NetworkAV™ H.264 HDMI Transmitter over IP with PoE & RS-232

The EXT-AVIPH264TX eliminates dedicated AV cabling for multi-display installations by encoding and transmitting full HD 1080p HDMI signals over a standard Ethernet network up to 394 ft (120m) using H.264 compression over TCP/IP. A single CAT5e/6 run carries video, audio, IR control, and RS-232 — with PoE eliminating the need for a local power outlet at the transmitter.

Designed for integrators deploying digital signage, corporate AV, and multi-zone display systems, the EXT-AVIPH264TX supports point-to-point, one-to-many, and many-to-many topologies over a managed Gigabit switch. Group ID selection via remote controller or web browser allows source-switching without recabling, and the HDMI loopthrough output keeps a local display active at the source.

- H.264 over IP
- PoE Powered
- 1080p@60Hz
- RS-232 Control
- HDCP Compliant

FEATURES

- ✓ Encodes and transmits pure 1080p HDMI signals up to 394 ft (120m) over a single CAT5e/6 cable
- ✓ H.264 compression over TCP/IP — 15 Mbps streaming bit rate, LPCM audio at 48kHz
- ✓ Dual power input: 802.3af PoE compliant + DC 5V (no power adapter required when using PoE switch)
- ✓ Supports point-to-point, one-to-many, and many-to-many configurations — up to 64 TX / 255 RX nodes
- ✓ Group ID source switching (00–63) via IR remote controller or web browser
- ✓ Bidirectional RS-232 pass-through up to 115,200 baud — 8 baud rate presets
- ✓ Wideband IR pass-through 38–56kHz for remote source control at the display location
- ✓ HDMI loopthrough output for simultaneous local display at the transmitter

PACKAGE CONTENTS

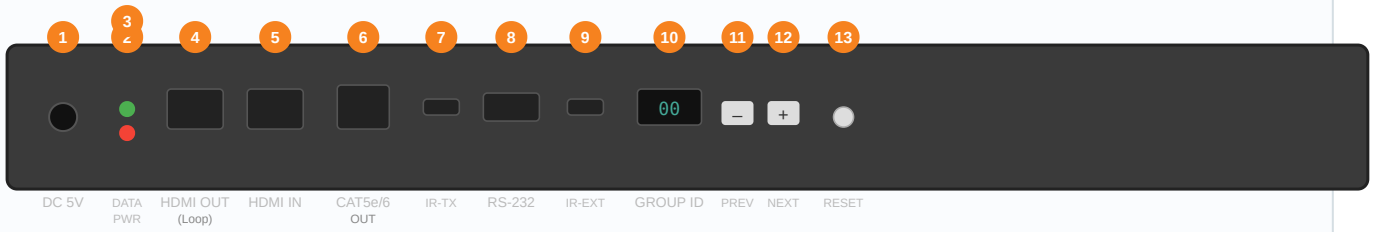
1× Transmitter • 1× Receiver • 1× IR-TX cable • 1× IR-RX cable • 2× IR Ext cable • 2× Power adapter 5V 1A • 2× Phoenix RS-232 plug • 2× Remote controller • 4× Detachable mounting ears • 8× Screws • 1× User manual

Specifications

VIDEO	
Compression	H.264 over TCP/IP
Supported Formats	480i / 480p / 576i / 576p / 720p / 1080i / 1080p@60Hz
Streaming Bit Rate	15 Mbps
HDCP	Compliant
AUDIO	
Format	LPCM
Sampling Rate	48kHz
CONTROL	
IR Frequency	38–56kHz
RS-232 Baud Rate	Default 2400 bps; 8 options: 2400 / 4800 / 9600 / 19200 / 28800 / 38400 / 57600 / 115200
NETWORK	
Default IP (TX)	192.168.1.11 (username: admin / password: admin)
Default IP (RX)	192.168.1.12
Group ID Range	00–63
Switch Requirements	IGMP + DHCP support recommended for multi-unit deployments
Max TX Nodes	64
Max RX Nodes	255
Max Total Nodes	256 (TX + RX + Switch)
CONNECTORS — TRANSMITTER	
Input	1× HDMI Type-A female
Output	1× RJ45, 1× HDMI loopthrough (Type-A female)
Control	1× Phoenix RS-232, 1× IR-TX (38–56kHz), 1× IR-Ext (38kHz)
POWER	
Supply	DC 5V/1A or 802.3af PoE (36–57V)
Consumption	3W max
ENVIRONMENTAL	
Operating Temperature	-5 to +35°C (+23 to +95°F)
Operating Humidity	5–90% RH, non-condensing
PHYSICAL	
Dimensions (L×W×H)	4.69″ × 3.13″ × 1.10″ (119 × 79.5 × 28mm)
Net Weight	0.62 lbs (0.28kg)
CERTIFICATIONS	
Regulatory	FCC Class B (Part 15)

Panel Description

TRANSMITTER (TX) PANEL



NO.	NAME	FUNCTION
1	**DC 5V Input**	5V/1A power adapter input. Not required when powered via PoE switch.
2	**Data LED (Green)**	Blinks when the unit is actively transmitting data over the network.
3	**Power LED (Red)**	Illuminates solid red when power is connected.
4	**HDMI Loop Output**	HDMI output for a local display at the transmitter. Mirrors the HDMI input signal.
5	**HDMI Input**	Connect to the HDMI source device.
6	**CAT5e/6 Output**	RJ45 Ethernet output to PoE switch or direct to receiver.
7	**IR-TX Port**	Connect the IR-TX cable emitter. Attach over the source device IR window.
8	**RS-232 Port**	3-pin Phoenix connector. Bidirectional RS-232 pass-through. Default 2400 bps.
9	**IR-Ext Port**	External IR emitter (38kHz).
10	**Group ID LED**	Shows current Group ID (00–63).
11	**Group ID –**	Decrements Group ID. Hold 3 sec for factory reset.
12	**Group ID +**	Increments Group ID.
13	**Reset Button**	Pin reset. Hold 10 sec to restore factory defaults.

Installation & Configuration

POINT-TO-POINT CONNECTION

For a basic one TX to one RX connection, no IP configuration is required. Connect the source to the HDMI input on the TX, connect the TX RJ45 output directly to the RX RJ45 input using a CAT5e/6 cable, and connect the display to the HDMI output on the RX. Power both units.

SETTING THE IP ADDRESS

DHCP (recommended): Connect both TX and RX to a DHCP-enabled Gigabit switch. The switch will automatically assign unique IP addresses to each unit.

Manual IP via web browser: Connect the TX to a PC on the same subnet. Default TX IP: 192.168.1.11 (user: admin / pw: admin). Default RX IP: 192.168.1.12. Login via browser, navigate to Network Settings, assign a unique IP for each TX and RX.

> The TX and RX must be on the same IP subnet. Each TX and RX must have a unique IP address.

SETTING THE GROUP ID

Group ID determines which TX a given RX displays. All RX units set to Group ID 01 will display the TX set to Group ID 01.

Via remote controller: Press + or – to increment/decrement. Or press the digit buttons directly (e.g., press 0 then 1 for Group 01).

Via web browser: Login to the TX or RX web interface → Stream Settings → change Group ID → click Submit → Reboot.

RS-232 & BAUD RATE

The TX and RX pass RS-232 signals bidirectionally. The default baud rate is 2400 bps. To change the baud rate, use the remote controller to switch to baud rate mode, then press + / – to select:

CODE	BAUD RATE	CODE	BAUD RATE
F0	2400 (default)	F4	28800
F1	4800	F5	38400
F2	9600	F6	57600
F3	19200	F7	115200

SWITCH REQUIREMENTS

For one-to-many and many-to-many deployments, use a Gigabit switch with IGMP and DHCP support. Enable IGMP snooping on the switch to manage Group ID multicast traffic. Daisy-chain switches when more RJ45 ports are needed. Maximum 64 TX + 255 RX = 256 total nodes (including switches).

One-to-Many Distribution — Corporate Digital Signage

How it works: Connect a single HDMI source to the EXT-AVIPH264TX encoder. The encoder compresses the 1080p signal using H.264 and transmits it over the IP network via the PoE switch. Any number of EXT-AVIPH264RX decoders set to the same Group ID will decode and display the signal simultaneously. No dedicated AV distribution hardware is required — the existing Ethernet infrastructure handles distribution.

Local display: The HDMI loopthrough output on the TX keeps a local monitor active at the source location without any signal degradation.

TROUBLESHOOTING

Q: No video on the display connected to the RX?
A: Verify both TX and RX are powered (red LED on). Check that the Group ID on the RX matches the TX. Confirm both units are on the same IP subnet. Try a factory reset on both units (pin reset, 10 sec) and reconnect.

Q: Video is choppy or has artifacts?
A: Use solid-core CAT5e/6 cable with shielded metal RJ45 connectors. Avoid sharing ground connections with the display. For long runs, verify cable length does not exceed 120m. Check that the switch supports IGMP and has sufficient bandwidth for 15 Mbps per stream.

Q: IR control is not working at the display location?
A: Confirm the IR-RX cable on the receiver is within line of sight of the remote control handset. Confirm the IR-TX cable emitter on the transmitter is positioned directly over the IR window of the source device. Check that the IR frequency of the remote is within the 38–56kHz supported range.

Q: RS-232 commands are not passing through?
A: Verify the baud rate setting on the TX and RX matches the baud rate of your control system and target device. All three must be the same. Check Phoenix connector pin wiring (TX, RX, GND).