

HS13 and HS13+ Ketron EVM MIDI Macropad Operating Instructions

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HS13/HS13+ Controller

The USB based MIDI controller supports the most often used EVM Arranger functions via MIDI SysEx and CC messages. Button assignments can be changed by modifying the values in a config file saved on the controller's USB drive. The controller supports a base and shift layer, enabling up to 24 functions to be coded on the keys.

Base layer key assignments

The base layer of the controller by default is configured to the following EVM MIDI SysEx or CC messages:

Row 1 (Top Row):

- Intro/End 1 (green)
- Intro/End 2 (green)

- Intro/End 3 (green)
- To End (red)

Row 2:

- Arr.A (blue)
- Arr.B (blue)
- Arr.C (blue)
- Arr.D (blue)

Row 3 (Bottom Row):

- Variation/Shift (blue)
- Fill (green)
- Break (orange)
- Start/End (red)

Note: The base and shift layer key configurations can be changed to any of the MIDI SysEx supported messages supported by the EVM Pedal or Tab lists. It is possible to create and assign a macro to any of the keys. A macro can be configured to contain one or more messages from the aforementioned message lists. Until a configuration application is available, please edit the keymap.cfg file on the USB drive to modify key assignments,

Shift layer key assignments

The shift layer of the controller by default is configured to the following EVM SysEx messages:

Row 1:

- Transpose Up (yellow)
- Transpose Down (yellow)
- Octave Up (teal)
- Octave Down (teal)

Row 2:

- 1/2 Bar (blue)
- Plugged (orange) (drums and bass only macro)
- UnPlugged (orange) (style, real chord and chord only macro)
- Rhythm (blue) (rhythm only macro)

Row 3:

- Variation/Shift (blue)
- Value Down (violet)
- Value Up (violet)
- Start/End (red)

Activating the Shift Layer

The shift layer operates in two modes - similar to shift and caps lock on a PC keyboard:

1. Press the Variation/Shift key, and while holding it in follow up with a second key press for the desired layered function. This combination of keys will transmit the layered MIDI message. This allows for quick activations of e.g. the 1/2 Bar message using the familiar keyboard shift action. More than one layered message can be sent while the Variation/Shift key is held down.
2. When the Variation/Shift key is pressed and held for 200ms or longer, the keypad behavior changes to caps lock mode. The shift layer is activated and keys such as Value Up/Down can be pressed until the Variation/Shift key is pressed again to unlock caps.

Note: The Shift/Variation key continues to support the EVM Arranger Variation function on a quick press (<200ms) and if the above shift condition is not met.

Controller Primary Encoder Configuration

The Encoder switch is coded to cycle through the following functions when pressed consecutively. Once a function is selected, the rotary encoder is used to change the values for the selected function.

- Rotor Fast/Slow (blue) - left for Slow, right for Fast
- Tempo Up/Down (yellow) - up or down from current Tempo value
- Master Volume Up/Down (purple)

Notes:

- The colors mentioned for the encoder switch functions show on the Shift/Variation key.
- Additionally, when you press Start/Stop, the EVM will start playing and the Variation button turns yellow to indicate that it is in Tempo adjustment mode. The

Tempo and Volume modes once activated or pressed are timed to return to the default Rotor Fast/Slow after 60 seconds of no adjustments.

- For Master Volume to work, **you must change the EVM configuration to listen on MIDI channel 16**. You can do so by navigating to the EVM MIDI configuration screen, select the receive (RX) option, and then set Global to channel 16. The Controller encoder in Volume mode sends MIDI CC Expression to EVM RX Global channel 16 adjusting the volume of all channels in the EVM - acting similar to the EVM Master Volume knob. An attached MIDI keyboard/organ can be configured to send expression pedal messages to the EVM synchronizing volume between the devices in the same manner.

HS13+ (Plus) Controller

The HS13+ has the same features as the standard HS13. It adds four additional rotary encoders that are used to adjust the EVM channel volumes via MIDI CC messages.



The four additional encoders and their built-in switches follow the shift layer state enabled through the Shift/Variation key as explained above.

Base layer encoder assignments

Rotary Encoders (left to right):

- Lowers Volume
- Upper/Voice 1 Volume
- Upper/Voice 2 Volume
- Drawbar Volume

Rotary Switches (on each encoder):

- Lowers Volume to 0
- Upper Volumes to 0
- All Volumes to 0
- Manual Volumes to 96

Shift layer encoder assignments

Rotary Encoders (left to right):

- Style Volume
- Drum Volume
- Bass Volumes
- RealChord Volumes

Rotary Switches (on each encoder):

- Bass Volume to 0
- Bass Volumes to 96
- All Style Volumes to 0
- All Style Volumes to 96

Note: 'All Style' volumes include: Style, Drums, RealChord and Chord, See the keymap.cfg file for the current macro definitions.

Customizing HS13/HS13+ Button Assignments and SysEx Messages

The EVM Controller button assignments can be found in the keymap.cfg file on its Macropad USB drive that mounts with the name CIRCUITPY on your PC or Mac. Open the keymap.cfg file using a text editor.

Every Macropad button is mapped to one of the TABS or FOOTSWITCH MIDI SysEx messages provided. Notepad++ works very well for updating the mappings and can be downloaded from: <https://notepad-plus-plus.org/downloads/>

The EVM MIDI SysEX definitions file can be downloaded from Ketron to view the lists of messages available:

<https://shop.ketron.it/images/ketron/manualiPdf/EventX/EVENT%20SYSEX-NRPN.pdf>

To change a key assignment, look for the desired TABS or FOOTSWITCH SysEx message in the respective list. Note and copy the exact name of the message as it is used by the Macropad software to locate and send a SysEx MIDI message to the EVM.

Example mapping messages:

key00=1:VARIATION:blue

key01=0:Arr.A:blue

key02=0:Intro/End1:green

Where as example key00 refers to:

- Macropad button identifier: “key00”
 - Button identifier numbers are 00 through 0B (hex) for the Base Layer and 10 through 1B (hex) for the Shift Layer
- Key mapping: “1:VARIATION”
 - Where the number “0:” refers to the FOOTSWITCH list and “1:” refers to the TABS list.
 - Please do correctly match the newly selected message and the table selector. If there is a mismatch, the Macropad LEDs will turn red on a reboot to indicate an error for a few seconds, and then revert to its default mappings and behavior.
 - “VARIATION” is an exact match to the message name in the TAB or FOOTSWITCH tables.
- LED Color: blue
 - The following button LED colors are available: red, green, blue, purple, yellow, orange, white, and teal. Colors can be used to relate functions coded on the keys.

To change a Macropad key assignment in the keymap.cfg file opened in the text editor, please proceed as follows:

1. Find the new SysEx message from the TABS or FOOTSWITCH list
 - a. Note if the message is located in the FOOTSWITCH or TABS list and ensure the correct table value is set in the mapping file.
2. Change the table selector value if needed
3. Edit the current SysEx message (e.g. VARIATION) to exactly match your new preference.
4. Change the LED color as needed.

5. Save the keymap.cfg file to the main directory in the EVM Macropad CIRCUITPY USB drive - overwriting the original file.
6. The EVM Controller will reboot and once back up your new key mapping will be active.

Note: Consider making a backup copy of the keymap.cfg file before proceeding to edit it in case you need to revert your changes..

NEW: Macros on Controller Buttons

We have added the ability to create macros that enable the execution of multiple SySEX messages on a single Macropad button.

Example macro Button: **key17=2:UNPLUGGED:orange**

Note:

- The Macropad list selector value for a macro is the value “2” - as opposed to 0 or 1 for FOOTSWITCH and TABS.
- The MIDI message name “UNPLUGGED” refers to the macro, not a SysEx message directly.

The macro definition for “UNPLUGGED” consists of one or more SysEx messages found in the FOOTSWITCH and TABS SysEx MIDI lists. One or more messages can be assigned to a macros list separated by commas.

Example macro definition: **mac01=UNPLUGGED:[0:Drum Mute,0:Bass Mute]**

Please be careful when changing button mappings. Lines in the keymap.cfg file are validated, and if an error is encountered during controller startup, all buttons will turn red on startup for a few seconds. The EVM Controller continues to function though based on its coded default mappings.

Note: The rotary encoder(s) on the HS13 and HS13+ are hardcoded and not configurable at the moment, but can be changed should there be enough demand for this in future.

Connecting the EVM Controller to the EVM Module

All MIDI USB devices used with the EVM Module, including a MIDI keyboard/organ and the HS13/HS13+, have to be plugged in and powered up before the EVM Module is turned on. The EVM does not recognize MIDI devices connected after it has booted.

This means that we are not able to power the EVM Controller from the USB port on the EVM Module. Instead, we have to power the EVM pad in one of the following two ways:

- Use a powered USB hub with a data pass through ability. The hub's common data USB cable is connected to the EVM USB port, and the MacroPad is connected to one of the USB hub ports.
 - Example powered USB hub: <https://a.co/d/hnikcSZ>
 - The powered USB hub can also be used to charge/power an iPad or a portable HDMI touch screen needed to operate the EVM module.



- Use a micro USB Y splitter cable with separate power and data connectors. In this case
 - Plug the long end of the splitter into the EVM MacroPad.
 - Plug the data end of the splitter into the EVM Module USB port. A USB extension cable may be needed between the splitter end and EVM Module depending on how close the Macropad is to the EVM Module.
 - Plug the power end of the splitter into a USB charger or a battery, e.g. a credit card sized phone charger battery. Depending on the power rating, the EVM controller can run for 10 or more hours on a single charge.
 - Example Y splitter cable: <https://a.co/d/ix7pB2F>



Testing the EVM Controller

Before connecting to the EVM Module, you may want to download and install MidiView (<https://hautetechnique.com/midi/midiview/>). MidiView is useful to inspect and validate the output from any MIDI controller or monitor the exchange of MIDI messages between any two MIDI devices. In this case you will be able to view the Macropad MIDI SysEx and CC messages associated with keys or the rotary encoder(s).

Upgrading the EVM Controller Software

Note: Contact AjamSonic for the software download links.

Download the latest zip file containing the source code for the EVM MacroPad. Please note that the HS13 and HS13+ have two different code bases, and the appropriate file for your unit should be downloaded.

- In the zip file, you will find three files:
 - boot.py - controls the controller startup messages, etc.
 - keymap.cfg - contains the Macropad button mappings. *If you have already modified your button messages, then do not copy this file as it will overwrite your custom mappings!*
 - code.py - contains the logic that powers the EVM controller.
 - Please copy the files onto the USB drive (CIRCUITPY) one-by-one after the MacroPad has connected to your PC. The EVM Controller will do a quick reboot between each file copy - which is normal.

Troubleshooting:

- If the file copies do not work, an alternative that works well is to download Notepad++ (<https://notepad-plus-plus.org/downloads/>) and open the files one-by-one and from the editor menu do a Save-Copy-As into the CIRCUITPY USB drive root directory.
- If the CIRCUITPY USB drive does not show up after you connect the EVM MacroPad to your PC, then press the reset button on the MacroPad case (side, left top) twice in succession with a ¼ sec pause in between. The controller will reboot in safe mode and the USB drive should show up ready to accept the copies.
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