Hall Technologies • 1234 Lakeshore Dr Suite #150 Coppell, TX 75019 • halltechav.com

HIVE AV

Audio Visual Control

USER MANUAL

May 21st, 2024

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OVERVIEW

HIVE AV represents a comprehensive suite of Audio-Visual control solutions, designed to streamline the management of AV systems across various environments. The suite includes the Hive Touch, a standalone, POE-powered touch panel that integrates with the Hive AV App for simplified room-specific and multi-room control. This powerful combination supports up to 100 rooms, facilitating an expansive matrix switch setup with direct control over TCP/IP for most connected devices.

Alongside the Hive Touch and Hive AV App, the suite features the Hive Nodes and Hive KP8. The Hive Nodes expand system capabilities with relay control and sensor triggers, while the Hive KP8 offers a standalone 8-button controller, extending the versatility and customization of the system. These components work together to provide a robust, driverless interface that enhances ease of use and reliability, catering to both end users and integrators. The suite is ideal for managing complex AV setups in conference spaces, educational institutions, and commercial venues, ensuring high uptime with minimal maintenance.

OVERVIEW

FEATURES

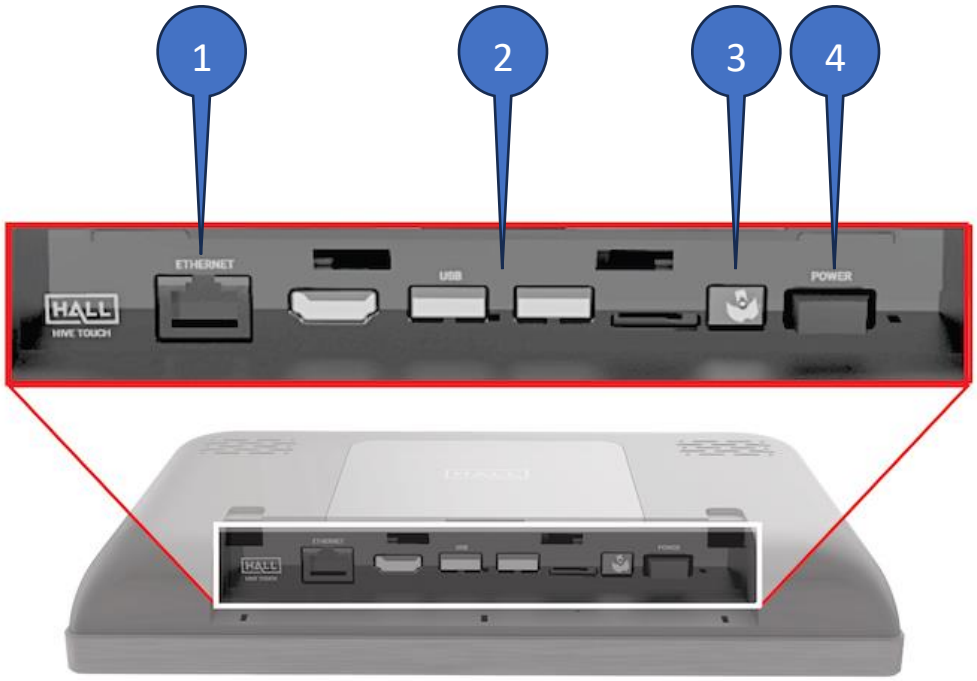
- **All-In-One User Interface and Control System**
  - Stand-alone control system and User Interface with nothing else required.
  - Room control and power over a single PoE (Power over Ethernet) connection.
  - Driverless TCP/IP control of power and volume of most IoT connected devices.
  - Add Hive Nodes and control can be extended to include RS-232, IR, and Relays.
  - Hive-Sync enables multi-room systems by combining Hive Touch panels and allowing control of divisible spaces or a whole floor or even whole building.
- **Ease of Setup and Use:**
  - Easy for Integrators to configure and simple for end-users to operate.
  - Configuration is straightforward and requires no software; all configurations can be completed right from the panel itself.
  - Operates independently of the internet or cloud. Suitable for isolated AV networks or corporate LAN.
  - Programming can be made even easier with the use of the Hive Viewer, a utility that allows updates from any PC.
- **Versa-4k – AV over IP**
  - Hive will discover all Versa senders and receivers on a network and add them to the system
  - Auto Add creates a matrix switching interface as well as a switching preset to send any source to all displays from the press of a button: Send To All.
  - Audio mute and slider controls can be automatically built for any of the Versa audio outputs.
  - Versa can be used as a Hive Node; adding CEC, IR and RS-232 control.

HIVE TOUCH

The Hive touch-panel is a sophisticated, standalone interface optimized for managing AV systems. It features a 10.1-inch high-resolution capacitive touchscreen that supports multi-touch functionality and gestures, ensuring clear and responsive user interactions. Designed for versatility, it can be mounted on walls or tables and is powered through PoE for streamlined setup and integration. Additionally, it boasts wireless, Bluetooth, and casting capabilities, along with HDMI output and USB 2.0 ports for expanded connectivity and display options.

- **High-Resolution Display**: 1280x800 touchscreen for sharp, responsive control.
- **Connectivity Options**: Includes wireless, Bluetooth, and casting capabilities.
- **Flexible Installation**: Wall and table mounting options, VESA compliant.
- **Enhanced Ports**: Features HDMI out and USB 2.0 ports for additional connection possibilities.

PANEL CONNECTIONS



ID	Name	Description
1	ETHERNET	RJ45 Network Port with Power Over Ethernet - POE
2	USB	2 USB Connectors Primarily Used for Program Backup/Restore
3	POWER JACK	Connector for 12V DC Power Supply. Not Required when using POE
4	POWER SWITCH	Switch to turn Power On and Off

HIVE TOUCH

SPECIFICATIONS

Name	Subcategory	Description
Display	Size	10.1 Inch IPS
	Resolution	1280 x 800 WXGA
	Viewing Angle	±89° horizontal, ±89° vertical300 nits
	Luminance	300 nits cd/m2
	Contrast Ratio	600:01:00
	Touch	10 Point Capacitive Multi-Touch
System	CPU	Cortex-A17 Quad-core up to 1.6GHz
	OS	Android 7.12
	RAM	2GB DDR
	Storage	8GB EMMC
Connectivity	Ethernet	RJ45 10/100/1000
	Wi-Fi	802.11a/b/g/n/ac
	Bluetooth	4.2
IO	1x RJ45	PoE+ (class 4)
	2x USB	USB 2.0 Type A
Power	Supply	12V DC 2A
	Consumption	10 Watts Max

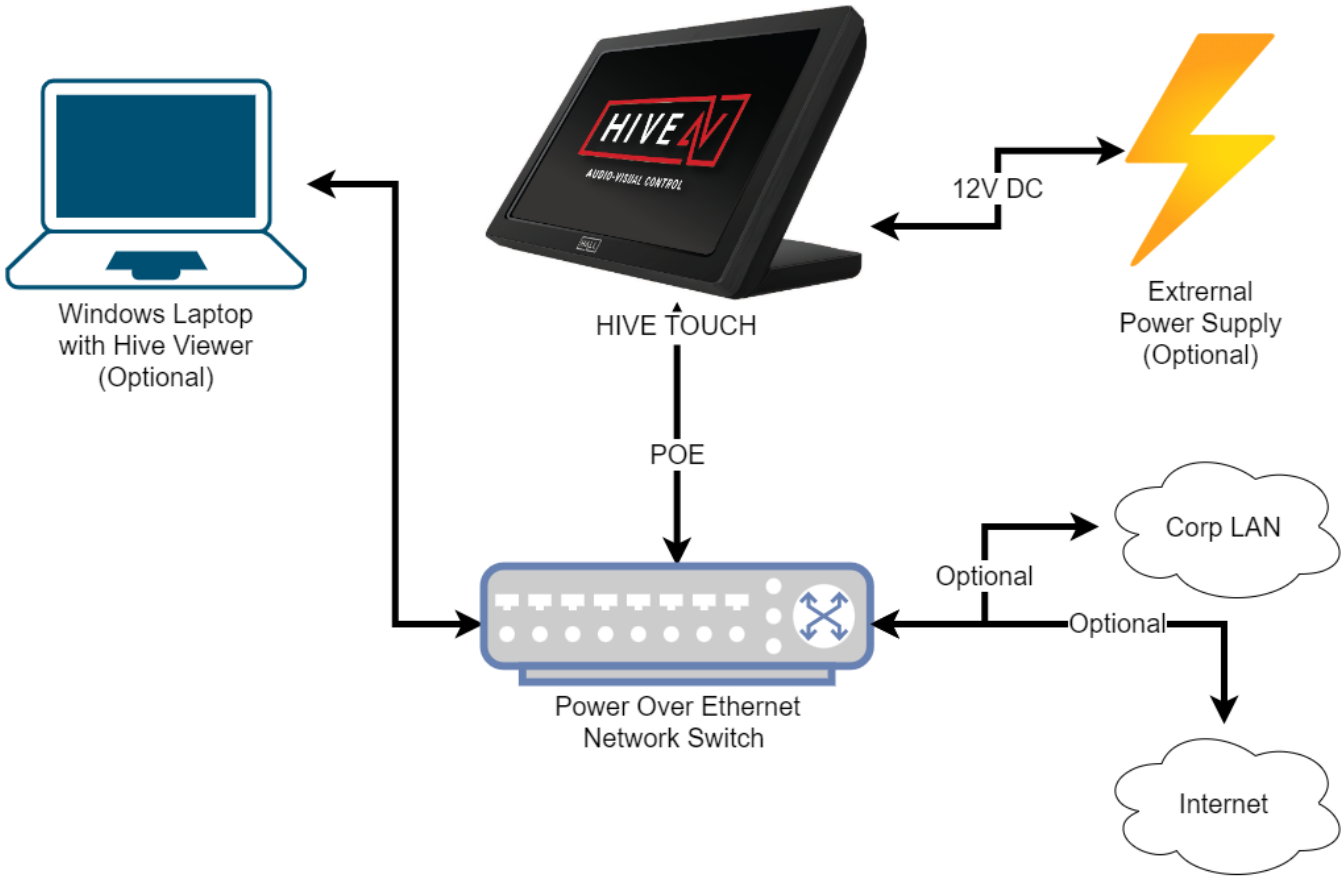
INITIAL SETUP

UNBOX AND CONNECT

As an All-In-One user interface and control system very, the Hive Touch needs little in way of set up. Out of the box, simply connect your Hive Touch to a POE network switch with CAT5 cable, turn it on and you're ready to go.

Here is a more detailed step by step out of the box set up:

1. Unbox Hive Touch
2. Connect ethernet cable to Power Over Ethernet Switch
3. (Optional) Connect 12V DC Power supply for non-power switches
4. Turn On Power
5. Install Desk mount and route cabling
6. Connect AV devices to Network Switch for control
7. (Optional) Connect switch to Corp LAN and/or Internet



INITIAL SETUP

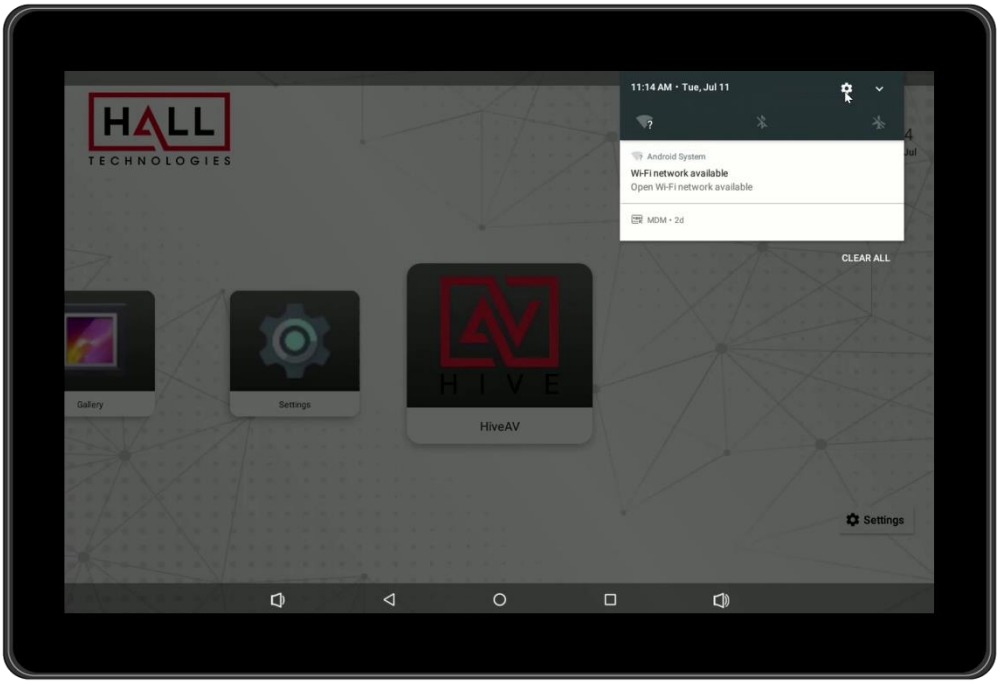
NETWORK SETTINGS AND HIVE VIEWER

After unboxing and connecting to the switch you will need to do some basic network settings to make sure the Hive is on the same subnet as the AV devices you wish to control. Even though you can do all the set up from the Hive touch-panel itself it is highly recommended to use the Hive Viewer to connect your laptop so you can emulate the panel and do all the configurations right from your Windows PC.

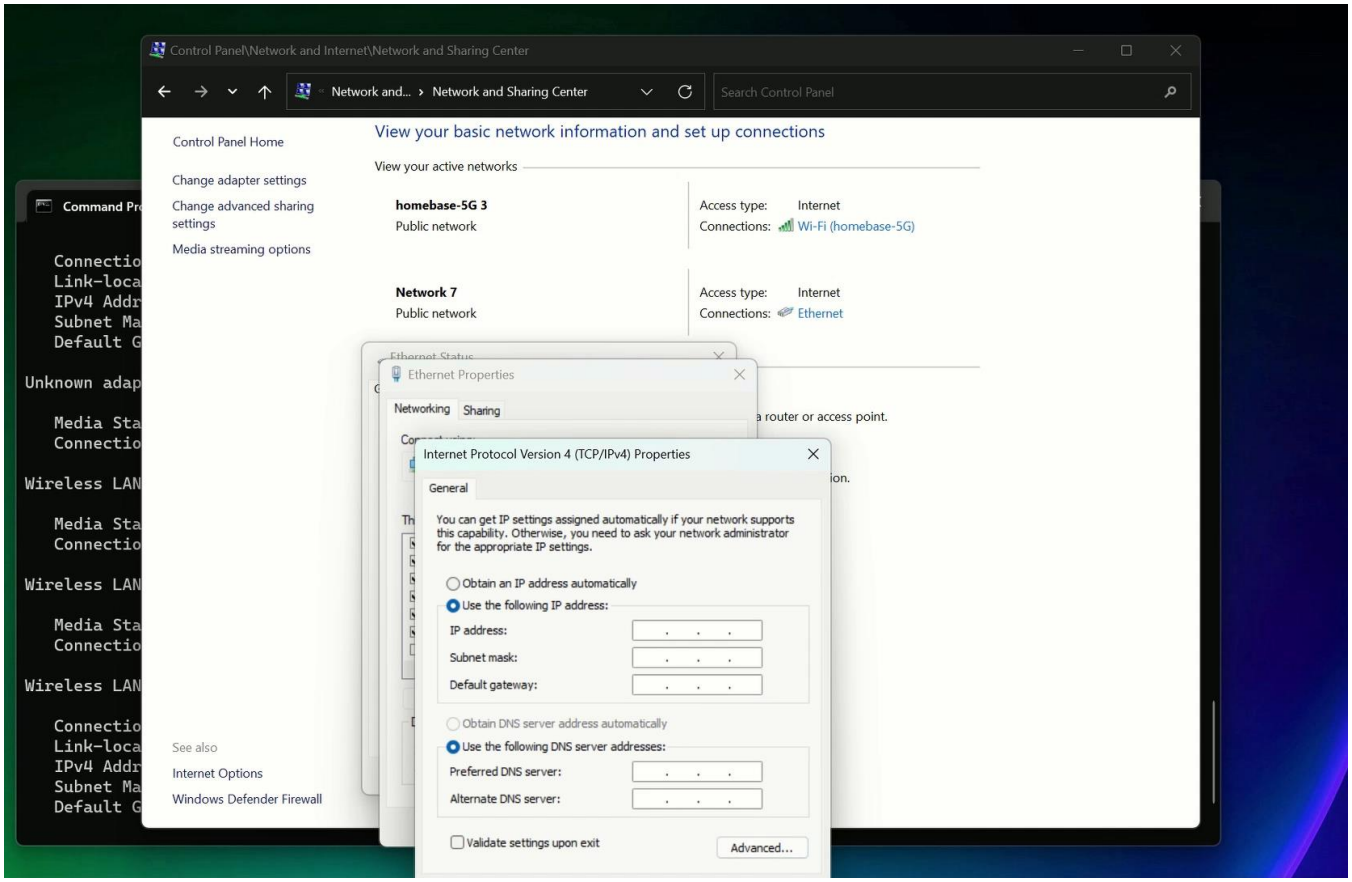
Here is a short tutorial on how to do the initial network set up and how to connect using the Hive Viewer: https://youtu.be/jK9h4WKoeyw?si=YGp994rqVqIEfNju

Here is a detailed step by step of how to set up the network and connect with the Hive Viewer:

1. **Connect the Hive Touch**: Ensure the Hive Touch is connected to a PoE switch to power it and facilitate network connection. Ensure your PC is on the same network.
2. **Set Up Network Settings**:
    - On the Hive Touch, access Ethernet settings either through the settings menu or by swiping down from the top and tapping the settings icon.
    - If using DHCP, confirm the IP address is auto-assigned and matches the network range of your PC.
    - For a static IP, manually set the IP address, DNS, and subnet mask to ensure it aligns with your network.

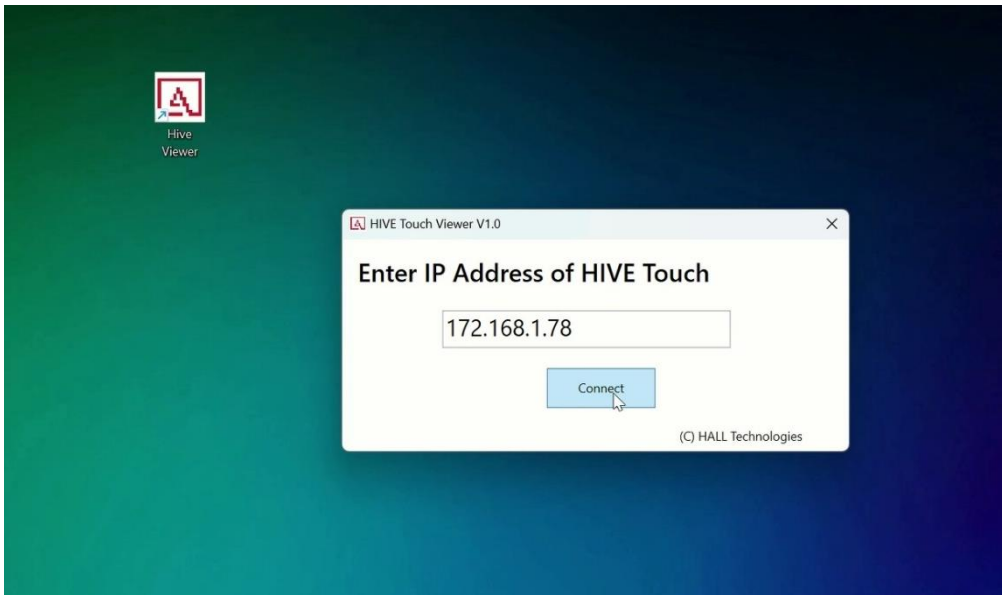


3. **Configure PC Network Settings**:
    - Open Command Prompt on your PC and check your IP address to ensure it's on the same subnet as the Hive Touch.
    - If necessary, adjust your PC's IP settings via the Control Panel to match the Hive Touch network settings.



4. **Download and Install Hive Viewer**:
    - Visit the Hive product page to download the latest Hive Viewer installer or download here: https://halltechav.com/wp-content/uploads/2023/06/HiveViewerInstaller-1.zip
    - Unzip the downloaded file and run the Setup.exe. Admin permissions may be required.
    - Follow the installation prompts to complete the setup.

5. **Connect Using Hive Viewer**:
    - Open the Hive Viewer by double-clicking its icon.
    - Enter the IP address of the Hive Touch in the popup window and click connect.



INITIAL SETUP

UPDATING THE HIVE AV APP

Your Hive Touch should come with the most recent firmware and Hive AV App, but we are developing new features and bug fixes at a very fast pace so you may want to update to the latest version. Installing or updating the Hive AV app is easy, simply download the APK from the Hive product page and then drag and drop it into the Hive Viewer window. If there is an existing Hive AV app on the Hive Touch is recommended to uninstall the old version before installing the new version.

Here is a short video tutorial that goes over the process:

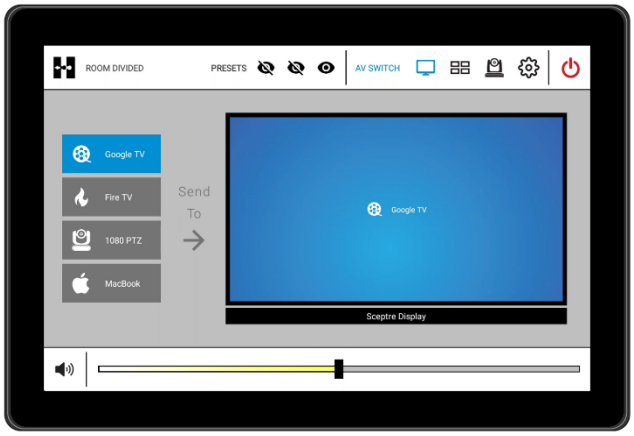
https://youtu.be/-C4r7f6d5JU?si=xaA-Z-RIyEO1ggSK

Steps to Update the Hive AV App:

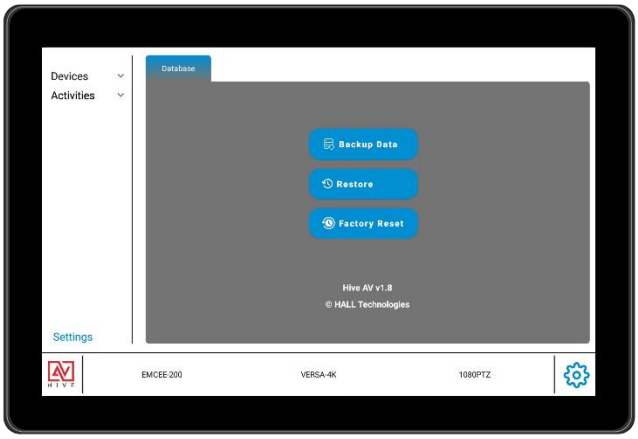
1. **Navigate to the Hive Product Page**: Go to the Hall Technologies website and locate the Hive Touch under products to download the latest Hive AV app and Hive Viewer installer.
2. **Download and Extract the App**: Download the latest version of the Hive AV app, which will be in a ZIP file. Extract the file to get the APK and any release notes.
3. **Connect via Hive Viewer**: Open the Hive Viewer on your PC and connect to the Hive Touch using its IP address.
4. **Backup and Reset**: Before updating, back up your system data. Optionally, perform a factory reset or uninstall the current Hive app to avoid conflicts with the new version.
5. **Install the APK**: Drag and drop the APK file onto the Hive Touch through the Hive Viewer. Follow the prompts to install and wait for the device to reset.
6. **Set Default Launcher (Optional)**: Change the default launcher settings if needed to restrict the panel to only run the Hive AV app or to allow system adjustments during the update.

OVERVIEW

HIVE AV APP



Activity Mode



Device Mode

The Hive AV App revolutionizes AV system setup and control by combining the functionalities of a program generator for AV integrators and a control processor for end-users into a single, streamlined platform. Unlike traditional AV control systems, which necessitate the use of separate PC software for building system programs and additional software for creating user interfaces on different devices, the Hive AV App simplifies this process. With just the Hive Touch panel and the Hive AV app, system setup can be accomplished in minutes rather than days or weeks. This integration significantly reduces the complexity, cost, and potential points of failure associated with traditional methods.

The app operates in two primary modes: Device Mode for AV program generation and Activities Mode for user interaction. This section will explore the rapid configuration process of the Hive Touch, starting with the addition of AV devices such as switchers, videowall processors, DSPs, and cameras. It then details setting up user activities like system switching, power management, and audio controls. The process culminates with launching the Activities Mode to test the system and performing necessary backups before the system is handed off to the customer.

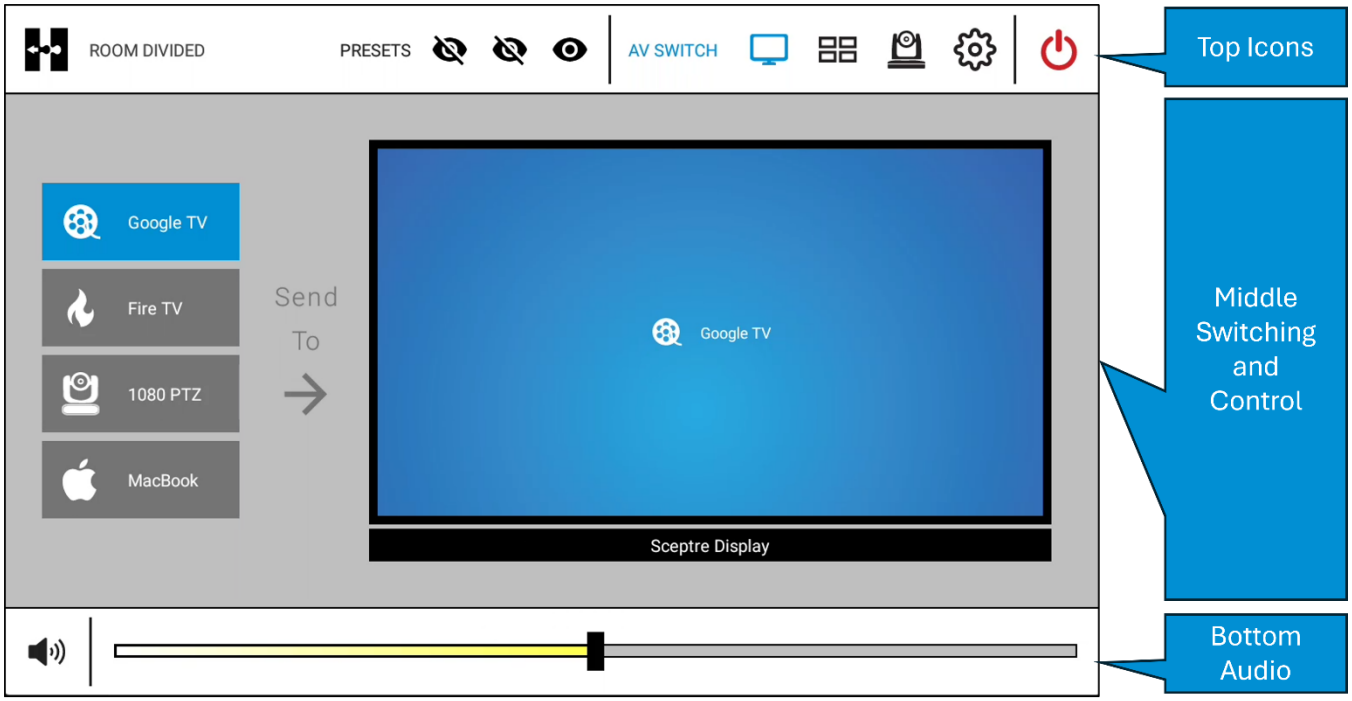
Here is a Quick Start video tutorial that goes over the following section:
https://youtu.be/9TmoUlLnGPY?si=atn_pOPk7XO848gj

OVERVIEW

Activity Mode

Let us begin at the end. As mentioned before, the Hive AV app has two modes, let's review the finished product first. The Activity mode is the what the end user sees and interacts with to control the room or rooms for simple audio-visual presentation, like Power Point for or maybe more complex unified communication like a Teams all hands meeting. This is what the customer is delivered by the AV integrator. Let's review the interface and controls and then we go over how to build them.

The Activity mode is broken down into three sections: the top icons, the middle switching and control, and the bottom audio controls.

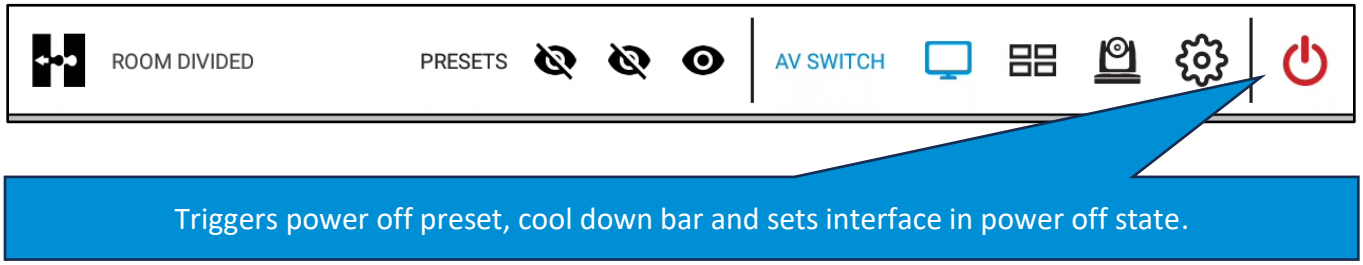


OVERVIEW – ACTIVITY MODE

Top Section Icons

The top bar has icons to control power off, to take the tech back to the Device mode, open up controls for switching, the video wall or camera, custom presets and the Room Combo controls.

Power Off Icon



Triggers power off preset, cool down bar and sets interface in power off state.

Device Mode Icon

Takes AV tech back to Device Mode for set up or troubleshooting. Requires a press and hold for 5 seconds.

Main Activity Icons

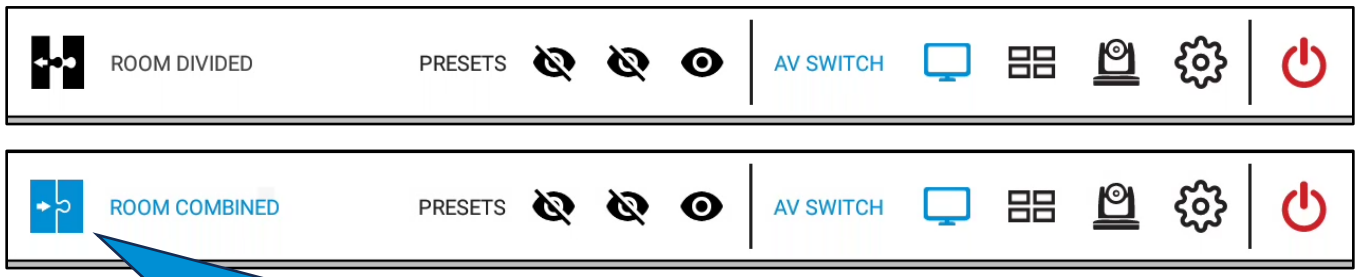
Three main activities: AV Switching for matrix switchers like Versa, Video Wall control for devices like the Emcee-200 and then camera control .

OVERVIEW – ACTIVITY MODE

Preset Icons

These are for the custom Global Presets. The first 3 will show at the top for quick access. Selecting "PRESETS" will open the presets page that will contain up to 25 macros.

Room Combo Icons



These will show when Hive Sync and the Room Combo presets are set up. This also requires a press and hold to change states. Any other synced Hive Touch panels will respond by matching the state and also recalling the Room Combo preset.

OVERVIEW – ACTIVITY MODE

Middle Section Switching and Control

The middle and largest section is mainly for switching of audio and video, is also used for presets, video wall switching, camera control and to power the system on from the off state.

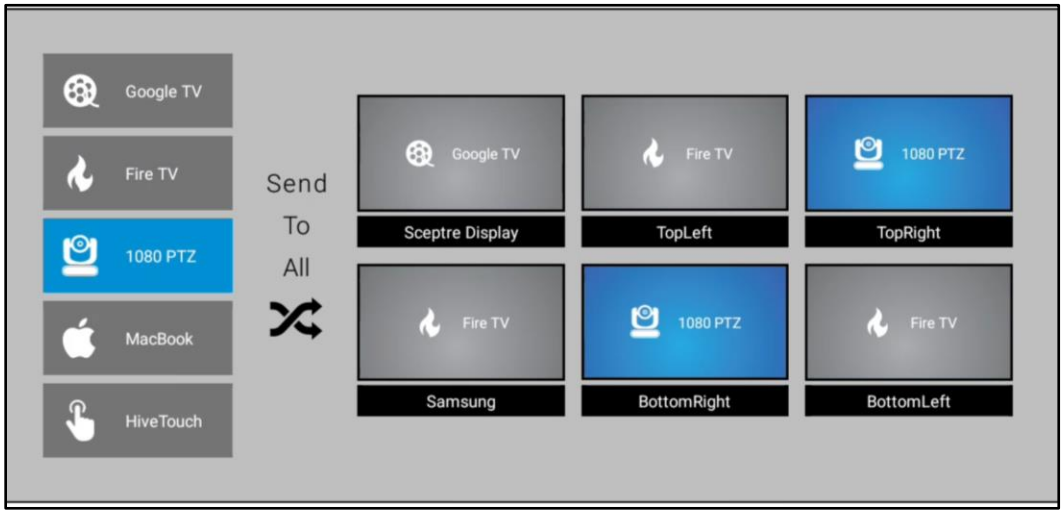
Switching: Many to One

Selecting the display icon shows the switching interface which will control one Halls AV switchers such as Versa or the HSM line of Matrix switchers. When there are many sources being switched to just one display the following interface is built. The user simply needs to select the sources on the left and it will automatically send it to the display on the right. The display will show the icon and label of the source routed to it.

OVERVIEW – ACTIVITY MODE

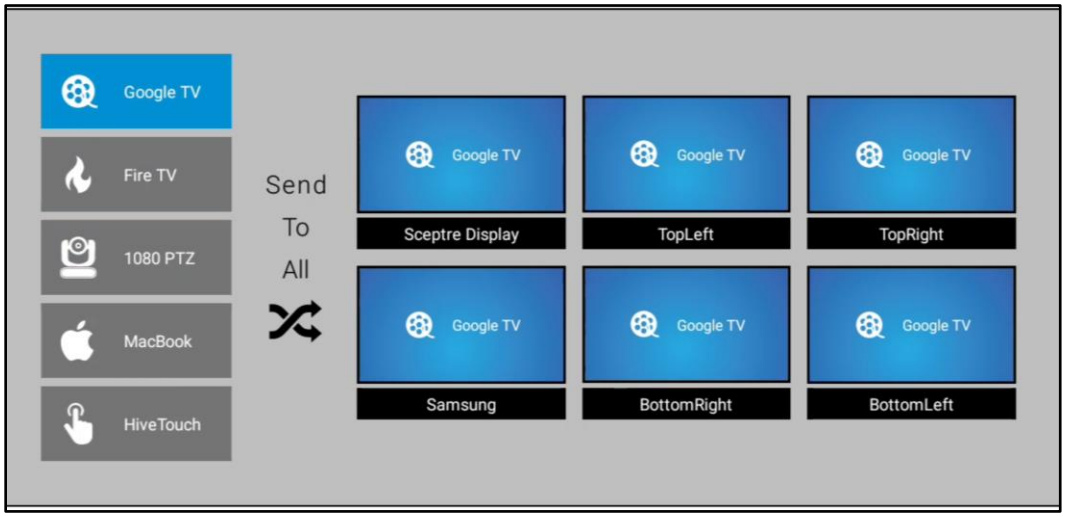
Matrix Switching: Many to Many

When there are multiple sources and multiple displays the matrix switching interface is available when the display icon is selected. Now, when a source is selected, the displays that have the source routed to it will show as blue and have the icon and name of the source. The user then can select any of the other displays to route the source to them.



Matrix Switching: Send To All

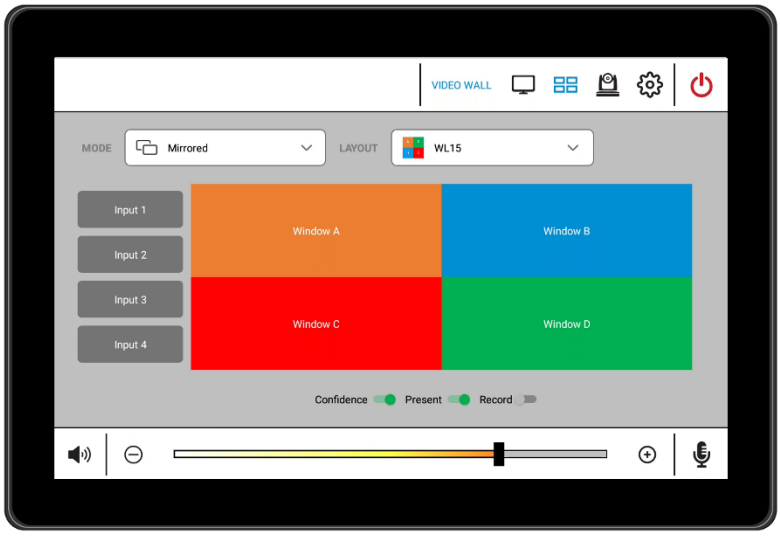
A great feature of the Hive matrix switching UI is the Send to All button which allows the user to select a source and then they can route it to all displays by simply pressing the Send To All button.



OVERVIEW – ACTIVITY MODE

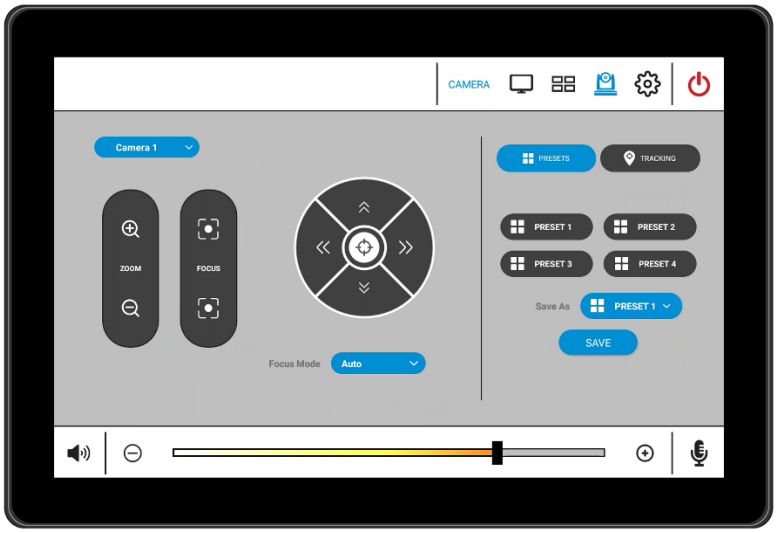
Middle Section: Video Wall

Selecting the video wall icon will show the interface that currently only controls the Emcee-200 presentation switcher but will eventually include AVoiP systems like Versa. The user can drag and drop the sources on the left to the window that wish to route to. Presets are available to change the video processing, windowing, and number of display outputs.



Middle Section: Camera

Selecting the Camera icon will show the camera controls, which are typically associated with out HT-CAM-1080PTZ camera. The user can control Pan, Tilt and Zoom easily as well as saving and recalling presets. There is also a page to enable or disable auto-tracking of the camera.



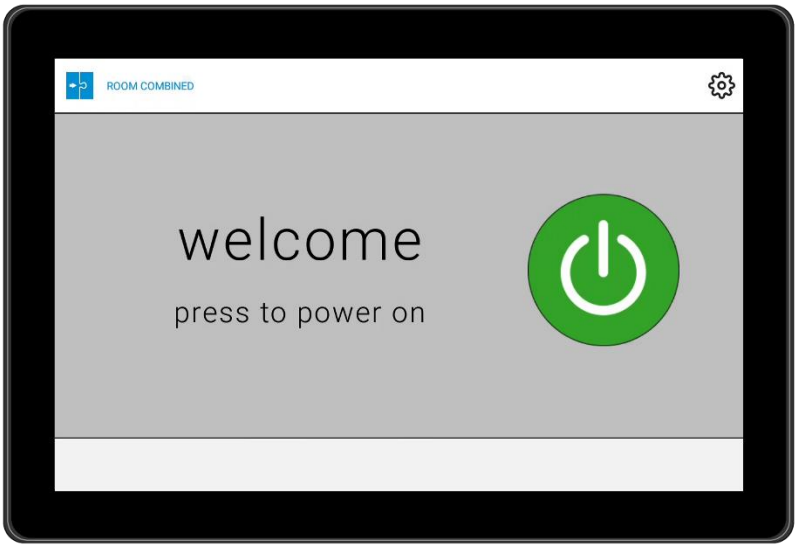
OVERVIEW – ACTIVITY MODE

Middle Section: Presets

Global presets can be quickly accessed by pressing one of the 3 icons to the left of the “PRESETS” or by pressing the “PRESETS” text which is a button that will open the presets page. The first 3 presets that are built in Device mode will show at the top and the rest show on the page.

Middle Section: Power

Pressing the Power Off button, at the very top right corner of the panel, will recall the power off preset, show a cool down gauge and then show the Power On page. The system saves the power state to memory so that if the panel is reset it will always button to the last power state.

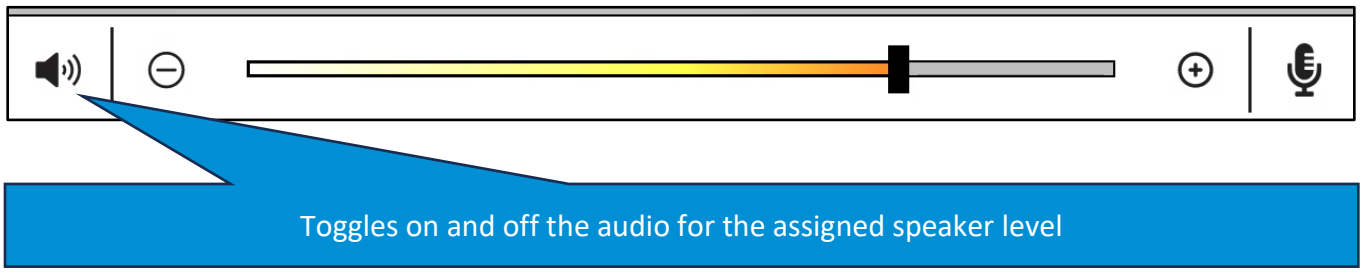


OVERVIEW – ACTIVITY MODE

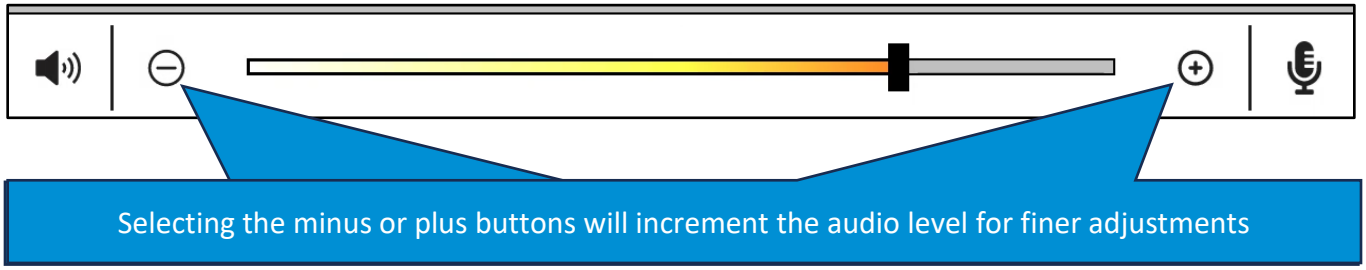
Bottom Section: Audio Controls

Perhaps the most important part of AV control is adjusting the levels of audio for speakers and microphones. The bottom section allows for the muting and unmuting of speakers or microphones and audio level adjustments either through the increment up and down or the slider.

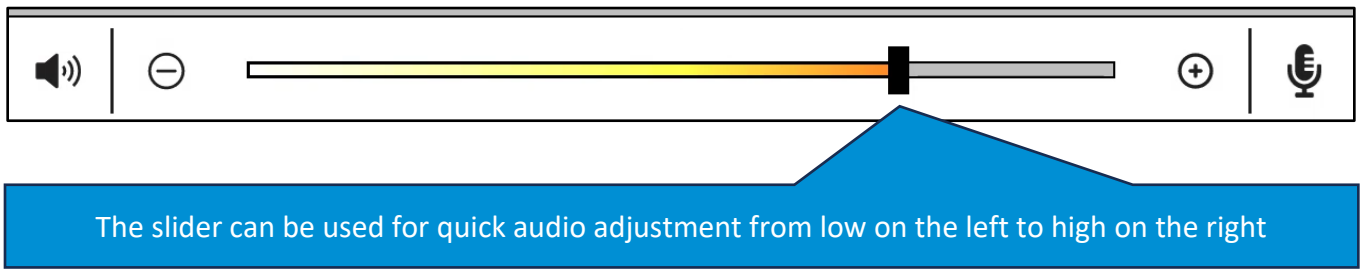
Speaker Mute



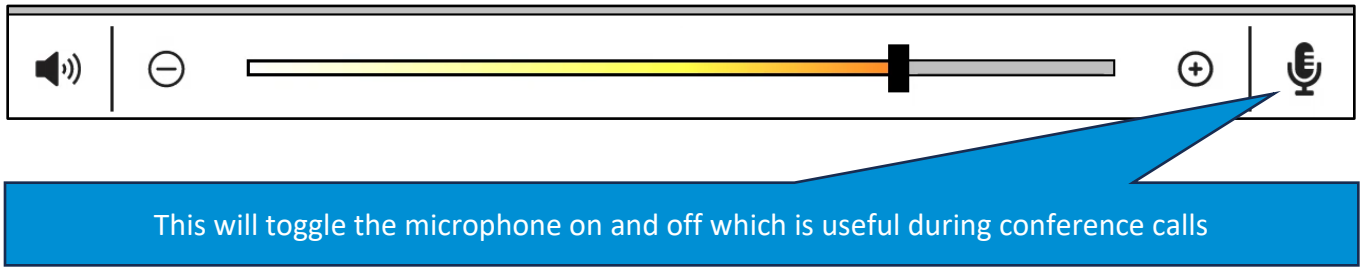
Increment Up and Down



Slider Control



Microphone Mute

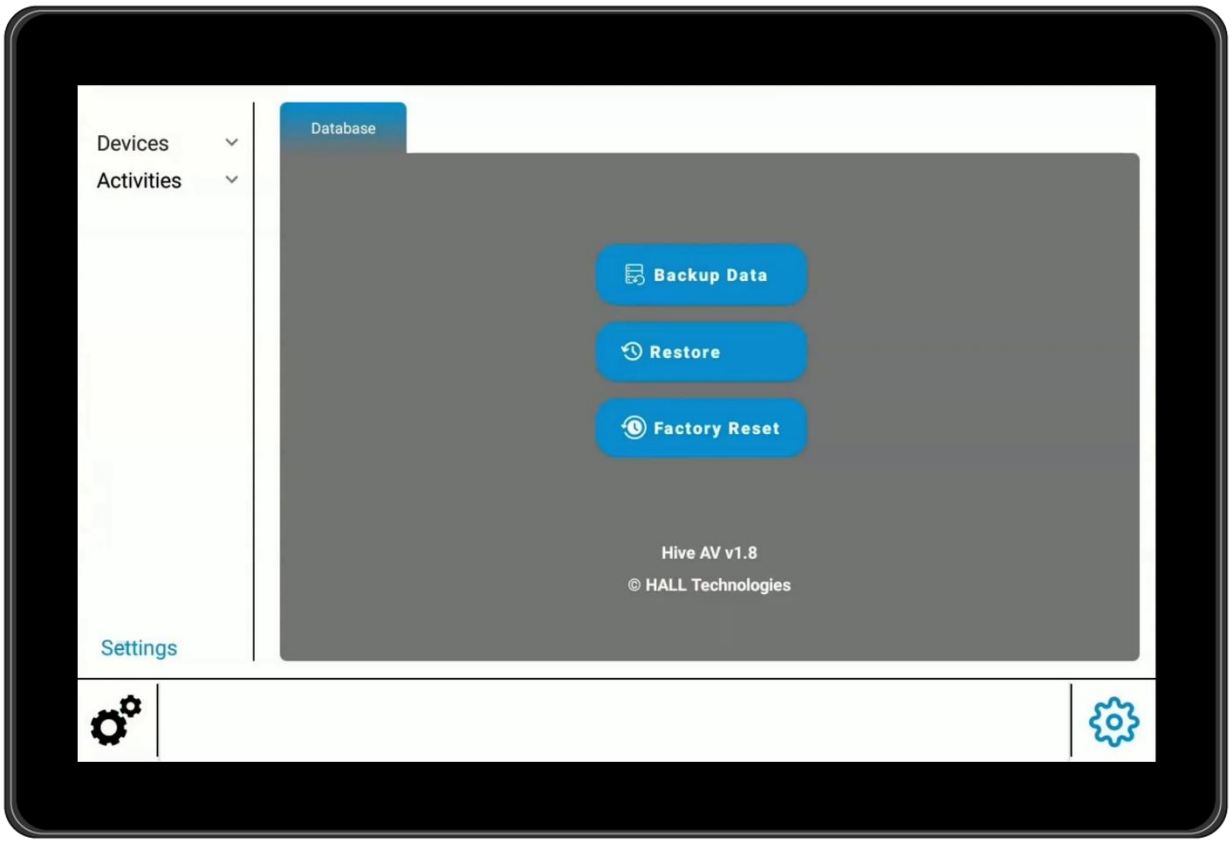


OVERVIEW

Device Mode

Devices, Activities, and Settings are fundamental components in creating an intuitive user interface for audio-visual systems. Hive Activity Mode presents the end-user experience within a room, providing essential controls and lasting reliability throughout the lifecycle of the AV space. Preceding this, Hive Device Mode is crucial for AV technicians, enabling them to add devices, configure end-user activities, and manage settings, such as backups or system restores.

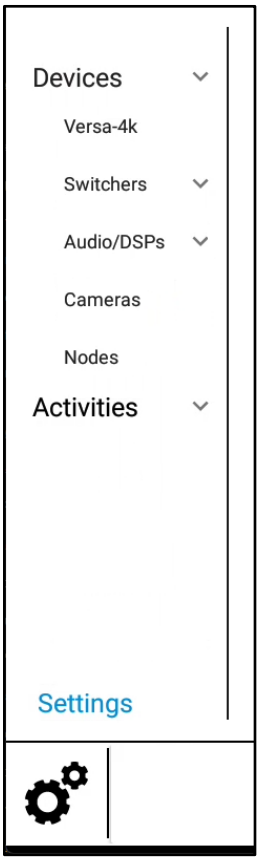
Below is the initial interface that an AV integrator encounters in a new system equipped with the latest Hive AV App. The interface is organized into three main menus on the left: **Devices, Activities, and Settings**. This page is also accessible from Activity Mode by pressing and holding the Cog icon for five seconds.

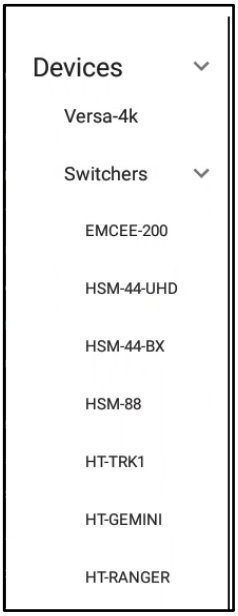


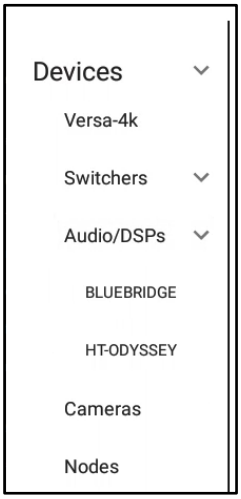
OVERVIEW – DEVICE MODE

Adding Devices

Most programmers will be beginning the configurations by clicking on the Devices menu and selecting the devices that won't to add to the system for control. Here Versa, Switchers, DSP's, Cameras, and Hive Nodes can be added.



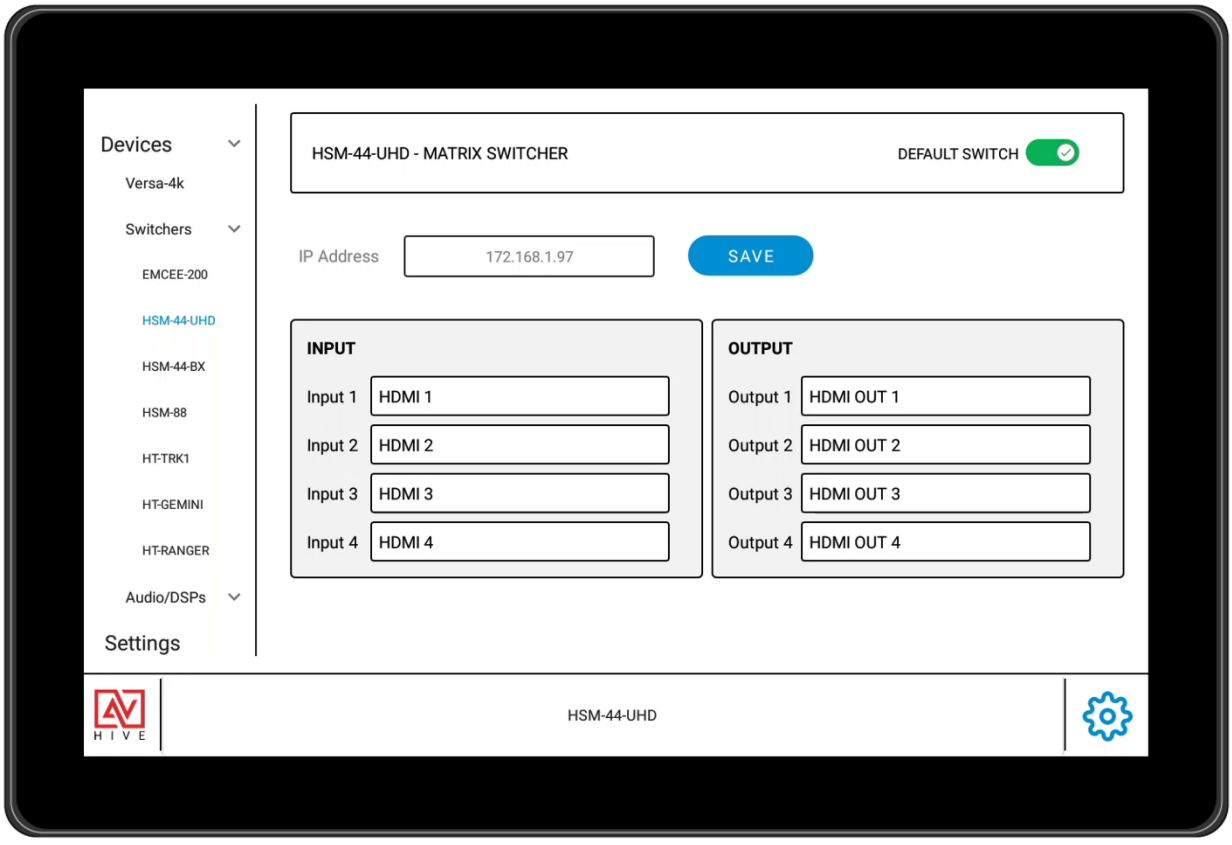




OVERVIEW – DEVICE MODE

Devices – Switchers

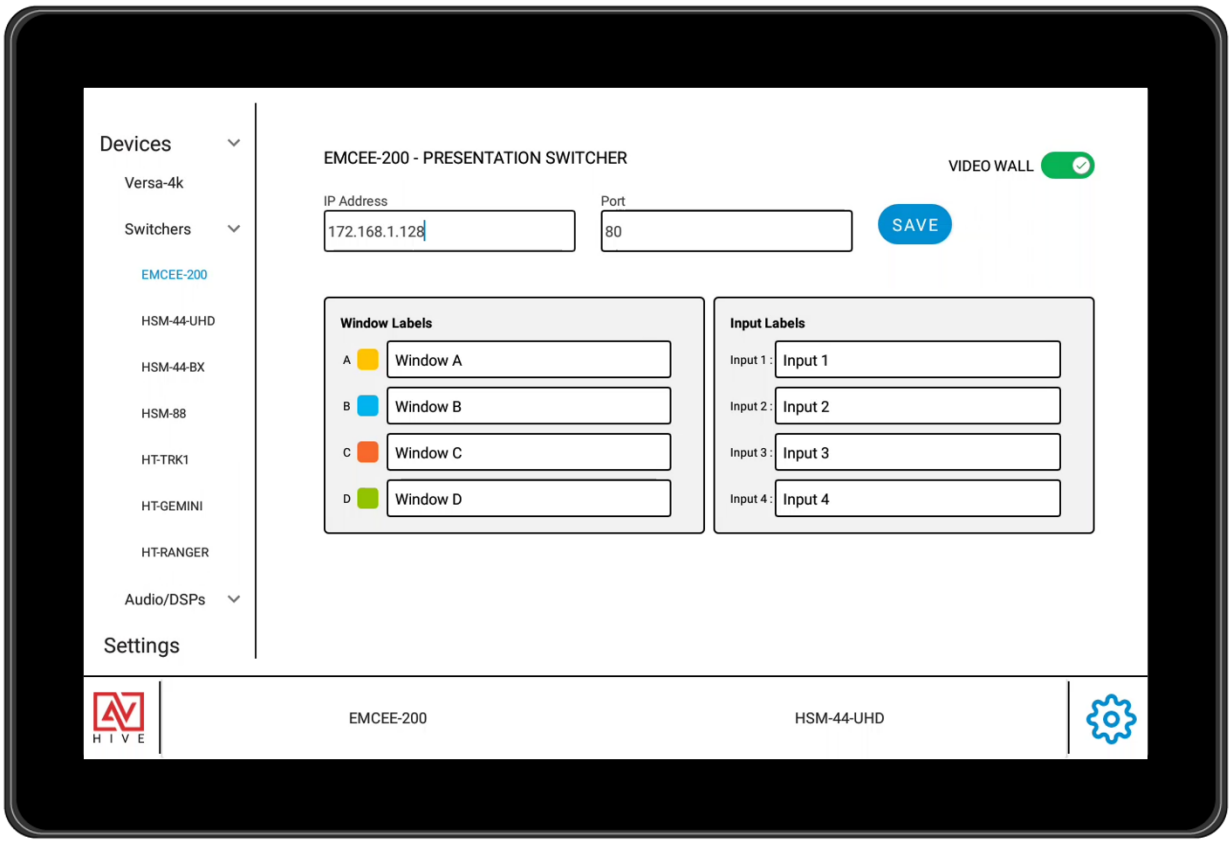
Perhaps the most important part of a control system is AV switching. Under Devices you can add Versa (this will be reviewed in the next section) or any of the switching devices under the Switchers sub menu by simply selecting and adding the IP address and pressing SAVE. The DEFAULT SWITCH will be enabled after saving and this is what maps the device to the Activity Mode Switching UI. Tech-Pages for the device will appear at the bottom to facilitate easy testing or settings not available in Activity Mode.



OVERVIEW – DEVICE MODE

Devices – Video Wall

The Emcee-200 is under Devices > Switchers yet it is different than the other devices in that it is a video processor that is often used with LED video walls. It has its own UI and Video Wall icon. When added to the system the VIDEO WALL switch is enabled. This is for future use for other devices can be mapped to it, like Versa.



OVERVIEW – DEVICE MODE

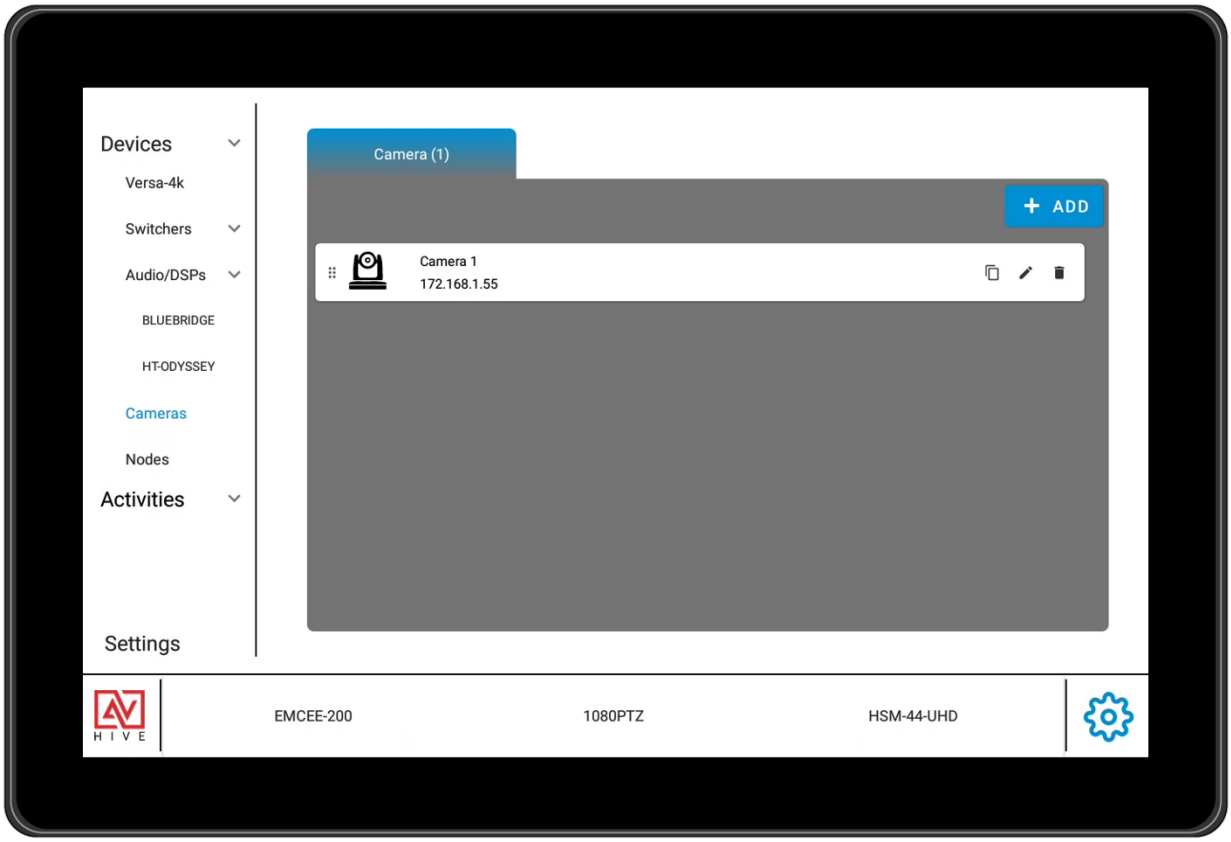
Devices – Audio/DSPs

Hive currently only has two DSP drivers, the HT-Odyssey and the Atlas BlueBridge DSP. The Odyssey set up is simple, just enter in the IP address and save. The BlueBridge is much more complicated and involves extensive set up on the device itself. To learn more, it is highly recommended to watch our tutorial which goes over the complete process and can be found here: https://youtu.be/xzeYUr41tbU?si=Bmh1Gm2elkHs9j2x

OVERVIEW – DEVICE MODE

Devices – Cameras

Adding one or more HT-CAM-1080PTZ cameras is easy, simply press the +ADD button and enter in a name and the IP address. You can also easily copy a camera and just change the name and IP. Adding a camera creates the tech page as well as the icon and page in Activity Mode. More camera drivers, such as VISCA will be coming soon.



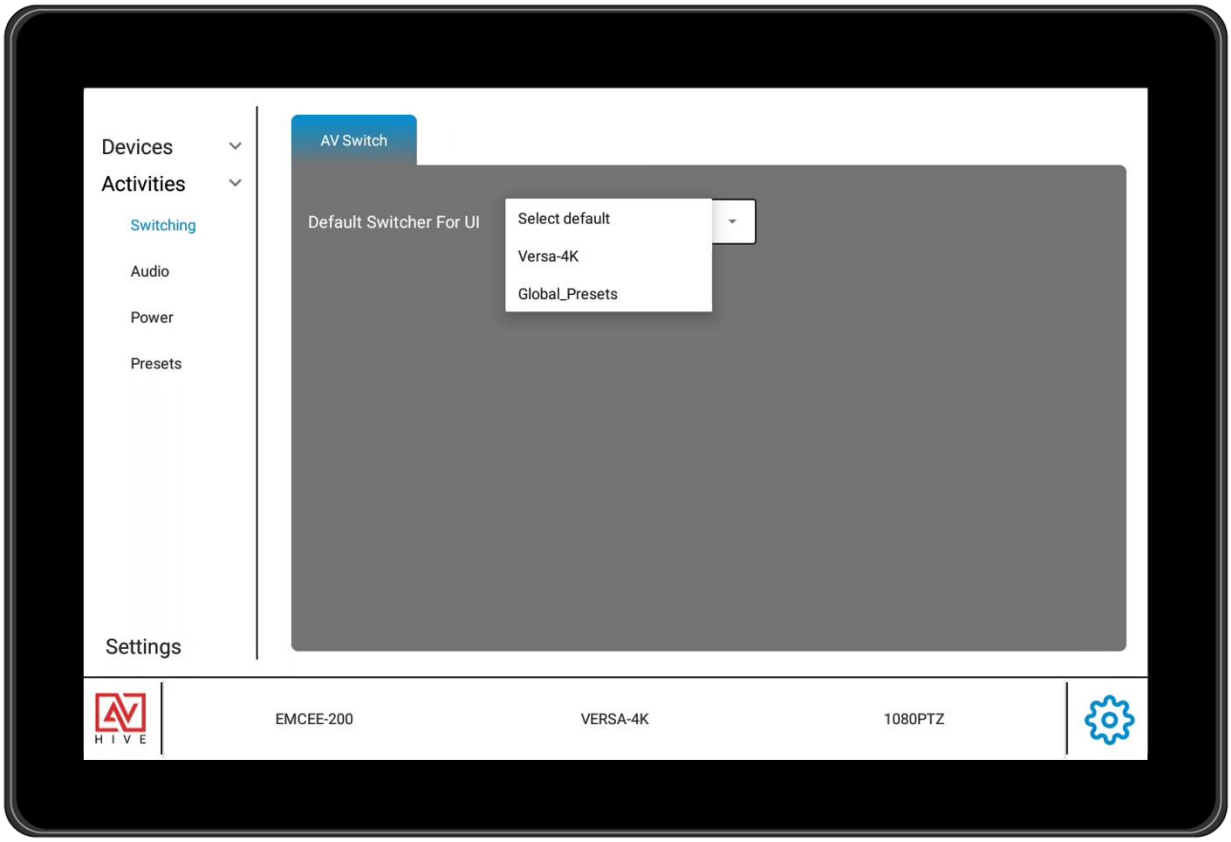
OVERVIEW – DEVICE MODE

Activities

After adding all the devices and the connections to Hive the next step is to setup the different activities that will be used in Activity Mode. The Activities menu is broken down into four sub menus: Switching, Audio, Power, and Presets.

Activities – Switching

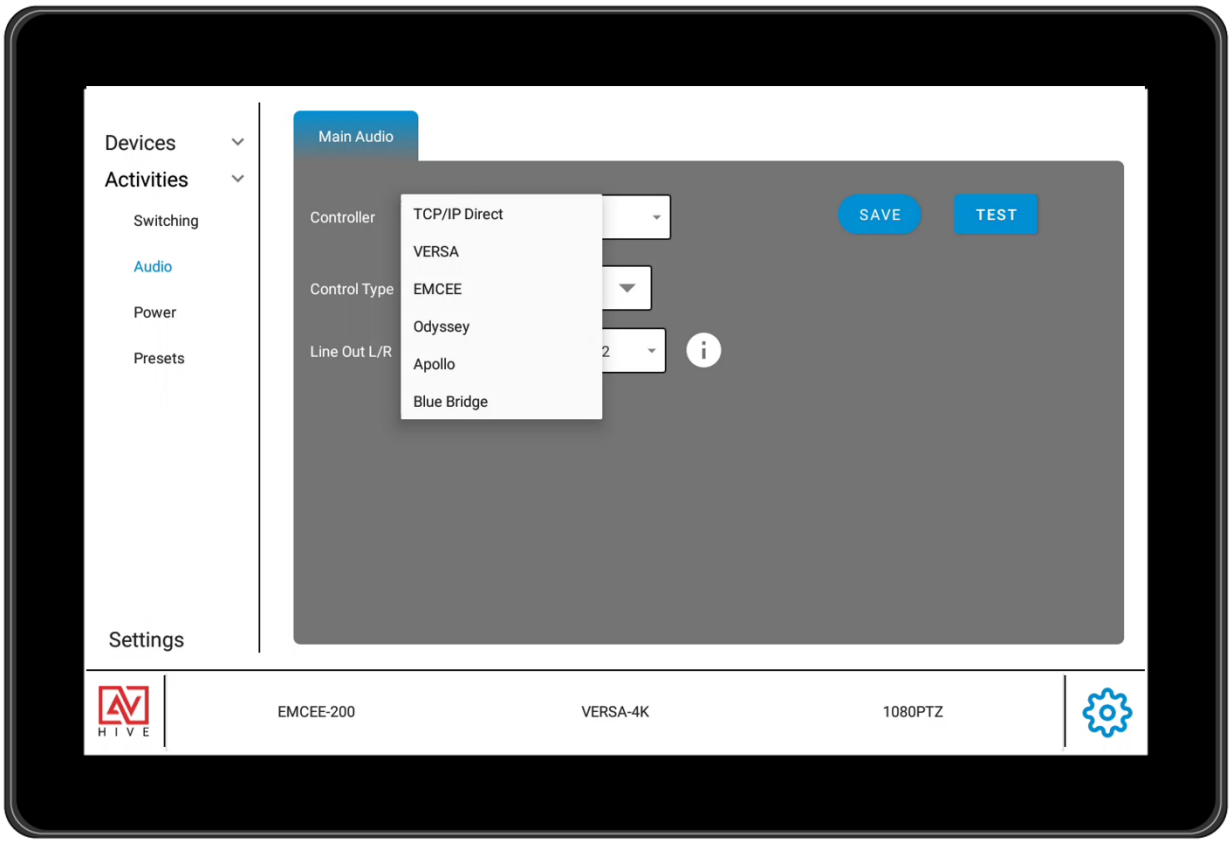
The first submenu allows the user to map the added device switchers with the end user interface for switching. The icon can also be associated with Global presets if that is all the control the end user needs. The page and icon can also be disabled if the switching devices are being added but won't need the switching interface for control.



OVERVIEW – DEVICE MODE

Activities – Audio

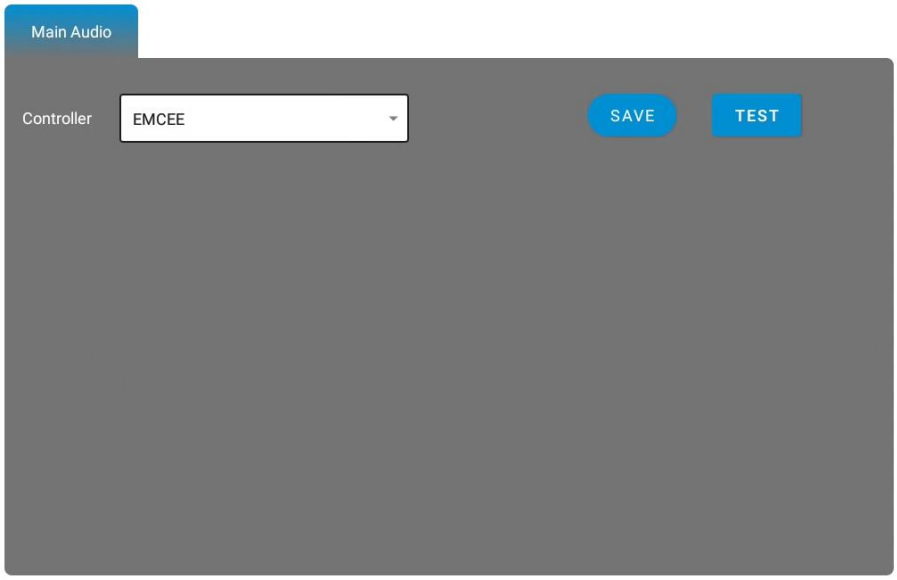
Hive AV has dynamic audio controls capable of controlling mutes for speakers and/or microphones or adjusting the level through increment plus or minus buttons or through the slider. Control can be assigned to dedicated audio devices like the Odyssey or for switching devices like Versa. Custom control can also be created for just about any IP controllable DSP by using the TCP/IP direct driver and manually inputting the commands.

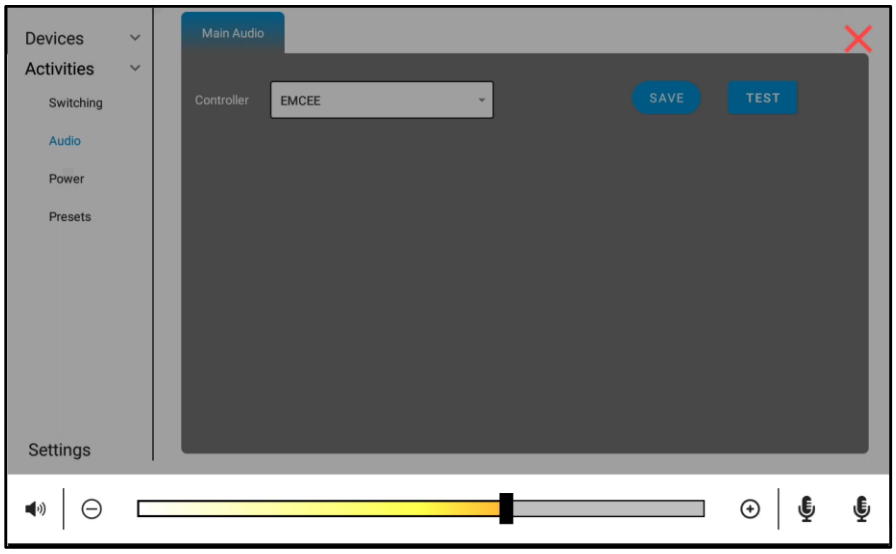


OVERVIEW – DEVICE MODE

Audio – Auto Building Control

Just like the switching UI gets automatically built by associating the device, most of the audio controls work the same way. For the Emcee-200, Odyssey, and Apollo TRK1, all that is needed is to select device from the Controller dropdown and press SAVE. You can use the test button on the right to test and view the different controls that are mapped.



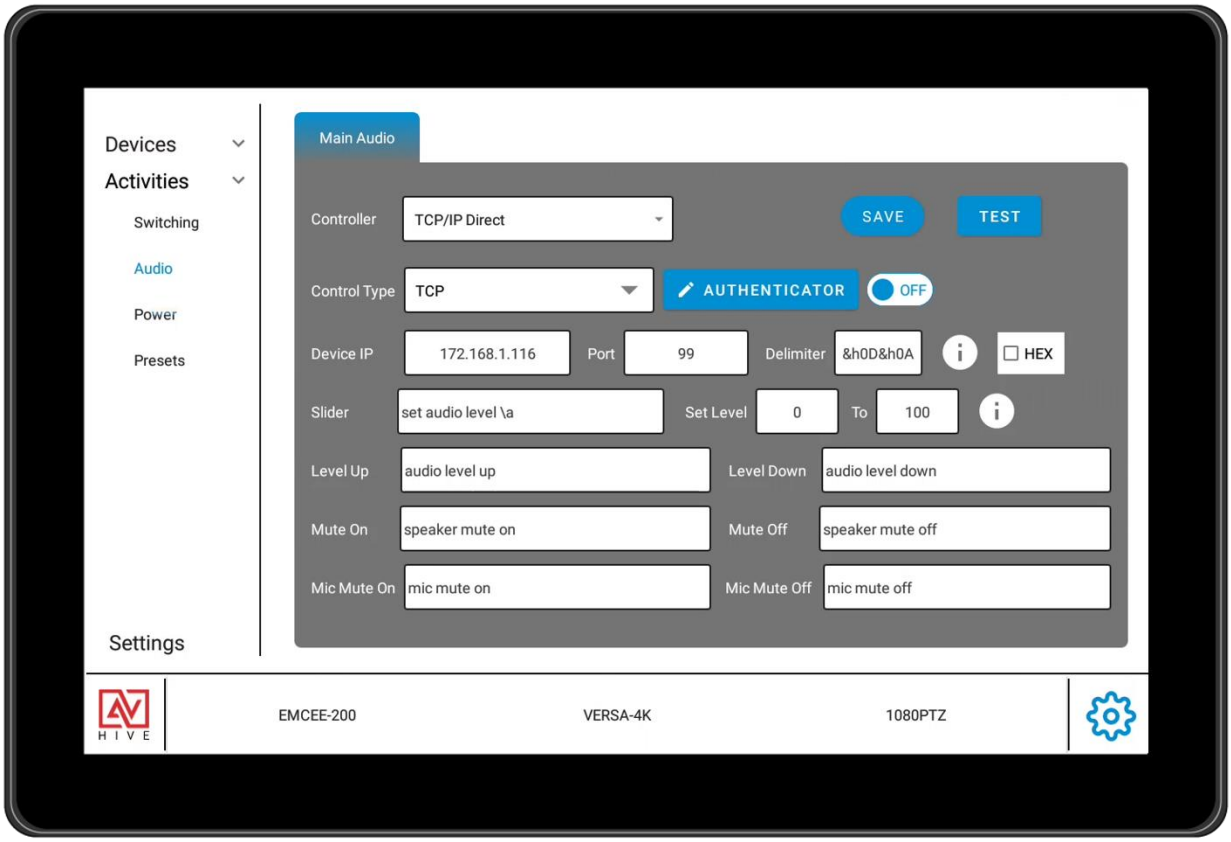


OVERVIEW – DEVICE MODE

Audio – TCP/IP Direct

The TCP/IP Direct control feature of Hive allows devices to be controlled by connecting to the IP address and the device control port and inputting commands from the device API. This feature is available for Power and Global presets (which will be reviewed in the next section) as well as for audio control.

To configure control, you will need to know the audio device IP address, any set up required on the device for 3rd party control, the device connection settings, such as the port, and the device API or command list. All of these should be available through the manufacturer's technical documentation.

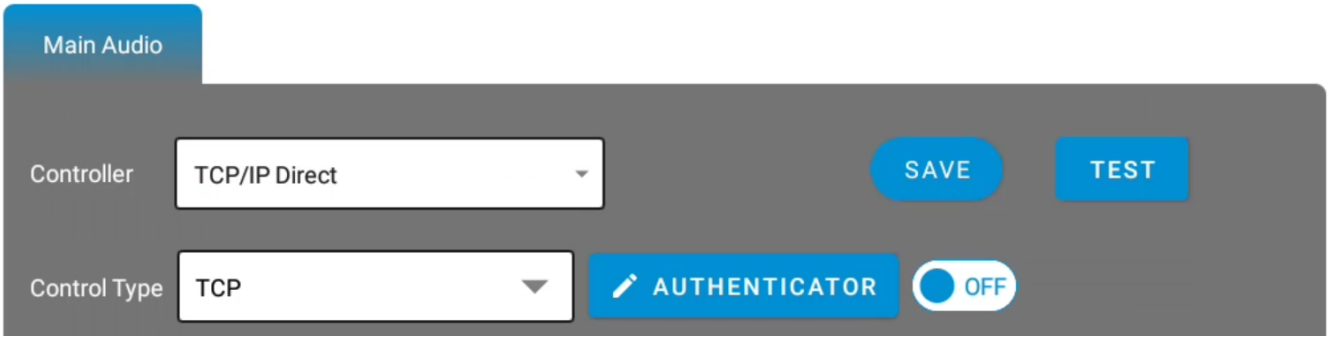


OVERVIEW – DEVICE MODE

Audio – TCP/IP Set Up

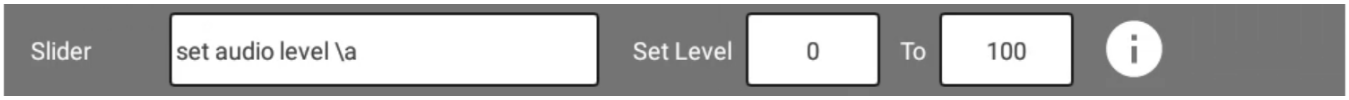
Here are the basic steps to configure an IP controllable audio device.

1. Select TCP/IP Direct for the Controller and TCP for Control Type. If the device needs authentication like a username and password be sure to click on AUTHENTICATOR and enable.

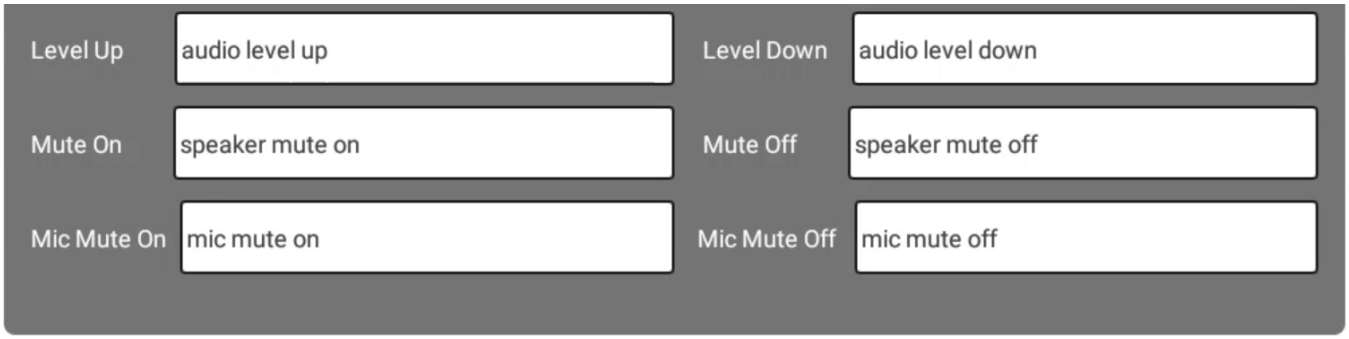


2. Find or set the audio device IP address and input it along with the control port. If the device delimiter (Carraige Return and Line Feed) is anything other than the typical 0D and 0A then input that here. It will need the &h to denote the Hex values. If the commands are in Hex, then be sure to check the HEX box.

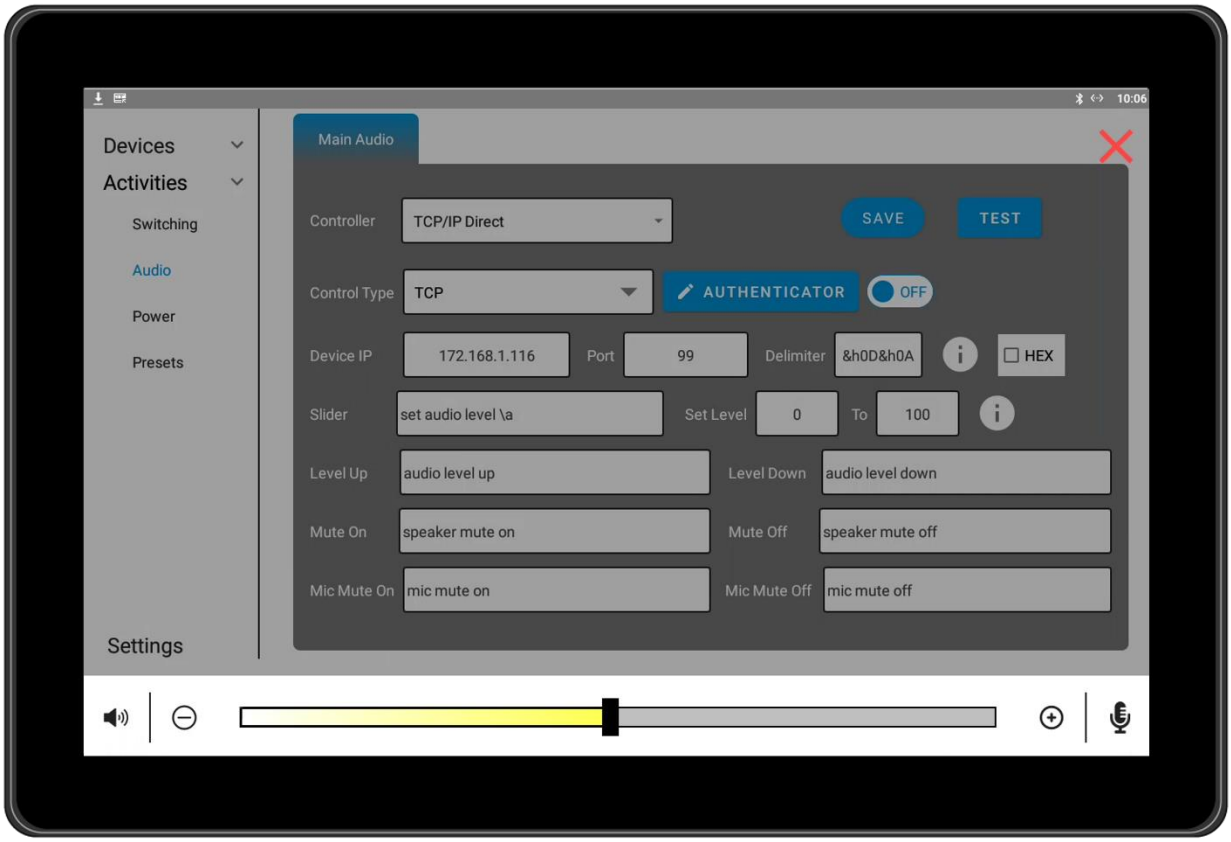
3. The Slider requires that the device API has a set point for the audio levels with a range of numbers. The variable \a is used for that range that by default is set 0 to 100 but can be anything that is supported by the device. Click on "I" for more details.



4. Set the Level Up, Level Down, Mute On, Mute Off, Mic Mute On and Mic Mute Off if the device supports these commands. Only the UI elements that are configured will show on the UI. For example, if only the slider is set then that will only show.



5. Save and Test if needed



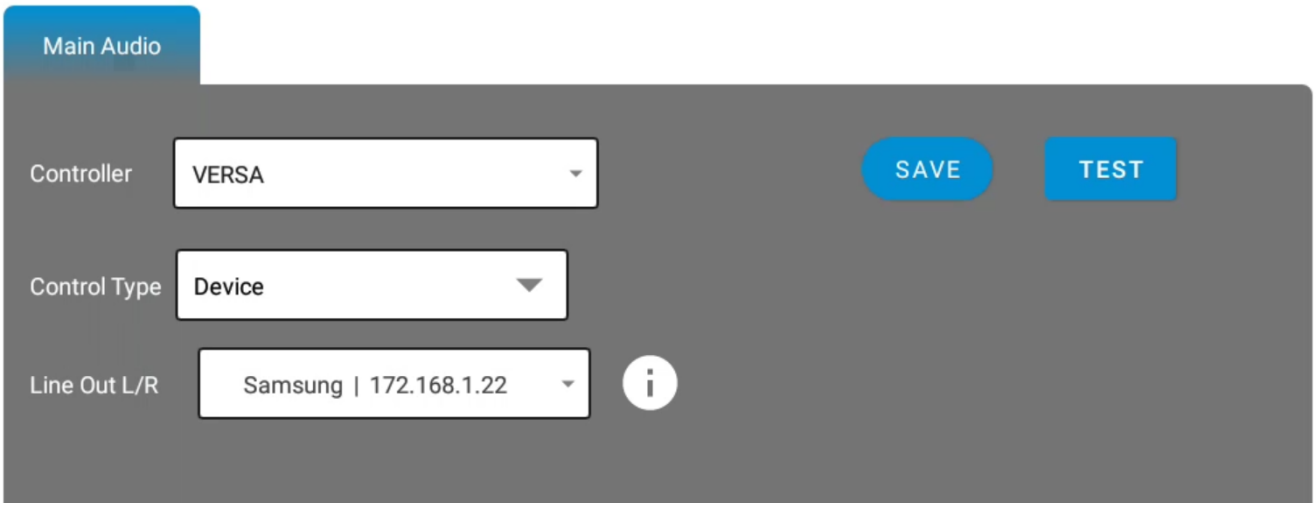
OVERVIEW – DEVICE MODE

Audio – Versa 4k

One of the best features of Versa is that source audio can be routed to any Versa sender or receiver, via the stereo Line Output and easily controlled. Additionally, the Versa RS-232 port can be used as a controller for any 3rd party audio device.

Versa 4k – Line Output

To set up a Versa encoder or decoder for Line Output, set the **Controller** to **VERSA**, set **Control Type** to **Device** and then set the **Line Out L/R** to the Versa that's output will be connected to an amp or DSP. Press **Save** and then **TEST** if needed.



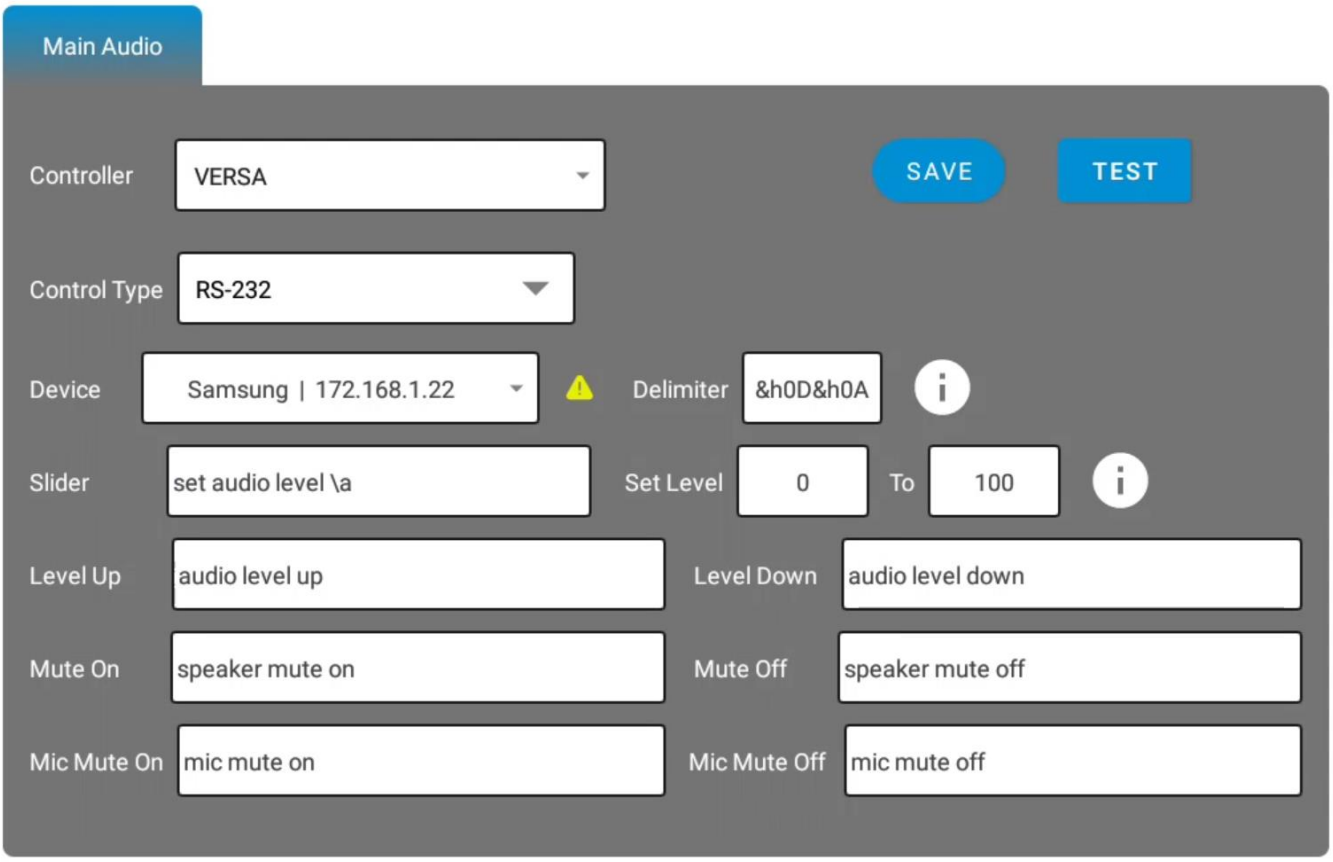
OVERVIEW – DEVICE MODE

Versa 4k – RS-232 Controller

This type of control is nearly identical to the TCP/IP direct controller but uses the Versa RS-232 port instead. The same steps apply except you will need to know the 3rd party serial connection settings, such as pin out and baud rate. The baud rate will need to be set properly on Versa, which can easily be done by going to the device webpage.

Steps to Configure:

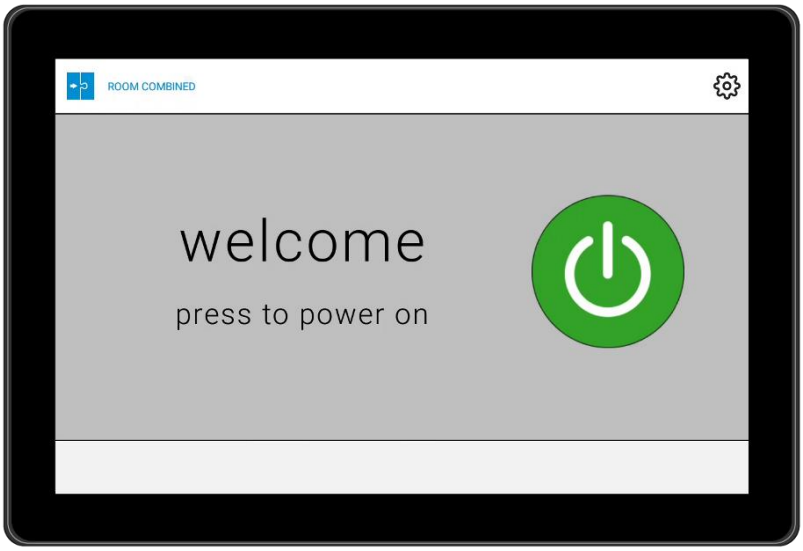
1. Select VERSA as Controller, RS-232 as Control Type
2. Select the Versa that will be connected to the device from the Device drop down
3. Set baud rate of Versa from the webpage and the delimiter if not the default
4. Enter in the commands for the different controls
5. Save and if needed TEST (after connected to device).



OVERVIEW – DEVICE MODE

Activities – Power

One of the key elements of AV control is to simply turn on a room for use and turn off a room when done. Hive AV has powerful presets that can be built with multiple commands to turn on and off displays, projectors and lower and raise screens and lifts. The power presets will get associated with the power on and off icons and trigger the presets when pressed. Both the Power On and Power Off presets need to be completed for the recall to work properly. To build the power presets go to Device Mode > Activities > Power and click on the Pencil:



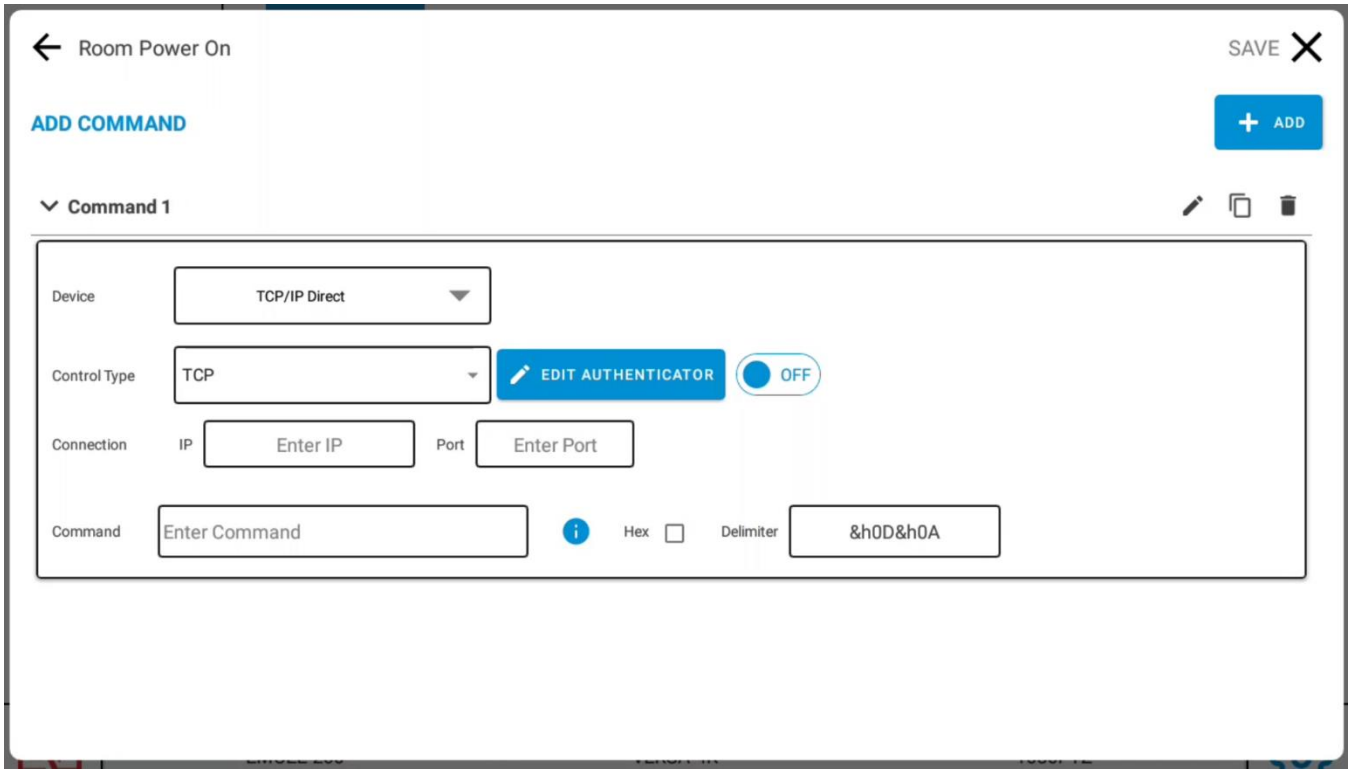
OVERVIEW – DEVICE MODE

Activities – Power Preset Setup

One of the key elements of AV control is to simply turn on and off a room. Hive AV has powerful presets that can be built with multiple commands to turn on and off displays, projectors and lower and raise screens and lifts.

ADD COMMAND

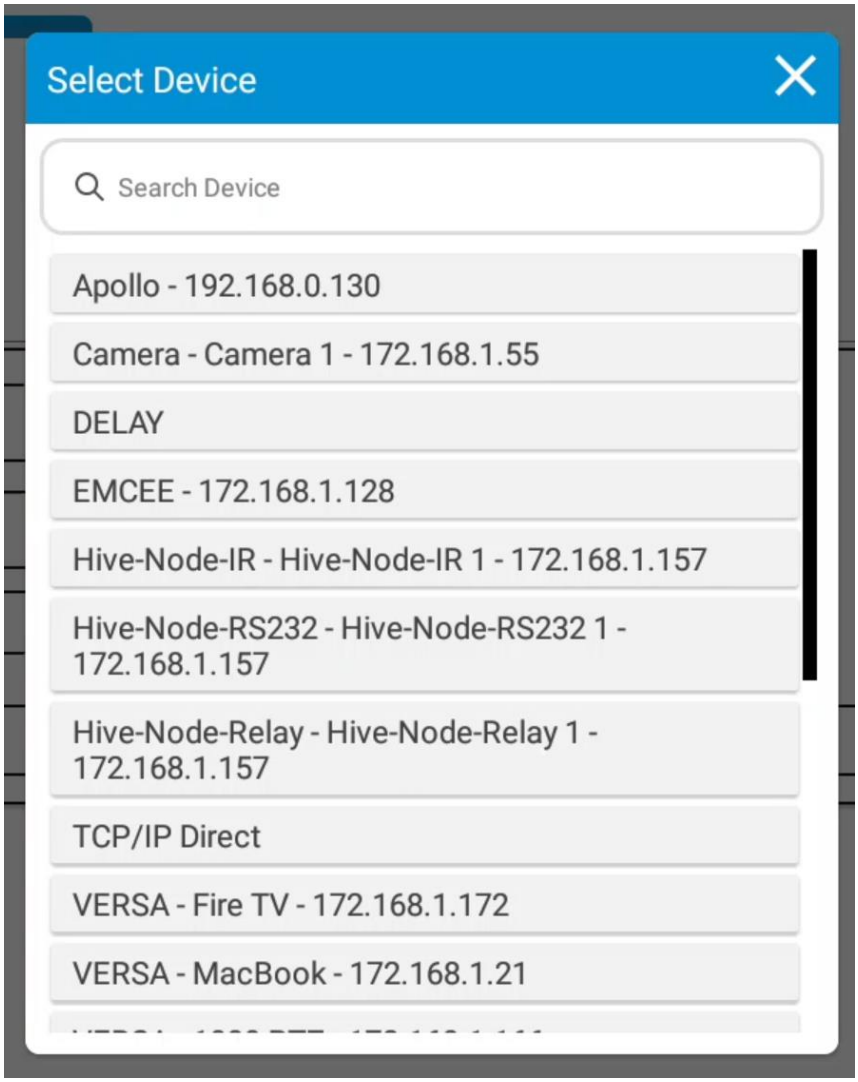
Clicking on the edit “pencil” icon will open the pop up to add commands, that you see below. If you are reopening a saved power preset, you might have many commands. You can add new commands by pressing the +ADD button, edit the command label by selecting the pencil icon, copy a command by selecting the copy icon or delete a command by pressing the garbage icon.



OVERVIEW – DEVICE MODE

Select Device

By default, new presets will have a new command that is set to TCP/IP direct by default. Clicking on the Device will open the Select Device pop up. Here you can choose to add commands from devices you added previously or create new connections and commands using TCP/IP direct or add a DELAY.

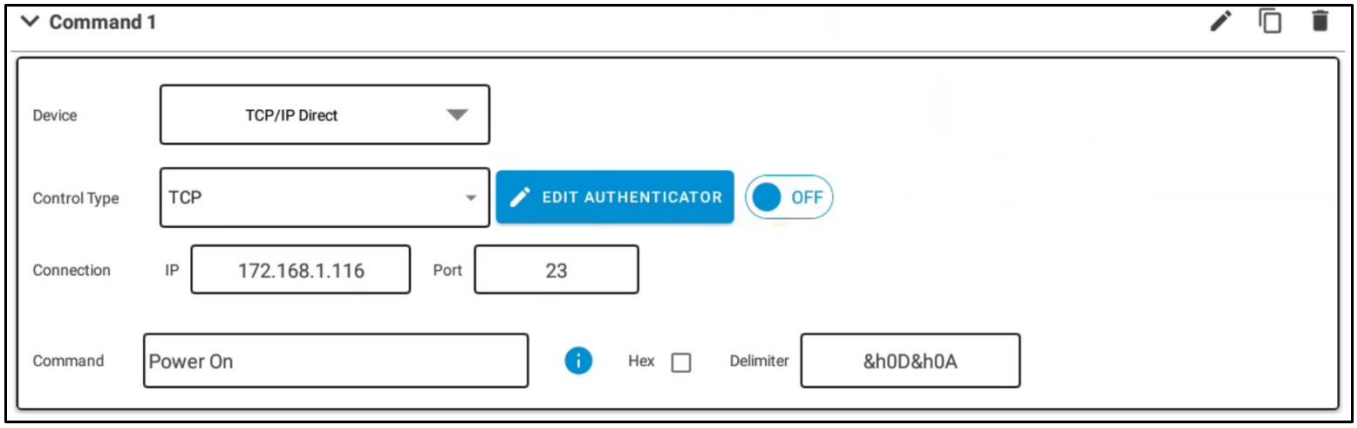


OVERVIEW – DEVICE MODE

Device Commands

Here is a breakdown of the devices that can be added and their commands:

- TCP/IP Direct is very similar to setting up control of audio devices that we do not have drivers for yet. Typically, this will used to power on and off displays or projectors. To set up enter in the IP address and port of the unit you wish to control, enter the API command and adjust the Delimiter if needed.

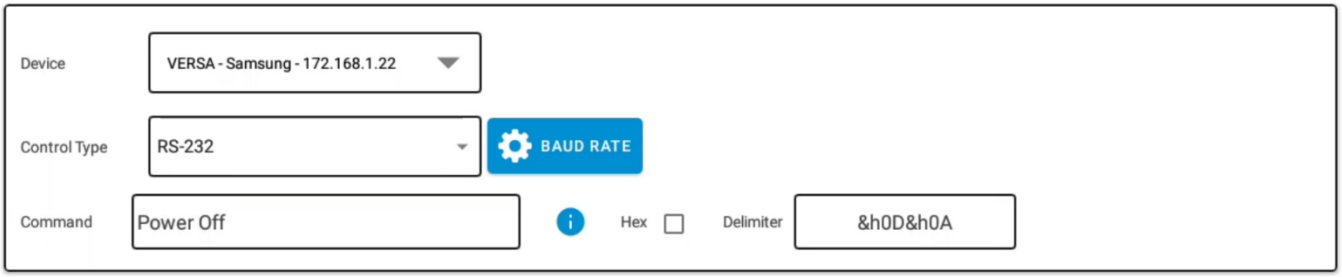


- Versa 4k has 4 different Control Types for commands:
    - Device – commands for Versa itself can be selected here. You can set the video wall for instance.

OVERVIEW – DEVICE MODE

Device Commands – Versa Continued

- RS-232 – Similar to audio control using the Versa RS-232 port. Here you can input a command to power on and off a device like a display that is connected to the Versa serial port. Again, you will need to know the device RS-232 pinout, set the baud rate and know the device API command and line ending.

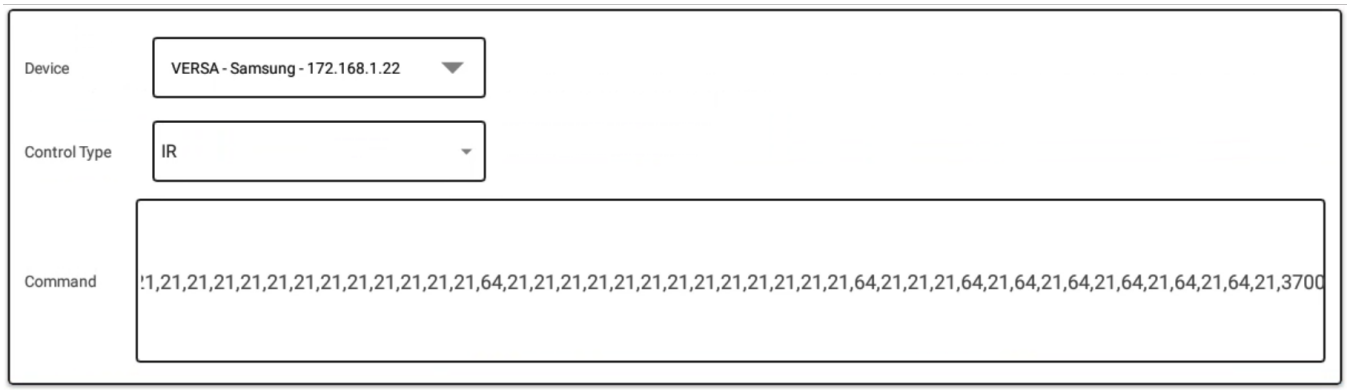


- CEC – By far the easiest and most reliable method for turning on and off any display is the universal CEC control that every display with an HDMI connection should support. When using a Versa decoder that is connected to a display, only one HDMI cable is needed for video and control. The tested on and off commands populate automatically and have been tested and are working on all popular displays.

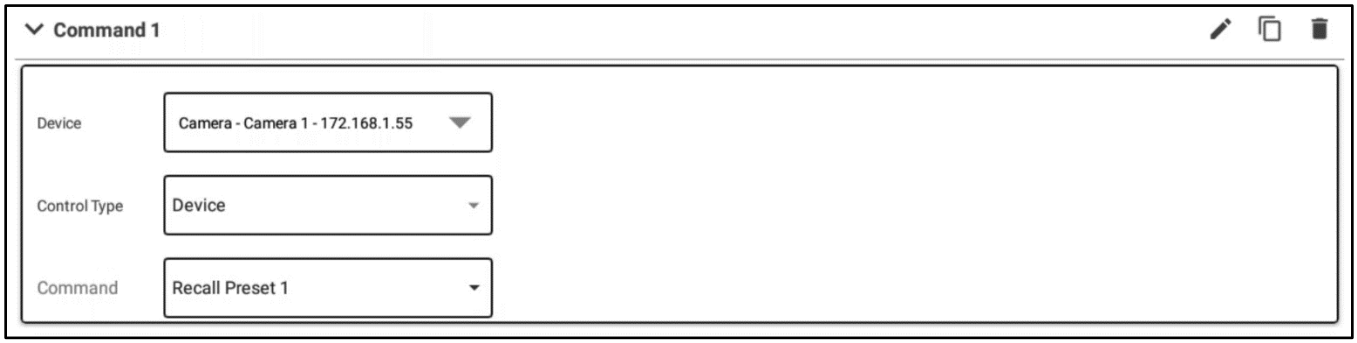
OVERVIEW – DEVICE MODE

Device Commands – Versa Continued

- IR – The Versa IR port can be used with either Pronto or Global Cache Hex commands. The Hive Node IR kit can be used with Hive Node Learner to learn the commands and paste them in. There is a full database of thousands of IR commands that can be found at: https://irdb.globalcache.com/

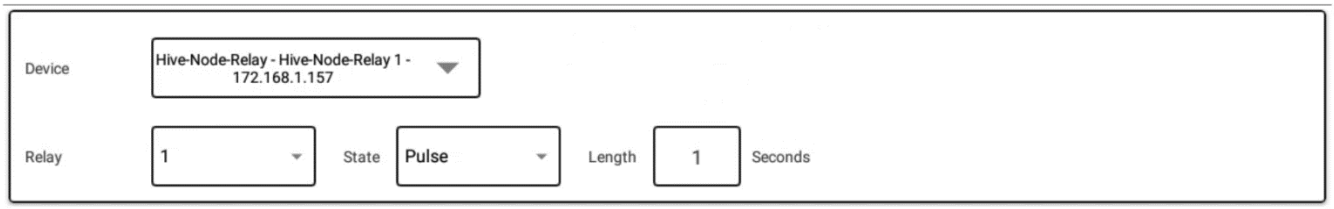


- Switchers – any of the added switching devices such as the Apollo TRK1, which can turn on and off connected displays via CEC, can be used to add commands to the Power presets.
- Audio/DSP – these devices and their commands can also be added. The Atlas Bluebridge DSP can recall audio presets on power and power off. The Odyssey can trigger CEC power on and off commands for devices connected to its HDMI output.
- Camera – Auto-Tracking can be turned on and off with the room power, or camera presets can be recalled with the power presets.



Device Commands - Continued

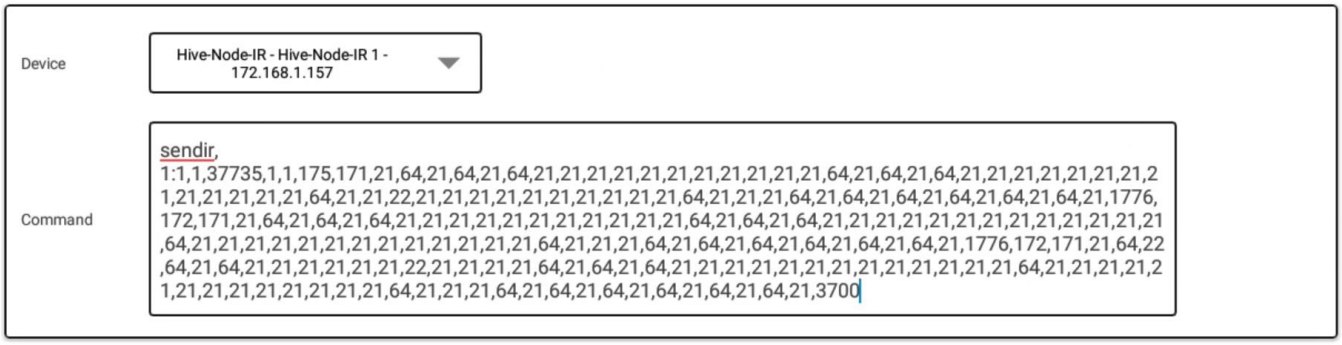
- Hive Nodes – these kits are very similar to Versa in that that are capable of multiple types of IP control.
    - Hive Node Relay – this kit is primarily used for projector lifts and screens. These commands usually will get used along with power commands for the projector. The most common configuration for screens or lifts is to set the Relay to SPST and use two relays and grounds. Closing one should lower a screen or lift and closing the other should raise it. Because the ground is usually shared, we have built a pulse that closes and opens the relay after a set pulse time. The example below would close relay 1 for 1 second which would lower/raise the screen/lift depending on how it is wired.



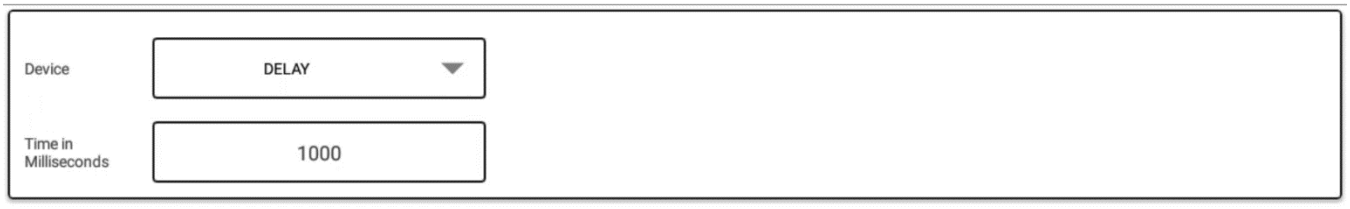
    - Hive Node RS232 – This is nearly identical to using the Versa RS232 port and works nearly the same way. Here you can input a command to power on and off a device like a display that is connected to the Hive serial port. Again, you will need to know the device RS-232 pinout, set the baud rate and know the device API command and line ending.

Device Commands - Continued

- Hive Node IR – Just like RS-232, using a Hive Node IR kit is nearly identical to using the Versa IR port with the slight exception that it only accepts Global Cache hex format. The Hive Node IR kit can be used with Hive Node Learner to learn the commands and paste them in. Here is a link to the utility: https://halltechav.com/wp-content/uploads/2023/11/Node_Utilities.zip There is a full database of thousands of IR commands that can be found at: https://irdb.globalcache.com/



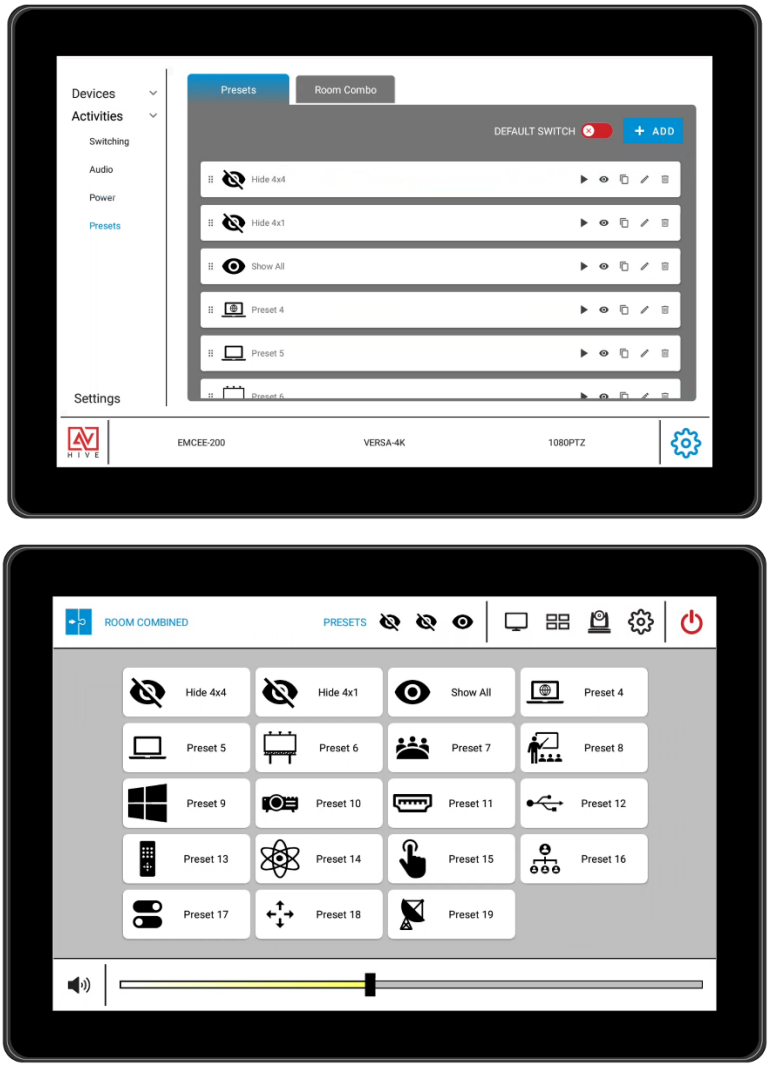
- Delay – Power presets and global presets are insanely fast. This is the power of asynchronous tasks that are native to Android. This means that the commands will fire in order, but they do not wait for the completion of one command before the next. This means often they are being sent in parrel. This could cause issues when sending multiple commands to the same device. This is why we have the DELAY so that you can introduce a pause between commands. The time is in milliseconds, so the example below, 1000 ms is a one second DELAY.



OVERVIEW – DEVICE MODE

Activities > Presets - Global

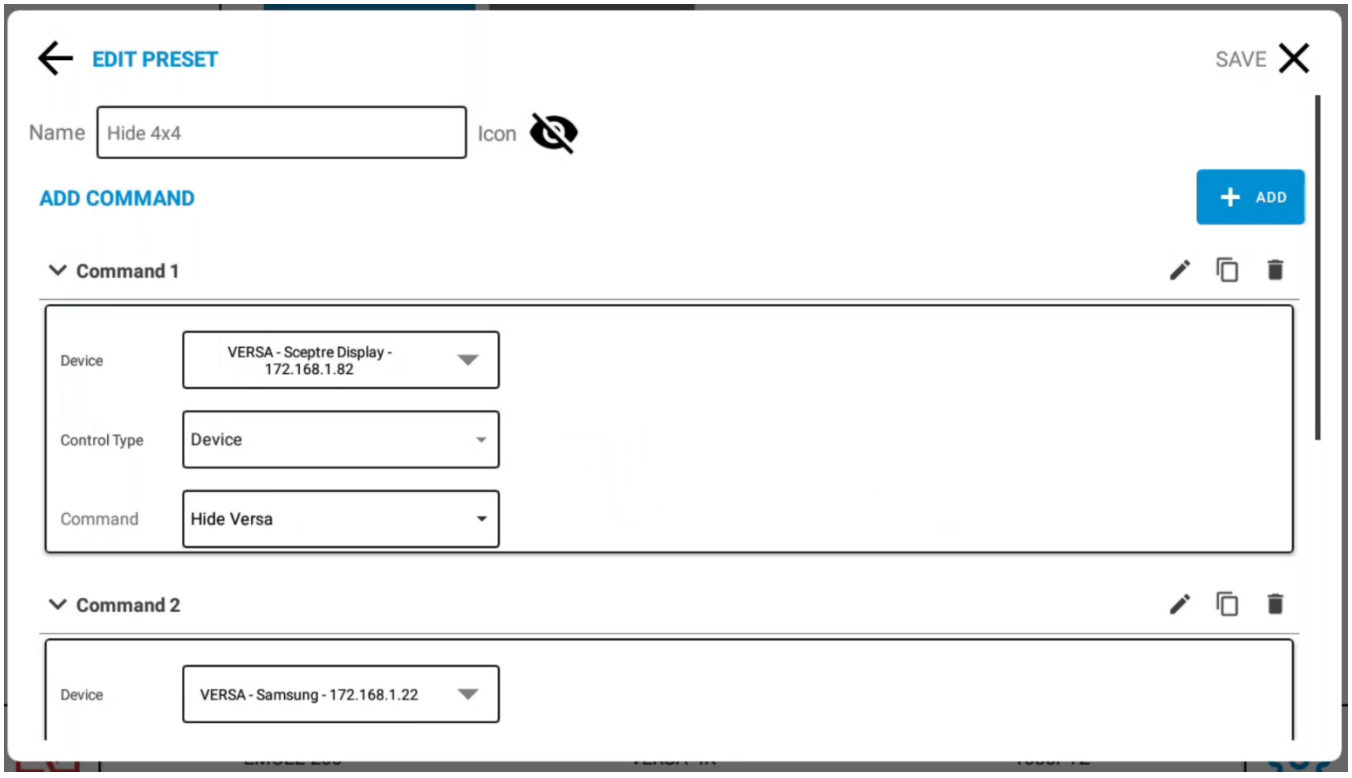
There are 3 different types for presets, but they are all nearly identical. What separates them is their application and how they are triggered or recalled. Power Presets, from the previous sections are triggered when the end user selects the power off or power on buttons and changes the state of the room and panel. Presets are described as global because they have their own custom icon and can be selected from the top banner or from their own page. They can be used for just about anything, but typically they would recall audio level presets, camera presets or device controls that are not available anywhere else on the end UI while in Activity mode. They can even be set as the main AV switch so that custom switching presets can be built for switchers or displays.



OVERVIEW – DEVICE MODE

Presets – Add, Edit or Copy

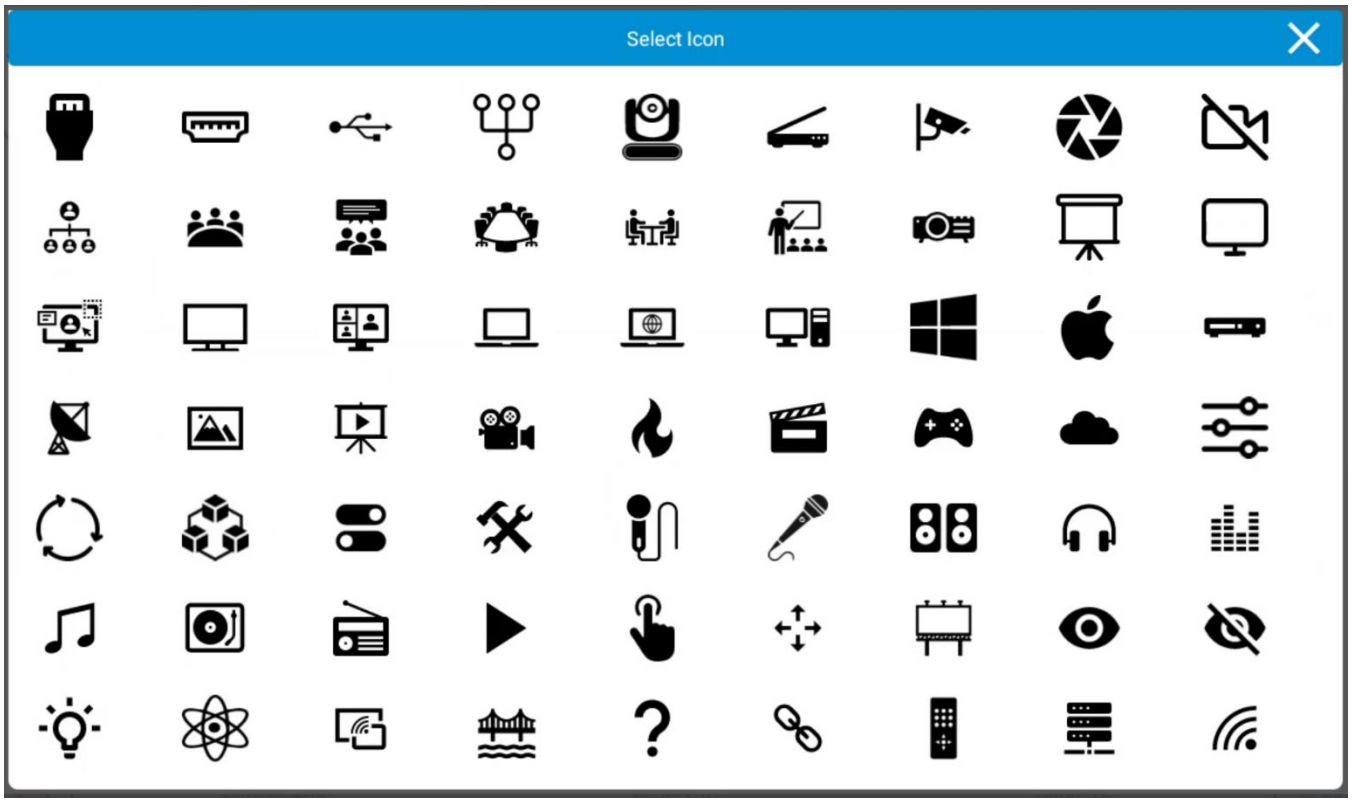
Setting up the commands for Global Presets is the same as what was reviewed in the last section for Power Presets. One big difference between the two types is that you can have many Global presets, so you have the ability to not just edit but also +ADD or copy. Selecting the +ADD, Copy or Edit buttons will open the preset pop up. Another key difference is that each preset can be given a custom name and icon.



OVERVIEW – DEVICE MODE

Presets – Name and Icon

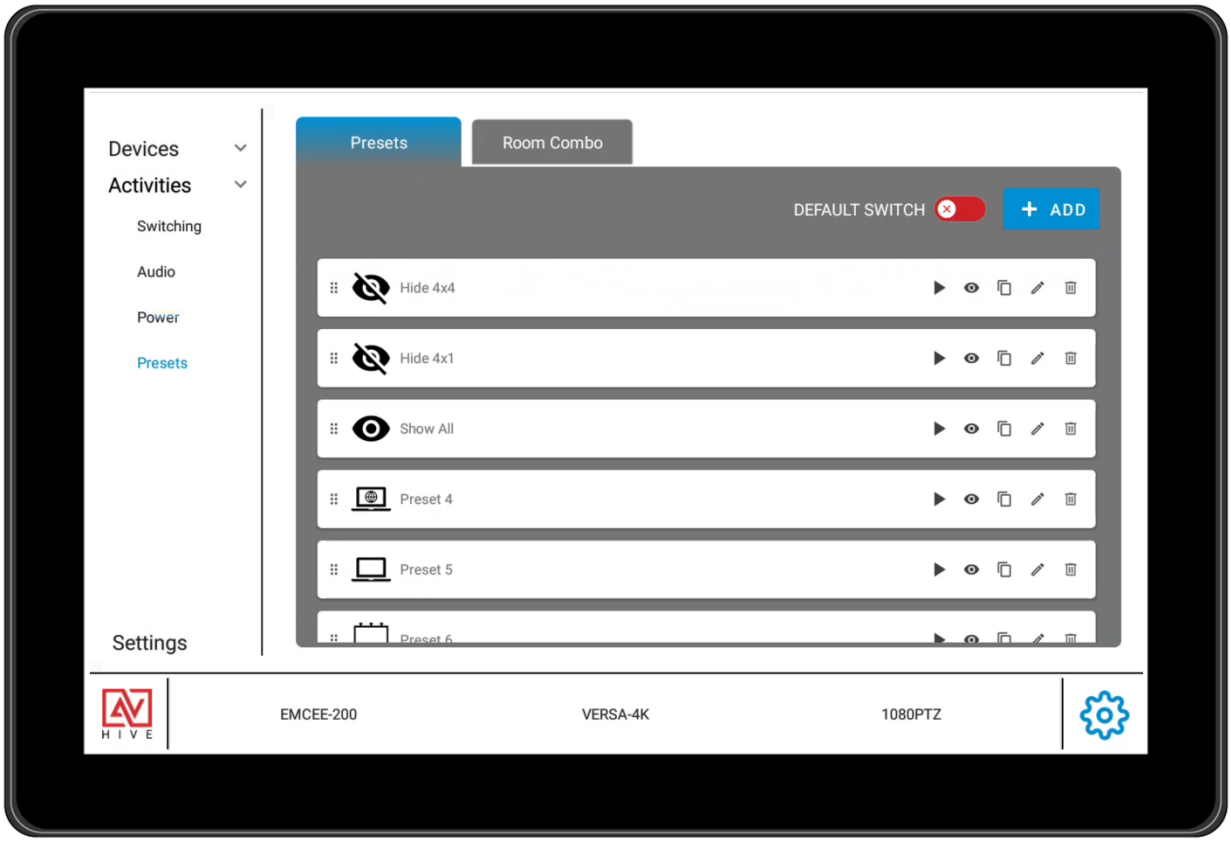
To change the name simply click in the label space and change it to whatever you need. Clicking on the icon will open another pop up with an array of different icons to choose from.



OVERVIEW – DEVICE MODE

Presets – Continued

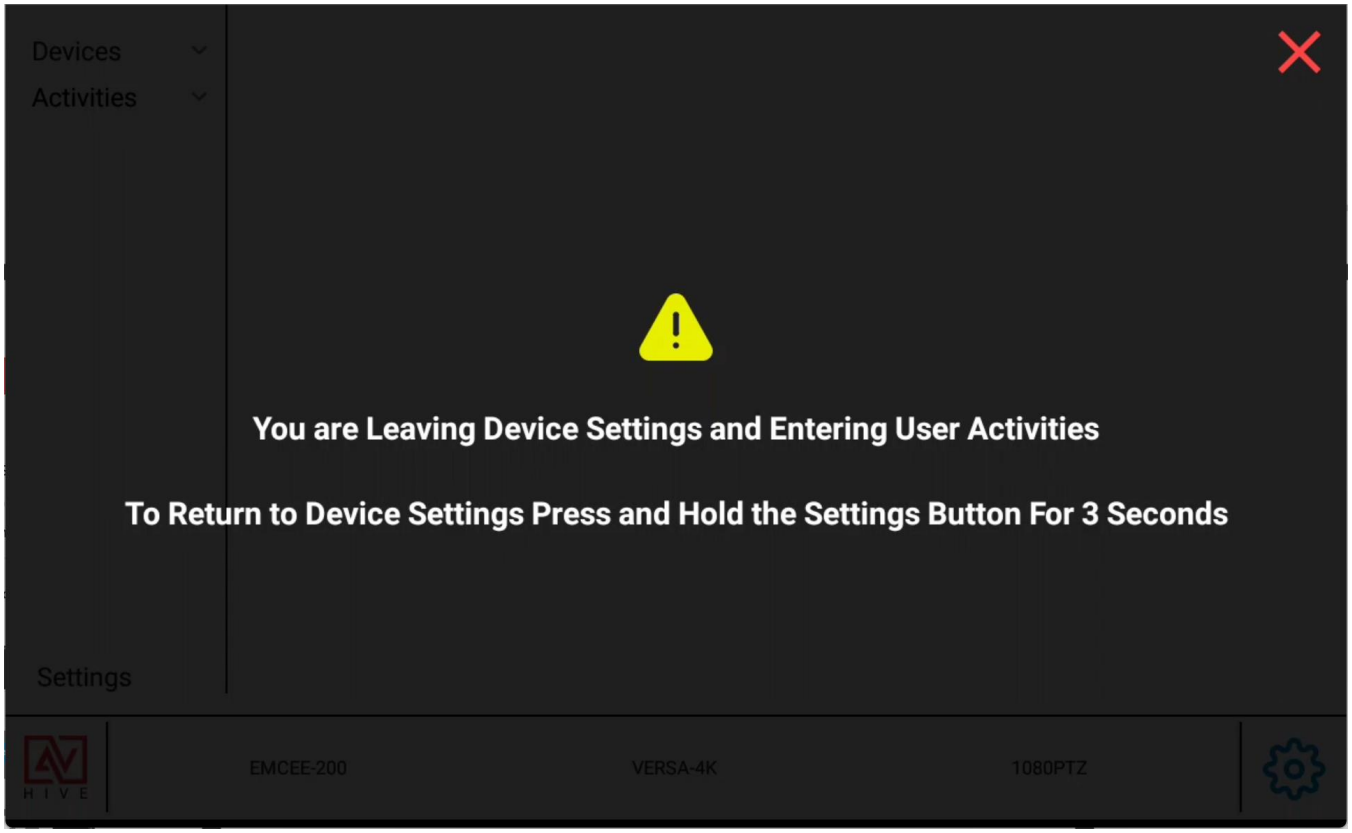
If you want to use the presets as the AV switch interface simply enable the DEFAULT SWITCH. The order of the presets matter; the first three will be what show up on the top icon banner for easy recall. You can change the order by pressing and holding the dots on the left and dragging the preset to a new position. Presets can be tested right after they are saved by pressing the play button. The eye icon allows preset to be hidden if it is only meant to be recalled by an AV tech in Device mode.



OVERVIEW – DEVICE MODE

Entering Activity Mode – Final Testing

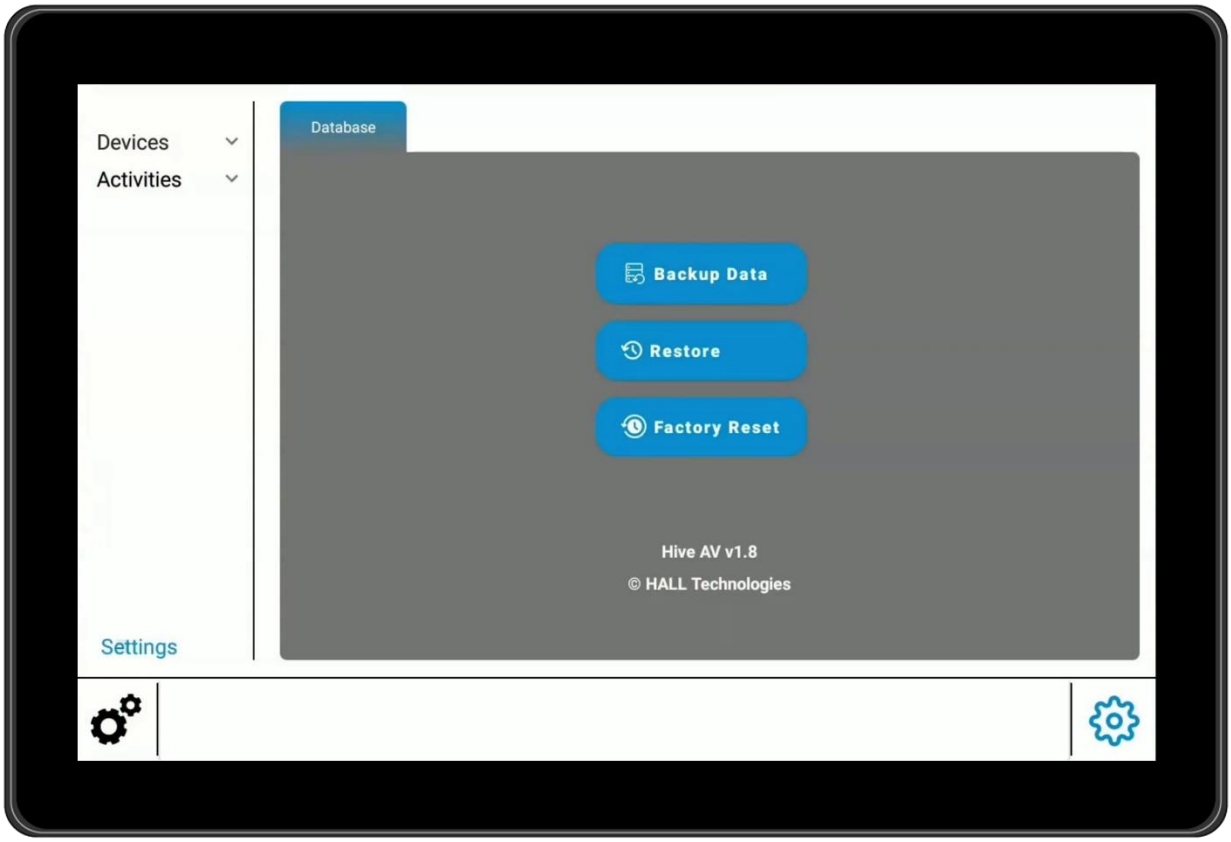
Once configuration is complete you can navigate from Device Mode to Activity Mode by pressing the Hive AV logo in the bottom left corner. Once in Activity Mode you can test all your configurations. If you need to return to the Device Mode for further testing just press and hold the Cog Icon for 3 seconds.



OVERVIEW – DEVICE MODE

Settings

If you are happy with the testing it is a good idea to do a back-up of the system. Press and hold the cog in you are in Activity mode to return to Device mode. You can do a back-up to the panel itself or you can back up to a USB drive connect to one of the USB ports on the back of the Hive Touch. You can also Restore a back up from the panel itself or from a back up of another unit from a USB. If are having issue with the panel or if you upgrading to a new firmware version from a very old version it is recommended to do a full Factory Reset.



VERSA-4K

Easy AV over IP

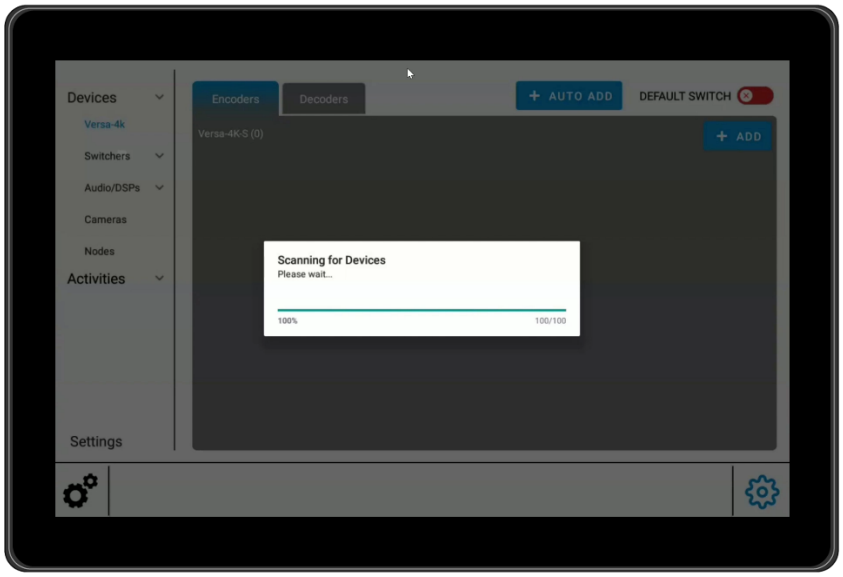
Versa-4k is the ultimate simplification of AV over IP, which traditionally faces challenges due to the complexity of configuration and the necessity for a centralized controller. Unlike most AVoIP encoder and decoder system, the Versa-4k is straightforward to set up and operate, functioning independently without an external controller. Each Versa features an LCD screen for easy setting adjustments and routing. Like the Hive Touch and Hive Nodes, Versa units are Powered over Ethernet, allowing minimal network setup. They also include individual device webpages for advanced configurations or can be managed using the Versa DVM PC software.

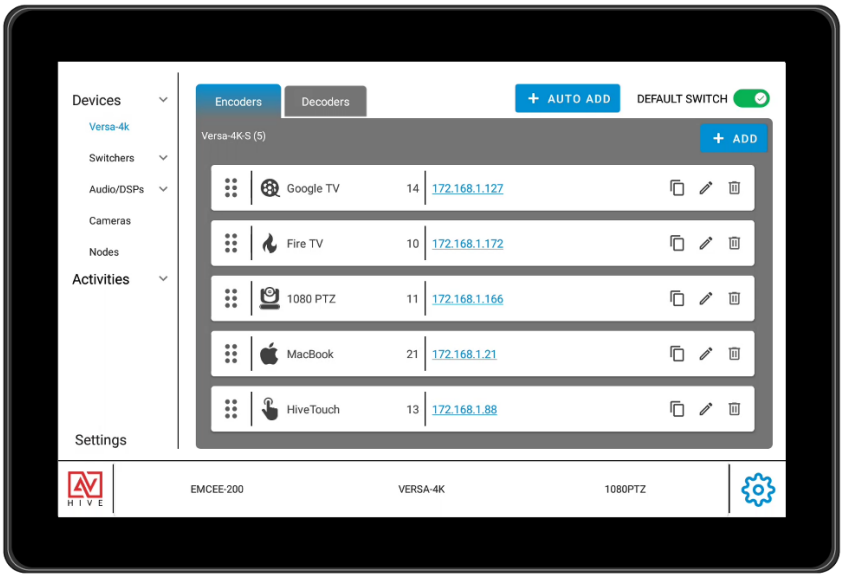
It might seem unlikely for an all-in-one tablet and control processor to effectively manage multicast streams in an AV over IP system, yet Hive AV delivers an exceptionally streamlined control experience. The synergy between the Hive AV app and Versa-4k allows for easy setup, audio and video distribution, and extensive control, streamlining the integration of standalone control systems with advanced AVoIP technology. Simply connect Versa and Hive to the same POE network switch on the same subnet, and the system automatically detects all Versa units, creating a matrix switching interface with minimal input—just navigate to Devices, select Versa, and let Hive AV handle the rest.

VERSA-4K

Hive + AUTO ADD

One of the best features of Hive AV is it's ability to automatically discover Versa-4k encoders and decoders, retrieve each one's IP address, label, Group ID and then create a beautiful switching matrix interface all in a matter of seconds. Simply navigate to Device Mode > Devices > Versa and if it is a first time use it will start the discovery process. Here is a video that shows that insanely fast process: https://youtu.be/HjDr_uziQHc?si=j5eiZybbspAHBnke



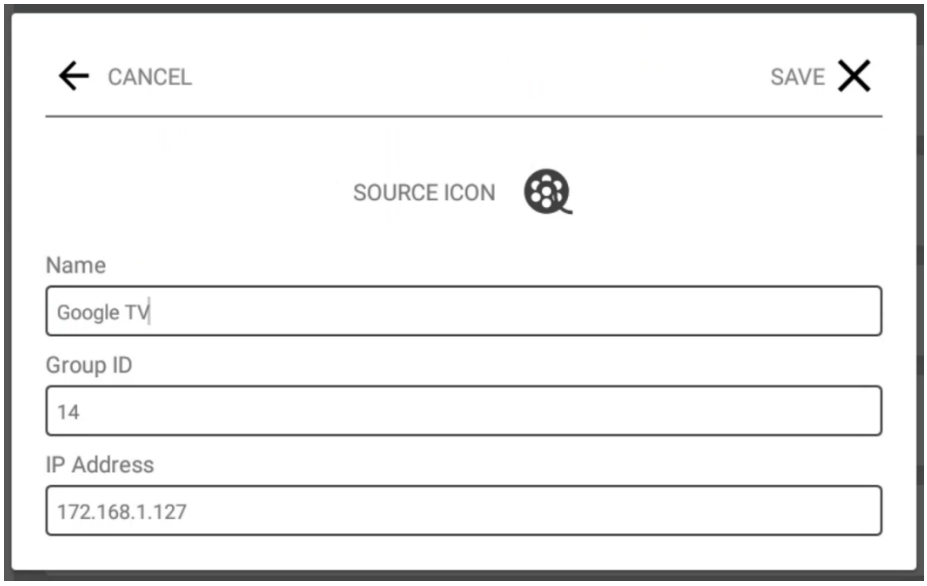


Device Settings

After discovery, a list of encoders and decoders is built, each with their own tab. An initial matrix interface is created and DEFAULT SWITCH, which determines which switcher is the main switching interface on in Activity Mode, is enabled. If you want to run the scan again simply press the + AUTO ADD button or if you want to add Versa manually press the + ADD button. The order of the encoders and decoders is used for the final matrix UI so if you need to rearrange the order simply press and hold the 6 dots on the left and drag the Versa to the position that you want. If you need to access the Versa webpage from the panel, click on the IP address.

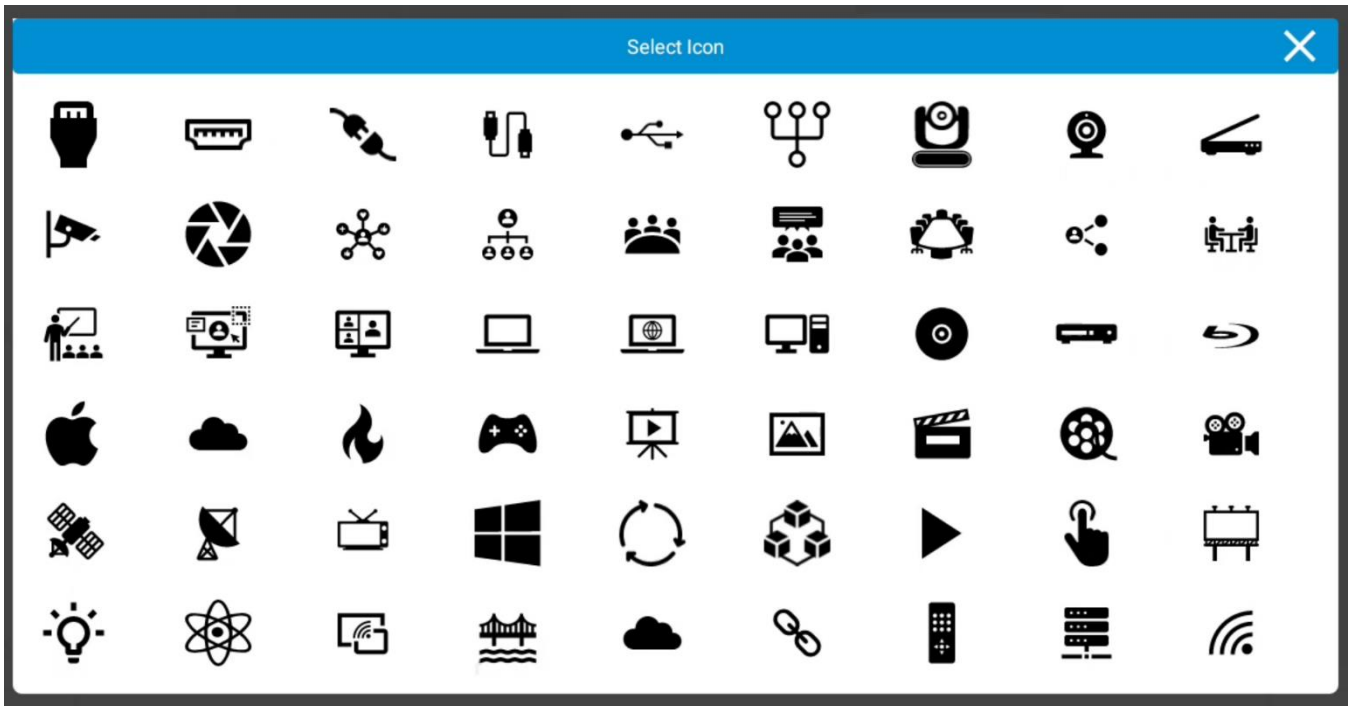
Edit, Copy, or Add Device

Select the pencil icon to edit, select the copy icon to copy an existing Versa, and press + ADD to manually add a Versa. Either way you will get a pop up like the one below.



Device Settings Continued

The name of the Versa is pulled from the device and can be set from the device webpage or from the edit pop-up, which will update the Versa on save. Only encoders will have customizable Icons. This is because when the source (Versa Sender) is routed to the display (Versa Receiver) the UI will show the label of source and icon inside of the display itself. To customize the icon simply click on it and it will open another pop up that you see below.

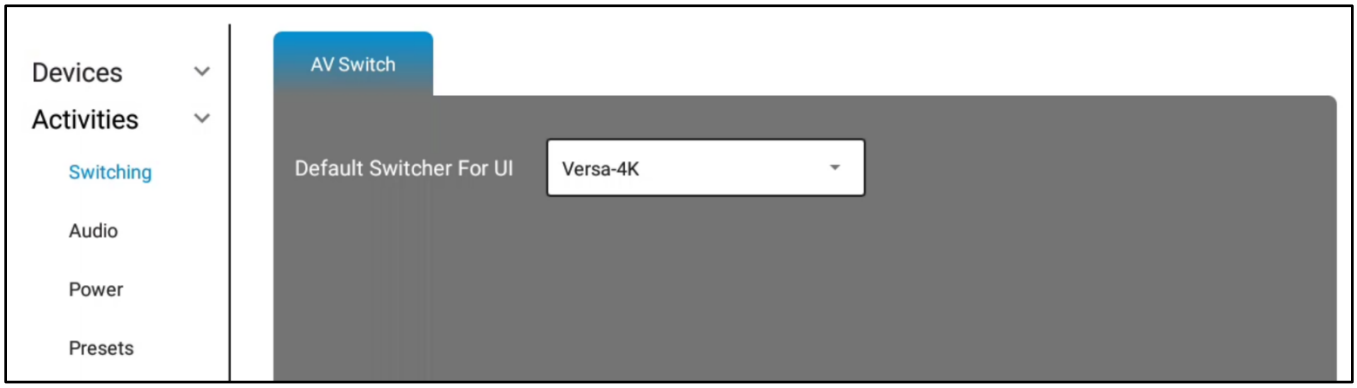


Activity Set Up

After Versa is added and customized, and if all you need to do is switch control then at this point you are done. Most AV spaces will probably require audio control and power on and off so you will want to set up those Activities.

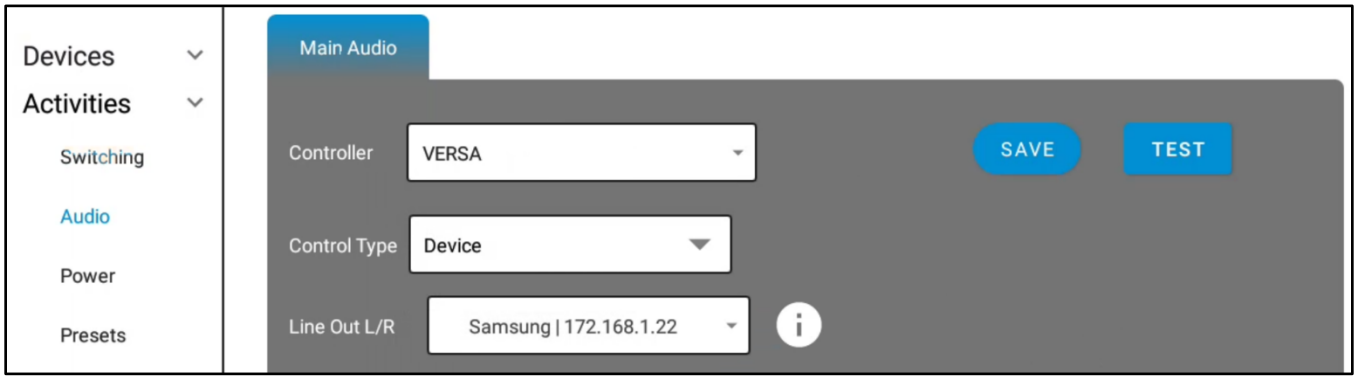
Switching

This should already be set if only added Versa. If you added other switching devices after Versa then it might show that device as the default instead. You can either set the DEFAULT SWITCH on the Versa device page or select Versa from the Switching drop down.



Audio

One of the best features of Versa is that audio follows video from source (encoder) to display (decoder) or can be routed independently to any Versa. That analog output can then be connected to an amplifier and the levels controlled by Hive. This can be set up under Activities > Audio. Below is an example.



Power

Versa is more than just about audio and video routing, it is also a power control end point that Hvie can utilize as if it were a Hive Node. Power and Global Presets can be set up to control displays and projectors over CEC, RS-232 or IR. By far the easiest and most reliable is CEC control which uses the HDMI connection itself, so no other wiring is required. Also, CEC is universal and works on most displays. To set control navigate to Device Mode > Activities > Power or Presets.

Commands

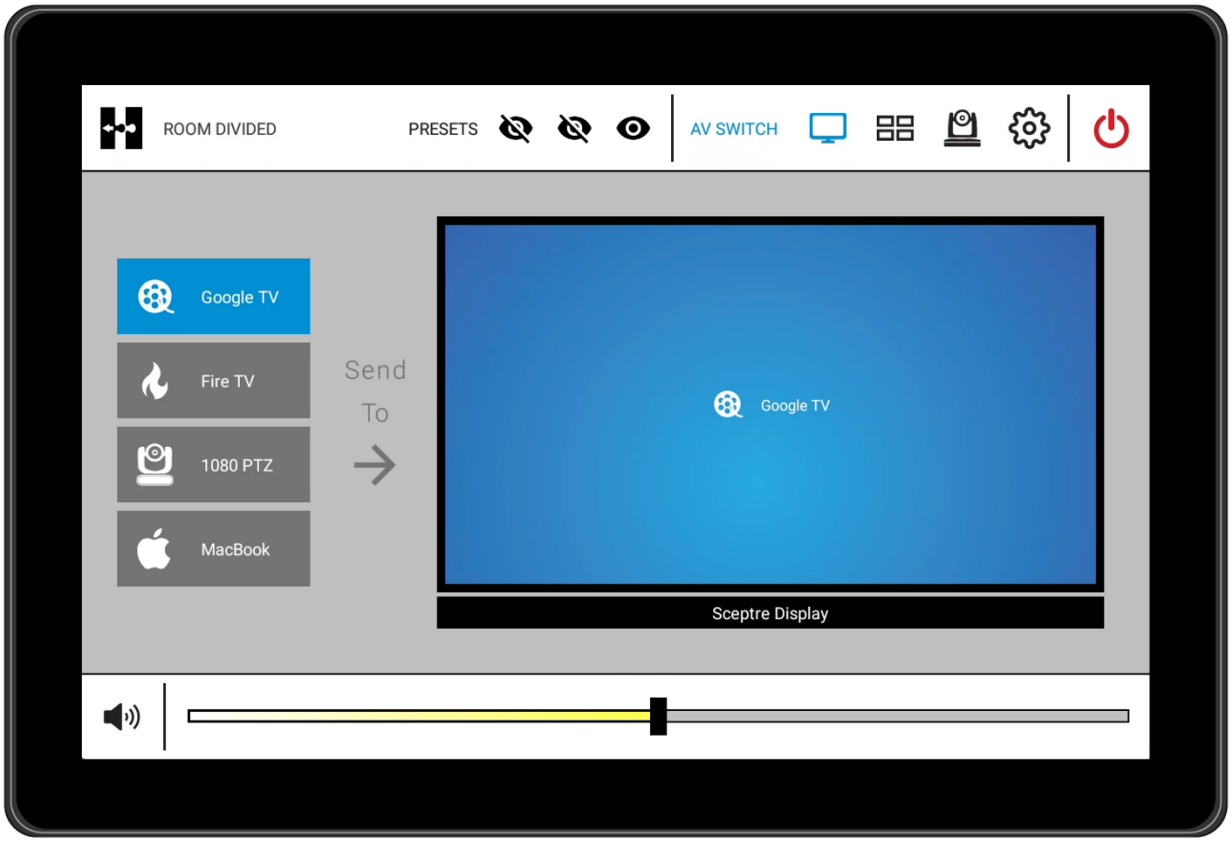
To edit the Power On or Off presets click on the pencil icon which will open a pop up. Edit the existing commands, press +ADD for new ones or copy existing. To add Versa commands, select the Versa encoder or decoder from the Device pop up. Under Control Type, select Device if you want to build a preset for something like a video wall, select RS-232, CEC or IR if you want to control a display or projector.

Activity Mode

Now that you have Versa added to the system, customized and all the activities configured, you can go to Activity Mode to test it all out by pressing the Hive AV button in the bottom left corner. Here you can test out the Power or global presets that you built, the switching UI or the audio levels. If you need to return to Device Mode, to adjust, press and hold the cog wheel.

Switching: Many to One

The Versa switching UI that gets automatically built in Device Mode is determined by the number of encoders (sources) and the number of decoders (displays). Many to One is a type of switching where there are 2 or more sources and only 1 display. Routing could be easier; simply select the source you want on the right and it will be routed to the display on the left. The source icon and label will populate the display in the UI just like the actual source will show on the actual display in the room.



Matrix Switching: Many to Many

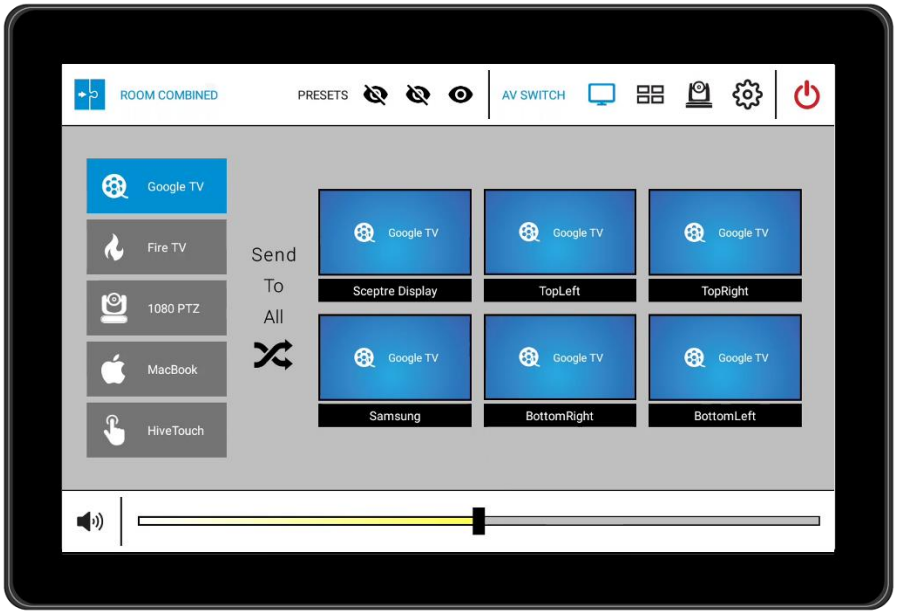
When your system has multiple sources and displays, this type of routing is called Matrix switching. When this is set up in Hive with Versa it creates a single column of sources (Versa encoders) on the left and either 2 or 3 columns of displays (Versa decoders) on the right. The order of these is determined by how you set it up in Device Mode, where you can change the order by dragging and dropping them into position.

Source Routing

To route an AV source to display, select any of the sources on the left. The selected source will turn blue as will any of the displays have the source routed to it. Then select any of the grey displays that do not have the source routed to it yet and the will turn blue and show the icon and label of the routed source.

Send To All

One of the best features of the Hive switching UI is the Send to All button. This allows the user to select one source on the left and automatically send it to all the displays on the right. This preset is automatically built when the switching UI is created.



HIVE NODES

The Hive Touch is a stand-alone controller which can easily control the devices in a single room if they are IP controllable, when combined with another Hive Touch, Hive Node Kits or Versa it becomes so much more. The Hive Touch was initially designed to be an All-In-One control system and interface for a single room, but with the new Hive Sync and Room Combo features it can now connect to many Hive Touches, up to 100, to control a divisible space, or a floor, or even a building. The Hive Touch by itself can only control devices over IP, but with Hive Node Kits and Versa-4k the capabilities are extended to CEC, RS-232, IR or Relay controls.

Hive Node Kits are IoT controllers that offer an efficient and compact solution for controlling devices through RS-232, IR, and Relay interfaces via IP. These Power over Ethernet kits only require a single Cat-5 and are small enough to install just about anywhere. They come with utilities and device webpages for easy discovery and set up.

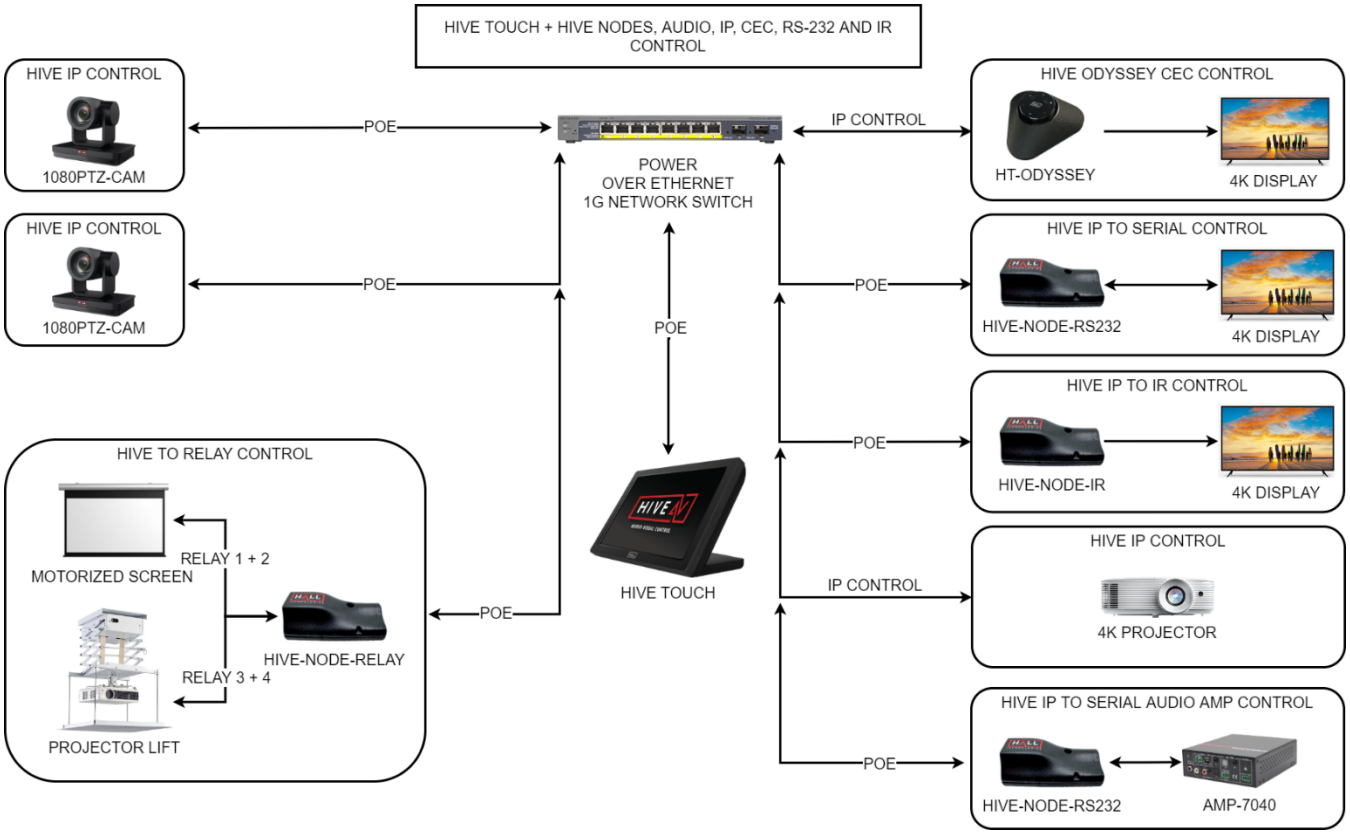
Many resources are available, here are some links:

- Product Pages: Hive Node Relay, Hive Node RS-232, and Hive Node IR
- Hive Node Manual – Technical manual for all three kits
- Hive Node Utilities – Node Help, Node Learn and Node Test PC apps
- Hive Node Series– This is a YouTube playlist of 6 tutorial videos that do a deep dive on Nodes

HIVE NODES

Hive Nodes – Relay, RS-232 and IR control

Below is a drawing that shows how the Hive Touch controls devices over IP or connects to the Hive Nodes over IP for Relay, RS232, or IR control. Some of the examples below are the most typical. Hive Node Relays are commonly used to control motorized screens and lifts for projectors. Hive Node IR and RS232 are commonly used to power on and off displays and projectors.



HIVE NODES

Hive Node Relay

Included in the kit is a PoE-powered Hive-Node-Mini, which effortlessly connects to the adapter through a 3.5mm cable connector. The adapter is equipped with four relay outputs and four sensor inputs, all accompanied by LED indicators for real-time status monitoring. Its compact form factor ensures easy concealment, whether it's mounted in a rack or installed near a screen. The relay control utilizes TCP commands, and sensor states are broadcast via UDP, providing a streamlined, efficient solution for automation, data collection, and control applications.

HIVE-NODE-RELAY FEATURES:

- 4 Relay outputs and 4 sensor inputs with LED indicators
- Flexible relay combinations set easily with wire jumpers
- Voltage or contact closure sense modes for sensors
- Relay control via TCP commands and sensor state broadcast via UDP

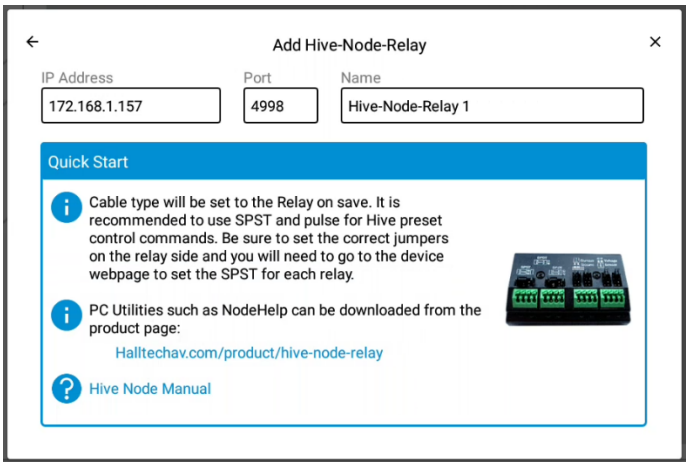
HIVE NODES

Hive Relay Configuration

Adding a Hive Node to the Hive AV App is straightforward. While in Device mode go to Devices > Nodes. The first tab is for the relay. Select +ADD to open the add device pop up.

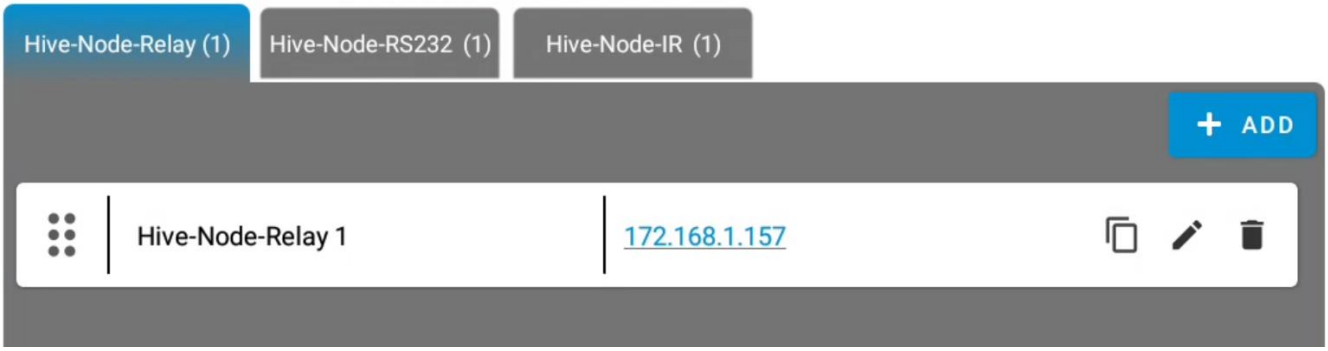
Add Hive Node Relay

Enter in the IP address of the Hive Node Relay and press “X” to save. If you need help finding it on your network, you can use the Node Help PC utility. Be sure the jumpers are set to SPST so that the presets trigger the relays properly.



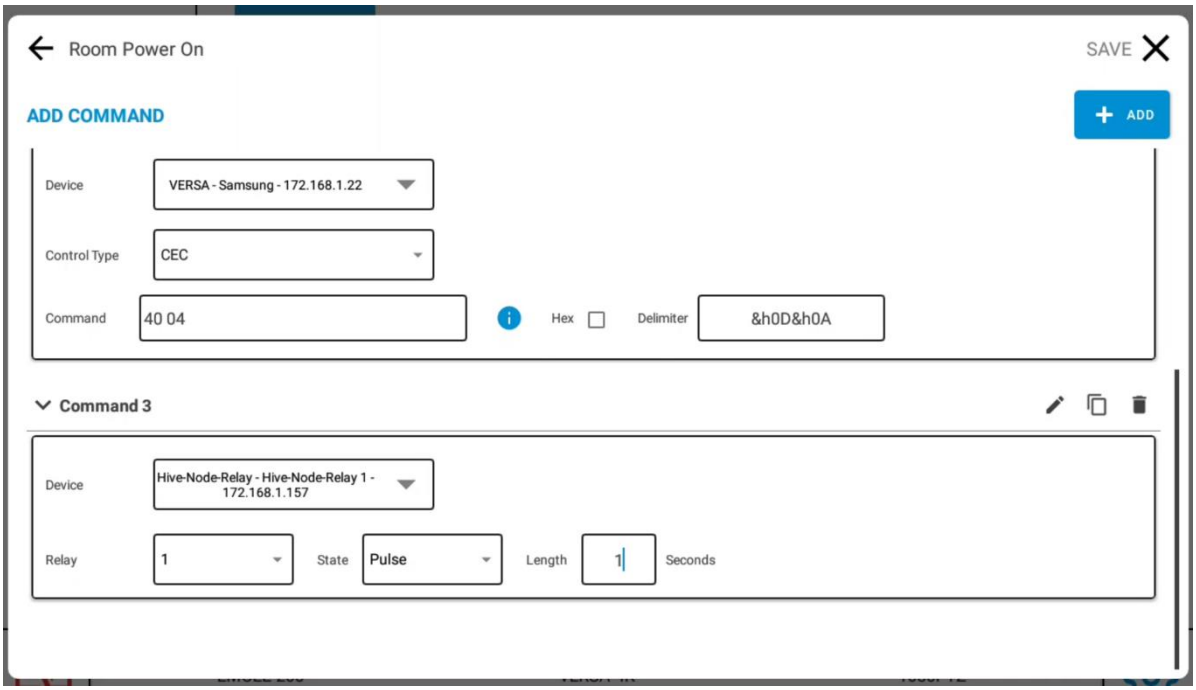
Relay Configuration Continued

After you add a new Hive Node Relay, a hyper-link to the device webpage is created so you can simply click on it and make any final updates to the device and test the connection and the relays and sensors. If you need to change the IP address or label, simply click on the pencil.



Power and Global Presets

Once you have added your Hive Node Relay to the Hive Touch then its relay state can be recalled through the Power on and off, or the Global Presets.



HIVE NODES

Hive Node RS-232

This vital addition to the Hive Node Kits lineup, controlling an array of AV devices using its PoE-powered Hive-Node-Mini and RS232 adapter. It has easy installation and configuration via its device web page or API, integrates perfectly with the Hive Touch.

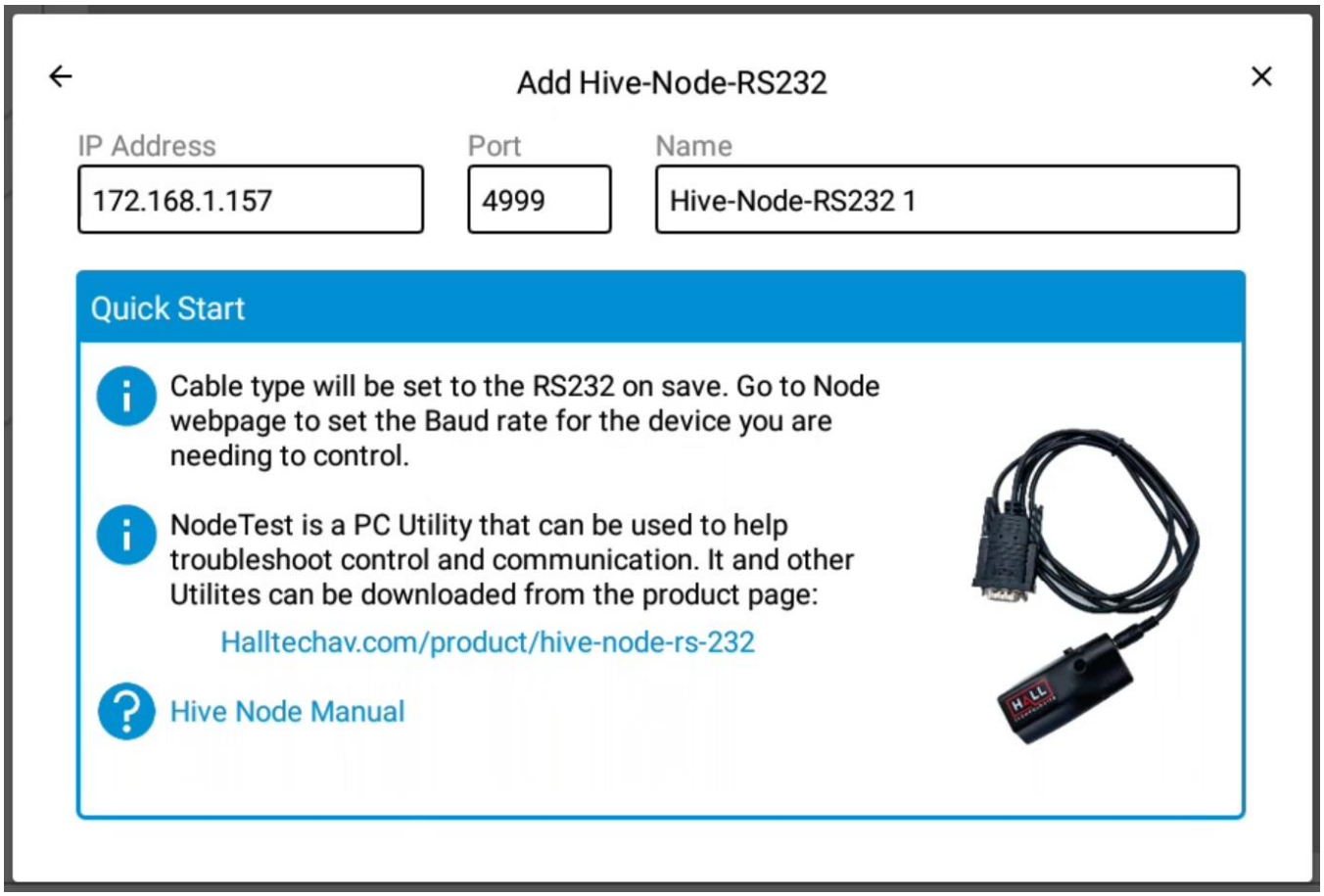
Features:

- Controls anything capable of RS-232 control: displays, projectors, switchers, and DSPs
- Includes PoE-powered Hive-Node-Mini with RS232 adapter and gender changer
- Compact, concealable design, scalable and adaptable to unique project requirements
- Serial baud rate, parity, stop bits and gender are all settable through the device webpage.

HIVE NODES

Hive RS-232 Configuration

To add a new Node RS-232 navigate to Device Mode > Devices > Nodes > Hive-Node-RS232 tab. Select the +ADD button which will open the pop up shown below. Enter in the IP address of the Hive Node RS232 and press “X” to save. If you need help finding it on your network, you can use the Node Help PC utility. You may need to set the baud rate from the node webpage. Once it is added to the system it will be available in both Power and Global Presets.



HIVE NODES

Hive Node IR

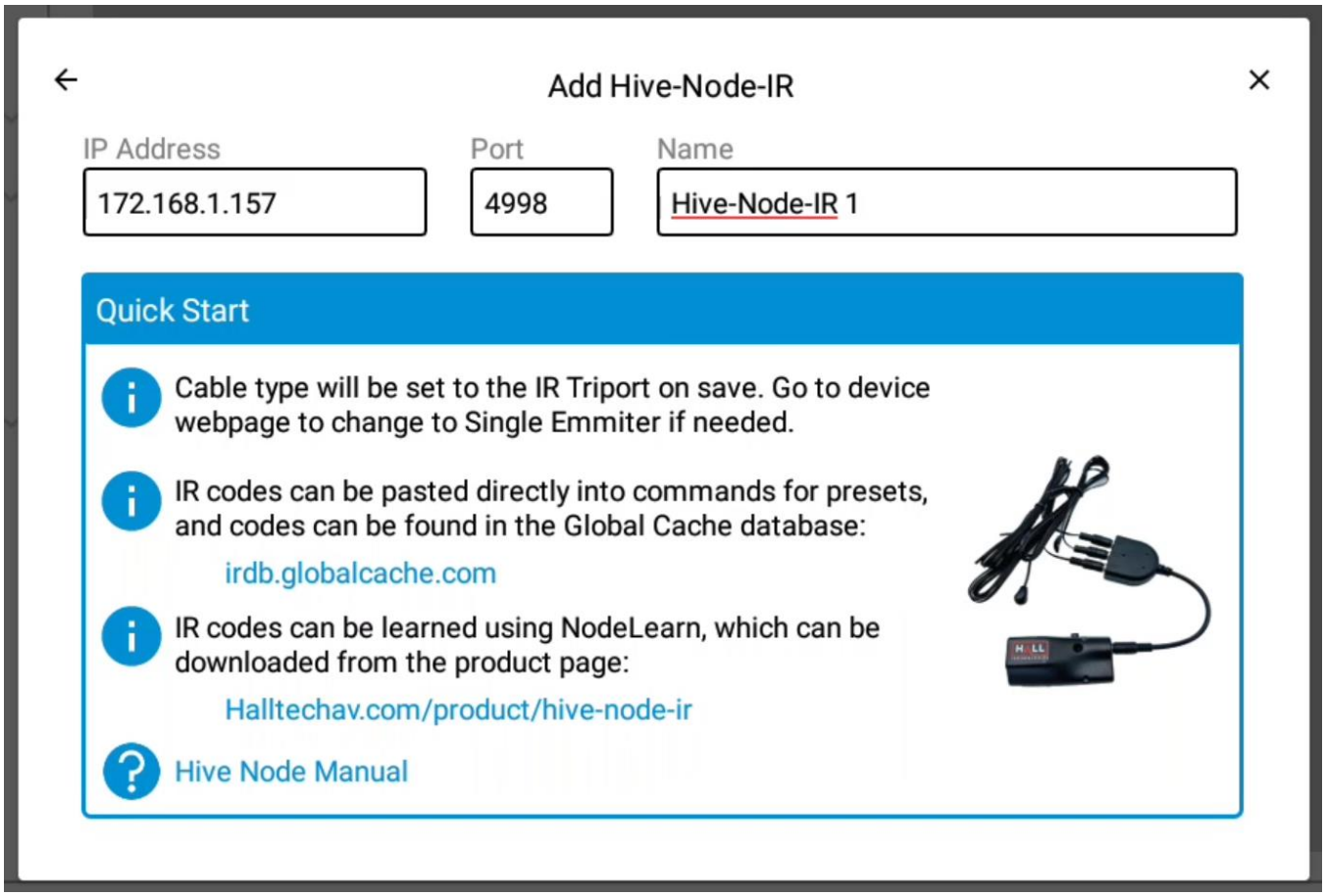
Nearly all displays, projectors and media players are controllable by an Infra-Red emitting remote. This is what makes the Hive Node IR so useful. This node offers one-way IR control of an array of devices, with the ability to connect to multiple IR emitters for discrete multi-device control.

- Includes PoE-powered Hive-Node-Mini, tri-port and 3 emitters
- IR emitters blink during command transmission for visual feedback and troubleshooting
- Access to extensive IR device driver database
- Features IR learning capability via built-in sensor and utility

HIVE NODES

Hive IR Configuration

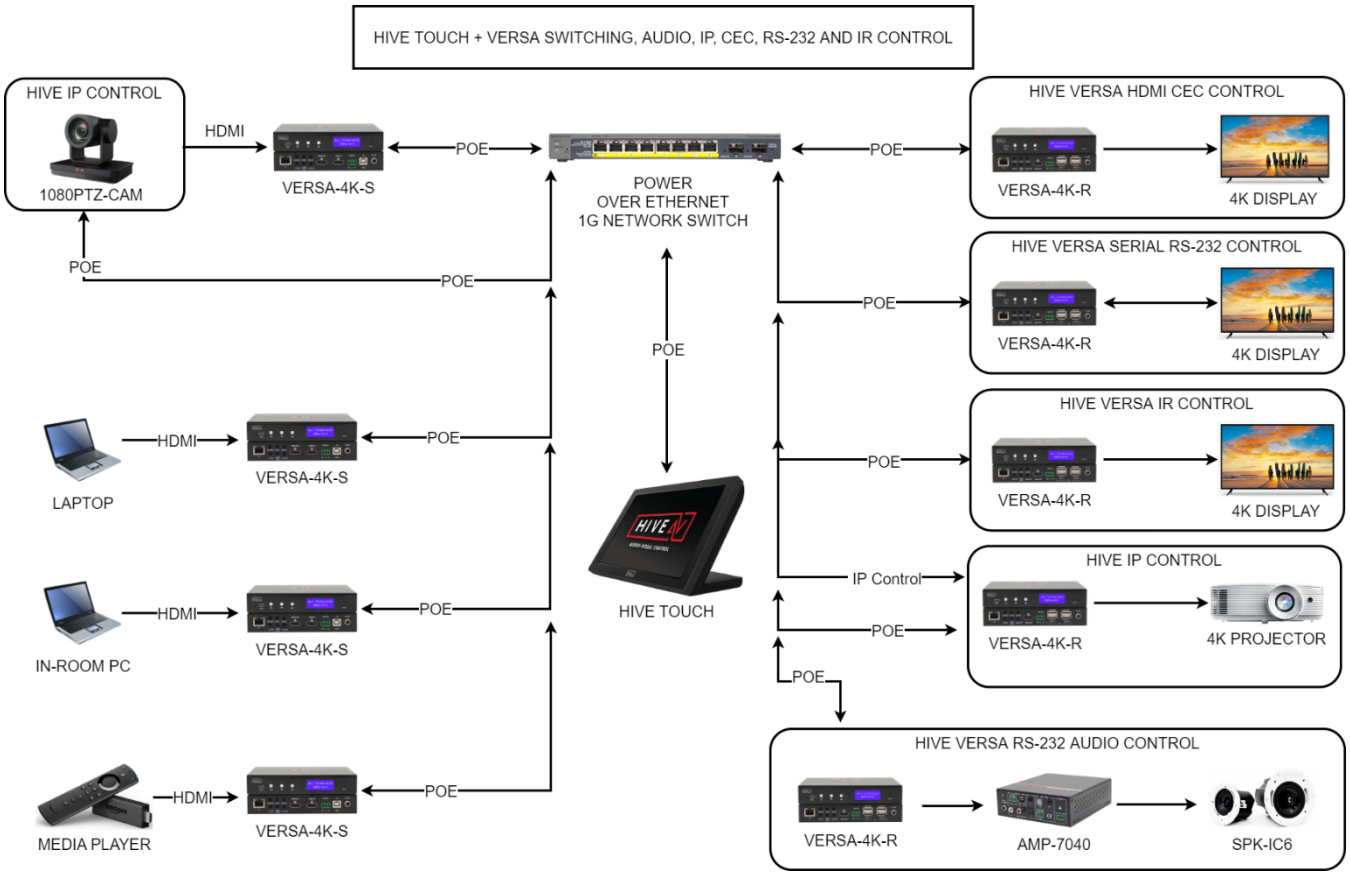
To add a new Node IR navigate to Device Mode > Devices > Nodes > Hive-Node-IR tab. Select the +ADD button which will open the pop up shown below. Enter in the IP address of the Hive Node IR and press "X" to save. If you need help finding it on your network, you can use the Node Help PC utility. To change the from the tri-port to a single emitter you will need to navigate to the device page. Once it is added to the system it will be available in both Power and Global Presets.



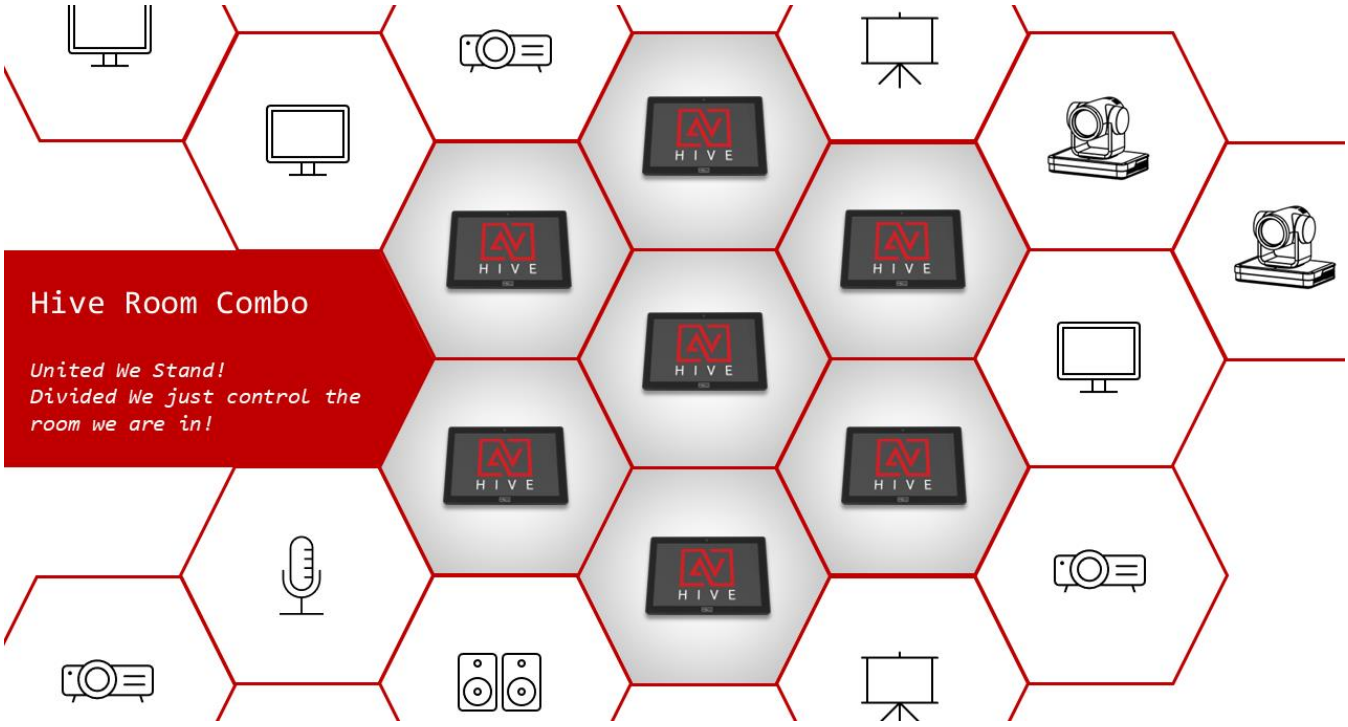
HIVE NODES

Versa-4k As a Hive Node

More than just an AV over IP solution, Versa encoders and decoders are also control endpoints capable of converting IP to CEC, RS-232 or IR control. Just like the other Hive Nodes, Versa is Power Over Ethernet, and has a dedicated IP ports that can be written directly to for easy control from Hive AV or any 3rd party control system. Hive AV automatically discovers Versa on the network and adds them to the system. Then the CEC, RS-232 or IR commands are available to be used with Power or Global Presets.



ROOM COMBO



Hive AV – Single or Multi-Room Control

Originally designed as a standalone interface and control system, the Hive Touch could control a single room on a connected AV network. This setup was not only powerful and user-friendly but also cost-effective compared to systems that required a separate touch panel, a control processor, and proprietary software, all needing complex and expensive programming. As innovative as it was, the Hive's initial capabilities were confined to single-room applications.

The Synergy of Hive Sync

The introduction of Hive Nodes and Versa expanded Hive's functionality, enabling control over additional components through CEC, RS-232, IR, and Relays. However, control was still limited to one room per Hive Touch panel. The development of Hive Sync and Room Combo were a “Quantum” leap forward, allowing a single Hive Touch to control its immediate room or, when combined with other units, to manage multiple rooms, an entire floor, or even a whole building. This expansion is described as a "Quantum” leap and is not just highlighting the increase in scope and flexibility. Room Combo resembles the concept of quantum entanglement where connected entities (like Hive Touches) simultaneously change states in a coordinated fashion.

HIVE ROOM COMBO

Hive AV – Master of Multicasts

Hive doesn’t rely on quantum mechanics for its symphony of synchronization. The real magic lies in mastering multicast streams. Hive uses dedicated multicast ports to query and discover devices on the network, storing their data effectively. It employs multicast for both Hive Sync and Room Combo, ensuring each panel is constantly receptive or ready to broadcast changes in power or room configuration. Additionally, the Hive Node Relay sensor broadcasts the status of divisible walls, triggering appropriate responses in the Hive Touch's Room Combo state.

Hive Room Combo tutorial: https://youtu.be/utvSc1rOVpg?si=GimN8-oRVxRp6Fx2

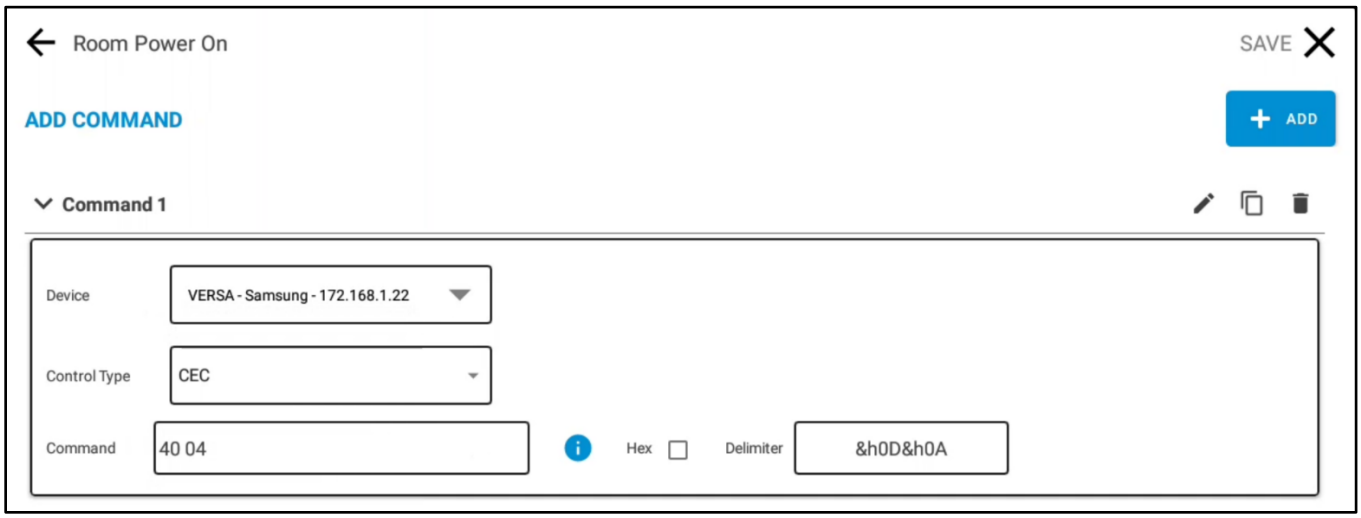
HIVE ROOM COMBO

Hive Sync

Easily synchronize power states across multiple panels in large AV spaces. Whether you're managing a single room with two panels or a divisible space, start with Hive Sync before setting up Room Combo presets.

Power Presets

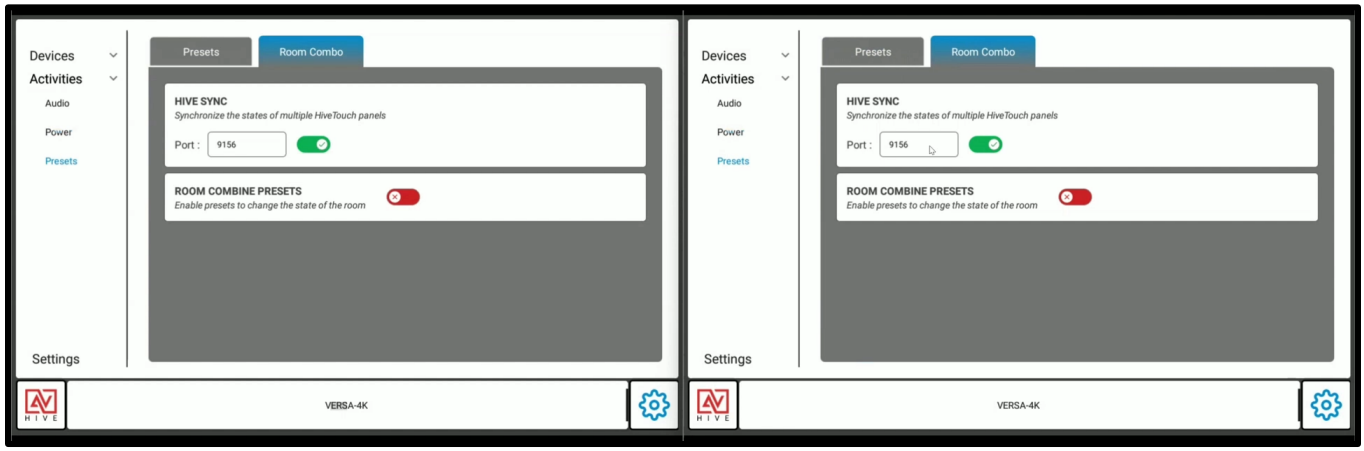
Prior to syncing panels, configure the devices and activities, focusing on Power presets. These presets are crucial, as they trigger with commands from any synced panel. In divisible spaces, ensure each panel controls only its respective room's displays. This setup allows for unified or independent control, so when rooms are combined, triggering one panel's power will activate both. Conversely, when rooms are divided, each panel only affects its assigned room, maintaining separate control states.



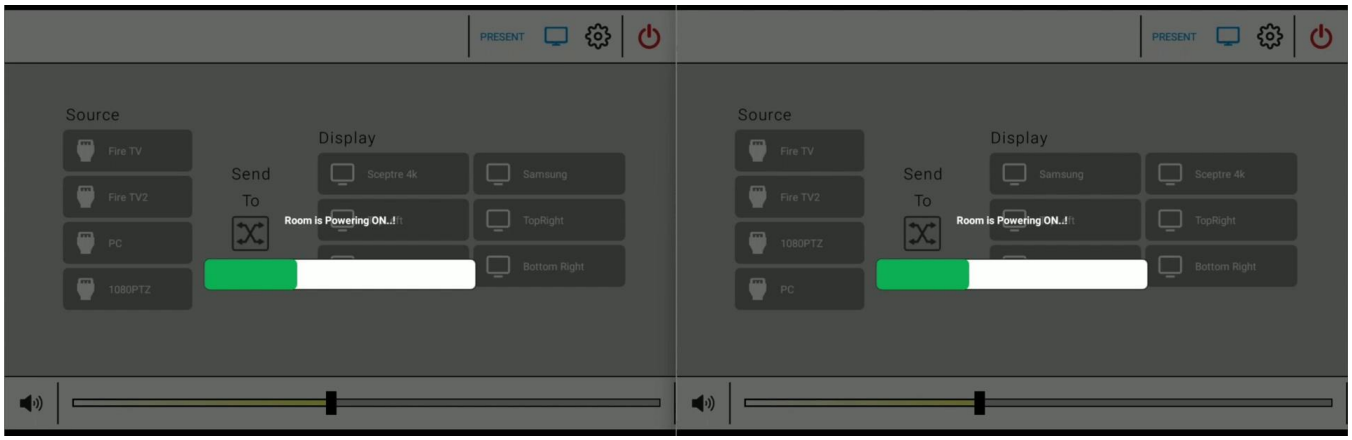
HIVE ROOM COMBO

Enabling Hive Sync

Once the power presets are set for both panels go to Activities > Presets > Room Combo tab. You will notice there is a power drop down. This needs to be the same for panels that are synced together. The ports are for multicast broadcasts, and they are the default for the Hive Node Sensors as well. Select enable and the panel will reset.



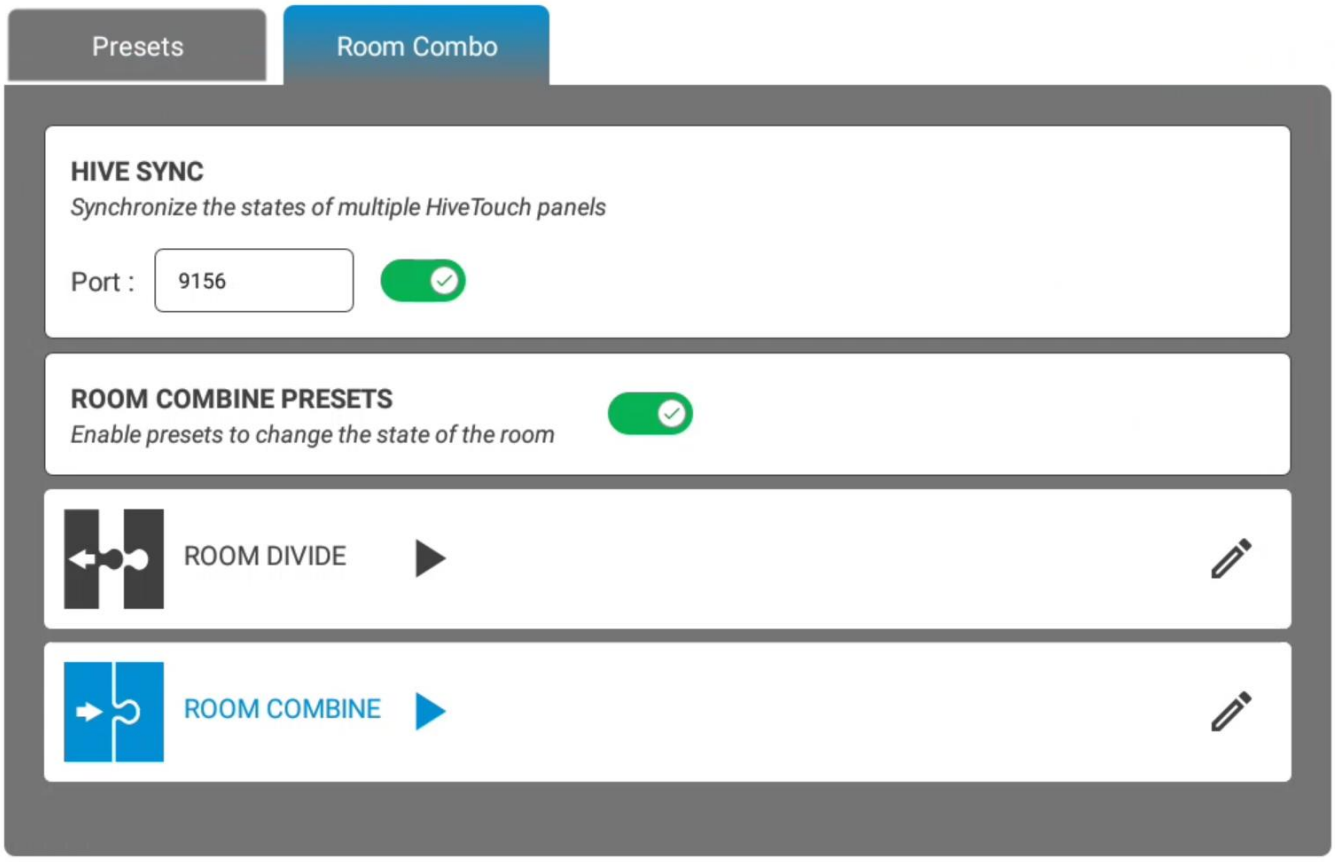
If all you need is the power states to be synced, like for a large single space with multiple panels, then you are done. You can proceed to Activity Mode on each and test the power on and off. The pressing from either should trigger the other.



HIVE ROOM COMBO

Configuring Presets

When you enable the Room Combo feature, it creates two presets that are triggered by the Room Combo button in Activity Mode. When the room is divided then Hive Sync is disabled and the panels power states are independent of one another. When the room is combined then Hive Sync is re-enabled and press power from one panel will trigger it on both. Additionally, the Room Combo states are synced so pressing the Room Combine button on one panel will set the other so that both are in the combined state. These presets are nearly identical to the Power and Global presets and commands for devices can be added to either.

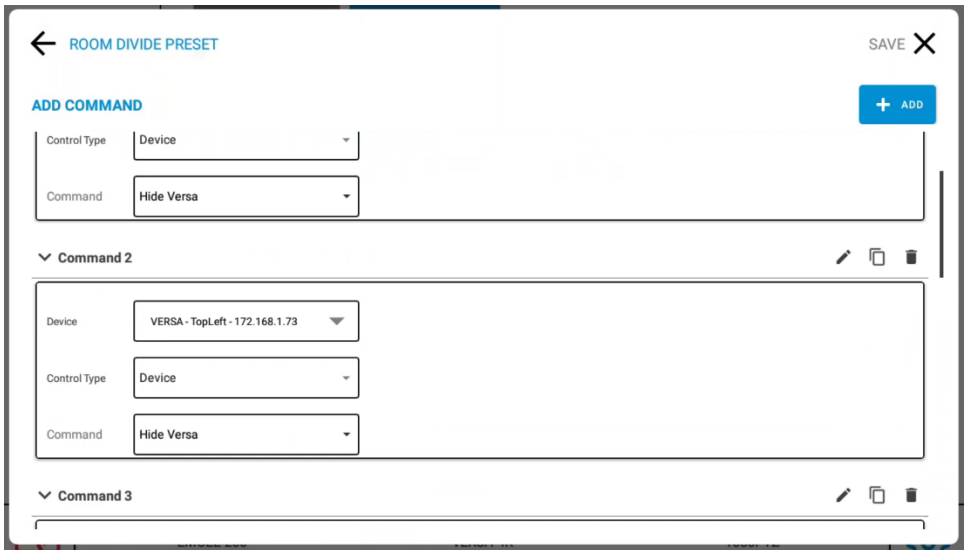


HIVE ROOM COMBO

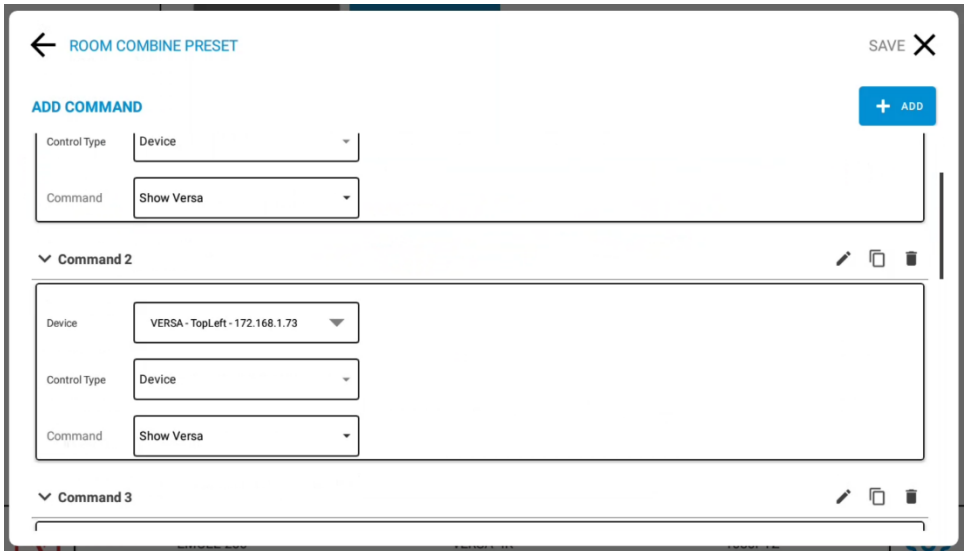
Versa 4k

The best device to integrate with the Room Combo feature is Versa which also uses multicast for AV streams and control. Versa is perfect for this application because it can be in many rooms and visible on one network. The key is to build Room Combo presets so that when the rooms are divided only the Versa in the divided room show up and when they are combined all the encoders and decoders in all combined rooms show in switching Matrix.

Hide Versa for Room Divide Preset



Show Versa for Room Combine Preset

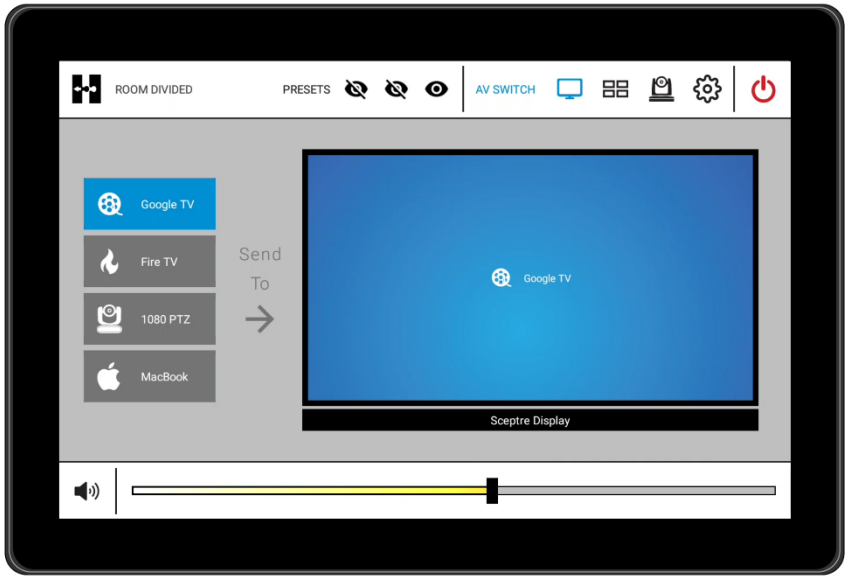


HIVE ROOM COMBO

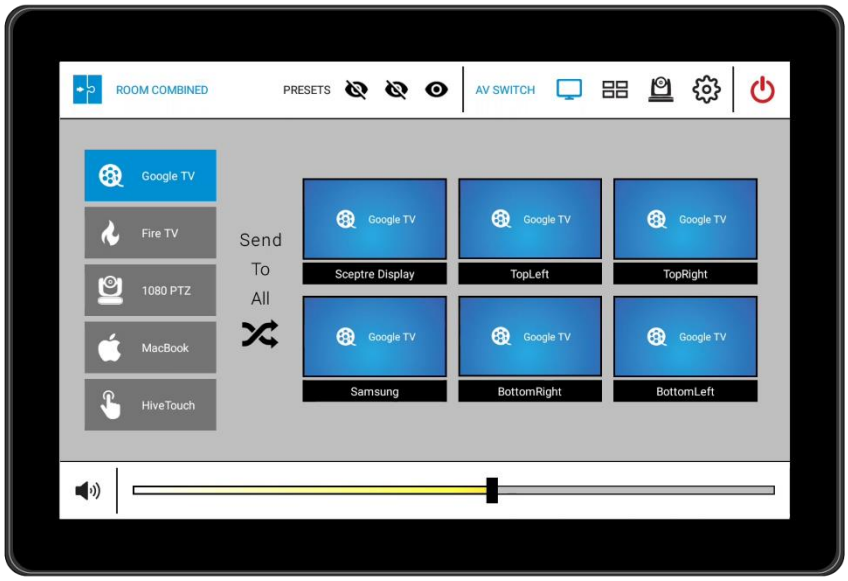
Room Combo Manual Recall

To trigger the Room, Combine or Room Divide states and preset recall, from Activity press and hold the top left Room Combo icon for 5 seconds. This is like the cog icon that takes the AV tech back to the Device mode. The press and hold is so that it doesn't get pressed by accident.

Room Divided State



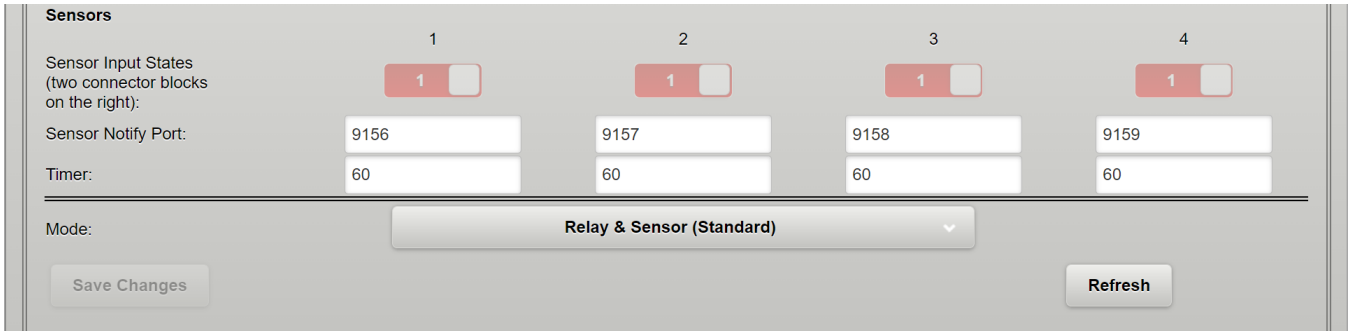
Room Combined State



Wall Sensors

Many divisible spaces will have a retractable wall that triggers a wall sensor. That sensor can be tied into the Hive Node Relay sensor and the trigger the Room Combo presets automatically. The sensors will use the same port that was set up for Hive Sync and broadcast when a circuit (like a wall sensor) closes or opens. If any sensor broadcasts as closed the Room Divide state is triggered and all panels will recall their set presets and change, their state to divided. If all the sensors report open, then the Room Combine state is broadcast and all synced panels will combine. The Hive Node Sensor doesn't need to be added to Hive at all for this to work, but the settings need to be updated on the device itself by going to the Hive Node webpage. Set the cable to Relay & Sensor and input the port that was used for Hive Sync, in this example 9156. If you are using more than one wall and sensor input the same port for each one that is being used. Also, it is highly recommended that you input 60 seconds for the Timer. This will report the sensor states every 60 seconds, so that if a broadcast is missed it will report properly every minute. You can test this by closing the circuit on the Hive Sensor and you will see the light go out and the rooms should change over to Divided. Open the circuit back up and it will return to Combined.

Hive Node Relay – Webpage Sensor Port Settings



RESOURCE LINKS

- Hive AV -
    - Hive AV App – Go to Hive Touch product page and Downloads for latest version
        - https://halltechav.com/product/hive-touch/
    - Hive Viewer
        - https://halltechav.com/wp-content/uploads/2023/06/HiveViewerInstaller-1.zip
    - Hive AV Tutorials
        - Quick Start: https://youtu.be/9TmoUlLnGPY?si=vf2FRzpizE2U4ClF
        - Overview: https://youtu.be/HjDr_uziQHc?si=NwIF3RvQUUNLzqS7
        - Room Combo tutorial: https://youtu.be/eB_LQIZVyXg?si=jCKCXPP6Sw1Mxp3K
        - For the latest videos go to Hall Technologies YouTube Channel:
            - https://www.youtube.com/@halltechav/videos
- Hive Touch
    - Product Page - https://halltechav.com/product/hive-touch/
    - Spec Sheet - https://halltechav.com/wp-content/uploads/2023/06/HIVE_Touch_Specsheet_Nov_9.pdf
    - Hive Touch and Nodes Diagrams - https://halltechav.com/wp-content/uploads/2024/02/Hive-Touch-and-Nodes.pdf
    - Hive Touch and Versa Diagrams - https://halltechav.com/wp-content/uploads/2024/02/Hive-Touch-and-Versa.pdf
- Hive KP8
    - Product Page - https://halltechav.com/product/hive-kp8/
    - Manual - https://halltechav.com/wp-content/uploads/2024/02/Hive-KP8-Manual.pdf
    - Device Finder Utility - https://halltechav.com/wp-content/uploads/2023/06/SW-HD-420Device20Finder.zip
    - Default Config File - Configuration File with Versa, Nodes and Hall Device Drivers. Unzip and use XML file. https://halltechav.com/wp-content/uploads/2024/02/HT-HIVE-KP8New-Default.zip

    - Hive KP8 and Nodes Diagram - https://halltechav.com/wp-content/uploads/2024/02/Hive-KP8-and-Nodes.pdf
    - Hive KP8 and Versa Diagram - https://halltechav.com/wp-content/uploads/2024/02/Hive-KP8-and-Versa.pdf
- Hive Nodes
    - Hive Node Kits
        - Product Page - https://halltechav.com/product/hive-control-node/
        - Manual - https://halltechav.com/wp-content/uploads/2023/11/Hive-Node-Manual.pdf
        - API/Command List - https://halltechav.com/wp-content/uploads/2023/11/Hive-Node-Command-List.pdf
        - Spec Sheet - https://halltechav.com/wp-content/uploads/2023/11/HIVE_Node_Specsheet_Sep_9.pdf
        - Utilities - https://halltechav.com/wp-content/uploads/2023/11/Node_Utilities.zip
        - Hive Touch and Nodes Diagram - https://halltechav.com/wp-content/uploads/2024/02/Hive-Touch-and-Nodes.pdf
        - KP8 and Nodes Diagram - https://halltechav.com/wp-content/uploads/2024/02/Hive-KP8-and-Nodes.pdf
        - Hive Node Series – YouTube Playlist https://youtube.com/playlist?list=PLmWGqaW7pqwmqqjEfoHvjgaUJZZACa7gM&si=Ceqsrp4r5H_q_GL2
    - Hive Node Relay
        - Product Page - https://halltechav.com/product/hive-node-relay/
        - Video Tutorial - https://youtu.be/pqgPYzORQDQ?si=LYGuMOdaaoDLchOa
    - Hive Node RS-232
        - Product Page - https://halltechav.com/product/hive-node-rs-232/
        - Video Tutorial - https://youtu.be/pqgPYzORQDQ?si=LYGuMOdaaoDLchOa
    - Hive Node IR
        - Product Page - https://halltechav.com/product/hive-node-ir/

        - Video Tutorial - https://youtu.be/DA79TxKHOkQ?si=LuA8BXaGaG3E-mLP
        - IR Database - https://irdb.globalcache.com/
- Versa 4k
    - Product Page - https://halltechav.com/product/versa-4k/
    - Manual – https://halltechav.com/wp-content/uploads/2023/06/Versa-4K_Manual_Feb9-2023.pdf
    - Network Configurations - https://halltechav.com/wp-content/uploads/2023/06/VERSA-4K_configuration-setup_Feb13.pdf
    - DVM PC Utility - https://halltechav.com/wp-content/uploads/2023/06/VERSA-4K-DVM-PC-GUI-Software.zip
    - Hive Touch and Versa Diagrams - https://halltechav.com/wp-content/uploads/2024/02/Hive-Touch-and-Versa.pdf
    - Hive Versa Overview - https://youtu.be/HjDr_uziQHc?si=4dsaDTNPZt_Xt2h9
    - Hive Presets and Video Wall Set Up - https://youtu.be/MVE89Kt2AO8

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