

ZIGEN

Subject: Tech Tip - Controlling The System - Zigen RXAV-POEWP

Hi Scott -

This tech tip addresses controlling the system with Zigen's latest product pair - the ZIG-POE-RXAV HDBaseT Receiver/Amplifier/4K Scaler and ZIG-POEWP-100 HDBaseT Transmitter

Controlling the System

The POEWP-100 and POE-RXAV can be used separately with other HDBaseT transmitters and receivers. This Tech Tip addresses signal flow when they are used together in a small room application.

General: Communication between the POE-RXAV (RX) and POEWP-100 (TX) is primarily routed from point to point via single CAT5e (6a recommended).

Control: The purpose of this pair is to provide maximum capability for connecting to and controlling the TX and RX and all devices connected to them (sources and displays).

Control Methods:

Button press - on the POEWP there are 2 buttons - one to switch between VGA and HDMI and one that can be programmed to send an RS-232 command (more on how to later).

On-Connection - When an HDMI or VGA cable is connected to the POEWP that source will be routed to the display connected to the RXAV. An additional set of RS-232 commands can be added via the POEWP WebOS (up to 128 characters delimited by \n (next line)). For example, you may want to turn on the display when an active HDMI or VGA source is connected.

On-Disconnection - Same process as above (on-connection), however the command is executed when the active source is disconnected. ex. When the HDMI cable is unplugged the display gets turned off.

RS-232 Commands

Button Press:

@rxav mute toggle\nPOWR1 \n

Test

Save

HDMI Cable Connect:

POWR1 \n

Test

Save

HDMI Cable Disconnect:

POWR0 \n

Test

Save

VGA Cable Connect:

POWR1 \nINPS2\n

Test

Save

VGA Cable Disconnect:

POWR0 \n

Test

Save

Admin

Note: The above is a screenshot of the WebOS for the POWEP. This is an example while connected to a Sharp display:

Button Press – toggle the mute condition in the RXAV and turn the power on the Sharp display.

HDMI Cable Connect – Power on the Sharp TV

HDMI Cable Disconnect – Power off the Sharp TV

VGA Cable Connect – Power on the Sharp TV and change to PC input

VGA Cable Disconnect – Power the Sharp TV off

This assumes there is an RS-232 connection between the RXAV and Sharp TV. All TVs are different so consult the owner's manual to determine RS-232 straight or crossover (null modem) cable and specific command syntax for your display.

IR/Remote Control - The RXAV comes with an IR remote. The RXAV has a built-in "eye" (IR receiver) that may be used during initial installation or in operation is line of site can be maintained. In many installations this is not possible. The RXAV also comes with an IR receiver (3.5mm) that can be placed within line of site of the remote or a 3rd party remote. The only caveat here is the MCU in the POEWP does the IR processing and must be in the system if the extended IR receiver is used. As an alternative, if the POEWP is not used an IR flasher can be placed over the built-in IR "eye" in the RXAV to issue IR commands to the RXAV.

RS-232 - There are a few ways to use RS-232 commands (for a list of RS-232 commands for the RXAV/POEWP see user manual for either device. For a list of commands for your particular hardware see the device service manual):

With RXAV DB9 connected directly to a device to be controlled like a display. Commands can be entered in the POEWP WebOS on any input line depending on application. Ex. On-connection (of HDMI cable) turn on the display and dim the lights in the room. In the WebOS HDMI Cable Connect line enter: **\n@rxav rel1 on\nPOWR1 \n** - thus, when the HDMI cable is connected relay #1 in the RXAV closes, triggering the lights to dim to viewing level, additionally, the Sharp TV that is connected to the RXAV DB9 and HDMI turns on. Since you have 128 characters you could also change to input HDMI (on display) and change VOL level to reference level (in RXAV). \n is to force a next line, which is needed in RS-232 to indicate a new command is being entered.

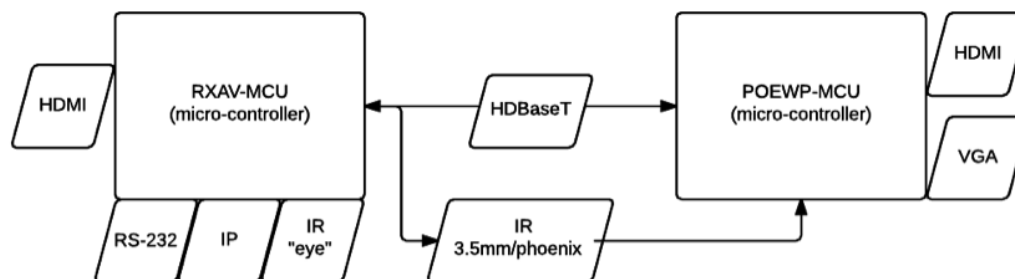
With RXAV DB9 connected to a 3rd party control processor. When connected as part of a distributed system to a 3rd party controller all commands in the users manuals are valid and can be issued to control both devices.

With RXAV DB9 connected directly to a PC or Mac via terminal program. Primarily for troubleshooting and testing of commands - use of null modem vs. straight connection, etc. All commands are valid and can be executed and echoed via terminal session.

IP - All RS-232 commands are also valid via IP connection to RXAV. The only difference is you remove **@RXAV** or **@POEWP** so instead only enter: **mute on or mute off** vs. via RS-232: **@rxav mute on or @rxav mute off**

HTTP Direct Commands – Coming Soon – Check zigencorp.com for updates.

Block Diagram



RXAV Available RS-232/IP Commands: Several - see manual for commands to control relays, EQ audio, mute, volume control, etc. for features inside the RXAV. These commands can come from the POEWP command lines or from 3rd party controllers or computers.

POEWP Available RS-232/IP Commands: @poewp insel HDMI or VGA or CVBS - the ability to change the source input used on the POEWP. This is the only action that can be directly controlled remotely in this device.

Note on RS-232 vs. IP Command Syntax: RS-232 Command Example: @rxav mute on IP Equivalent Command: **mute on**

Notes on IR routing:

Built-in IR sensor - When using the IR remote that comes with the RXAV (or 3rd party IR remote) and the IR "eye" (built-in IR Receiver) all processing of commands are completed in the

RXAV. 3.5mm or Phoenix extended IR receiver - When using the IR remote that comes with the RXAV (or 3rd party IR remote) and the IR extension cable (connected to the IR IN 3.5mm jack on RXAV) all processing of commands are completed in the POEWP.

This is important to know, as some integrators may want to deploy the RXAV without the POEWP - in that case you can still remotely control the RXAV via IR by connecting a 3rd party IR flasher/sender directly over the built-in IR "eye" receiver.

Cover eye – if you deploy a remote IR receiver to control the RXAV make sure you cover the built-in IR "eye" – use electrical tape or similar.