Keith McMillen
INSTRUMENTS

QuNeo Reference Manual

QuNeo V0.9 Preview
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Welcome

QuNeo is a 3D multi-touch pad controller. QuNeo is a different species of pad controller for electronic musicians, DJs, VJs and DIY hackers. While it covers all of the functionality of other pad controllers, QuNeo adds the power of touch recognition in other dimensions.

Each of the 27 pads, sliders and rotary sensors are pressure, velocity, and location sensitive. The 17 buttons also respond to pressure and velocity. The 16 square pads provide 128 levels of Velocity response, X-Y location, and continuous pressure for each pad. The 2 rotary sensors allow you to scrub, trigger, stretch, pinch and play phrases and sound files, manipulate continuous controllers and more. Each rotary sensor measures direction, pressure and location. The 9 touch sensitive sliders can be mapped to fader and effects controls. Out of the box the long slider is multi-touch and lets you select a length between two fingers to set stereo locations or filter resonances. Tapping a slider can mute or toggle any track or function. The switches are located in smart groupings to select samples, fader banks, and transport controls.

QuNeo is the size of an iPad and can fit in iPad accessories such as mic clips, stands and more. QuNeo works with USB, MIDI or OSC and will communicate with your favorite music software environments right out of the box.

In this manual you will find detailed information to help answer all of your questions about QuNeo hardware and software.

Questions or Feedback? Contact Us!

If at any time you have any questions, please contact us:

Web: www.keithmcmillen.com
Forum: forum.keithmcmillen.com
Email: support@keithmcmillen.com

What's in the QuNeo Package

When you open up the box you should find:

- (1) QuNeo
- (1) USB A-to-Micro cable (1 meter)
- (1) QuNeo QuickStart Document

QuNeo Hardware

Dimensions: 9.5” x 7.3” x .3” (inches). The pads are about 1.2” x 1.2”.
Weight: 14 oz.

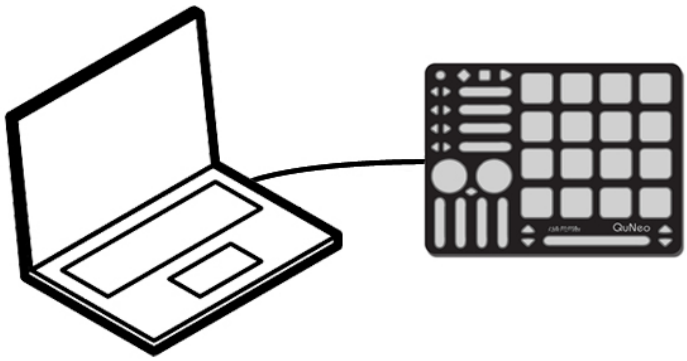
USB Port
QuNeo is connected to a computer and powered by USB. It is a class compliant USB device and does not require a driver. This allows for maximum compatibility with an extremely wide range of other devices.

MIDI Expander (optional)
Connect QuNeo to our KMI MIDI Expander (sold separately) to control MIDI hardware without a computer. Power is supplied to QuNeo from the MIDI Expander’s power port.

LEDs
LEDs provide the visual feedback needed for intuitive control over the QuNeo. The 16 square pads provide an option of red and green on each corner, giving you 128 LEDs at your disposal on just the pads alone. Contained within QuNeo are 251 LEDs with 16 different levels of brightness. Local or Remote LED control is available. In Local, the action on sensors will determine the LED behavior. In Remote, note or CC data input will determine LED behavior. Local and Remote LED Control can be used simultaneously. See the QuNeo LED Behavior chapter for more information.

Connecting QuNeo

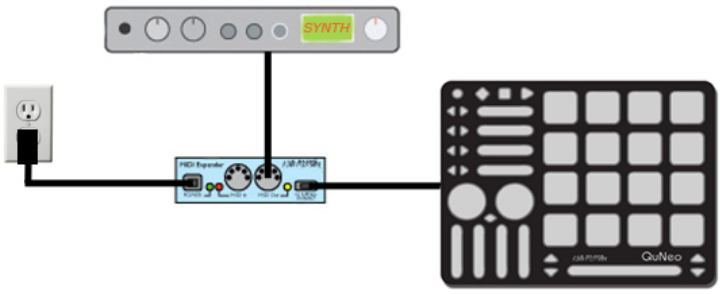
Connect QuNeo to a computer



This image shows QuNeo set up to send MIDI data to a computer.

Use a USB A-to-Micro cable to connect the QuNeo micro port to a USB port on your computer. QuNeo will receive power from the computer.

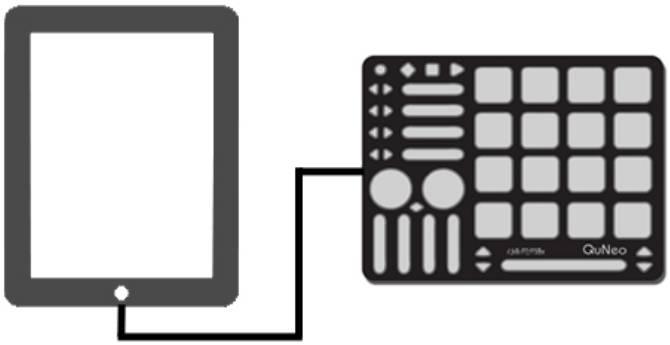
Connect QuNeo to MIDI hardware



The image above shows QuNeo connected to a hardware synth via our MIDI Expander

1. Use a USB A-to-Micro cable to connect the QuNeo micro port to the USB "to Expand" port on the MIDI Expander.
2. Connect the power supply to the MIDI Expander USB "Power" port.
3. Connect the MIDI Out on the Expander to the MIDI In on the synth.

Connect QuNeo to an iPad



The image above shows QuNeo connected to an iPad

Use a USB A-to-Micro cable to connect the QuNeo USB micro port to the iPad via the iPad Camera Connection Kit.

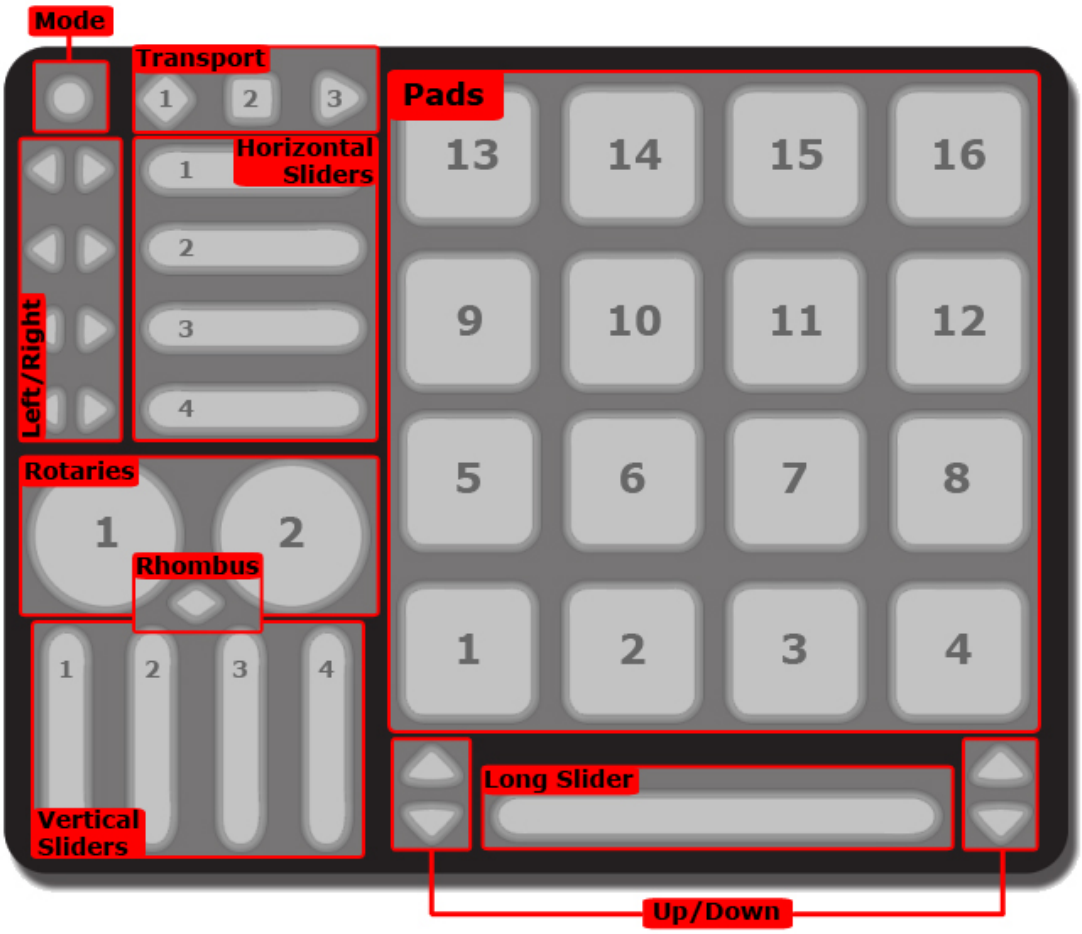
MIDI Expander

The KMI MIDI Expander is an optional addition which enables use of QuNeo with hardware MIDI devices. Plug MIDI devices into the MIDI Out port, and QuNeo will send and receive MIDI data through a regular 5 pin MIDI cable.

Dimensions: 4" x 1.25" x 1.25"
Weight: 2.5 oz

QuNeo Data Sources and MIDI Output

There are many useful types of sensors that can be found on the QuNeo:



[Pads](#) (16)
[Long Slider](#) (1)
[Left/Right Buttons](#) (4)
[Mode Button](#) (1)
[Horizontal Sliders](#) (4)
[Rotaries](#) (2)
[Up/Down Buttons](#) (2)
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[Transport Buttons](#) (3)
[Rhombus Button](#) (1)

Each sensor type has the ability to send out multiple MIDI messages at once for several different kinds of sources. In the chapters below you will find exactly what kinds of sources are available in each of these sensor types.

Pads

These sources are available for use from the pads:

- MIDI notes with a velocity based on how hard you hit the pad
- CC# values for the pressure of your finger on the pad
- CC# values for the x-axis (side to side/horizontal) location of your finger on the pad
- CC# values for the y-axis (top to bottom/vertical) location of your finger on the pad

How these work is dependent on whether the Pads are in **Drum Mode** or **Grid Mode**. The Factory Preset Guides will be helpful in determining which presets use Drum or Grid Mode and if a preset uses both on different pads.

Drum Mode

When a pad is in Drum Mode all 4 sources are available (if enabled within the given preset).

Note - tapping or pressing anywhere on the pad causes 1 note to output along with a velocity value that is relative to how hard a pad is hit. The LEDs in all four corners of the pad will light up with color and brightness corresponding to velocity (from green to red).

Pressure - pressing anywhere on the pad will cause the pressure CC# value to output going from low to high (soft to hard). The LEDs in all four corners of the pad will light up with color and brightness corresponding to the pressure (from green to red).

X-Axis (horizontal/side to side) - moving a finger from side to side across the surface of the pad will cause the X-Axis CC# value to output going from low to high (left to right).

Y-Axis (vertical/top to bottom) - moving a finger from top to bottom or bottom to top across the surface of the pad will cause the Y-Axis CC# value to output going from low to high (bottom to top).

Grid Mode

While in Grid Mode, note and pressure are available in the corner of each pad (if enabled within the given preset). X and Y are not available in grid mode.

Here is an example of how a Pad might be set up in Grid Mode:

In this example each corner has its own note and pressure CC#.

Note: Throughout the QuNeo documentation note names are used to show where notes are on and what they are set to. QuNeo treats C3 = Note #60. In the image to the right the note numbers correspond to the pressure CC#s.

Horizontal and Vertical Sliders

If enabled in a preset, multiple sources are available for use from the Sliders. Available sources include:

Note - tapping or pressing anywhere on the slider will cause 1 note to output along with a velocity value that is relative to how hard a slider is hit.

Pressure - pressing down anywhere on the slider will cause the pressure CC# value to output going from low to high (soft to hard).

Location - pressing down and moving a finger along the slider will cause the location CC# value to output going from low to high (left to right or bottom to top).

LEDs will light up to where a finger is and fill in from the left (for Horizontal) or bottom (for Vertical).

The Sliders can also be set up to have **banks**. Banks work slightly differently for Horizontal and Vertical Sliders.

Horizontal Sliders and Banks

The Horizontal Sliders can be set to utilize 4 different banks, taking advantage of the Left/Right buttons to select the banks for each slider. Each Left/Right Button must be set to have Bank Control on to control the bank of the corresponding Horizontal Slider.

See the Left/Right Buttons and Banks chapter for more information on bank switching for the Horizontal Sliders.

To determine if bank switching is enabled within a factory preset for the Horizontal Sliders, consult the Factory Preset Guides.

While banks are enabled; 4 separate notes, pressure CC#s, and location CC#s per slider can be enabled. Switch through them separately using the 4 left and right arrow button pairs.

Vertical Sliders and Banks

The Vertical Sliders can be set to utilize 4 different banks, taking advantage of either the Rhombus button or one of the Up/Down button pairs. One of these must have Bank Control enabled, and must be assigned to the Vertical Sliders in order to control the banks. Unlike the Horizontal Sliders, the bank control button for the Vertical Sliders will shift all 4 Vertical Slider banks together instead of one at a time.

See the Up/Down Buttons and Banks or the Rhombus Button and Banks chapter for more information on bank switching for the Vertical Sliders.

To determine if bank switching is enabled within a factory preset for the Vertical Sliders, consult the Factory Preset Guides.

While banks are enabled; 4 separate notes, pressure CC#s, and location CC#s per slider are available. To switch banks, use one of the up and down arrow button pairs or the Rhombus button.

Long Slider

If enabled within a preset, multiple sources are available for use from the Long Slider. Available sources include:

Note - tapping or pressing anywhere on the slider will cause one note to output along with a velocity value that is relative to how hard the slider is hit.

Pressure - pressing down anywhere on the slider will cause the pressure CC# value to output going from low to high (soft to hard).

Location - pressing and moving a finger along the slider will cause the location CC# value to output going from low to high (left to right).

Width - pressing with two fingers sends a width CC# value that represents the distance between the two fingers. The wider the gap, the higher the value. When the second finger leaves the slider, the width will not change again until the second finger returns to the slider.

The LEDs will light up where a finger is. If a second finger appears, the LEDs will light up between the two fingers.

The Long Slider can also be set up to have **banks**.

Long Slider and Banks

The Long Slider can be set to utilize 4 different banks, taking advantage of either the Rhombus button or one of the Up/Down button pairs. One of these must have Bank Control enabled, and must be assigned to the Long Slider in order to control the banks.

See the Up/Down Buttons and Banks or the Rhombus Button and Banks chapter for more information on bank switching for the Vertical Sliders.

To determine if bank switching is enabled within a factory preset for the Long Slider, consult the Factory Preset Guides.

While banks are enabled; 4 separate notes, pressure CC#s, and location CC#s are available. To switch banks, use one of the up and down arrow button pairs or the Rhombus button.

Rotaries

If enabled within a preset, multiple sources are available for use from the Rotaries. Available sources include:

Note - tapping or pressing anywhere on the rotary will cause one note to output along with a velocity value that is relative to how hard a rotary is hit.

Pressure - pressing anywhere on the rotary will cause the pressure CC# value to output going from low to high (soft to hard).

Location - moving a finger around the rotary will cause the location CC# value to output going from low to high (from the top center, around clockwise). This source cannot be enabled at the same time as Direction.

Direction - moving a finger around the rotary will cause the direction CC# value to output. If finger movement is clockwise, the CC# will repetitively send out a 127. If finger movement is counterclockwise, the CC# will repetitively send out a 0. The faster a finger is moved, the faster the repeated value will output.

Both Location and Direction may not be enabled simultaneously.

When a rotary is pressed, all LEDs will light up around the finger. When the finger is removed, all LEDs will turn off except for where the finger last was.

The Rotaries can also be set up to have **banks**.

Rotaries and Banks

The Rotaries can be set to utilize 4 different banks, taking advantage of either the Rhombus button or one of the Up/Down button pairs. One of these must have Bank Control enabled and must be assigned to the Rotaries in order to control the banks.

See the Up/Down Buttons and Banks or the Rhombus Button and Banks chapter for more information on bank switching for the Rotaries.

To determine if bank switching is enabled, within a factory preset for the Rotaries, consult the Factory Preset Guides.

While banks are enabled; 4 separate notes, pressure CC#s, and location or direction CC#s per rotary are available. To switch banks, use one of the up and down arrow button pairs or the Rhombus button.

Transport Buttons

There are 3 buttons intended for transport control: the diamond button for record, the square button for stop, and the sideways triangle for play.

If enabled within a preset, multiple sources are available for use from the Transport buttons. Available sources include:

Note - tapping or pressing the button will cause one note to output along with a velocity value, relative to how hard a button is hit.

Pressure - pressing a button will cause the pressure CC# value to output going from low to high (soft to hard).

When a button is pressed, the LED will illuminate. When released, the LED will turn off.

Left/Right Buttons

The Left/Right arrow buttons can be used either as bank switches for the Horizontal Sliders, or as programmable MIDI buttons. To determine if bank switching is enabled within a factory preset, consult the Factory Preset Guides.

While bank switching is disabled, the following sources are available for use from the Left/ Right buttons (if the sources are enabled within the given preset):

Note - tapping or pressing the button will cause one note to output along with a velocity

value relative to how hard a button is hit.

Pressure - pressing a button will cause the pressure CC# value to output going from low to high (soft to hard).

When a button is pressed, the LED will illuminate. When released, the LED will turn off.

Left/Right Buttons and Banks

When bank switching is enabled on the Left/Right buttons, they are used to switch banks for their neighboring Horizontal Slider. The LEDs for the two buttons will indicate which bank the Horizontal Slider is in.

The image to the left shows how the banks are indicated with the LEDs. From the top:

Bank 1 - no LEDs
Bank 2 - left LED only
Bank 3 - right LED only
Bank 4 - both LEDs

The 4 banks determine what the corresponding Horizontal Slider will output. The Horizontal Sliders can have 4 separate notes, pressure CC#s, and location CC#s per slider and switch through them separately using these 4 left and right arrow button pairs.

Up/Down Buttons

The Up/Down arrow buttons can be used either as bank switches, or as programmable MIDI buttons. To determine if bank switching is enabled within a factory preset for the Up/Down buttons, consult the Factory Preset Guides.

While bank switching is disabled, the following sources are available for use (if the sources are enabled within the given preset):

Note - tapping or pressing the button will cause one note to output along with a velocity value relative to how hard the button is hit.

Pressure - pressing a button will cause the pressure CC# value to output going from low to high (soft to hard).

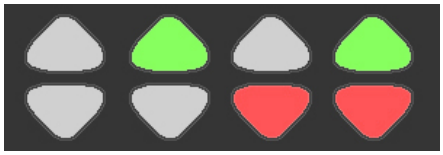
When the button is pressed, the LED will illuminate. When released, the LED will turn off.

Up/Down Buttons and Banks

When bank switching is enabled on the Up/Down buttons, that pair is used to switch banks for either the Rotaries, the Vertical Sliders, or the Long Slider. Presets determine which sensor type each of the Up/Down button pairs is assigned to, these are shown in the Factory Preset Guides.

Example: If the Up/Down arrow button pair to the left side of the Long Slider is assigned to control the Vertical Sliders, pressing the up or down button will put all of the Vertical Sliders in a new bank so they can send out different MIDI data.

The LEDs for the 2 buttons will indicate which bank you are in.



The image to the left shows how the banks are indicated with the LEDs. From the left:

Bank 1 - no LEDs
Bank 2 - top LED only
Bank 3 - bottom LED only
Bank 4 - both LEDs

Which bank is selected will determine what MIDI data the corresponding sensor type will output.

For more information about bank switching read the Vertical Sliders and Banks, Long Slider and Banks, or Rotaries and Banks chapter.

Rhombus Button

The Rhombus button can be used either as bank switches, or a programmable MIDI button. To determine if bank switching is enabled within a factory preset for the Rhombus button, consult the Factory Preset Guides.

While bank switching is disabled, the following sources are available for use (if the sources are enabled within the given preset):

Note - tapping or pressing the button will cause one note to output along with a velocity value relative to how hard the button is hit.

Pressure - pressing a button will cause the pressure CC# value to output going from low to high (soft to hard).

When the button is pressed, the LED will illuminate. When released, the LED will turn off.

Rhombus Button and Banks

When bank switching is enabled on the Rhombus button, it is used to switch banks for either the Rotaries, the Vertical Sliders, or the Long Slider. Presets determine which sensor type the Rhombus button is assigned to, these are shown in the Factory Preset Guides.

Example: If the Rhombus button is set to control the Rotaries, pressing it will put both of the Rotaries in a new bank so they can send out different MIDI data.

The LEDs for the button will indicate which bank you are in.

The image to the left shows how the banks are indicated with the LEDs. From the left:

Bank 1 - no LEDs
Bank 2 - only the green LED is on
Bank 3 - both red and green are on to make yellow
Bank 4 - only the red LED is on

Which bank is selected will determine what MIDI data the corresponding sensor type will output.

For more information about bank switching read the Vertical Sliders and Banks, Long Slider and Banks, or Rotaries and Banks chapter.

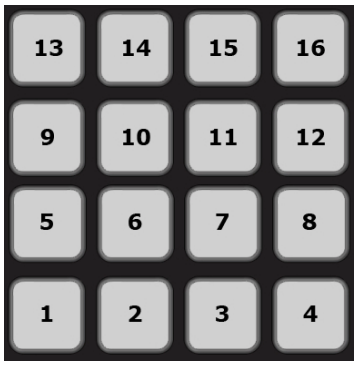
The Mode Button

The Mode button is a small circular button that can be found in the upper left corner of the QuNeo. When illuminated, the button is blue. The Mode button serves as the gateway to selecting presets and entering CoMA mode (our Controller Mapping Assistant).

Selecting Presets

After plugging in the QuNeo, it will automatically load the last preset you used. The first time, it will load Preset 1.

To enter preset mode, quickly tap the Mode button so that it begins to flash blue. Select a preset by pressing one of the pads. The image below shows how the pads are numbered and which pad to select for that given preset number:



After entering Preset mode, the pad for the current preset will be illuminated in red. Once a pad is selected it will briefly blink green and QuNeo will exit Preset mode and go to the selected preset.

Tapping the Mode button again will put QuNeo back into Preset mode at any time.

For more information on factory presets, see the Factory Preset Guides chapter of this manual.

CoMA Mode

Many DAWs and performance software tools like Ableton Live and Apple's Logic have MIDI Mapping modes that will recognize MIDI data from a controller and map it to whatever you choose. Since the QuNeo can have multiple data sources for one control, it is useful to use the Controller Mapping Assistant (CoMA). CoMA mode allows quick mapping of each available data source one at a time, allowing for rapid and efficient software/controller pairings.

Here is an **example** of how to use CoMA mode to map the Y-Axis data from a pad on QuNeo in Ableton Live:

1. Enable MIDI Mapping mode in Ableton Live by clicking the MIDI button at the top right-hand corner. Select the control you'd like to have QuNeo control in Live.
2. Put QuNeo into CoMA mode by holding down blue Mode button in the upper left-hand corner for 1 second. The blue LED will turn on (and stay on) showing that you have successfully entered CoMA mode.
3. Pick the pad you'd like to map to Live and press the bottom right (south-east) corner of the pad. The SE corner is designated to send out the CC# for the Y-Axis.
4. Repeat step 3 for any other pads you wish to map.
5. Exit CoMA mode by holding down the blue Mode for 1 second until the blue LED turns off.
6. Take Live out of MIDI Map mode and try out your new mapping by pressing and sliding your finger from top to bottom (the Y-Axis) of the pad you mapped.

CoMA Mode Mapping Guide

When in CoMA mode it is necessary to be familiar with how each data source from QuNeo is mapped. Here is how to do this for each sensor type:

Pads in CoMA Mode

NOTE: Before using CoMA mode to map presets, consult the Factory Preset Guides to check whether the Pads are in Grid Mode or Drum Mode for the preset you are mapping. Pad mapping works differently for Drum and Grid mode. Also check which data sources are enabled. There may be presets with Pressure, X, or Y turned off. When data sources are turned off, they will not output in CoMA mode.

Drum Mode:

(Drum Mode)

NW corner - Pressing the North-West corner of a pad in CoMA mode will output the **Note** assigned to that Pad.

NE corner - **Pressure** CC# (how hard a pad is pressed)

SW corner - **X-Axis** CC# (for horizontal or side to side motion)

SE corner - **Y-Axis** CC# (for vertical or top to bottom motion)

For your convenience the red LEDs for each corner will turn on after the note or CC# is sent out.

Grid Mode:

Note and pressure CC#s are available in the corner of each Pad while in Grid Mode. X and Y are not available in Grid Mode.

To output the **Note** - Quickly tap on the corner you wish to map. The red LED will come on in that corner as soon as the note is sent out.

To output the **Pressure** CC# - Press and hold the corner you wish to map for 1 second until the green LED illuminates in that corner.

Both LEDs will illuminate (yellow) if you assign both the note and pressure.

Sliders in CoMA Mode

Note: Before using CoMA mode to map presets, consult the Factory Preset Guides to check which data sources are enabled. Some presets may have Note, Pressure, or Location turned off. Data sources that are turned off will not output in CoMA mode.

This is how to map each data source available for the Horizontal and Vertical Sliders:

Note - Quickly tap anywhere on the slider. The red LEDs will illuminate as soon as the note is sent out.

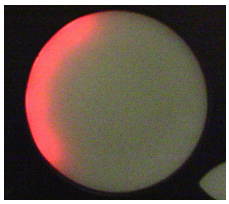
Pressure CC# - Press and hold anywhere on the slider without sliding your finger for 1 second until the green LEDs illuminate.

Location CC# - Slide your finger along the slider for 1 second until the yellow LEDs illuminate.

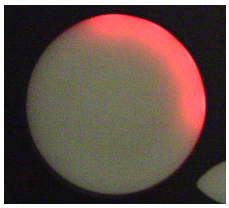
Rotaries in CoMA Mode

Note: Before using CoMA mode to map presets, consult the Factory Preset Guides to check which data sources are enabled. Some presets may have Note, Pressure, or Location/ Direction turned off. Data sources that are turned off will not output in CoMA mode.

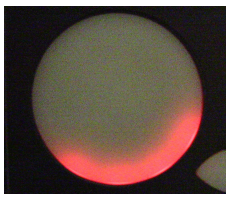
This is how to map each data source available for the Rotaries:



Note - Quickly tap anywhere on the rotary. The LEDs in the top left third will illuminate as soon as the note is sent out. (As shown in image to the left).



Pressure CC# - Press and hold anywhere on the rotary without sliding your finger for 1 second until the LEDs in the top right third of the rotary illuminate. (As shown in image to the left).



Location CC# or **Direction** CC# - Location and Direction cannot be enabled simultaneously, therefore the method for mapping them in CoMA mode is the same. Slide your finger around the rotary for 1 second until the LEDs in the bottom 3rd illuminate. (As shown in image to the left).

Long Slider in CoMA Mode

Note: Before using CoMA mode to map presets, consult the Factory Preset Guides to check which data sources are enabled. Some presets may have Note, Pressure, Location or Width turned off. Data sources that are turned off will not output in CoMA mode.

This is how you map each data source available for the Long Slider:

Note - Quickly tap anywhere on the slider. The red LEDs will illuminate as soon as the note is sent out.

Pressure CC# - Press and hold anywhere on the slider without sliding your finger for 1 second until the green LEDs illuminate.

Location CC# - Slide your finger along the slider for 1 second until the yellow LEDs illuminate.

Width CC# - Press down with 2 fingers making sure to space them apart. Hold down with 2 fingers for 1 second until the blue LED in the middle illuminates.

Transport Buttons in CoMA Mode

Note: Before using CoMA mode to map presets, consult the Factory Preset Guides to check which data sources are enabled. Some presets may have Note or Pressure turned off. Data sources that are turned off will not output in CoMA mode

Note - Quickly tap once on the button.

Pressure CC# - Press and hold the button for 1 second until the CC# is recognized by the MIDI mapping software.

Left/Right and Up/Down Buttons in CoMA Mode

Note: Before using CoMA mode to map presets, consult the Factory Preset Guides to check whether the buttons are assigned to bank switching. If buttons are assigned to bank switching they will not output their own data in CoMA mode, but instead control the banks for the sliders or rotaries they are assigned to. If buttons are not in bank mode, check which data sources are enabled. Some presets may have Note or Pressure turned off. Data sources that are turned off will not output in CoMA mode.

If Banks are enabled:

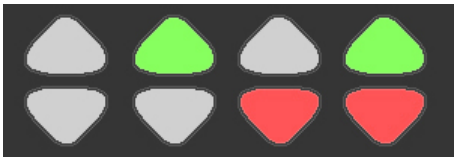
The Left/Right buttons will control which bank the corresponding Horizontal Slider is in when assigning it. Scroll through the banks using the Left/Right buttons, then map the MIDI data in each bank for that slider.

The LEDs on the buttons indicate which bank the Horizontal Slider is in as shown in the image to the left. From the top:

Bank 1 - no LEDs
Bank 2 - only the red LED is on (left side)
Bank 3 - only the green LED is on (right side)
Bank 4 - both LEDs on

The Up/Down buttons will control the banks for either the Vertical Sliders, the Rotaries, or the Long Slider. To find out which sensor type the Up/Down button pair will control, consult the Factory Preset Guides. In CoMA mode, use the Up/Down buttons to scroll through the banks, then map the MIDI data in each bank for the Vertical Sliders, the Rotaries, or the Long Slider (whichever one that Up/Down button pair is set to control in the current preset).

The LEDs on the buttons indicate the banks, as shown in the image below. From the left:



Bank 1 - no LEDs
Bank 2 - only the green LED is on (top)
Bank 3 - only the red LED is on (bottom)
Bank 4 - both LEDs on

If Banks are off:

With banks off, the Left/Right and Up/Down buttons will output their own MIDI data:

Note - Quickly tap once on the button.

Pressure CC# - Press and hold the button for 1 second until the CC# is recognized by the MIDI mapping software.

Rhombus Button in CoMA Mode

Note: Before using CoMA mode to map presets, consult the Factory Preset Guides to check whether the Rhombus button is assigned to bank switching. If assigned to bank switching, the Rhombus button will not output its own data in CoMA mode, but instead control the banks for the sliders or rotaries it is assigned to. If the button is not in bank mode, check which data sources are enabled. Some presets may have Note or Pressure turned off. Data sources that are turned off will not output in CoMA mode.

If Bank Switching is enabled:

The Rhombus button will control the banks for either the Vertical Sliders, the Rotaries, or the Long Slider. To find out which sensor type the Rhombus button will control, consult the Factory Preset Guides. In CoMA mode, use the Rhombus button to scroll through the banks, then map the MIDI data in each bank for the Vertical Sliders, the Rotaries, or the Long Slider (whichever one the Rhombus button is set to control in the current preset).

The LEDs on the buttons indicate the banks, as shown in the image below. From the left:

Bank 1 - no LEDs
Bank 2 - only the green LED is on
Bank 3 - both red and green are on to make yellow
Bank 4 - only the red LED is on

If Bank Switching is off:

With bank switching off, the Rhombus button will output its own MIDI data:

Note - Quickly tap once on the button. The red LED will illuminate as soon as the note is sent out.

Pressure CC# - Press and hold the button for 1 second until the green LED illuminates.

If both note and pressure are mapped, both the green and the red LED will illuminate.

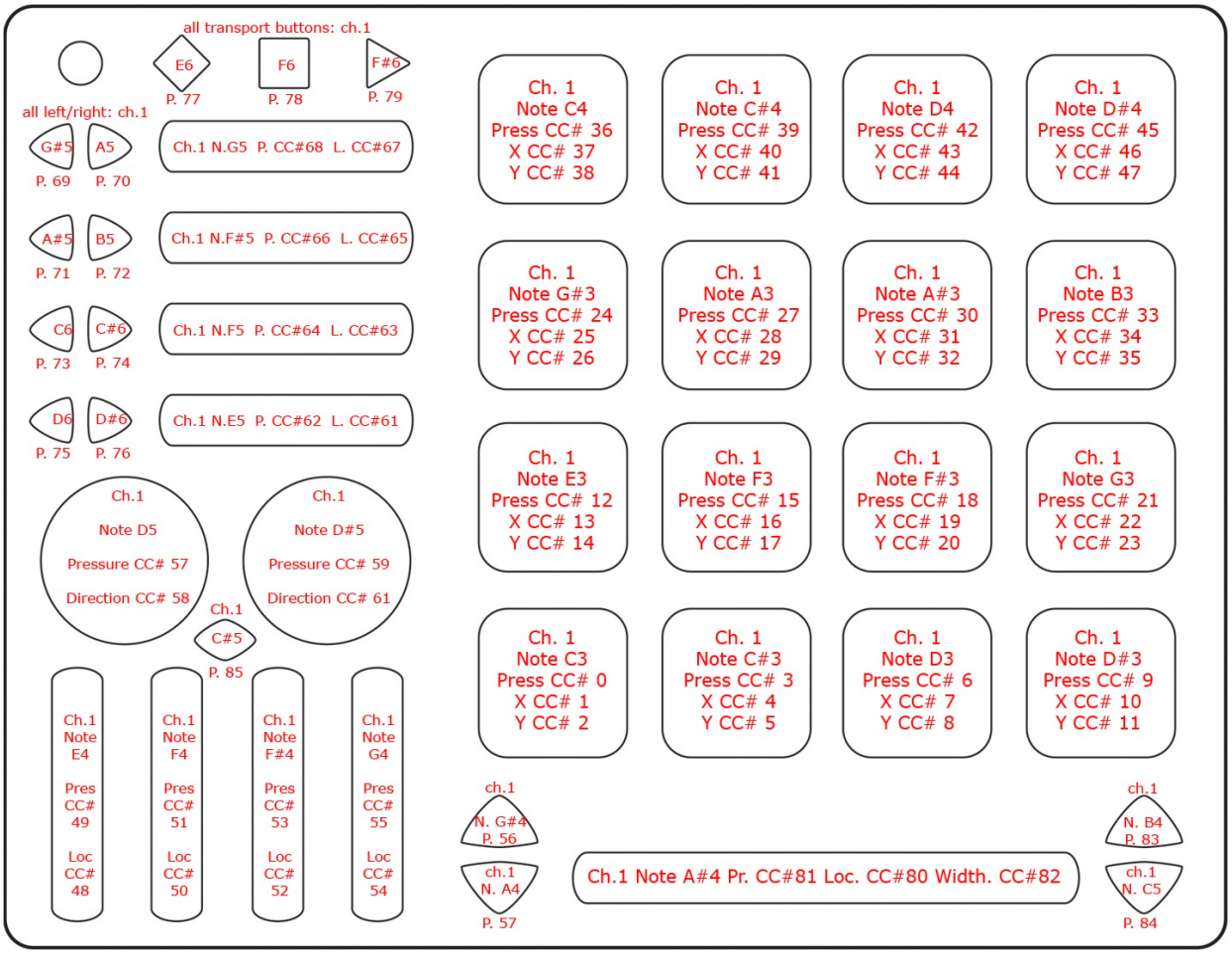
Factory Preset Guides

Notes about the Preset Guide images:

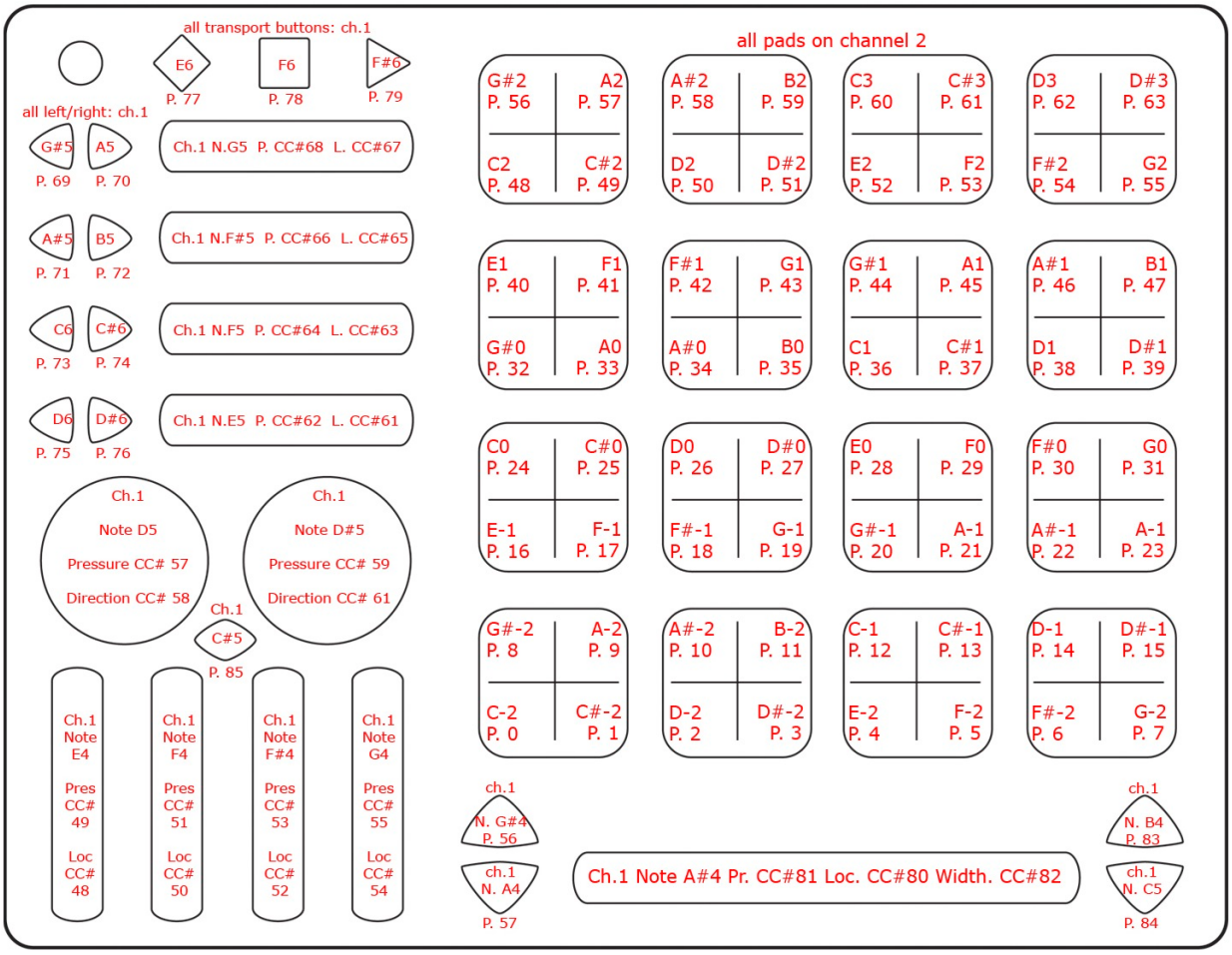
- If a data source is not accounted for in the preset guide image, this means it is disabled. For Example: If one of the Pads only shows note names and not pressure CC#s, assume that the pressure data is turned off and will not output as MIDI data, even in CoMA mode.

MIDI Output

Preset 1: "Drum Mode"

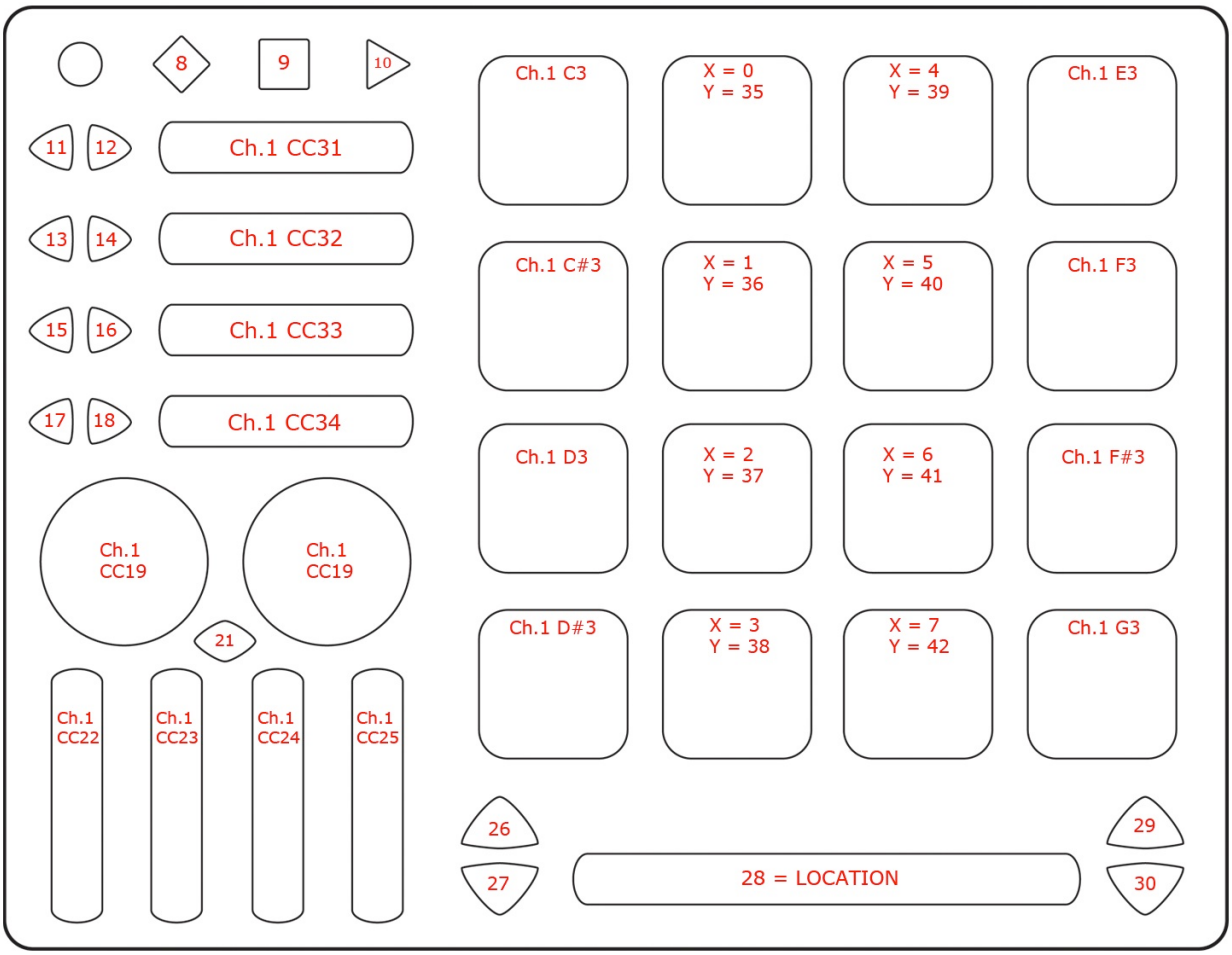


Preset 2: “Grid Mode”

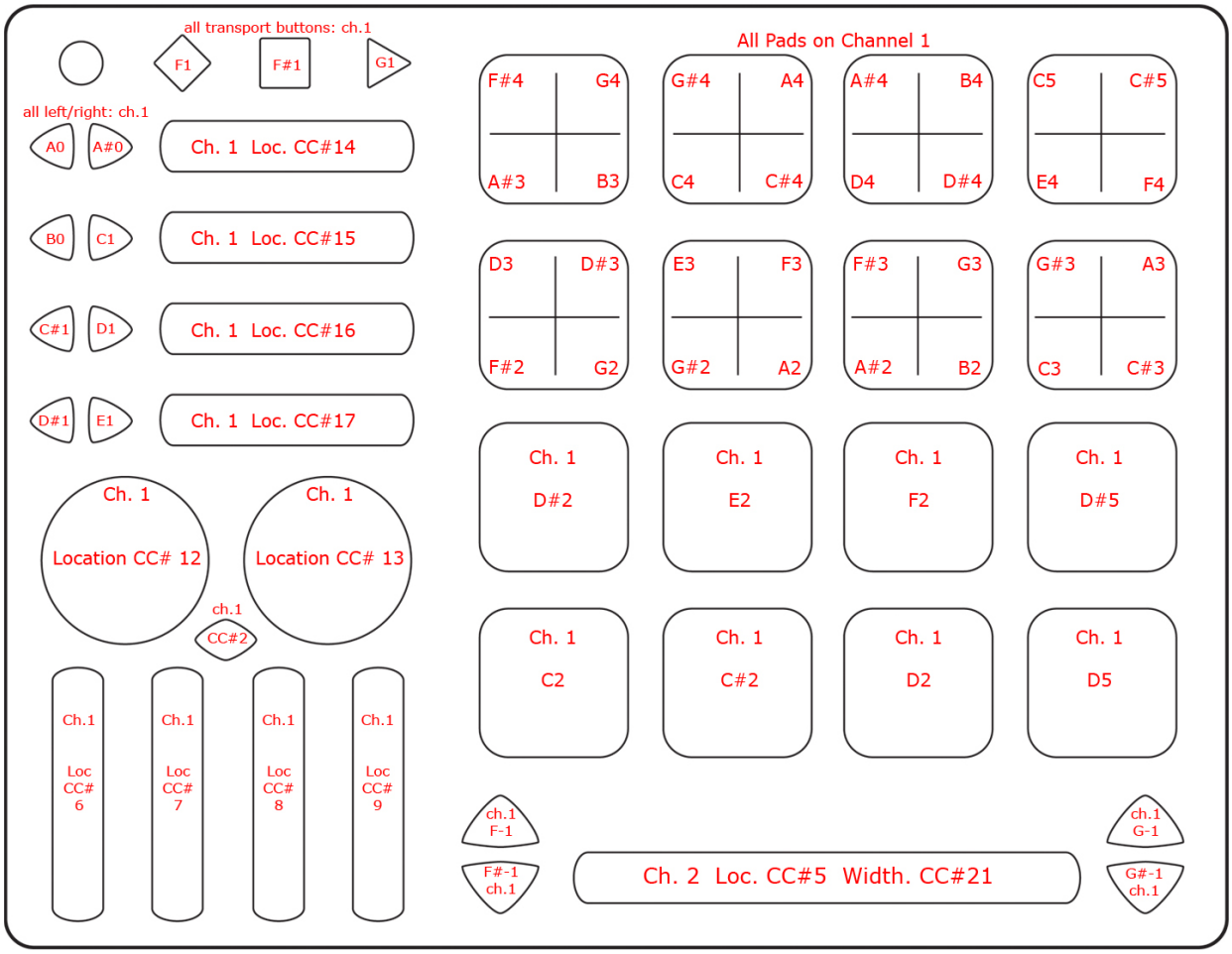


Preset 3: “Artist Preset”

*ALL CC’s are on Channel 1 (Ch.1)



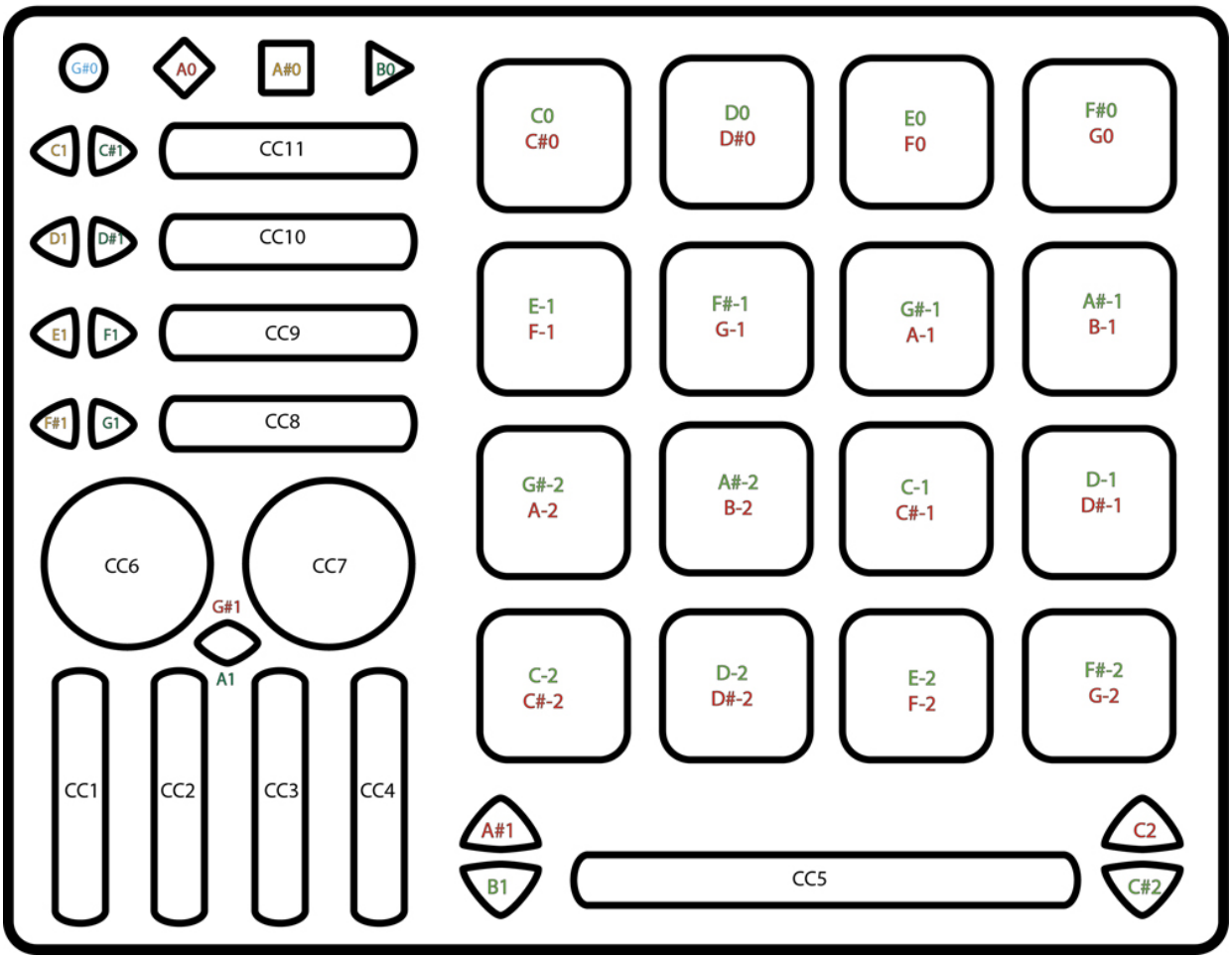
Preset 4: “Traktor”



MIDI Input

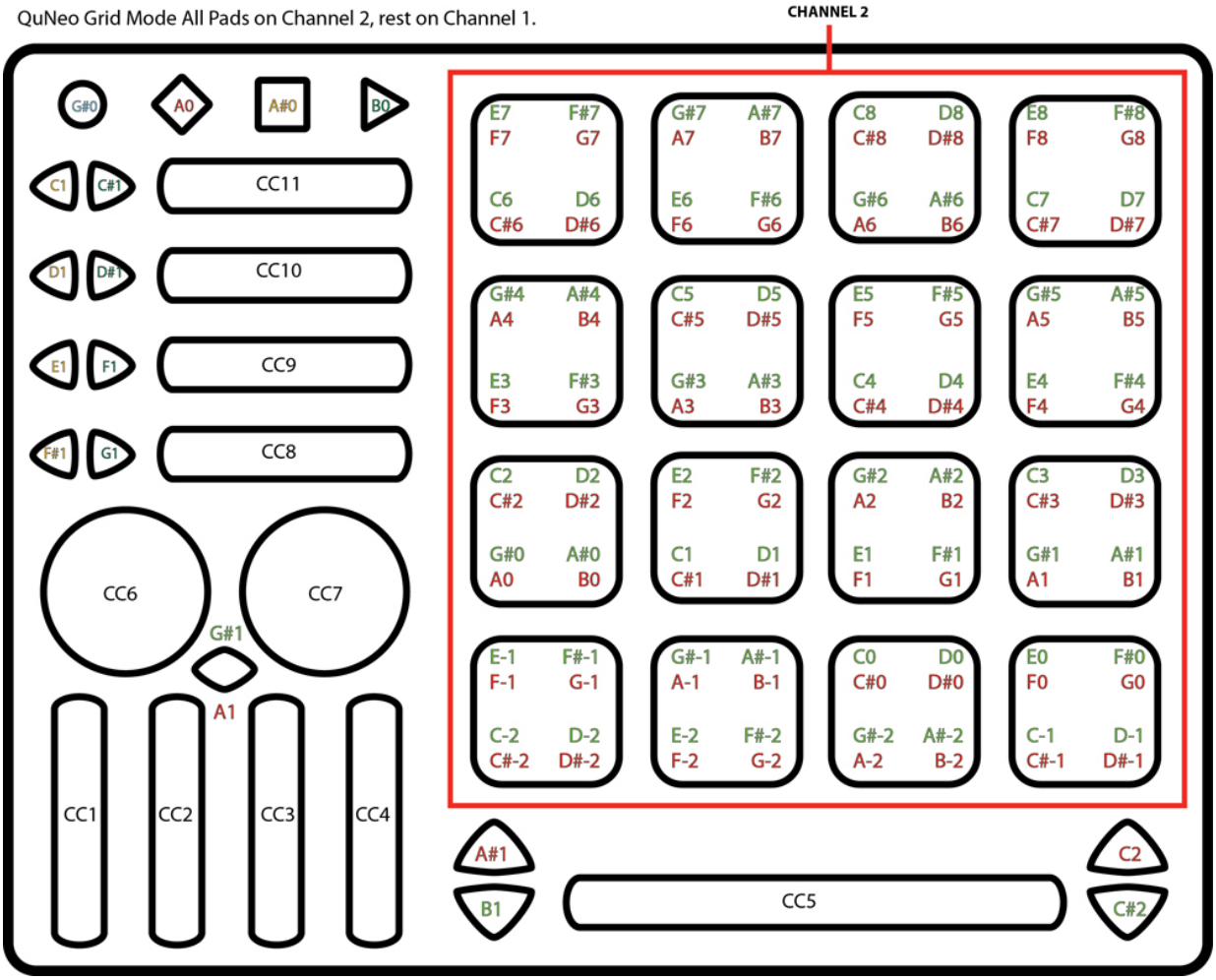
Drum Mode:

QuNeo Drum Mode LED Map. All On Channel 1



Grid Mode:

QuNeo Grid Mode All Pads on Channel 2, rest on Channel 1.



QuNeo LED Behavior

QuNeo's LEDs provide many great ways to visualize interactions with the QuNeo. Local or Remote control is available. **Local LED Control** means the action on sensors will determine the LED behavior. **Remote LED Control** means note or CC Data being sent to the QuNeo will determine LED behavior. Local and Remote control can be used simultaneously as well.

Local LED Control

Without sending LED messages to the QuNeo from another application or device, the QuNeo's LEDs will automatically respond to touch. Local LED Control is the QuNeo's built-in LED behavior. Here is how the LEDs will behave for each sensor.

Pad LEDs

When in Drum Mode:

- The LEDs in all four corners of the pad will illuminate with color and brightness corresponding to velocity and pressure (from green to red).

When in Grid Mode:

- The LEDs in each corner of the pad will illuminate individually with color and brightness corresponding to velocity and pressure (from green to red).

Horizontal and Vertical Slider LEDs

- The LEDs will illuminate to where a finger is and fill in from the left (for Horizontal) or bottom (for Vertical).

Long Slider LEDs

- The LEDs will illuminate where a finger is. If a second finger touches the slider, then the LEDs will illuminate between the two fingers.

Rotary LEDs

- When the rotary is pressed, all LEDs will illuminate around the finger. When released, one LED will show where the finger last was.

Transport Button LEDs

- When the button is pressed, the LED will illuminate. When released, the LED will turn off.

Left/Right Button LEDs

When Bank Switching is off:

- When the button is pressed, the LED will illuminate. When released, the LED will

turn off.

When Bank Switching is enabled:

- LED of the Left/Right arrow pairs indicate the banks that the corresponding Horizontal Slider is in.

- The image to the left shows how the banks are indicated with the LEDs. From the top:
    - Bank 1 - no LEDs
    - Bank 2 - left LED only
    - Bank 3 - right LED only
    - Bank 4 - both LEDs

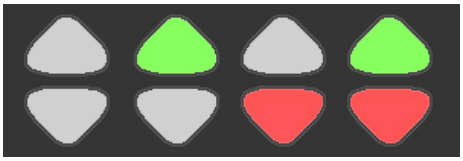
Up/Down Button LEDs

When Bank Switching is off:

- When the button is pressed, the LED will illuminate. When released, the LED will turn off.

When Bank Switching is enabled:

- The LEDs for the two buttons will indicate which bank the corresponding sensors are in.
- The image below shows how the banks are indicated with the LEDs. From the left:



- Bank 1 - no LEDs
- Bank 2 - top LED only
- Bank 3 - bottom LED only
- Bank 4 - both LEDs

Rhombus Button LEDs

When Bank Switching is off:

- When the button is pressed, both the red and green LEDs will illuminate. When released, the LEDs will turn off.

When Bank Switching is enabled:

- The LEDs for the button will indicate which bank the corresponding sensors are in.
- The image below shows how the banks are indicated with the LEDs. From the left:

- Bank 1 - no LEDs
- Bank 2 - only the green LED
- Bank 3 - both red and green to make yellow
- Bank 4 - only the red LED

Mode Button LEDs

- When tapped to go into Preset mode, the Mode button's blue LED will blink

- When held for 1 second to go into CoMA mode, the Mode button's blue LED will illuminate

Remote LED Control

The LEDs on the QuNeo can be sent MIDI messages to control their behavior. When the QuNeo receives the proper MIDI data for a pad, slider, button, etc., the LEDs will respond accordingly. If you are touching the QuNeo, the Local LED control will momentarily override the Remote LED Control for as long as a finger is pressed down. When released, Remote LED Control will take over again.

To learn what MIDI messages can be sent to the LEDs for each preset, consult the Factory Presets Guide.

Here is a list of the possible ways to control the LEDs when using Remote LED Control:

Pad LEDs

When in Drum Mode:

- Pads can receive a note for the green LEDs and a note for the red LEDs. A note with velocity above 0 will illuminate the LEDs for all 4 corners. The velocity of the note will determine the brightness.

When in Grid Mode:

- The LEDs in each corner of the pad can light up individually. Pads can receive 4 notes (one for each corner) for the green LEDs and 4 other notes for the red LEDs. A note with velocity above 0 will illuminate the LED. The velocity of the note will determine the brightness.

Horizontal and Vertical Slider LEDs

- Each slider can receive a CC# value for LED location. This will tell the slider where the LEDs should fill up to. They will fill in from the left (for Horizontal) or bottom (for Vertical). This works great for VU meters.

Long Slider LEDs

- The Long Slider can receive a CC# value for LED location. This will tell the slider which of the LEDs should light up.

Rotary LEDs

- Each rotary can receive a CC# value for LED location. This will tell the slider which of the LEDs should light up.

Transport Button LEDs

- Each Transport button can receive a note for its LED. A note with velocity above 0 will turn the LED on and the velocity of the note will also determine the brightness.

Left/Right Button LEDs

When Bank Switching is off:

- Each of the arrow buttons will respond to a note. A note with velocity above 0 will illuminate the LED and the velocity of the note will determine the brightness.

When Bank Switching is enabled:

- The LEDs will not respond to remote messages. Instead they will behave the way they do in Local LED Control.

Up/Down Button LEDs

When Bank Switching is off:

- Each of the arrow buttons will respond to a note. A note with velocity above 0 will illuminate the LED and the velocity of the note will determine the brightness.

When Bank Switching is enabled:

- The LEDs will not respond to remote messages. Instead they will behave the way they do in Local LED Control.

Rhombus Button LEDs

When Bank Switching is off:

- The Rhombus button can receive a note for the red LED and a note for the green LED. A note with velocity above 0 will illuminate the LED and the velocity of the note will determine the brightness.

When Bank Switching is on:

- The LEDs will not respond to remote messages. Instead they will behave the way they do in Local LED Control.

Mode Button LEDs

- The Mode button will not respond to remote messages. Instead it will behave the way it does in Local LED Control.

QuNeo Editor

If you wish to make changes to the QuNeo's factory presets you will need to acquire and use the QuNeo Editor.

System Requirements

We recommend the following minimum system requirements.

MAC:

- An Intel Core 2 Duo 2.3GHz or greater
- Mac OS 10.5 or later

WINDOWS:

- Windows XP, or Windows 7
- Intel Core 2 processor or greater
- 1GB of RAM with 50 MB free hard disk space

Downloading the Editor

Please make sure to do all of the following **in this order:**

1. Download the QuNeo Editor from: http://www.keithmcmillen.com/QuNeo/downloads/
2. Install on a computer:
    a. **for mac:** Install using the .dmg file. Once installed **keep everything in the QuNeo folder as is** so that the application can access everything it needs to run.
    b. **for windows:** Install using the installer file. The entire QuNeo directory will be stored in the Program Files directory. Make sure to **keep all the folders and files in their original locations** so that the application can access everything it needs to run.
3. Plug the QuNeo into the computer via USB
4. Open up the QuNeo Editor. Use this manual as a reference for the QuNeo Editor.

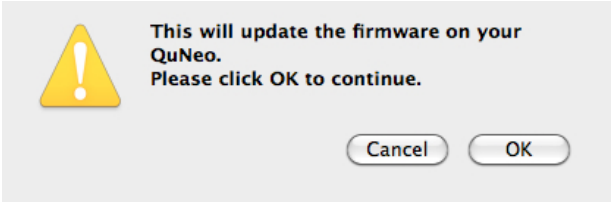
Updating the QuNeo Editor

After downloading an upgrade from the QuNeo downloads site, install it using the installer file. Keeping the old version will cause no problems or conflicts with the newer version. Make sure to update any shortcuts so that they link to the correct version. Remember to save presets from older versions. Presets are located in the preset folder so make sure to copy it out of the folder and put it in a safe location.

Updating the Firmware

Make sure the editor and the firmware versions are compatible with each other.

An “Update Firmware” button is in the bottom right corner of the QuNeo Editor. Click on this button and the prompt to the right will appear. Click ok and wait until the blue Mode button light stops flashing before continuing. The blue light indicates the firmware update is in progress.



Keith McMillen Instruments cannot be held liable for damage resulting from installation and operation errors or improper use.

Main Window Overview

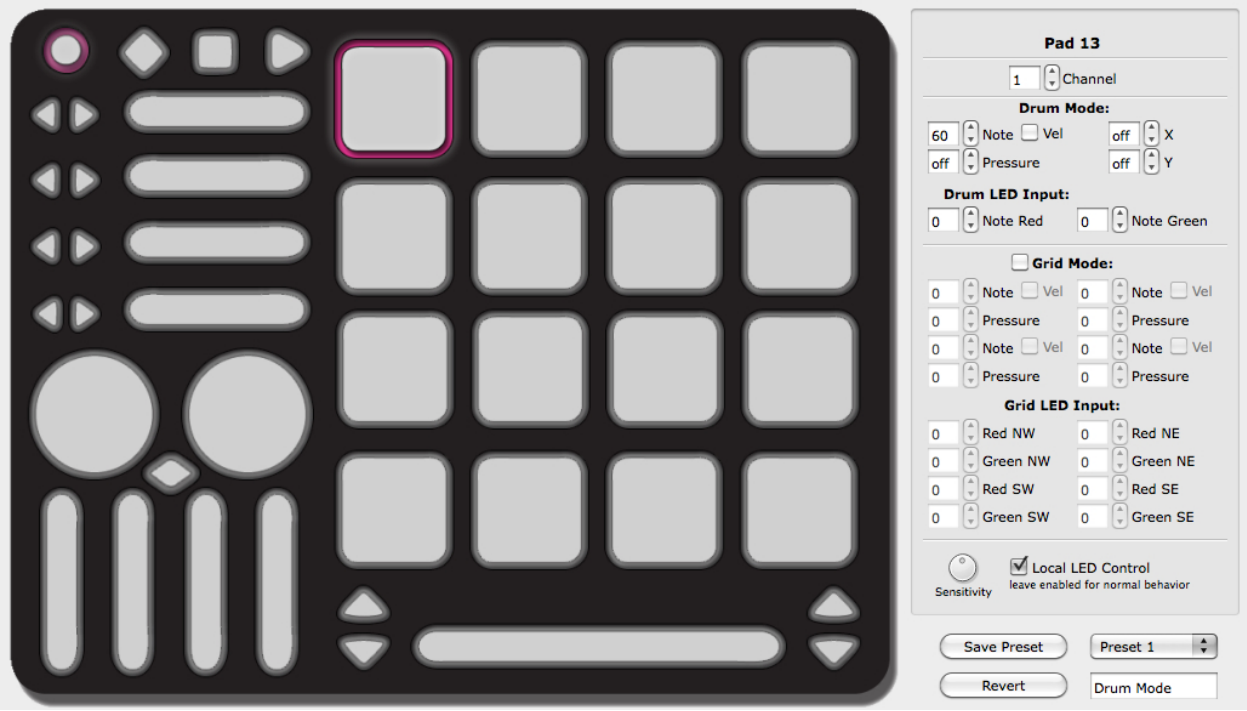
The QuNeo Editor opens with this window:

Selecting a sensor on the QuNeo image will open an edit pane in the box on the right side. The edit pane is for re-assigning the MIDI data input and output for that sensor. Controls for saving and recalling presets are found under the edit pane.

On the bottom left side of the screen is a drop-down menu for selecting the QuNeo device. If QuNeo is connected to the computer via USB, the device menu should automatically change to "QuNeo 1" (after the application fully loads) to show that a connection between the Editor and the device has been made.

In the bottom right is the "Update Preset" button. Press the "Update" button to send the current saved preset to the QuNeo.

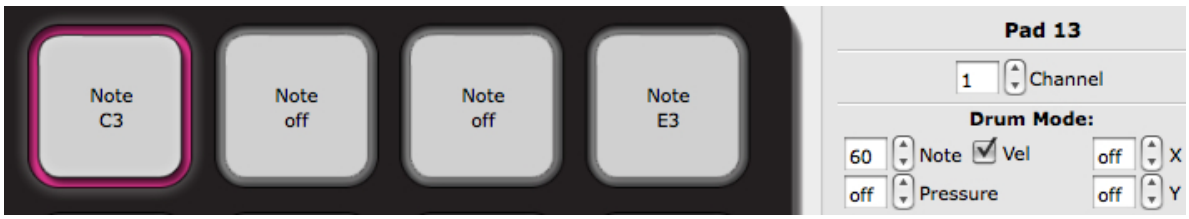
Sensor Edit Panes



The image above shows Pad 13 selected on the QuNeo image and the Pad 13 edit pane open on the right side of the window. Pad 13 is highlighted pink to show that it is selected.

When editing a parameter in the edit pane, the parameter is displayed on the QuNeo image; as are the corresponding parameters for all of sensors of that type.

Example: In the image below, the Note parameter for Pad 13 is set to MIDI note 60 (C3). All of the other pads will display the notes they are currently set to as well. This allows easy checking to prevent unwanted duplicate notes.

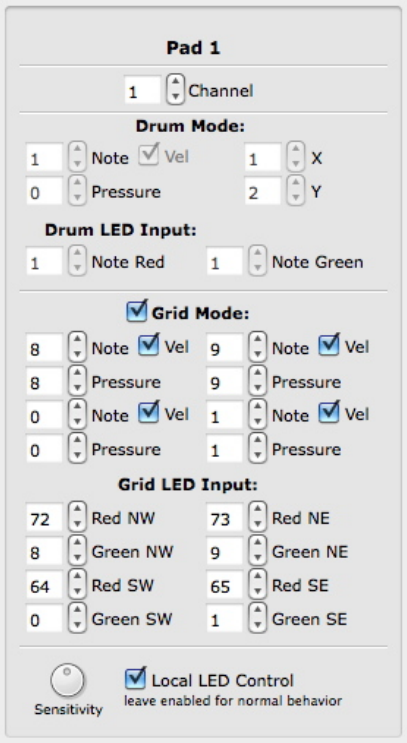


Adjusting the Pressure parameter changes the QuNeo image to display what CC# is assigned to pressure on all of the pads.

All parameters are displayed this way for all sensor types.

Read on for more detail about the editable parameters in each of the various edit panes.

Pad Edit Pane

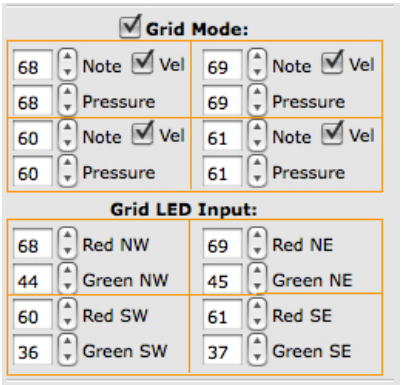


The Pads function in either **Drum Mode** or **Grid Mode**. In Drum Mode, it is not possible to edit the parameters for Grid Mode and vice-versa. Enter Grid Mode by clicking on the "Grid Mode" check box.

In **Drum Mode**, the pad parameters include a note, a pressure CC#, an X-Axis position CC#, and a Y-Axis position CC#. In Drum Mode, the programmable LEDs in the 4 corners operate together using a note for red and a note for green.

In **Grid Mode** you get a note and pressure source in each corner, allowing up to 4 notes or pressure points per pad. The programmable LEDs can be controlled individually, using a note for red and a note for green in each corner.

To disable a parameter (except Channel), set the number box to "-1". Enable velocity sensitivity for MIDI notes with the "**Vel**" check boxes. If unchecked the velocity of the note (if the note is enabled) will be fixed at 127.

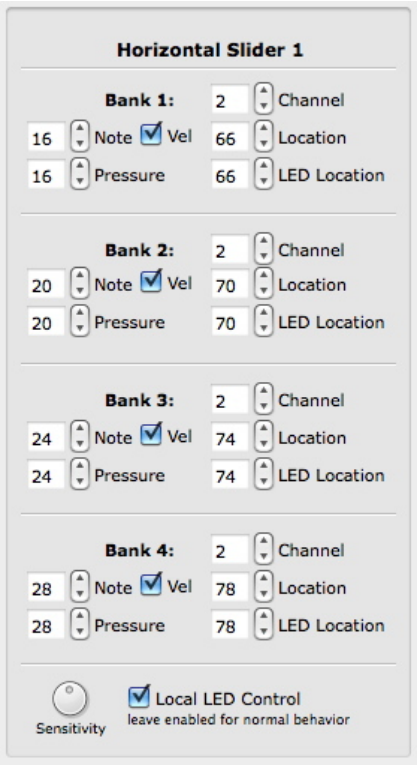


The image to the left is a display of the parameters for Grid Mode. It is divided to show which of these parameters correspond to each corner of the pad. The parameters of each pad corner contain a note, velocity switch, and pressure CC#. The placement of the parameters in the edit pane correspond to the corners of the pads.

The labels for the LEDs indicate the corners as well: "NW" means North-West corner, "SE" means South-East corner, etc...

At the very bottom of the edit pane is the Sensitivity and Local LED Control parameters. For more information on these please reference the Sensitivity and Local LED Control chapters in this section of the manual.

Vertical and Horizontal Slider Edit Pane



The Vertical and Horizontal Slider Edit Panes have essentially the same editable parameters.

There are 4 banks available per slider. The Horizontal Sliders each have their own Left/Right Buttons to control which bank is selected. (See the Left/Right Buttons Edit Pane chapter for more information).

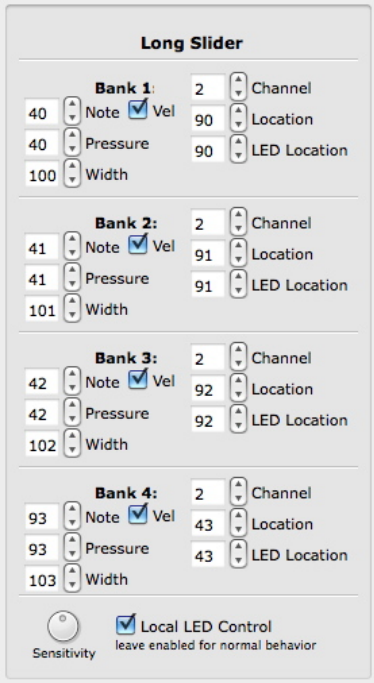
The banks of the Vertical Sliders can be selected by either the Rhombus button, or one of the Up/Down button pairs. This is programmable in the edit panes for those buttons. (See the Rhombus Button Edit Pane or the Up/Down Buttons Edit Pane chapters for more information).

The Slider Edit Pane parameters include a Note, Pressure CC#, Location CC#, and LED Location CC# for each bank.

To disable a parameter (except Channel), set the number box to "-1". Enable velocity sensitivity for MIDI notes with the "**Vel**" check boxes. If unchecked the velocity of the note (if the note is enabled) will be fixed at 127.

At the very bottom of the edit pane is the Sensitivity and Local LED Control parameters. For more information on these please reference the Sensitivity and Local LED Control chapters in this section of the manual.

Long Slider Edit Pane



The Long Slider Edit Pane is similar to the Vertical and Horizontal Slider edit panes.

There are 4 banks available. The banks of the Long Slider can be selected by either the Rhombus button, or one of the Up/Down button pairs. This is programmable in the edit panes for those buttons. (See the Rhombus Button Edit Pane or the Up/Down Buttons Edit Pane chapters for more information).

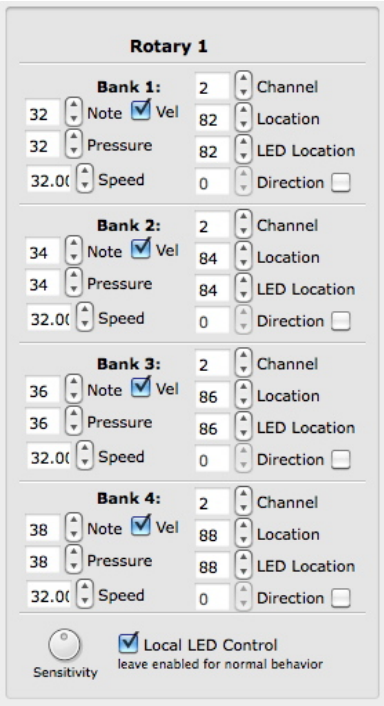
The Long Slider Edit Pane parameters include a Note, Pressure CC#, Location CC#, LED Location CC#, and Width CC# for each bank.

To disable a parameter (except Channel), set the number box to "-1". Enable velocity sensitivity for MIDI notes with the "**Vel**" check boxes. If unchecked the velocity of the note (if the note is enabled) will be fixed at 127.

At the very bottom of the edit pane is the Sensitivity and Local LED Control parameters. For

more information on these please reference the Sensitivity and Local LED Control chapters in this section of the manual.

Rotary Edit Pane



The Rotary Edit Panes are also similar to the Slider Edit Panes.

There are 4 banks available per slider. The banks of the Rotaries can be selected by either the Rhombus button, or one of the Up/Down button pairs. This is programmable in the edit panes for those buttons. (See the Rhombus Button Edit Pane or the Up/Down Buttons Edit Pane chapters for more information).

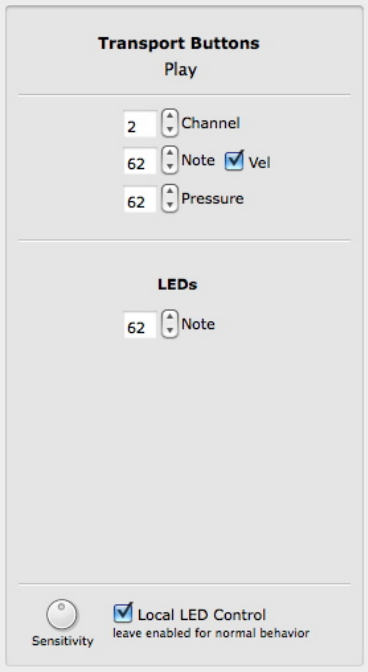
The Rotary Edit Pane parameters include a Note, Pressure CC#, Location CC#, LED Location CC#, Direction CC#, and Speed for each bank.

The **Direction** CC# will repetitively send out a 127 if finger movement is clockwise. If finger movement is counterclockwise, the CC# will repetitively send out a 0. We refer to this repetitive CC# as a tick. The faster a finger is moved, the faster the tick will output. The **Speed** parameter controls the number of ticks per degree.

Direction and Location cannot be used at the same time. To disable a parameter (except Channel), set the number box to "-1". Enable velocity sensitivity for MIDI notes with the "**Vel**" check boxes. If unchecked the velocity of the note (if the note is enabled) will be fixed at 127.

At the very bottom of the edit pane is the Sensitivity and Local LED Control parameters. For more information on these please reference the Sensitivity and Local LED Control chapters in this section of the manual.

Transport Edit Pane

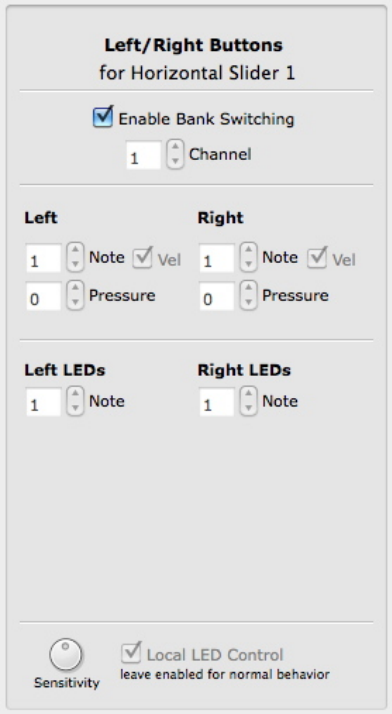


The Transport buttons are the 3 buttons at the top of the QuNeo next to the Mode button. The diamond button with the red LED is for record, the square button with the yellow LED is for stop, and the triangular button with the green LED is for play. Assign the Channel, a Note, a Pressure CC#, and an LED Note for each Transport button.

To disable a parameter (except Channel), set the number box to "-1". Enable velocity sensitivity for MIDI notes with the "**Vel**" check boxes. If unchecked the velocity of the note (if the note is enabled) will be fixed at 127.

At the very bottom of the edit pane is the Sensitivity and Local LED Control parameters. For more information on these please reference the Sensitivity and Local LED Control chapters in this section of the manual.

Left/Right Buttons Edit Pane



The Left/Right buttons are positioned to the left of each Horizontal slider. If the "**Enable Bank Switching**" box is checked, these button pairs act as bank controls for each Horizontal Slider. See the Vertical and Horizontal Slider Edit Pane chapter for more info. The banks will be indicated by the LEDs of the 2 buttons.

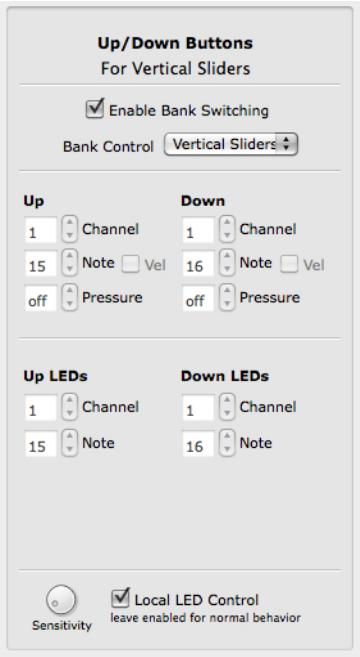
For information about how the LEDs indicate the banks, see the Left/Right Buttons and Banks chapter of this manual.

If Bank Switching is disabled, each button can output an assigned Note or Pressure CC#. There is also a left and right Note parameter for controlling the LEDs

To disable a parameter (except Channel), set the number box to "-1". Enable velocity sensitivity for MIDI notes with the "**Vel**" check boxes. If unchecked the velocity of the note (if the note is enabled) will be fixed at 127.

At the very bottom of the edit pane is the Sensitivity and Local LED Control parameters. For more information on these please reference the Sensitivity and Local LED Control chapters in this section of the manual.

Up/Down Button Edit Pane



The Up/Down buttons are positioned on either side of the Long Slider. If the "**Enable Bank Switching**" box is checked, these button pairs act as bank controls for the Rotaries, Vertical Sliders, or Long Slider. See the Vertical and Horizontal Slider Edit Pane, Long Slider Edit Pane, or Rotary Edit Pane chapters for more info. The banks will be indicated by the LEDs of the 2 buttons.

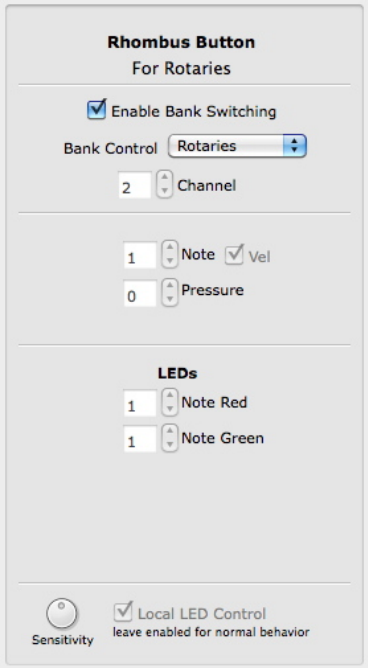
For information about how the LEDs indicate the banks, see the Up/Down Buttons and Banks chapter of this manual.

If Bank Switching is disabled, each button can output an assigned Note or Pressure CC#. There is also an up and down Note parameter for controlling the LEDs

To disable a parameter (except Channel), set the number box to "-1". Enable velocity sensitivity for MIDI notes with the "**Vel**" check boxes. If unchecked the velocity of the note (if the note is enabled) will be fixed at 127.

At the very bottom of the edit pane is the Sensitivity and Local LED Control parameters. For more information on these please reference the Sensitivity and Local LED Control chapters in this section of the manual.

Rhombus Button Edit Pane



The Rhombus button is positioned under the Rotaries and above the Vertical Sliders. If the "**Enable Bank Switching**" box is checked, this button acts as a bank control for the Rotaries, Vertical Sliders, or Long Slider. See the Vertical and Horizontal Slider Edit Pane, Long Slider Edit Pane, or Rotary Edit Pane chapters for more info. The banks will be indicated by the LEDs of the button.

For information about how the LEDs indicate the banks, see the Rhombus Button and Banks chapter of this manual.

If Bank Switching is disabled, the button can output an assigned Note or Pressure CC#. There is also a red and green Note parameter for controlling the LEDs

To disable a parameter (except Channel), set the number box to "-1". Enable velocity sensitivity for the MIDI note with the "**Vel**" check boxes. If unchecked the velocity of the note (if the note is enabled) will be fixed at 127.

At the very bottom of the edit pane is the Sensitivity and Local LED Control parameters. For more information on these please reference the Sensitivity and Local LED Control chapters in this section of the manual.

Sensitivity

Sensitivity is editable for the various sensors using the **sensitivity** dial at the bottom of each of the edit panes.

The Sensitivity dial is global for all controls of that type.

For **example**: Adjusting the sensitivity in one of the Pad Edit Panes will adjust the sensitivity for all pad edit panes. The Sensitivity dials for the Horizontal Sliders are linked, the Vertical Sliders, the Left/Right Buttons, etc...

Local LED Control

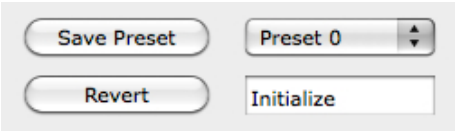
In each Edit Pane, next to the Sensitivity dial, is a check box for turning on and off **Local LED Control**. Without sending LED messages to the QuNeo from another application or device, the QuNeo's LEDs will automatically respond to touch. This built-in LED behavior can be enabled using the Local LED Control check box. Like the sensitivity dial, the Local LED Control check box is global for all controls of that type.

NOTE: If Local LED Control is disabled and the QuNeo is not receiving MIDI notes for controlling LEDs, the QuNeo will not light up at all.

In the Left/Right, Up/Down, and Rhombus Button edit panes, if Bank Switching is enabled, Local LED Control cannot be disabled.

Saving

The preset saving functions are available below the edit pane. Select presets from the menu, name them with the text box, and save or revert them with the buttons.



If edits are made in one of the presets, the **Save Preset** button will begin to blink red as a reminder to save. Click the save button and the selected preset will save and cease to blink red. As another reminder, any modified preset will appear in the menu list with a star next to it to show which presets have changes that haven't been saved. Or click the **Revert** button to go back to the previously saved state.

In the menu, the presets are listed by number to correspond with the pad numberings when selecting presets (see the Selecting Presets chapter for more information).

If you experience any problems or have questions regarding the QuNeo install process e-mail us at support@keithmcmillen.com outlining the problems you're experiencing. The more detailed you are in describing your problem (information about your computer, the software you're running, the circumstances around the issue), the more easily we will be able to help you.