



HDMI/VGA/CVBS Auto-switching HDBaseT transmitter over single CAT5e/6/7 - 100m, IEEE POE Power Options, 4K, Audio, IR, RS232, LAN - WebOS

ZIG-POE-AHTX



USER MANUAL Ver. 1.0



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Before You Begin

Follow all instructions marked on the device during use. Do not attempt to maintain the device by yourself, any faults, please contact your vendor.

- Provide proper ventilation and air circulation and do not use near water.
- It is better to keep it in a dry environment.
- The system should be installed indoor only.
- Only use the power cord supplied with the device.
- Do not use liquid or aerosol cleaners to clean the device.
- Always unplug the power to the device before cleaning.
- Unplug the power cord during lightning or after a prolonged period of non-use to avoid damage to the equipment.

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Introduction

The ZIG-POE-AHTX is a 100-meter (328 feet) HDBaseT transmitter. The AHTX has 3 inputs with auto-switching – HDMI, VGA/Component and Composite. With switchable POE it can be set up to power upstream and downstream HDBaseT transmitters and receivers. The ZIG-POE-AHTX can be used stand-alone as an HDBaseT transmitter, but really shines when paired with the ZIG-POE-RXAV receiver/scaler & audio amplifier. A perfect “no-control” control system using “on-connection” technology to fire up projectors, drop screens and control lighting in small rooms – BYOD and in seconds collaborate with your colleagues with full audio and video in stunning 4K UHD. A must for conference rooms and huddle spaces.

Package Contents

- 1 x ZIG-POE-AHTX
- 1 x User Manual
- 1 x IEC US Power Cord

Features

- HDMI, VGA, CVBS inputs.
- Auto-Switching function – if you remove an active source – and another source is connected then it will switch to the new source immediately.
- IEEE POE – Upstream or Downstream POE provider.
- WebOS setup and control – or control from ZIG-POE-RXAV hand-held remote – simple automation or integrate into 3rd party controller.
- Supports HDMI 1.2, 1.3 and 1.4 with 48-bit deep color
- Supports digital video formats up to Ultra HD 4K/2K, 60Hz, 4:2:0 pixel format
- Supports uncompressed PCM 2- Ch., 5.1, 7.1, Dolby Digital, DTS, Dolby TrueHD, DTS HD-Master Audio and more.
- Supports IR, RS-232 commands and has additional 3-12V IR locking connection.
- Supports HDCP 1.4 & 2.2
- Dual use RJ-45 ports support HDBaseT and LAN/TCPIP



Specifications

Video Bandwidth

10.2 GBPS

Video Resolutions

HDMI – SMPTE Up to 4096x2160P 60fps @ 4:2:0 8-bit

VGA – up to 1920x1080x60_[n1]

CVBS – Standard 480i/p

Color Space

RGB, YUV

Color Bit Depth

8-bit, 10-bit, 12-bit, 16-bit – 300 MHz Pixel Clock

Chroma Subsampling

4:4:4, 4:2:0 -

Audio

HDMI Input – Up to Dolby TrueHD and DTS-HD Master

L/R Audio Input – PCM 2-channel stereo – follows either VGA or CVBS port – whichever is selected.

Distance

HDBaseT Output – 100M at 4K_[n2]

HDMI Input – 5M at 4K, 15M at 1080P

VGA & CVBS - Standard

HDCP

1.4, 2.2, none

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Connections

- 1 x HDMI type A HDMI Input
- 1 x VGA Input (25-pin locking)
- 1 x CVBS Input (RCA style)
- 1 x 3.5mm left/right stereo input (follows VGA/CVBS)
- 1 x RJ45 HDBaseT Output (Full 5-Play)
- 1 x 5 port IR locking connector (phoenix style) 3-12 V
- 1 x IR Input 3.5mm jack (5V)
- 1 x IR Output 3.5mm jack (5V)
- 1 x Built-in IR sensor (front panel)
- 1 x RJ45 LAN port
- 1 x 9-pin RS-232 port (locking)
- 1 x IEC 110-230V AC connector

Temperature – Operating 32-122 F (0-50 C), Humidity: 20-90% non-condensing

Dimensions

1RU

Weight

3 Pounds

Certifications

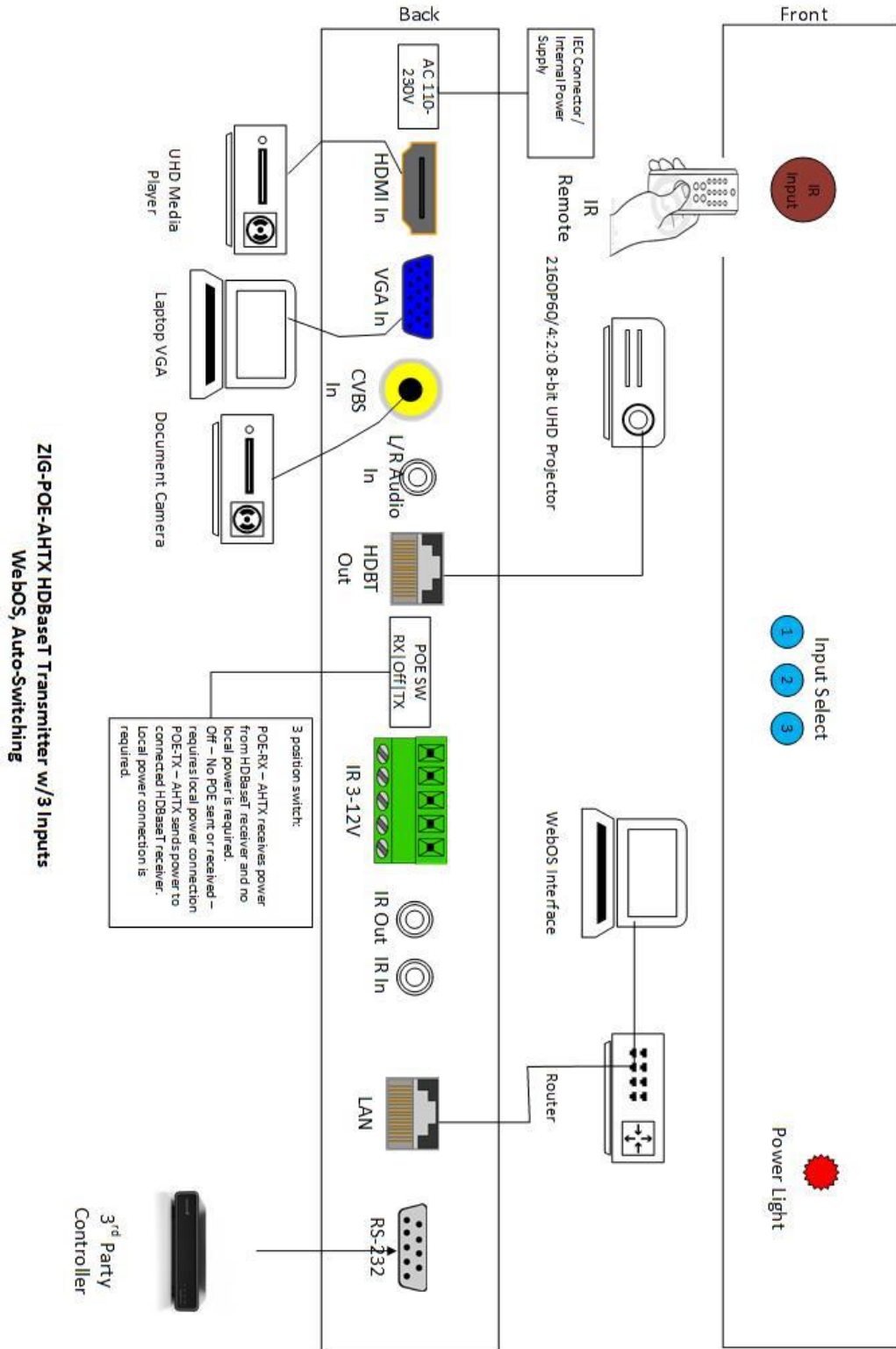
FCC, HDBaseT, CE, RoHS, HDCP, HDMI

Control/Access

Via RJ45 and WebOS for direct control. Can also be accessed and controlled via ZIG-POE-RXAV or ZIG-PS-61

Works With

ZIG-POE-RXAV, ZIG-POE-RX70, ZIG-PS61, ZIG-POE-70R



ZIG-POE-AHTX Block Diagram



Panel Description

Front Side

1. Input select – turns blue when source is selected. Source selection can happen 5 ways:
 - a. Last source connected automatically is active and sent to display.
 - b. By pushing this button the source will toggle to the button pushed – 1 is HDMI, 2 is VGA and 3 is CVBS.
 - c. Via the WebOS (will be covered later)
 - d. Via 3rd party control – IR, RS-232 or LAN
 - e. Via supplied remote control (IR)
2. IR Input Sensor – Use the supplied remote [n4] or 3rd party IR remote to control AHTX directly. Supplied remote also can be use to send commands to the ZIG-POE-RXAV for actions such as changing inputs, triggering relays, volume control and muting.
3. Power Light

Note: **Auto-Switching function** [n5] – if you remove an active source – and another source is connected then it will switch to the new source immediately. Additionally, as soon as you connect either source, if none are connected, that port will become active immediately.

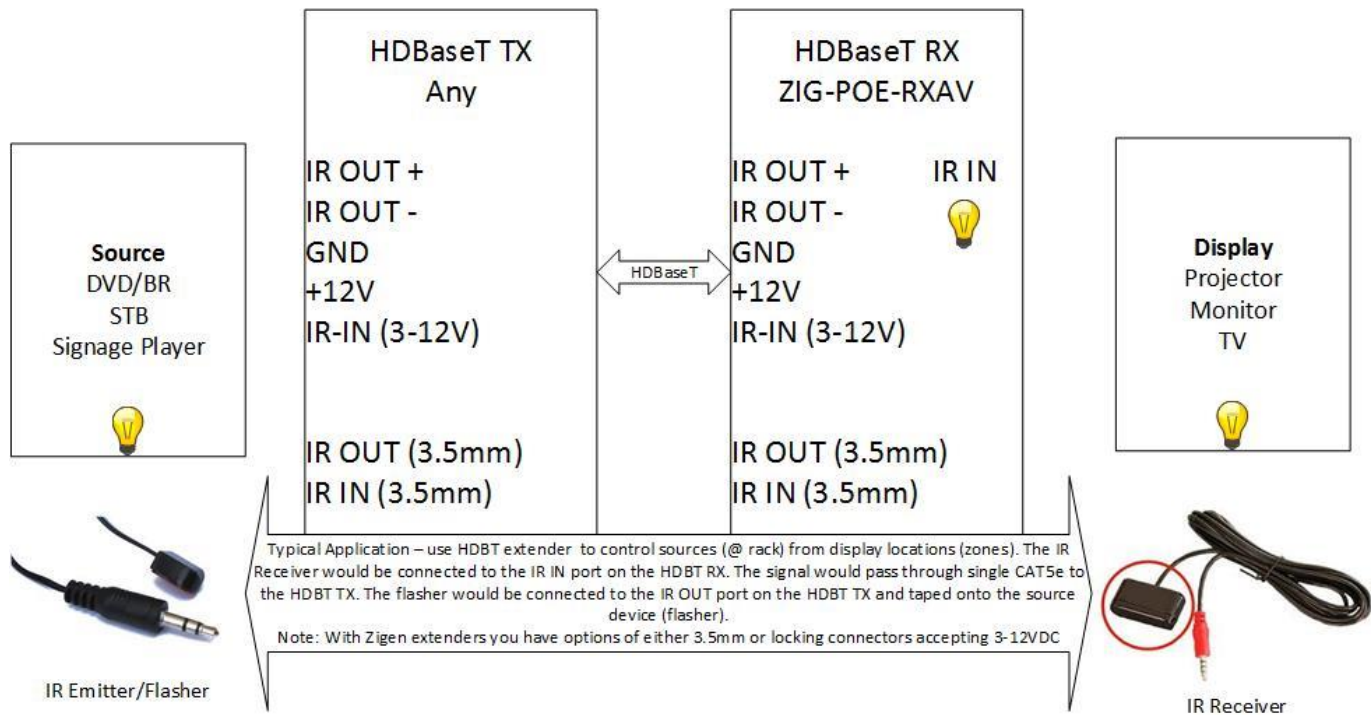
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Back Side

1. HDMI Input – Connect HDMI cable here from your source (BlueRay, Computer, etc.) up to 4K UHD.
2. VGA Input – Connect VGA cable here from PC/MAC or use a breakout cable to connect Component, RGBHV, or Y/C. DVD players, STB, etc.
3. CVBS Input – connect legacy devices – VCR, document cameras, etc.
4. Audio Input – 3.5MM stereo audio input jack. The audio going into this jack follows the VGA/CVBS depending what is the active source.
5. HDBaseT output/LAN Port (fallback) connection – Connect RJ45 up to 100 meters (328 feet) CAT5e, 6, 6a. This is the connection to an HDBaseT receiver such as the ZIG-POE-RXAV, ZIG-PS-61 or ZIG-POE-RX70 wall plate RX. You can also use this connection when accessing via WebOS as a fallback method.
6. POE Switch – 3-position switch.
 - a. Left – POE-RX – **receives IEEE POE** from downstream HDBaseT receivers like the ZIG-POE-RXAV or PS-61 – no local power is required.
 - b. Center – Off – **no POE is generated**. Requires local power source.
 - c. Right – POE-TX – **sends IEEE POE** to upstream HDBaseT receivers like the ZIG-POE-RX70 and ZIG-POE-70R. Local power source is required.
7. 5-Pin connector – for IR connecting block – used for local control and relayed to HDBaseT RX device.
 - IR OUT +
 - IR OUT –
 - Ground
 - + 12V
 - IR IN 3-12V



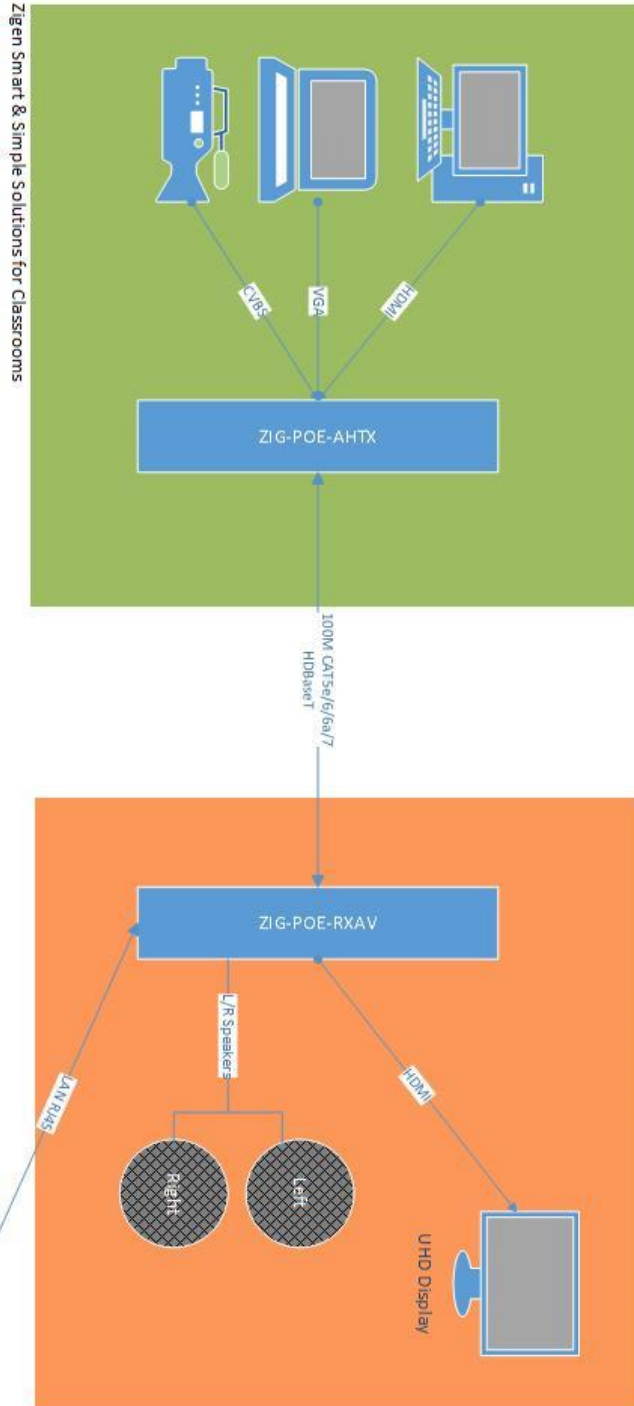
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Typical IR Application Above

8. IR Out port – (Tip P+, Ring P-) 3.5mm – this can be used to send IR to local sources – the origin of the signals would be from the connected HDBaseT RX device (like ZIG-POE-RXAV IR routing)
9. IR In port – 3-13 V 3.5mm [in6] (Tip Signal, Sleeve Ground) – connect IR sensor if you don't have line of site to the built-in IR sensor. Place black tape over built-in sensor when this port is used to eliminate interference.
10. LAN (RJ45) port – Full WebOS control for channel switching. Port can also be used to access and control any HDBaseT device on the network. Telnet and direct HTTP requests [in7] are supported.
11. RS232 (9-pin) port – Bi-directional for local control and remote control (commands relayed via HDBaseT port. Local commands executed locally).

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In this simple system the green box represents a rack or remote source location with 3 sources connected. The Orange would be at the display location with connections to a UHD display and speaker being powered from the RXAV's amplifier. The blue box represents local or remote control position – WebOS sees everything on the network.

Distance from rack to display – up to 328' and HDBaset 5-Play (all 5) compliant 4K UHD

Control Options: IR, RS232, LAN (Telnet or WebOS) connected to either device.

Either device can provide POE.

Simple Classroom setup with ZIG-POE-RXAV as Receiver

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General – In the example above we are showing using an HDBaseT transmitter (ZIG-POE-AHTX) connected to the HDBaseT receiver (ZIG-POE-RXAV) – as mentioned previously you also get an amplified audio output for direct connection to speakers, LAN ports for almost anything you choose and for controlling/setting up the devices, relays, a 4K scaler and IR and RS232 control and functionality.

1. Connect sources to ZIG-POE-AHTX – HDMI, VGA and Composite – with audio if required.
2. Connect RXAV to Display via HDMI
3. Connect Ethernet cable between HDBaseT transmitter (ZIG-POE-AHTX) and RXAV (HDBaseT) Ports – this will also provide power on the ZIG-POE-AHTX
4. Note: If you are not using ZIG-POE-RXAV you can also connect directly to the HDBaseT port on the back of the unit to access/program it.
5. Connect LAN switch/router to LAN 1 port – this is the switch or router that issues IP address (DHCP server)
6. Connect your PC or MAC to the same switch/router. The DHCP server will issue IP addresses to both devices separately.
7. Turn on the Source, TV and RXAV
8. Locate the serial number sticker on each RXAV and make note of it. The web address for the given unit is <http://rxav-xxxx/> where the xxxx are the last 4 digits of the serial number. Ex. If the serial number is 154320000015, then the web address is <http://rxav-0015/>. This is necessary to distinguish multiple units from colliding in the network before their names are changed by the customer. The ZIG-POE-AHTX operates similarly...i.e. <http://poewp-xxxx/>.^[n8]
9. You can also locate the devices with Bonjour. If you do need to connect directly from a PC or Mac to the LAN 1 or 2 port in the RXAV without a router (LAN) you can expect up to 5 minutes for the address to be resolved.
10. Once connected the user interfaces will be available for you to evaluate, change, enter commands, etc.

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ZIG-POE-AHTX Remote Control



Perfect for classrooms when connected to the ZIG-POE-AHTX use the remote to change between HDMI, VGA and CVBS sources.

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WebOS Interface Page

ZIGEN ZIG-POE-AHTX Control Panel

Device Name: ahtx-0000
Notes
Save Notes

Connections: Local HDBaseT, Remote HDBaseT
HDMI: LINK: LINK:
VGA: HDMI: HDMI:
Audio: Mode: Mode:
Cable Length: 0 Cable Length: 0

Refresh
Select Video Input:
HDMI | VGA | CVBS
Active Input:

RS-232 Commands
Ext trigger: [] Test Save
HDMI Cable Connect: [] Test Save
HDMI Cable Disconnect: [] Test Save
VGA Cable Connect: [] Test Save
VGA Cable Disconnect: [] Test Save

EDID Management
EDID Information can be customized for the VGA input
Active edid table:
New edid table: []
Upload custom edid file: (ahtx.edid)
Choose Files No file chosen Upload Edid

Admin
Serial: 123456780000
Firmware: 0.95
Hardware: 0001
IP Address: 192.168.1.111
Device name: ahtx-0000 Change Name
Factory Reset
Choose Files No file chosen Upload Firmware
Reset AHTX Install Update

Device Name/Notes

Status

Command Lines

EDID Management

Firmware/Reset/Info



WebOS

Status

Connections

- HDMI – Green when HDMI is the source
- VGA – Green when VGA is the source
- Audio – Green when audio is present with the VGA signal

Local HDBaseT (RXAV in this case)

- Link – Green when there is an HDBaseT connection
- HDMI - Green when HDMI is present
- Mode: Solid green when HDCP is present, flashing green when no HDCP detected.
- Cable Length of CAT cable being reported by HDBaseT chip – this is not always 100% accurate, especially with shorter cables.

Remote HDBaseT (POEWP in this case)

- Link – Green when there is an HDBaseT connection
- HDMI - Green when HDMI is present
- Mode: Solid green when HDCP is present, flashing green when no HDCP detected.
- Cable Length of CAT cable being reported by HDBaseT chip – this is not always 100% accurate, especially with shorter cables.

Refresh Button – Press to refresh the indicators to note any changes

HDMI and VGA Buttons – Use to toggle between VGA and HDMI

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Device Name & Notes

- Device Name – default out of the box is ZIG-POE-AHTX_[n9].XXXX (last 4 digits of the serial number). You should change it if you are using more than 1 device (Change Name below) to whatever you want – ex. CR100RX – for conference room number 100 receiver.
- Notes – free form field for entering installer notes.

Control/Defaults (RS-232 Command Lines)

- Button Press – enter the command for the CMD button – use Test and Save buttons to make sure it works and saved.
- HDMI Cable Connect – enter the command that you want to have executed when an HDMI cable is plugged into the wall plate. Use Test and Save buttons to make sure it works and saved.
- HDMI Cable Disconnect – enter the command that you want to have executed when an HDMI cable is unplugged from the wall plate. Use Test and Save buttons to make sure it works and saved.
- VGA Cable Connect – enter the command that you want to have executed when a VGA cable is plugged into the wall plate. Use Test and Save buttons to make sure it works and saved.
- VGA Cable Disconnect – enter the command that you want to have executed when a VGA cable is unplugged from the wall plate. Use Test and Save buttons to make sure it works and saved.
- NOTE: When assigning and programming via the WebOS you can also use escape characters – line feed \n and carriage return \r

Firmware/Reset/Info

- Serial Number – serial number of AHTX
- Firmware – Current firmware revision
- Hardware – for internal use
- IP Address – IP address of the unit assigned by your DHCP Server
- Device Name – this is what you want to call the unit – syntax example CR100RX_k123. This is also the name you type into your browser to access the WebOS.
- Factory Reboot – Will reboot the unit.

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- Choose File/Upload Firmware – when necessary, this is where you select a new firmware file and upload firmware.
- Reset POE-AHTX – will reset the ZIG-POE-AHTX remotely.
- Install Update – when necessary is for installing new software updates to the unit.

RS-232 Commands

Command Structure:

ZIG-POE-RXAV ^[n10]RS232 commands

<@hostname> <sp> <command> <sp> <parameter> <end of command>

<@hostname > indicates the specific target RXAV device, preceded by @ <sp> whitespace, space or tab <command> defines the current operation <parameter> is the variable or the value passed to the device

<end of command> newline char \n, ASCII 0xA [hex]

Response Structure:

<@hostname> <sp> <parameter> <sp>... <parameter> <sp> <end of response>

<@hostname> = indicates the device initiating the response <sp> = space, ASCII 0x20 <parameter> = command-specific number of parameters, each followed by a space 0x20 [hex] <end of response> = newline char \n, ASCII 0xA [hex]

RS232 Protocol Settings:

Baud Rate = 115200 Data Bits = 8 Parity = None Stop Bit = 1

Flow control = None

ZIG-POE-RXAV COMMANDS:

Set volume [range -136dB to +10dB, 1dB steps]

@rxav-01 vol -25

Set device 'rxav-01' volume to -25dB Response: @rxav-01 vol x

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Increase volume

@rxav-01 volup

Increase device 'rxav-01' volume by 1dB Response: @rxav-01 vol x

Decrease volume

@rxav-01 voldn

Decrease device 'rxav-01' volume by 1dB Response: @rxav-01 vol x

Bass level [range -10dB to +10dB in 2dB steps]

@rxav-01 bass 6

Set device 'rxav-01' bass level to +6dB Response: @rxav-01 bass x

Treble level [range -10dB to +10dB in 2dB steps]

@rxav-01 treb -2

Set device 'rxav-01' treb level to -2dB Response: @rxav-01 treb x

Mute on/off

@rxav-01 mute on

Set device 'rxav-01' mute on Response: @rxav-01 mute x

Relay 1 on/off

@rxav-01 rel1 on

Set device 'rxav-01' relay 1 to ON position Response: @rxav-01 rel1 x

Relay 2 on/off

@rxav-01 rel2 on

Set device 'rxav-01' relay 2 to ON position Response: @rxav-01 rel2 x

Get Device Status



@rxav-01 st

Get device 'rxav-01' status Response: @rxav-01 st power x, vol x, bass x, treb x, mute x, relay1 x, relay2 x

Display Device Info

@rxav-01 man

Get device 'rxav-01' device information Response: @rxav-01 Zigen Corp, ZIG-POE-RXAV, fw1 ver xx, fw2 ver yy

Power on/off

@rxav-01 pwr off

Set device 'rxav-01' power off Response: @rxav-01 pwr x

ZIG-POE-AHTX COMMANDS:

Source switching (HDMI or VGA or CVBS)

@ahtx-xxxx_[n11]insel hdmi

@ahtx-xxxx insel vga

@ahtx-xxxx insel cvbs

@ahtx-xxxx st

Returns the current input selection



Warranty Information

LIMITED WARRANTY – with the exceptions noted in the next paragraph, ZIGEN warrants the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a period of three year from the date of purchase. The proof of sale is required in order to claim warranty. Should this product, in ZIGEN’s opinion, prove defective within this warranty period, ZIGEN, at its option, will repair or replace this product without charge. Customers outside of US are responsible for shipping charges to and from ZIGEN. Any defective parts replaced become the property of ZIGEN. This warranty does not apply to those products which have been damaged due to accident, unauthorized alterations, improper repair, modifications, inadequate maintenance and care, or use in any manner for which the product was not originally intended for. Items integrated into ZIGEN products that are made by other manufacturers, notably computer hard drives and liquid crystal display panels, are limited to the term of the warranty offered by the respective manufacturers. Such specific warranties are available upon request to ZIGEN.

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