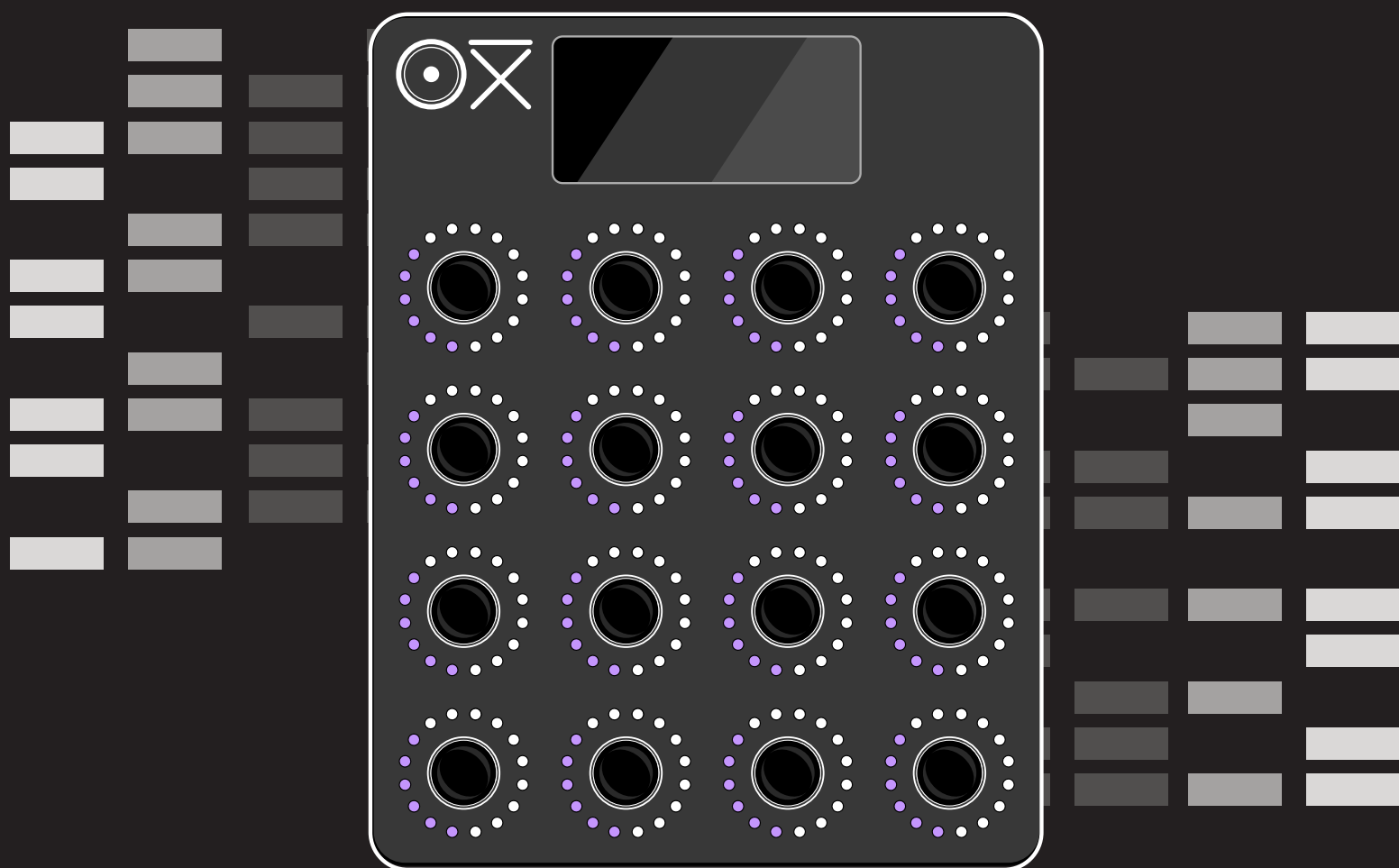




E16



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Overview

The E16 is a compact yet advanced MIDI parameter controller which can communicate MIDI over TRS, USB or Bluetooth connections. MIDI input also accepts messaging from external devices. There are 16 push/turn endless encoders immediately available on the panel which can be configured for control of a destination device's MIDI functions such as CC - Control Change , PC - Program Change, note data and many other MIDI parameters. The E16 has a loop recorder which can record and play back parameter automation and can operate with parameter groups and provide precise individual parameter control and function selection. Controls are organised in Scenes. A maximum of 16 Scenes are available on board the E16, 8 of which are presented for immediate access with knobs 1-8 in the home screen at power on and the next 8 accessed by tapping knobs 9-16. A scene stores the E16 settings and each scene has 16 presets which can be used to capture and store the current parameter settings. Presets can be used to recall stored parameter states. A scene contains 12 pages, each with 16 parameter controls. A scene can hold 192 parameters each with 2 destination controls and a push value. Navigating the menus and options is also performed using the 16 push/turn encoder knobs along with the multi-functional shift button. The E16 is a great tool in the MIDI armoury either as a creative contributor to your setup or as a flexible and practical utility tool. The important thing is that the E16 contributes to you making great music, being creative with live performances, and generally having fun!

1.1 Introduction

E16 is the latest part of the OXI family of audio products and the perfect compliment to OXI ONE. E16 is an advanced MIDI performance controller consisting of 16, configurable push / turn rotary encoders. Control over MIDI USB, TRS and Bluetooth is possible.

E16 is a MIDI controller and in itself does not generate any audio output. Audio is generated from the connected devices where E16 will control the synth, effect or sequencer parameters and pattern values.

Specifications

Electrical specifications:

- 5V DC, 200mA (USB type C supply)

Radio equipment:

- Bluetooth: BLE 5.0

Mechanical specifications:

- Aluminium chassis.
- Dimensions: 143 x 114 x 19mm / 39mm incl knobs
- Weight: 370 gr.

User interface

- 16x push / rotary encoders with LED indication. Detent or Non-Detent knob type options available.
- Single power on button, also serves as a user interface navigation aid.
- OLED Display

Inputs & Outputs

- USB-C for 5V power supply and MIDI USB.
- MIDI TRS input x1 & output x2. MIDI Out is 5V, MIDI IN accepts 5V and 3.3V
- MIDI Bluetooth BLE 5.0 bidirectional, peripheral and central roles.

What's In The Box

Supplied with the device are the following components:-

- 1 x OXI E16 Controller device.
- 1 x OXI E16 Protective Case.
- 1 x USB A to C right angled cable.
- 1 x Quick start instruction leaflet. Main manual is downloadable.

1.2 How To Use This Manual

This manual combines a formal reference with detailed instructions, illustrations, guides, workflows and tips for your device. You can add your own notes which personalises this into a comprehensive and unique guide book. For clarity, OXI E16 device will simply be called E16 in this manual.

Icons and graphics may be used in the diagrams that reflect the faceplate and display of the device but there will be explained by text commands. Controls on the E16 are multi functional, used for device control, navigation and setup. Therefore it is important to follow a clear convention in the terminology. Any walkthroughs and instructions will refer to these functions in text format.

[Shift]

The multi-functional button located within the OXI 'O' will be called [Shift]. This is also the power on and off button and is used to backup in menus and for other navigation commands. This is described in square brackets.



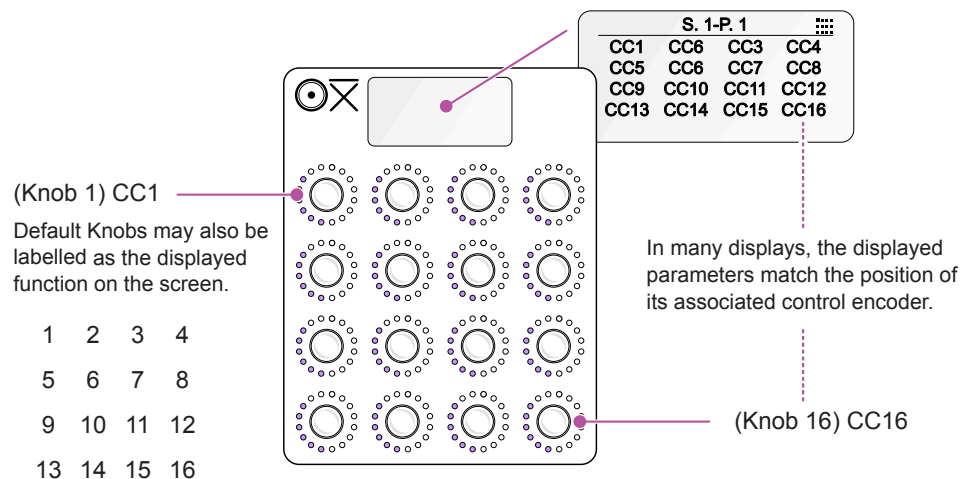
Example: Power On, Hold [Shift]



(Knob X)

The 16 Front panel push / encoders generally control the CC or MIDI parameter values. Also they may be presented as menu and function selection or navigation buttons and controls. In order to differentiate, a name or number will be used to describe the parameter. The name is based on how it is dynamically displayed, relevant to the control position. It is possible to change some of these values so they will be referred to by their knob position in the descriptions. Encoder type can be changed to match your version in the config between normal, non-detent knobs or detent knobs.

Examples: Control Change, (Knob 1) for default CC1 encoder, (Knob 5) to edit the default CC5.

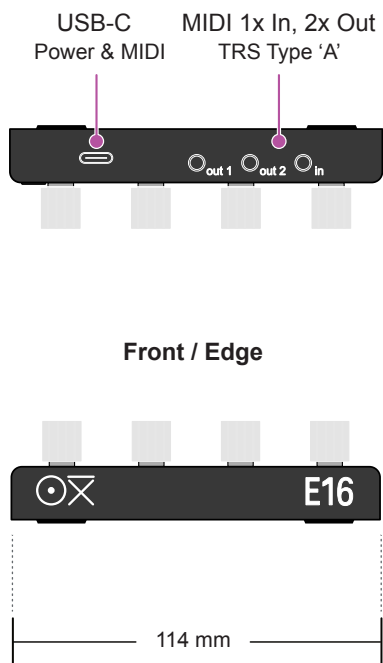


1.3 Hardware Overview

Left / Side



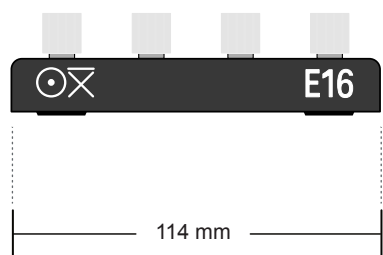
Rear / Edge



Right / Side



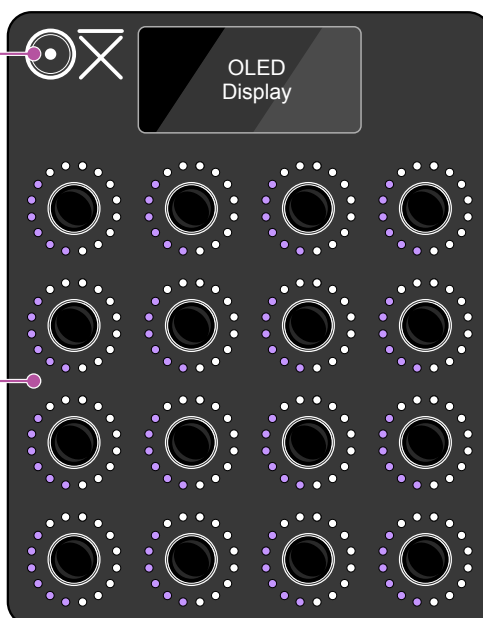
Front / Edge



Front Panel

Shift Button
Multifunctional button
Operates.
- Power On/Off.
- Shift button.
- Navigation backup.

Controls
16 Push / Turn
endless encoders
Operates.
- Direct control.
- Navigate & select.



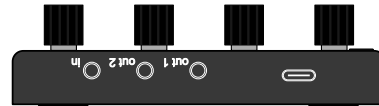
Important. Encoder Type

Knob behavior should be configured in the settings to match your hardware version.

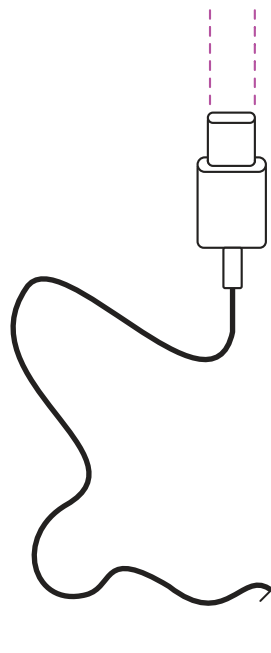
Select in the config settings between the default normal, smooth non-detented control or detented encoder type.

1.4 Powering Up

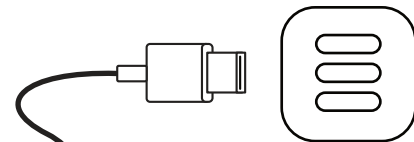
The E16 is powered using the USB-C connection. A standard USB Mains charger, PC / Macbook connection or a power bank can be used. The E16 has a low power rating and it is recommended to use a supply with a minimum of 200mA.



- 1 USB power connection**
Connect the other end of the USB-C cable to the **E16** USB Socket



- 2 Mains to USB adapter**
Connect the device to a mains connected USB power supply adapter.

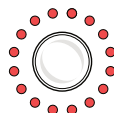


It is also possible to use a power bank with a USB output and also use USB-C to various USB cable types.

- 3 Turn On / Off**
The E16 will power directly from the USB power supply. There is no onboard rechargeable battery or charging option. To turn the device on, tap the shift button located in the OXI 'O'.



Power On
Hold the multifunctional [Shift] button.



Power Off
Tap the [Shift] button, then tap (Knob 16), red lit encoder.
Turn off from the main, top level scenes page.

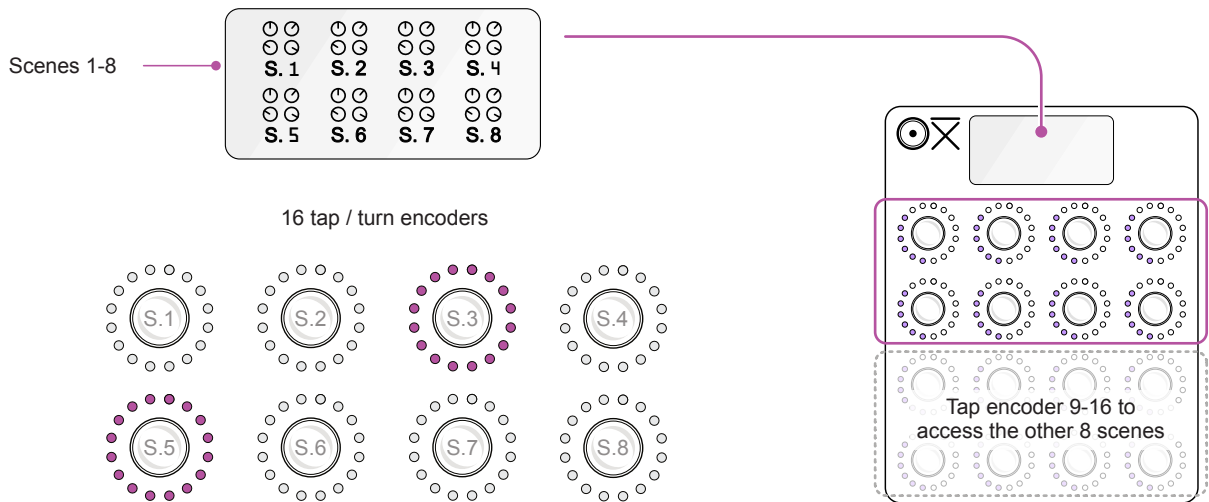
Settings & Off Screen.

Available at power down and to access the system settings. Tap [Shift] to backup in the menus.



1.5 Navigating the E16

The main ‘home’ screen location in the structure of OXI **E16** is presented when first powering on. This display will show the first 8 scenes labelled S.1 to S.8. Tapping an encoder knob 1-8 selects and opens the scene. Tap knob 9-16 to access the other 8 scenes, S.9 to S.16. In the main scene page, hold [Shift] to access the system config settings and to access the off command. Any knob which is controlling a menu command will be lit. Tap a knob to select the option and tap shift to backup in the menu structure. In a menu, turning a knob selects a value or option.



In several screens, the knob position matches the position of the displayed elements. For example the first 8 scenes presented from the home page match the 1-8 knob positions and the lower knobs 9-16 represent Scenes 9-16. The knob LEDs for the scenes are shown in the scene header color.

Turn

Edit or change value of the the respective parameter

The rotary LEDs will indicate a parameter value setting.

Tap or Press

Select the respective displayed option.

Any knob which has a currently selectable menu option will be lit.

[Shift] + Turn

Edit or select some secondary values and options.

The [Shift] button is used as a classic shift, to access secondary parameters or to backup or exit menus as well as operating as the on/off command.

Tap [Shift]

Navigate and backup in the menu hierarchy structure

The option to save is presented when exiting scene editing. Press a knob to select yes to save or no to backup without saving.

Save No

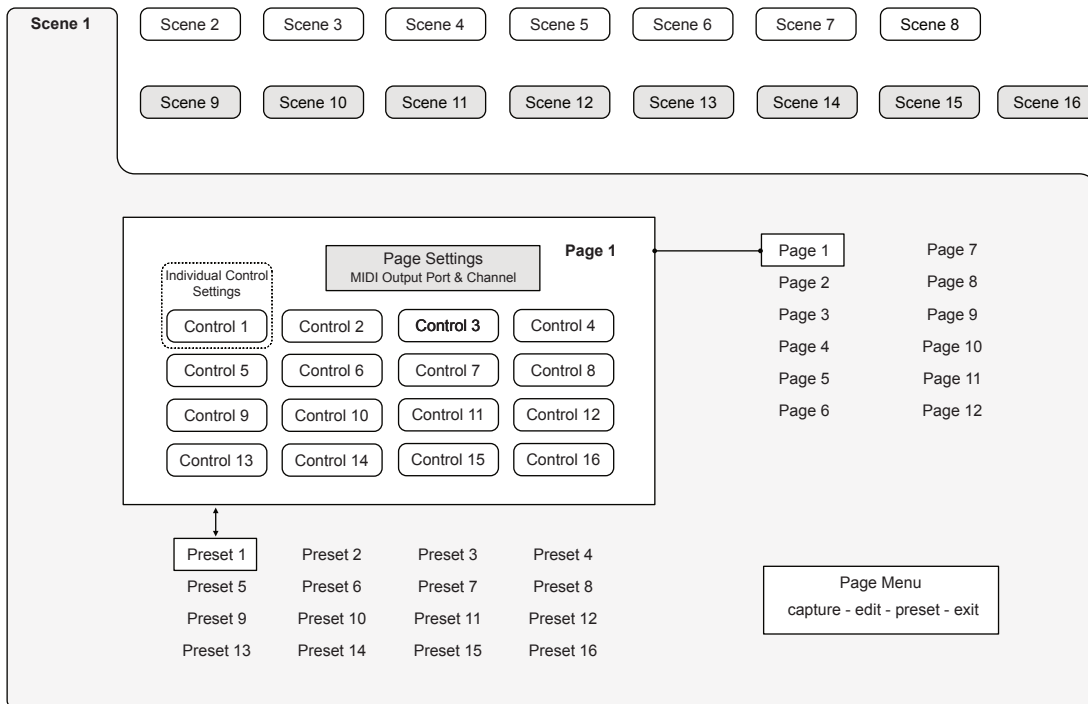
Save Yes

Encoder Type

Knob behavior must be set in the config settings for the encoder types on your controller hardware to the default normal, non-detented control or to the detented style.

1.6 Architecture

The highest elements in the E16 organisational structure are scenes. There are a total of 16 scenes on board with 8 available for direct access from the home screen and the interface knobs. A scene contains 12 pages each with 16 control parameters. Scenes can also be managed and setup on a PC/Mac by using the OXI App.



Navigating Scenes

Choose a Scene.

Tap knob to select a scene from the home screen. Tap knob 9-16 to switch scene selection options.



View or Change Controls.

Tap [Shift] to switch between the page / alt menu or control view.

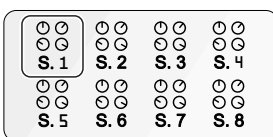


Page / Alt Menu Option.

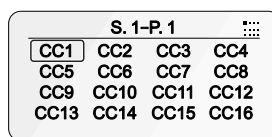
Tap a knob 1-12 to change the page or 13-16 to choose an alt menu option.



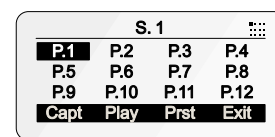
Home / Scenes



Control View



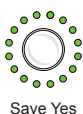
Shift Menu / Page Selection



This is the main, home screen and is available upon power up. If any scene parameters have been edited, exiting from the page menu to the home screen will prompt to save the scene.

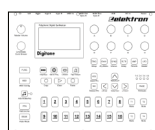


Save No



Save Yes

Turn a knob to adjust the MIDI output value for the respective parameter.



Menu Options: Knobs 13-16

Capt - Looper Record. Arms parameter automation. Will capture the control value changes while turning any knob. Tap to end.

Play. Sets the Play mode to On/Play or Off/Stop. Determines if loops play or not.

Prst - Preset. Opens the load and save preset management menu.

Exit. Exit the and backup from the scene and back to the home scenes page.

A scene is a function to help organise the controls and saves all of the E16 settings. The scene options are found in the main, home screen, presented on power up. To start, select a scene to work with or to setup. Within the control view one of the 16 pages of parameters can also be selected. You can open one of the 8 direct access scenes from the main, home menu. Tap knob 9-16 to view and select the other 8 scenes.

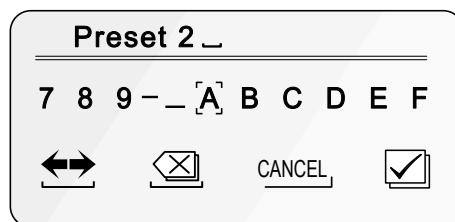
1.7 Naming Editor

At various points in the workflow the option to save as or rename something will be presented. This includes scenes and presets. The text editing interface is the same for all naming options and requires turning and tapping certain knobs to edit and navigate in the text string name.

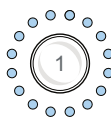
The top four encoder knobs are used to perform changes in the text editor.

- **Knob 1** - Turn to scroll the selection of the alpha-numeric options.
Tap to change the character.
- **Knob 2** - Turn to move the edit cursor in the text body being edited.
Tap to backspace and clear the previous character.
- **Knob 3** - Press to cancel and return to the sub-menu.
- **Knob 4** - Press to confirm editing and complete the changes.
- Press [Shift] at anytime to backup, cancel or exit.

Name editor option found in several menus

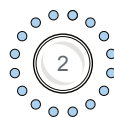


Turn
Select a
character



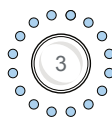
Tap
Change &
confirm

Turn
Move the
edit cursor



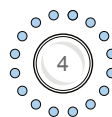
Tap
Backspace
and clear

Turn
-



Tap
Cancel &
backup

Turn
-



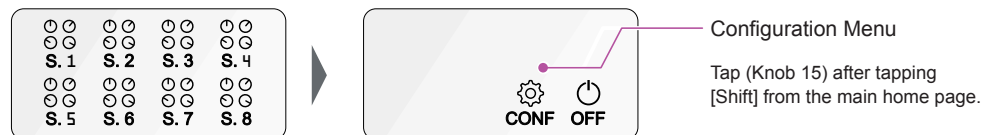
Tap
Confirm

1.8 Configuration & Set-Up Menus

There are several menu structures in the E16, each serving a specific purpose and enabling global configurations as well as precise application set-up. Each workflow will be covered in the specific application section of this manual, so consider this section as an introduction to the available menus.

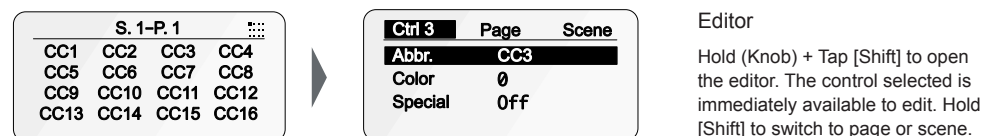
Global Configuration

The 'CONF' menu contains global settings that operate across the E16. Workflow and user experience options, Generic MIDI setup and System wide settings are included in this menu. Access from the home scenes page by tapping [Shift].

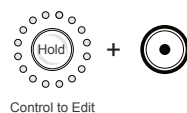


Settings Editor

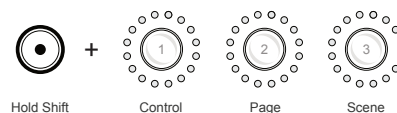
The editor is used to setup each scene, page or control. The editor is available from multiple entry points. The most common workflow is in the control view, hold a control (Knob) + tap [Shift]. Holding [Shift] in this menu will allow switching between a control or between a page or scene editor. The editor can also be configured as an option from the page view, alt menu.



In the control view



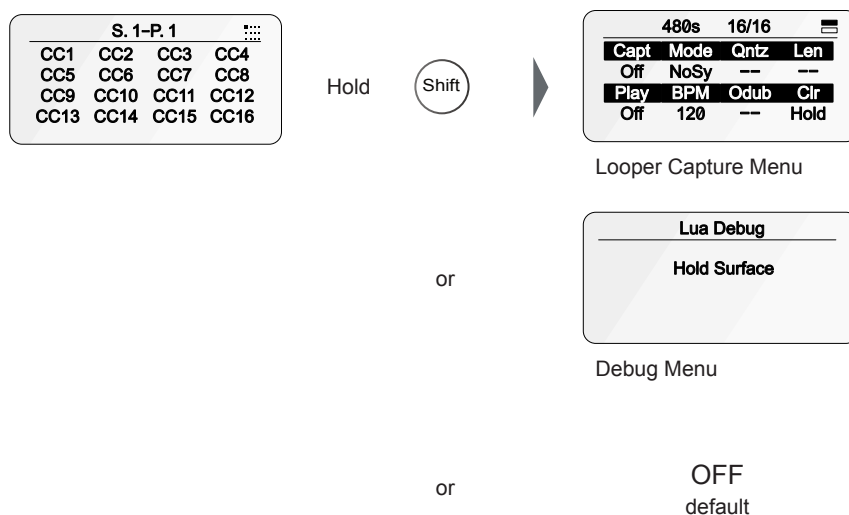
In the edit page, hold [Shift] for the Ctrl, Page or Scene options



Control View 'Hold' Menu

The control view 'hold' menu is a configurable option for quick access to selected functions. This can be setup based on your preferred workflow. Selecting the function to call when shift is held is performed in the page view by holding [Shift]. The selectable 'hold' functions are:-

- Off. Holding shift in the control view has no effect.
- Looper capture. The recording mode options as displayed when holding shift.
- Lua scripting debug. Shift presents incoming diagnostic information.



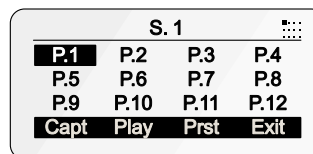
► Configuring the 'Hold' Menu

1. Configuration of the hold function is performed in page view. With a scene selected and from the control view, tap [Shift] to open the Page view.
2. To open the configurator, hold [Shift]. Tapping a lit knob will choose the the respective function to assign to the control view hold shift command. Knob 1; turns the hold function 'Off', Knob 2; Loop Capture menu, Knob 3; Lua Debug for scripting.
3. Holding the control view [Shift] button will display the assigned function options. The buttons needs to be held to edit an option and released to return back to the control view. Default is set to off.

The last used hold mode will be saved with each scene.

Alt Menu

The Alt Menu is presented at the bottom of the Page view. Tap [Shift] in the control view to toggle between the Control and Pages view. The available options in the Alt Menu are selected using Knobs 1-16. The defaults include: Looper Capture, Play, Preset Selection or Scene Exit commands for the lower knobs 13-16 while knobs 1-12 represent pages. These functions can be re-configured from the defaults.



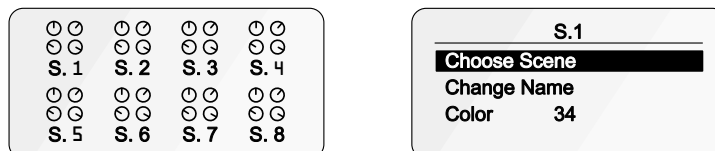
► Configuring the Alt Menu Options

1. Configuration of the alt menu is performed in page view. With a scene selected and from the control view, tap [Shift] to open the Page view.
2. To configure the options, Hold (Knob) 1-16 + Tap [Shift] to edit the selected knob command.
3. The 'Type' option will determine which command will be presented for the knob. Turn the knob to edit and tap to select.

The available functions are described in the relevant section in the manual.

Scene Slot Configuration Menu

Each Scene slot can be configured. The configuration options are accessed from the main scenes page.



► Configuring a Scene Slot

1. Ensure the main scenes view is on display.
2. To configure a slot options, Hold (Knob) 1-16 + Tap [Shift] to edit the settings for the selected knobs scene.
3. Options such as the scene to select, name, color and also the MIDI messaging when accessing the scene are configurable.

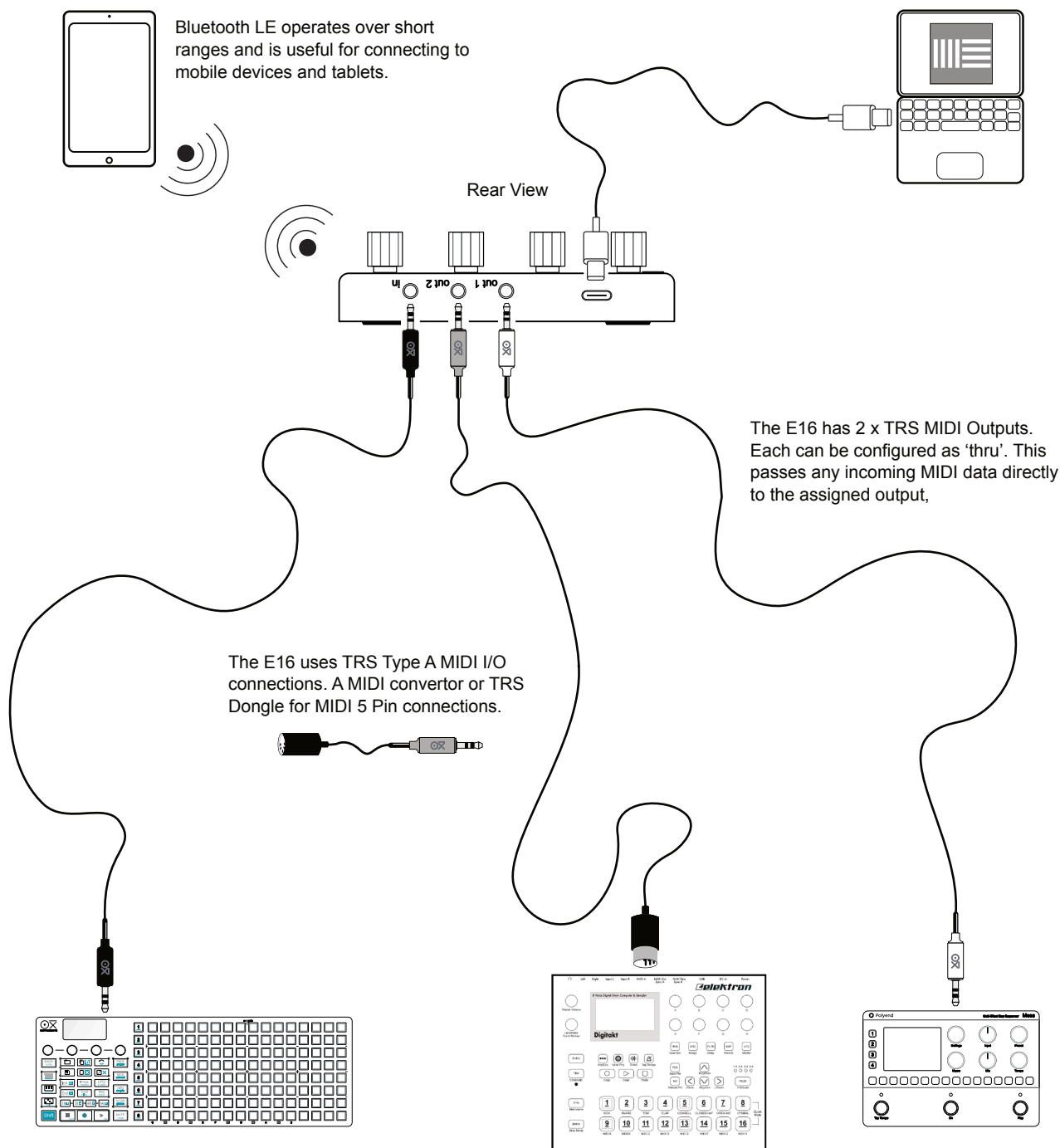
Connect & Control

The OXI E16 is focussed on MIDI parameter control of one or more external devices, whether a PC/Mac Digital Audio Workstation, synths or audio effects. Multiple connectivity options are available for a high level of flexibility across devices. These include USB-C, Bluetooth Low Energy or MIDI TRS In and Out. The target device MIDI accessible parameters such as CC - Control Change, PC - Program Change, Pitch Bend, Notes and more can be controlled by the E16. The choice of connectivity method will depend on the application and the devices to connect with. It is important that you have knowledge on the destination device MIDI parameter mappings to align the E16 controls. It is also possible to use instrument definitions with the E16 to quickly set predefined parameter mappings. The MIDI configuration documentation from the equipment manufacturer will provide details of the MIDI Mappings, especially the CC definitions used with each device.

2 Connect & Control

2.1 Connectivity Overview

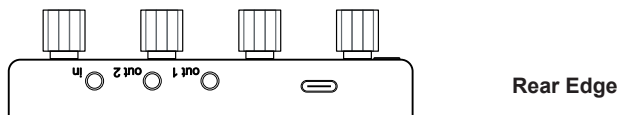
OXI E16 has a variety of connection options including Bluetooth Light Energy, TRS MIDI and USB MIDI. This allows multiple devices to be connected and the choice of connection gives flexibility for the application required. A typical setup is shown in the illustration although many other options are possible.



TRS Type A allows Stereo cables to be used for MIDI. Mini jacks 3.5mm / 1/8th are typically the size used for TRS MIDI.

2.2 MIDI USB Connectivity

It is possible to connect the E16 to another device directly with the USB-C connection. Bear in mind that this is also the power supply input so any connected device, for example a PC or Mac, must be able to supply the 5V, 200mA source..



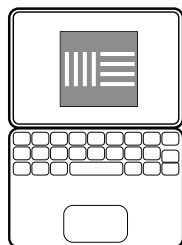
Rear Edge

MIDI USB

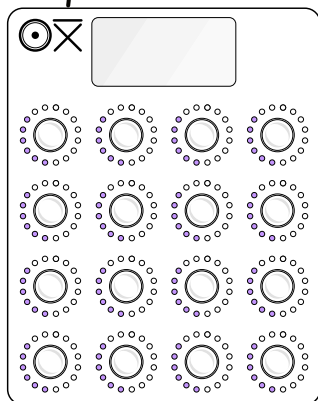


USB Type C can be connected between devices, ideal for PC/Mac hosted DAWs or applications. The config options can be set for the USB behavior where it is also used as the charge supply for the device.

Example: MIDI USB OXI E16 to Mac / PC Ableton Live DAW



MIDI can be connected directly using the USB-C connection on OXI E16 and the USB on the target PC/Mac. This provides MIDI In and Out messaging. OXI E16 should be configurable in the DAW settings.

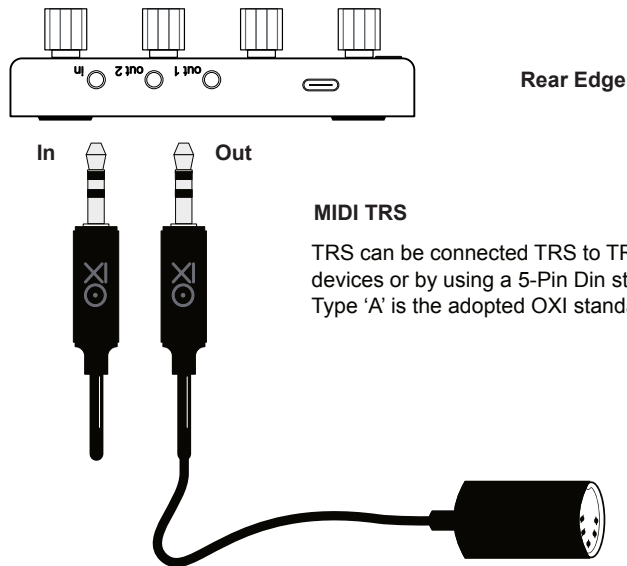


Controls such as the level, sends etc can be set with the Ableton Live MIDI Map option. For more precise setup with a destination, the E16 options can be configured for the specific parameter on a device if they have fixed mappings.

2 Connect & Control

2.3 MIDI TRS Connectivity

OXI E16 can be used to control MIDI devices using a TRS MIDI connection in and out. This can also connect to the classic MIDI 5 Pin Din style connections with a type 'A' adapter / interface or by using a TRS Stereo cable if both devices are type A compatible.



MIDI In / Out / Thru

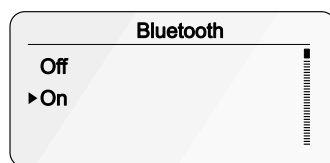
MIDI Thru can be set in the Conf > MIDI settings for TRS, USB or BLE. If set to On, MIDI messages from this input will be echoed to the other MIDI outputs. If set to off MIDI inputs will not be automatically be passed through the device to an output and only E16 generated messages are output.

2.4 MIDI Bluetooth Connectivity

OXI ONE uses BLE MIDI or Bluetooth Low Energy for wireless communications. BLE can sometimes be technically challenging to set up on some devices so it is advised to use a MIDI dongle such as WIDI Master, WIDI Jack or WIDI uHost when using devices like iPads. Android can be more robust for MIDI BLE.

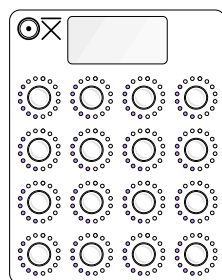
Ensure the external device has bluetooth turned on in order to pair. The pairing process will be determined by the device itself and may be different between devices. The E16 will show up as a Bluetooth central MIDI device not a peripheral.

On the OXI E16, turn Bluetooth on in: Conf > Bluetooth > On/Off.



Once the option is selected, turn the lit knob to select On or Off and then tap the knob to confirm. The bluetooth connection will be active or inactive.

Example: MIDI Bluetooth OXI E16 to iPad AUM App.

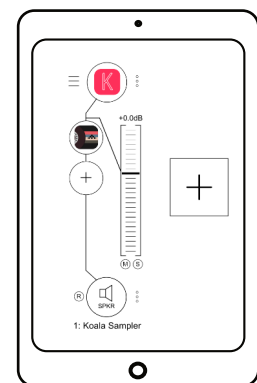


Conf > Bluetooth > On/Off = ON



In AUM: Wireless MIDI
Bluetooth Central = OXI E16 BLE
iPad is the peripheral device

In the AUM MIDI Routing matrix connect between
OXI E16 BLE and the loaded device in the track

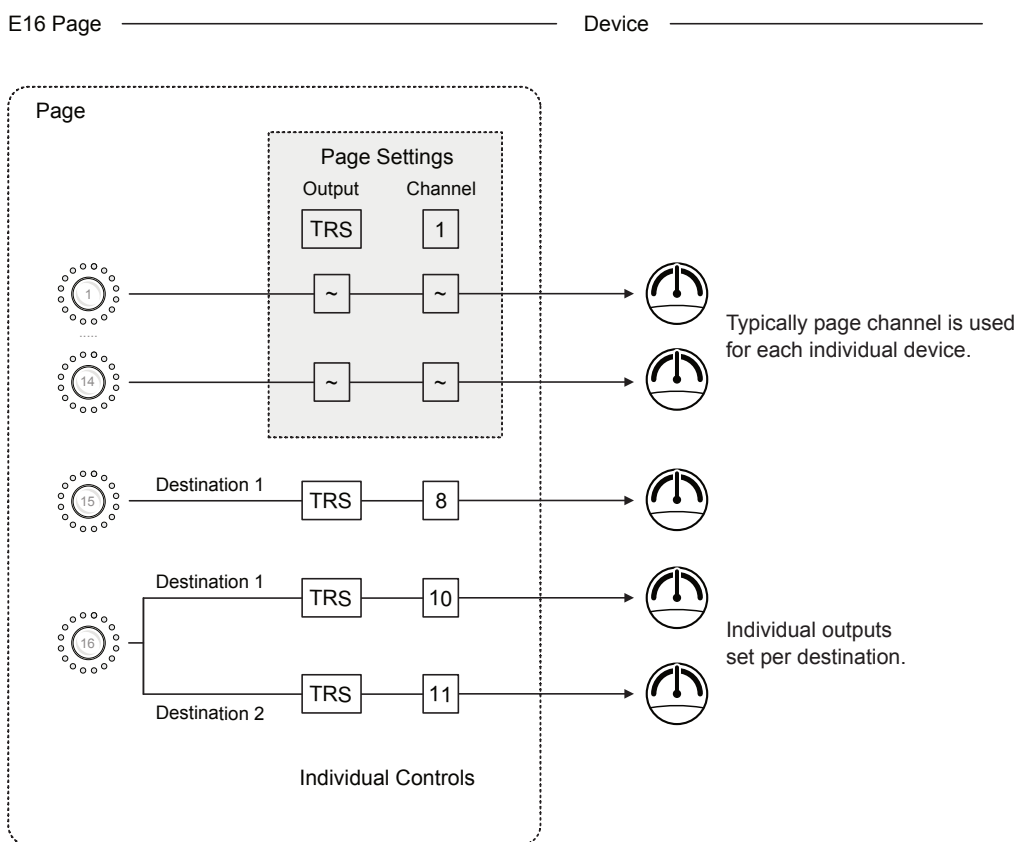


2 Connect & Control

2.5 MIDI Ports & Channels

OXI E16 has the ability to interface with multiple MIDI ports, each with 16 MIDI channels. Port A and B are the available ports integral to the E16 device but use the same physical output. These may be identified as 1 and 2 on some external DAWs and devices. The output ports and the 16 channels in E16 can be assigned at a page level for all controls within that page or at an individual control level, per destination.

Example: Channel and Output Configuration



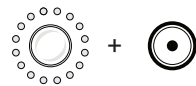
Page level output and channel can be set at the individual control level. This means the control destination uses the collective page level settings. If the control destination setting has a dedicated output and channel number assigned then this will be used for this destination.

2.6 Control Settings Overview

The E16 can control a variety of MIDI message formats. The default parameter configuration is control change but each knob can be configured individually. The configuration and setup options will depend on the parameter type. Controls are configured in the control settings, accessed from the control view.

Directly Edit a Control

Hold (Knob) to edit + Tap [Shift].



S. 1-P. 1			
CC1	CC2	CC3	CC4
CC5	CC6	CC7	CC8
CC9	CC10	CC11	CC12
CC13	CC14	CC15	CC16

Turn (Knob) to select and tap to edit the selection.

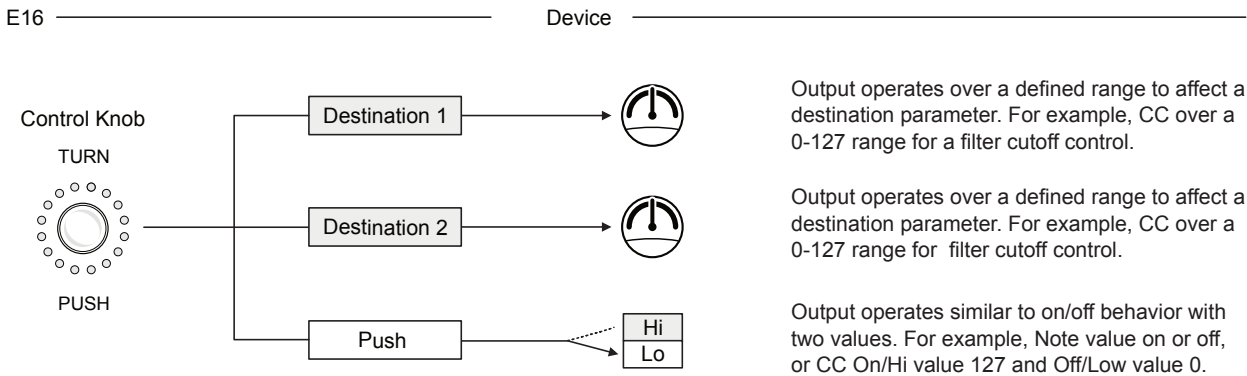


Ctrl 3	Page	Scene
Abbr.	CC3	
Color	0	
Special	Off	

Hold [Shift] + Tap (Knob) 1, 2 or 3 to change tab.

Each parameter can control:-

- 2 x Control Destinations - Variable MIDI message sent by turning the rotary knob.
- 1 x Push Control - Discrete MIDI message sent by pushing the rotary knob.



The push command can also initiate scripts and navigate pages.

2.7 Configuring a Control

The E16 can control a variety of control types. The settings menu is the starting point for configuring on board the device. Also a quicker solution is to use the OXI App which contains a dedicated scene editor, used to configure the pages and controls.

The control settings are accessed from the control view. Hold (Knob) + Tap [Shift] to edit the selected control. This will configure the control in the current scene and page of parameters. Turn the lit knob to scroll and tap to select an option to edit.

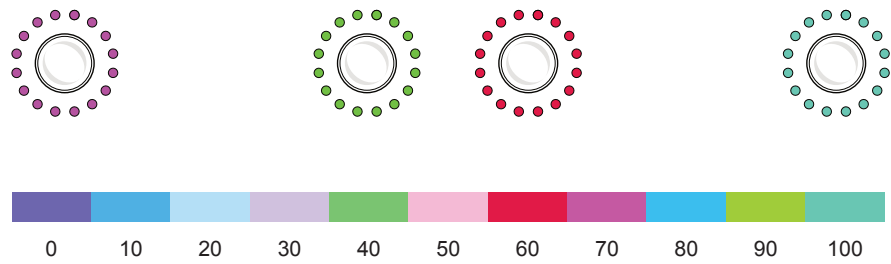
Generic Parameter Options		Turn knob to navigate, tap knob to change.
Function	Description	
Abbr	Name Abbreviation	Allows editing of up to 4 characters. This is the label used on the control view for the parameter.
Color	LED ring color	Assigns the color for the LED ring indicators. If swap is active then a color can be set for each destination. Represents knob value.
Special	Encoder Options	Can be set to <u>Off</u> or a special function. <u>Snapshot Morph</u> will capture and store an A and B value to assign as the knob range. <u>Looper Capture</u> will allow automation to be recorded by the knob when in the control view. <u>Looper Playback</u> , a recording can be controlled by pressing the knob. <u>Random</u> will set the value of parameters on the page to a random value. <u>Swap Destination</u> will enable switching the knobs control between destination 1 or 2 when pushing the knob. Random will set the value of parameters on the page to a random position
Dest1	Destination 1	Configure the destination device settings when rotating the control. Two device destinations can be assigned to each parameter. If destination 1 is set to Off, destination 2 will be unavailable.
Dest2	Destination 2	
Push	Knob push behavior	Configure the destination device settings when pushing the control. Sets the behavior of the push command on the encoder and its associated display.
Copy	Copy Settings	Copies the control settings.
Paste	Paste Settings	Pastes previously copied settings to the selected control
Erase	Clear settings	Clears the settings to defaults.

► Editing a Control

1. The settings edit menu is accessible from the control view. Tap [Shift] if necessary to backup the menu to the main home screen. Select a scene by tapping the associated knob to choose the scene and its control view.
2. To directly edit a control hold the (Knob) + Tap [Shift]. This is performed from the control view. The editor will open for the selected control.
3. The editor tab should be open for 'Ctrl'. If not, hold [Shift] and tap (Knob 1) to choose the controller settings. The page and scene settings tabs are also available.
4. To navigate, turn (Knob 1). Scroll to the desired option and tap (Knob 1) to edit. The selected option is highlighted and when in edit mode the '►' tag label is shown.
5. Once editing is complete tap [Shift] to backup and exit. After any edits the scene can be saved. This option is presented when backing up to the home scenes page.
6. Note that a controller's settings can also be erased, copied and pasted to another control from within this menu.

2.8 Control Colors

Each control can be set with its own color scheme for the control functions. This sets the color of the rotary LED ring for each control knob and its destinations and is useful as a visual reference. The color setting is defined at a control level for each control knob and is set in the control editor. The color spectrum is chosen within a parameter range of 0 to 100.



When setting the color value in the edit menu, the knob LED color will change while editing making it easy to select visually rather than by numbers.

The first LED on the rotary LED ring can be set to on for all controls or stay at the default off. This is a visual indicator for the lowest value. This is set in the config settings under System > Color Indicator.

2.9 Controller Destination Options

A variety of parameter types can be controlled by the E16. These are setup based on the target device and parameter to modulate. The type of control is set up per destination. There are three options per knob, two rotary destinations and one push destination. Select 'Dest 1', 'Dest 2' or 'Push' to configure each destination for the selected knob. If destination 1 is set to Off, destination 2 will be unavailable.

The available destination menu options will change depending on the destination.

CC Abs - Control Change Absolute

Control change sends a value that is used to affect a destination parameter over a defined range. Absolute is the most common application of CC control. The maximum range for absolute control is from 0-127. An example is to control a filter cutoff sweep with a CC parameter. The control sends an absolute value between 0-127 to the destination.

CC Abs

	Function	Description
Instr.	Instrument Def	Select an instrument definition which contains preset settings for a selected destination instrument. These can be managed in the OXI App. Option also to set to the default 'None'.
Param.	Parameter	Select an instrument definition to enable access to the parameter option. When an instrument definition is loaded the parameter mapped will be available in this setting.
Type	Parameter Type	Off, CC Rel1, CC Rel2, CC Abs, CC14 (High Resolution), PC, PB, AT, Note, NRPN, Script
Output	Output & Port	MIDI physical output and port. Set to: Same as Page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as Page, 1-16
CC nr.	CC Number	Control Change Number. Sets the number for the CC mapping to a destination parameter. This will match the destination device parameter CC number.
Minimum	Min value	The lower minimum value that the CC knob will send out. This is a value between the standard 0-127 standard.
Maximum	Max value	The upper maximum value that the CC knob will send out. This is a value between the standard 0-127 standard.
Anchor	Push anchor value	If push type is set to 'Set to Anchor', this value is used when the knob is pushed, to reset the encoder to this value and also send the value out.
Mode	Encoder behavior.	Sets the behavior of the encoder rotation. Options are: Div8, Div4 and Div 2 - Divides the encoder resolution by 8, 4 or 2. Acc0, Acc1, Acc2, Acc3 - Encoder acceleration. 0 = no acceleration, normal operation, 3 is max acceleration when rotating. LSp2, LSp4, LSp6 - large step mode - steps values in the 2, 4 or 6 increments selected. Default is 'Scene' which uses the acceleration setting set for the scene.
Display	Encoder Scale	How the encoder scale is displayed. Set to : Off - blank display, standard, 127 - Default, 100, 1000 - useful for CC14, B63 bipolar +/-, B63 bipolar +/-, 9999 useful for CC14 or High Res. Always on - Value is always displayed.
Learn	Sets listening mode	Sets the device to listen to the MIDI input channel for any MIDI messages. The channel and control received is assigned to the parameter destination settings.

CC Rel 1 & 2 - Control Change Relative

Control change sends a value that is used to affect a destination parameter over a defined range. Relative mode is useful for interfacing to DAWs and other devices where an incremental change iteration is required. Relative 1 will send a value of 1 to increment the control and 127 to decrement. Relative 2 operates the same but uses 63 to increment and 65 to decrement the destination.

CC Rel

	Function	Description
Instr.	Instrument Def	Select an instrument definition which contains preset settings for a selected destination instrument. These can be managed in the OXI App. Option also to set to the default 'None'.
Param.	Parameter	Select an instrument definition to enable access to the parameter option. When an instrument definition is loaded the parameter mapped will be available in this setting.
Type	Parameter Type	Off, CC Rel1, CC Rel2, CC Abs, CC14 (High Resolution), PC, PB, AT, Note, NRPN, Script
Output	Output & Port	MIDI physical output and port. Set to: Same as Page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as Page, 1-16
CC nr.	CC Number	Control Change Number. Sets the number for the CC mapping to a destination parameter. This will match the destination device parameter CC number.
Minimum	Min value	The lower minimum value that the CC knob will send out. This is a value between the standard 0-127 standard.
Maximum	Max value	The upper maximum value that the CC knob will send out. This is a value between the standard 0-127 standard.
Anchor	Push anchor value	If push type is set to 'Set to Anchor', this value is used when the knob is pushed, to reset the encoder to this value and also send the value out.
Learn	Sets listening mode	Sets the device to listen to the MIDI input channel for any MIDI messages. The channel and control received is assigned to the parameter destination settings.

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CC 14 (High Res) - Control Change Absolute - High Resolution

Control change sends a value that is used to affect a destination parameter over a defined range, the standard being 7 bit 0-127. High resolution refers to the ability to send more precise, smoother controlled absolute CC values over a range of 0-16,383. This is implemented using MSB and LSB messaging to the CC numbers.

CC14 High Resolution

	Function	Description
Instr.	Instrument Def	Select an instrument definition which contains preset settings for a selected destination instrument. These can be managed in the OXI App. Option also to set to the default 'None'.
Param.	Parameter	Select an instrument definition to enable access to the parameter option. When an instrument definition is loaded the parameter mapped will be available in this setting.
Type	Parameter Type	Off, CC Rel1, CC Rel2, CC Abs, CC14 (High Resolution), PC, PB, AT, Note, NRPN, Script.
Output	Output & Port	MIDI physical output and port. Set to: Same as Page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as Page, 1-16
MSB	Most Significant Byte	Coarse adjustment. CC number used for the MSB message destination. Typically this uses CC 0-31, but check with the destination device to pair correctly.
LSB	Least Significant Byte	Fine adjustment. CC number used for the LSB message destination. Typically this uses CC 32-63, but check with the destination device to pair correctly.
Minimum	Min value	The lower minimum value that the CC knob will send out. This is a value between the standard 0-127 standard.
Maximum	Max value	The upper maximum value that the CC knob will send out. This is a value between the standard 0-127 standard.
Anchor	Push anchor value	If push type is set to 'Set to Anchor', this value is used when the knob is pushed, to reset the encoder to this value and also send the value out.
Mode	Encoder behavior.	Sets the behavior of the encoder rotation. Options are: Div8, Div4 and Div 2 - Divides the encoder resolution by 8, 4 or 2. Acc0, Acc1, Acc2, Acc3 - Encoder acceleration. 0 = no acceleration, normal operation, 3 is max acceleration when rotating. LSp2, LSp4, LSp6 - large step mode - steps values in the 2, 4 or 6 increments selected. Default is 'Scene' which uses the acceleration setting set for the scene.
Display	Encoder Scale	How the encoder scale is displayed. Set to : Off - blank display, standard, 127 - Default, 100, 1000 - useful for CC14, B63 bipolar +/-, B63 bipolar +/-, 9999 useful for CC14 or High Res. Always on - Value is always displayed.
Learn	Sets listening mode	Sets the device to listen to the MIDI input channel for any MIDI messages. The channel and control received is assigned to the parameter destination settings.

PC - Program Change

Program change messages also called PC, are used to change a destination device preset, bank, patch or program using values between 1-128. The actual impact and numerical alignment of a PC message from the E16 will depend on how the destination device is designed. Refer to the manufacturers MIDI implementation guide.

PC

	Function	Description
Type	Parameter Type	Off, CC Rel1, CC Rel2, CC Abs, CC14 (High Resolution), PC, PB, AT, Note, NRPN, Script.
Output	Output & Port	MIDI physical output and port. Set to: Same as Page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as Page, 1-16
Minimum	Min value	The lower minimum value that the CC knob will send out. This is a value between the standard 0-127 standard.
Maximum	Max value	The upper maximum value that the CC knob will send out. This is a value between the standard 0-127 standard.
Anchor	Push anchor value	If push type is set to 'Set to Anchor', this value is used when the knob is pushed, to reset the encoder to this value and also send the value out.
Mode	Change confirmation	Instant: Sends a PC change message out or a bank change message out instantly when adjusting the knob real-time. Option to send PC and Bank messages only with confirmation is also available.
Learn	Sets listening mode	Sets the device to listen to the MIDI input channel for any MIDI messages. The channel and message received is assigned to the parameter destination settings.

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PB - Pitch Bend

Pitch bend refers to the adjustment of the note pitch up or down while it plays by use of a modulation control. On many synths this would be represented by a pitch bend wheel. On the E16 a knob can be set to operate the pitch bend command for MIDI out configured over a note range of C-2 to G8.

PB

	Function	Description
Type	Parameter Type	Off, CC Rel1, CC Rel2, CC Abs, CC14 (High Resolution), PC, PB, AT, Note, NRPN, Script.
Output	Output & Port	MIDI physical output and port. Set to: Same as Page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as Page, 1-16
Minimum	Min PB value	The lower PB value that the knob will send out. Default is -8192.
Maximum	Max PB value	The upper PB value that the knob will send out. Default is 8191.
Anchor	Push anchor value	If push type is set to 'Set to Anchor', this value is used when the knob is pushed, to reset the encoder to this value and also send the value out.
Mode	Encoder behavior.	Sets the behavior of the encoder rotation. Options are: Div8, Div4 and Div 2 - Divides the encoder resolution by 8, 4 or 2. Acc0, Acc1, Acc2, Acc3 - Encoder acceleration. 0 = no acceleration, normal operation, 3 is max acceleration when rotating. LSp2, LSp4, LSp6 - large step mode - steps values in the 2, 4 or 6 increments selected. Default is 'Scene' which uses the acceleration setting set for the scene.
Display	Encoder Scale	How the encoder scale is displayed. Set to : Off - blank display, standard, 127 - Default, 100, 1000 - useful for CC14, B63 bipolar +/-, B63 bipolar +/-, 9999 useful for CC14 or High Res. Always on - Value is always displayed.
Learn	Sets listening mode	Sets the device to listen to the MIDI input channel for any MIDI messages. The channel and message received is assigned to the parameter destination settings.

AT - Aftertouch

Aftertouch is a common feature on many synths and audio devices. Aftertouch represents how hard a keyboard key is pressed after triggering the initial note. Sometimes called channel pressure, aftertouch operates over a 0-127 range. The E16 can send an aftertouch message by using a control knob. Aftertouch messages are part of the MIDI standard so should easily be recognised by a compatible destination device.

AT

	Function	Description
Type	Parameter Type	Off, CC Rel1, CC Rel2, CC Abs, CC14 (High Resolution), PC, PB, AT, Note, NRPN, Script.
Output	Output & Port	MIDI physical output and port. Set to: Same as page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as page, 1-16
Minimum	Min value	The lower minimum value that the CC knob will send out. This is a value between the standard 0-127 standard.
Maximum	Max value	The upper maximum value that the CC knob will send out. This is a value between the standard 0-127 standard.
Anchor	Push anchor value	If push type is set to 'Set to Anchor', this value is used when the knob is pushed, to reset the encoder to this value and also send the value out.
Learn	Sets listening mode	Sets the device to listen to the MIDI input channel for any MIDI messages. The channel and message received is assigned to the parameter destination settings.

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Note - Musical Note Values

Note messages represent a musical note value, similar to pressing a keyboard key or triggering a sequencer note. A Note On message is sent at a fixed velocity of 100 over a range of C-2 up to G8 when turning the control knob followed by a Note Off message.

Note

	Function	Description
Instr.	Instrument Def	Select an instrument definition which contains preset settings for a selected destination instrument. These can be managed in the OXI App. Option also to set to the default 'None'.
Param.	Parameter	Select an instrument definition to enable access to the parameter option. When an instrument definition is loaded the parameter mapped will be available in this setting.
Type	Parameter Type	Off, CC Rel1, CC Rel2, CC Abs, CC14 (High Resolution), PC, PB, AT, Note, NRPN, Script.
Output	Output & Port	MIDI physical output and port. Set to: Same as Page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as Page, 1-16
Min Note	Min note value	The lower note value that the knob will send out. This is a value between the between C-2(0) and G8 (127). C-2(0) Default.
Max Note	Max note value	The upper note value that the knob will send out. This is a value between the between C-2 (0) and G8 (127). G8(127) Default.
Anchor	Push anchor value	If push type is set to 'Set to Anchor', this value is used when the knob is pushed, to reset the encoder to this value and also send the value out.
Learn	Sets listening mode	Sets the device to listen to the MIDI input channel for any MIDI messages. The channel and note message received is assigned to the parameter destination settings.

NRPN - Non-Registered Parameter Number

NRPN is an alternative messaging to the MIDI CC standard and offers a higher resolution of control. Not all devices are NRPN compatible so check with the manufacturers MIDI implementation documentation. NRPN and High Resolution CC14 operate in a similar way with an MSB / LSB messaging approach.

NRPN

	Function	Description
Instr.	Instrument Def	Select an instrument definition which contains preset settings for a selected destination instrument. These can be managed in the OXI App. Option also to set to the default 'None'.
Param.	Parameter	Select an instrument definition to enable access to the parameter option. When an instrument definition is loaded the parameter mapped will be available in this setting.
Type	Parameter Type	Off, CC Rel1, CC Rel2, CC Abs, CC14 (High Resolution), PC, PB, AT, Note, NRPN, Script.
Output	Output & Port	MIDI physical output and port. Set to: '~' same as page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: '~' same as page, 1-16
MSB	Most Significant Byte	Coarse adjustment. Number used for the MSB message destination.
LSB	Least Significant Byte	Fine adjustment. Number used for the LSB message destination.
Minimum	Min value	The lower minimum value that the CC knob will send out. This is a value between the hi-res 0-16383 standard.
Maximum	Max value	The upper maximum value that the CC knob will send out. This is a value between the hi-res 0-16383 standard.
Anchor	Push anchor value	If push type is set to 'Set to Anchor', this value is used when the knob is pushed, to reset the encoder to this value and also send the value out.
Mode	Encoder behavior.	Sets the behavior of the encoder rotation. Options are: Div8, Div4 and Div 2 - Divides the encoder resolution by 8, 4 or 2. Acc0, Acc1, Acc2, Acc3 - Encoder acceleration. 0 = no acceleration, normal operation, 3 is max acceleration when rotating. LSp2, LSp4, LSp6 - large step mode - steps values in the 2, 4 or 6 increments selected. Default is 'Scene' which uses the acceleration setting set for the scene.
Display	Encoder Scale	How the encoder scale is displayed. Set to : Off - blank display, standard, 127 - Default, 100, 1000 - useful for CC14, B63 bipolar +/-, B63 bipolar +/-, 9999 useful for CC14 or High Res. Always on - Value is always displayed.
Learn	Sets listening mode	Sets the device to listen to the MIDI input channel for any MIDI messages. The channel and message received is assigned to the parameter destination settings.

Push Control Options

Each knob control can be set to 2 rotary destinations and 1 push destination. The push control sends a MIDI message when the knob is quickly pressed. Slow / long presses may select a secondary function rather than trigger the push option. Once a type has been selected, the available settings will present the configuration options.

CC

	Function	Description
Instr.	Instrument Def	Select an instrument definition which contains preset settings for a selected destination instrument. These can be managed in the OXI App. Option also to set to the default 'None'.
Param.	Parameter	Select an instrument definition to enable access to the parameter option. When an instrument definition is loaded the parameter mapped will be available in this setting.
Type	Parameter Type	Off, Note, CC, PC, Set to Anchor, AT, Navigate, Store, Script.
Output	Output & Port	MIDI physical output and port. Set to: Same as Page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as Page, 1-16
CC nr.	CC Number	Control Change Number. Sets the number for the CC mapping to a destination parameter. This will match the destination device parameter CC number.
Mode	Behavior	Press Only - P.Val sent on press. Press & Release - P.Val sent when pressed and R.Val; sent when released. Toggle - each push will change the state between P.Val & R.Val.
P.Val	Push Value	CC value sent out when the knob is pushed.
R.Val	Release Vale	CC value sent out when the knob is released. Option is available only on Press+Rel and Toggle types.

Note

	Function	Description
Type	Parameter Type	Off, Note, CC, PC, Set to Anchor, AT, Navigate, Store, Script.
Output	Output & Port	MIDI physical output and port. Set to: Same as Page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as Page, 1-16
Note	Note value	Sets the note value to send on the press of the knob. Options C-2 (0) to G8 (127). Default F-1(17).
Velocity	Note Velocity	Sets the MIDI output velocity level 0-127 that is sent with the note message. Default 100.
Mode	Behavior	Press Only - note on + velocity sent on press followed by note off. Press & Release - note on + velocity sent when pressed and note off when released. Toggle - Note on + velocity sent on first press and note off on next press changes state per press.

Set to Anchor

	Function	Description
Type	Parameter Type	Allows the push behavior to set the encoder to an anchor value set in each destination and to send this value out.

PC

	Function	Description
Type	Parameter Type	Off, Note, CC, PC, Set to Anchor, AT, Navigate, Store, Script.
Output	Output & Port	MIDI physical output and port. Set to: Same as Page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as Page, 1-16
PC nr.	PC Number	Program Change number sent each time the knob is pressed.

AT

	Function	Description
Type	Parameter Type	Off, Note, CC, PC, Set to Anchor, AT, Navigate, Store, Script.
Output	Output & Port	MIDI physical output and port. Set to: Same as Page, TRS1, TRS2, USB1, USB2, USB3, BLE, ALL-BLE all except bluetooth, ALL-USB all except USB, or to Off.
Channel	MIDI Channel	Communicates MIDI messages on this channel. Set to: Same as Page, 1-16
AT Val	Aftertouch Value	Value sent as channel pressure / aftertouch when the knob is pressed.
Mode	Behavior	Press Only - aftertouch value only sent on press. Press & Release - aftertouch value sent on press. Toggle - aftertouch value sent on press

Navigate

	Function	Description
Type	Parameter Type	Off, Note, CC, PC, Set to Anchor, AT, Navigate, Store, Script.
Nav	Navigate to ..	This selects an internal scene or page to navigate to. Optionally configures the push + turn left and right options for navigating scenes and pages with the knob. Scroll the scenes and pages is also an option available to setup.

Script

	Function	Description
Type	Parameter Type	Allows the push behavior to trigger a script.
Script ID	Script to run	Sets the script reference to run 0-255.

Store

	Function	Description
Type	Parameter Type	Performs a temporary quick store in the scene. This sets up a knob as: press to store the current parameter value states and press again to recall the stored state

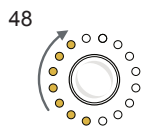
About the Push behavior: When using the push knob configured for a destination, the push requires a quick press. This is important as some commands also operate by holding / long pressing a knob. So for example, tap quickly to change page if set as destination or long press to assign a control to a group from the control view.

2.10 Store

It is useful, especially during a live performance, to capture and recall the current state of the E16 page of parameter value. This allows improvisation and experimentation and then quickly return to the prior value state.

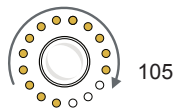
Store is a function that can be assigned per control knob. This allows the current page value to be captured when holding the encoder and after further changes, can be restored to the stored state by tapping the store encoder.

Store the current values on the page



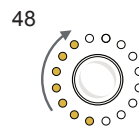
Hold the 'Store' assigned encoder. The parameters are stored and the display will notify.

Change parameters



Modify and edit the page of parameter values.

Recall values for the page



Tap the 'Store' assigned encoder. The parameters previously stored will be recalled.

Store can be assigned to an encoder knob from within the control view when editing a control type. The Store knob is pressed to activate a store command.

2.11 Special Functions Overview

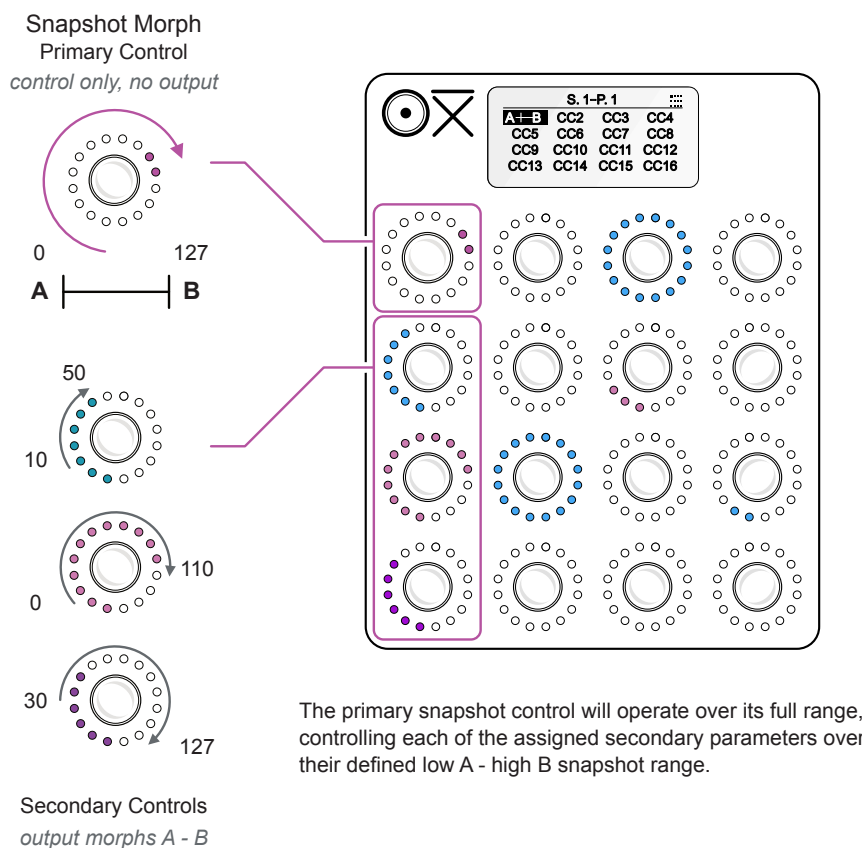
The E16 special functions, accessible in the control settings, affects the behavior of the knob and its control operation. A special function can be assigned for each control. The 'Special' menu options are:-

Special Options		Turn knob to navigate, tap knob to change.
	Function	Description
Off	Rotate 0-127	Control will operate with default behavior. Turning the knob will control the output over a 0-127 range.
Snapshot Morph	A to B range	Snapshot morph allows two knob values to be captured. These are stored as position A and position B. The A-B values then set the range for the control to morph between the two.
Looper Capture	Toggles loopers capture mode	Looper capture enables knob value changes to be recorded when in the control view. Capture will arm all of the controls for ready to record each one when turning a knob.
Looper Playback	Toggles loopers global playback	Sets the behaviour when pressing the knob in the control view. This option enables the playback start / pause of recorded loop automation.
Swap Destination	Dest 1 <u>or</u> Dest 2	Selects the which single output destination, 1 or 2, is controlled with the knob. Tapping a knob switches the destinations. The parameter will display underscored when destination 2 is the target. Output will be to both destinations if 'Swap Destination' is not configured. Each of the two destinations can also have its own knob LED colour.
Random	Randomize all values.	Randomize the parameter values for the page controls to values within the parameter ranges. The encoder is configured as the random generator, turn to set a % amount. Press to generate randomization.

2.12 Snapshot Morph

Snapshot morph mode assigns a knob as a primary lead. When the primary lead is adjusted, it will morph the values for other, secondary assigned knobs, between two defined A-B points. The lower A and upper B values of each secondary controller's range can be assigned to the A and B range of the primary snapshot knob. The primary snapshot knob only affects the connected secondary controls and does not send any output itself. The secondary controls send manually adjusted outputs valued or snapshot controlled values out. Any control knob can be set to snapshot morph mode.

Example



Snapshot A - Captures the lower value of selected secondary controls.

Snapshot B - Captures the upper value of the selected secondary controls.

The primary snapshot control will affect the secondary controls across their defined A-B ranges.

Individual secondary controls can still be adjusted across its full range manually.

The primary snapshot encoder LED ring will display as a special, minimal LED indicator representing the snapshot position rather than a fully ranged LED ring.

► **Setting Up a Snapshot**

1. The option for snapshot morph mode is found in the special section of the control settings, accessed from the control view. Select a scene by tapping the associated knob to choose the scene and its control view.
2. To open the settings menu, hold (Knob) to edit + tap [Shift] from the control view.
3. The editor tab should be open for 'Ctrl'. If not, hold [Shift] and tap (Knob 1) to choose the controller settings. The page and scene settings tabs are also available.
4. The knob which will be assigned as the primary snapshot control should be setup first. This is the lead control that affects the other knob values.
 - If another control is required, tap a knob to select a control to edit or use the currently selected control. Example (Knob 1).
 - To navigate, turn knob, example (Knob 1). Scroll to the 'Special' option and tap (Knob 1) to edit. The selected option is highlighted and when in edit mode the '►' tag label is shown.
 - Select the 'Snapshot Morph' option for the special setting. This also sets the 'Destination 1' to snapshot. A primary snapshot control only affects other controls and does not output MIDI messages itself. Tap knob to confirm.
 - When complete, tap [Shift] to backup and exit the edit menu.
5. Once a primary snapshot control is assigned, the A-B symbol is displayed on the screen for the control. If this is not yet configured, '?' may be displayed for the control. The next step is to connect the secondary controls that will be controlled.
 - Hold the Primary Snapshot knob + Tap the knobs to add to the snapshot control. Example: Hold (Knob 1) + Tap (Knob 5), (Knob 9) and (Knob 13). Holding a knob rather than tapping a secondary knob will select / deselect the entire page. The secondary controls are displayed highlighted while the primary knob is held.
 - Set the lower value as the starting point for each of the secondary knobs by turning each knob and setting its value. Example; Knobs 5, 9, 13.
 - Hold + Turn counter-clockwise the primary snapshot knob. When the knob is released, the lower values are captured into the slot 'A' for the snapshot. Example turn (Knob 1) counter-clockwise.
 - Set the upper value as the end point for each of the secondary knobs by turning each knob and setting its new value. Example; Knobs 5, 9, 13.
 - Hold + Turn clockwise the primary snapshot knob. Then release the knob to capture and save the values into the slot 'B'. Example turn (Knob 1) clockwise.
6. Adjusting the primary snapshot knob, now labelled A-B, will control and morph the values of the assigned secondary control knobs within their defined ranges.

NOISES

► **Setting Up a Random Encoder**

1. The option for knob randomization mode is found in the special section of the control settings, accessed from the control view. Select a scene by tapping the associated knob to choose the scene and its control view.
2. To open the settings menu, hold (Knob) to edit + tap [Shift]. This is performed from the control view.
3. The editor tab should be open for 'Ctrl'. If not, hold [Shift] and tap (Knob 1) to choose the controller settings. The page and scene settings tabs are also available.
4. The knob which will be assigned as the random control should be setup first.
 - Tap a knob to select a control to edit or use the currently selected control. Example (Knob 1).
 - To navigate, turn knob, example (Knob 1). Scroll to the 'Special' option and tap (Knob) to edit. The selected option is highlighted and when in edit mode the '►' tag label is shown.
 - Select the 'Random' option for the special setting. Tap knob to confirm.
 - When complete, tap [Shift] to backup and exit the edit menu.
5. Once a random control is assigned, the dice symbol is displayed on the screen for the control. The next step is to select the controls that will be affected, or not, by the randomization and the morph rate. Default is all parameters.
 - Select parameters to randomize. Hold the primary random knob + Tap or Hold a knob to add or remove from the randomization. Tap to select individually or hold to toggle selection for all knobs on the page. Example: Hold (Knob 1) + Tap (Knob 5), (Knob 9) and (Knob 13). The controls affected by randomization are backlit white, excluded controls are backlit black.
 - Set the morph time. This is the time it takes to change between the original values and the new random values. Hold + Turn the primary snapshot knob, for example (Knob 1). The slew time is set between 0.0s and 5.0 Seconds and displayed on the control and in the header.
6. To now use the random function, turn the primary random knob to set a randomization percentage between 1% to 200%. This sets the range of values to randomize for the affected parameters. Quickly tap the primary random knob to generate a set of random values. The values will change immediately or if a slew time is set, will transition over the time assigned.

2.14 Groups

Each of the individual parameters can also be added to a 'group'. A group is a collection of 2 or more parameters that can be controlled together as a collective set. Push and hold an encoder knob to view the group status. A maximum of 4 groups are available.

A control knob can play one of two roles if assigned into a group.

- **Primary lead.** A control which, when adjusted, will also change the value of all other knobs in the same group at the same time. Primary lead knobs will change its own value and the relative values of the others in its group. These can also be included in a snapshot control.
- **Secondary follower.** A control knob whose value can be changed by the lead knob. Turning a lead knob in the same group will change the value of this knob. A secondary follower knob can also be adjusted manually in isolation.

Create a group.
In the control view, push and hold first knob + tap knob(s)



Group 1			
CC1	CC2	CC3	CC4
CC5	CC6	CC7	CC8
CC9	CC10	CC11	CC12
CC13	CC14	CC15	CC16

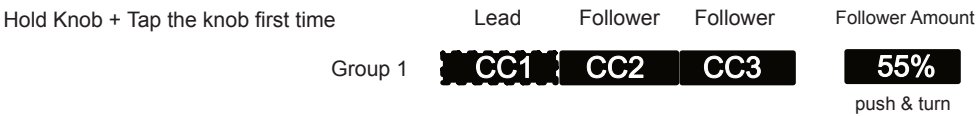
► Creating a group

1. Groups are set from the control view by holding a knob. The group number is displayed while holding a knob. Push and hold a knob, typically this will be the primary lead, displayed by the dotted border and fully lit LED ring for the knob. Example: Keep hold of (Knob 1).
2. While holding the lead knob, tap any other knob to add to the same group. Example: Hold (Knob 1) + Tap (Knob 2) & (Knob 3). Holding a secondary knob rather than tapping will select / deselect the entire page for the group. The first tap will add controls as secondary followers, indicated by the solid border and the LED ring partially lit, right side.
3. While still holding the lead knob, tap any other knob a second time to change the group assignment from a follower to a lead. Example: Hold (Knob 1) + Tap (Knob 2). The second tap will change its control mode from follower to lead, indicated by the dotted border and fully lit LED ring.
4. To remove a control from the group. While holding the lead knob, tap any other knob a third time to remove it from the group. Example: Hold (Knob 1) + Tap (Knob 2). Knobs that are not in the group are shown as normal, not highlighted and the LED ring unlit while holding the knob.
5. At the conclusion of these examples, Knob 1 will be the primary lead and Knob 3 a follower control.

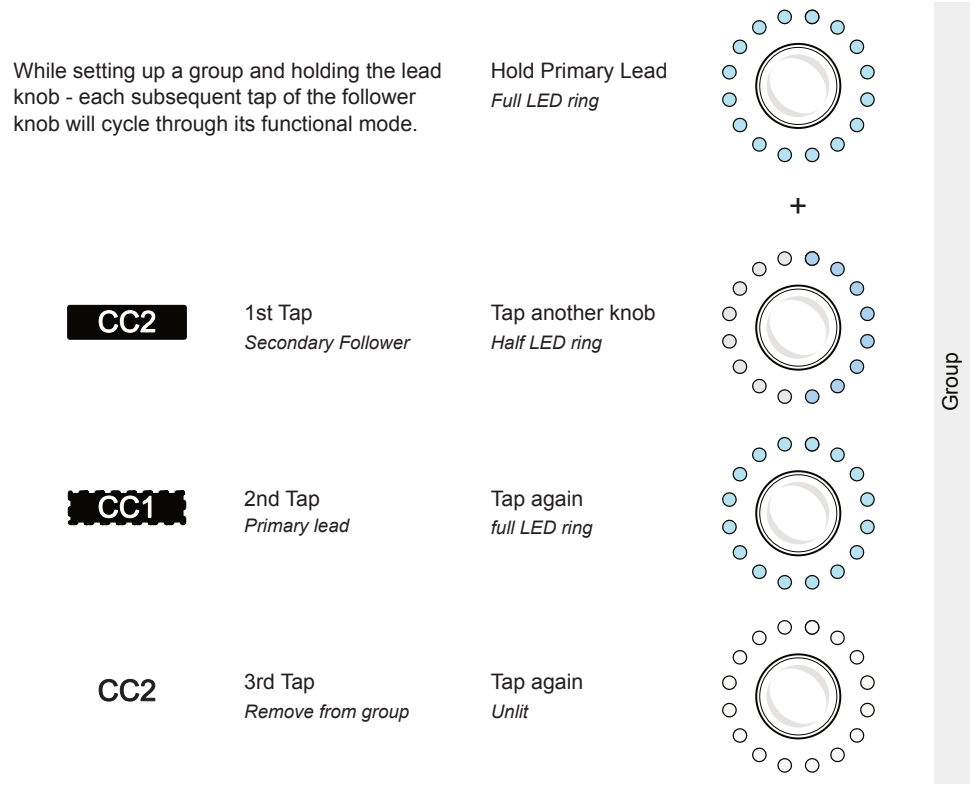
Group Operating Behavior

Parameters displayed with a 'solid' bounding box will follow any changes made by a primary lead control, but can also be adjusted independently. The primary lead controls are shown with a 'dotted' boundary box. In the example below only CC1, when adjusted, will affect its own value plus the value of the other 2 parameters. When changing the CC2 or CC3 knob, only its own individual value is changed. Other parameters in the group are not affected.

The amount of control applied by the primary lead to a follower can be set for each follower parameter. The amount is set on each follower by holding & turning its knob. In this example hold + turn knob 2 (CC2) to set the amount, then repeat for CC3.



Parameters displayed with a 'dotted' bounding box will act as a primary lead control. If any of these are adjusted, the values of the other parameters in the same group are also adjusted in harmony. The value change is relative to each of the parameter's original value. In the example below, all three knobs will affect the value of itself and the other two parameters.



2 Connect & Control

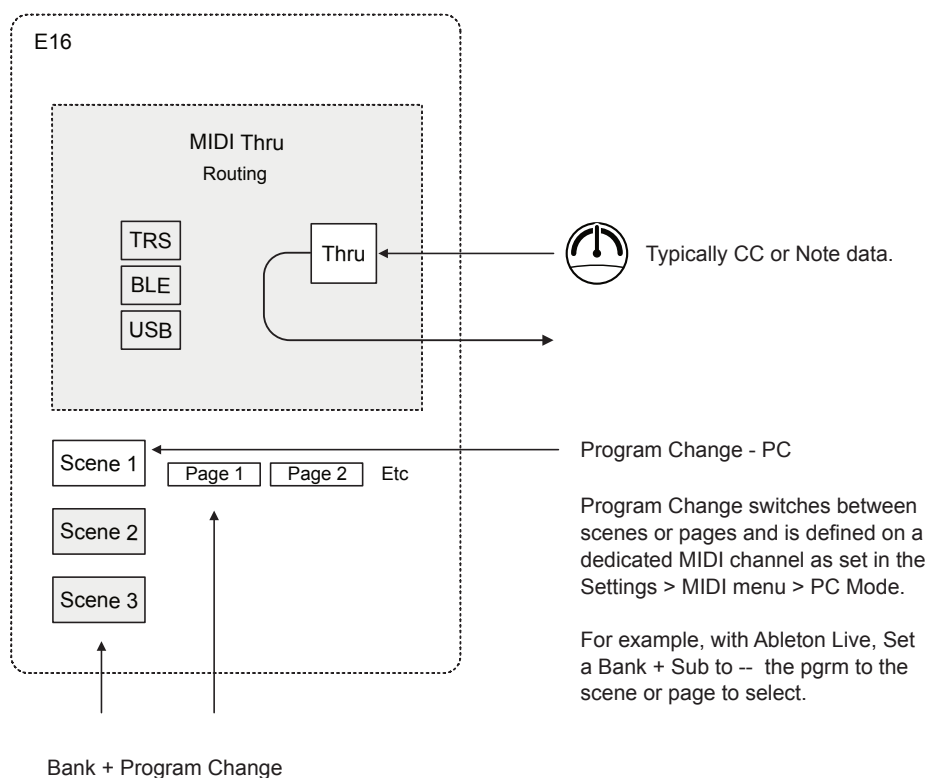
2.15 MIDI In

The E16 can channel incoming MIDI through to the selected outputs. This is configured in the Settings > MIDI section. An active, external MIDI clock is also be used by any tempo synchronised recording mode.

In addition external MIDI PC - Program Change messages can be used to change scenes or pages on the device.

- A program change can be used along with a bank select message to change scenes and pages. Bank Select received by the E16 will change the scene while the Program Change message is used to change pages. The MIDI Config 'PC Receive Channel' must be set.
- Alternatively, a PC message can be used to change the scene or the page. This option is set in the MIDI Config 'PC Mode' options. The MIDI Config 'PC Receive Channel' must also be set.

Example: MIDI Input to change a scene.



If a bank change is initiated with a program change message, the bank will change the scene and the PC will change page.

For example, with Ableton Live, Send a Bank + Sub as the sub will select the scene, and the pgm will change the page.

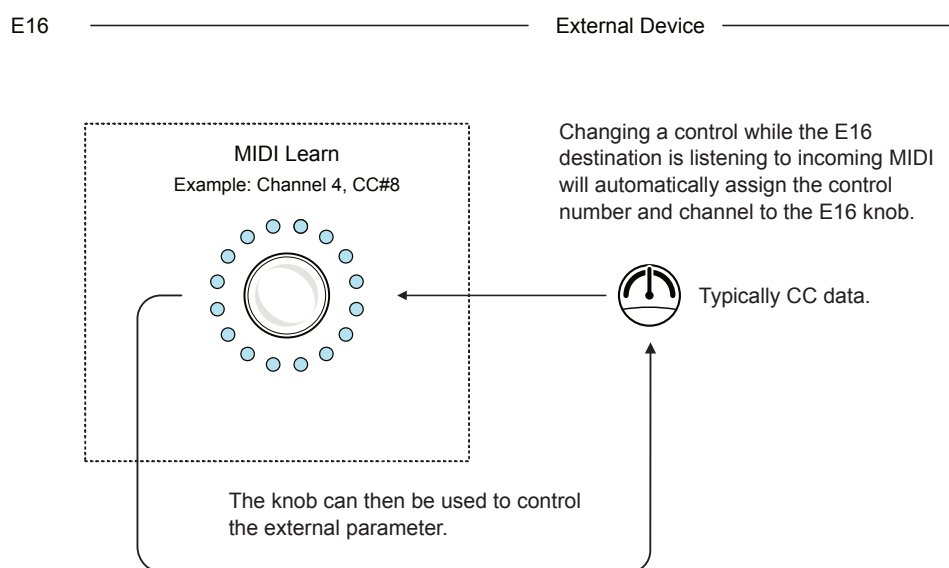
► Changing the Scene or Page with a PC Message

1. Connect the externally controlling device to a MIDI input on the E16, for example from PC/Mac to the E16. Ensure the general MIDI settings are correct on the external device in order to send a PC message.
2. On the E16, open the system config. In the home screen, press (Knob 8).
3. Navigate to the MIDI settings, tap to open.
 - Navigate to 'PC Receive Channel' and set this to a dedicated MIDI channel that the external device will send the PC message. Example, set to channel 8.
 - Navigate to 'PC Mode' and choose either scene or page. The selected option is what will be changed by the incoming PC message.
4. Sending a PC message without any bank or sub bank data on the defined channel will then change the scene or page to the PC message value. For example PC 1 will select Scene 1, PC 4, selects Scene 4. Scenes 1-16 can be selected directly by PC.

2.16 MIDI Learn

The option to automatically register a knob to an incoming MIDI message is possible with the MIDI learn feature. This is found in each of the parameter destination options. E16 will learn the MIDI channel and the incoming MIDI message, when the external control is changed. For example, turning a control change parameter on channel 4 will register the CC number and channel to the control knob 'listening' for the message.

Example: MIDI Input

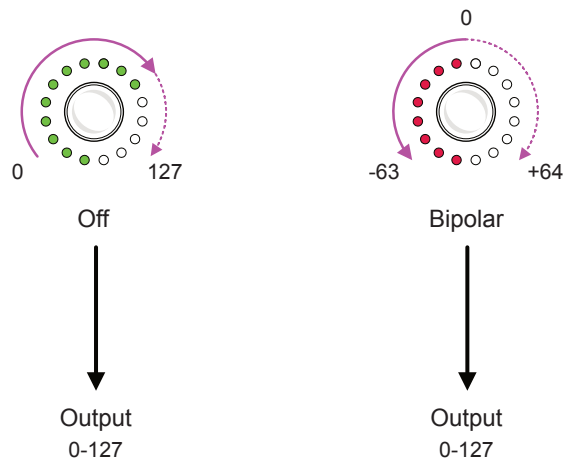


► Setting a knob to MIDI Learn

1. Connect the externally controlling device to a MIDI input on the E16, for example from PC/Mac to the E16. Ensure the general MIDI settings are correct on the external device in order to send MIDI messages.
2. On the E16 control view, Hold (Knob) + Tap [Shift] to open its settings.
3. Navigate to the destination 1 or 2 settings by turning the (Knob). Press (Knob) to open the destination options.
4. Navigate to the 'Learn' option by turning the (Knob).
5. Press (Knob) to start listening for incoming MIDI.
6. Send a MIDI message to capture for the destination. For example, turn the external parameter control. The E16 will automatically learn the channel number and MIDI message and assign it to the destination settings.
7. Once learnt, the E16 will send MIDI out on the chosen controller to this external control when turning the knob.

2.17 Notes on Bi-Polar

The controller destination > display settings include a bi-polar option. The knob behavior can be set to display a normal 0 to 127 range or a bipolar -63 to 64 range. The LED ring will represent the value as well as the display screen. This setting affects only the display and control behavior. In both instances the physical output would be the same, for example for CC, both are ranged over 0-127.



Looper

Looper is the function that enables the recording and playback of automation loops for one or more controls in the control view. Any knob value changes can be recorded individually into an individual control pattern and then this can be re-played back in a loop. The loop will cycle the value changes of the destination parameter in the same way that a manual adjustment affects the parameter. The recording mode sets the synchronization behaviour that will suit your workflow or the application required. Any manual changes on a recorded loop will override and erase the recorded data unless overdubbing. Recordings are not saved so will be erased when changing scenes or powering the device on or off. This is a particularly creative tool not only to automate individual knob controls, but also together with functions such as recording a snapshot or group lead control can be a powerful feature.

3.1 Looper Recording Introduction

The E16 has a configurable looper which records and plays parameter automation for each control. Parameter changes can be recorded with a variety of synchronization options and then played back in a loop.

Once armed, any knob push or turn, will activate the loop recording process for each knob that is adjusted. Playing the recorded loop, will apply the automated control pattern to the knob and hence to the external destination parameter.

Recordings are not retained when switching scenes or when powering off the device.

There are 3 capture mode selection options to consider:

1. Alt Menu Arm. Capture mode can be initiated with the single 'Capt' menu command found in the page Alt menu. By default this is (Knob 13).
2. Hold Menu Arm. if configured with the looper capture, the hold menu also has the recording commands available.
3. Knob Transport Arm. This is part of the 'special' configuration options. Each knob can be set with its own 'on-the-knob' transport commands. The 'Looper Capture' special function will arm recording when tapping the knob. Playback or pausing loops across all controls can be configured with the 'Looper Playback' special function.

Whichever transport command is used, capture 'on' will arm ready all knobs for loop recording. Knob movement will then start the recording of the automation loop for the selected knob. Knob movement when not armed, for example while playing, will allow manual control to be applied and will clear any recorded loop for the knob.

It is advised to set the synchronization rec mode and associated settings for loop recording prior to starting the recording process. Any state of settings you start recording with will be used for the specific recording. You can switch to other settings between individual knob recordings. The settings are 'baked' in per control recording

Recording Time

The maximum system recording time is 8 Minutes / 480 Seconds, shared across all controls. The maximum recording time per control is 60 Seconds. A warning is issued when starting a recording that would be impacted by the 60 second limit. For example, a low bpm, say 50bpm, at 16 bars would exceed 60 seconds in fixed sync recording mode.

To start a recording, the full 60 seconds must be available in the shared buffer. If the recording ends early, the unused seconds will be placed back into the shared buffer

3.2 Looper Setup Menus

While the transport and arming controls can be made available on the knobs, the menu functions are a good aid to setting up the recording behavior. Your workflow will govern the best option to choose.

The menu options can be edited in either:-

- **The Alt Menu Editor.**

Select the page view and hold 'Capt' (Knob 13) + [Shift].
The default Alt menu has 'Looper Capture' assigned to knob 13.
This menu is useful for pre-configuring the recording setup.
Configuration options are presented as a scrollable menu.

Alt Menu Edit	
Type	Looper Ca
Rec Mode	No Sync
Smooth	0.25s

Navigate by turning a knob.
Tap to select, turn to change.

- **The Hold, Looper Capture Menu.**

Select the control view and hold [Shift].
The 'Hold' menu must have 'Looper Capture' pre-assigned in order to select it.*
Useful for on-the-fly recording changes and transport commands.
The knobs are used to edit options and initiate commands.

Total recording time remaining	Page 1	Number of controls available for recording.	Page 2
480s	16/16	480s	16/16
Capt	Mode	Qntz	Len
Off	NoSy	--	--
Play	BPM	Odub	Clr
Off	120	--	Hold
SMod	STme		
Wrap	0.25		

Tap knob 1-8 to chose page 1.

Tap knob 9-16 to chose page 2.

Edit the settings by turning or pressing the respective knob 1-8 or 9-16 for the parameter to change.

* By default, the hold menu is set to 'Off' . The 'Looper Capture' must be assigned as pre-requisite.

Hold Function - Control View [Shift]: The [Shift] button hold behavior can be changed based on your preferred workflow. Holding [Shift] in page view will open the options to assign to the hold menu. The menu can be assigned as the looper capture. Command knobs in the 'Alt' menu can also be set in the page view by holding a command, example (Knob 13) + [Shift].

3 Looper

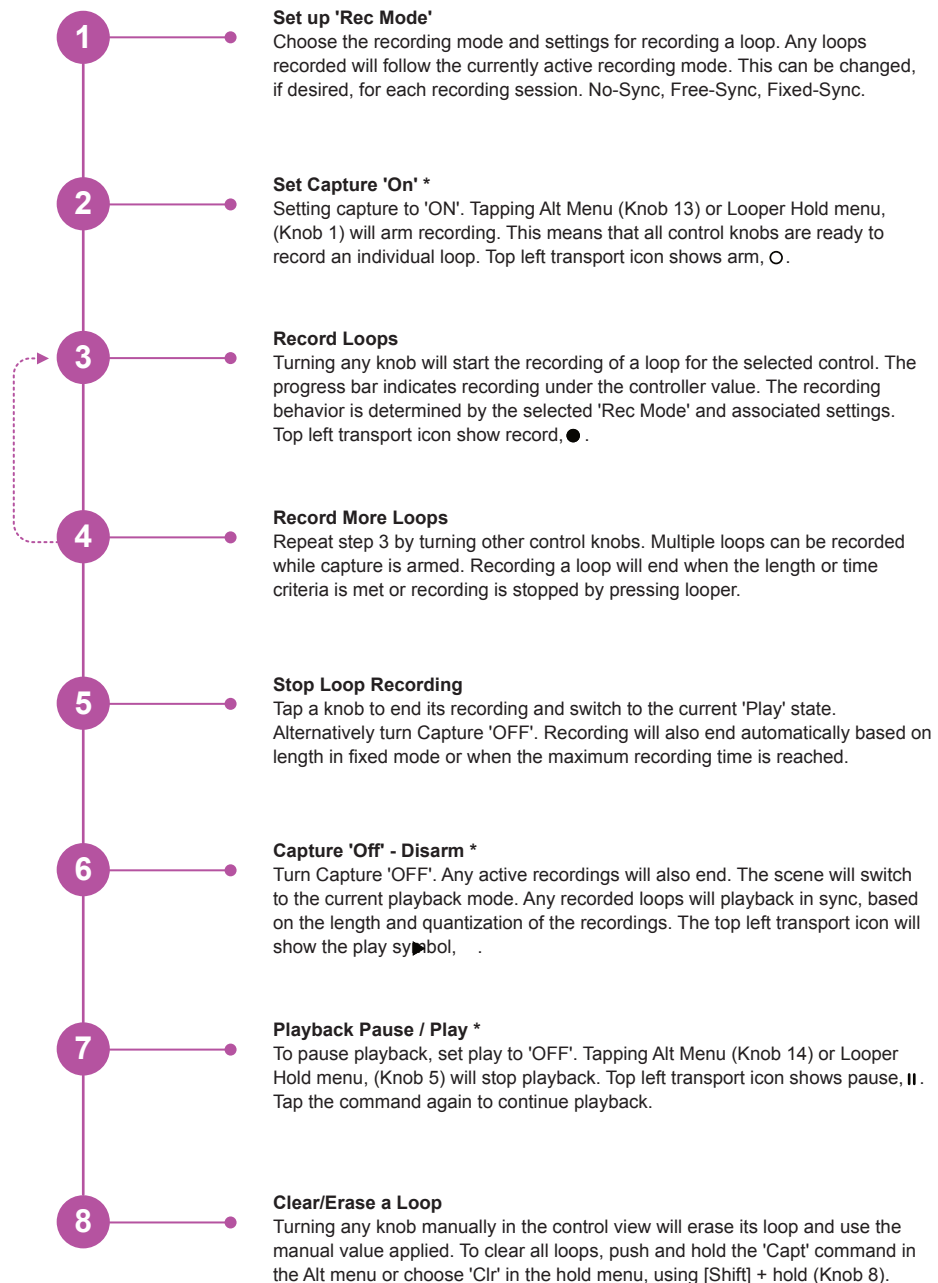
Recording Options

Hold Looper Menu	Rec Mode	Description
N/A	All	Assigns a function to the knob 13-15 in the page view Alt menu. Select from Off, Page, Looper Capture, Looper Play or Exit. For recording automation the button default is set to 'Looper Capture' which then presents the set up options as listed here in this table.
Mode	All	Recording synchronization mode. No Sync, recording is freely performed without a clock sync. Free sync, records from a quantized stop and start but rounds the recording to the nearest whole bar. Fixed Sync, records to a fixed and defined bar/phrase length.
STime	All	Sets the transition time for the smoothing through the loop based on the smoothing mode selected. Range can be set to Off, 0.01 to 1 Sec. OFF provides no smoothing.
SMod	All	Sets the behavior of the parameter automation to create a smooth transition as the recording through playback and as it loops around from the end. Wrap will provide a cross-fade style transition. Tail will create a ramp from the loop value to the start value. These work in conjunction with the 'Smooth/STime' value.
BPM	All	Sets the internal tempo in beats per minute for the E16 clock. Range is 40-300BPM. External clock may override if present.
Capt	All	Tap to set capture mode on, arming the recording ready to record the knob automation loops. Recording starts when turning a knob.
Qntz	Free & Fixed Sync	Quantization interval applied. Bars or Phrase for fixed sync and bar or beat for free sync.
Len	Fixed Sync	Sets the recording length for fixed sync loop recording. Length is based on the quantization interval.
Play	Play	Tap to play or stop the recorded knob loops.
Odub	Fixed Sync	Sets overdub mode on, allows recordings to be overwritten when new adjustments are made to a control. Off will only record the initial loop automation.
Clr	All	Clear all recorded loops.

The recording mode behavior and parameters are explained further in the specific mode descriptions.

3.3 Recording Workflow

You will develop your own specific workflow when working with the E16. To get started here is an example, high level, workflow that will illustrate the key steps to looper recording and playback.



* Knobs can also be assigned with the looper capture and looper record transport controls if required. In this case the knob will also show the transport icon. Pressing the knob will operate the same commands as capture and play and affect all controls.

3 Looper

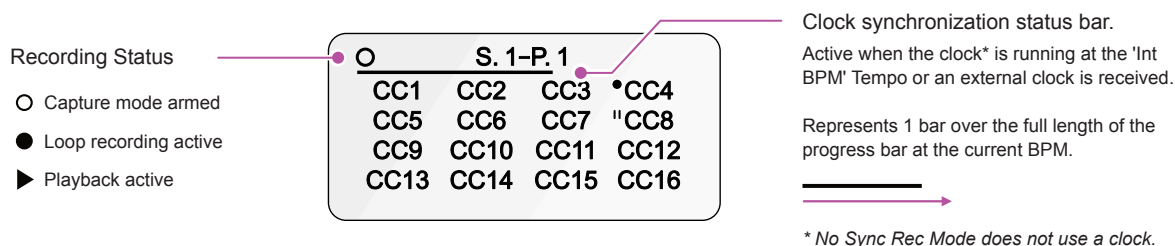
3.4 Conventions for Loop Recording

The control view is the primary page for recording and managing playback. It is also possible to use the page menu options. Recorded data and synchronization status is animated in real-time for all values on the control view.

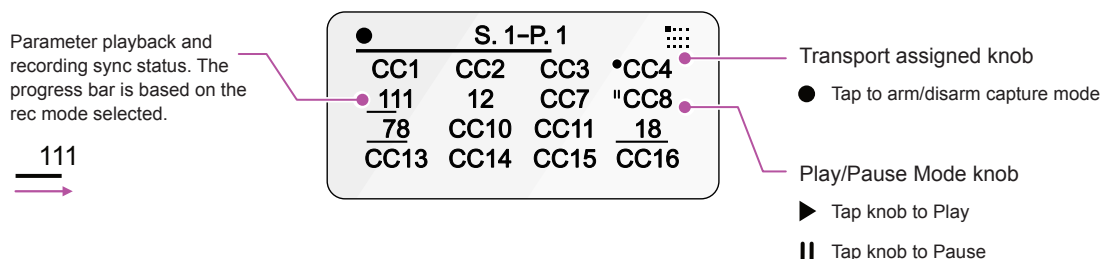
Setting up Rec mode and its parameters is a pre-recording task which determines loop recording synchronization and transition behavior. After setup, any subsequent loops will be recorded for each knob movement based on the current settings. It is possible to change the rec mode and then to continue to record automation for other knobs. Recordings will adhere to the recorded mode for any knob adjusted. Recording and playback are decoupled, so existing loop recordings can play while recording on other knobs.

The main global synchronization can be viewed with the progress bar under the header for free and fixed sync modes. This shows that a clock is recognised and is running. The transport icon and the progress bar cycle represents 1 bar at tempo speed. In addition, each loop recording has a progress bar under the knob value that represents the loop position, length and status when recording and playing.

Clock and Arm Status

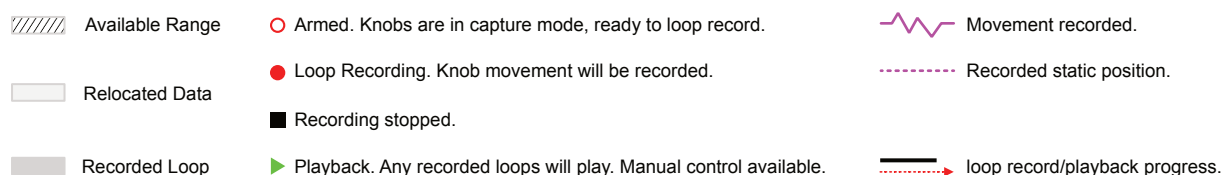


Loop Recording Status



If a knob has a special command assigned for 'Looper Capture' or 'Looper Playback', these commands take precedence for tapping a knob. With no special transport command assigned, tapping any knob will stop/start loop recording if capture is armed. This is the default behavior for all modes. The following examples of rec modes assume the default mode.

The icons and symbols below are used on all of the Rec Mode examples shown in this manual.



3.5 Recording Mode & Synchronization

Which ever workflow is used for arming recording, any loop recorded is performed with the currently active 'Rec Mode' . This manages the recording and playback synchronization and offers flexibility in how loops are captured and replayed. Three recording modes are available. Internal synchronization of the E16 can also take a clock reference from a connected MIDI device such as the OXI One MkII.

► Setting up Rec Mode Behavior - Hold Menu

1. As pre-requisite, the hold menu must be configured to 'Looper Capture'. This is set in the page view by holding [Shift] and tapping (Knob 2).
2. The hold menu can now be selected from the control view by holding [Shift].
Navigate to control view to access the hold menu.
3. To set the recording mode from the Hold menu. Hold [Shift] + Turn (Knob) 1-8 to adjust the settings. Tapping (Knob) 9-16 will switch to page 2. [Shift] must be held throughout as releasing it will close the menu.
4. The 'Rec Mode' setting, labelled 'Mode' is set using (Knob 2) in Page 1. The active page is shown top right by the two icon bars.
5. The hold menu header also displays the total recording time remaining in seconds and the number of controls of the total 16 which have active recordings.

3 Looper

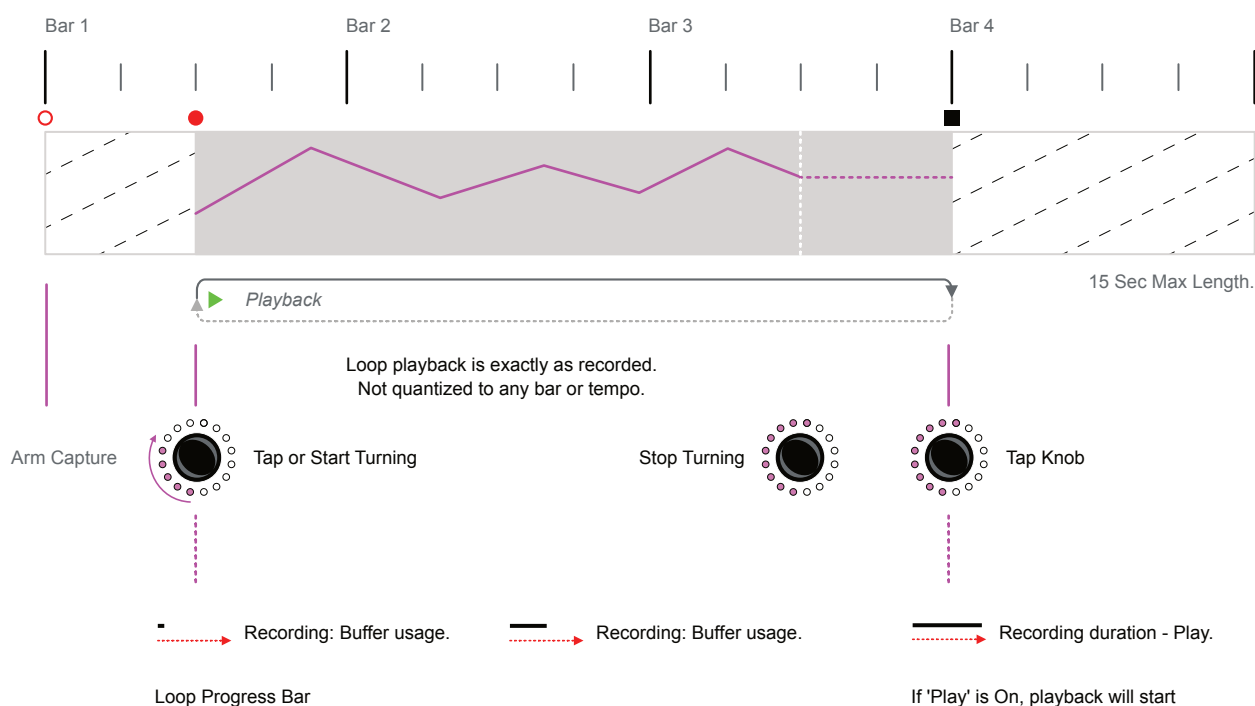
No Sync - Rec Mode

No Sync recording mode is a free flowing mode that does not use a clock for sync. When capture mode is armed, adjusting any knob will start the recording of the parameter changes. When knob movement ceases, recording will capture the last value and continue until recording is stopped.

Recording will stop when either of the following scenarios is true:-

- Loop recording is stopped by pressing the knob being recorded.
- End Capture. Recording is disarmed and stopped. Press 'Capt' or a record enabled knob to stop recording. Ending capture is also automatically performed when exiting a scene, for example in the Alt menu 'Exit'.
- The 60 Seconds, maximum loop recording length is reached or the total recording time for the device is reached. A warning message is issued if the recording time available is restricted.

Example.



CC4

If 'Play' is Off, playback will pause, then start when the play is set to On.

Free Sync - Rec Mode

When capture is armed, recording will commence when a knob is turned. The loop will only start recording from the next quantization interval. Any data recorded earlier than the quantization bar/beat will be relocated to the end part of the loop. For example, after turning the knob, the loop will be recording from next whole bar position. When knob movement ceases, the last value will hold and be recorded until recording is stopped. The end is then rounded to the nearest quantization interval. Recording beyond the quantized interval will trim it back and any shortfall will extend the loop to the next interval. The playback range will therefore always cover whole bars/beats. The interval is set in the Quantize option to bar or beat.

Recording will stop when either of the following scenarios is true:-

- Loop recording is stopped by pressing the knob being recorded.
- End Capture. Recording is disarmed and stopped. Press 'Capt' or a record enabled knob to stop recording. Ending capture is also automatically performed when exiting a scene, for example in the Alt menu 'Exit'.
- The 60 Seconds, maximum loop recording length is reached or the total recording time for the device is reached. A warning message is issued if the recording time available is restricted.

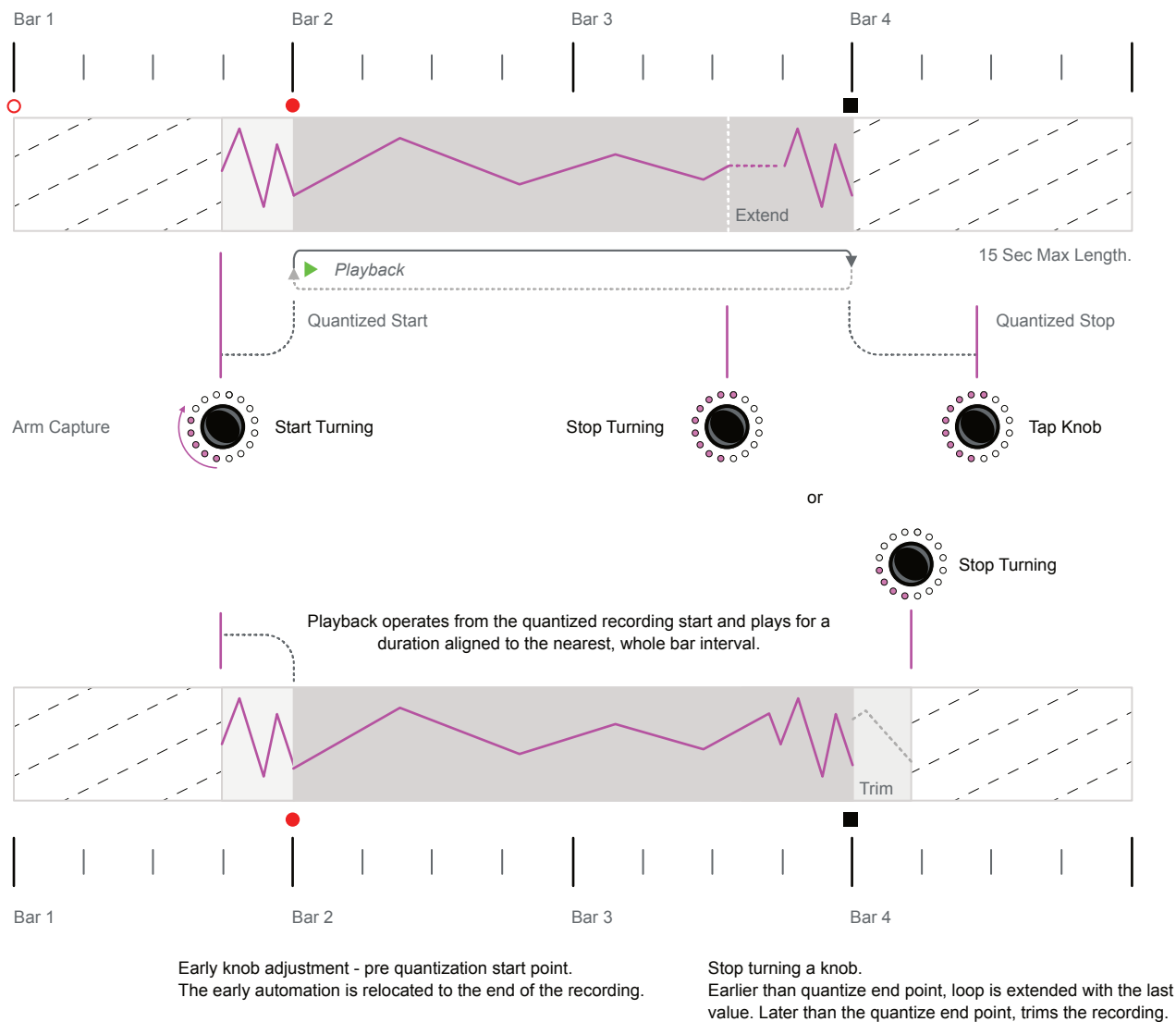
Free Sync Record Mode Options - Alt Menu

Menu Option	Function	Description
Rec Mode	Synchronisation	Free sync, records from a manual stop and start but rounds the recording to the nearest whole bar.
Quantize *	Recording Interval	Sets the interval that will be used as the recording start and end quantization marker. So recording will start on the first quantized interval after the count-in period and the duration will always round to the nearest whole bar or beat. The selectable options are bar or beat.

* This options appears when the 'Free Sync' mode is selected. Quantize appears in addition to the other Alt Menu options when this mode is selected.

3 Looper

Example: Quantize set to Bar.



Fixed Sync - Rec Mode

When armed, adjusting a knob will trigger the count-in period, ready to record at the next bar interval. This is indicated by the reversed progress bar indicator under the knob parameter value. Once the bar interval is reached, loop recording starts, now the progress bar plays forwards to indicate recording duration. The recording will be performed to a fixed bar length as defined in the Alt menu settings and stops automatically when the bar count is reached. If knob movement ceases during recording, the value is frozen until the end of the range. If overdub is on, the recording will loop and overwrite while further knob adjustments are being made.

Recording will stop when either of the following scenarios is true:-

- Loop recording is stopped by pressing the knob being recorded.
- End Capture. Recording is disarmed and stopped. Press 'Capt' or a record enabled knob to stop recording. Ending capture is also automatically performed when exiting a scene, for example in the Alt menu 'Exit'.
- The 60 Seconds, maximum loop recording length is reached or the total recording time for the device is reached. A warning message is issued if the recording time available is restricted.
- Fixed bar length setting is reached, when not in overdub mode. In overdub mode the loop length will cycle to allow punch-in recording changes.

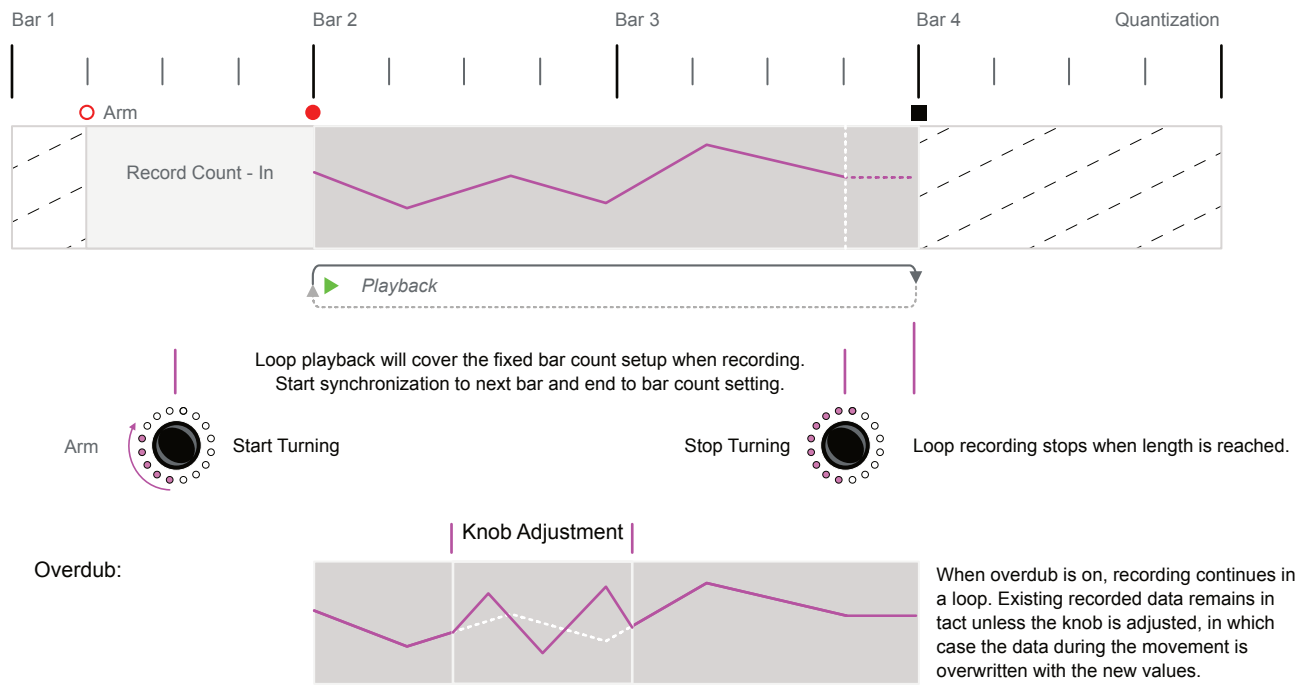
Fixed Sync Record Mode Options - Alt Menu

Menu Option	Function	Description
Rec Mode	Synchronisation	Fixed Sync, records to a fixed and defined bar/phrase length.
Quantize *	Recording Interval	Sets the interval that will be used as the recording start and end marker. So recording will start on the first quantized interval after the count-in period. The options are bar or phrase.
Length *	Recording Length	Sets the length used for the recording duration. This will be the fixed recording length after the count-in period, starting from the quantized start position and ending at the set length. Options include 1, 2, 4, 8 or 16 Bars, including sub increment for example, beats 1.1, 1.2, 1.3, 1.4. 2 etc.
Overdub *	Overwrite on Loop	With overdub on, the loop will continue recording through further cycles. Any knob changes will replace the existing data with the newly recorded values. If a knob is not adjusted, the existing data will remain unaffected. If overdub is off the recording will stop recording at the fixed length.

* These options appear when the 'Fixed Sync' mode is selected. They appear in addition to the other Alt Menu options when this mode is selected.

3 Looper

Example: Length - 2 Bars, Quantization - Bars.



Armed: Count In Blinks Recording: Position in fixed length Record length. Play: Loop position.

Loop Progress Bar

The clock sync progress bar will also be visible in this mode, located in the display header.

If 'Play' is On, playback will start when the recording ends.

CC4

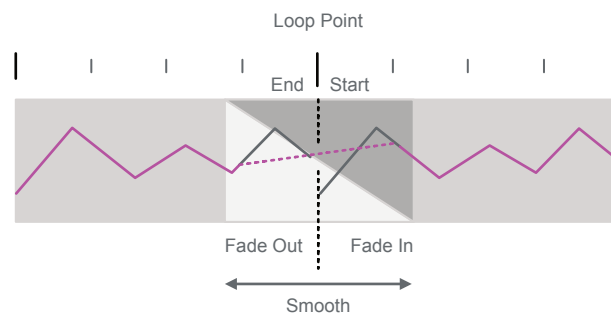
If 'Play' is Off, playback will pause, then start when the play is set to On.

Loop Transition Smoothing

Smoothing determines how the transition will be managed from when the recording ends to when it restarts when playing the loop.

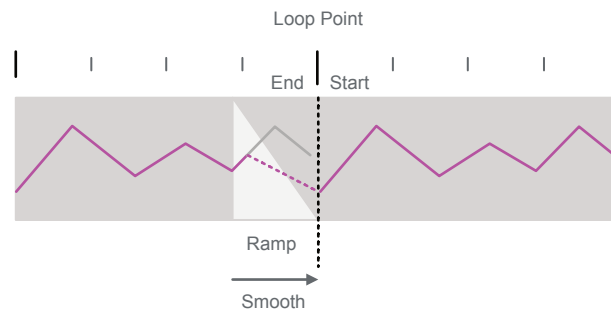
When smoothing mode is set to wrap, the transition is performed with a cross fade which applies a fade in and fade out. Tail will ramp the ending parameter value to the original value of the start position. The transition is applied over the 'Smoothing' time amount set.

Example: Wrap, Smooth 0.25s



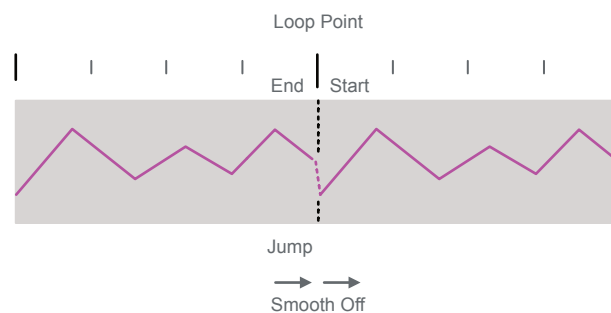
Wrap: Cross fade makes a seamless, jump free transition at the loop point.

Example: Tail, Smooth 0.25s.



Tail: Start value remains unchanged while the end value will ramp towards the start value for seamless transition.

Example: Tail or Wrap, Smooth OFF.



When smoothing is off, the value will simply jump from the value at the end of the loop to the value at the start..

3.6 Recording Knobs

The Alt menu, located in page view has commands to arm capture and stop recording. Also to toggle playback mode on or off. If configured with 'Looper Capture', the Hold menu can also select capture and record modes. The hold menu is accessible from the control view. The recording processes are covered here.

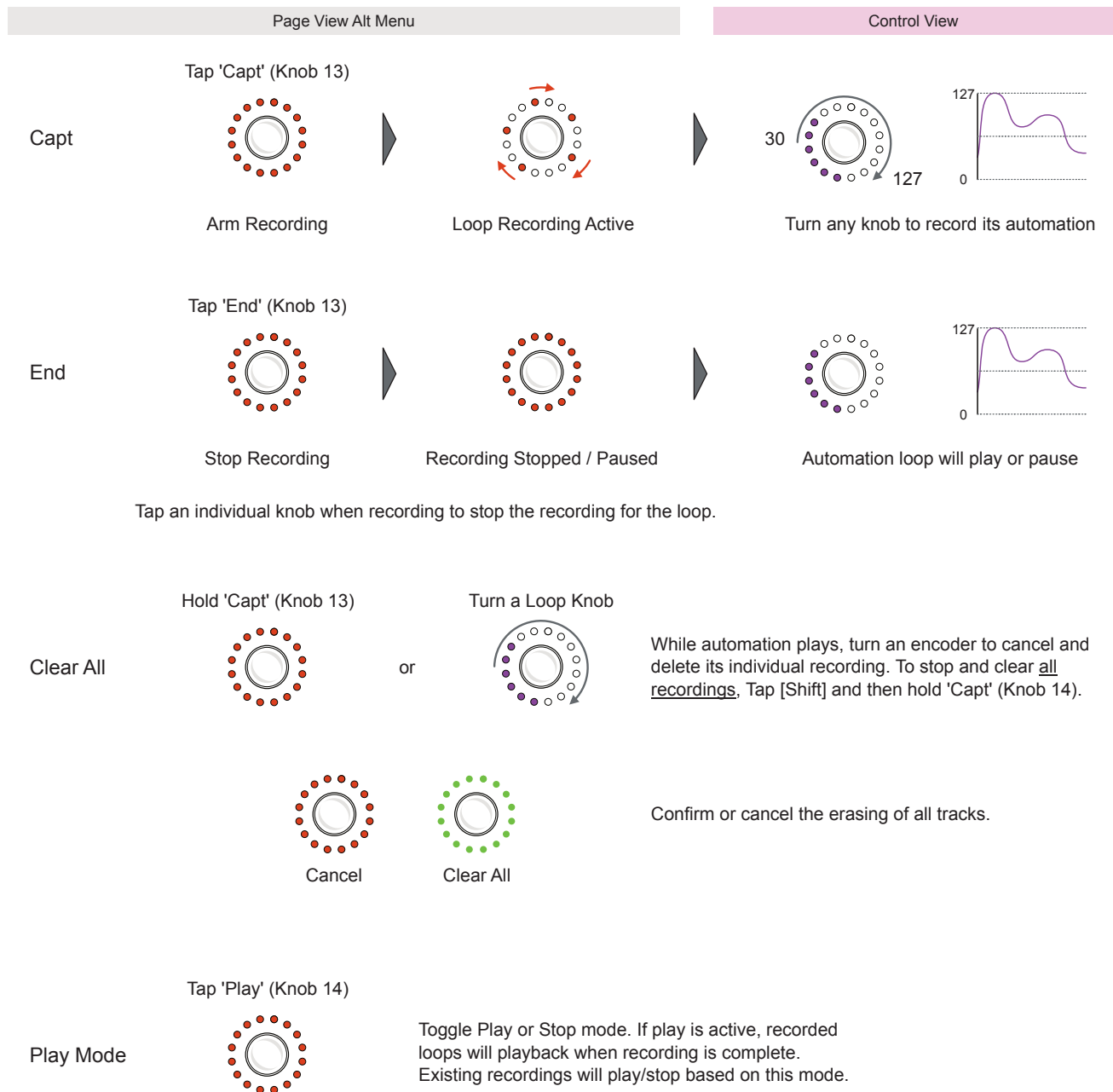
Note that the recording and playback commands are decoupled. So the 'Play' mode can be set to on / off whether recording or not. Loops will automatically play once recording has stopped if 'Play' is active or they will pause if 'Play' is inactive.

► Recording from Page View, Alt Menu

1. From the control view, tap [Shift] to open page view.
2. To arm recording Tap 'Capt' (Knob 13), Default is knob 13. Recording status is indicated by the arm/record symbol in the top left of the control display. The 'Capt' Knob LEDs will rotate red.
3. The interface switches to control view. Recording each control loop can be performed by adjusting any knob on the page. Multiple knobs on the page can be recorded. Recording status is indicated by the symbol in the top left of the control display.
4. The status of the individual loop recording will be displayed by the progress bar under each control. This is based on the rec mode synchronisation setting.
5. Tapping the individual knob being recorded will stop recording that loop.
6. To stop global recording, tap [Shift] to go back to page view.
7. Tap 'End' (Knob), default is (Knob 13). Same knob as for 'Capt', but the mode changes to 'End' when recording.
8. The state of the 'Play' command will determine if playback commences when recording stops. The default is (Knob 14) and can toggle between 'Play' and 'Stop' when tapping the knob. The page view 'Play' knob LEDs will rotate green if 'Play' is active.
9. To clear all automation recordings for all controls on the page, Hold 'Capt' (Knob 13). Confirm erasing all tracks by tapping (Knob 3) or cancel by tapping (Knob 2).

Start / Play Recording from the Page Alt Menu

Tapping [Shift] in the control view opens the page view and menu



► Recording from Control View, Hold Menu

- 1. A pre-requisite is that the hold menu option is set to 'Looper Capture'. The default is 'Off'. In Page view, hold [Shift] to assign the function to the hold menu. The hold menu will appear while holding [Shift] in the control view.
- 2. To arm recording Hold [Shift] + Tap 'Capt' (Knob 1). Recording status is indicated by the arm/record symbol in the top left of the control display. Mode will be 'On'.
- 3. Recording each control loop can be performed by adjusting any knob on the page. Multiple knobs on the page can be recorded. Recording status is indicated by the symbol in the top left of the control display.
- 4. The status of the individual loop recording will be displayed by the progress bar under each control. This is based on the rec mode synchronisation setting.
- 5. Tapping the individual knob being recorded will stop recording that loop.
- 6. To stop global recording, Hold [Shift] + Tap 'Capt' (Knob 1). Mode changes to 'Off'.
- 7. The state of the 'Play' command will determine if playback commences when recording stops. Hold [Shift] + Tap (Knob 5) to toggle between 'Play' and 'Stop'.
- 8. To clear all automation recordings for all controls on the page, Hold [Shift] + hold 'Clr' (Knob 8). All recorded automation will be erased for all knobs.



Hold [Shift] to access the hold menu and use knobs 1, 5 and 8 to control recording commands. Other knobs edit settings.

480s		16/16			
Capt	Mode	Qntz	Len		
Off	NoSy	--	--		
Play	BPM	Odub	Clr		
Off	120	--	Hold		

Tap knob 9-16 to access page 2.

480s		16/16			
SMod		STme			
Wrap		0.25			

Recording can also be performed by using any knob which has the special function for 'Looper Capture' or 'Looper Playback' assigned. This allows an individual knob to control the recording and playback for all loops.

3.7 Looper Quick Reference

A summary of the looper commands is provided here for a collective reference when recording automation. Commands assume the default configuration of the Alt menu.

Looper Quick Reference

Function	Command	Description
Arm Capture Mode	Hold Menu: Hold [Shift] + Tap (Knob 1) Alt Menu: Tap (Knob 13)	It is recommended to use the hold menu for the recording workflow. User interface knob LEDs will rotate orange.
Record a Knob	Tap a (Knob) to start recording Turn a (Knob) to start recording.	Capture mode must be armed ready to record. One or more knobs can be recorded.
Stop Recording a Knob	Tap (Knob) to stop it recording	Global playback may continue to be visualised on the display when stopping individual knobs.
Stop Recording All knobs	Hold Menu: Hold [Shift] + Tap (Knob 1) Alt Menu: Tap (Knob 13)	End global capture mode to stop recording.
Start Playback	Hold Menu: Hold [Shift] + Tap (Knob 5) Alt Menu: Tap (Knob 14)	Select Play. User interface knob LEDs will rotate green.
Stop Playback	Hold Menu: Hold [Shift] + Tap (Knob 5) Alt Menu: Tap (Knob 14)	Select Stop. User interface knob LEDs will rotate green.
Erase a Knob Automation	Turn (Knob) - Capture OFF/ Disarmed Hold (Knob) - Capture ON / Armed	While in normal playback more, capture disarmed, turning a knob will erase its recorded automation. The manual control will operate as normal.
Erase All Knob Automation	Hold Menu: Hold [Shift] + Tap (Knob 8) Alt Menu: Hold (Knob 13)	Holding Alt menu 'Capt' while disarmed. Confirm with (Knob 3) or cancel with (Knob 2). Also use the Hold menu 'clr' will erase all automation.

Scenes

Scenes are the highest order of organisation in the E16, each scene can hold 16 pages of parameters. The E16 can hold 16 Scenes in total on the device. The first set of eight scenes are presented for access from the main home page and each can be opened by tapping a lit (Knob) 1-8 from the home page. Tap knob 9-16 to open the selection of the the other 8 scenes. Tap any lit knob to open Scene 9-16. A scene is a structural aid that stores all of the parameter settings and helps to organise the controls collectively. Scene selection is available from the first page presented when powering up the E16 along with the system configuration settings menu. To start, select a scene to work with or to setup. The option to switch scenes from an external device by using PC - Program Change messaging is configurable. The E16 uses a dedicated MIDI channel to listen for incoming PC change messages. Each scene also contains 16 pages, enabling more control over the structure and arrangement of controls. Presets are available which store the current values of all the knobs which can then be recalled. Different configurations are therefore possible in order to match various hardware setups.

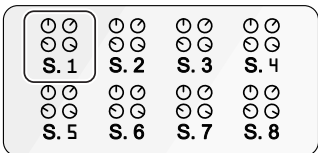
4 Scenes

4.1 Scene Navigation

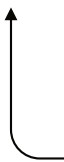
When the E16 is first powered up, the 'home' screen is displayed which presents the first set of 8 directly accessible scenes S.1 to S.8. There are 16 in total stored on the E16 with 8 presented for quick access. Tap a rotary knob to select and tap [Shift] to backup. Each scene has 12 pages, each with 16 control parameters.

Scene Select - Main View

Tap (Knob) 1-8 to view the first 8 scenes.
Tap (Knob) 9-16 to switch views to the next 8 scenes.
Tap a lit (Knob) to open the selected scene.



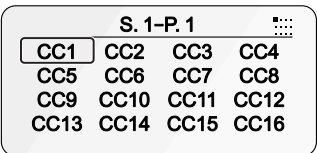
Main Home View - Scenes / System



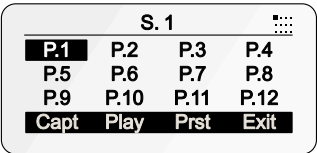
Exit.
Tap 'Exit', (Knob), default 16, to backup in the menu / page structure

Control View

When a scene is opened, the control view is presented.
Turning a knob will send a MIDI control message to the assigned CC destination.



Tap [Shift] to switch between page view/alt menu and the control view



Example Page 1



Change Page Number

Tap [Shift] to access the page selection screen along with the options menu. Tap (Knob) 1-12 to change the page or tap the lower 4 knobs to select an alt menu option.

Save on Exit

After editing a scene and backing up to the home screen the option to save the scene or not is presented. Tap the knob to choose the save option.



Save No



Save Yes

4.2 Scene Slot Settings

Each scene setting can be edited. This allows the scene slot name, color, MIDI auto transmit and PC on entry to be changed.

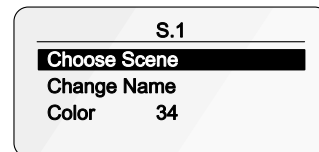
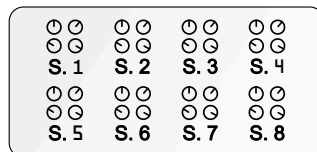
► Edit a Scene Slot Settings

1. Accessing the scene settings is managed from the main scene view.
2. From main view, open the editor, hold (Knob) for the scene to edit + tap [Shift].
3. To navigate and scroll the options, turn the lit (Knob). To select an option for editing or choose a menu command press (Knob).
4. When editing is complete, tap [Shift] to exit and backup in the menu.

Hold (Knob) + Tap [Shift]



Tap [Shift] to exit scene editing.



Scene Settings

Setting	Function	Description
Choose Scene	Command	Navigates through the 16 scenes. Tap to open the currently highlighted scene. The currently loaded scene is tagged.
Change Name	Edit	Opens the name editor and enables the renaming of a scene from the current name or the default name S.1, S.2 etc.
Color	Edit	Selects the LED ring color for the knob. The numbers refer to the standard color range for the E16 device.
Auto Transmit	MIDI Out	Sets the E16 behavior for sending MIDI scene parameter data out. Data can be sent when entering a scene, when switching pages or when loading a preset.
PC on Entry	MIDI Out	Sub menu sets up a PC MIDI message when entering the scene. This enables presets or programs to be changed if required on the destination device. Sets up the MIDI channel, PC number, bank and the physical output port.
Copy	Copy Settings	Copies the scene settings.
Paste	Paste Settings	Pastes previously copied settings to the selected scene.

4 Scenes

4.3 Alt Menu

The Alt menu is a configurable page of commands and navigation options making it quick and easy to manage the performance and configuration workflow when using E16.

By default this includes access to the pages contained in the scene. A page contains 16 parameter controls. A total of 192 parameters are therefore available in each scene. Organising parameters in pages allows them to be managed in an easy and structured way.

In addition the option to configure any knob for a specific menu command is possible. The defaults are; Looper Capture, Edit menu, Preset selection, and Exit the scene, assigned to knobs 13-16.

The alt menu can be restored to its defaults by using the 'Reset Alt Menu' option found in the Scene settings menu.

► Navigating Pages

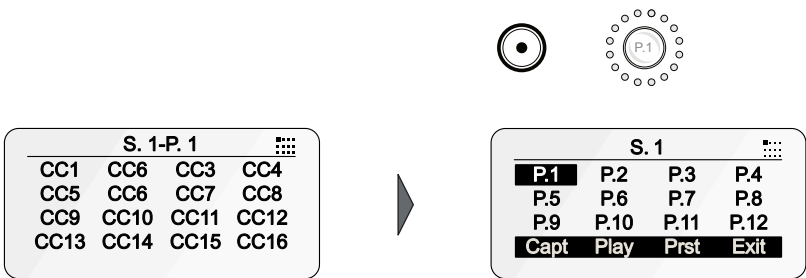
1. The Alt menu, where page access is performed, is accessible from the control view. The following instructions assume the default configuration.
2. To view the Alt menu, tap [Shift]. The default names are P.1 - P.12 but these can also be edited. The currently selected page is highlighted on the display and its associated knob will flash. The top right matrix icon will show the selected page.
3. The currently selected page is highlighted on the display and its associated knob will flash. To change page, tap (Knob 1) - (Knob 12) to select the respective page.
4. Control view is presented for the selected page.

Each page consists of:-

- 16 Configurable control parameters.
- The MIDI Channel assignment for the 16 controls.
- The MIDI Port output for the 16 controls.

Change Page. From the control view.....

Tap [Shift], then a Tap (Knob) for page

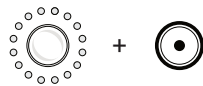


The page options can be edited. This allows the page to be renamed and the MIDI channel and port to be set. Some destination options use the page settings as a default, although they can be set individually. Copying pages is also possible from within the editor. The editor is accessible from the control view but can also be assigned as an Alt menu command. Select a page to edit first.

► Edit the Page Settings

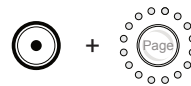
1. Pages are in the Alt menu, accessible from the control view. Select a scene by tapping the associated knob to choose the scene and its control view.
2. In control view, Hold (Knob) + tap [Shift]. This opens the control editor.
3. Select the page tab. Hold [Shift] + tap (Knob 2), 'Page'. The edit options also include controls with knob 1 and scene with knob 3.
4. To navigate and scroll the options, turn (Knob 1). To select an option for editing press (Knob 1) then turn to change the setting. The '►' tag label indicates that the parameter is editable. Press again to confirm the change.
5. Tap [Shift] to backup the menu structure.

Tap [Shift], then Tap (Knob 14) for the editor



S. 1-P. 1			
CC1	CC6	CC3	CC4
CC5	CC6	CC7	CC8
CC9	CC10	CC11	CC12
CC13	CC14	CC15	CC16

Hold [Shift] + Tap (Knob 2) for the page options



Ctrl 3	Page	Scene
Name	P.1	
Channel	1	
Output	TRS1	

Page Settings

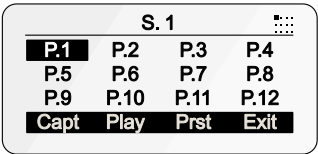
In the editor, access settings by [Shift] + (Knob 2)

Setting	Options	Description
Name	Text Entry	Opens the text editor for renaming the page. The page name has a maximum of 7 characters. The name is presented on the control view header and the first 4 characters in the page list.
Channel	1-16	Select MIDI channel for the controls set in the selected page. Individual controls also refer to this setting by default.
Output	All, TRS, USB, All-BLE, All-USB, OFF	Sets the MIDI Output port 1 or 2 for TRS and USB or Off. Also all ports excluding USB or excluding BLE can be selected. Individual controls also refer to this setting by default.
Copy	Command	Copies the current page and controls to the clipboard.
Paste	Command	Pastes the copied page and controls from the clipboard into the currently selected page.
Erase	Command	Clears and resets the current page to defaults. Requires the action to be confirmed by the green (Knob 3) or cancel with red (Knob 2).
Send All	Command	Sends all of the current page parameters to the MIDI Outputs

Other commands are also configurable on the knobs in the Alt menu.

► **Configuring the Alt Menu**

- 1. Toggle between control view and the alt menu by tapping [Shift].
- 2. In the Alt menu, hold (Knob) + tap [Shift]. The knob selected will presented for editing.
- 3. To assign a function to the knob press command, select 'Type' and tap (Knob).
- 4. Turn the knob to navigate the choices and tap to select. [Shift] can be used to back up in the menu.
- 5. The description of each function is covered in the relevant section. When choosing a function, additional options, specific to the function, are presented. For example, when selecting 'Page', the page number can also be configured.



Any of the 16 knobs can be configured with the following options.

Alt Menu		
Setting	Function	Description
Off	None	The knob is turned off and does not perform any function in the Alt menu.
Page	Navigate	Allows a page to be assigned to the knob. When pressing the knob the page will be selected.
Looper Capture	Looper Command	Arms looper capture ready for parameter recording. Hold knob to erase all existing recordings.
Looper Play	Looper Command	Initiates looper playback.
Exit	Navigate	Exit the menu and return the the main view.
Preset Menu	Navigate	Opens the preset menu options.
Edit	Navigate	Opens the editor for the Control, page or scene.

— Note —

The knob 'Push' control can be assigned to select a page. This is setup in the control configuration and by setting the push option to type 'page'. A page number can be assigned which allows the knob push to switch from the current page and jump directly to the assigned control view.

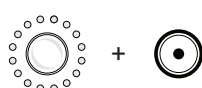
4.4 Scene Settings

The generic scene settings can be edited. This enables the look and behaviour of the scene to be changed and configured.

► Edit the Scene Settings

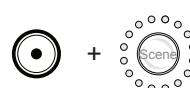
1. Scenes are accessible from the main view by tapping the associated knob.
2. In control view, Hold (Knob) + tap [Shift]. This opens the control editor.
3. Select the scene tab. Hold [Shift] + tap (Knob 3), 'Scene'. The edit options also include controls with knob 1 and page with knob 2.
4. To navigate and scroll the options, turn (Knob 1). To select an option for editing press (Knob 1) then turn to change the setting. The '►' tag label indicates that the parameter is editable. Press again to confirm the change.
5. Tap [Shift] to backup the menu structure.

Tap [Shift], then Tap (Knob 14) for the editor



S. 1-P. 1			
CC1	CC6	CC3	CC4
CC5	CC6	CC7	CC8
CC9	CC10	CC11	CC12
CC13	CC14	CC15	CC16

Hold [Shift] + Tap (Knob 3) for the scene options



Ctrl 3	Page	Scene
Name	S.1	
Reload		
Erase Scene		

Scene Settings

In the editor, access settings by [Shift] + (Knob 3)

Setting	Options	Description
Name	Text Entry	Opens the text editor for renaming the scene. The scene name has a maximum of 7 characters. The name is presented on the control view header and the first 4 characters in the scene list.
Accel	Encoder behavior.	Sets the behavior of the encoder rotation. Options are: Div8, Div4 and Div 2 - Divides the encoder resolution by 8, 4 or 2. Acc0, Acc1, Acc2, Acc3 - Encoder acceleration. 0 = default normal operation, no acceleration, 3 is max acceleration when rotating. LSp2, LSp4, LSp6 - large step mode - steps values in the 2, 4 or 6 increments selected.
Reload	Command	Reloads the saved scene and its setting from the E16 memory. Tap the lit knob to confirm, Yes/Green to confirm, No/Red to cancel.
Send All	Command	Sends all parameters from the pages in a scene to the MIDI Outputs
Script variables	Script	Select from the assigned script variables. See the Lua Scripting section for more information on E16 scripts.
Reset Alt Menu	Command	Resets the page, Alt Menu back to its default settings. The alt menu determines recording behavior and page menu layout.
Erase Script	Command	Clears and resets the assigned script. See the Lua Scripting section for more information on E16 scripts.
Erase Scene	Command	Clears and resets the scene to the default settings. Tap the lit knob to confirm, Yes/Green to confirm, No/Red to cancel.

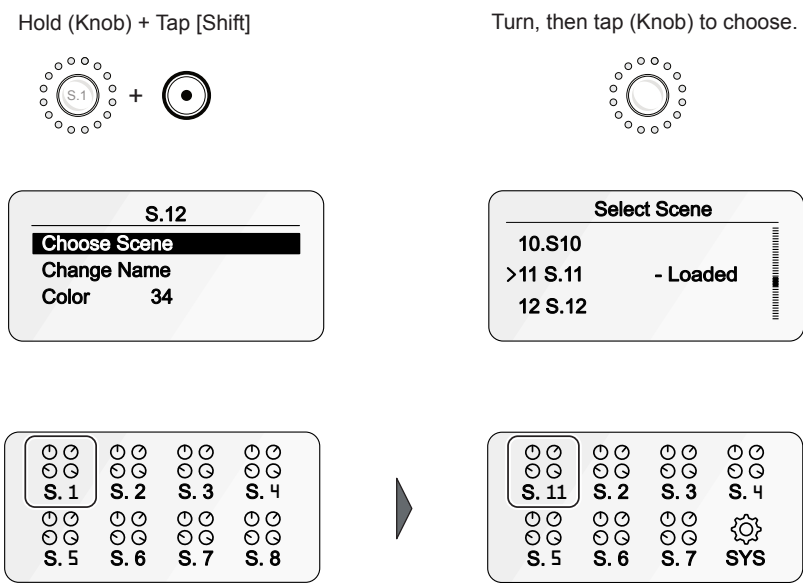
4.5 Accessing All Scenes

There are 16 scene slots stored on the E16, 8 of which are directly accessible from the home screen. Scenes can be managed in the OXI App but also can be configured on board the E16 device. Assignment of the scenes from the total 16 is performed in the home screen using shift.

► Assigning a scene as direct access

- 1. There are 8 scenes that are assigned to knobs 1-8 in the home screen, scene page. These are configured by default, but can be changed to another one from the 16 onboard scenes. Navigate to the home screen to start. Tap [Shift] if needed to backup the menu and screen structure.
- 2. Hold (Knob 1) to (Knob 8) + Tap [Shift]. These contain the assigned scenes. The scene selected will be replaced by the chosen scene in the following steps.
- 3. Navigate to the 'Choose Scene' screen option in the menu. Tap the knob to select.
- 4. Turn the selected knob to navigate the 16 available scenes. The scene currently loaded to the selected knob is shown in the list.
- 5. Tap the knob to select and assign the highlighted scene to the main view.
- 6. The menu is automatically exited and the display returns to the home screen. The assigned scenes to knobs are shown and the newly added scene will be accessible.

Change Scene Assignments - from the home / scene screen.



4.6 Presets

Each scene has 16 preset slots. Each preset can store the current state of all of the control knob values from the scene. Presets can be recalled later. The preset menu is accessible from the page view. In control view, tap [Shift] to open the page view, then press the 'Prst', default is (Knob 15). The preset management menu is then navigated using the lit Knob.

► Saving a Preset

1. Ensure the knob values are set or configured as snapshots or with automation as desired. This will be the state saved.
2. Open the preset manager. In the control view, tap [Shift] then tap 'Prst', default control is (Knob 15).
3. To Save:
 - To save to the current slot. Navigate in the menu by turning (Knob 15). Highlight with the '►' tag the 'Save' option. Tap (Knob 15) to select save.
 - To save to another slot and rename the preset. Navigate in the menu by turning (Knob 15). Highlight with the '►' tag the 'Save As' option. Tap (Knob 15) to select save. The slot selector will open and a new slot can be selected. The name can also be edited when saving.

► Loading a Preset

1. Open the preset manager. In the control view, tap [Shift] then tap (Knob 15), 'Prst'.
2. To Load a preset. Navigate in the menu by turning (Knob 15). Highlight with the '►' tag the 'Load' option. Tap (Knob 15) to select load.
3. The preset slot selector will open and a preset from the list can be selected. The currently active preset will be displayed in the list as 'loaded'. Navigate with the '►' to the preset to load and press (Knob 15).
4. If the currently active preset has been changed, the option to save prior to loading the new preset is presented. Tap red (Knob 2) to cancel without saving and green (Knob 3) to save to the current slot prior to loading.
5. The selected preset will be loaded, restoring its control values.

— Note —

The options to clear the currently selected preset slot or page and to rename the preset are also presented in the preset menu. Navigate using the lit knob and select by tapping the knob.

System & App

This final section is more about configuration and setup of the OXI E16. However don't overlook these topics as there are lots of useful topics that will be valuable and help your workflow. Here, the firmware updates are covered along with the OXI App and a complete overview of the configuration options. There are some useful elements that will be important to know, if not now, then certainly in the future. It is recommended that you at least familiarise yourself with the content and features covered here for future reference and awareness. To finish, OXI Instruments would like to issue a heartfelt and big thank you for buying OXI E16 and following our journey as new devices join the OXI family and its associated ecosystem of gear. Good luck with your musical adventures; hopefully, OXI E16 will join the OXI ONE, Coral, Meta and all the other gear to help your musical journey. Remember, things don't end here; only the manual does. The real journey is only just starting. Have fun!

5.1 OXI App

Most device management activities when working with the OXI gear are handled using the OXI App. This is a stand alone utility that, when connected to an OXI device will help update, backup and transfer data between the device and a PC or Mac. The app also contains some useful tools such as the ability to configure the E16 directly from the App, to create and load instrument definitions and write scripts.

Download the App from the OXI site.



[Click Here to Download the App](#)

The OXI App can manage operations between a PC / Mac and E16:-

- Manage and backup scenes.
- Edit and create scenes in the on-board scene editor.
- Manage instrument CC definition files between devices.
- Create and load scripts.
- Check the available firmware in comparison with the OS installed on the connected e16 and perform an update to the firmware on the device.

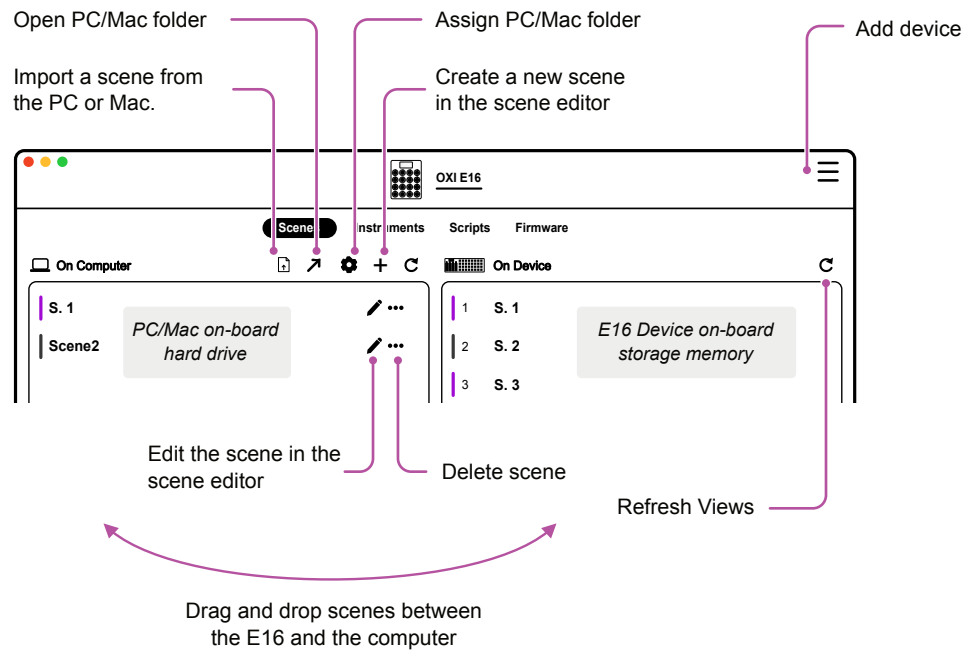
— Note —

The OXI App is a tool used for several OXI devices. The devices can be selected with the '+' button top right. For example the OXI ONE and ONE MkII can all be connected to the App. Also instrument definitions and scripts are managed and can be created directly in the App.

Scene Management

The option to set a storage directory is available which assigns a folder on the PC/Mac as the storage location for E16 files and data. Scenes can be copied from E16 to / from a PC/Mac using the drag and drop options in the 'Scene' tab menu.

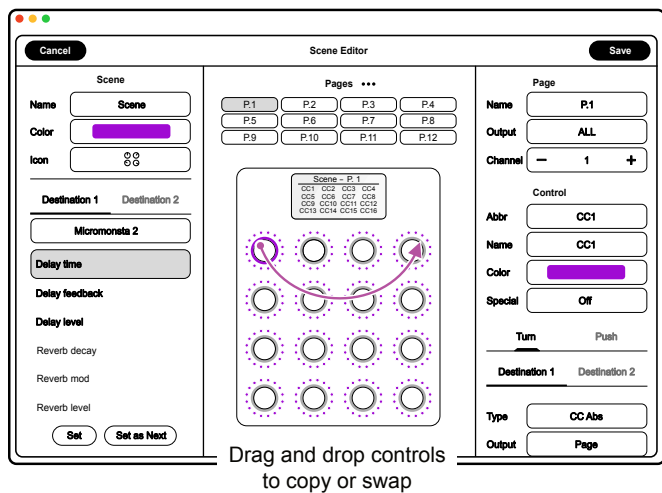
Scenes Tab



Scenes Editor

The App scene editor speeds up the E16 configuration and workflow enormously. While editing on the device is quite easy, the App presents all of the setup data in one place and makes it even quicker to get going. It is recommended to use the App for getting the E16 initially configured and then make any required individual changes on the device going forwards.

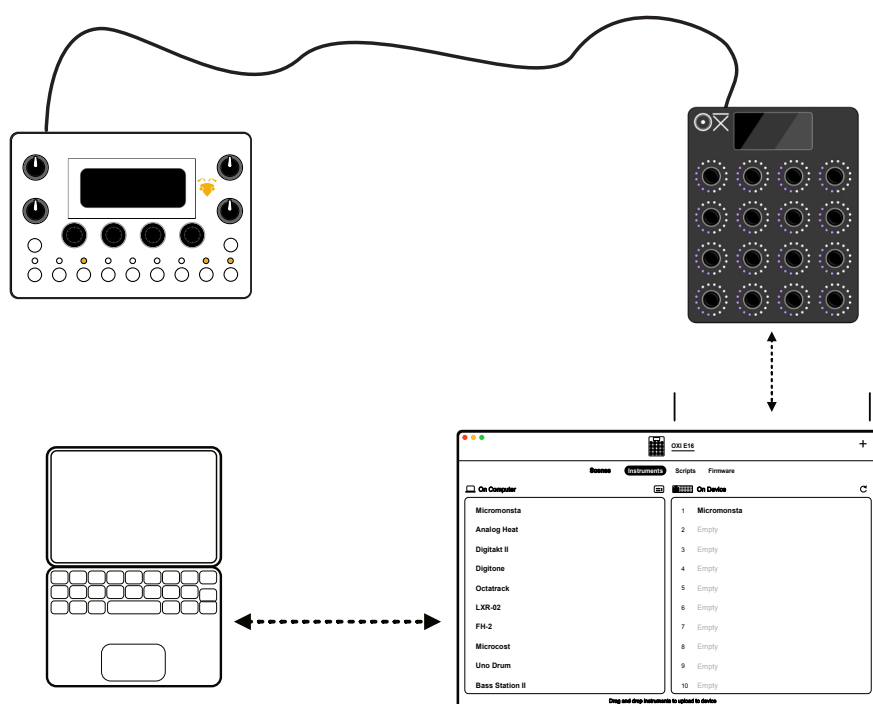
The scene icon can also be changed from the available symbol library or new icons created when clicking the icon in the app. Controls can be copied or swapped by dragging and dropping the control.



5.2 Instrument Definitions

An instrument definition is a predefined configuration for MIDI CC mapping to external devices. Instead of manually setting up each CC to control an external device parameter, the instrument definition for the specific device will map the parameters automatically and apply their names. This saves time and is an efficient way to work with MIDI continuous control messages for external gear.

OXI E16 Instrument definition is selected in the destination 1, 2 or push destination settings for any of the controls. This examples show Audiothingies MicroMonsta2 connected by MIDI and the CC control can be performed from E16 without manual configuration. Restart the E16 after transferring instrument definitions for them to be visible and accessible in the E16.



The OXI App can be used to download instrument definitions from the database and transfer the definition files between the OXI E16 and a PC/Mac.

The instrument definition for a device is selected in the destination 'Instrument' option. The mapped parameter for the control is also available under 'Parameter'.

Destination 1	
Instr.	Micromons
Param.	Delay time
Type	CC Abs

— Note —

Instrument definitions are not user configurable on the device but can be created in the OXI App. These can be created individually and then loaded to OXI OE16 using the app. If the manufacturer changes the CC mapping of the device the instrument definition may not work as originally configured. Instrument definitions are saved with the scene and can be backed up with the app. See the OXI App manual regarding the instrument editor.

Instrument Definitions

The currently available instrument definitions to download via the App are listed. The list captures most definitions available but is always likely to change at any time as more are added :-

Manufacturer	Device
ASM	Hydrasynth
Abildgaard	Droid-3
Access	Virus A
Access	Virus T1
Arturia	Microfreak
Arturia	Minifreak
Arturia	Polybrute
Audiothingies	Doctor A
Audiothingies	Micromonsta
Behringer	Deepmind 12
Behringer	Neutron
Behringer	Pro 800
Behringer	TD-3-MO
Black Corporation	Deckard's Dream
Black Corporation	Deckard's Dream Mk2
Conductive Labs	NDLR
Dave Smith Instruments	Evolver
Dave Smith Instruments	OB-6
Dave Smith Instruments	Prophet '08
Dave Smith Instruments	Prophet 12
Dave Smith Instruments	Prophet Rev 2
Dave Smith Instruments	Prophet X (XL)
Dreadbox	Nymphes
Dreadbox	Typhon
Elektron	Analog 4 MKII
Elektron	Analog Heat
Elektron	Analog Heat +FX
Elektron	Analog Rtm MKII
Elektron	Digitakt
Elektron	Digitakt II
Elektron	Digitone
Elektron	MachineDrum
Elektron	Model Cycles
Elektron	MonoMachine
Elektron	Octatrack
Elektron	Syntakt
Elektron	Model Samples
Empress	Echosystem
Empress	Reverb
Ensoniq	ASR-X Pro
Erica Synths	LXR-02
Expert Sleepers	FH-2
Flame	Curve
Flame	Maander
Fred's Lab	Buzzzy!
GEM	rp-x
GSmusic	E7
Gotharman	Spazedrum Black

Manufacturer	Device
Hologram	Microcosm
IK Multimedia	Uno Synth Pro X
IK Multimedia	Uno Drum
IK Multimedia	Uno Synth
Intellijel	uMidi
Jomox	Airbase 99
Korg	Arp 2600 M
Korg	Electrabe ER-1
Korg	MS2000
Korg	NTS-1
Korg	Opsix
Korg	Wavestate
Korg	Minilogue
Korg	Minilogue XD
Korg	Monologue
Korg	Volca Bass
Korg	Volca Beats
Korg	Volca Drum
Korg	Volca FM
Korg	Volca Keys
Korg	Volca Kick
Korg	Volca Nubass
Korg	Volca Sample
Korg	Prologue
Kodamo	Essence FM
Kurzweil	K2661
LPZW	Tram 8
MFB	Synth II
MFB	Tanzbar 1
MFB	TanzbarLite
MFB	Tanzmous
Make Noise	O-Coast
MeeBlip	Geode
MeeBlip	Triode
Melbourne Instruments	Nina
Meris	LVX
Meris	Ottobit Jr
Meris	Polymoon
Modal Electronics	ARGON8M
Modal Electronics	COBALT5S
Modal Electronics	CRAFTsynth2
Modal Electronics	Craft
Modal Electronics	Skulpt
Modor	NF-1
Moog	Grandmother
Moog	Matriarch
Moog	Minitaur
Moog	Mother 32

4 System

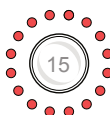
Manufacturer	Device
Moog	Sirin
Moog	Sub-Phatty
Moog	Subsequent 25
Moog	Subsequent 37
Moog	Voyager
Mutable Instruments	Shruthi
Norand	Mono
Nord	Drum 2
Nord	Drum 3P
Nord	Lead (Rack)
Nord	Lead (Rack) 2x
Nord	Wave 2
Novation	Bass Station II
Novation	Bass Station Rack
Novation	Circuit
Novation	Nova
Novation	Summit
Novation	Peak
OTO Machines FX	BAM
OTO Machines FX	BIM
OTO Machines FX	BOUM
OXI Instruments	Coral
Oberheim	OB-6
Oberheim	OB-X8
Pioneer	Toraiz AS-1
Polyend	Tracker
Red Panda	Particle
Red Panda	Raster
Roland	D-05
Roland	GAIA SH-01
Roland	JD-XA
Roland	JD-XI
Roland	JP-08
Roland	JU-06
Roland	JU-06A
Roland	JV1010
Roland	JX-03
Roland	JX-08
Roland	Juno 60 Minerva
Roland	Jupiter X (xM)
Roland	MC-101
Roland	MC-20h2
Roland	MKS-50
Roland	MX-1
Roland	S-1
Roland	SE-02
Roland	SH-01A
Roland	SH-4d
Roland	System 1 (1M)
Roland	System 8

Manufacturer	Device
Roland	TB-03
Roland	TB-3
Roland	TR-06
Roland	TR-08
Roland	TR-09
Roland	TR-6S
Roland	TR-8
Roland	TR-8S
Roland	VP-03
Roland	XV-5050
Sequential	Pro 3
Sequential	Prophet-6
Sequential	TAKE 5
Sherman	Filterbank
Sonicware	Liven Lofi 12
Sonicware	Liven XFM
Sonicware	Smpltrek
Strymon	Nightsky
Strymon	Volante
Studio Electronics	ATC-1
Studio Electronics	SE-1X
Studiologic	Sledge
TC Electronic	D-Two
Tasty Chips	Gr-1
Teenage Engineering	OP-1
Teenage Engineering	OP-1 Field
Teenage Engineering	OP-XY
Teenage Engineering	KOII
Teenage Engineering	OP-Z
Twisted Electronics	MEGAfm
Twisted Electronics	TherapSID
UDO Audio	Super 6
Waldorf	Blofeld
Waldorf	Iridium
Waldorf	M
Waldorf	Pulse 2
Waldorf	Rocket
Waldorf	Streichfett
Yamaha	Reface CP
Yamaha	Reface CS
Yamaha	Reface DX
Yamaha	Reface YC

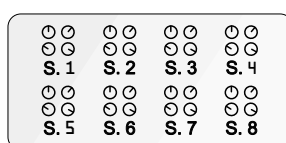
5.3 System Config Settings

Global configuration settings can be accessed from the main scenes view by tapping [Shift] and then (Knob 15). The user interface settings include: Interface brightness, auto save, screen saver and auto turn off. Also firmware options and a MIDI monitor are available. Other menus include MIDI and Bluetooth settings. These are found in the System sub-menu.

Config Settings



Tap [Shift], then Tap (Knob 15) to open the system config. Turn to navigate and tap to access the sub-menus.



Workflow

Setting	Options	Description
Auto Transmit	Scene Entry, Page Switch, Preset Load	Sets the E16 behavior for sending MIDI scene parameter data out. Data can be sent when entering a scene, when switching pages or when loading a preset.
Auto Save	All Off, All On, Scenes, Presets	The device will automatically save everything, just scenes or just presets. Can also be set to off.
Color Indicator	On/Off	Illuminates the first rotary LED 'digit', always on, for all controls. This demonstrates a zero value rather than no indication being visible at zero position.

MIDI

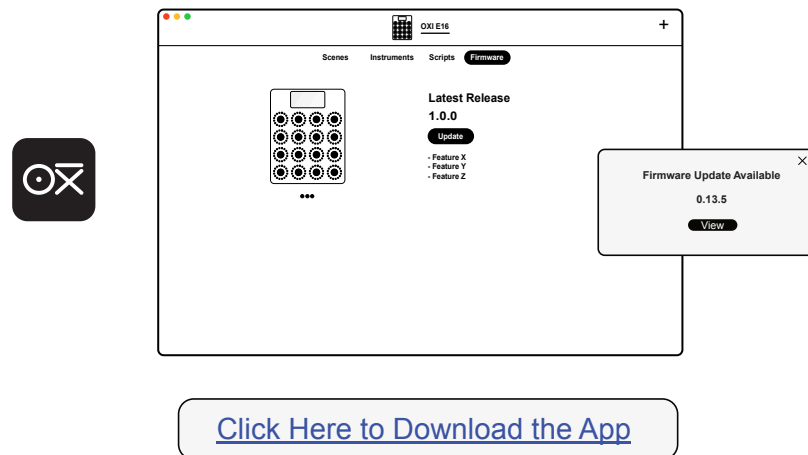
Setting	Options	Description
MIDI Monitor	On/Off	MIDI monitor is a tool that will display in real-time any incoming MIDI messages. Used as a diagnostic tool.
BLE Thru	On/Off	Sets if the incoming MIDI from the bluetooth interface is passed thru to the MIDI output or is set to off - no thru.
TRS Thru	On/Off	Sets if the incoming MIDI from the TRS interface is passed thru to the MIDI output or is set to off - no thru.
USB Thru	On/Off	Sets if the incoming MIDI from the USB interface is passed thru to the MIDI output or is set to off - no thru.
PC Receive Channel	Off, 1-16	Sets the MIDI channel that the E16 will listen to for program change messages. Incoming program change messages will switch scenes or pages in the E16.
PC Mode	Scene or Page	Determines whether the PC MIDI messaging will change the selected scene or switch between pages.

System

Setting	Options	Description
Brightness	Low, Med, High	Sets the rotary LED brightness level for the control knobs.
Bluetooth	Various	Bluetooth can be set to off. Alternatively bluetooth can be set as a central interface, peripheral interface or both.
Auto Turn Off	Off or Timed	Enable or disable the automatic shutdown time. Timer can be set to off or power down after 30 Min or 1,2 or 4 hrs.
Screensaver	Off or Timed	Disable by setting to off or enable the screensaver with a timer. Set to 10 MIns, 30 Min or 1 hr.
Animations	On/Off	Off, slow or fast. Animations control the morph speed of the LED transitions.
Encoder Type	Normal or Detent	Sets the encoder behavior from a normal non-detent style or a detent style encoder. This must be set to match the hardware encoders for your specific E16.
Factory Reset	Initiate reset	Initiate a factory reset to the original defaults. Will erase any existing settings and data.
HW/FW Version	View only	Displays the current firmware version as well as the hardware and bluetooth version. Information only, no editable options.

5.4 Firmware Update

Updates to OXI E16 firmware are released from time to time to add new features, improve performance and fix bugs. The update process is automated within the OXI App. Simply connect the PC/Mac to OXI E16 and open the 'Firmware' page. The current status of the device and any available firmware versions will be displayed.



The currently installed firmware version and hardware version can be viewed in the Sys Settings > System > HW & FW Version.

► Update Firmware

1. Connect OXI E16 to the PC or Mac which hosts the OXI App using the USB connection.
2. Open the OXI App.
3. In the 'Firmware' page the currently installed firmware will be displayed as well as the latest available firmware. It is possible to update from this page.
4. Any newly available updates will be displayed in the pop-up message. Click 'View' to see more information and to proceed to perform the update.
5. While updating, the progress bar will be displayed on E16. Do not disconnect the devices while updating.
6. Once complete, E16 will reboot. Update takes between 15 - 60 seconds.
7. Note that the option to update a specific firmware version from a update file is also possible. Click the 3 dots under the E16 image and the options to update the firmware from a file will be available. The file must have been previously downloaded to a location on the PC/Mac.

5.5 Troubleshooting Updates

It is unusual for the OXI E16 to freeze or to get locked into a 'bricked' condition while updating. Should this situation occur the following steps should be followed.

► Update Mode Recovery

1. Connect OXI E16 to the PC or Mac which hosts the OXI App using the USB connection. Also ensure the PC / Mac is connected to the internet.
2. Push and hold the power button of OXI E16 to force it to off.
3. Power up in update mode. Hold (Knob 15) + (Knob 16) while pressing the power on button. The E16 should power up in update mode.
4. Try updating again using the App but use a downloaded OS version. This could be an older revision or the latest version.
5. Try powering off / on. Repeat the procedure.

A factory reset is also an option to return the E16 to its original state. Be careful in using this function as any configurations and settings will be permanently cleared.

► Factory Reset

1. In the main home page, hold [Shift], then tap (Knob 15), 'Conf' to access the configuration settings menu.
2. Navigate to 'System' and tap the lit knob to open the sub-menu.
3. Navigate to 'Factory Reset' and tap the lit knob to initiate the command.
4. Confirm by pressing the green lit (Knob 3) for 'Yes' or tap red lit (Knob 2) for 'No' and to exit back to the menu.
5. A factory reset will be performed if choosing 'Yes' and the unit will restart.

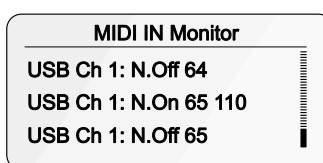
—Note—

The Sysex Librarian utility can be used if the PC/Mac OS doesn't support the App.

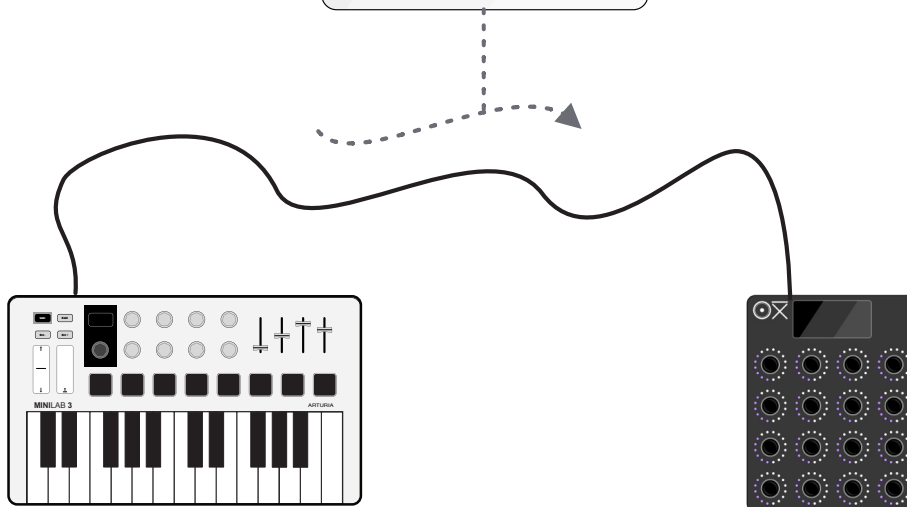
5.6 MIDI Input Monitor

MIDI Monitor is a utility used for checking incoming MIDI activity within OXI E16 from all routes and channels. It is a simple, yet highly useful tool available when needed from the config menu or directly on the user panel.

Shows Connection, Channel and message. Example shows Note numbers + velocity with a note 'on' message.



Last 3 messages are displayed. If a clock is monitored this may overwrite any notes or cc information.



Turn MIDI Monitor on in: Conf Settings > MIDI > MIDI Monitor.

Lua Scripting

Lua is an open source scripting language often used for web, game development and image processing. The E16 has built-in scripting features and can initiate a Lua script when loading a Scene. The script can then govern the behavior when pressing and turning knobs, receiving incoming MIDI messages and when switching pages. Lua scripts are lightweight programming tools, written in plain text and lua scripts are recognised by the .lua file extension. The OXI App is where the Lua scripts are managed, loaded and even created for the E16 device. This section provides a guide to using lua scripts in the E16, but be aware that some programming language experience will help in the application and development of script files.

6.1 How it Works

The E16 has 16 encoders, 12 pages, and 16 scenes. A Lua script can react to encoder events, send and receive SysEx messages, change what the screen shows, and control the LED rings.

All indices in the Lua API are 1-based (encoder 1–16, page 1–12). The firmware converts internally.

Scripts are loaded or created using the OXI App.

Managed vs Manual

Every script-type encoder is either managed or manual:

Managed (default): The firmware handles incrementing the value when the user turns the encoder. Your script receives the event after the value has already changed. You can read the new value, send MIDI, update the display — but you don't control the value itself.

Manual (manual=true in the assignment): Your script owns the value completely. When the user turns the encoder, the firmware sends you the raw increment, but does not change anything. You decide what happens — apply the increment, quantize it, ignore it, whatever you want.

Values

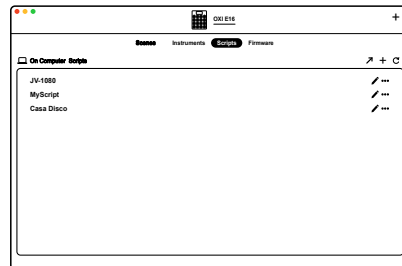
The E16 stores all values internally as 14-bit integers (0–16383). When you configure a managed control with a range like l=0, h=127, the firmware maps the internal 14-bit value to that output range. The mapped value is what you see in `enc.scaled`.

Tip to build big SysEx Editors

Script memory on the E16 is limited. Small scripts will run without any special consideration, however a large editor, like for the JV1080, which declares a Lua table entry for hundreds of parameters can approach the memory limit. Using big tables to do this costs substantial amount of memory. Therefore on very large scripts, the recommended technique is to pack the per-parameter data into a single string literal as a fixed-stride byte table. Each parameter occupies the same number of bytes, so a field is read arithmetically with `string.byte` rather than by walking nested tables. One string replaces dozens or hundreds of table objects, and lookup remains fast.

6.2 Scripts in the App

Scripts are managed in two places. The Scripts tab is where you create, edit, and delete scripts similar to the scene tab. The script panel in the control editor is where you select which script a scene uses and drag its parameters onto encoders. In both places scripts can be edit and new scripts created.

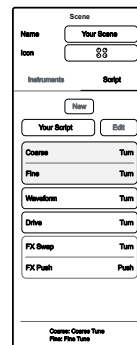


Select scripts on the PC/Mac using the OXI App to load to the E16 device .



Create scripts in the OXI App. Tap '+' to open the script editor.

When a script is uploaded to the device, the app minifies it first — comments and whitespace removed, local variables renamed to short forms. The minifier is LuaSrcDiet, extended to handle Lua 5.3/5.4 operators (`//`, `<<`, `>>`, `&`, `|`, `~`) and the `<const>` / `<close>` attributes.



If the minifier can't run, the app uploads the script with only comments stripped. This almost always means a real Lua syntax error — the device won't be able to run it either; fix the syntax and the minifier takes over again.

The editor shows a live byte counter: uploaded-size / 8000. Neutral under the limit, red over it (save is blocked). A ⚠ next to the number means the minifier didn't run.

When you download a scene back from the device, the app matches the script by name against your local library. If the script is not found, the script dropdown in the panel shows red — assignments and full source are only available when the script exists in your library.

6.3 Assignments

When a control's turn type is set to Script, it gains the following fields: script ID, manual mode flag, lower/upper range, acceleration mode, and display mode. For push actions set to Script, there is only a script ID.

Assignments are `--@assign` comment directives at the top of your script. They declare the parameters your script exposes — their IDs, labels, ranges, modes, and grouping.

When you load a script in the app, the app parses these directives and presents the parameters in a selection panel — similar to instrument parameters. Parameters with the same `g` (group) value are grouped together. You then drag parameters onto encoder slots in the control editor — onto turn destination 1, turn destination 2, or push. Grouped parameters can be dropped onto an encoder as a unit.

Assignments are not required — you can manually set each control's turn type to Script and configure the script ID, range, and mode by hand in the editor. But assignments make this much easier by letting the script declare what it needs and the app handle the wiring.

Like all Lua comments, assignment directives are stripped from the script before uploading to the device. They do not count toward the 4000-byte script limit.

```
--@assign id=1 abbr="AR" name="Attack" desc="Attack Rate" l=0 h=31
--@assign id=2 abbr="D1R" name="Decay 1" desc="Decay 1 Rate" l=0 h=31 accel=2
--@assign id=3 abbr="Wave" name="Waveform" desc="Waveform" l=0 h=3 manual=true
--@assign id=4 abbr="Vol" name="Volume" desc="Volume" l=0 h=99
--@assign id=5 abbr="FX" name="FX Swap" desc="FX Turn" l=0 h=127 d=1 g=1 swap=true
--@assign id=6 abbr="FX" name="FX Push" desc="FX Push Toggle" p=true g=1
```

Assignment Keys

Key	Type	Required	Default	Description
id	int	yes	-	Script ID. Used to identify the control in callbacks (enc.id)
abbr	string	*	-	Encoder label on the device (max 4 characters). If omitted, derived from first 4 characters of name
name	string	*	-	Display name in the app's parameter list. If omitted, falls back to abbr
desc	string	no	-	Description shown in the app (not on device)
l	int	no	0	Lower bound of the output range.
h	int	no	127	Upper bound of the output range.
d	int	no	1	Destination slot (1 or 2). Controls can have two turn destinations
g	int	no	-	Group number. Parameters with the same group are presented together in the app and can be dropped onto an encoder as a unit.
swap	bool	no	false	Push swaps between destination 1 and 2.
manual	bool	no	false	Manual mode — script owns the value.
accel	int	no	3	Acceleration mode (0=Div8 slowest ... 3=Acc0 default ... 6=Acc3 fastest).
p	bool	no	false	This parameter is a push action instead of a turn action.
dis	int	no	-	Display mode for the turn/push action.

At least one of abbr or name is required. If only name is provided, abbr is derived from its first 4 characters. If only abbr is provided, name copies it.

Each encoder has one label (current limitation). When two turn destinations share an encoder (e.g. d=1 and d=2 with swap=true), the app sets the label to the abbr of whichever parameter was last dropped onto it. Use the same abbr for both assignments to avoid confusion.

Controls can also be configured at runtime with `controller.setControls()`, `controller.setByIndex()`, or `controller.set()`. This is useful for dynamic behavior like changing ranges on the fly, but assignments are the standard way to declare the initial setup.

6.4 Global Objects

Your script has access to six global objects:

Object	Purpose
controller	Configure controls, read page index, attach event callbacks.
page	Set the header title, attach init / page-change / var-change callbacks.
midi	Send CC and SysEx messages.
leds	Take over LED rings from the firmware.
slots	Override the text labels shown under each encoder.
var	Declare and read script-defined persistent variables.

6.5 Callbacks

Callbacks are functions you define on the global objects. The firmware calls them when things happen.

`page.onInit()`

Called once after the script loads and the Lua environment is ready. Use this to set the page title, initialize script state, and request data from external gear.

```
function page.onInit()
    page.setTitle("Synth Edit")
    midi.sendSysex(0, {0xF0, 0x7D, 0x02, 0xF7}) -- request current values
end
```

`controller.onEncoderTurn(enc)`

Called when a script-assigned encoder is turned. The `enc` table contains

Field	Type	Description
<code>enc.id</code>	int	The control's <code>script_id</code>
<code>enc.index</code>	int	Encoder position on the page (1–16)
<code>enc.page</code>	int	Current page (1–12)
<code>enc.increment</code>	int	Raw turn direction and speed: ± 1 , ± 2 , ± 4 , or ± 8 depending on how fast the encoder is turned
<code>enc.value</code>	int	Internal 14-bit value (0–16383)
<code>enc.scaled</code>	int	Output value mapped to the control's range (e.g. 0–127)
<code>enc.is_held</code>	bool	Whether the encoder button is currently held down

```
function controller.onEncoderTurn(enc)
    if enc.id == 1 then
        midi.sendCC(0, 1, 74, enc.scaled)
    end
end
```

`controller.onEncoderPress(enc)`

Called when a script-assigned encoder is pressed. The `enc` table contains `id`, `index`, `page`, `value`, and `scaled` (no `increment` or `is_held`).

`controller.onSysex(bytes)`

Called when the E16 receives a SysEx message. `bytes` is a table of raw byte values (integers), including the 0xF0 and 0xF7 framing bytes.

```
function controller.onSysex(bytes)
    if bytes[2] ~= 0x7D then return end -- check manufacturer ID
    local msg_type = bytes[3]
    if msg_type == 0x11 then
        local param = bytes[4]
        local value = bytes[5]
        -- do something with it
    end
end
```

`page.onPageChange(previous_page, new_page)`

Called when the user switches pages. Both arguments are 1-based page indices.

This is where you should clean up overlays from the previous page and set up overlays for the new page. The LED and label overlays are not automatically cleared on page change — your script manages this.

```
function page.onPageChange(prev, curr)
    -- Clean up
    for i = 1, 16 do
        leds.reset(i)
        slots.reset(i)
    end
    -- Set up the new page if it's one we care about
    if curr == 1 then
        for i = 1, 16 do
            slots.update(i, my_labels[i])
        end
    end
end
```

`page.onVarChange(name)`

Called when one of your script-defined variables (see Variables) is changed by the firmware — typically when the user edits it via the device's variable menu. Not called when the script itself sets a value, so this won't recurse if you call `var.get` (or anything else) from inside the handler.

`name` is the registered variable name (string).

```
function page.onVarChange(name)
    if name == "channel" then
        slots.update(16, "ch:" .. var.get("channel"))
    end
end
```

6.6 Control Configuration

Control Configuration

Controls can be addressed in two ways: by script ID or by index. Script ID is the primary method — it addresses controls by the id from their assignment, regardless of where they are on the page. By index addresses controls by page and encoder position (page index × encoder index on that page).

`controller.set(id, key, value) / controller.set(id, props)`

Set properties on a control by its script ID. Searches across all pages to find the control.

```
controller.set(1, "v", 8192)
controller.set(1, {l=0, h=63, n="Cutoff"})
```

`controller.setByIndex(page, index, key, value) / controller.setByIndex(page, index, props)`

Set properties on a control by its page and encoder position.

```
local pg = controller.getPage()
controller.setByIndex(pg, 1, "v", 8192)
controller.setByIndex(pg, 1, {l=0, h=127, manual=true})
```

`controller.setControls(controls)`

Bulk-configure all 16 encoders on the current page. Array position maps to encoder index (1–16).

```
controller.setControls({
    {i=1, n="AR", l=0, h=31},
    {i=2, n="D1R", l=0, h=31},
    {i=3, n="D2R", l=0, h=31},
    {i=4, n="RR", l=1, h=15},
})
```

`controller.getPage()`

Returns the current page index (1-based).

```
local pg = controller.getPage()
```

Property Reference

Field	Type	Description
v	int	Internal value (0–16383). Sets the control's current value.
l	int	Lower bound of the output range
h	int	Upper bound of the output range
n	string	Display label (writes to control.abbr, max 4 chars)
manual	bool	If true, script owns the value; firmware won't auto-increment
accel	int	Acceleration mode (0=Div8 slowest, 3=Acc0 default, 6=Acc3 fastest)
i	int	Script ID — only works in setControls(), not set()/setByIndex()

6.7 MIDI Output

`midi.sendCC(output, channel, cc, value)`

Send a MIDI Control Change message.

- `output`: MIDI output port (0 = all outputs)
- `channel`: MIDI channel (0–15)
- `cc`: Controller number (0–127)
- `value`: Value (0–127)

```
midi.sendCC(0, 0, 74, 64) -- CC 74, value 64, channel 1, all outputs
```

`midi.sendSysex(output, bytes)`

Send a raw SysEx message. `bytes` must be a table of integers including the 0xF0 start and 0xF7 end bytes. Maximum 128 bytes per call.

```
midi.sendSysex(0, { 0xF0, 0x7D, 0x01, param, value, 0xF7 })
```

6.8 LED Rings

By default, the firmware draws LED rings based on the control's internal value. If your script needs to show something different — quantized steps, a custom color, or a completely independent visualization — you can take over.

```
leds.update(index, value [, color])
```

Take ownership of an encoder's LED ring and draw it.

- index: Encoder position (1–16)
- value: Ring fill amount (0–16383, where 16383 = full ring)
- color: Color index (0–15, optional, defaults to 0)

Once you call `leds.update()` on an encoder, the firmware stops drawing that ring. It stays under script control until you call `leds.reset()` to hand it back. If you only need a temporary override, remember to reset.

```
-- Show 4 discrete steps on encoder 15
local step = (enc.scaled * 4) // 128
if step > 3 then step = 3 end
leds.update(15, step * 16383 // 3)
leds.reset(index)
```

Hand the LED ring back to the firmware. The firmware will resume drawing it from the control's internal value on the next render.

```
leds.reset(15) -- firmware takes over encoder 15's ring again
```

6.9 Screen Labels

By default, each encoder shows the label from its control configuration (the 4-character abbreviation). Your script can override this to show parameter names, values, status text, or whatever fits. Labels longer than 4 characters are truncated.

`slots.update(index, text)`

Override the label for an encoder slot.

- `index`: Encoder position (1–16)
- `text`: Label text (max 4 characters displayed)

```
slots.update(1, "Cut")  
slots.update(2, "Reso")
```

`slots.reset(index)`

Remove the override and revert to the control's default label.

```
slots.reset(1) -- shows control.abbr again
```

6.10 Variables

Variables are persistent script-side state. Unlike Lua locals (which are recreated whenever the script reloads) or values you keep in module-scope tables (which die when the Lua VM is destroyed on scene exit), variables are stored in flash and survive scene exits and power cycles. The user can edit them at runtime via the device's variable menu; your script reads them with `var.get`. Variables are found in the Scene settings.

Each variable has a name and a type — `int`, `bool`, or `float` — fixed at registration time. Variables exist per scene; two different scenes can both have a variable called "cutoff" without interfering.

`var.register(name, type, default)`

Declare a variable. The first call seeds the default value; subsequent calls with the same name are silently no-op so that re-running the script (e.g. via hot-reload) preserves whatever value is currently stored — live-coding friendly.

- name: identifier, max 16 characters
- type: "int", "bool", or "float"
- default: initial value used only on first registration

```
var.register("channel", "int", 1)
var.register("scale", "float", 1.0)
var.register("muted", "bool", false)
```

If the script registers more than the per-scene capacity, additional registrations are dropped. If you re-register an existing name with a different type, the type tag is not updated — the original type wins.

`var.get(name)`

Read the current value. Returns the value typed appropriately (integer for `int`, boolean for `bool`, float for `float`). Returns `nil` if the name was never registered.

```
local ch = var.get("channel") -- 1
local s = var.get("scale")   -- 1.0
local m = var.get("muted")   -- false
local x = var.get("nope")     -- nil
```

The lookup is by name and is fast enough for hot paths — names registered earlier in the same script are interned by the firmware-side store.

`var.set(name, value)`

Update an already-registered variable. The value is coerced according to the registered type — pass a number for int / float and a boolean (or truthy value) for bool. If the name was never registered, the call is a no-op and returns nil.

`var.set` does not trigger `page.onVarChange` — that callback only fires for firmware-side edits (e.g. via the variable menu). Script-initiated writes are silent, so handlers can call `var.set` without recursing.

```
var.set("channel", 5)
var.set("scale", 1.5)
var.set("muted", true)
```

`var.delete(name)`

Remove a single variable. The slot is freed; subsequent `var.get(name)` returns nil until the script (or firmware) re-registers it.

```
var.delete("channel")
```

`var.deleteAll()`

Wipe the entire variable store. Equivalent to deleting every variable.

```
var.deleteAll()
```

The store is loaded from flash before your script runs, so values registered in previous sessions are present when `page.onInit` is called. `var.register` preserves those values across reloads. Calling `var.deleteAll` resets the store to empty regardless of what was persisted.

Reacting to User Edits - `page.onVarChange(name)`

When the user changes a variable from the device's variable menu, the firmware fires `page.onVarChange(name)` so the script can react (refresh a label, recompute a derived value, etc.). See [Callbacks](#) for details.

Example

```
function page.onInit()
    var.register("channel", "int", 1)
    var.register("base_cc", "int", 20)
    var.register("scale", "float", 1.0)
    var.register("muted", "bool", false)

    page.setTitle("Voices")
    refresh()
end

function refresh()
    slots.update(13, "ch:" .. var.get("channel"))
    slots.update(14, "cc:" .. var.get("base_cc"))
    slots.update(15, string.format("x%.1f", var.get("scale")))
    slots.update(16, var.get("muted") and "MUTE" or "LIVE")
end

function controller.onEncoderTurn(enc)
    if var.get("muted") then return end
    if enc.id >= 1 and enc.id <= 4 then
        local v = math.floor(enc.scaled * var.get("scale"))
        if v < 0 then v = 0 end
        if v > 127 then v = 127 end
        midi.sendCC(0, var.get("channel"), var.get("base_cc") + (enc.id - 1), v)
    end
end

function page.onVarChange(name)
    refresh()
end
```

6.11 Page

`page.setTitle(text)`

Set the header text shown at the top of the screen. Max 15 characters.

```
page.setTitle("SysEx Editor")
```

`page.resetTitle()`

Revert to the default header (scene name + page name).

```
page.resetTitle()
```

6.12 Scripts onboard the E16

Scripts are loaded to the E16 using the App. There are several options onboard the E16 for working with scripts. Scripts can be assigned as the parameter type for many of the control knobs. Also variables are accessible in the scene settings along with the command to erase a script.

► Accessing the Scene Variables

1. Scenes are accessible from the main view by tapping the associated knob.
2. In control view, Hold (Knob) + tap [Shift]. This opens the control editor.
3. Select the scene tab. Hold [Shift] + tap (Knob 3), 'Scene'. The edit options also include controls with knob 1 and page with knob 2.
4. To navigate and scroll the options, turn (Knob 1). Select the 'Script Variables' option for editing press (Knob 1) then turn to change the setting. The '►' tag label indicates that the parameter is editable.
5. The variable options are displayed depending on how you registered the variable in the script: int, bool or float. For example
 - SomeIntVariableName 15
 - SomeFloatVariableName 0.59
 - SomeBoolVariableName False
 - or
 - SomeIntVariableName 2059
 - SomeFloatVariableName 0.02
 - SomeBoolVariableName True
6. Tap [Shift] to backup the menu structure.

Scripts can be cleared from the E16 by using the Scene settings..

► Erase a Script

1. Scenes are accessible from the main view by tapping the associated knob.
2. In control view, Hold (Knob) + tap [Shift]. This opens the control editor.
3. Select the scene tab. Hold [Shift] + tap (Knob 3), 'Scene'. The edit options also include controls with knob 1 and page with knob 2.
4. To navigate and scroll the options, turn (Knob 1). Select the 'Erase Script' option and press (Knob 1) to erase.
5. Tap (Knob 3) to confirm clearing the script or (Knob 2) to exit without clearing.
6. Tap [Shift] to backup the menu structure.

6.13 Example Script - Realistic Sysex Editor

```
-- Yamaha TX81Z complete editor for OXI E16
-- Per-operator params (id 1-64), voice common (65-86), op enable pushes (87-90)

-- OP4 per-operator (id 1-16)
--@assign id=1  abbr="CRS"  name="OP4 Coarse"    l=0 h=63
--@assign id=2  abbr="Fine" name="OP4 Fine Freq"  l=0 h=15
--@assign id=3  abbr="FRng" name="OP4 Freq Range" l=0 h=7
--@assign id=4  abbr="DET"  name="OP4 Detune"     l=0 h=6
--@assign id=5  abbr="AR"   name="OP4 Attack"     l=0 h=31
--@assign id=6  abbr="D1R"  name="OP4 Decay 1"    l=0 h=31
--@assign id=7  abbr="D2R"  name="OP4 Decay 2"    l=0 h=31
--@assign id=8  abbr="RR"   name="OP4 Release"     l=1 h=15
--@assign id=9  abbr="D1L"  name="OP4 Decay Lvl"   l=0 h=15
--@assign id=10 abbr="LS"   name="OP4 Level Scale" l=0 h=99
--@assign id=11 abbr="RS"   name="OP4 Rate Scale"  l=0 h=3
--@assign id=12 abbr="EBS"  name="OP4 EG Bias Sens" l=0 h=7
--@assign id=13 abbr="KVS"  name="OP4 Key Vel Sens" l=0 h=7
--@assign id=14 abbr="OUT"  name="OP4 Output Level" l=0 h=99
--@assign id=15 abbr="SHFT" name="OP4 EG Shift"    l=0 h=3
--@assign id=16 abbr="OSW"  name="OP4 Osc Wave"    l=0 h=7

-- OP3 per-operator (id 17-32)
--@assign id=17 abbr="CRS"  name="OP3 Coarse"    l=0 h=63
--@assign id=18 abbr="Fine" name="OP3 Fine Freq"  l=0 h=15
--@assign id=19 abbr="FRng" name="OP3 Freq Range" l=0 h=7
--@assign id=20 abbr="DET"  name="OP3 Detune"     l=0 h=6
--@assign id=21 abbr="AR"   name="OP3 Attack"     l=0 h=31
--@assign id=22 abbr="D1R"  name="OP3 Decay 1"    l=0 h=31
--@assign id=23 abbr="D2R"  name="OP3 Decay 2"    l=0 h=31
--@assign id=24 abbr="RR"   name="OP3 Release"     l=1 h=15
--@assign id=25 abbr="D1L"  name="OP3 Decay Lvl"   l=0 h=15
--@assign id=26 abbr="LS"   name="OP3 Level Scale" l=0 h=99
--@assign id=27 abbr="RS"   name="OP3 Rate Scale"  l=0 h=3
--@assign id=28 abbr="EBS"  name="OP3 EG Bias Sens" l=0 h=7
--@assign id=29 abbr="KVS"  name="OP3 Key Vel Sens" l=0 h=7
--@assign id=30 abbr="OUT"  name="OP3 Output Level" l=0 h=99
--@assign id=31 abbr="SHFT" name="OP3 EG Shift"    l=0 h=3
--@assign id=32 abbr="OSW"  name="OP3 Osc Wave"    l=0 h=7

-- OP2 per-operator (id 33-48)
--@assign id=33 abbr="CRS"  name="OP2 Coarse"    l=0 h=63
--@assign id=34 abbr="Fine" name="OP2 Fine Freq"  l=0 h=15
--@assign id=35 abbr="FRng" name="OP2 Freq Range" l=0 h=7
--@assign id=36 abbr="DET"  name="OP2 Detune"     l=0 h=6
--@assign id=37 abbr="AR"   name="OP2 Attack"     l=0 h=31
--@assign id=38 abbr="D1R"  name="OP2 Decay 1"    l=0 h=31
--@assign id=39 abbr="D2R"  name="OP2 Decay 2"    l=0 h=31
```

```
--@assign id=40 abbr="RR" name="OP2 Release" l=1 h=15
--@assign id=41 abbr="D1L" name="OP2 Decay Lvl" l=0 h=15
--@assign id=42 abbr="LS" name="OP2 Level Scale" l=0 h=99
--@assign id=43 abbr="RS" name="OP2 Rate Scale" l=0 h=3
--@assign id=44 abbr="EBS" name="OP2 EG Bias Sens" l=0 h=7
--@assign id=45 abbr="KVS" name="OP2 Key Vel Sens" l=0 h=7
--@assign id=46 abbr="OUT" name="OP2 Output Level" l=0 h=99
--@assign id=47 abbr="SHFT" name="OP2 EG Shift" l=0 h=3
--@assign id=48 abbr="OSW" name="OP2 Osc Wave" l=0 h=7

-- OP1 per-operator (id 49-64)
--@assign id=49 abbr="CRS" name="OP1 Coarse" l=0 h=63
--@assign id=50 abbr="Fine" name="OP1 Fine Freq" l=0 h=15
--@assign id=51 abbr="FRng" name="OP1 Freq Range" l=0 h=7
--@assign id=52 abbr="DET" name="OP1 Detune" l=0 h=6
--@assign id=53 abbr="AR" name="OP1 Attack" l=0 h=31
--@assign id=54 abbr="D1R" name="OP1 Decay 1" l=0 h=31
--@assign id=55 abbr="D2R" name="OP1 Decay 2" l=0 h=31
--@assign id=56 abbr="RR" name="OP1 Release" l=1 h=15
--@assign id=57 abbr="D1L" name="OP1 Decay Lvl" l=0 h=15
--@assign id=58 abbr="LS" name="OP1 Level Scale" l=0 h=99
--@assign id=59 abbr="RS" name="OP1 Rate Scale" l=0 h=3
--@assign id=60 abbr="EBS" name="OP1 EG Bias Sens" l=0 h=7
--@assign id=61 abbr="KVS" name="OP1 Key Vel Sens" l=0 h=7
--@assign id=62 abbr="OUT" name="OP1 Output Level" l=0 h=99
--@assign id=63 abbr="SHFT" name="OP1 EG Shift" l=0 h=3
--@assign id=64 abbr="OSW" name="OP1 Osc Wave" l=0 h=7

-- Voice common (id 65-81)
--@assign id=65 abbr="ALG" name="Algorithm" l=0 h=7
--@assign id=66 abbr="FB" name="Feedback" l=0 h=7
--@assign id=67 abbr="LSPD" name="LFO Speed" l=0 h=99
--@assign id=68 abbr="LDLY" name="LFO Delay" l=0 h=99
--@assign id=69 abbr="PMD" name="PM Depth" l=0 h=99
--@assign id=70 abbr="AMD" name="AM Depth" l=0 h=99
--@assign id=71 abbr="LSYN" name="LFO Key Sync" l=0 h=1
--@assign id=72 abbr="LW" name="LFO Wave" l=0 h=3
--@assign id=73 abbr="PMS" name="LFO PM Sens" l=0 h=7
--@assign id=74 abbr="AMS" name="LFO AM Sens" l=0 h=3
--@assign id=75 abbr="MID" name="Middle C" l=0 h=48
--@assign id=76 abbr="PLAY" name="Play Mode" l=0 h=1
--@assign id=77 abbr="PB" name="Pitch Bend Range" l=0 h=12
--@assign id=78 abbr="PMOD" name="Portamento Mode" l=0 h=1
--@assign id=79 abbr="PTIM" name="Portamento Time" l=0 h=99
--@assign id=80 abbr="MWP" name="MW Pitch Range" l=0 h=99
--@assign id=81 abbr="MWA" name="MW Amp Range" l=0 h=99
```

```
-- Per-operator ratio/fixed toggle (id 82-85)
--@assign id=82 abbr="R/F" name="OP4 Ratio/Fixed" l=0 h=1
--@assign id=83 abbr="R/F" name="OP3 Ratio/Fixed" l=0 h=1
--@assign id=84 abbr="R/F" name="OP2 Ratio/Fixed" l=0 h=1
--@assign id=85 abbr="R/F" name="OP1 Ratio/Fixed" l=0 h=1

-- Reverb (id 86)
--@assign id=86 abbr="REV" name="Reverb Rate" l=0 h=7

-- Operator enable push toggles (id 87-90)
--@assign id=87 abbr="OP1" name="OP1 Enable" p=true
--@assign id=88 abbr="OP2" name="OP2 Enable" p=true
--@assign id=89 abbr="OP3" name="OP3 Enable" p=true
--@assign id=90 abbr="OP4" name="OP4 Enable" p=true

local out = 0
local channel = 0

local vced = {0xF0, 0x43, 0x10 + channel, 0x12, 0, 0, 0xF7}
local aced = {0xF0, 0x43, 0x10 + channel, 0x13, 0, 0, 0xF7}

-- 0 = VCED, 1 = ACED per script_id (1-86)
local param_type = {
    -- OP4 (1-16)
    0,1,1,0, 0,0,0,0,0,0,0,0,0,0,1,1,
    -- OP3 (17-32)
    0,1,1,0, 0,0,0,0,0,0,0,0,0,0,1,1,
    -- OP2 (33-48)
    0,1,1,0, 0,0,0,0,0,0,0,0,0,0,1,1,
    -- OP1 (49-64)
    0,1,1,0, 0,0,0,0,0,0,0,0,0,0,1,1,
    -- Voice common (65-81): all VCED
    0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
    -- Ratio/Fixed (82-85): all ACED
    1,1,1,1,
    -- Reverb (86): ACED
    1,
}
```

```
-- Sysex address byte per script_id (1-86)
local param_num = {
    -- OP4 (1-16)
    11, 2, 1, 12, 0, 1, 2, 3, 4, 5, 6, 7, 9, 10, 4, 3,
    -- OP3 (17-32)
    24, 7, 6, 25, 13, 14, 15, 16, 17, 18, 19, 20, 22, 23, 9, 8,
    -- OP2 (33-48)
    37, 12, 11, 38, 26, 27, 28, 29, 30, 31, 32, 33, 35, 36, 14, 13,
    -- OP1 (49-64)
    50, 17, 16, 51, 39, 40, 41, 42, 43, 44, 45, 46, 48, 49, 19, 18,
    -- Voice common (65-81): VCED addresses
    0x34, 0x35, 0x36, 0x37, 0x38, 0x39, 0x3A, 0x3B,
    0x3C, 0x3D, 0x3E, 0x3F, 0x40, 0x41, 0x42, 0x47, 0x48,
    -- Ratio/Fixed (82-85): ACED addresses Op4, Op3, Op2, Op1
    0x00, 0x05, 0x0A, 0x0F,
    -- Reverb (86): ACED address
    0x14,
}

-- Operator enable state: Op1, Op2, Op3, Op4 (1=on, 0=off)
local op_en = {1, 1, 1, 1}

local function sendOpEnable()
    local packed = (op_en[1] * 8) + (op_en[2] * 4) + (op_en[3] * 2) + op_en[4]
    vced[5] = 0x5D
    vced[6] = packed
    midi.sendSysex(out, vced)
end

function page.onInit()
    page.setTitle("TX81Z")
end

function controller.onEncoderTurn(enc)
    if enc.id >= 1 and enc.id <= 86 then
        local msg = param_type[enc.id] == 1 and aced or vced
        msg[5] = param_num[enc.id]
        msg[6] = enc.scaled
        midi.sendSysex(out, msg)
    end
end
```

```
function controller.onEncoderPress(enc)
    -- Op enable toggles (id 87=OP1, 88=OP2, 89=OP3, 90=OP4)
    if enc.id >= 87 and enc.id <= 90 then
        local op = enc.id - 86 -- 1-4
        op_en[op] = 1 - op_en[op]
        sendOpEnable()
        slots.update(enc.index, op_en[op] == 1 and "ON" or "OFF")
    end
end
```


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DECLARATION OF CONFORMITY

SPECIAL MESSAGE SECTION

This product utilizes rechargeable batteries. DO NOT connect this product to any power supply or adapter different than one described in the manual or specifically recommended by OXI Instruments.

This product should be used only with the components supplied or, in case a non-official accessory is used, please observe that the specifications are the same as the official ones.

IMPORTANT: Don't try to open or disassembly the OXI One. For any technical problem it may have, please contact OXI Instruments for further information. Opening or disassembling the OXI One will void your warranty.

FCC INFORMATION (U.S.A)

1. IMPORTANT NOTICE: DO NOT MODIFY THIS UNIT!

This product meets FCC requirements once it is produced and assembled. Modifications not expressly approved by OXI Instruments may void your authority, granted by the FCC, to use the product.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Contains FCC ID: 2A094-MK02

2. IMPORTANT

When connecting this product to accessories and/or another product use only high- quality shielded cables. Cable/s supplied with this product **MUST** be used. Follow all installation instructions. Failure to follow instructions could void your FCC authorization to use this product in the USA.

3. NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.devices.

DECLARATION OF CONFORMITY

The full text of the US declaration of conformity is available at the following internet address: www.oxiinstruments.com/



EUROPE

This product complies with the requirements of **European Directive 2014/53/EU & Directive 2011/65/EU**.

The full text of the EU declaration of conformity is available at the following internet address www.oxiinstruments.com/



ENVIRONMENTAL ISSUES:



This symbol indicates that this product should not be treated as domestic waste. Once its useful life has ended, it must be taken to a relevant collection point for the recycling of electrical appliances. Through the correct recycling of batteries and electrical devices, we contribute to avoiding risks to environmental health and safety.

Product Disposal Note: If this product is damaged beyond repair or, for any reason, its useful life is deemed to have expired, please inform yourself about local, state and European regulations regarding the proper disposal and recycling of products containing lead, batteries, plastics, among other materials, as well as collection points for these types of products.



These symbols indicate that this product contains batteries and cannot be disposed as domestic waste. Once its useful life has ended, it must be taken to a relevant collection point for the correct recycling of its batteries.

This product is classified as **Radio Equipment**.

SERIAL NUMBER LOCATION:

The serial number is located on the instrument body, in the label placed in the bottom side.

TERMS OF WARRANTY

REFUND POLICY (only in European Union)

The consumer has a total of 14 days from the acquisition of the OXI One to be able to return the product thus receiving a full refund of the price of it. The product must be in the same state and with all the original content in order to receive a full refund.

Shipping costs will be paid by the customer.

WARRANTY

OXI Instruments warrants the included hardware product and accessories against defects in materials and workmanship for two years from the date of original purchase. Unless proven otherwise, it will be presumed that the breaches of conformity manifested in a period of six months from the delivery of the product already existed on that date.

The warranty will not cover the repairing costs of the following cases:

Misuse of OXI One, whether subject to extreme conditions, as using it incorrectly.

Improper handling of the product.

Normal wear and tear, nor damage caused by accident or abuse.

Malfunction due to the use of accessories not authorized by OXI Instruments.

Change Log

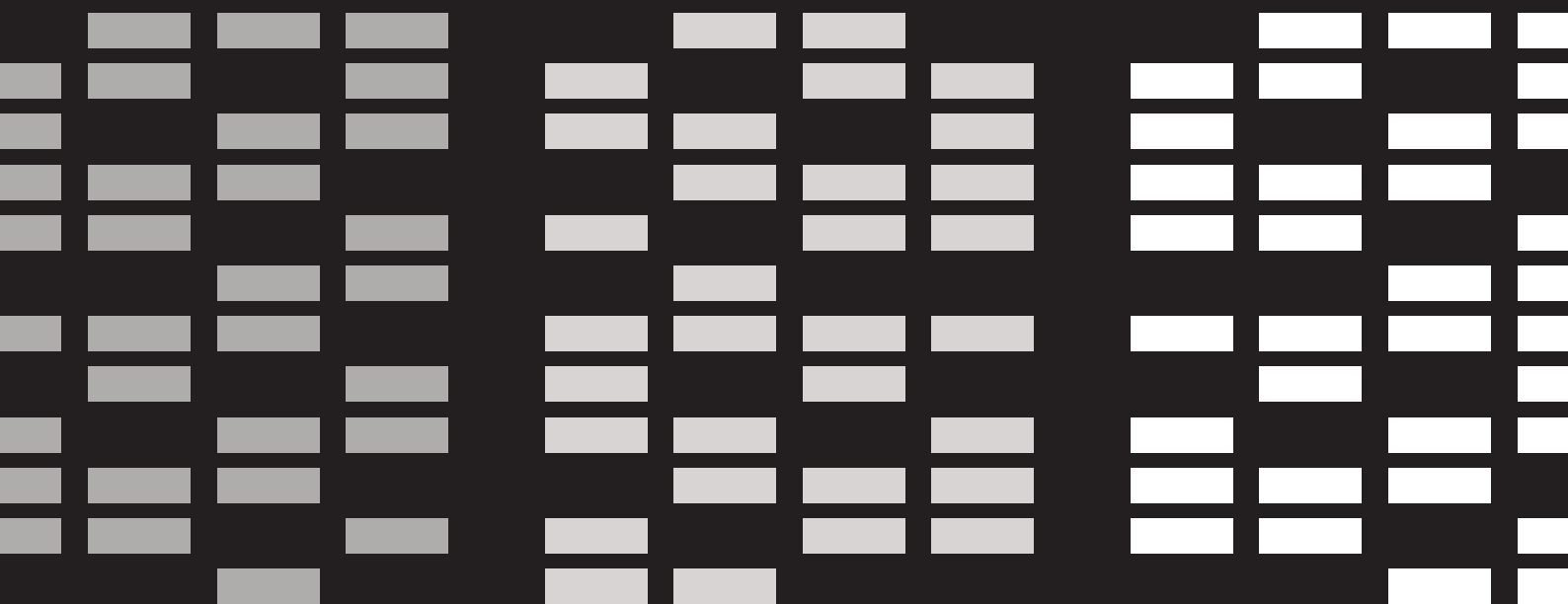
OS + Manual	Feature Update	Manual Update
0.5.6 b	- Added swap dest. - MIDI Learn - Send MIDI Parameter data manually or when changing scenes or presets.	- Swap Destinations with push option - Page 18, 30. - MIDI Learn and Param list update - Page 20 - 27, 39. - Preset and Scene send MIDI params - Page 44, 46, 55 - Changelog added. - Specifications updated - Page 2.
0.6.1 a	- Always On - Special Options: Random, Store - LED ring for snapshot. - Color Indicator option - 1st LED. - Individual destination colors. - Group masters included in snapshot	- Option to always display value in destination. Pages 20, 22, 24, 27. - Special Random. Page 30 edited, 32, 34 (added). - Special Store. Page 35 (added). - Snapshot LED ring - dual LED. Page 31. - First LED illumination - Page 19, 59. - Bi-polar. Removed from Special options and added to destinations. Page 30. - Destination 'default' changed to 'anchor'. Page 20-27, 29. - Destination colors. Page 18-19. - Group Masters in snapshot. Page 31, 39.
0.6.1 b	- CC Push range changes - App controls edit options	- P.Val & R.Val added. Pages 28 - Drag and drop to copy or swap controls. Page 55.
0.6.1 c	Special functions & colors	Summary of special functions improved. Pages 18
1.0.1 a	- New Looper added with sync functionality. - Lua Scripting compatibility. - Various command & terminology changes. - Menu structure changes. - Scene and control workflow changes.	Complete re-write and restructure of the manual to match the new 1.0 Release OS.

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July 2026 - OXI ONE MKII OS 1.0.1 a

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