

QuNeo Quickstart Guide

QuNeo Version 1.01
July 2012

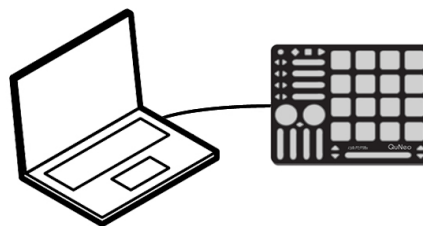
QuNeo is a 3D multi-touch pad controller. QuNeo is a different species of pad controller for electronic musicians, DJs, VJs and DIY hackers. While it covers all of the functionality of other pad controllers, QuNeo adds the power of touch recognition in other dimensions.

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. Each rotary sensor measures direction, pressure and location.

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.

Connect QuNeo to a computer

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

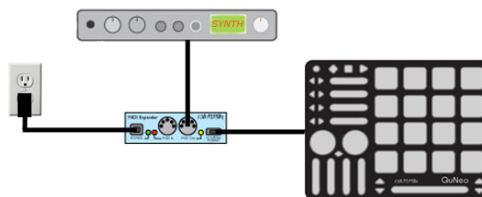


Use a USB A-to-Micro cable to connect the QuNeo micro port to a USB port on a computer. QuNeo will receive power from the computer.

Connect QuNeo to MIDI hardware

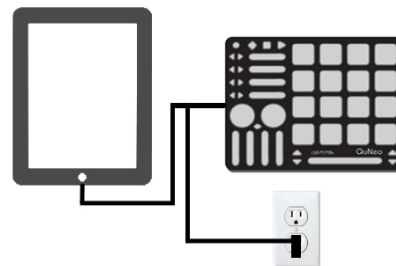
The image to the right shows QuNeo connected to a hardware synth via our MIDI Expander (sold separately):

1. Use a USB A-to-Micro cable to connect the QuNeo micro port to the USB "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 a synth or other hardware device.



Connect QuNeo to an iPad

The image to the right shows QuNeo connected to an iPad using the QuNeo Remote Power Kit (sold separately through our online store: <http://store.keithmcmillen.com/>). This includes a Y USB cable and a power supply. You will also need the iPad Camera Connection Kit (sold by Apple: <http://store.apple.com/us/product/MC531ZM/A>).



QuNeo Software Installer

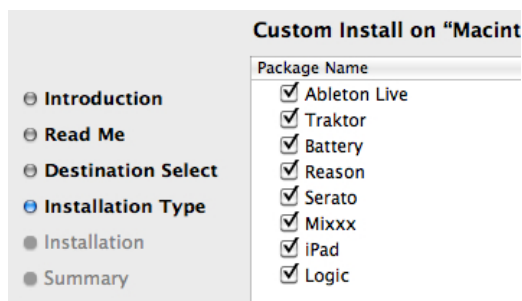
Download our free QuNeo Software Installer from: <http://www.keithmcmillen.com/QuNeo/downloads/>

The Software Installer contains template files that go with QuNeo presets for Ableton Live, Logic, Traktor, Battery, Reason, Mixxxx, Serato, and BeatMaker (iPad). There is also a Manual QuNeo Software Installer which will allow you to place the template files yourself. When using the manual installer, be sure to read the README files associated with each application template.

Installation Instructions (Mac)

Double-click on the .dmg file to open the disk image, then double-click on the QuNeo Software Installer.

On the "Installation Type" page, select the software you want to use with QuNeo (as shown in the image to the right). Hit continue, enter your admin password, and the installer will copy over any necessary auto-mapping files. A QuNeo folder will now appear in the Applications directory on your computer.



Installation Instructions (Windows)

Double-click on the .exe file to launch the QuNeo Software Installer. This will copy all of the necessary files and documentation into the C: directory. When installation is complete click the close button.

Now that the software is installed, look inside the QuNeo folder to find a "Documentation" folder, a "Software Templates" folder, and a "QuNeo Editor" folder. Template files for the software you selected will appear in the "Software Templates" folder. To use them just plug in QuNeo, select the corresponding preset, and try out the template. Use the Quickstart Guides in the respective Software Templates folders for more information about using these templates.

The "QuNeo Editor" folder will contain the QuNeo Editor. Use this to make changes to QuNeo's presets. Once installed **keep everything in the "QuNeo Editor" folder as is** so the application can access everything it needs to run.

We recommend the following minimum system requirements to run the QuNeo Editor:

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

The "Documentation" folder will contain a manual for the QuNeo Editor along with other useful documents for obtaining more detailed information.

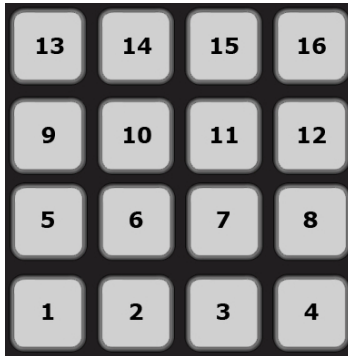
The Mode Button

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.



After entering Preset mode, the pad for the current preset will be illuminated in red. Select a preset by pressing one of the pads. The selected pad will briefly blink green and QuNeo will exit Preset mode and go to the selected preset.

The image to the left shows how the pads are numbered and which pad to select for which preset number.

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

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.

To enter CoMA Mode using the Mode Button, hold down on the Mode Button for 1 second until all the LEDs flash. 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** -

- When in **Drum Mode** each corner outputs a different data source. Pressing the NW (North-West) corner outputs the Note, the NE corner outputs the Pressure CC#, the SW corner outputs the X-Axis CC#, and the SE corner outputs the Y-Axis CC#.

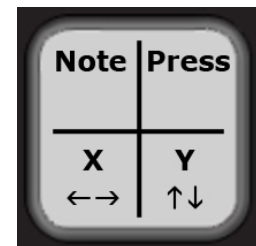
- For your convenience the red LEDs for each corner will illuminate after the note or CC# is sent out.

When Pads are in **Grid Mode** a Note and Pressure CC# are in each corner. Quickly tap the corner to output the Note. Press and hold for 1 second to output the Pressure CC#.

- A red LED will illuminate for each Note sent out and a green LED will illuminate for each Pressure CC#.

- **Sliders** - to output the Note quickly tap the slider, press and hold for 1 second to output the Pressure CC#, and press and drag a finger to output the Location CC#. To output the Width CC# for the Long Slider press and hold with 2 fingers.

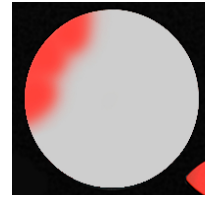
The red LEDs will illuminate when the Note is sent out, the green LEDs will illuminate for the Pressure CC#, and the yellow LEDs will illuminate for the Location CC#. The blue LED on the Long Slider will illuminate when the Width CC# is sent out.



- **Rotaries** -

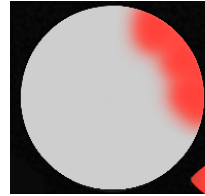
Note - Press and hold the rotary in the top left sector.

- The LEDs in the top left will illuminate as soon as the note is sent out. (As shown in image to the right).



Pressure CC# - Press and hold the rotary in the top right sector.

- The LEDs in the top right will illuminate. (As shown in image to the right).



Location CC# or Direction CC# - Press and hold the bottom sector of the rotary.

- The LEDs along the bottom will illuminate. (As shown in image to the right).



- **Buttons** - To output the Note quickly tap the button. Press and hold for 1 second to output the Pressure CC#. 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. Use the bank buttons to shift through banks, then map the MIDI data for each of the Slider or Rotary banks.

Tip: 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 Notes or Pressure turned off. When data sources are turned off, they will not output in CoMA mode.

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.

Preset 1: (Drum C1-D#2 / Serato)

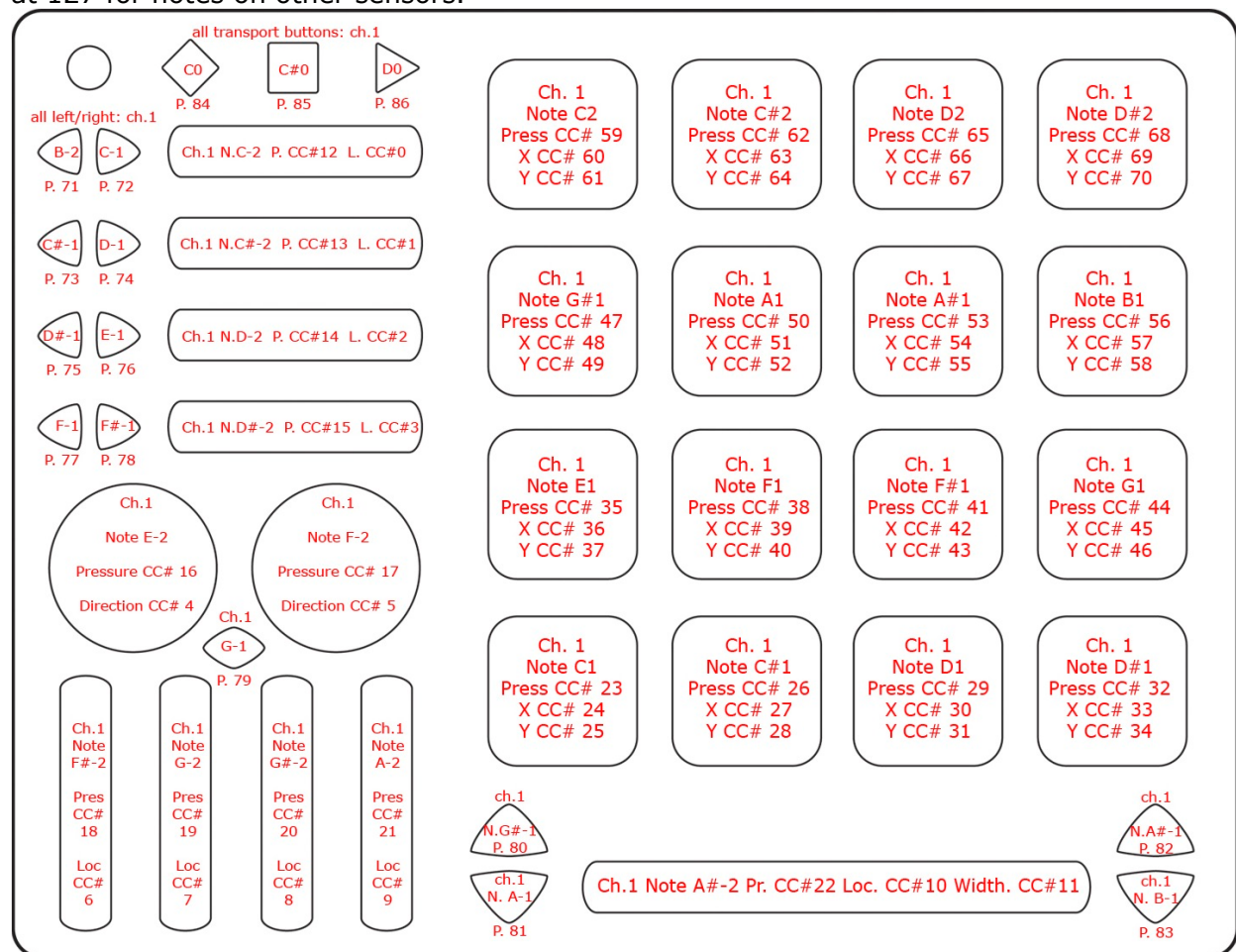
Preset 2: (Drum E2-G3)

Preset 3: (Drum G#3-B4)

Preset 4: (Drum C5-D#6)

Presets 1-4 are the same except the pad notes increment up as the preset # increases. So the pad notes on preset 1 are shown below from C1-D#2, preset 2 are from E2-G3, preset 3 are from G#3-B4, and preset 4 are from C5-D#6.

These presets are in Drum Mode and don't use banks. Rotaries are set to use Direction instead of Location. Pass Thru Widths for the rotaries are set to 127. The Pad X/Y Return values are set to 63. Velocity response is enabled for all notes on the Pads; velocity is fixed at 127 for notes on other sensors.



Our Serato Template uses Presets 1-3 and is included in the QuNeo Software Installer.

Scratch Live (Serato) Mappings for Preset 1, 2, & 3:

Global:

- 1. LOAD Deck 1** - loads the selected track from the main track library or crate to Deck 1
- 2. LOAD Deck 2** - loads the selected track from the main track library or crate to Deck 2
- 3. Track Library Browse** - Browse Up and Down a crate or the main Track Library.

SERATO CUE / LOOP PAGE - PRESET 1

A. Left Deck - Represents Deck 1

B. Right Deck - Represents Deck 2

QuNeo Preset 1:

A1/B1 - Trigger Cue Point 1

A2/B2 - Trigger Cue Point 2

A3/B3 - Trigger Cue Point 3

A4/B4 - Trigger Cue Point 4

A5/B5 - Play

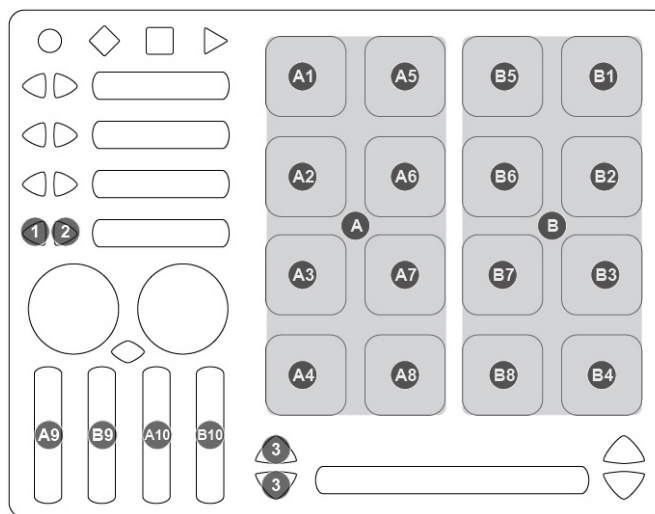
A6/B6 - Loop In

A7/B7 - Loop Out

A8/B8 - Loop On/Off

A9/B9 - DJ/FX Select

A10/B10 - DJ/FX Amount



SERATO SET CUE POINTS - PRESET 2

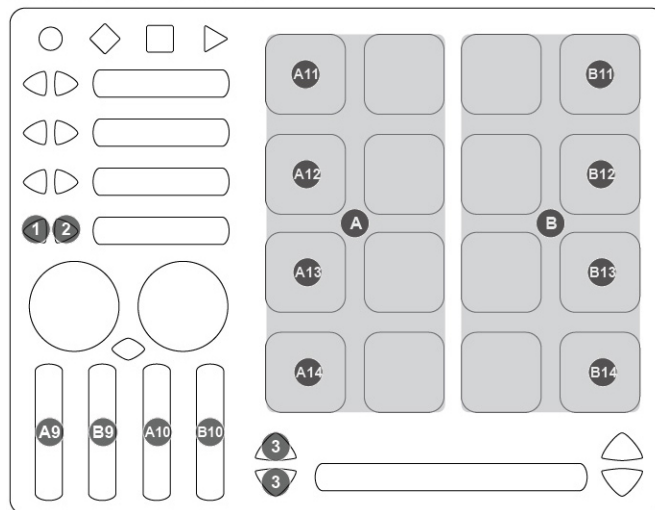
QuNeo Preset 2:

A11/B11 - Set Cue Point 1

A12/B12 - Set Cue Point 2

A13/B13 - Set Cue Point 3

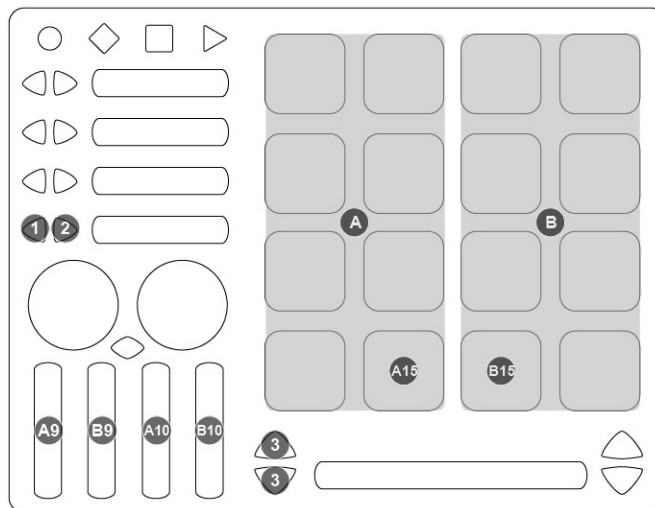
A14/B14 - Set Cue Point 4



SERATO DJ-FX PAGE - PRESET 3

QuNeo Preset 3:

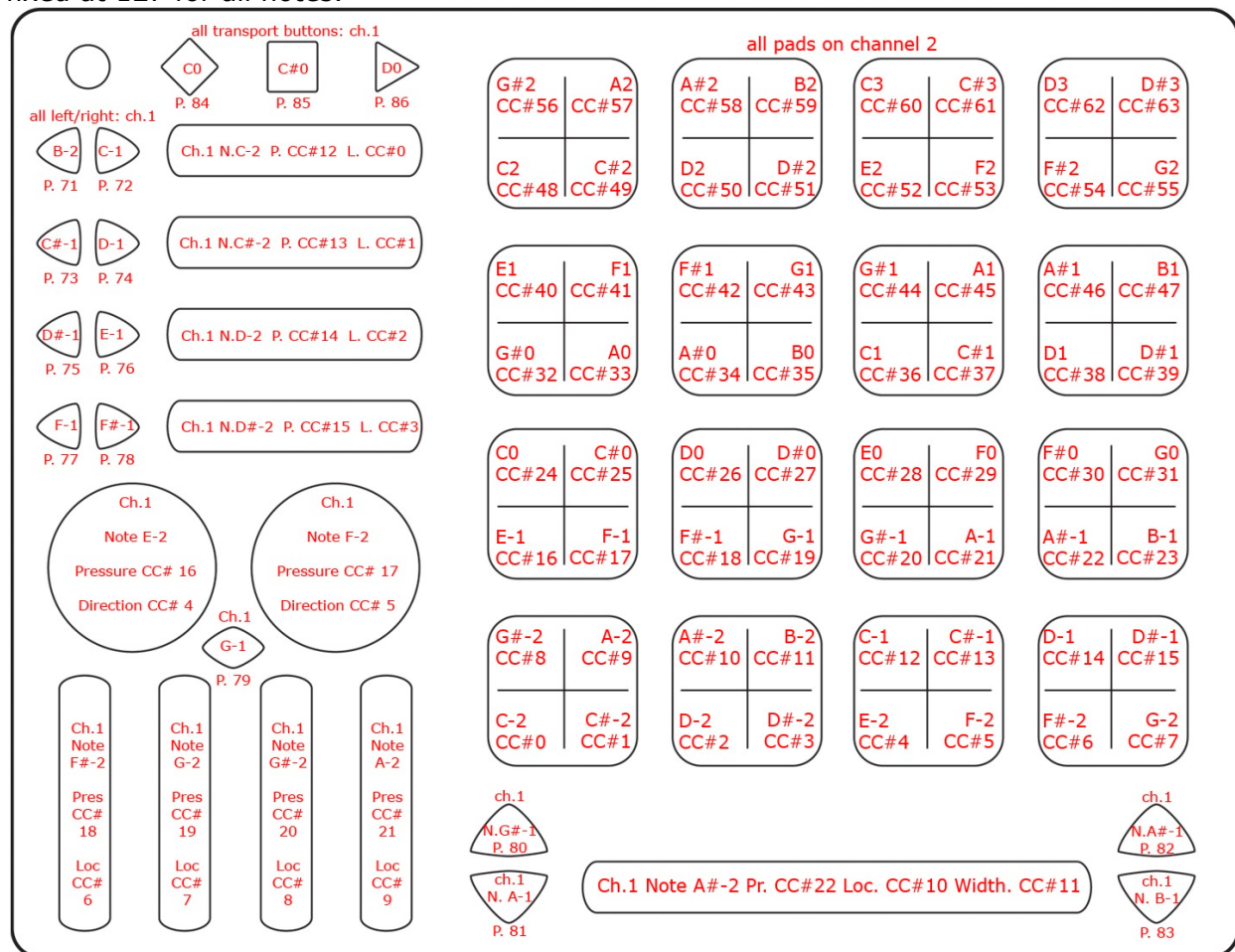
A15/B15 - DJ/FX On/Off



Preset 5, 6, 7, & 8 (Grid Mode):

Presets 5-8 are the same except the Pad channels increment as the preset # increases.

These presets are in Grid Mode and don't use banks. Rotaries are set to use Direction instead of Location. Pass Thru Widths for the rotaries are set to 127. Velocity response is fixed at 127 for all notes.



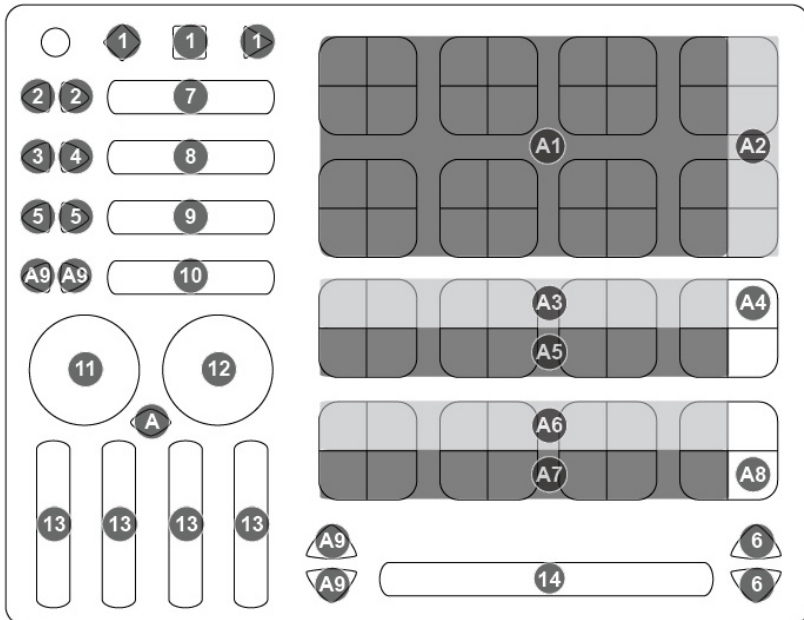
Presets 9 (Ableton Live Clip Launching):

The QuNeo Ableton Live Remote Control Surface contains a variety of Modes. Modes remap the 8x8 Grid and non Global Buttons into various functions for Ableton Live. Modes include Clip Launch, Step Sequencer, and Note Mode. When the Ableton Live Remote Control Surface is loaded it initializes Mode 1 (M1 - Clip Launch Mode). The image and corresponding text below summarizes Clip Launch Mode.

M1. CLIP LAUNCH MODE

GLOBAL CONTROLS:

- 1.** Transport Controls
- 2.** Tempo
- 3.** Metronome
- 4.** MIDI Overdub
- 5.** Track Navigation
- 6.** Scene Navigation
- 7.** Selected Track Send A
- 8.** Selected Track Send B
- 9.** Selected Track Pan
- 10.** Selected Track Volume
- 11.** Selected Clip Loop
- 12.** Selected Clip Loop End
- 13.** Volume Faders
- 14.** Crossfader



M1. CLIP LAUNCH MODE Controls:

Clip Launch Mode represents an overview of the current Ableton Live Session. Clip Launch Mode enables the QuNeo to launch clips within Ableton's clip slots and control volume parameters assigned to the first 4 volume Sliders within Ableton's highlighted red box. Other controls include: overdub - on/off, metronome - on/off, tempo - up/down, and transport functionality including: play, stop, and record.

A1. CLIP LAUNCH - These Pads launch clips within Ableton's clip slots.

A2. SCENE LAUNCH - Rows in the Session View are called scenes. All clips in a scene can be launched simultaneously by clicking the corresponding SCENE LAUNCH button in the column. These buttons trigger a row of clips within the session. A row is known as a "SCENE". When triggered, all of the clips in the selected scene will play.

A3. CLIP STOP - Push to stop the currently playing or recording clip corresponding to the correct track.

A4. STOP ALL CLIPS - Push to stop all playing and recording clips in the session.

A5. TRACK ACTIVATOR - Activate this button to hear the track, or deactivate it to mute the track.

A6. SOLO / CUE - Activate this button to solo the track, or deactivate it to unsolo the track.

A7. RECORD ARM - Active this button to Arm the track, or deactivate it to unarm the track.

A8. BANK SELECT - These allow the user to move the highlighted 7 x 4 red box around the session LEFT/RIGHT/UP/DOWN

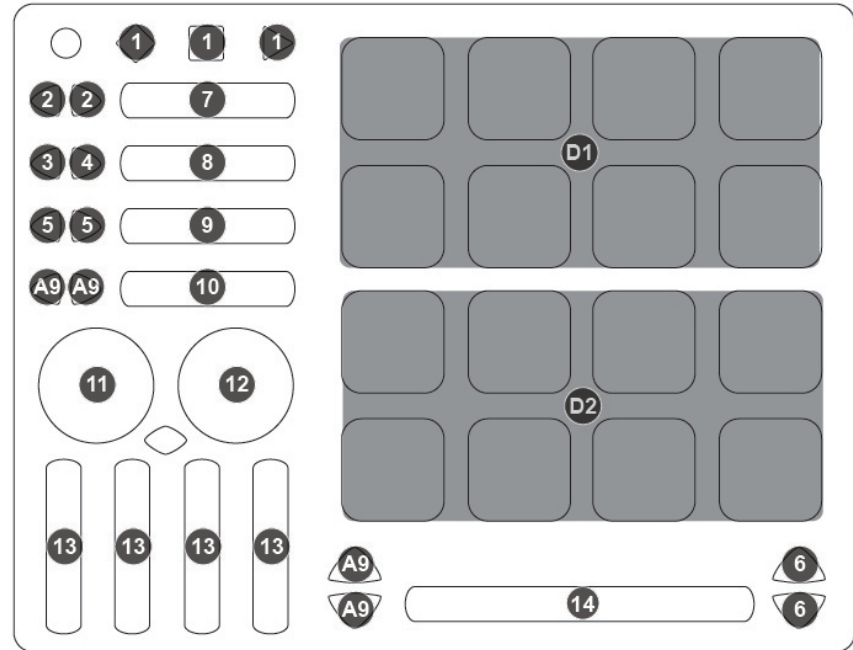
A9. SELECTED CLIP LAUNCH - Push to launch the currently selected clip.

Presets 10 (Ableton Live Drum Rack):

GLOBAL CONTROLS:

1. Transport Controls
2. Tempo
3. Metronome
4. MIDI Overdub
5. Track Navigation
6. Scene Navigation
7. Selected Track Send A
8. Selected Track Send B
9. Selected Track Pan
10. Selected Track Volume
11. Selected Clip Loop
12. Selected Clip Loop End
13. Volume Faders
14. Crossfader

PRESET 10 - DRUM MODE



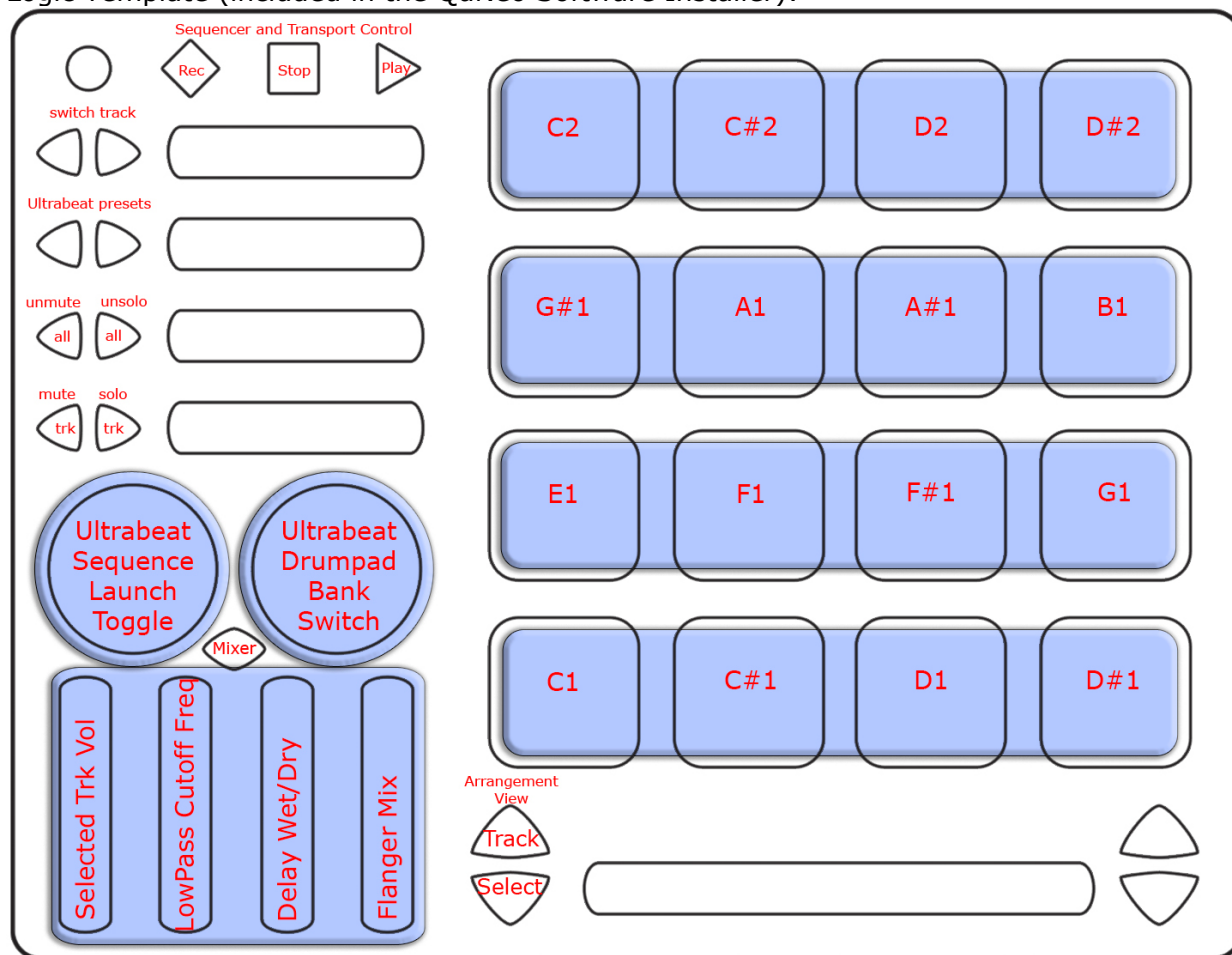
Preset 10

D1. Drum Rack - These Pads are Assigned to Drum Rack's C1-G8 Cell slots.

D2. Impulse - These Pads are Assigned to Impulses 8 Sample cells.

Preset 11 (Logic):

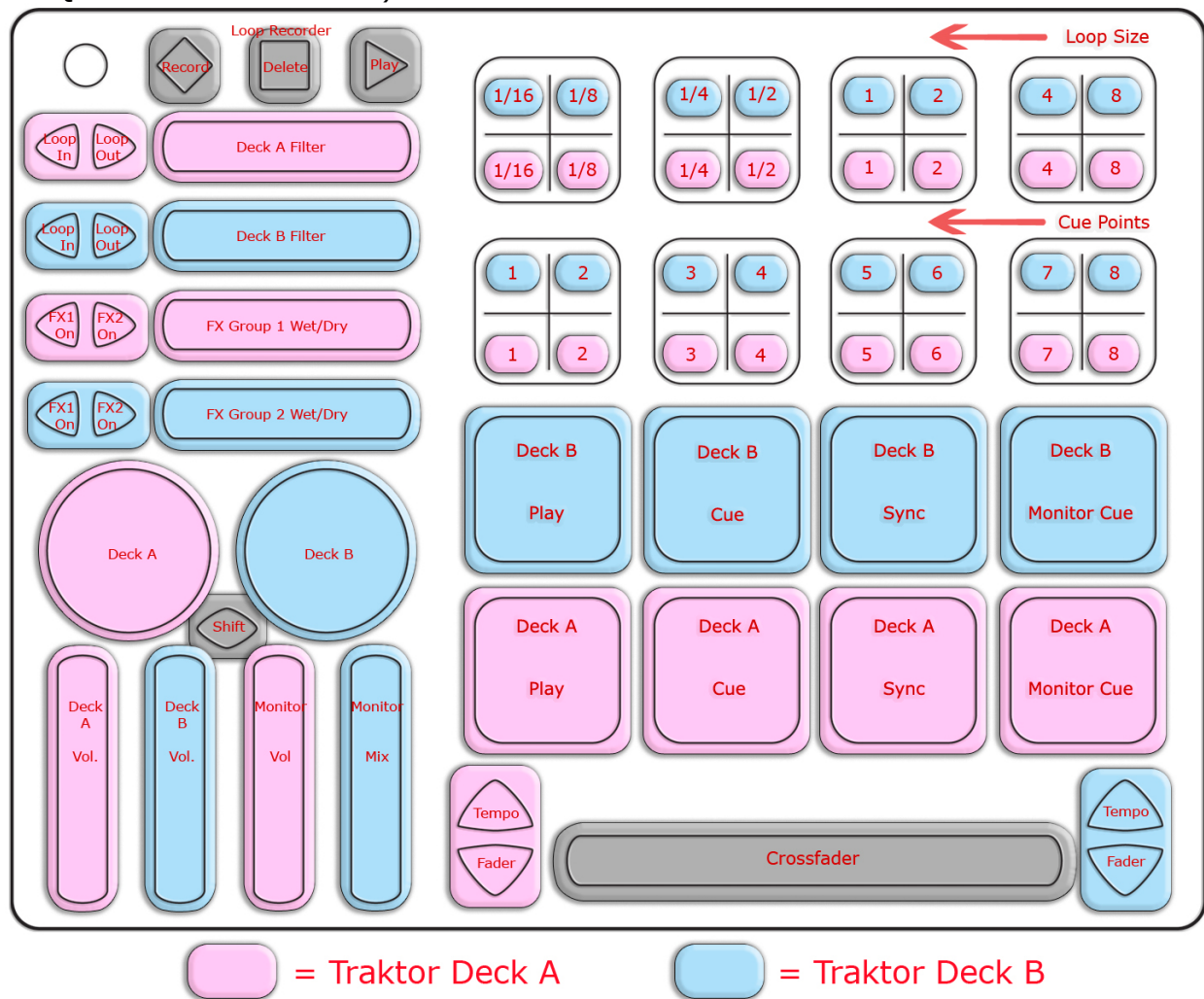
This turns QuNeo into a drum synth controller using the Ultrabeat software instrument that comes with Apple's Logic Pro. Below is an image showing how this preset is mapped to the Logic Template (included in the QuNeo Software Installer):



Preset 12 (Traktor - DJ / Mixxx):

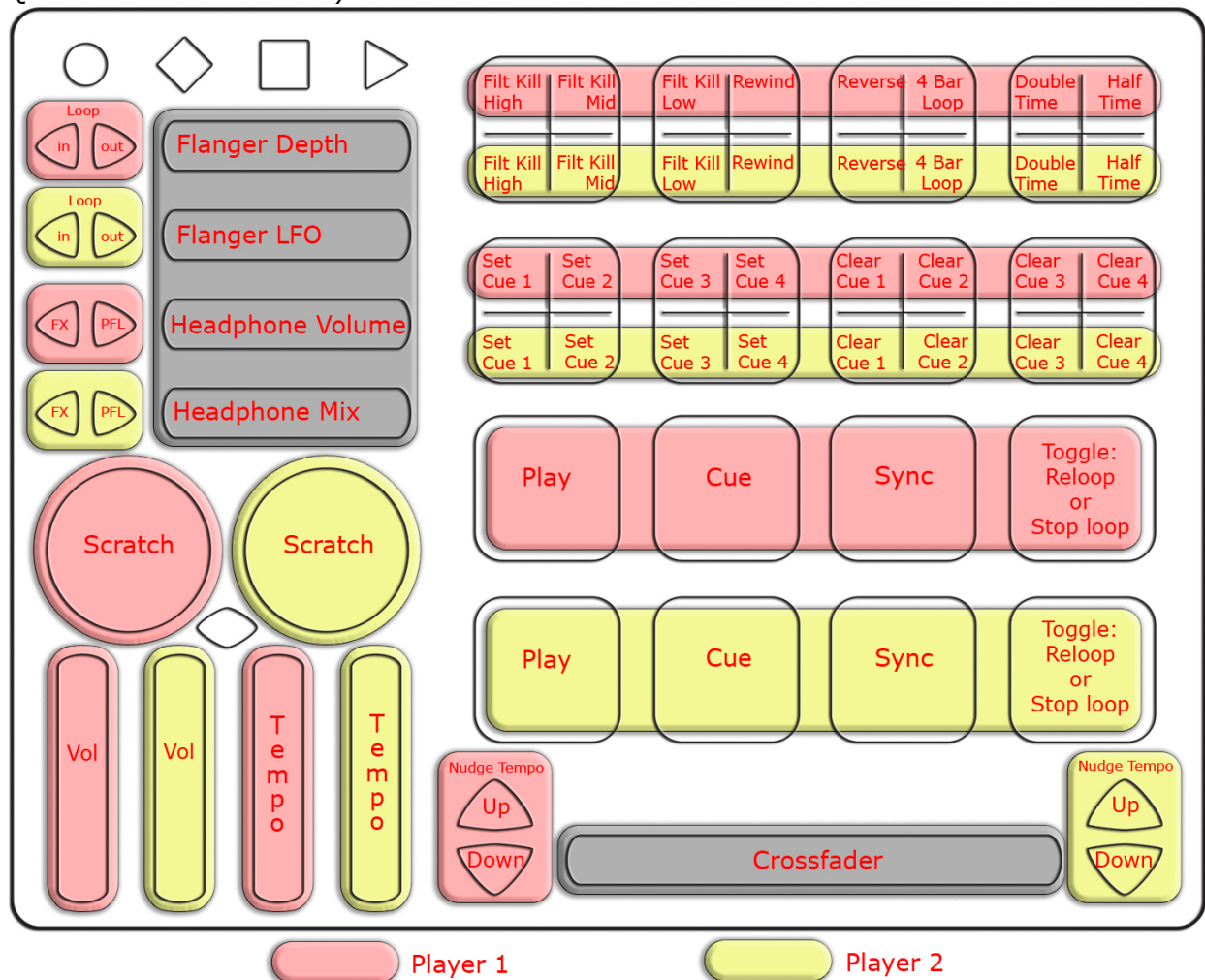
The Traktor DJ Preset turns QuNeo into a full fledged DJ controller for Native Instruments' Traktor. This preset is designed with a more traditional approach to digital DJing in mind, with play, sync, cue, monitor, fx, filter, loop points, cue points, crossfading, deck control, and various volume controls accessible from QuNeo. In addition, this preset takes advantage of the modifier functions, creating a Shift button on QuNeo that allows for sample playback, extended mixing, and more in depth FX control.

The image below shows what each sensor controls in our Traktor DJ Template (included in the QuNeo Software Installer):



This preset turns QuNeo into a full fledged DJ controller using Mixxx as well. It includes controls for 2 players: play, sync, cue, tempo controls, crossfading, scratching, and various volume controls accessible from QuNeo.

The image below shows what each sensor controls in our Mixxx Template (included in the QuNeo Software Installer):

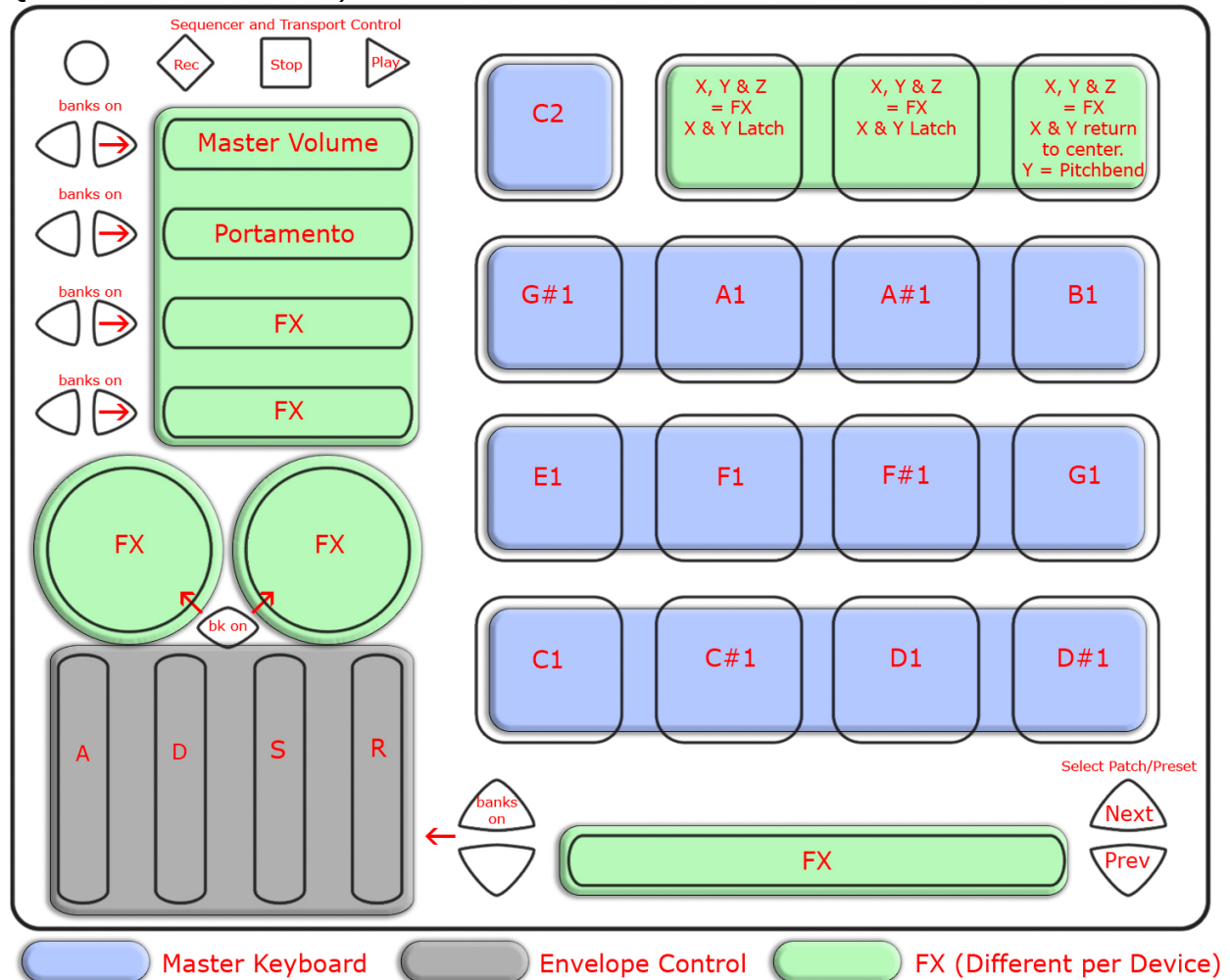


For more information about using the Traktor or the Mixxx Template read their Quickstart documents in the QuNeo directory's "Software Templates/Traktor 1.0" and "Software Templates/Mixxx 1.0" folders.

Preset 13 (Reason):

The Reason Preset turns QuNeo into a full fledged master keyboard controller for Propellerhead's Reason. The pads give one octave of notes while sliders control an ADSR envelope and various effects parameters.

The image below shows what each sensor controls in our Reason Template (included in the QuNeo Software Installer):

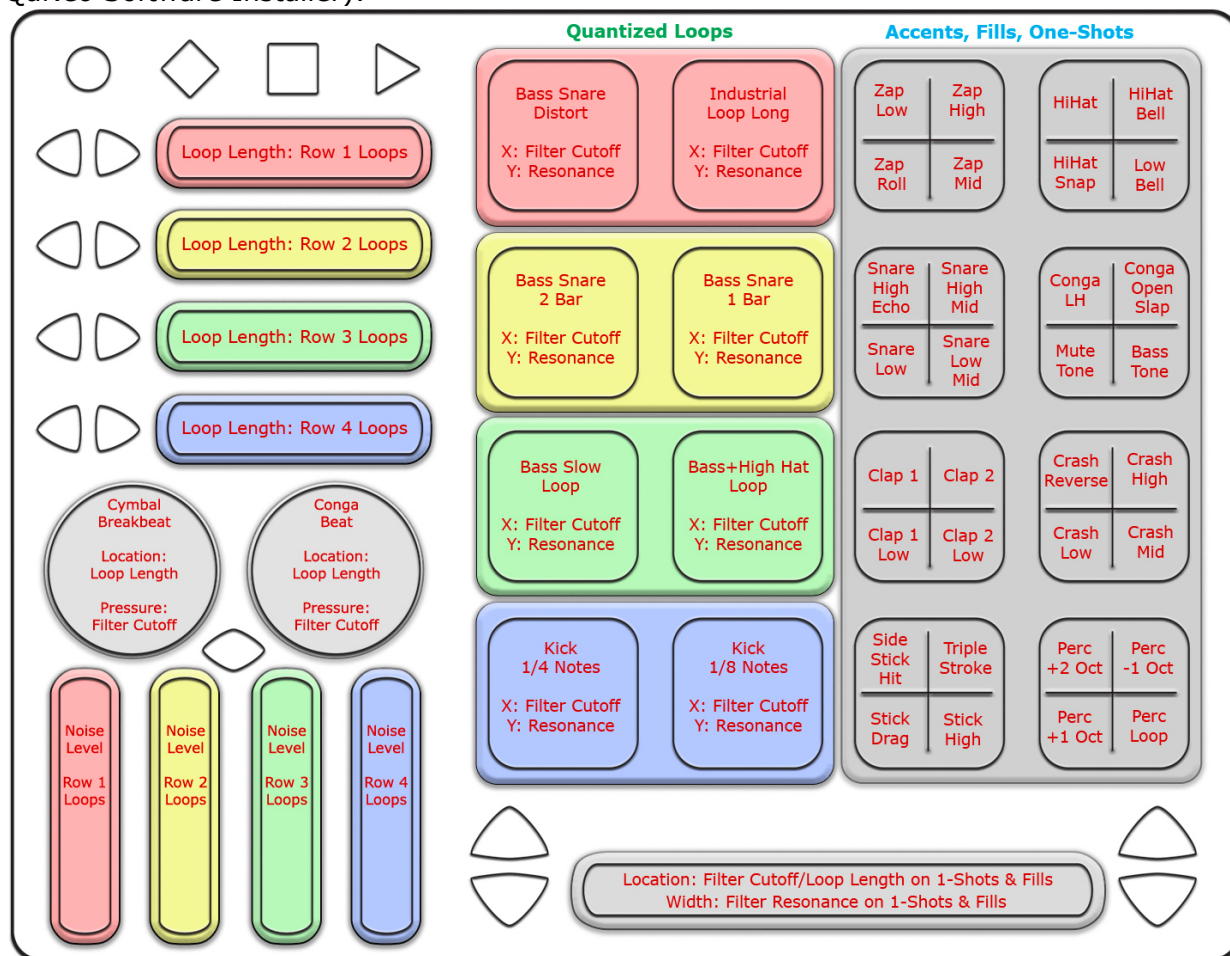


For more information about using the Reason Template read the Reason Template Quickstart document in the QuNeo directory's "Software Templates/Reason 1.0" folder.

Preset 14 (Battery):

This preset is for use with our Native Instrument's Battery 3 template file. This template will turn the QuNeo into a sampler with loops on the left 8 pads and both rotaries and quick drum hit samples on the right 8 pads. The sliders provide additional control and effects.

The image below shows what each sensor controls in our Battery Template (included in the QuNeo Software Installer):



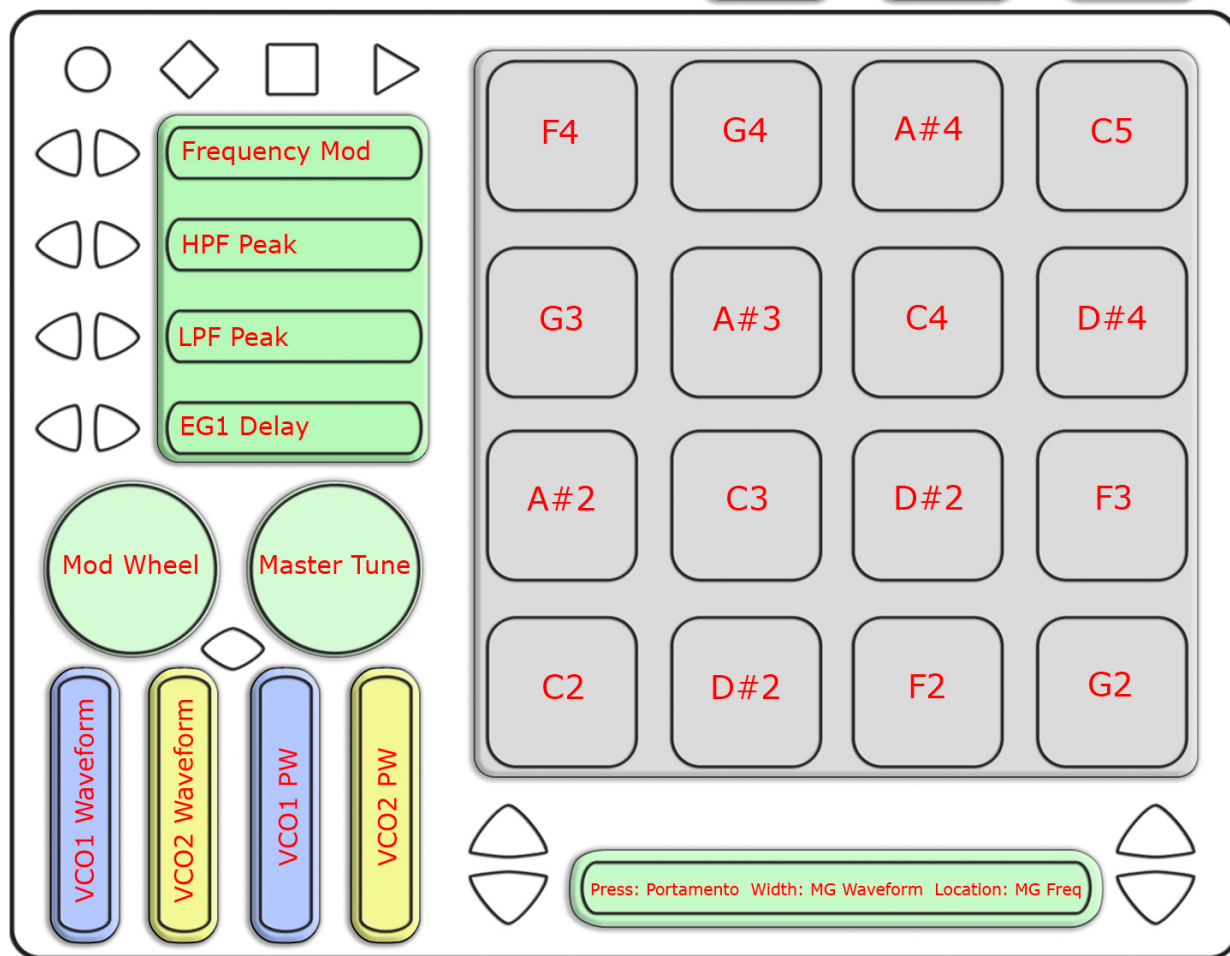
For more information about using the Battery Template read the Battery Template Quickstart document in the QuNeo directory's "Software Templates/Battery 1.0" folder.

Presets 15 (iMS-20 - iPad):

This preset is for use with Korg's iMS-20 synthesizer for iPad. This allows the QuNeo to play minor pentatonic notes from the iMS-20 and adjust voltage controlled oscillators and effects. Each pad will send out the same pressure CC# to control a low pass filter cutoff frequency. The X axis of each pad will control the first voltage control oscillator. The Y axis of each pad will control the second voltage control oscillator. The Horizontal Sliders and the Long Slider control effects. Use the Rotaries to control the mod wheel and the tuning. The Vertical Sliders control the VCO waveforms and pulse width.

The image below shows what each sensor controls in the iMS-20 synthesizer:

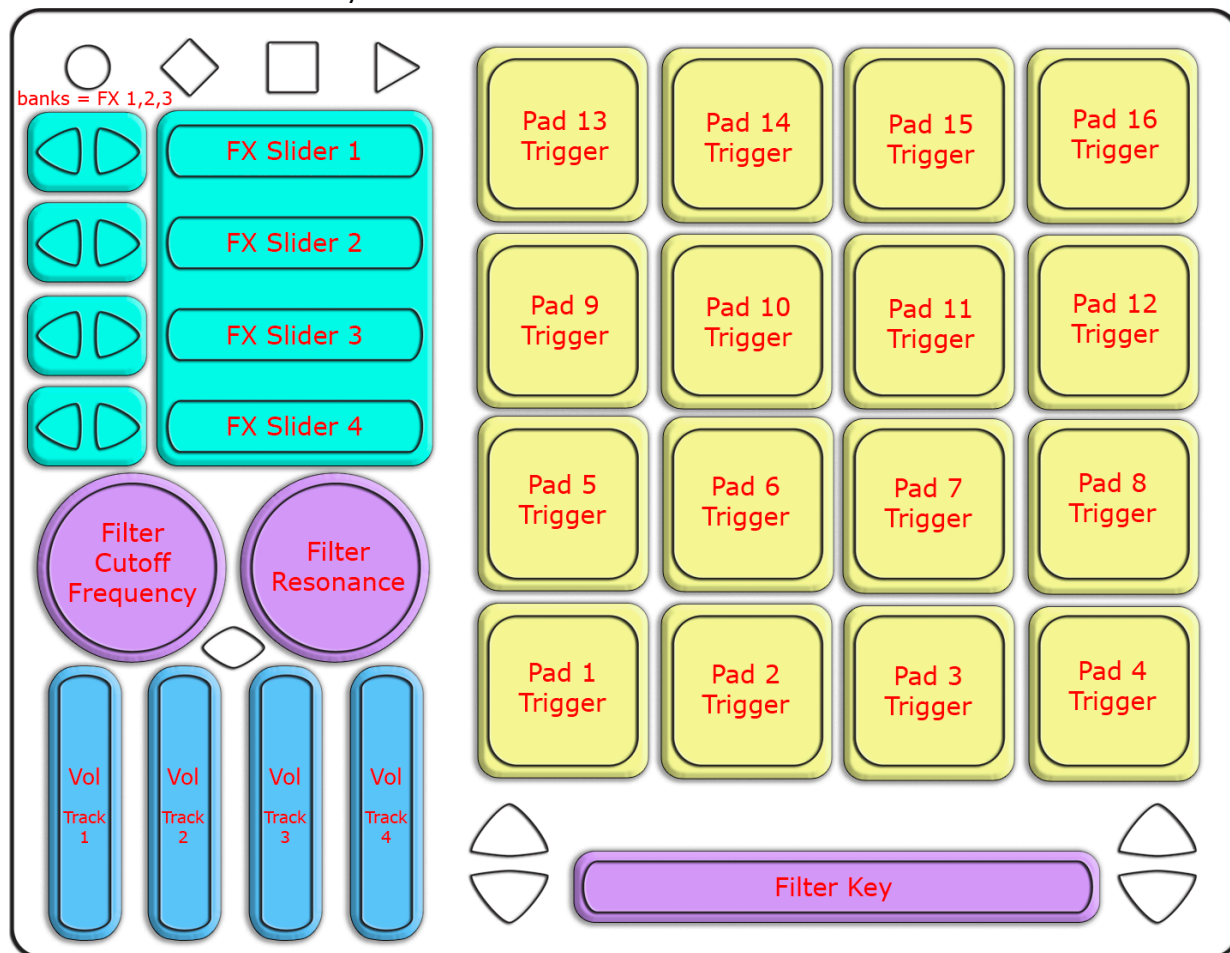
All Pads: Pressure = LPF Cutoff X = VCO1 Scale Y = VCO2 Scale



For more information about using the iMS-20 Template read the iMS-20 Template Quickstart document in the QuNeo directory's "Software Templates/iPad 1.0/iMS-20 1.0" folder.

Preset 16 (BeatMaker - iPad):

Below is an image showing how the QuNeo is mapped to BeatMaker's controls in factory preset #16. Each pad is in Drum Mode and outputs a MIDI note to trigger one of BeatMaker's drum pads. The vertical sliders each output a location CC to control the volume for tracks 1-4 in BeatMaker. The horizontal sliders are set up to control the first four sliders on the currently selected track's effects. Using the bank buttons next to the horizontal sliders you can access control for all three of a track's effects (bank four has nothing set as there are a maximum of three effects per track). The left rotary is mapped to filter cutoff frequency and the right rotary is mapped to filter resonance. The long slider controls a track's filter key.



For more information about using the BeatMaker Template read the BeatMaker Template Quickstart document in the QuNeo directory's "Software Templates/iPad 1.0/BeatMaker 1.0" folder.

QuNeo LED Behavior

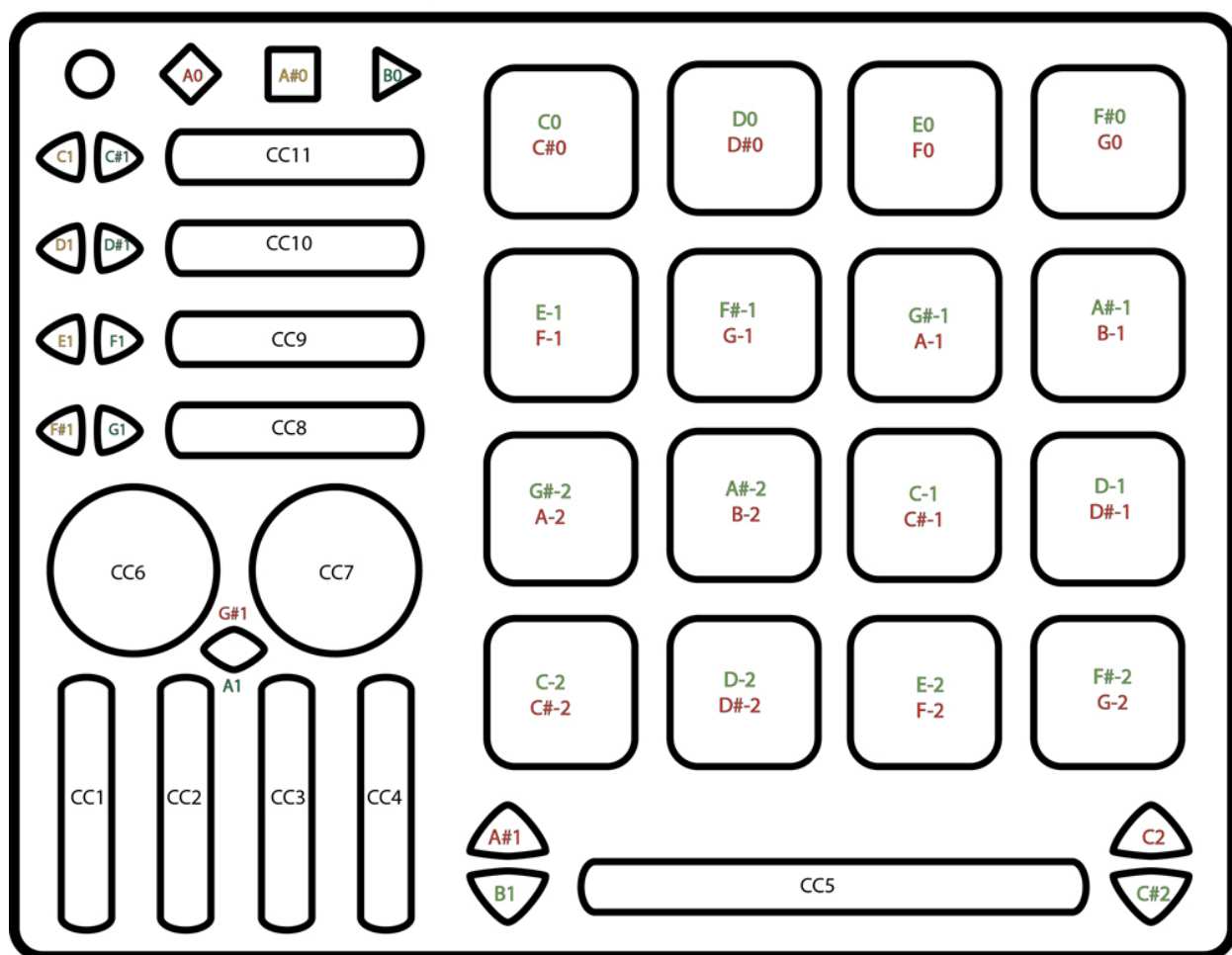
QuNeo's LEDs provide many great ways to visualize interactions with the QuNeo. Local or Remote control is available. **Local LED Control** means the action on sensors will determine the LED behavior. **Remote LED Control** means note or CC Data being sent to the QuNeo will determine LED behavior. Local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

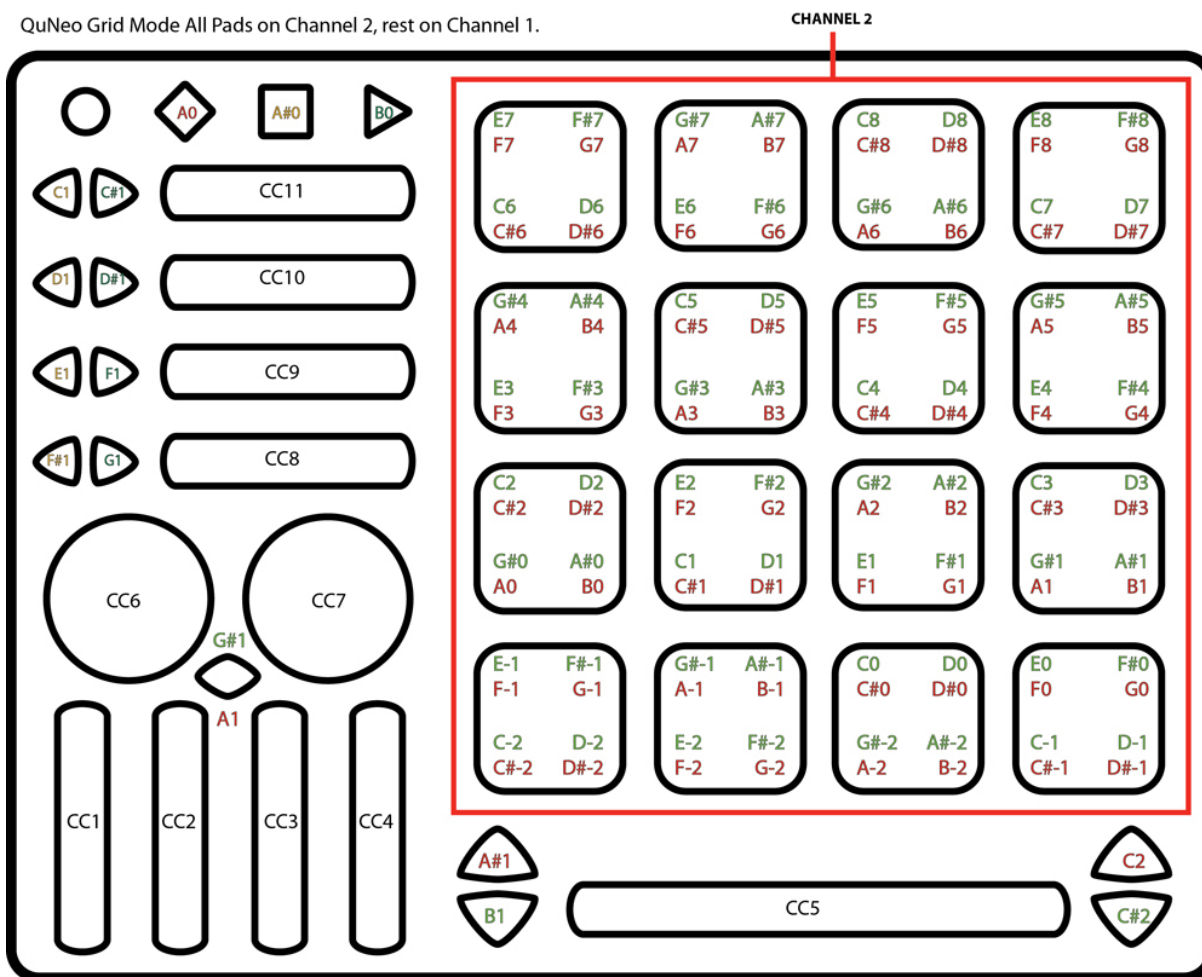
Local LED Control - Without sending LED messages to the QuNeo from another application or device, the QuNeo's LEDs will automatically respond to touch. Local LED Control is the QuNeo's built-in LED behavior and will override any currently incoming Remote messages.

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. You can disable Local LED control using the editor.

Here are the guides that show what MIDI data the QuNeo will accept to control LEDs remotely. The LEDs on the pads will respond to the velocity of the notes to determine the brightness:

QuNeo Drum Mode LED Map. All On Channel 1





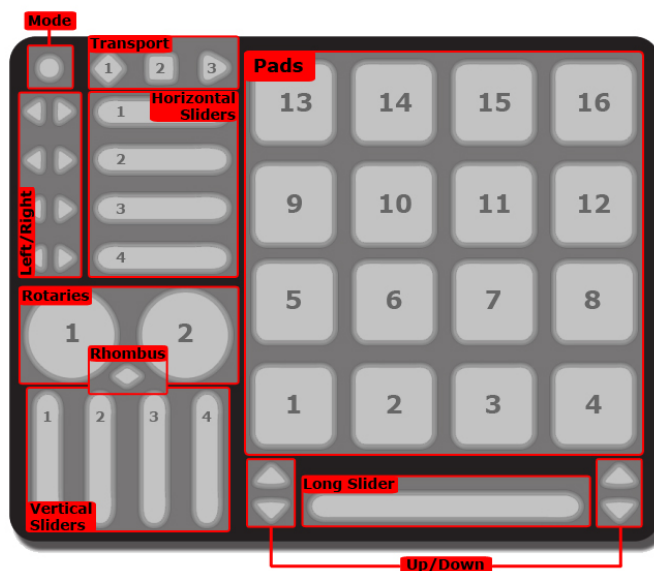
It is also possible to use 1 note per corner. In this case the velocity of the note will fade the LEDs from green to red. Send the notes in the image to the right to QuNeo on **Channel 3**.



QuNeo Data Sources and Sensor Output

There are many useful types of sensors that can be found on the QuNeo. Each sensor type has the ability to send out multiple MIDI messages at once for several different kinds of sources.

- **Pad** sources in Drum Mode include Note, Pressure, X-Axis, and Y-Axis. Grid mode includes a note and a pressure CC# in the corners of each pad. X and Y are not available in Grid Mode.
- **Horizontal and Vertical Sliders** use Note, Pressure, and Location.
- The **Long Slider** uses Note, Pressure, Location, and Width.
- The **Rotaries** use Note, Pressure, Location, and Direction. Location and Direction may not be enabled simultaneously.
- **Transport Buttons** use Note and Pressure.
- **Left/Right** and **Up/Down Buttons** use Note and Pressure (unless they are assigned as bank switches).
- The **Rhombus** button uses Note and Pressure (unless it is assigned as a bank switch).



Source Definitions

Note - Tapping on the sensor causes 1 note to output along with a velocity value relative to how hard it is hit. Velocity sensitivity can be turned off if unwanted.

Pressure - Pressing on the sensor will cause the pressure CC# value to output from low to high (soft to hard).

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

Y-Axis (vertical/top to bottom) - Pads only. Moving a finger up and down across the surface of a pad will cause the Y-Axis CC# value to output going from low to high (bottom to top).

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

Width - pressing with two fingers on the Long Slider 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.

Direction - Moving a finger around a 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.





Consult the [Factory Preset Guides](#) to determine which of the sources for each sensor are enabled in a given preset.

Banks





Banks can be used for the sliders and rotaries if enabled. If banks are enabled for the sliders or rotaries, a different note, pressure CC#, and location CC# can be assigned for each bank so that each slider or rotary can control 4 different things. These banks will be selectable using either the Left/Right Buttons, the Up/Down Buttons, or the Rhombus Button.

The presets determine whether the sliders and rotaries have banks enabled and which buttons are assigned as bank switches. Consult the [Factory Preset Guides](#) for this information.





The **Horizontal Slider** banks are controlled individually by their neighboring **Left/Right arrow buttons**. The images below show how the Horizontal Slider banks are indicated with the Left/Right Button LEDs:

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

In our presets, the **Vertical Slider** banks are all controlled using the nearest **Up/Down Button** pair. The **Long Slider** banks are controlled using the **Up/Down Button** pair on the right side of the Long Slider. The images below show how the Vertical and Long Slider banks are indicated with the Up/Down Button LEDs:

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

In our presets, the **Rotary** banks are both controlled using the **Rhombus** Button. The images below show how the Rotary banks are indicated with the Rhombus Button LEDs:

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

Using the QuNeo Editor, the bank controls for the Vertical Sliders, the Long Slider, and the Rotaries can be chosen. Both Up/Down Button Pairs and the Rhombus Button can be assigned to one of these sensors if editing presets in the Editor. See the "QuNeo Editor Manual" for more information about editing presets.

If you experience any problems or have questions regarding the QuNeo install process submit a support request (<http://www.keithmcmillen.com/support>) 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.