the Original Purchaser. Jurisdictions vary with regard to the enforceability of warranty limitations, and you should check the laws of your local jurisdiction to _nd out whether the above limitation applies to you. The Company shall not be liable to you for loss of data, loss of profits, lost savings, special, incidental, consequential, indirect, or other similar damages arising from breach of warranty, breach of contract, negligence, or other legal action even if the Company or its agent has been advised of the possibility of such damages, or for any claim brought against you by another party. Jurisdictions vary with regard to the enforceability of provisions excluding or limiting liability for incidental or consequential damages. You should check the laws of your local jurisdiction to find out whether the above exclusion applies to you. This warranty allocates risks of product failure between Original Purchaser and the Company. The Company's hardware pricing reflects this allocation of risk and the limitations of liability contained in this warranty. The warranty set forth above is in lieu of all other express warranties, whether oral or written. The agents, employees, distributors, and dealers of the Company are not authorized to make modification to this warranty, or additional warranties binding on the Company. Accordingly, additional statements such as dealer advertising or presentations, whether oral or written, do not constitute warranties by the Company and should not be relied upon. This warranty gives you specific legal rights. You may also have other rights which vary from one jurisdiction to another.

DATA-TRONIX®

DATA-TRONIX Offices

Address: 1085 Andrew Dr. Ste. A
West Chester, PA 19380

Official Website: www.datatronix.biz

DATA-TRONIX Technical Support

(800) 688-9282 Press '3', then '4'.