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# Using the Button LED Matrix (BLM)

Forum Discussion Thread - for comments, corrections, or questions about this article

I've written the article below based on the 16×8+X Novation Launchpad BLM implementation, but whichever BLM you're using, the interface works more or less the same way. There are many other BLM options - you can build a hardware BLM, you can use an iPad with the Lemur BLM Emulator, or you could use the Windows/MAC/Linux BLM emulator software.

You should also read the BLM Section of the Official SEQ Manual.

## Control Buttons

The “+X” in 16×16+X refers to the control buttons. These are located along the sides and at the top/bottom of the BLM depending on your BLM configuration.

### SHIFT Button

The SHIFT Button doesn't exist on the Novation Launchpad BLM. On the Hardware BLM, the shift button is located in the lower left corner. It doubles as a beat indicator, flashing its LED on with every beat as the SEQ is playing.

On Hardware BLMs which have only one extra vertical column of control buttons, the SHIFT button is used to change the function of the extra vertical column. Normally, the vertical column is used to select tracks. When SHIFT is held, the extra column provides view select and start/stop buttons. When SHIFT is pressed, the top two extra column buttons are START and STOP, and the bottom buttons activate 303 View, Keyboard View, Pattern View, Track View and Grid View. Since ALT was introduced, the lowermost button in the extra column is the ALT button.

Since Version 1.1 of the PC/MAC/Linux BLM Emulator software, there is a second extra column of control buttons providing direct access to the START/STOP, view select and ALT buttons. Prior to V. 1.1, the SHIFT button had to be activated to access those buttons. Since a user with a mouse can only click one button at a time, the SHIFT button could be activated with the spacebar.

### ALT Button

The ALT Button was intruduced with V. 1.2 of the PC/MAC/Linux BLM Emulator software to address some of the limitations of a 16×8+X layout (primarily the lack of control buttons and the need to access more than one octave of notes). It has a variety of different functions, depending on which view you are in. These functions will be described in more detail below in the sections for each view.

The main functions of the ALT button are: - in GRID and KEYBOARD view, ALT+track select buttons select the octave which is displayed on the BLM. - 16×8+X BLMs can only display 8 DRUM tracks at a

time in GRID view. ALT+track select buttons select which drum instruments are displayed on the BLM. This is only required for drum tracks with more than 8 instruments. - in TRACK view, ALT+track select buttons selects which of the Trigger Layers is displayed. - in PATTERN view, ALT+pattern slot button quick-saves the current pattern into that slot.

### Step Select Buttons

The extra row of buttons along the top or bottom of your BLM are the Step Select Buttons. These buttons work like the STEP select button on the SEQ Frontpanel. Each “page” of the BLM can only display a certain number of steps - on a 16x…+X BLM, 16 steps are displayed. Using these buttons, you can move through up to 16 pages of steps, to access a total of 256 steps (the maximum track length.)

The LEDs on these buttons serve as indicators of (1) which page of steps is currently displayed on the BLM (indicated in Green on the Novation Launchpad version); AND (2) which page of steps is currently playing (indicated in Red). If the currently displayed page is also currently playing, that will be indicated in Yellow.

If the length of the currently selected track is 256 steps, then each of the 16 step select buttons will represent one page of steps. However, if the track is shorter, then a group of 2 or 4 step select buttons will represent one page. For a 128 step track, there will only be 8 pages of 16 steps, so groups of 2 step select buttons will represent one page. For a 64 step track, four buttons will represent one page.

You'll notice that as you page through steps using the STEP button on your SEQ frontpanel, the steps displayed on the BLM change as well. And vice-versa: When you move through pages of steps on your BLM, the steps displayed on the SEQ LCDs change as well.

### Track Select Buttons

Press the buttons on the left side of the BLM to select which of the SEQ's 16 tracks you're working with. On the Novation Launchpad 16×8+X BLM, there are only 8 buttons on the left side. The third button from the top in the column of right-side control buttons toggles the track select buttons between tracks 1-8 (indicated in Green) and 9-16 (indicated in Red).

You can also mute and unmute tracks using the Track Select buttons - muted tracks are indicated in Red.

You'll notice that when you switch tracks using the buttons on your SEQ frontpanel, the track displayed on the BLM changes as well. And vice-versa: When you switch tracks using the BLM Track Select buttons, the track displayed on the SEQ LCDs changes as well.

## BLM Views

### Grid View

### Track View

### Pattern View

### Keyboard View

### 303 View

303 View is not accessible on 16×8+X BLM configurations.

## Differences Between the Various BLM Implementations

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