WyreStorm SW-510-TX 4-input 4K UHD Switching HDBaseT Transmitter User Guide

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IMPORTANT! Installation Requirements

1. Read through the Wiring and Connections section for important wiring guidelines before creating or choosing premade cables.
2. While this product supports CEC, WyreStorm cannot guarantee compatibility with all forms of CEC communication.
3. Visit the product page to download the latest firmware, document version, additional documentation, and

configuration tools.

In the Box

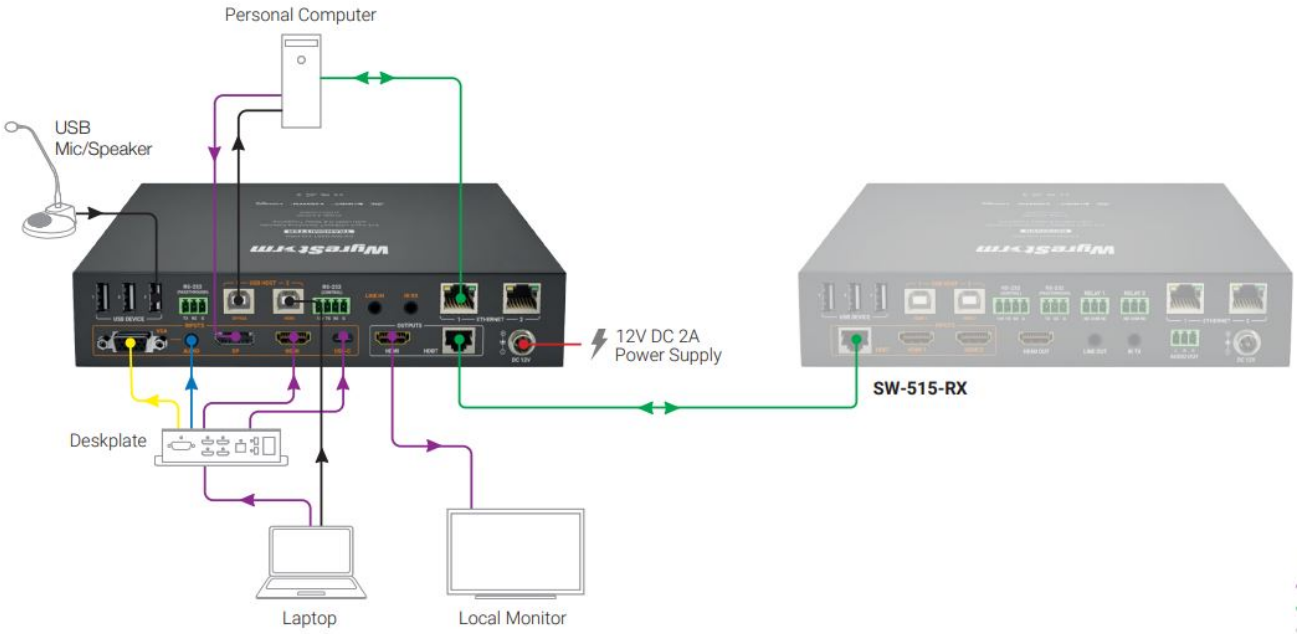
- 1x SW-510-TX Transmitter
- 1x 12V 2A DC Power Supply (US/UK/EU/AU)
- 1x IR Receiver
- 2x Mounting Brackets
- 1x 3-pin Screw Down Phoenix Connector
- 1x 4-pin Screw Down Phoenix Connector
- 1x Quickstart Guide (This Document)

Information and Parts Required for Installation
This transmitter requires connection via RS-232 in order to configure functions such as EDID. Ensure that the following items are on hand before proceeding with the installation

- PC or Mac
- Terminal software such as PuTTY
- USB COM Port Adapter (Not Included)
- WyreStorm Part: CAB-USB-3PIN
- Latest version of the SW-510-TX API for advanced configuration not covered in this document

Note: IP control is only possible when the SW-510-TX and SW-515- RX are used as a kit. The web server exists only in the RX.

Basic Wiring Diagram



KEY

- HDMI/DisplayPort/USB-C

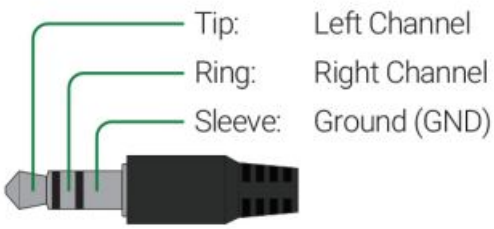
- HDBaseT/Ethernet
- RS-232/Relay
- Analog Audio
- Analog Video
- USB 2.0

Wiring and Connections
WyreStorm recommends that all wiring for the installation is run and terminated prior to making connections to the switcher. Read through this section in its entirety before running or terminating any wires to ensure proper operation and to avoid damaging the equipment.

IMPORTANT! Wiring Guidelines

- The use of patch panels, wall plates, cable transmitters, kinks in cables, and electrical or environmental interference will have an adverse effect on signal transmission which may limit performance. Steps should be taken to minimize or remove these factors completely during installation for best results.
- WyreStorm recommends using pre-terminated VGA, HDMI, DP and USB cables due to the complexity of these connector types. Using preterminated cables will ensure that these connections are accurate and will not interfere with the performance of the product

Audio Connections



Audio In The audio connections use a 3.5mm (1/8in) TRS Stereo Jack.

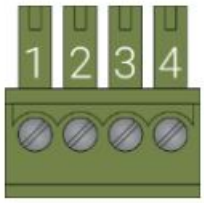
Communication Connections

RS-232 Wiring
The SW-510-TX uses a 3-pin RS-232 with no hardware flow control. Most control systems and computers are DTE where pin 2 is RX, this can vary from device to device. Refer to the documentation for the connected device for pin functionally to ensure that the correct connections can be made.
PC Connection
Connection to a PC uses the RS-232 Control connection and requires the use of a USB to 3-pin Port Adapter cable (CAB-USB-3PIN) in order for a port to be provided on the PC. Note that this adaptor can be used on both v1 and v2 versions.

RS-232 Passthrough

WyreStorm Connector			3rd Party Device
Pin 1	TX (Transmit)	---> To --->	RX (Receive)
Pin 2	RX (Receive)	---> To --->	TX (Transmit)
Pin 3	G (Ground)	---> To --->	G (Ground)

RS-232 Control



WyreStorm Connector			3rd Party Device
Pin 1	12V DC Out	No Connection	Reserved
Pin 2	TX (Transmit)	---> To --->	RX (Receive)
Pin 3	RX (Receive)	---> To --->	TX (Transmit)
Pin 4	G (Ground)	---> To --->	G (Ground)

Troubleshooting

- No or Poor Quality Picture (snow or noisy image)
- Verify that power is being supplied to the transmitter and receiving device.
- Verify that all HDMI and HDBaseT connections are not loose and are functioning properly.
- Verify that the HDBaseT cable is properly terminated following EIA568B standard.
- Verify that the output resolution of the source and display is supported by this transmitter.
- Configure EDID Settings to a lower resolution.
- If transmitting 3D or 4K, verify that the HDMI cables used are 3D or 4K rated.
- No or Intermittent 3rd party Device Control
- Verify that the IR, RS-232, and Ethernet cables are properly terminated following the Wiring and Connections section.
- Relays Not Functioning
- Verify polarity of the relay connections.
- Troubleshooting Tips
- WyreStorm recommends using a cable tester or connecting the cable to other devices to verify functionality.
- This product contains a USB-C connection that can be used as an audio/video input. When using this connection verify that the USB-C cable used supports audio/video functionality as not all USB-C cablessupport this requirement.

Setup and Configuration

The SW-510-TX is configured using RS-232 commands for Output Resolution, and EDID. Follow these steps to properly configure the transmitter based on the system requirement.
Note: The steps and information provided in this QSG are for basic operation of the transmitter out of the box. Refer to the SW-510-TX API for full configuration settings

Communication Settings
The commands listed below can be sent to the TX through a direct RS-232 connection or via a LAN connection if used as a kit with the SW-515-RX. Each device must be connected together via HDBaseT in to order to send a command from one device to the other. The only exception is Configuring a Static IP Address which requires connection to the RX.

Baud rate:	115200
Data Bits:	8bits
Parity:	None
Stop Bits:	1bit
Flow Control:	None

Configuring Input EDIDs
By default, all inputs are set to an EDID or 1920×1080@60Hz 2CH. However, this can be configured to suit the installation.

<table>
<tr><td rowspan="9">Set Input EDID

SET EDID [Input] [Resolution] [Device] <CR><LF> Example: SET EDID in1 1 tx<CR><LF> Response: EDID SET in1 1 tx<CR><LF>

Query Input EDID

GET EDID [Input] [Device]<CR><LF> Example: GET EDID in1 tx<CR><LF> Response: EDID GET in1 1 tx<CR><LF></td><td colspan="2">Input= VGA | DP | TXHDMI | USBC | RXHDMI1 | RXHDMI2

Resolution={Below tables based on connection}</td></tr>
<tr><td>VGA EDID</td><td>HDMI/USB-C EDIDs</td></tr>
<tr><td>1024×768@60Hz 2CH</td><td>1024×768@60Hz 2CH</td></tr>
<tr><td>1280×768@60Hz</td><td>1280×720@60Hz</td></tr>
<tr><td>1360×768@60Hz</td><td>1360×768@60Hz</td></tr>
<tr><td>1440×900@60Hz</td><td>1440×900@60Hz</td></tr>
<tr><td>1600×900@60Hz</td><td>1600×900@60Hz</td></tr>
<tr><td>1680×1050@60Hz</td><td>1680×1050@60Hz</td></tr>
<tr><td>1920×1080@60Hz</td><td>1920×1080@60Hz</td></tr>
<tr><td>1920×1200@60Hz</td><td>3840×2160@30Hz</td></tr>
</table>

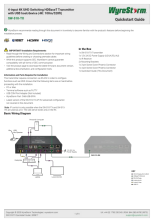
Specifications

Audio and Video				
Inputs	1x VGA In: 15-pin VGA 1x Display Port In: DisplayPort 1.3 1x HDMI In: 19-pin type A 1x Audio In: 3.5mm (1/8in) TRS Stereo 1x Line In: 3.5mm (1/8in) TRS Stereo			
Outputs	1x HDMI Out: 19-pin type A 1x HDBT Out: 8-pin RJ-45 Female			
Video Encoding	HDBaseT Class C			
Encoding Data Rate	9.2Gbps			
End to End Latency	10µs (micro seconds)			
Audio Formats	2ch Analog/PCM | Multichannel: LPCM			
Video Resolutions (Max)	**Video Resolution**	**HDMI**	**Cat6**	**Cat6a/7**
	1920x1200p @60Hz 8bit	15m/49ft	150m/492ft	150m/492ft
	1920x1080p @60Hz 8bit	15m/49ft	150m/492ft	150m/492ft
	3840x2160p @30Hz 8bit 4:4:4	7m/23ft	100m/328ft	100m/328ft
	4096x2160p @60Hz 8bit 4:2:0	7m/23ft	100m/328ft	100m/328ft
Supported Standards	DCI | RGB			
Maximum Pixel Clock	297MHz			
Communication and Control				
HDMI	HDMI | HDCP 2.2 | EDID | DVI/D supported with adapter (not included)			
HDBaseT	HDMI | HDCP 2.2 | EDID | CEC | 2ch audio | USB			
Ethernet	2x 8-pin RJ-45 female | Bidirectional over HDBaseT			
RS-232	1x RS-232 (Control): 3-pin Phoenix | 1x RS-232 (Passthrough): 3-pin Phoenix			
IR	1x IR RX: 3.5mm (1/8in) TS Mono			
USB	1x USB-C: USB 3.1 Audio/Video | 2x USB Host: USB-B | 3x USB Device: USB-A USB over HDBT limited to 190Mbps | Max 5v 500mA per Type A port			
Power				
Power Supply	12V DC 2A			
Max Power Consumption	14.02W			
Environmental				
Operating Temperature	0 to + 45°C (32 to + 113 °F), 10% to 90%, non-condensing			
Storage Temperature	-20 to +70°C (-4 to + 158 °F), 10% to 90%, non-condensing			
Maximum BTU	56.3BTU/hr			
Dimensions and Weight				
Rack Units/Wall Box	<1U			
Height With | Without Feet	44.5mm/1.76in | 42mm/1.66in			
Width With | Without Brackets	263mm/10.36in | 220mm/8.67in			
Depth With | Without Handles	148.7mm/5.86in | 148.7mm/5.86in			
Weight	0.97kg/2.13lbs			
Regulatory				
Safety and Emission	CE | FCC | RoHS			

Warranty Information

WyreStorm Technologies LLC warrants that its products to be free from defects in material and workmanship under normal use for a period of five (5) years from the date of purchase. Refer to the Product Warranty page on wyrestorm.com for more details on our limited product warranty.

Documents / Resources

	WyreStorm SW-510-TX 4-input 4K UHD Switching HDBaseT Transmitter [pdf] User Guide SW-510-TX 4-input 4K UHD Switching HDBaseT Transmitter, SW-510-TX, 4-input 4K UHD Switching HDBaseT Transmitter
	WyreStorm SW-510-TX 4-input 4K UHD Switching HDBaseT Transmitter [pdf] User Guide SW-510-TX, 4-input 4K UHD Switching HDBaseT Transmitter, SW-510-TX 4-input 4K UHD Switching HDBaseT Transmitter, 4K UHD Switching HDBaseT Transmitter, Switching HDBaseT Transmitter, HDBaseT Transmitter, Transmitter

References

- WyreStorm - Professional Audio Visual Solution Provider

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