HALL TECHNOLOGIES Hive-KP8 All In One 8 Button User Interface and IP Controller User Manual

Contents

HALL TECHNOLOGIES Hive-KP8 All In One 8 Button User Interface and IP Controller

Product Information

Specifications

- Model: HT-HIVE-KP8
- Type: All-In-One 8 Button User Interface and IP Controller
- Power Supply: 5VDC, 2.6A Universal Power Supply
- Connectivity: TCP/Telnet/UDP commands to IP-enabled devices
- Control Options: Keypad button presses, embedded webpage, user-programmed schedules
- Features: Programmable buttons, customizable LEDs, PoE compatibility
- Integration: Works with Hive Nodes for IR, RS-232, and Relay control

Product Usage Instructions

Configuration
The HT-HIVE-KP8 can be configured to control various devices on the same network. Follow these steps:

1. Connect the power supply or use PoE for power.
2. Program each button with desired TCP/Telnet/UDP commands.
3. Customize LED settings for each button.
4. Set up macros for executing series of commands.

Operation
To operate the HT-HIVE-KP8:

1. Press a button once for single command execution.
2. Press and hold a button to repeat a command.
3. Consecutively press a button to toggle between different commands.

4. Schedule command execution based on specific day/time using the clock/calendar feature.

Integration with Hive Nodes
When used with Hive Nodes, the HT-HIVE-KP8 can extend its control capabilities to include IR, RS-232, and Relay control for compatible devices.

Frequently Asked Questions (FAQ)

1. **Q: Can the HT-HIVE-KP8 control non-IP-enabled devices?**
   A: The HT-HIVE-KP8 by itself is designed for IP control. When used with Hive Nodes, it can extend control to IR, RS-232, and Relay devices.
2. **Q: How many macros can be programmed on the HT-HIVE-KP8?**
   A: Up to 16 macros can be programmed and recalled on the HT-HIVE-KP8 for sending commands to various systems.

Introduction

OVERVIEW
The Hive-KP8 is a key component of Hive AV control. Just like the Hive Touch, it is both an All-In-One standalone control system as well as an 8 button User Interface. Each button can be programmed to issue TCP/Telnet/UDP commands to IP-enabled devices on the same network, with activation possible via keypad button presses, the embedded webpage, or through user-programmed day/time schedules. Buttons are configurable for single command execution with a single press or for launching a series of commands as part of a macro. Additionally, they can repeat a command when pressed and held or toggle between different commands with consecutive presses. Up to 16 macros can be programmed and recalled for sending TCP/Telnet messages or commands to various IP-enabled and IoT systems, including AV distribution, factory automation, security systems, and keypad access controls. Each button is equipped with two programmable color LEDs, allowing for customization of the on/off state, color, and brightness. The Hive-KP8 can be powered using the included power supply or via PoE (Power over Ethernet) from a compatible LAN network. Featuring an integrated battery-backed clock/calendar, the Hive-KP8 facilitates command execution based on specific day/time schedules, such as automatically powering off and, on the network,-connected devices each evening and morning, respectively.

OVERALL FEATURES

- **Ease of Setup and Use:**
  - Setup is straightforward and requires no software; all configurations can be completed via the KP8’s web page.
  - Operates independently of the internet or cloud, suitable for isolated AV networks.
- **Design and Compatibility:**
  - Features a single gang Decora wall plate design with 8 programmable buttons, blending seamlessly into various environments.
  - Requires only a standard PoE (Power Over Ethernet) network switch for operation.
  - Rugged and durable housing ensures easy installation and longevity, ideal for conference rooms, classrooms, factory floors, and machine control settings.
- **Control and Customization:**
  - Capable of sending TCP/Telnet or UDP commands for versatile device management.
  - Offers adjustable LED brightness and color for personalized button indication.
  - Supports up to 16 macros and a total of 128 commands across all macros (with a maximum of 16

commands per macro), facilitating complex system management.

- **Scheduling and Reliability:**
  - Features time and date scheduling with customizable daylight saving time adjustments.
  - Provides up to 48 hours of backup power to maintain the internal clock and calendar in the event of a power loss.

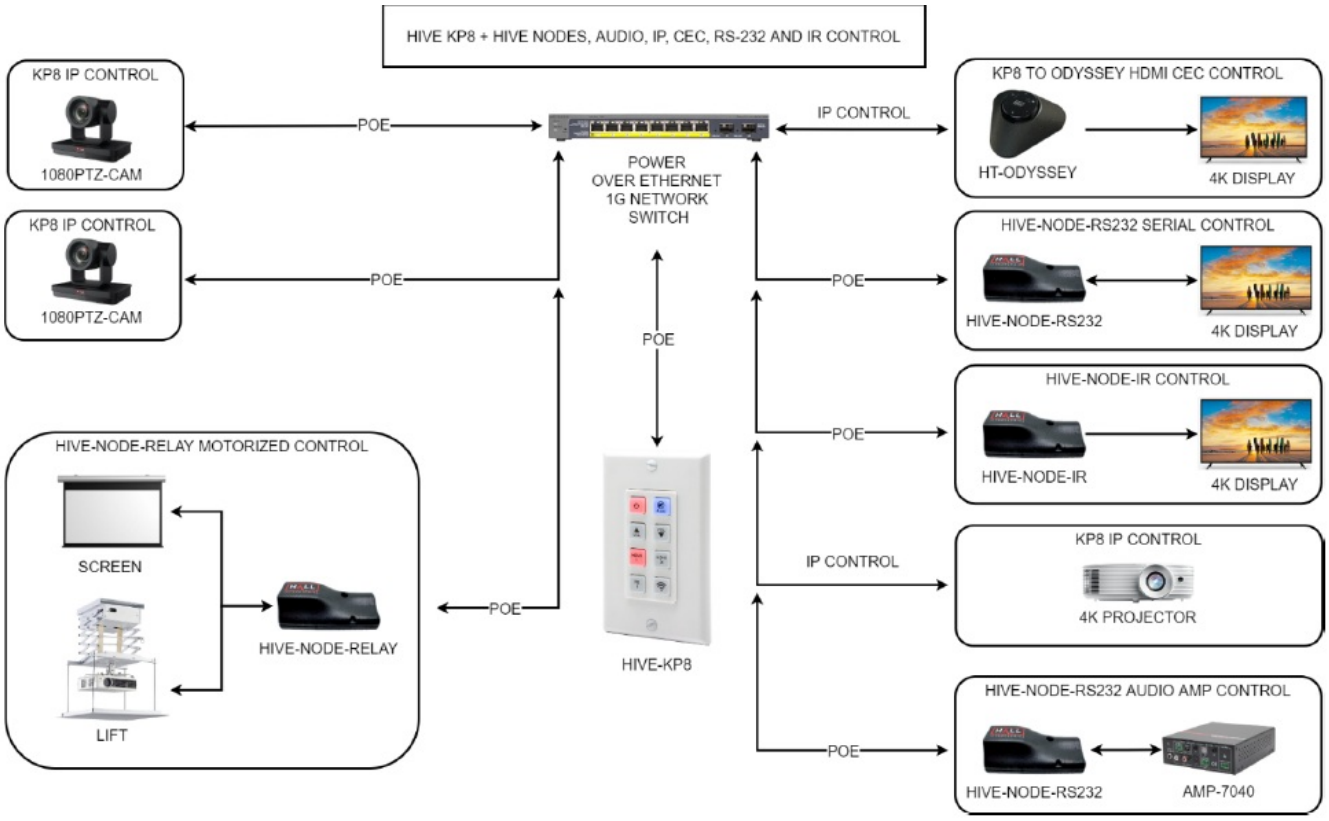
Package Contents

HT-HIVE-KP8

- (1) Model HIVE-KP8 Keypad
- (1) 5VDC, 2.6A Universal Power Supply
- (1) USB Type A to Mini USB OTG connector
- (1) Pre-printed button labels (28 labels)
- (1) Blank button labels (28 labels)
- (1) User's Manual

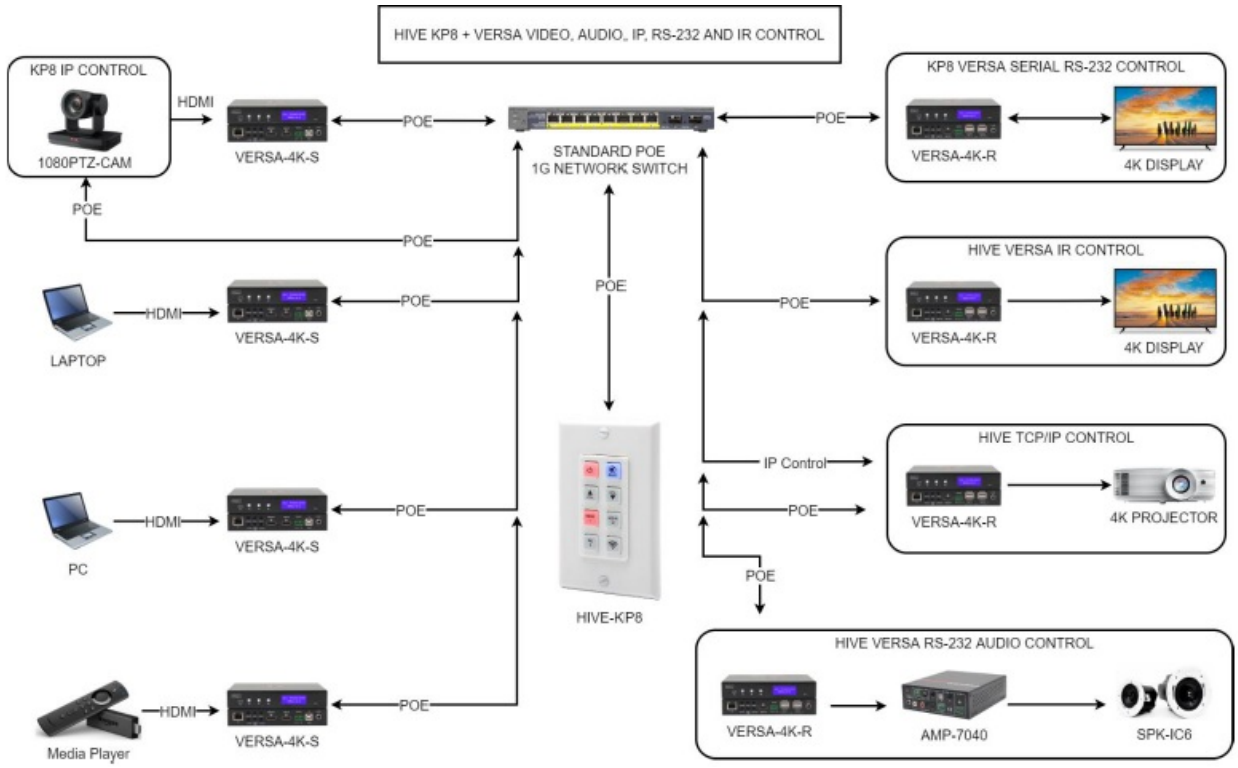
Configuration and Operation

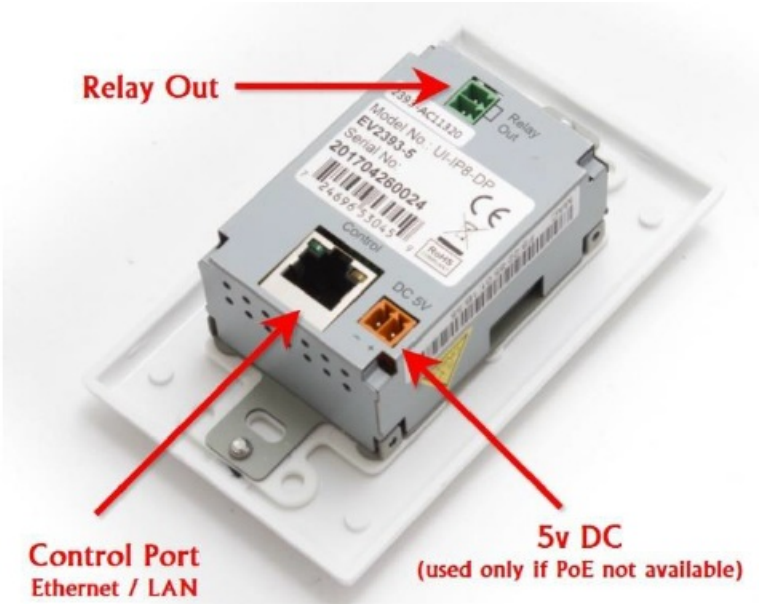
HIVE KP8 AND HIVE NODES
By itself, the HT-HIVE-KP8 is capable of IP control of a variety of devices such as our HT-CAM-1080PTZ, our HT-ODYSSEY and most displays and projectors. When used with our Hive Nodes it is capable of IR, RS-232 and Relay control for various devices such as our AMP-7040 as well as motorized screens and lifts.



HIVE KP8 AND VERSA-4K

As mentioned before, HT-HIVE-KP8 is capable of IP control of a variety of devices but when integrated with our AVoIP solution, Versa-4k, the Hive KP8 can control AV switching of the encoders and decoders and it can use Versa, just like a Hive-Node to control devices over IR or RS-232.





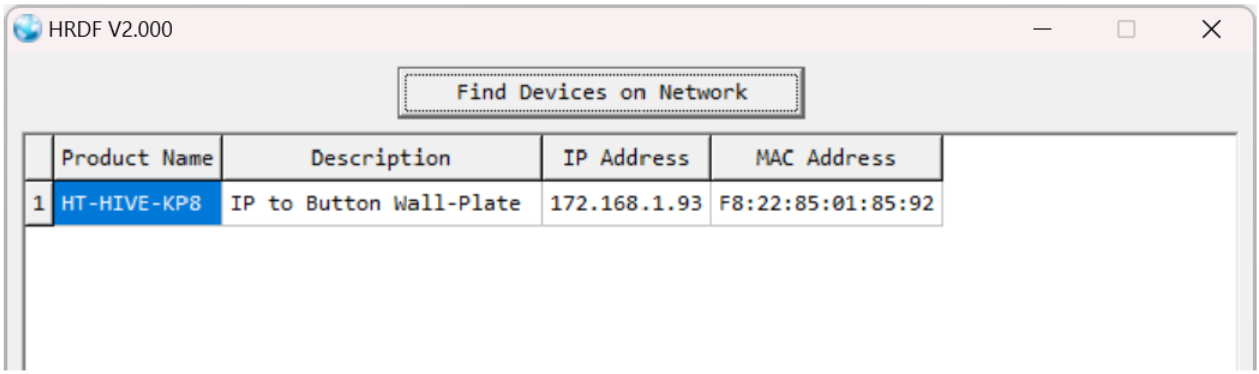
Name	Description
DC 5V	Connect to the supplied 5V DC power supply if no PoE power is available from the network switch / router.
Control Port	Connect to a compatible LAN network switch or router using a CAT5e/6 cable. Power over Ethernet (PoE) is supported; this enables the unit to be powered directly from the 48V network switch / router without the need for the 5V DC power supply to be connected.
Relay Out	Connect to a device that supports DC 0~30V/5A relay trigger.

Discovery and Connecting

Hall Research Device Finder (HRDF) Software Tool
The default STATIC IP address as shipped from the factory (or after factory default reset) is 192.168.1.50. If multiple keypads are connected to your network, or you are unsure of the IP addresses assigned to each keypad, free HRDF Windows® software is available for download on the product webpage. The user can scan the compatible network and find all the attached HIVE-KP8 keypads. Note that HRDF software may discover other Hall Technology devices on the network if present.

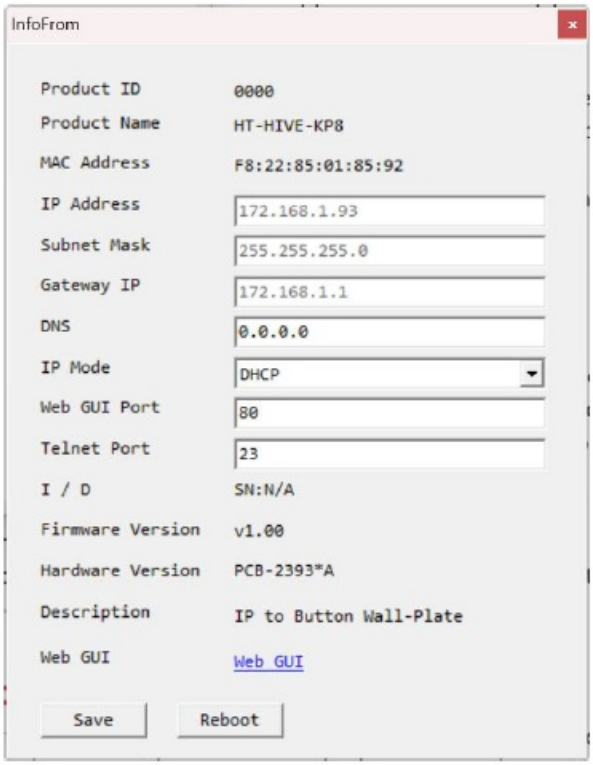
Finding the HIVE-KP8 on Your Network
The HRDF software can change the STATIC IP address or set the system for DHCP addressing.

1. Download the HRDF software from Hall Research website on a PC
2. Installation is not necessary, click on the executable file to run it. The PC may ask the user to grant permission for the application to access the connected network.
3. Click the “Find Devices on Network” button. The software will list all of the HIVE-KP8 devices found. Other Hall Research devices may also appear if connected to the same network as the HIVE-KP8.
4.



Relay ports can be configured as individual SPST relays, but can also be logically grouped with other ports to create other common relay type configurations. Input ports are all individually configurable and support either voltage sensing or contact closure modes.

5. Double click on any device to view or modify its parameters.
6. Click the “Save” and then “Reboot” buttons after making changes.
7. Allow up to 60 seconds for the keypad to fully bootup after rebooting.
8. For example, you can assign a new Static IP address or set it to DHCP if you want the compatible LAN network to assign the address.
9. A hyperlink to the attached HIVE-KP8 is available to launch the webGUI in a compatible browser.

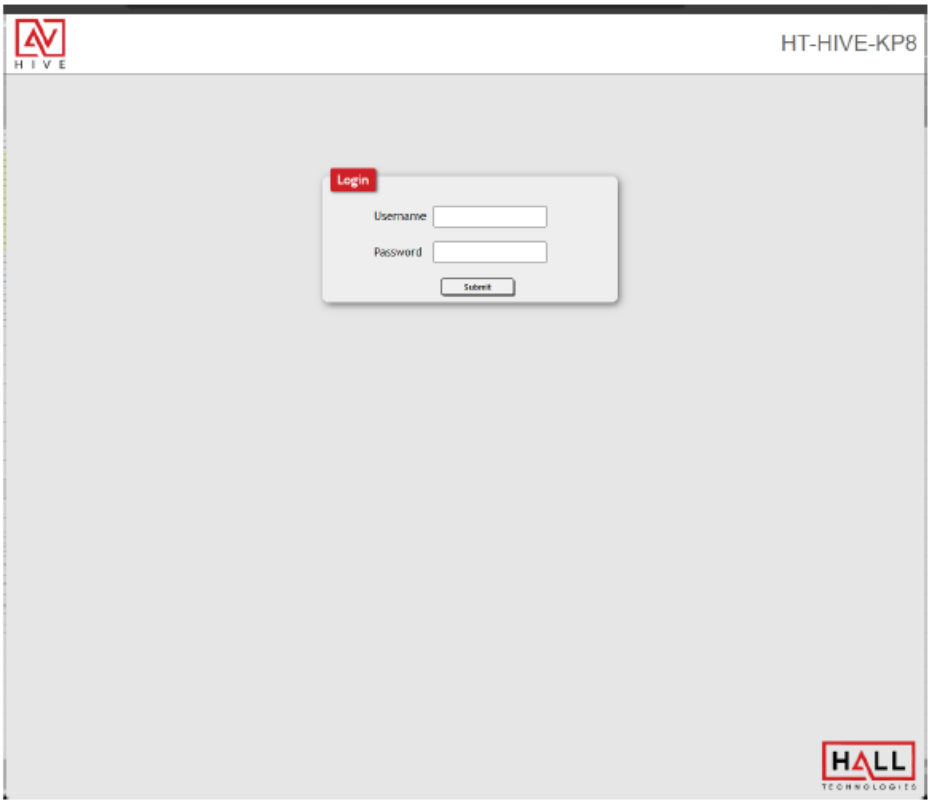


Device Webpage Login

Open a web browser with the device’s IP address into the browser’s address bar. The login screen will appear and prompts the user for a username and password. The page might take several seconds to load when first connecting. Most browsers are supported but it works best in Firefox.

Default Login and Password

- Username: admin
- Password: admin

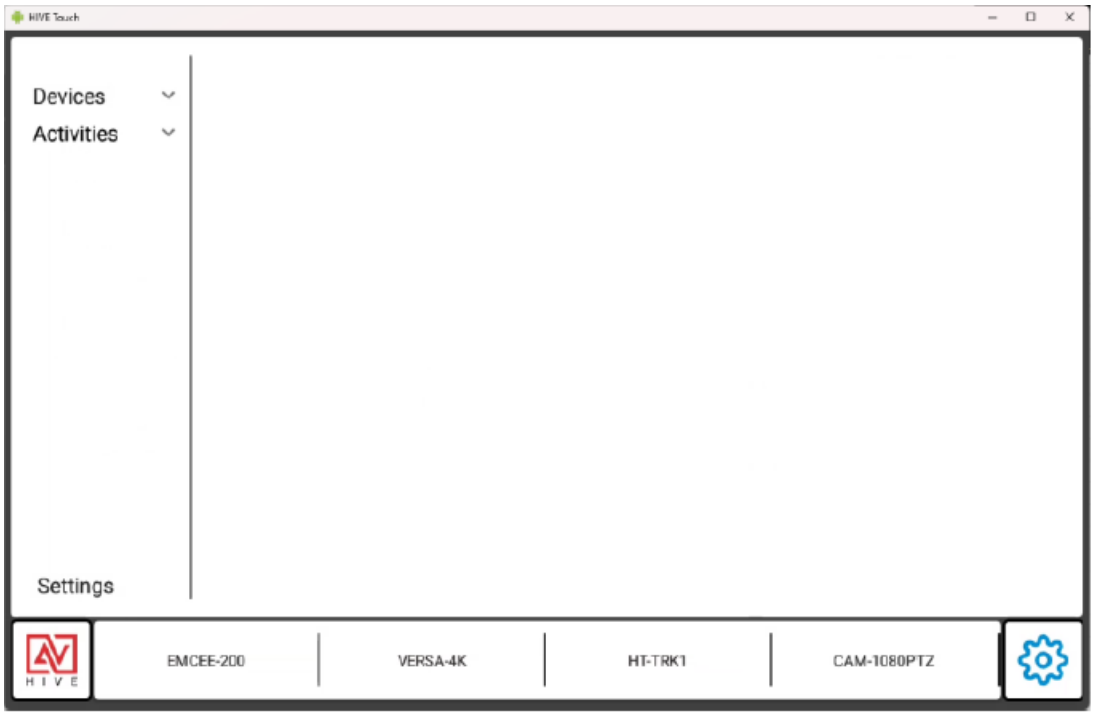


Devices, Activities and Settings

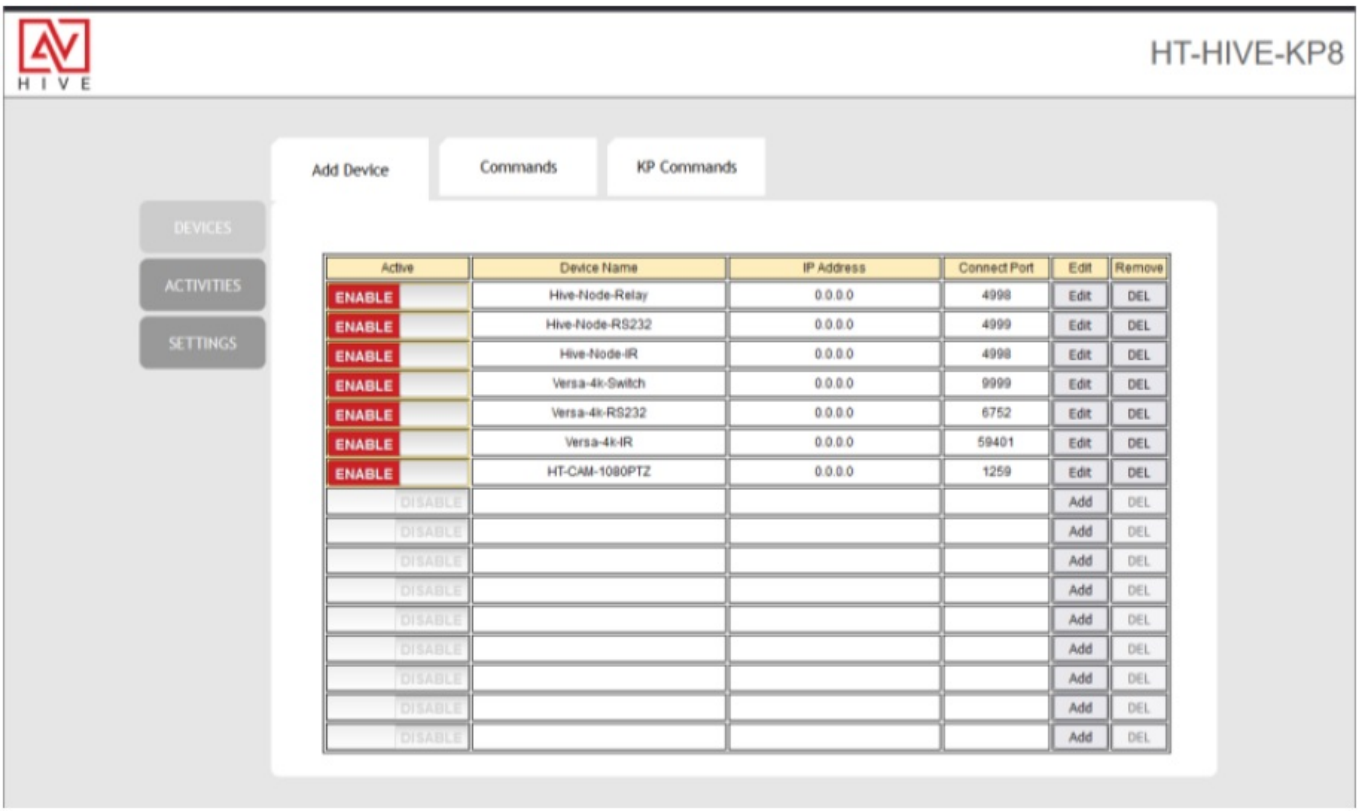
Hive AV: Consistent Programing User Interface
The Hive Touch and the Hive KP8 are designed to be easy to configure and set up. The menus for both are on the left and in order of operation. The intended workflow is the same for both:

1. Devices – Set up IP connections for devices to be controlled
2. Activities – Take the added devices and map them to buttons
3. Settings – Make and final configurations and maybe do a back up of the system

HIVE TOUCH WITH HIVE AV APP

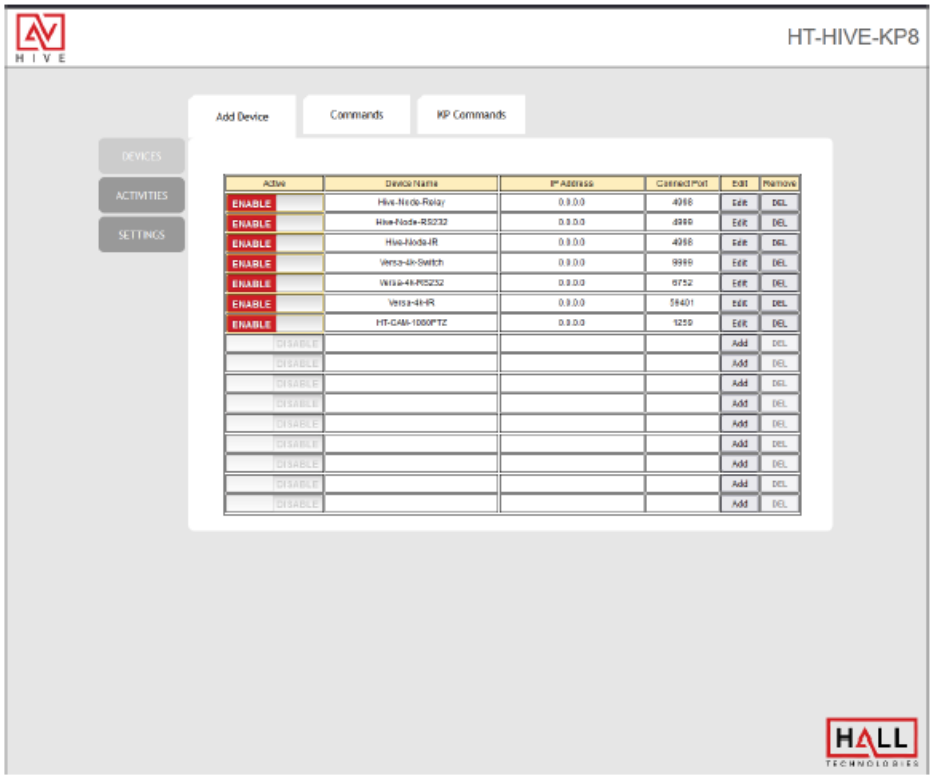


HIVE TOUCH WITH HIVE AV APP



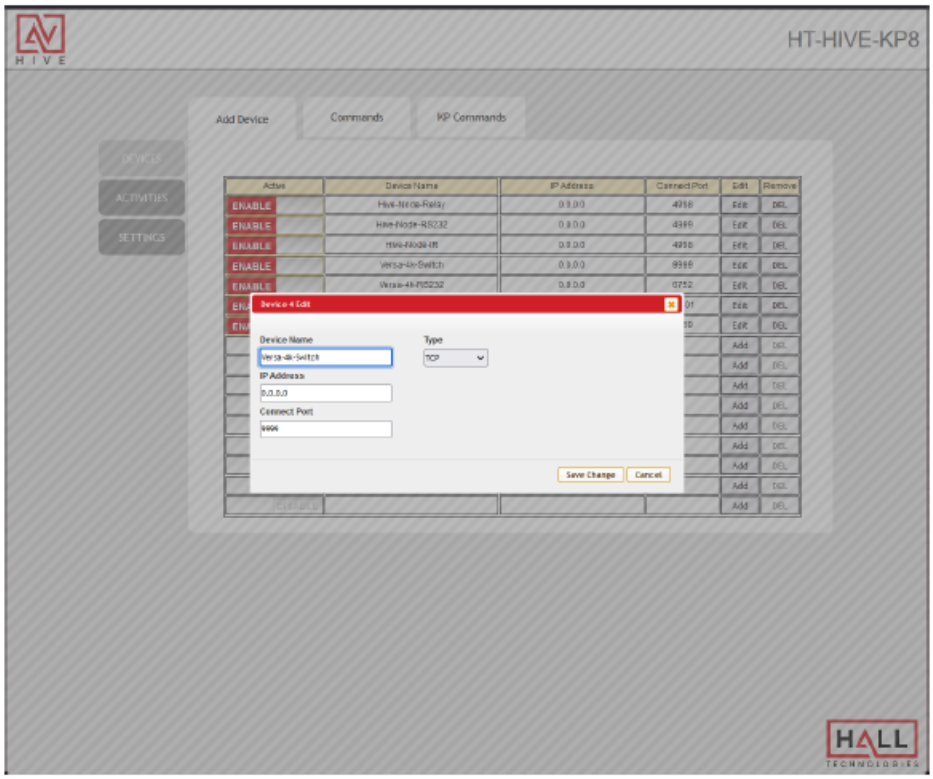
DEVICES – Add Device, Commands and KP Commands
It is recommended that you start with Devices first and the 3 tabs in order:

1. Add Device – Either update the Hall Devices IP Addresses or add new device connections.
2. Commands – Use the prebuilt commands for Hall devices or add new commands for devices that were added in the previous Add Device tab.
3. KP Commands – These are commands from the KP8 API that can change the button colors or control the relay. About 20 default commands are available, but if you need to you can add more from the API. A full list is in the Telnet Commands section, later in this manual.



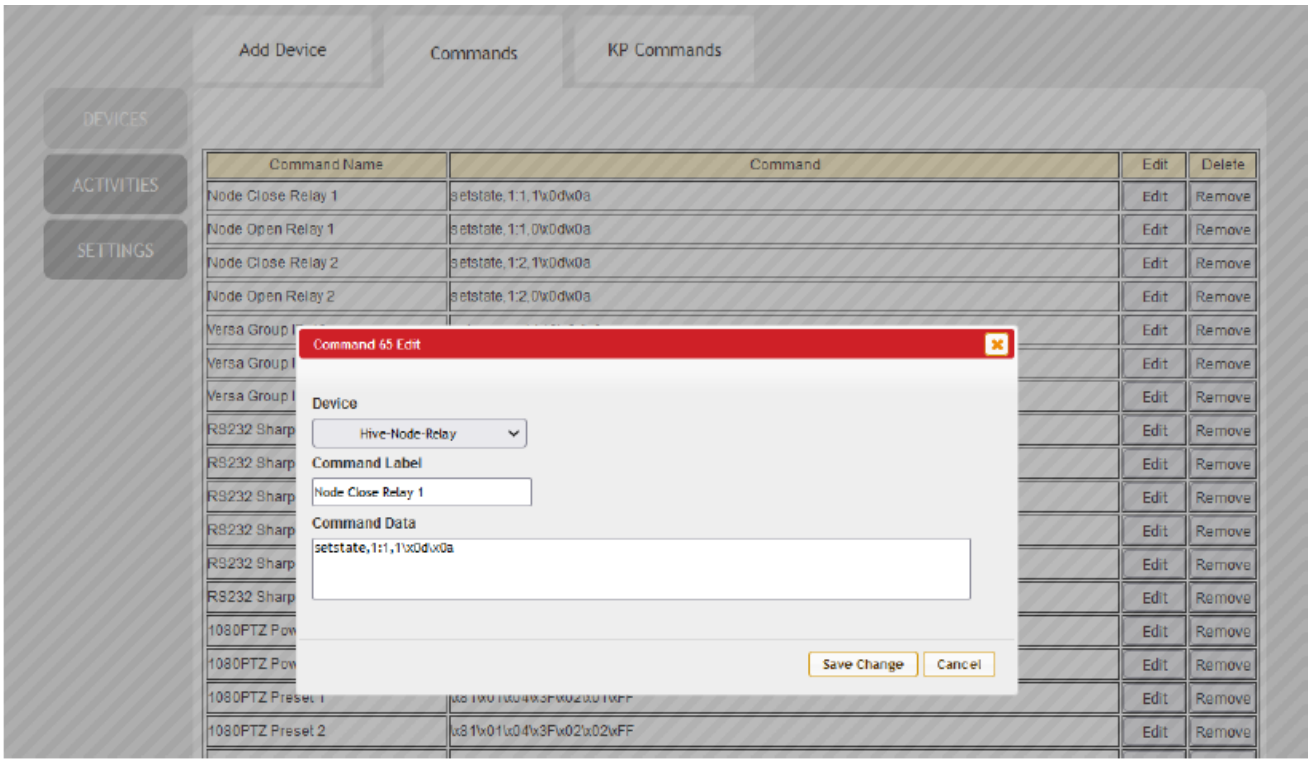
Add Device – Edit or Add
By default, the HIVE-KP8 comes with device connections for the Hall Devices or new device connections can be added.

- Edit Defaults – The KP8 comes with device connections for the Hive Node RS232, Relay and IR, as well as the Versa 4k for switching and the Serial and IR over IP ports. All the TCP ports have been added so all that needs to be done is to find the device on your network and add the IP address.
- Add New – If you want to add additional Hall devices then you can select Add and input the needed ports and the IP addresses. If you want to and new device, you can either connect TCP or UDP and will need the device IP address and the port for the API connection.



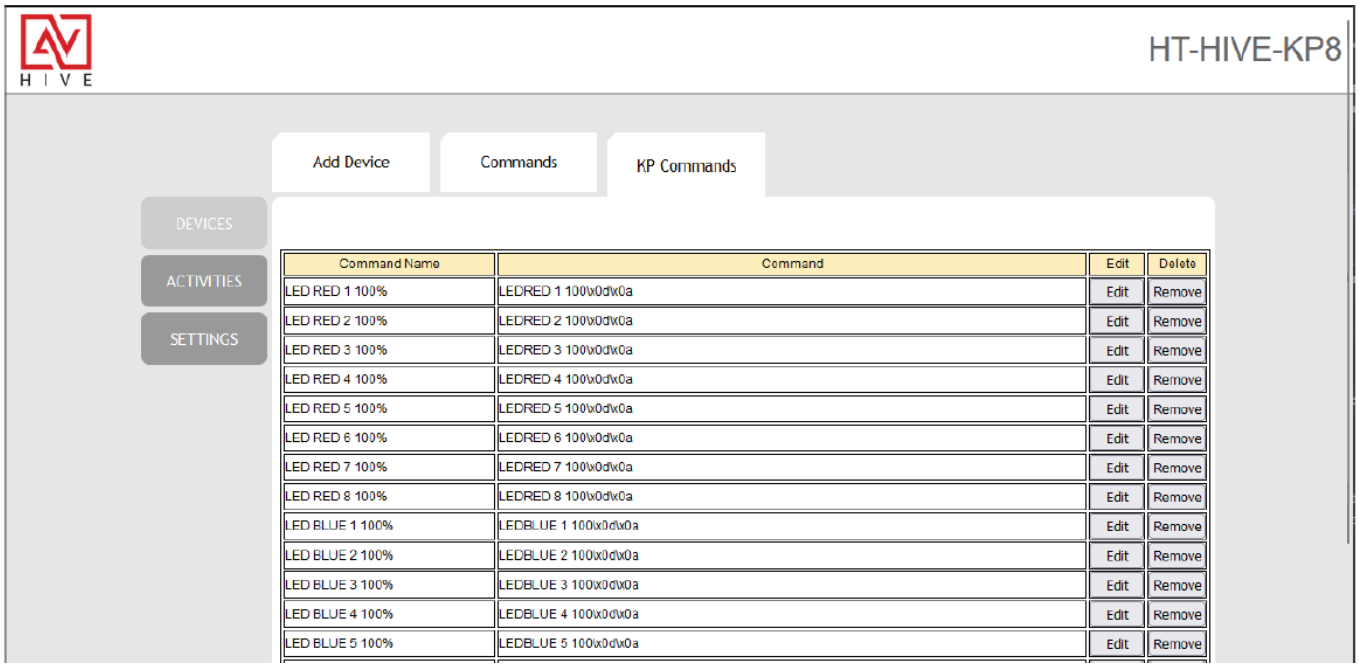
Commands – Edit or Add
The HIVE-KP8 also comes with default commands for the default Hall devices or new commands can be added and connected to devices added in previous tab.

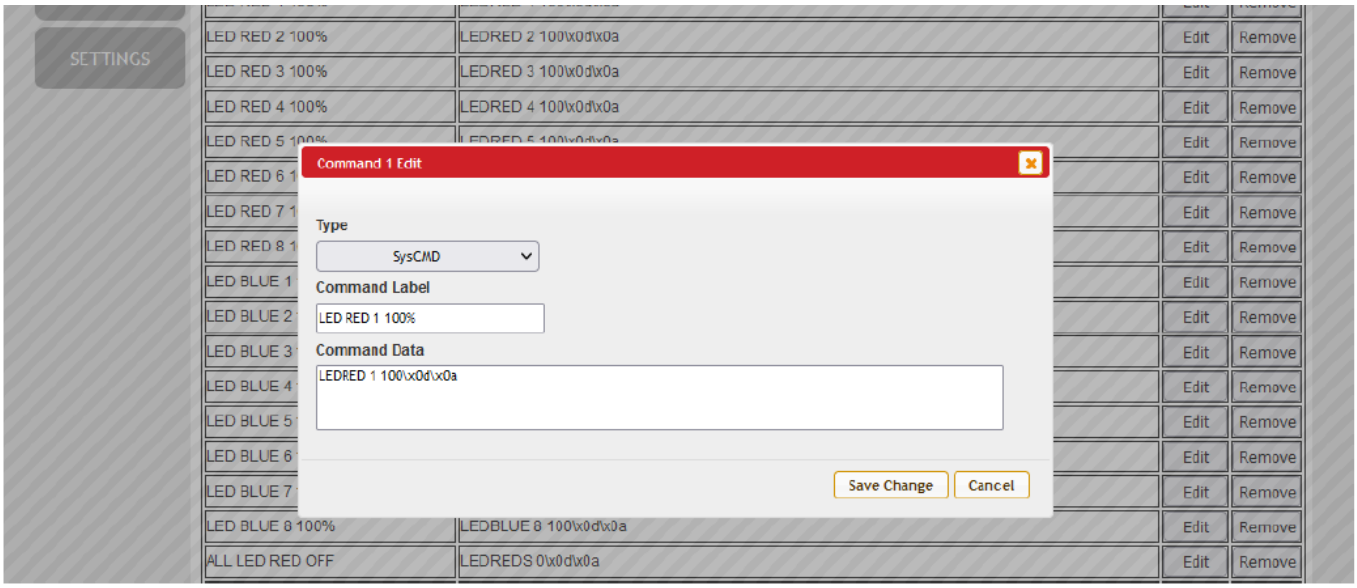
- Edit Commands – Common commands for the Hive Nodes, Versa-4k or the 1080PTZ Camera have been added by default. You might still want to double check that the Hall devices you updated on the previous are associated with the Commands by clicking on the Editi button and verifying the Device drop down.
- Add New Commands– If you want to add additional Hall devices commands then you can select Edit and update the existing ones and associate it with the device connection from the previous tab. If you want to add a new device command select Add and input the device API command the needed line ending.
- Hex and Delimiters – for ASCII commands simply input the readable text followed by the line ending which is typically a CR and LF (Carriage Return and Line Feed). The CR and LF are represented by a switch \x0A\x0A. If the command needs to be Hex, then you need to apply the same switch.
    - This is an example of an ASCII command with a CR and LF: setstate,1:1,1\x0d\x0a
    - This is an example of a VISCA HEX command: \x81\x01\x04\x3F\x02\x03\xFF
- IR Control – The Hive KP8 can be sent to control devices such as displays, either through the Versa-4k IR port or from our Hive-Node-IR. IR commands can either be learned using the Hive Node IR and the Node Learner utility or by going to the IR database at: **https://irdb.globalcache.com**/ Simple copy and paste the commands in as is. No HEX switch is required.



KP Commands

The HIVE-KP8 has system commands for a variety of functions found under the KP Commands tab. The commands can be associated with button presses under Activities to trigger button colors, light intensity or to control the single relay on the back. More commands can be added here that are found in the full Telnet API at the end of this manual. To add new commands not Device connection needs to be set up. Simple select Add and under Type be sure to associate it with SysCMD.





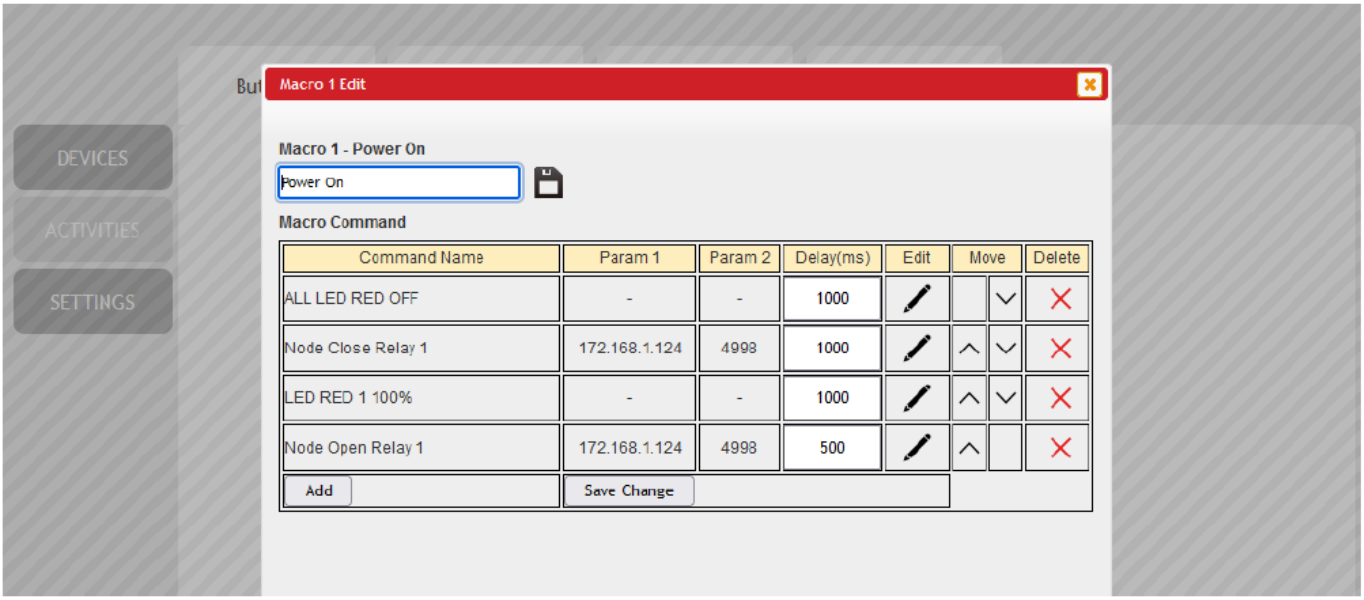
ACTIVITIES – Buttons 1, Buttons 2, Buttons Settings, Schedule

Once you have your DEVICES set up you need to associate the commands with button presses.

1. Buttons 1 – This tab allows you to set up macros for each button press
2. Buttons 2 – This tab lets you set up secondary commands for Toggle presses
3. Button Settings – This tab will set the button to either repeat or toggle between the commands in the previous tabs
4. Schedule – This allows you to set up scheduled triggering of macros set up for the buttons

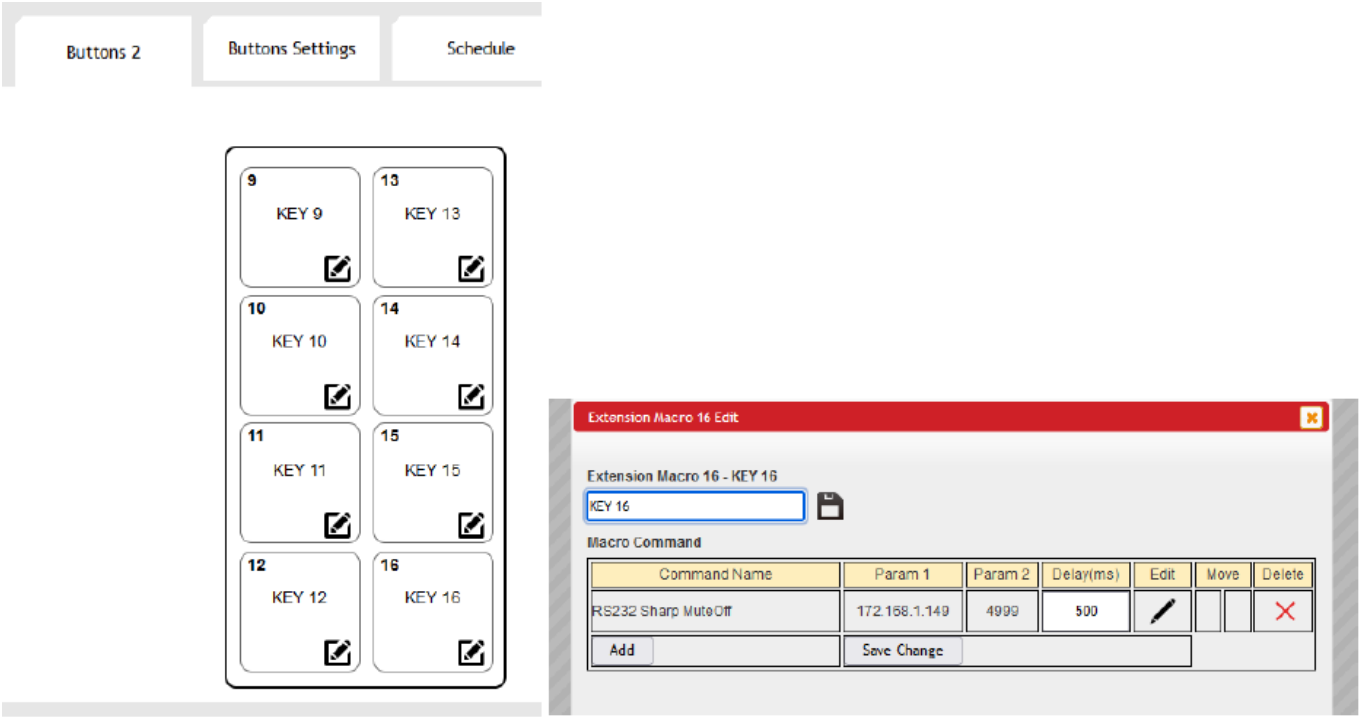
Buttons 1 – Setting Up Macros
Some default macros have already been set up to help you understand how the structure looks and some common applications.

1. Click on the pencil icon in the corner of the button to edit the macro.
2. A pop up will appear and show some of the default commands to help guide you.
3. Press the Edit pencil next to the command and another pop up will appear and all you to select a command from the devices you set up earlier.
4. The commands occur in order, and you can add delays or move the command order.
5. Press Add to add new commands or delete remove any.



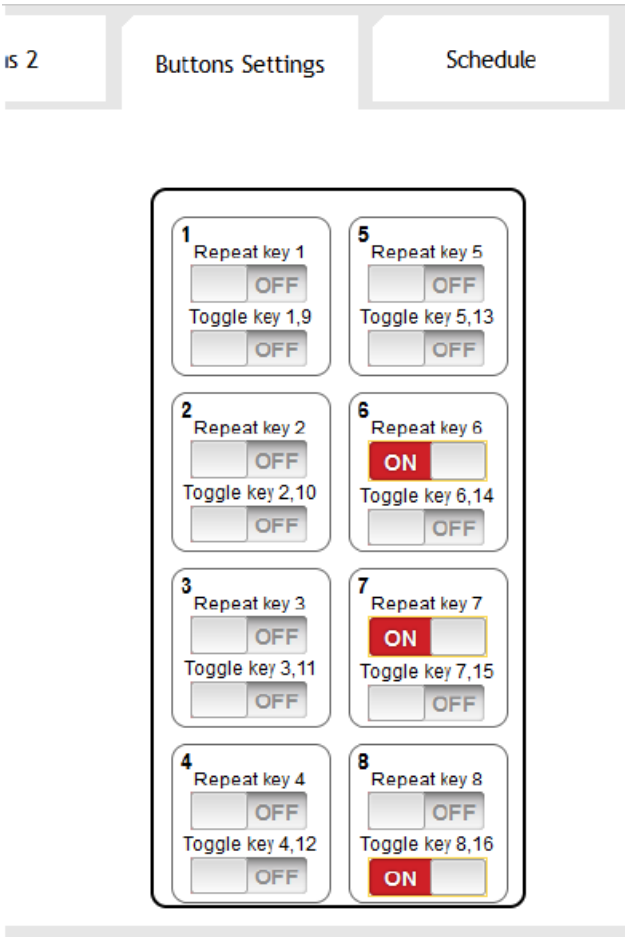
Buttons 2 – Setting Up Toggle Commands

The Buttons 2 Tab is for setting up a 2nd command for a Toggle. For example, you might want button 8 to Mute On when pressed the first time and Mute Off when pressed the second.



Button Settings – Setting Up Repeat or Toggle

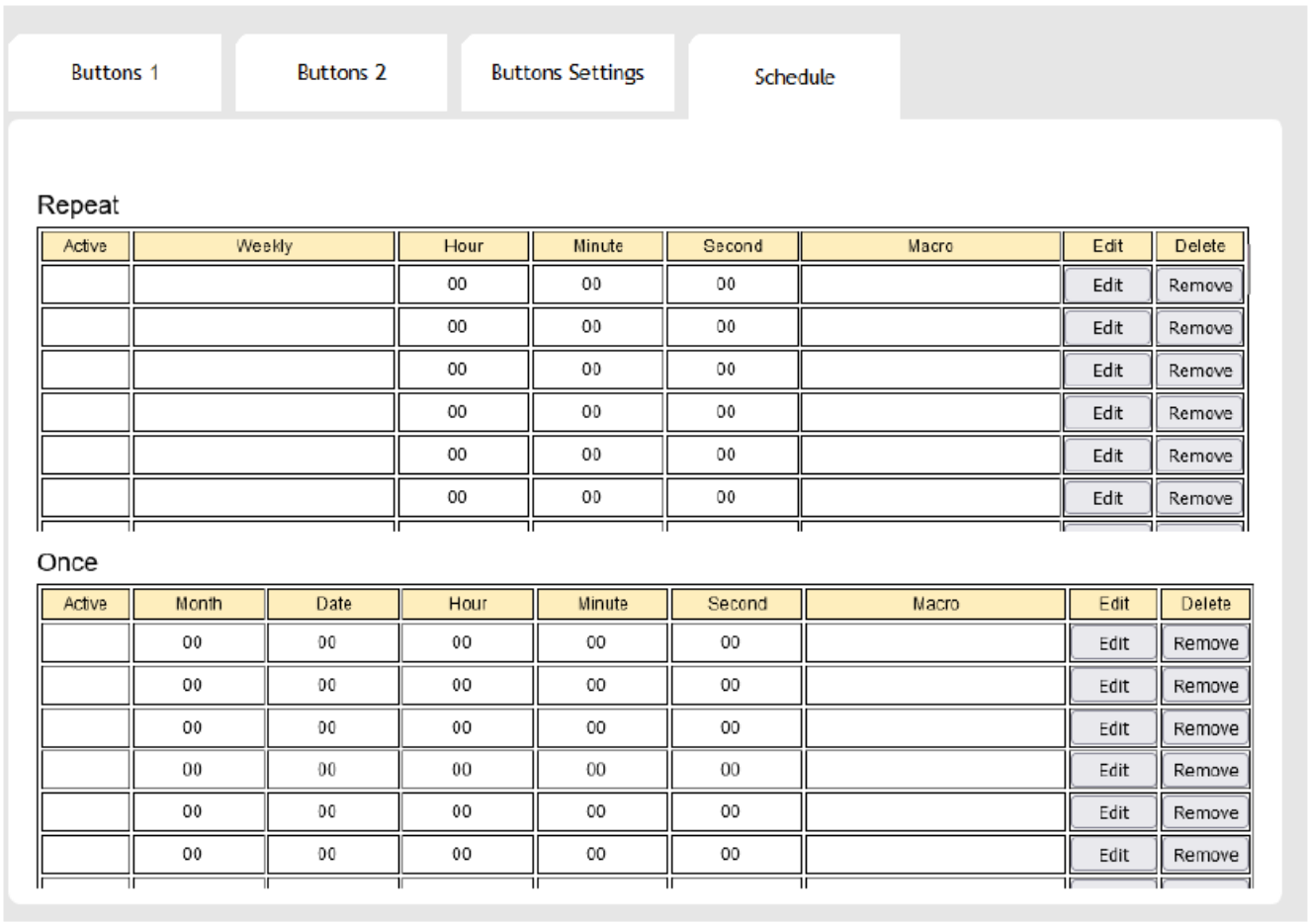
Under this tab you can set a button to repeat a command like say Volume up or down. This way the user can ramp the volume by pressing and holding the button. Also, this is the tab where you would set the button to toggle between the two macros set in Buttons 1 and 2.

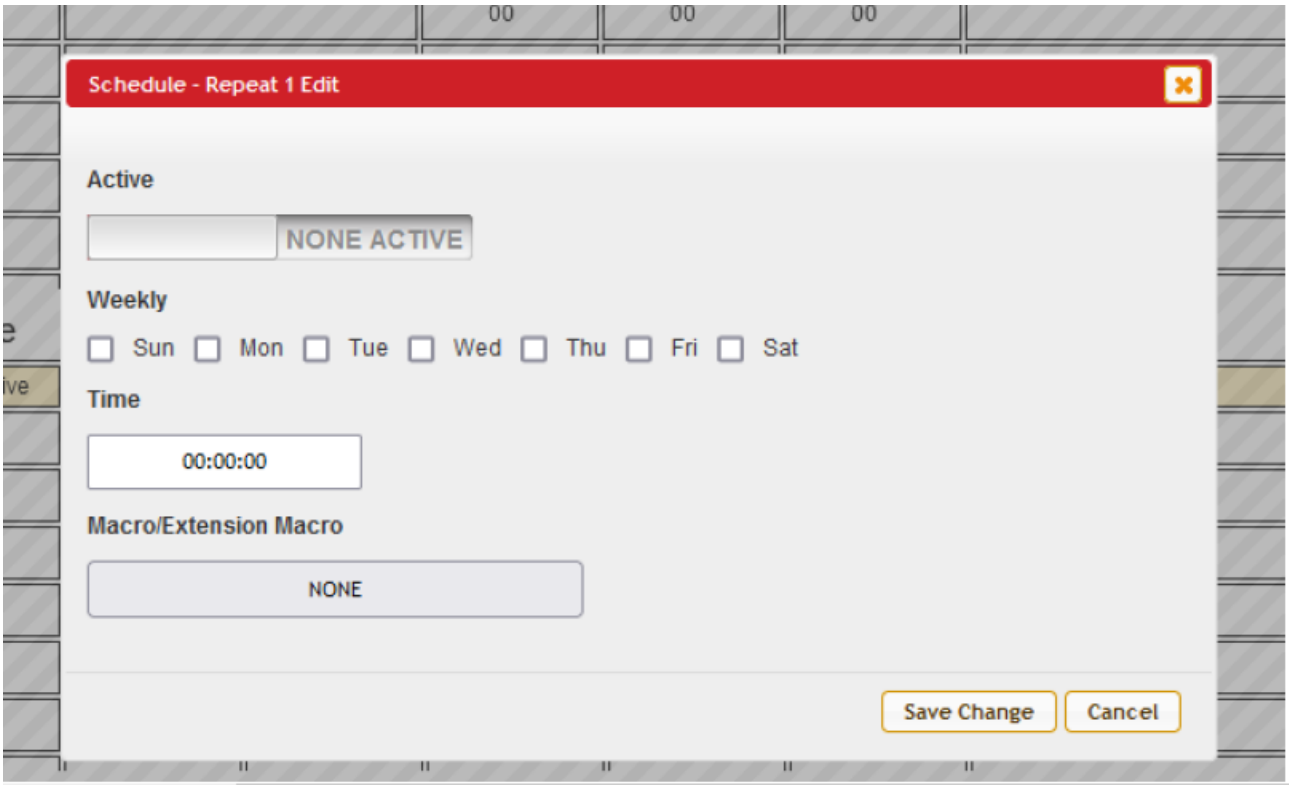


Schedule – Timed Trigger Events

This tab allows you to set up events to trigger the macros that were built in the previous tabs. You can either set a command to repeat or go out a specific time and date. You can associate the trigger to either Buttons 1 or Buttons 2 macros. Setting it to Buttons 2 will allow you to create a macro that is only sent out by the Scheduled trigger

event.

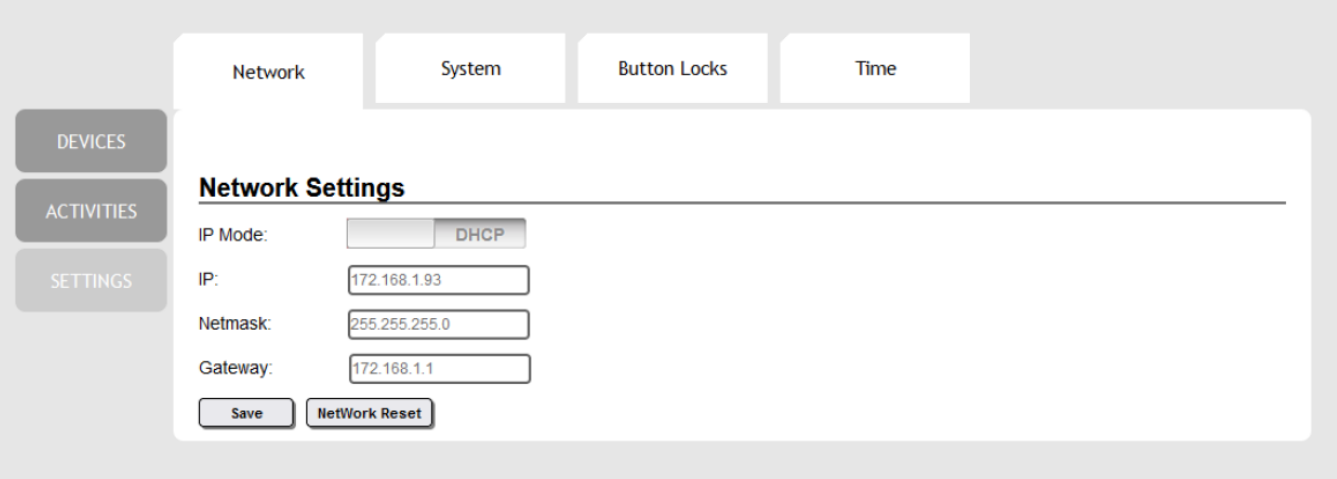




SETTINGS – Network, System, Button Locks and Time

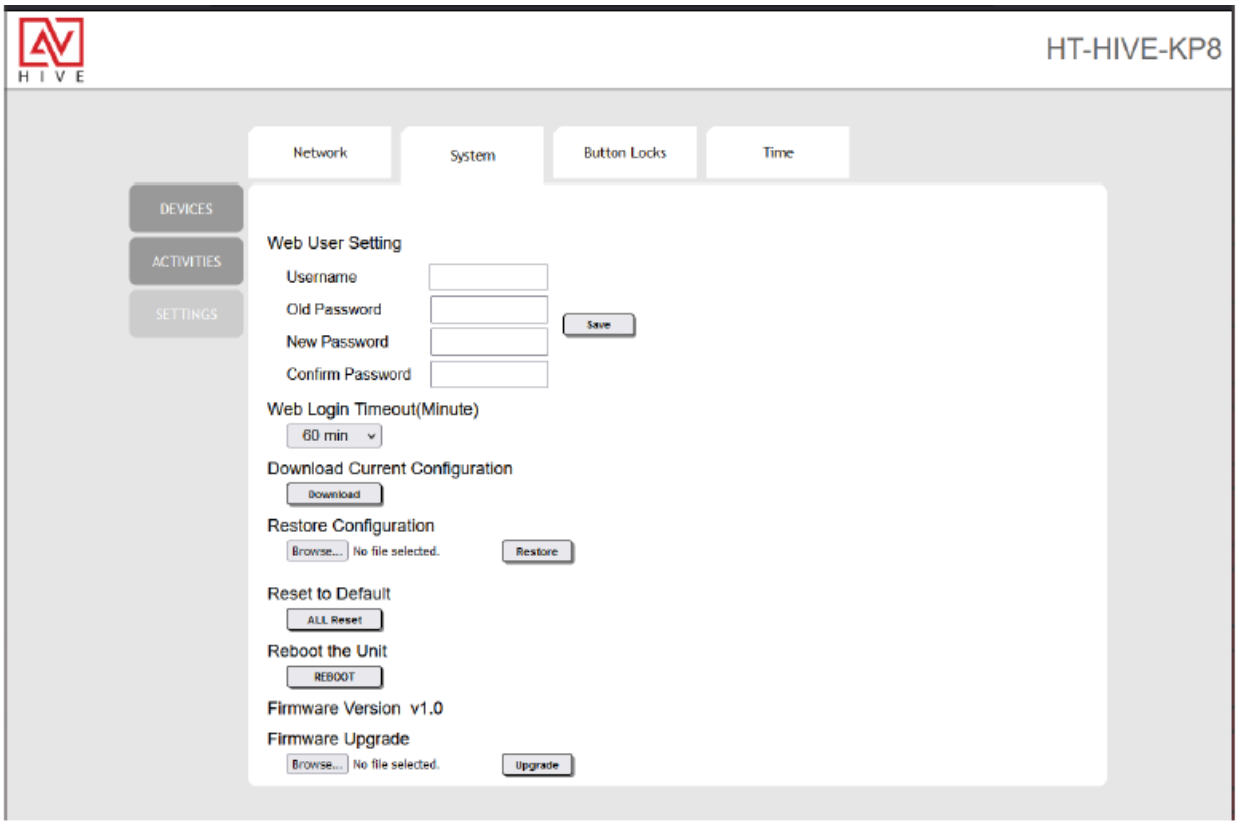
While it is recommended to start with the Device tab, before the Activities tab, you can configure the HIVE-KP8 at any time really, if needed.

Network
The Hive KP8 has two places to update the network settings, either from the HRDF Utility reviewed earlier in the manual or from the device Web Page, Network Tab under Settings. Here you can set the IP address statically or have it assigned one by DHCP. The Network Reset button will set it back to the default of 192.168.1.150.

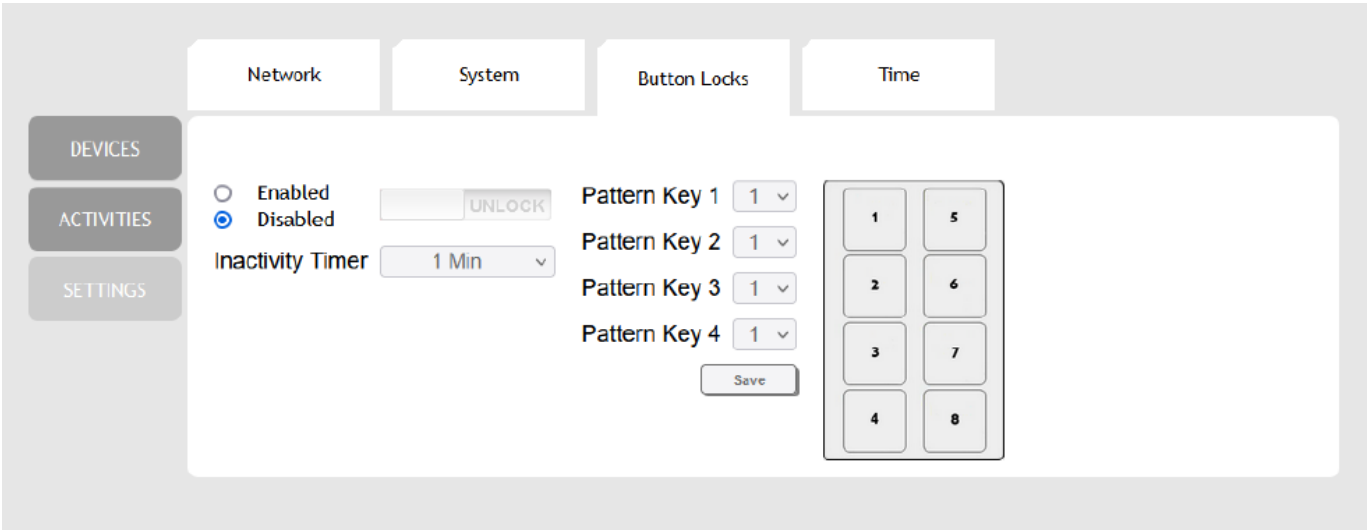


SETTINGS – System
This tab has a lot of admin settings that you might find useful:

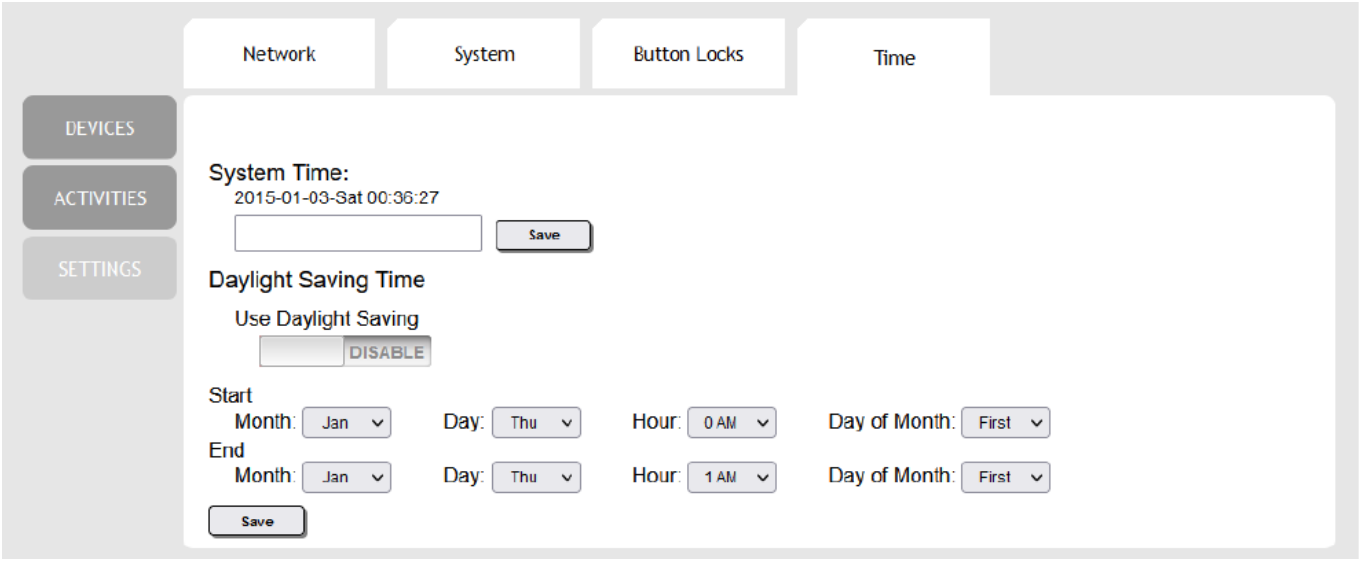
- Web User Settings – Change the default username and password
- Web Login Time out – This changes the time the it takes for the Web Page to go back to the login
- Download Current Configuration – You can download an XML with the device settings to either update manually or use a backup or use to configure other KP8s in similar rooms.
- Restore Configuration – This allows you to upload an XML that was Downloaded from another KP8 or from a backup
- Reset to Default – This will do a full Factory Reset of the KP8 and it will reboot with the default IP address of 192.168.1.150 and the default username and password of admin. A Factory Reset can also be done from the front of the unit, just below the USB, there is a pin hole. Stick a paper clip in the whole while the unit is powered on, and it will reset.
- Reboot – This is a simple way to reboot the unit if it is not operating properly.



SETTINGS – Button Locks
Here you can Enable/Disable the button locks. You can set a timer so it will lock and a code to unlock.



SETTINGS – Time
Here you can set the system time and date. The unit has an internal battery so this should be retained if the power goes out. It is important to set this correctly if you are using the Schedule feature under ACTIVITIES.



Troubleshooting

Help!

- Factory Reset – If you need to reset the HIVE-KP8 back to factory default settings you can navigate to the Settings > System tab and select ALL Reset under Reset to Default. If you can't get into the Device Webpage, then you can also reset the device from the front panel of the KP8. Remove the decora plate. Under the USB port there is a small pin hole. Take a paper clip and press while the unit is connected to power.
- Factory Defaults
  - IP Address is static 192.168.1.150
  - Username: admin
  - Password: admin
- Product Page – you can find the discovery Utility and additional documentation on the product page where you downloaded this manual.

HIVE-KP8 API
Telnet Commands (Port 23)
The KP8 is controllable by Telnet on port 23 of the devices IP address.

- The KP8 responds with "Welcome to Telnet.<CR><LF>" when the user connects to the Telnet port.
- Commands are in ASCII format.
- Commands are not case sensitive. Both uppercase and lowercase characters are acceptable.
- A single <CR> character terminates each command.
- One or more <CR><LF> characters terminate each response.
- Unknown commands respond with "Command FAILED<CR><LF>".
- Command syntax errors respond with "Wrong command format!!<CR><LF>"

Command	Response	Description
IPCONFIG	ETHERNET MAC : xx-xx-xx-xx- xx-x x<cr><lf> Address Type : DHCP or STATIC<cr><lf> IP : xxx.xxx.xxx.xxx<cr><lf> SN : xx x.xxx.xxx.xxx<cr><lf> GW : xxx.xxx. xxx.xxx<cr><lf> HTTP PORT : 80<c r><lf> Telnet PORT : 23<cr><lf>	Shows the current network IP configur ation
SETIP N,N1,N2 Where N=x.x.x.x (IP Address) N1=x.x.x .x (Subnet) N2=x.x.x.x (Gatewa y)	If a valid command is used, most lik ely there will be no response unless there was a command formatting err or.	Set the static IP address, subnet mask and gateway simultaneously. There sh ould be no ‘spaces’ between “N”, “N1” and “N2” values or a “Wrong command format!!” message will occur .
SIPADDR X.X.X.X		Set the devices IP address
SNETMASK X.X.X.X		Set the devices subnet mask
SGATEWAY X.X.X.X		Set the devices gateway address
SIPMODE N		Set DHCP or Static IP addressing
VER	<SPACE>—–> vx.xx <—– <CR> <LF> (There is a leading space)	Show installed firmware version. Note there is a single leading space charact er in the response.
FADEFAULT		Set the device to factory defaults
ETH_FADEFAULT		Set IP settings to factory default

REBOOT	If a valid command is used, most lik ely there will be no response unless there was a command formatting err or.	Reboot the device
HELP		Show the list of available commands
HELP N where N=command		Show description of command specified
RELAY N N1 where N=1 N1= OPEN, CLOSE, TOGGLE	RELAY N N1<CR><LF>	Relay control
LEDBLUE N N1 where N=1~8 N1=0-100%	LEDBLUE N N1<CR><LF>	Individual button blue LED brightness control
LEDRED N N1 where N=1~8 N1=0-100%	LEDRED N N1<CR><LF>	Individual button red LED brightness c ontrol
LEDBLUES N where N=0-100%	LEDBLUES N<CR><LF>	Set the brightness of all blue LEDs
LEDREDS N where N=0-100%	LEDREDS N<CR><LF>	Set the brightness of all red LEDs
LEDSHOW N where N=ON/OFF/TOGGLE	LEDSHOW N<CR><LF>	LED demo mode
BACKLIGHT N where N=0-100%	BACKLIGHT N<CR><LF>	Set the max brightness of all LEDs
KEY_PRESS N RELEASE	KEY_PRESS N RELEASE<CR><LF >	Set the key press trigger type to “Release”.
KEY_PRESS N HOLD	KEY_PRESS N HOLD<CR><LF>	Set the key press trigger type to “Hold”.
MACRO RUN N	RUN MACRO[N] EVENT.<CR><LF> x x where x = the macro commands	Run the specified macro (button). The response also occurs if a button is pre ssed.
MACRO STOP	MACRO STOP<CR><LF>	Stop all the running macros
MACRO STOP N N=1~32	MACRO STOP N<CR><LF>	Stop the specified macro.

DEVICE ADD N N1 N2 N3 where N=1~16 (Device slot) N1=X.X.X.X (IP Address) N2=0~65535 (Port Number) N3={Name} (Up to 24 characters)		Add TCP/TELNET device in Slot N The name may not contain any spaces.
DEVICE DELETE N where N=1~16 (Device Slot)		Delete the TCP/TELNET device in Slot N
DEVICE N N1 where N=ENABLE, DISABLE N1=1~16 (Device Slot)		Enable or Disable TCP/TELNET device in Slot N

Specifications

HIVE-KP-8	
Input Ports	1ea RJ45 (accepts PoE), 1ea Optional 5v Power
Output Ports	1ea Relay (2-pin terminal block) Relay contacts are rated for up to 5A current and 30 vDC
USB	1ea Mini USB (for updating firmware)
Control	Keypad Panel (8 buttons / Telnet / WebGUI)
ESD Protection	• Human body model – ±12kV [air-gap discharge] & ±8kV
Operating Temp	32 to 122F (0 to 50 °C) 20 to 90%, non-condensing
Storing Temp	-20 to 60 degC [-4 to140 degF]
Power Supply	5V 2.6A DC (US/EU standards/ CE/FCC/UL certified)
Power consumption	3.3 W
Enclosure Material	Housing: Metal Bezel: Plastic
Dimensions **Model** **Shipping**	2.75”(70mm) W x 1.40”(36mm) D x 4.5”(114mm) H (case) 10”(254mm) x 8” (203mm) x 4”(102mm)
Weight	Device: 500g (1.1 lbs.) Shipping: 770g (1.7 lbs.)

- 1234 Lakeshore Drive, Suite #150, Coppell, TX 75019
- halltechav.com / support@halltechav.com
- (714)641-6607

Documents / Resources

	HALL TECHNOLOGIES Hive-KP8 All In One 8 Button User Interface and IP Controller [pdf] User Manual Hive-KP8 All In One 8 Button User Interface and IP Controller, Hive-KP8, All In One 8 Button User Interface and IP Controller, Interface and IP Controller, IP Controller

References

- Home - Hall Technologies
- Global Caché Control Tower
- User Manual