Technical Note
Programming the AV-IP-C8-WH
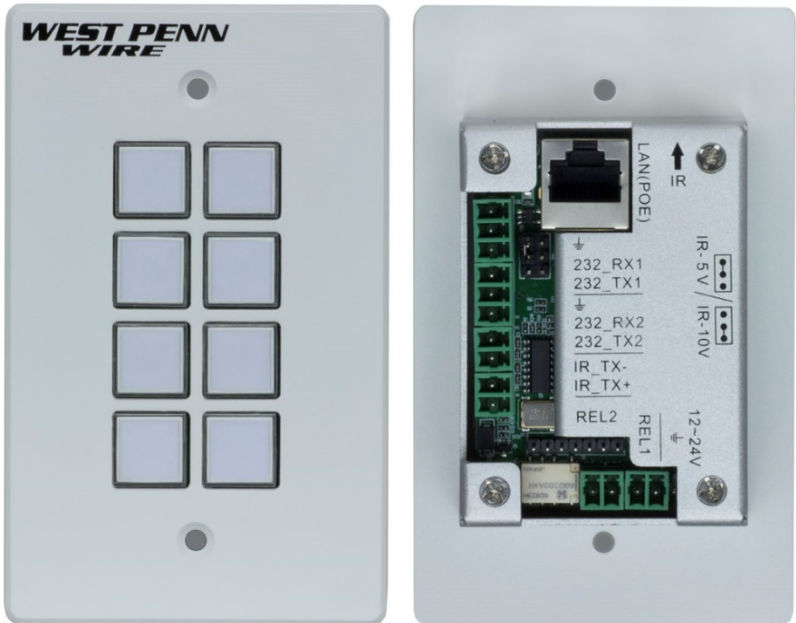
Contents

1. **Introduction**

This document explains how to program the AV-IP-C8-WH to send IP commands to both the AV-IP-WP772 and the AV-IP-RX776. You may also refer to their respective user manuals for further details.

2. **Prerequisites**

The following equipment is utilized in the example below:

- AV-IP-C8-WH
- AV-IP-WP772
- AV-IP-RX776
- PoE network switch
- HDMI video source with audio, such as a LapTop PC (with HDMI or VGA port) or a Bluray player (with HDMI port), etc.
- Computer with an Ethernet port for programing the AV-IP-C8-WH keys
- HDMI Smartboard or Display

Note: All networked IP equipment above must be in the same subnet, so that they can communicate over the network. The default network segment for these devices is 192.168.168.xx, where xx must be a unique value for each networked device.

3. **Setup Diagram**

The following setup diagram is used for this example.

Note: The AV-AMP-20W amplifier may also be used with passive speakers in this setup (see Chapter 6 for more details). In this case the output volume of the AV-AMP-20W may be manually preset at install and control of the audio output levels (mute, unmute, volume up and volume down) are set via IP commands sent to the AV-IP-RX776. Optionally the AV-AMP-20W may also control the audio output levels via RS232 commands sent directly to the AV-AMP-20W as per Chapter 6.
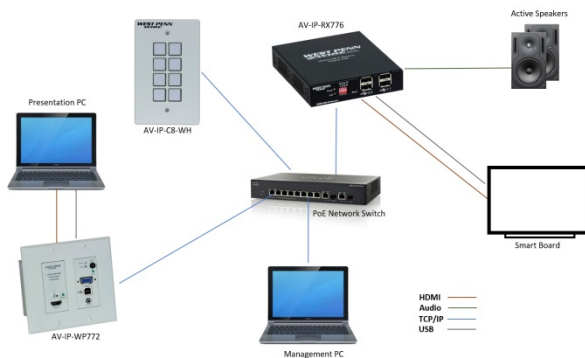
4. **Configuration**

To program the AV-IP-C8-WH 8 keys, open a web browser on a PC (the PC referred to in the above diagram as Management PC) and type the IP address of the AV-IP-C8-WH device, and then login.

- The default IP address for the AV-IP-C8-WH is: 192.168.168.54

    Note: Make sure your Management PC is set to the same network segment (IP address 192.168.168.xx), where xx is a unique value. We suggest setting xx to a unique value between 100 and 200.

- The default login username and password is: admin

Once logged in to the AV-IP-C8-WH, go to the Actions page to program the button functions. In the following example, we will program buttons 6 and 8 using the unmute and mute commands respectively. Other commands may be programmed in a similar manner.

To send a TCP/IP command, the following format is required (the brackets shown should not be used in the actual command):

- [*IP address*][*][Port][*][TCP][*][*Data*]

Where:

- *IP address* : This is the IP address of the device that will execute the command (in this example the AV-IP-RX776)
- * : This is a separator, and it must be included
- Port number : This is the required port setting, and it must be set to 6666
- TCP : This is the Protocol to be used, and it must be set to TCP
- *Data* : This is the actual command to be sent (see the list of IP Commands in Chapter 5)

Below are the default IP addresses of the West Penn Wire over IP devices:

- AV-IP-C8-WH: 192.168.168.54
- AV-IP-WP772:   192.168.168.58
- AV-IP-RX776:   192.168.168.59
- AV-IP-NC811:   192.168.168.50

In this first example we will use the following string to program button 6 to unmute the audio coming out of the audio extract port of the AV-IP-RX776 device. We will also cause button 6 to light up in green and then turn off after 1 sec.

See Chapter 5 for a list of the supported TCP commands. In this example the unmute command for the AV-IP-RX776 is: mux vul_o_unmute
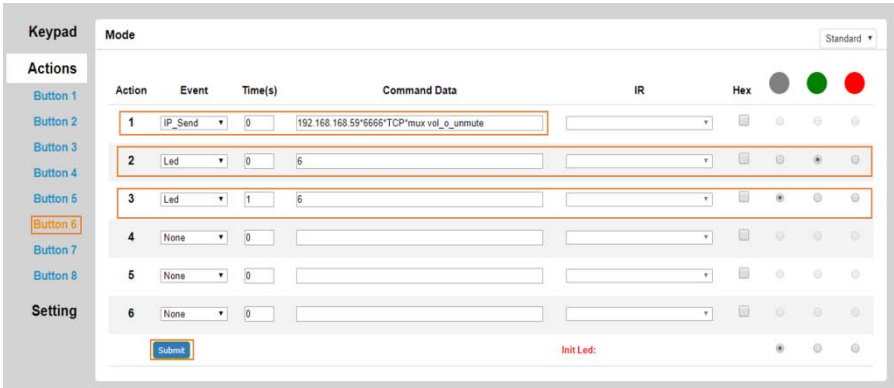
- The IP Command is: **192.168.168.59*6666*TCP*mux vol_o_unmute**

Follow the below steps to program button 6 (see reference diagram below):

1. Make sure you are in the Actions page of the AV-IP-C8-WH to program the button functions, and click on Button 6 to program it.

2. On Action 1, select *IP_Send* from the drop down menu (to be able to send an IP command).

3. Set the Time parameter to 0, which means the command will be sent immediately. This value sets a delay in seconds <u>before</u> the actual command is executed.

4. In the Command Data field, enter the unmute IP command:
    *192.168.168.59*6666*TCP*mux vol_o_unmute*

5. On Action 2, select the LED Event, and set the Time to 0, in order to execute the command immediately.

6. Type the button number to be programmed in the command data space (in this case enter 6, for button 6).

7. Set the LED color to Green. This is a radio button selected on the far right.

8. For Action 3, select the LED Event, and set the Time to 1, in order to execute the command after a 1 second delay (this allows the LED to remain Green as previously set, before executing this Turn Off LED command).

9. Type the button number to be programmed in the command data space (in this case enter 6, for button 6).

10. Select the LED color to Off. This is a radio button selected on the far right.

11. You may optionally set the "Init Led" color to Off. This determines the button 6 LED color on startup.

12. Click on the Submit button.

13. The AV-IP-C8-WH will display a confirmation message saying that the button has been successfully programmed.

So whenever the user presses button 6, the button 6 LED will light up in green and audio will be unmuted immediately. One second after, the button 6 LED will turn off.
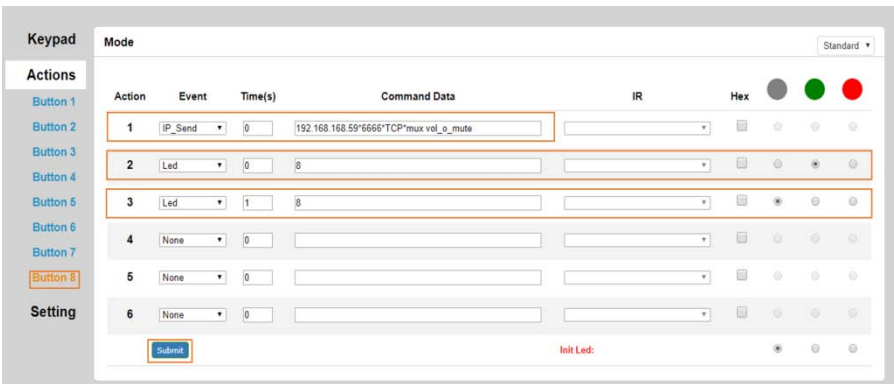
The following screenshot shows the above settings:

Repeat the previous steps to program button 8 to mute the audio output, the mute IP command to be used is:

- *192.168.168.59*6666*TCP*mux vol_o_mute*

The settings should look like the following:

Therefore when the user presses button 8 the LED for this button will light up in green, and audio will be muted immediately. After 1 second the LED will turn off.

5. **IP Commands List (for AV-IP-WP772 & AV-IP-RX776)**

The AV-IP-RX776 supports the following IP commands:

IP command name: Mute

Command description: Mutes the output of the audio extract port.

IP command syntax: mux vol_o_mute

IP command name: Unmute

Command description: Unmutes the output of the audio extract port, and sets it to the previous level.

IP command syntax: mux vol_o_unmute

- *192.168.168.59*6666*TCP* mux vol_o_unmute*

IP command name: Volume-Up

Command description: Increases the volume output of the audio extract port.

IP command syntax: mux vol_o_up

- *192.168.168.59*6666*TCP* mux vol_o_up*

IP command name: Volume-Down

Command description: Decreases the volume output of the audio extract port.

IP command syntax: mux vol_o_down

- *192.168.168.59*6666*TCP* mux vol_o_down*

The AV-IP-TX772-(AL or WH) support the following IP commands:

IP command name: Select HDMI

Command description: Selects the HDMI port as the input. This command also disables Auto Select mode.

IP command syntax: mux vin_hdmi

- *192.168.168.58*6666*TCP* mux vin_hdmi*

IP command name: Select VGA (with Audio-In)

Command description: Selects the VGA (with Audio-In) port as the input. This command also disables Auto Select mode.

IP command syntax: mux vin_vga

- *192.168.168.58*6666*TCP* mux vin_vga*

IP command name: Select Auto Mode

Command description: Enables Auto Mode for input port selection. The first port connected (HDMI or VGA) will be automatically selected, and remains selected until it is disconnected. As soon as the selected port is disconnected, the other port will be automatically selected if it is already connected.

IP command syntax: mux vin_auto_on

- *192.168.168.58*6666*TCP* mux vin_auto_on*

IP command name: Toggle

Command description: Toggles between HDMI port selection and VGA (with Audio-In) port selection.

IP command syntax: mux vin_toggle

6. **RS232 Command List (for AV-AMP-20W)**

In the event an AV-AMP-20W is utilized in the setup, the AV-IP-C8-WH can either control the audio output level via IP commands sent to the AV-IP-RX776 device as shown in the previous example (where in such a case the AV-AMP-20W output level is preset at install and left unchanged), or the AV-IP-C8-WH can also control the AV-AMP-20W audio output levels and other parameters directly via RS232 commands. The setup looks like the following:
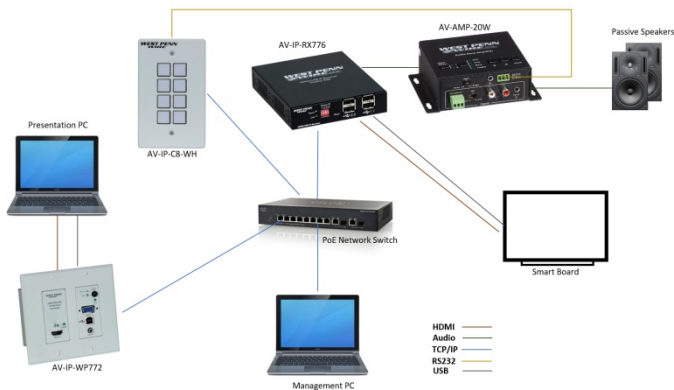
The RS232 COM Port settings are as follows:

- baud rate: 9600
- data bit: 8
- stop bit: 1
- parity bit: none

The table below describes the RS232 commands supported by the AV-AMP-20W:

Command	Function Description	Feedback Code
1A1.	Switching the audio to input 1 (RCA)	A: 1 -> 1
2A1.	Switching the audio to input 2 (3.5mm)	A: 2 -> 1
0A0.	Mute Audio for MIC and Line out	Mute
1A0.	Mute Audio for MIC	Mute MIC
2A0.	Mute Audio for Line out	Mute LIN
0A1.	Unmute Audio	Unmute
3A0.	Switch ON Noise Gate Logic	Gate On
4A0.	Switch OFF Noise Gate Logic	Gate Off
600%	Checking the working status	A: 1 -> 1 Volume: 30 Bass: 00 Treble: 00
601%	MIC volume up	Volume of MIC: 51
602%	MIC volume down	Volume of MIC: 50
603%	Line volume up	Volume of LINE: 51
604%	Line volume down	Volume of LINE: 50
605%	Bass level up	Bass of LINE: 04
606%	Bass level down	Bass of LINE: 03
607%	Treble level up	Treble of LINE: 04
608%	Treble level down	Treble of LINE: 03
609%	Initialization, back to default settings	Init OK
5[x][x]%	Preset MIC Volume, [xx] ranges from [00] to [60]. (Total of 61 levels)	Volume of MIC: 50
7[x][x]%	Preset line Volume, [xx] ranges from [00] to [60]. (Total of 61 levels)	Volume of LINE: 50
8[x][x]%	Preset the Bass level, [xx] ranges from [00] to [08]. (Total of 9 levels)	Bass of LINE: 04
9[x][x]%	Preset the Treble level, [xx] ranges from [00] to [08]. (Total of 9 levels)	Treble of LINE: 04

The AV-IP-C8-WH Buttons have clear covers
That need to be removed for labeling.

The covers can be removed with the small
Suction cup included in the packaging, or can
Be removed with a small flat screwdriver.

The AV-IP-C8-WH package includes 3 pages
of labels. Taking scissors cut the appropriate
label to fit into the clear covers. Snap the clear
cover back to the unit.