ROLI Loop Block
Creator Manual

September 2016

Introduction

Hello creator, and welcome to the Creator Manual for the Lightpad Block. We think of the people who buy and use ROLI's products as creators more than customers. Our products are designed to expand the bandwidth of creative expression and thereby empower people as the creators they are. Everyone who buys and uses BLOCKS is investing in this vision of creativity and therefore is also a co-creator of ROLI.

You may already be playing your BLOCKS and discovering its creative possibilities. This comprehensive Creator Manual explains all of the details about your Lightpad Block to ensure that you get the most out of it.

BLOCKS is a modular, digital music making platform which open new possibilities for musical expression and is the world's first truly mobile music studio. The individual Blocks are user-configurable and connect to each other magnetically in countless ways to suite your specific musical needs or style. There are currently 3 different Blocks to choose from: The Lightpad Block, the Loop Block, and the Live Block.

On the next page we have included a short list of terms specific to BLOCKS. We will refer to these terms throughout this Creator Manual.

Please note that this is a digital manual updated regularly to reflect software updates and other improvements. Be sure to check for updates on noise.fm. This Manual is current up to **NOISE** v1.1.57.

Support and Feedback

We want you to have the best experience possible with our products and would love to hear your feedback. Should you have any questions, are experiencing any problems, or just want to say hello, please don't hesitate to get in touch.

The easiest way to reach us is to send a support enquiry from: noise.fm or www.support.roli.com. We will respond as quickly as possible.

Table of Contents

Glossary of Selected Seaboard GRAND Terms

Glossary of selected BLOCKS terms

BLOCKS: BLOCKS refers to the MIDI-over-Bluetooth enabled Lightpad Block, Live Block, and Loop Block coupled with the NOISE App. Together these components create a modular, digital music making platform which open new possibilities for musical expression through the use of 5D Touch. BLOCKS can be physically connected to each other magnetically in multiple configurations and and connect with the NOISE App wirelessly. BLOCKS is the world's first truly mobile music studio .

Block(s): refers to the individual Blocks that make up a BLOCKS system. The Lightpad Block, Loop Block, an Live Block are all examples of Blocks.

Control Block: refers to one of the two currently available Blocks that allow for realtime recording and manipulation of 5D Touch musical performances. The Live Block and Loop Block are both examples of Control Blocks.

DNA Connector: Proprietary ROLI magnetic connector which serves two purposes: 1.) to connect the Blocks together and hold them in place. 2.) to serve as a charging port

The Five Dimensions of Touch (5D Touch): The feature of real-time control and modulation of sound through the basic movements of: **Strike, Press, Glide, Slide, Lift.**

- **Strike:** The velocity and force with which a finger makes contact with the **Lightpad Surface**.
- **Press:** The pressure and continuous touch applied to the **Lightpad Surface** after the initial **Strike**.
- **Glide:** Horizontal left and right movements on **Lightpad Surface**.
- **Slide:** Vertical movements up and down the **Lightpad Surface**.
- **Lift:** The release velocity or speed of liftoff from **Lightpad Surface**.

Grid Mode: Grid mode selects the number of active areas on the Lightpad Touch when you are playing in Drum Mode. Resolutions of 1x1, 2x2, 3x3, 4x4, and 5x5 are possible.

5x5: Melodic Grid
4x4: Clip triggering/ Drum Kit Option 1
3x3: Drum Kit Option 2
2x2: Drum Kit Option 3
1x1: Controlling FX

Lightpad Surface: the 15 x 15 LED matrix made up of individual cells (225) and covered with laser etched silicone which makes up the surface of the Lightpad Block and enables users to input multidimensional or 5D Touch performances.

Lightpad Block: the 5D Touch sensitive 15 x 15 LED matrix made up of 225 individual cells covered with laser etched silicon which enable the input of 5D Touch performances.

Live Block: the Control Block which features 10 buttons and enables performers to change octave, arpeggiated, play chords or individual notes, sustain notes, change scales, and adjust volume.

Loop Block: the Control Block which features 10 buttons and enables performers to record, play, loop, snap, change grid resolution, adjust tempo, and turn click “On” or “Off”.

MPE : MIDI Polyphonic Expression (MPE) is a protocol for using standard MIDI messages to communicate with and enable the operation of multidimensional instruments such as the Seaboard RISE and BLOCKS. MPE enables multidimensional devices like the Seaboard to control multiple parameters of every note independently such as pitch, timbre and other nuances when used within MPE-compatible software like Equator. MPE accomplishes this by spreading MIDI data that pertain to each note across a range of MIDI channels and reserving one channel (usually the lowest) for global MIDI messages such as program change, pedal, and fader positions. These global messages affect all notes equally.

Media: Picture of BLOCKS Connecting to NOISE

1. Getting started

1.1 What are BLOCKS

BLOCKS is a modular, digital music making platform which opens new possibilities for musical expression through the use of 5D Touch. BLOCKS can be made up of one or more individual Blocks such as the Loop Block and Live Block and can be connected to each other magnetically in multiple configurations. The BOCKS hardware can connect with the NOISE App wirelessly and serve as the interface for the NOISE app allowing for maximum expression. BLOCKS is the world's first truly mobile music studio.

1.2 System Requirements

iOS 9.0 and up
iPhone 6 or higher
3rd generation iPad or higher

1.3 The NOISE App

The NOISE application is the musical heart of BLOCKS. NOISE is available for free in the Apple App Store. The NOISE app is a very powerful mobile instrument that can take advantage of the 3D Touch capabilities of the iPhone 6 and iPad Pro. When paired with BLOCKS hardware via Bluetooth the combination becomes an extremely powerful mobile, modular, digital music making platform. Begin the installation process by visiting the App Store on your iPhone or iPad and downloading NOISE.

1.4 Product Registration

In order to fully unlock the potential of BLOCKS and the NOISE app, please register BLOCKS. BLOCKS can be registered either through the NOISE Application or by visiting www.noise.fm.

Launch the NOISE app on your compatible iOS device. Upon launching the BLOCKS app for the first time, you will be asked to sign in or register with noise.fm.

Registration on noise.fm makes it possible to store all of your NOISE app data such as presets, clips, projects, and songs in the cloud. You can also easily share data with other users. Just register from within the app or visit www.noise.fm and click “Register BLOCKS”

2. The Lightpad Block

2.1 Connections and Specifications

USB C Connector

The Lightpad Block features a USB C connector for charging the device or for a MIDI-over-USB connection between BLOCKS and a computer. Please see chapter 2.2 for more information about charging the Lightpad Block and Chapter 4.2 for information about the battery.

DNA Connectors

There are 8 DNA connectors in pairs of two located on all four sides of the Lightpad Touch. These connectors make it possible to magnetically attach additional Blocks such as the Live Block and Loop Block. The Lightpad Block also serves as a charging hub to charge any additional Blocks that are connected to its DNA connectors. The orientation of the DNA connectors allows for countless configurations of multiple Blocks ensuring that users can create their own perfect setup.

Power Button

The power button is located on the bottom side of the Lightpad Block. Press this button to turn it on, press and hold for approximately 3 seconds to turn the Lightpad Block off. While on, pressing this button repeatedly toggles between Bluetooth pairing mode and “cable” mode.

Mode Button

The Mode button is on the left side panel of the Lightpad Block and controls the the main feature of whatever current mode you are in. For example, if you are in Drum Mode, the Mode Button controls the Grid view (1x1, 2x2, 3x3, 4x4, 5x5). When in Synth Mode, pressing the Mode button advances to the next NOISE preset.

Dimensions and Weight

The 5D Touch-sensitive control surface features 15 x 15 RGB LED Matrix that make up a total of 225 cells. The Lightpad Block measures 94mm x 94mm x 20mm (3.7in x 3.7in x 0.78 in) / and weighs 250g (0.5lbs)

2.2 Charging the Lightpad Block

Using the included USB “C” cable, plug the Lightpad Block into any USB charger. Some USB chargers have a higher current rating such as an iPad charger (12W capacity as opposed to an iPhone charger which has 5W capacity).

Both chargers will work, but the iPad charger will be much faster as it can provide higher wattage. The same applies for a host USB 2 port (2.5W) verses a USB 3 port (4.5) on a computer. Adding one or two Control Blocks such as the Loop Block and Live Block (which get charged by connecting to a Lightpad Block that is plugged into either a computer or a USB charger) will increase the overall charge time.

Please see the table below for as a general guide for charge times.

Block or Blocks	Watts	Time to charge
Lightpad Block	2.5W-------12W	3 hours ---------- 2.5 hours
Lightpad Block + Live Block	2.5W-------12W	4 hours ---------- 2.5 hours
Lightpad + Live + Loop Blocks	2.5W-------12W	5 hours ---------- 3 hours

The above figures reflect charge times with the Blocks turned off. Having the Blocks turned on will increase the charge time by X%

2.3 Connecting to the NOISE App

The NOISE App which is downloadable on the Apple App Store is the heart of BLOCKS. Based on our Equator software, it is the sound engine that is driven by the BLOCKS hardware.

Please follow the instructions below for connecting your BLOCKS to the NOISE App has been downloaded from the Apple App Store.

- Turn Bluetooth “ON” for the mobile device.
- Turn on the Lightpad Block by pressing the power button. When the Lightpad Block is not connected by cable it will automatically power up in pairing mode as indicated by a blue light on the power button and an “R” displayed on the Lightpad Surface. If there is no blue light then please press the power button once to enter pairing mode.
- Press the Bluetooth icon in the NOISE App.
- Pair BLOCKS with the mobile device by selecting the Lightpad Block from the list.

2.4 The Lightpad Surface

The Lightpad surface features a 15 x 15 LED matrix comprised of individual cells (225) and covered with laser etched silicone which enables users to input multidimensional or 5D Touch performances.

The Lightpad Surface is made of silicone which is purposely engineered to withstand repetitive pressure inputs from fingers and hands while providing passive haptic feedback to the input gestures. The surface has been specially treated to provide soft touch and reduce surface friction for lateral gestures.

For more information on the care and maintenance of the Lightpad Surface, please refer to chapter 4.1.

2.5 Make Music Now

3. Playing the Lightpad Block

3.1 Five Dimensional Touch or 5D Touch

The Lightpad Block is a multidimensional instrument that lets you modulate sound through five dimensions of touch. NOISE is optimised to respond to these dimensions of touch. Through simple movements and gestures, you can shape sound easily and discover new modes of expression. The icons below depict the Five **Dimensions of Touch** on the Lightpad Block. The **Five Dimensions of Touch** are:

Strike: The velocity and force with which a finger makes contact with the **Lightpad Surface**. This dimension of touch corresponds to MIDI velocity on a standard keyboard.

Press: The pressure applied to the Lightpad Surface after the initial **Strike**. The **Lightpad Surface** responds to each moment of continuous touch, transmitting minute variations of pressure to sound. This continuous pressure-sensitivity allows for swells, fades, and other detailed expressions.

Glide: Horizontal left and right movements on the playing surface. **Glide** movements bend and adjust pitch as naturally as on a string instrument, allowing effects such as vibrato and glissando, all on a polyphonic basis. **Glide** is typically assigned to pitch, but it can be assigned to other sound parameters.

Lift: The release velocity or speed of liftoff from the play. You can assign **Lift** to most sound parameters in **Equator** and other compatible synths. For example, a rapid **lift** can create a lingering resonance or a hard pluck.

The Five MIDI messages of the four Dimensions of Touch:

Strike sends note-on messages in addition to velocity 0-127.
Press sends poly or channel pressure (aftertouch).
Glide sends pitch bend.
Slide sends MIDI CC 74
Lift sends note-off and release velocity 0-127.

3.2 Playing Techniques

Media: Diagram or wireframe of hands doing gestures (vibrato, chromatic bend, glide bend, press) with descriptions under each illustration. (To be created)
You can apply playing techniques associated with keyboard, string, and electronic instruments to the Seaboard GRAND. Playing techniques include:

Strike and hold: Strike the Lightpad Surface and hold for a duration without adding any additional movement.

Glide vibrato: Pressing into **the Lightpad Surface** and holding the point of your finger there, wiggle your finger from side to side. The pitch-bend effect of vibrato will widen the wider the arc of movement away from the stationary finger.

Glide glissando : Move your fingers along **the Lightpad Surface. Glide** bends can traverse multiple octaves in either direction or be performed vertically by by enabling the “Glide Up” feature in the NOISE App

Continuous press modulation: While sustaining a note, increase and decrease downward pressure on **the Lightpad Surface** to modulate the note.

Legato bend: Press and continue to hold any note on **the Lightpad Surface** with one finger and play another note a half-step above or below with another finger.

3.3 Incorporating Other BLOCKS

3.4 Examples of Different Configurations

4. Care and Maintenance

4.1 Cleaning the Lightpad Block

Basic care and attention will protect your Lightpad Block and help it stay in optimal condition. Keep it away from direct sunlight, sharp objects or edges,corrosive solvents, liquids, and especially oils - including greasy fingers after eating food. The lightpad surface is designed for finger and hand pressure/impact, but NOT for hard objects, such as drum sticks.

To clean the **Lightpad Surface** you may use a damp, bleach-free and oil-free cleansing wipes. Do not use any abrasive cleansing agents on the Lightpad Block.

4.2 Information About the Battery

The Lightpad Block features a Lithium Ion battery (2,000 mAh) capable of powering the Lightpad Block for the period in excess of four hours when fully charged. Using USB3 power supply, the battery will charge nominally within three hours. However it will take longer (five hours) if the device is connected via USB2. If additional Blocks are connected the charging time will increase accordingly, as the current is shared between all of them. 2 Lightpad Blocks connected to a single USB charger will take double the time to charge.

The battery will retain over 80% of its capacity for over 300 charge cycles. A charge cycle is defined as a complete discharge from 100% to 0%, and subsequent recharge back to 100%. For example, charging a device going from 50% charge up to 100% and back twice would be equivalent to one charge cycle.

5. ROLI Support & Feedback

5.1 noise.fm

noise.fm is the online environment where creators can interact with each other, save NOISE clips, presets and projects, download additional content, and browse other noise.fm users

shared work. Login to noise.fm to access the BLOCKS Creator Manuals and other helpful information.

5.2 ROLI Support

Contact the ROLI support team directly on www.roli.com/support for any questions. You will receive an answer within 24 hours. Our support team is here to help you.