intellijel

Metropolix

**Multitrack, Performance-Oriented
Pitch, Gate and Mod Sequencer**

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COMPLIANCE

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.

Changes or modifications not expressly approved by Intellijel Designs, Inc. could void the user's authority to operate the equipment.

Any digital equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

This device meets the requirements of the following standards and directives:

EMC: 2014/30/EU
EN55032:2015 ; EN55103-2:2009 (EN55024) ; EN61000-3-2 ; EN61000-3-3

Low Voltage: 2014/35/EU
EN 60065:2002+A1:2006+A11:2008+A2:2010+A12:2011

RoHS2: 2011/65/EU

WEEE: 2012/19/EU

INSTALLATION

Intellijel Eurorack modules are designed to be used with a Eurorack-compatible case and power supply. We recommend you use Intellijel cases and power supplies.

Before installing a new module in your case, you must ensure your power supply has a free power header and sufficient available capacity to power the module:

- Sum up the specified +12V current draw for all modules, including the new one. Do the same for the -12 V and +5V current draw. The current draw will be specified in the manufacturer's technical specifications for each module.

- Compare each of the sums to specifications for your case's power supply.

- Only proceed with installation if none of the values exceeds the power supply's specifications. Otherwise you must remove modules to free up capacity or upgrade your power supply.

You will also need to ensure your case has enough free space (hp) to fit the new module. To prevent screws or other debris from falling into the case and shorting any electrical contacts, do not leave gaps between adjacent modules, and cover all unused areas with blank panels. Similarly, do not use open frames or any other enclosure that exposes the backside of any module or the power distribution board.

You can use a tool like ModularGrid to assist in your planning. Failure to adequately power your modules may result in damage to your modules or power supply. If you are unsure, please contact us before proceeding.
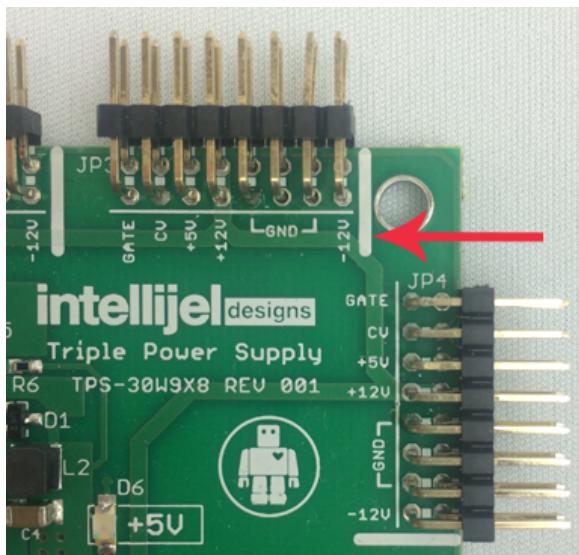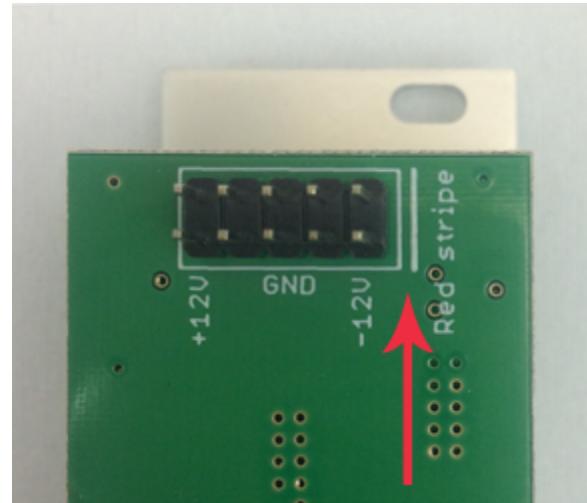
Installing Your Module

When installing or removing a module from your case always turn off the power to the case and disconnect the power cable. Failure to do so may result in serious injury or equipment damage.

Ensure the 10-pin connector on the power cable is connected correctly to the module before proceeding. The red stripe on the cable must line up with the -12V pins on the module's power connector. Different modules use different ways to indicate the -12V pins. Some may be labelled with "-12V;" a white stripe next to the -12V pins; the words "red stripe;" or some combination of these. Additionally, some modules may have shrouded headers, thus preventing backward connections.
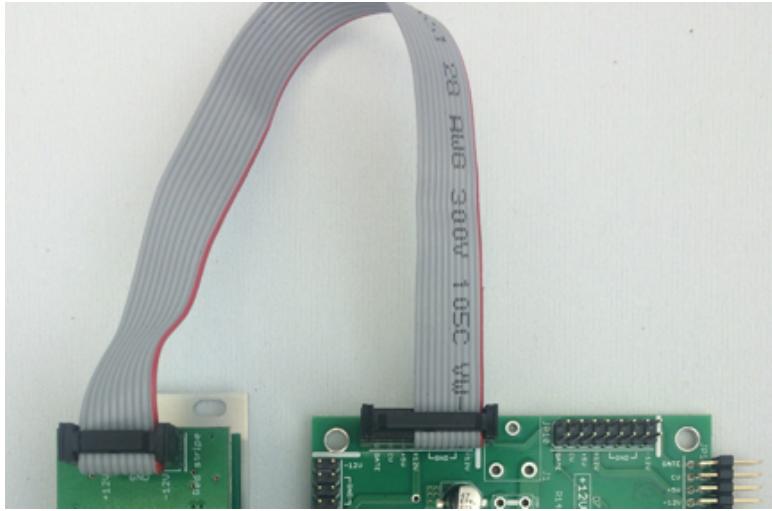
Most modules will come with the cable already connected but it is good to double check the orientation. Be aware that some modules may have headers that serve other purposes so ensure the power cable is connected to the right one.

The other end of the cable, with a 16-pin connector, connects to the power bus board of your Eurorack case. Ensure the red stripe on the cable lines up with the -12V pins on the bus board. On Intellijel power supplies the pins are labelled with the label "-12V" and a thick white stripe. Sometimes the connectors are shrouded, ensuring the cable can only be oriented in one direction.

If you are using another manufacturer's power supply, check their documentation for instructions.

Once connected, the cabling between the module and power supply should resemble the picture below:

Before reconnecting power and turning on your modular system, double check that the ribbon cable is fully seated on both ends and that all the pins are correctly aligned. If the pins are misaligned in any direction or the ribbon is backwards you can cause damage to your module, power supply, or other modules.

After you have confirmed all the connections, you can reconnect the power cable and turn on your modular system. You should immediately check that all your modules have powered on and are functioning correctly. If you notice any anomalies, turn your system off right away and check your cabling again for mistakes.

Connecting an Optional Expander Module

You can connect an *Intellijel Gx* (or *Qx*) gate expander module to Metropolix to provide eight additional gate and trigger outputs, which you configure via the MX button on the Metropolix panel.

1. Turn off power to your eurorack system.

2. Using the power power cable included with your expander module (Gx or Qx), connect one end to the module's 10-pin power connector and the other to the 16-pin power socket on your eurorack system's powered bus board — paying attention to polarity (aligning the red stripe as described previously).

3. Using the I2C cable included with your expander module, connect one end to the module's 6-pin I2C connector and the other end to the I2C port on your Metropolix module. Both ports are shrouded to ensure they can be connected in only one direction.

4. Power up your eurorack system.

IMPORTANT !!! : Always power down the modules before connecting or disconnecting an I2C cable.

METROPOLIX OVERVIEW

The Intellijel Metropolix is a unique and powerful Eurorack format musical sequencer, which evolves and expands upon the real-time, hands-on, dynamic sequencing methodology first introduced in the Intellijel Metropolis (which was, itself, inspired by the original Ryk M-185 — a Roland System 100m format sequencer).

On first blush, it appears to be a simple 8-stage sequencer — but there is far more functionality than first meets the eye:

- There are two tracks (TRK 1 and TRK 2) that are variants of the single main pitch/gate sequencer, which is programmed via the PITCH sliders, PULSE COUNT and GATE TYPE switches. Each track interprets the sequence in a variety of ways — creating complementary sequence variations that enable you to generate counterpoint, polyrhythms, and all manner of sonic movement (both subtle and extreme).

  Each of these tracks has its own playback ORDER, sequence LENgth, clock DIVision, SWING amount, SLIDE time, and track GATE lengths. Other track-based sequence variables are accessible from the TRACK MENU, and include Pitch Slider inversion; sequence note range; track transposition; and more. In addition, Tracks 1 & 2 both have multiple lanes of per-stage playback parameters, including: GATE override; PITCH override; RATCHet count; PROBability of playback; ACCUMulating transposition, and a dedicated CV lane. Each stage also has a SKIP feature, and a pitch SLIDE option.

- 8 separate and individual MODulation lanes are accessed via the MOD button. Each MOD lane has 8-stages of modulation values and its own playback ORDER, LENgth, and clock DIVision; and each lane is routable to one of Metropolix' two assignable outputs or to dozens of internal destinations, allowing for some sophisticated and powerful self-modulation.

- A trio of AUX inputs allows for external modulation of user-assignable sequencer parameters for even greater variation, while two assignable CTRL knobs give you direct access to the parameters you want to adjust most frequently during a performance. With dedicated Pitch/Gate outputs for both Track 1 and Track 2; two totally user-assignable outputs (A and B); and internal MOD routing, Metropolix features a wealth of patching opportunities.

- Metropolix also features a Loopy mode, allowing you to instantly play back short sub-sequences, or even "play" the stage buttons directly (like a 'keyboard').

- Metropolix stores up to 64 preset configurations (in 8 banks of 8 presets), and all live settings are stored in EPROM, ensuring that your Metropolix will always power up exactly as you left it — even if you haven't saved them to a preset. By default presets can change all the structural (menu-based) elements of your sequencer without overwriting the front panel controls, but full recall is also available.

- The operation of the Metropolix is optimized for live performance and jamming, with quick access to all the most important performance parameters, and the ability to greatly affect your sequences with a single slider or switch.
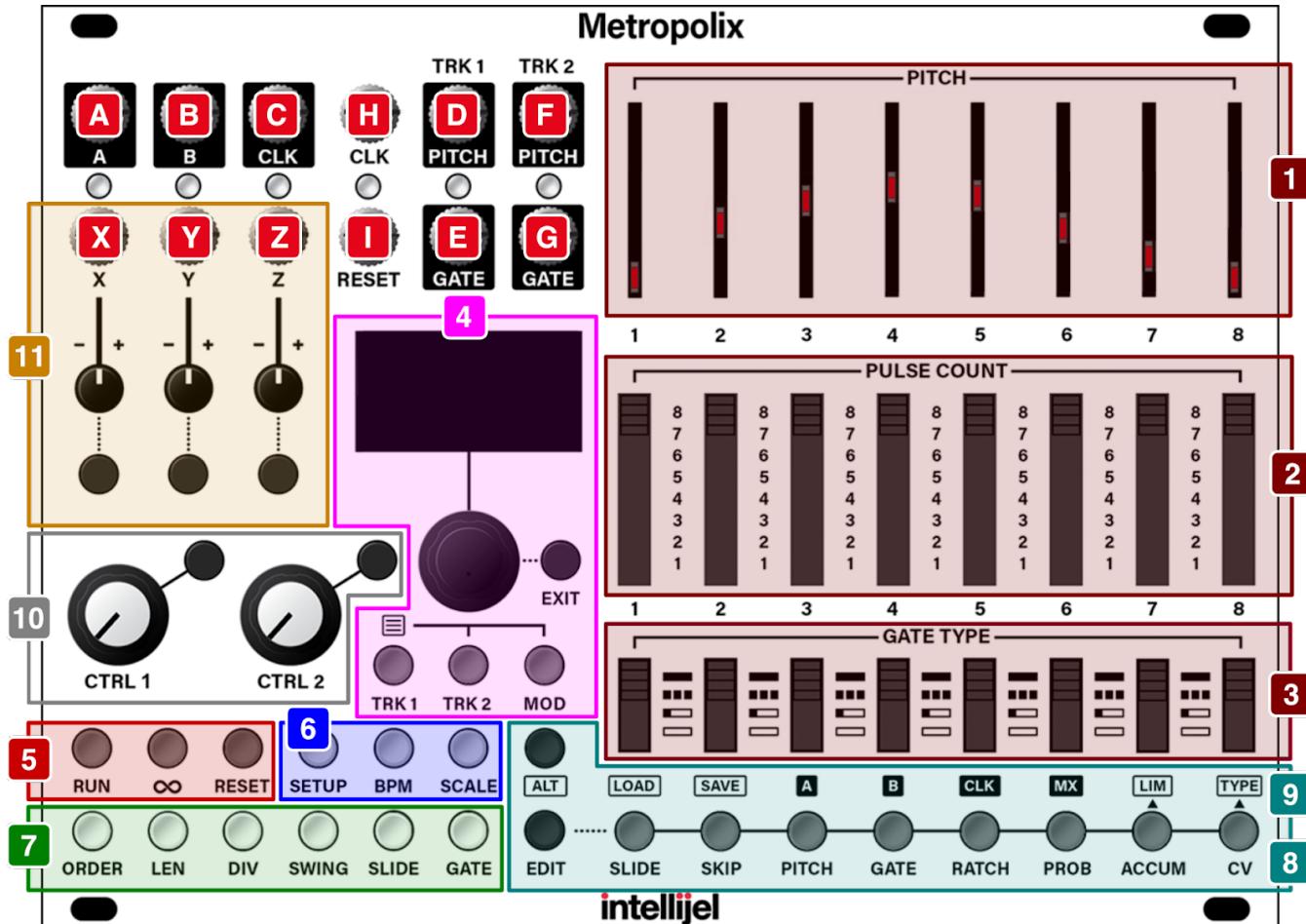
MANUAL CONVENTIONS

- **Bold** text = **BUTTON** names and **JACK** names.

- `Monospace` text = Screen Parameter `NAMES`

- 'Quoted' text = Parameter 'values'

- When told to *long-press* a button, it means to press the button down and hold it for approximately 1 second. Some buttons have secondary functions, and long-pressing a button is the way to access these secondary functions.

- When told to press-hold or press-and-hold a button, it means to press a button and continue to hold it down while pressing a second button.

FRONT PANEL OVERVIEW

The Front Panel consists of numerous input and output jacks, plus a plethora of buttons, switches, knobs, and other such controllers.

Each of these is described briefly below, though more detailed descriptions are contained later in the manual.

OUTPUTS

[A] **A OUT** - The first of two user assignable signals is sent out this jack. To assign a signal to this jack, press the **ALT** button to enter ALT mode, then press the **A** (Stage 3) button, as described in OUT A & B, later in this manual.

The color of the output LED changes depending on the type of signal it carries (**blue** = pitch/root data; **yellow** = gate/trigger; **green** (+) / **red** (-) = continuous voltage).

[B] **B OUT** - The second of two user assignable signals is sent out this jack. To assign a signal to this jack, press the **ALT** button to enter ALT mode, then press the **B** (Stage 4) button, as described in OUT A & B, later in this manual. As with the **A** output, the color of its corresponding LED indicates the type of signal assigned to it.

[C] **CLOCK OUT** - Outputs a clock from Metropolix. A clock signal is output only when the sequencer is running. The output clock can run at any division of the input (whether internally or externally clocked), as set by the `Clk Div` parameter accessed via the **ALT** + **CLK** (Stage 5) button, as discussed in CLK, later in this manual.

[D] **TRACK 1 PITCH OUT** - By default, the 1 V/Oct pitch generated by Track 1 is sent out this jack. However, it's possible to swap Track assignments, such that Track 2's pitch is sent to this jack. This feature (called `Trk Out Swap`) can be assigned to a CTRL knob or an AUX input or MOD Lane.

[E] **TRACK 1 GATE OUT** - By default, Track 1's gate signal (off = 0V; on = +5V) is sent out this jack. However, like with the PITCH out, you can swap it to carry Track 2's gate output instead. The corresponding LED lights whenever the gate output is high (on).

[F] **TRACK 2 PITCH OUT** - By default, the 1 V/Oct pitch generated by Track 2 is sent out this jack. However, it's possible to swap Track assignments, such that Track 1's pitch is sent to this jack. This feature (called `Trk Out Swap`) can be assigned to a CTRL knob or an AUX input or MOD Lane.

[G] **TRACK 2 GATE OUT** - By default, Track 2's gate signal (off = 0V; on = +5V) is sent out this jack. However, like with the PITCH output, you can swap it to carry Track 1's gate output instead. The corresponding LED lights whenever the gate output is high (on).

INPUTS

[H] **CLOCK IN** - Patch an external clock source here. This input is used to synchronize Metropolix playback to an external signal source, and requires that Metropolex be clocked externally (which is enabled by pressing the **SETUP** button, and setting Clock to 'External').

NOTE: The Clock IN LED blinks in time with the clock division being applied to this incoming external clock (as set with the Ext Clock Div parameter on the BPM screen, when Clock = 'External'. The LED does not blink if the internal clock is used.

[I] **RESET IN** - By default, a trigger signal patched into this jack will reset the current sequence to its beginning stage.

You can program individual tracks to ignore the RESET trigger by going to the TRACK MENU, and setting the Global Reset option to 'Off.'

Using the SETUP MENU, you can reconfigure the jack to act as a RUN input (instead of a RESET input). In this configuration, the sequence plays while the input gate signal is high, and it doesn't play when the gate signal is low.

NOTE: The LED above the RESET jack flashes red each time the sequence resets.

[X] **X IN** - One of three AUX inputs for controlling Metropolix. Patch a control voltage source (-5V to +5V) into this jack to modulate whichever sequencer parameter is assigned to that jack. See AUX Input Settings to learn how to assign parameters to the **X IN** jack, and what those various parameters accomplish.

[Y] **Y IN** - A second AUX input for controlling Metropolix. It is functionally identical to the **X IN**.

[Z] **Z IN** - A third AUX input for controlling Metropolix. It, too, is functionally identical to **X IN**.

SECTIONS
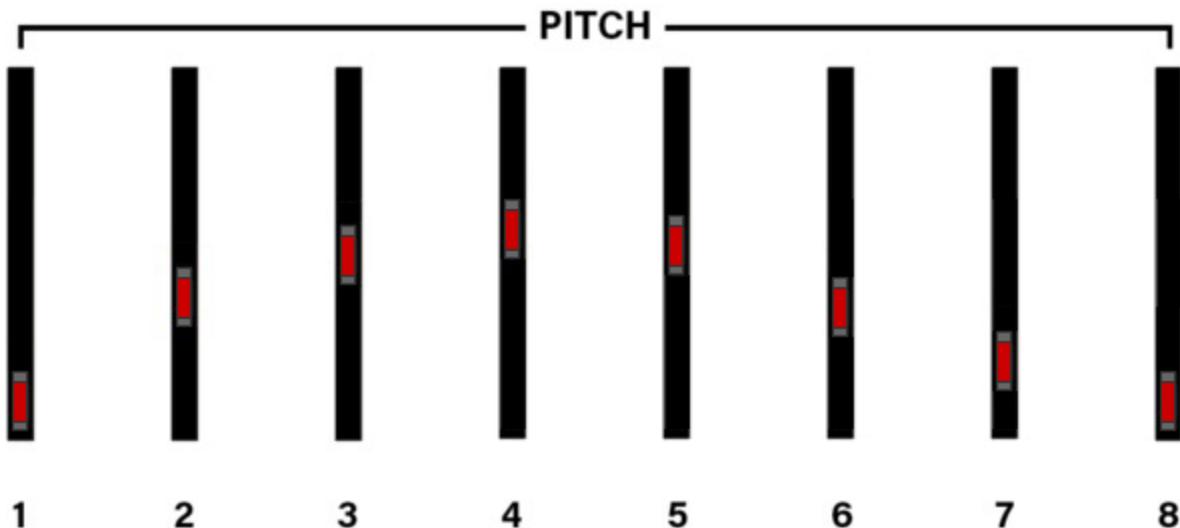
In order to understand all the various control features, let's first look at how they're grouped:

[1] **PITCH** sliders - These eight sliders control the pitch played by the associated stage. See PITCH SLIDERS for more information.

[2] **PULSE COUNT** switches - Each of these switches sets the pulse count (from 1 to 8 pulses) for the corresponding stage. This determines how long the stage plays in relation to all the other stages. See PULSE COUNT for more information.

[3] **GATE TYPE** switches - Each switch sets the gate type for its respective stage, either HOLD, MULTIPLE, SINGLE, or REST as discussed in GATE TYPES, later in this manual.

[4] **SCREEN & TRACK BUTTONS** - This section, discussed in SCREEN & TRACK BUTTONS, contains a SCREEN and PUSH-ENCODER for setting and viewing Metropolix functions; three TRACK buttons for selecting which track you wish to edit (TRK 1, TRK 2 or MOD Lanes); and an EXIT button, which exits any open menus and/or returns the screen to Metropolix' top-level HOME Screen.

[5] **TRANSPORT Buttons** - These buttons control Metropolix's transport, enabling you to start and stop playback, reset the sequencer to its 'starting' position, and enter Loopy mode. See TRANSPORT BUTTONS for a detailed description.

[6] **GLOBAL SETTINGS** - These buttons control various functions that apply to Metropolix as a whole — operating across all tracks. See GLOBAL SETTINGS for a detailed description of all the GLOBAL SETTINGS buttons.

[7] **TRACK SETTINGS** - These buttons modify the track that's currently selected for editing. Tracks are selected by pressing (and lighting) the corresponding TRACK button in the SCREEN & TRACK BUTTONS section. See TRACK SETTINGS for a detailed description of all the TRACK SETTINGS buttons.

[8] **STAGE Buttons** - These buttons modify different settings on a stage-by-stage basis within individual tracks. See STAGE BUTTONS for a detailed description of every STAGE function.

[9] **ALT Buttons** - Each Stage button has an alternate function, indicated by the text above the button, which is accessed by pressing the **ALT** button prior to pressing the Stage button. See ALT BUTTONS for a detailed description of all the ALT functions.

[10] **CTRL (Control) Knobs** - Assign functions to each of these knobs for real-time changes during a performance. See Control Knobs for a detailed description of these knobs.

[11] **AUX IN Settings** - Metropolix offers three user-assignable AUX inputs (**X**, **Y** and **Z**) for controlling the sequencer externally. Press an input's corresponding button to assign an AUX destination on one or more tracks, and use the built-in attenuverter to dial in the desired amount of control. For more information, see AUX Input Settings.

PITCH SLIDERS

(SECTION 1)

These sliders determine the default pitch value of each corresponding stage. Metropolix uses the position of these sliders as a starting point for determining the actual pitch output by each stage on each track.

On a GLOBAL level:

- Via the **SCALE** button, you can assign a scale type and root note to any quantized slider.

- Via the **SETUP** button, you can define which note represents the bottom of the slider (either a "C" or the current scale's root note).

On a per-TRACK level (accessed via the **TRACK MENU**), you can assign:

- The pitch range of the slider (from 1 octave bottom-to-top, to 4 octaves bottom-to-top)

- Whether the slider's lowest pitch is at the bottom (normal) or at the top (inverted).

- An overall output transposition above or below the default pitch value (±60 semitones).

On a per-STAGE, per-TRACK level:

- Via the **PITCH** button, you can assign a note value that deviates from the slider's current position for each stage on each track.

- Via the **ACCUM** button, you can assign whether a stage's pitch transposes cumulatively (either with each pass through the stage; each pulse within a stage; or each ratchet).

The way in which a slider's position can be interpreted, inverted, transposed and overridden by the various tracks and stages allows Metropolix to create harmonic intervals and counterpoint that change and evolve with a single move of a slider.

Each pitch slider has an LED that lights to indicate which stage is playing — glowing brightest when the stage's gate is high and dimmer with the stage's gate is low.

When you move a pitch slider, the value will be shown briefly on the screen, enabling you to set pitch values quickly and precisely.
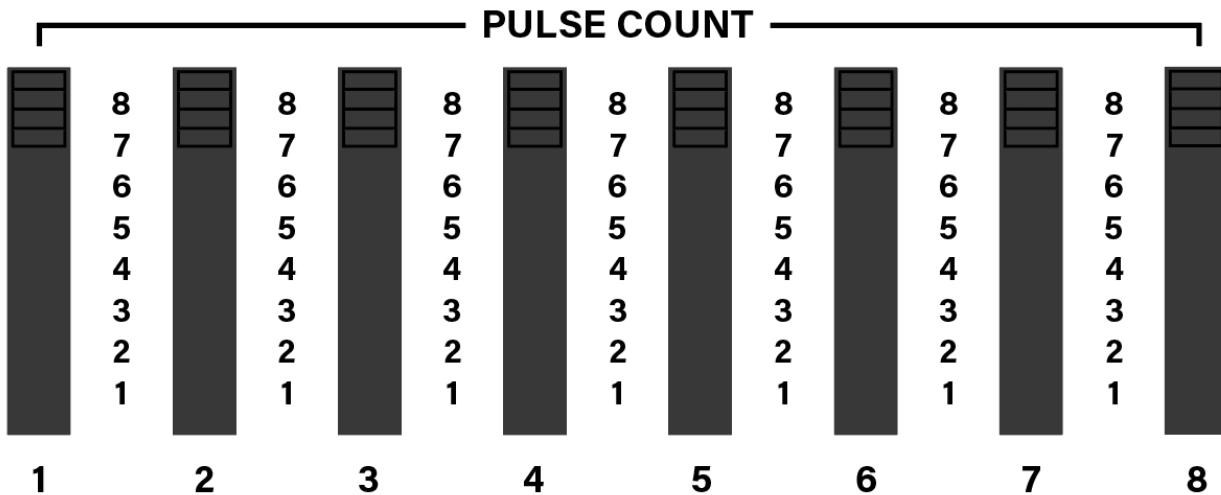
The keyboard 'greys out' (hashes) any notes not contained within the root/scale assignment you make with the SCALE button. That is, in-scale white keys are white; in-scale black keys are black; out-of scale keys (black or white) are 'grey.' The note you select with the pitch slider is indicated by a dot (and named beneath the keyboard, on the right). The Stage Number is shown beneath the keyboard on the left. Note that setting a Transpose value in the Track Menu enables you to assign notes that are out of scale.

*NOTE: Metropolix offers the option of loading stored pitch values with a Preset in its SETUP menu. If you choose to load this data, then the pitch you hear may not match the sliders. Similarly if a Stage is programmed to override the PITCH, or it's being modulated by an AUX input, or the ACCUM function is operating, it too will override the slider. You can always see exactly which pitch is playing by pressing the **EXIT** button (to view the HOME screens), then rotating the encoder to display HOME Screen 2 : Note Overview.*

PULSE COUNT

(SECTION 2)

These switches set the number of clock pulses at which the sequencer stays on a particular stage. In general, the sequence will not advance to the next stage until the chosen number of clock pulses has passed. Each stage's pulse count can be set from 1 pulse to 8 pulses.

> **EXAMPLE**: *If the sequencer is currently on a stage with PULSE COUNT = 1 it will advance to the next stage (as determined by the **ORDER** screen) upon receipt of the next clock pulse. If the stage's PULSE COUNT = 3, it will stay on the stage for 3 clock pulses before advancing.*

In general, the type (and number) of gates generated while on a stage is determined by the GATE TYPE switches (described below).
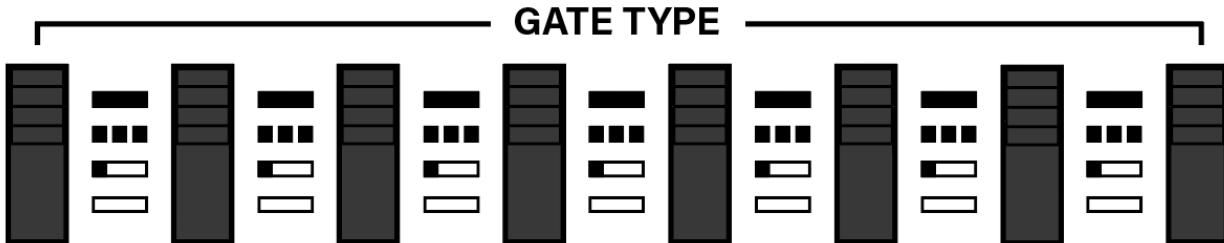
*NOTE: Metropolix offers the option of loading switch positions with a Preset in its SETUP menu. If you choose to load this data, then the pulse count you hear may not match the switches. You can always see the currently used switch setting by pressing the **EXIT** button (to view the HOME screens), then rotating the encoder to display HOME Screen 3 : Panel Values & Preset Overrides.*

For more general information about Pulses, see Understanding Pulse Hierarchy, later in this manual.

GATE TYPES

(SECTION 3)

These switches set the type of gate(s) generated by each stage. There are four possible types of gates that a stage can generate:

HOLD - The gate goes high at the beginning of the first pulse in the stage, and remains high for the number of clock pulses set by that stage's **PULSE COUNT** switch. Because the gate is still high when the sequence advances to the next stage, it will be tied (or slurred) to the note on the following stage.

MULTIPLE - In general, a new gate is output for each pulse in the stage's PULSE COUNT (though the `Pulse Count Div` parameter in the **DIV** button can impact this). The length of time that each pulse's gate remains high is set by the **(Track) GATE** screen, unless it's overridden by the **(Stage) GATE** button or if **Gate Stretching** is turned on in the TRACK MENU.

If a stage's PULSE COUNT = 1, then a MULTIPLE type gate behaves the same as SINGLE type gate, discussed below.

SINGLE - The gate goes high at the beginning of the first pulse in the stage, and remains high for the pulse percentage duration set by the **GATE TIME** screen (unless it's overridden by a stage's **GATE** button). Subsequent pulses in a stage's PULSE COUNT do not produce gates.

REST - The stage does not output a gate signal, keeping the gate low for the number of clock pulses set by the stage's PULSE COUNT switch.

NOTE: Ratchets can create additional gates within the time frame of a single pulse. See RATCH for more information about the relationship between ratchets and Gate Type.

*NOTE: Metropolix offers the option of loading switch positions with a Preset in its SETUP menu. If you choose to load this data, then the Gate Type you hear may not match the switches. You can always see the currently used switch setting by pressing the **EXIT** button (to view the HOME screens), then rotating the encoder to display HOME Screen 3 : Panel Values & Preset Overrides.*

SCREEN & TRACK BUTTONS
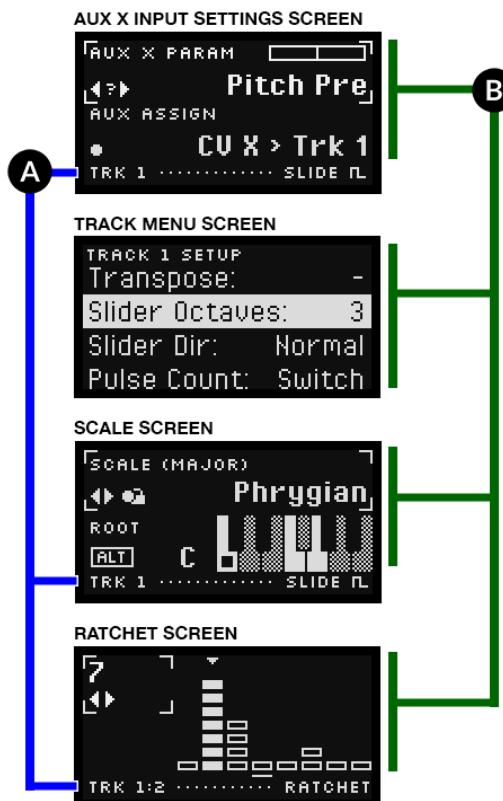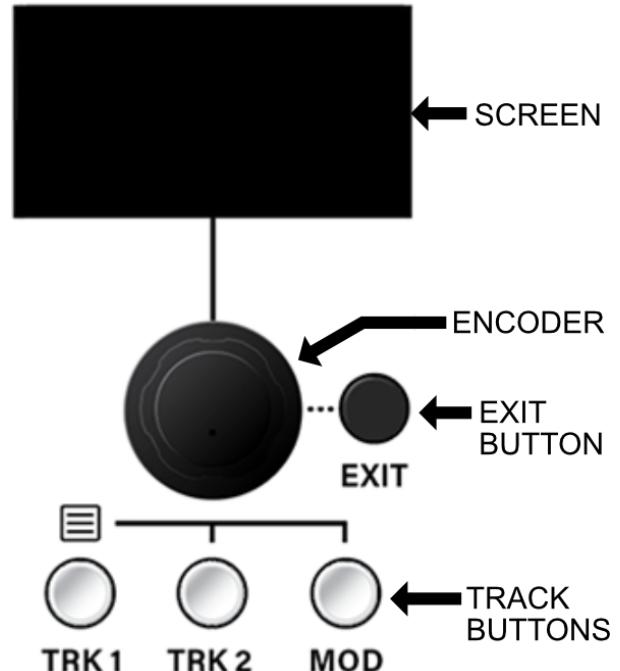
This section contains Metropolix's screen, push-encoder, three Track select button, and an EXIT button.

SCREEN

The contents of the screen change dynamically as you edit different Metropolix functions. Most editing screens are accessed by pressing one of the many buttons contained within the GLOBAL, TRACK, and STAGE sections of the panel, and will be discussed where appropriate.

In general, most screens have an upper section that contains button-specific parameters; and a lower section that contains the ACTION display.

For example, different screens are shown in the illustration on the left: The common areas are:

[A] ACTION display : Common across most screens, this area (in general) indicates the current function of the Stage Edit buttons, though it will also indicate other temporary actions, such as Shortcut selection or Copy/Paste operations.

[B] PARAMETER area : This area of the screen changes depending on what is currently being edited, and will be discussed in each relevant section.

ENCODER

Use the encoder to navigate around the screen — selecting options and setting values. The encoder can be pushed as well as turned. In general, turning an encoder changes the parameter's value, while pressing it may select a different parameter; toggle between two or three parameter values; or apply a selection. The exact operation of the encoder will be described for each screen, later in the manual.

Depending on the screen displayed, various "helper" icons appear beneath a parameter's name to help guide your use of the encoder. Specifically:

┌ ┐
└ ┘   Any parameter enclosed within a box with pulsing corners is the active parameter — meaning its value is set directly with the encoder.

◀▶   TURN the encoder to instantly change the parameter value. In most cases, this icon appears below the active (enclosed) parameter name, indicating that turning the encoder changes the parameter immediately.

◀?▶   TURN the encoder to queue a parameter change that requires confirmation. There are some situations in which it's undesirable for the value to change every time you turn the encoder. For example, you wouldn't want the AUX CV input to change destination as you scrolled through the choices — rather, you'd want to find your choice and then confirm your selection. Parameters with this requirement display a "?"

◀⬤▶   PRESS the encoder to confirm your selection. This icon indicates that a new parameter value has been selected, but that you must press the encoder in order to confirm it.

⬛   PRESS the encoder to select the parameter for editing. In most cases, this icon appears within a non-active (unenclosed) parameter, indicating that you must press the encoder in order to make the parameter active for editing.

⬛☐   PRESS the encoder to toggle between two options. When this icon appears beneath a parameter name, it indicates there are only two options for the parameter, which you can toggle between by pressing the encoder.

☐⬛☐   PRESS the encoder to toggle between three options. When this icon appears beneath a parameter name, it indicates there are only three options for the parameter, which you can cycle through by repeatedly pressing the encoder.

ALT   Indicates the value changes only if the **ALT** button is held when turning the encoder

◉   Long-Press (>1 sec) the Encoder to perform an action (used on SCALE screen)

🔒   PRESS the encoder to lock (used on SCALE screen)

②   Indicates the parameter is assigned to one of the **CTRL** knobs (either 1" or a "2"), and can therefore not be changed by turning the encoder.

EXIT

The EXIT button, to the right of the encoder, has two functions:

- **HOME Screen access** : Press the **EXIT** button to access the top-level HOME Screens (described below), or to step backwards out of any Metropolix menus.

  Metropolix features several HOME Screens — each of which displays a different overview of Metropolix' current configuration. Once at the HOME Screen level, **rotate the encoder to cycle through the various screens**.

  Each of these HOME Screens is discussed, in detail, on the following pages.

- **Sync to Panel :** Long-press (>1 sec) the **EXIT** button to clear a loaded preset's PITCH SLIDER, PULSE COUNT, GATE TYPE and CTRL knob settings, and instead use the values represented by the physical locations of these front panel controls. See LOAD for more information about Presets, and SETUP for more information about choosing which Live Control values you want loaded with a preset.
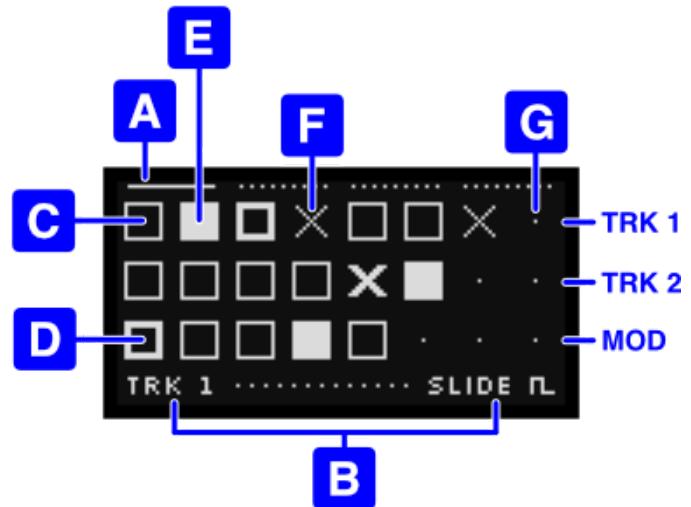
HOME Screen 1 : Positions Overview

The first HOME screen shows the current STAGE position (and its playback status) for Metropolix'
two note tracks and one of its MOD Lane.

[A] Home Screen Indicator : Solid line
indicates this is the first of four Home
Screens, which you access by rotating the
encoder.

[B] ACTION Display : Common across most
screens, this area (in general) indicates
the currently active Stage EDIT function if
the **TRK 1** or **TRK 2** button is lit, or the
current **MOD** Lane selection/assignment if
the **MOD** button is lit.

[C] Stage Playback Indicator : Each of the
eight stages on each track is represented
by a block (or other symbol). A filled-in
white block indicates the current stage **[E]**. An X indicates that a stage will be skipped **[F]**. A
black stage block indicates the stage will play as expected. A black stage block with a thick
outline **[D]** indicates the track's starting stage, as set with the **LEN** button's OFFSET parameter.
If a track has a length shorter than 8 stages, a dot **[G]** is displayed for the unused stages.

MOD Lane: As with TRK 1 and 2, this indicates the current stage for the currently active MOD
Lane. To see the current MOD Lane number, press the **MOD** button, and the Action Display **[B]**
will display the MOD Lane number and the parameter to which it's assigned.

[D] FIRST STAGE indicator : **BOLD** symbol Indicates which stage is the first stage, as set with the
LEN button's OFFSET parameter.

[E] CURRENT STAGE indicator : Indicates the current stage.

[F] SKIPPED STAGE indicator : Indicates a skipped stage.

[G] UNUSED STAGE indicator : Indicates stages beyond the current track length setting, as set with
the LEN button's STAGES parameter.

NOTE: If a track is muted, it appears 'greyed out' (crosshatched) on the screen.

HOME Screen 2 : Note Overview

The second HOME screen shows the note values assigned to each STAGE. Row 1 shows TRK 1 pitches, and Row 2 shows TRK 2 pitches. The pitches displayed are affected by anything that manually modifies a stage's pitch, such as the current scale, or the Transpose, Slider Octaves, and Slider Dir settings in the Track Menu; or any per-stage Pitch Overrides). Pitch modulations and things that temporarily affect pitch (such as the Accumulator) do not change the note name displayed.

[A] **Home Screen Indicator** : Solid line indicates this is the second of four Home Screens, which you access by rotating the encoder.

[B] **Action Display** : Common across most screens, this area (in general) indicates the currently active Stage EDIT function if the **TRK 1** or **TRK 2** button is lit, or the current **MOD** Lane selection/assignment if the **MOD** button is lit.

[C] **Note Name** : Displays the note name for each stage pitch.

[D] **Stage Indicator** : Displays various information about each stage. Specifically:
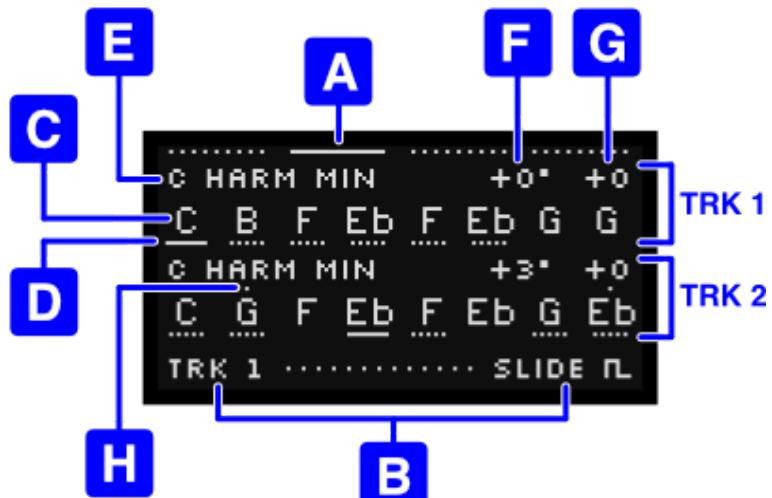
- **Solid underline** : Currently playing stage
- **Dotted underline** : Stage will play, but is not the currently playing stage
- **No underline** : Stage will *not* play (either because it is being skipped or because the Track LEN is truncated.

[E] **Scale Root and Name** : Displays the current root and scale.

[F] **Pitch Pre** : Displays (in scale degrees) any Pitch-Pre modulation applied to a track (either via the internal **MOD** track, a **CTRL** knob assignment, or an AUX (**X, Y, Z**) CV input.

[G] **Pitch Post** : Displays (in semitones) any Pitch-Post modulation applied to a track (either via the internal **MOD** track, a **CTRL** knob assignment, or an AUX (**X, Y, Z**) CV input.

[H] **Pitch Override Indicator** : A dot above a note indicates the pitch is being set by a per-stage pitch override.
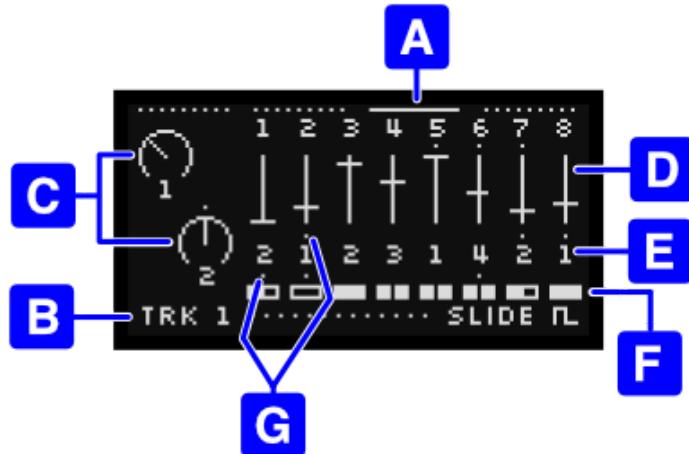
HOME Screen 3: Panel Values & Preset Overrides

The third HOME screen provides an overview of the current Pitch, Switch and CTRL knob values, plus and indication of whether the front panel value is being overridden by the loaded preset.

NOTE: You can decide (via options in the SETUP menu), whether a loaded preset overrides the front panel values. Should you enable this feature, this screen is a convenient way to see which loaded values are overriding the front panel controls, and what those values are.

[A] Home Screen indicator : Solid line indicates this is the third of four Home Screens, which you access by rotating the encoder.

[B] ACTION display : Common across most screens, this area (in general) indicates the currently active Stage EDIT function if the **TRK 1** or **TRK 2** button is lit, or the current **MOD** Lane selection/assignment if the **MOD** button is lit.

[C] Current CTRL Knob Value : Displays the current values of the two CTRL knobs. These will match the front panel unless a value is overridden by a loaded preset, in which case it will display the loaded value and an **Override Indicator dot [E]** over the knob.

[D] Current PITCH SLIDER Setting : Displays the current values of the eight PITCH SLIDERS. These will match the front panel unless their values are overridden by a loaded preset, in which case it will display the loaded value and **Override Indicator dot [E]** over the slider.

[E] Current PULSE COUNT Setting : Displays the current values of the eight PULSE COUNT switches. These will match the front panel unless a value is overridden by a loaded preset, in which case it will display the loaded value and an **Override Indicator dot [E]** over the number.

[F] Current GATE TYPE Setting : Displays the current values of the eight GATE TYPE switches. These will match the front panel unless a value is overridden by a loaded preset, in which case it will display the loaded value and an **Override Indicator dot [E]** over the switch.

[G] OVERRIDE INDICATORS : A dot appears over any value that's currently overwritten by a loaded preset. In this case, the value displayed on the screen reflects the loaded preset value, which might differ from the front panel controls (until the front panel controls are modified, in which case the indicator dot disappears).

HOME Screen 4: MOD Overview

The fourth HOME screen provides an overview of all the modulation lanes — i.e., the TRK 1 and TRK 2 CV lanes, and the 8 separate MOD Lanes.

[A] Home Screen indicator : Solid line indicates this is the fourth of four Home Screens, which you access by rotating the encoder.

[B] ACTION display : Common across most screens, this area (in general) indicates the currently active Stage EDIT function if the **TRK 1** or **TRK 2** button is lit, or the current **MOD** Lane selection/assignment if the **MOD** button is lit.
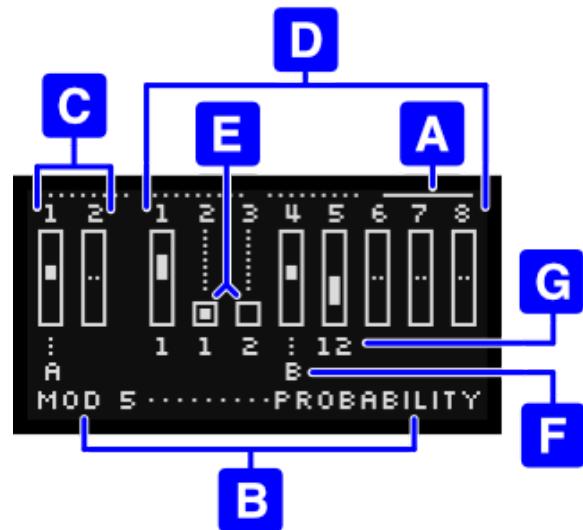
[C] CV Lanes : These two columns represent the TRK 1 and TRK 2 CV lanes. As Metropolix plays, these columns indicate the value of each stage's CV voltage. 0V is represented by the dotted line in the middle of the column. As the voltage becomes more positive, the length of the gauge rising above the 0V line becomes longer. As the voltage becomes more negative, the length of the gauge falling below the 0V line becomes longer.

[D] MOD Lanes : These eight columns represent Metropolix' eight MOD Lanes. As Metropolix plays, these columns indicate the value of each stage's MOD voltage. 0V is represented by the dotted line in the middle of the column. As the voltage becomes more positive, the length of the gauge rising above the 0V line becomes longer. As the voltage becomes more negative, the length of the gauge falling below the 0V line becomes longer.

[E] Gate Modulation : Modulation can either be continuous (in which case it's displayed as a bi-direction gauge within a column), or it can be a gate/trigger signal. When a MOD Lane is assigned to a Gated parameter (rather than a continuous one), the MOD Overview shows a square. A filled square represents a high gate, and an unfilled square is a low gate.

[F] OUT Jack Assignment : Displays the OUT jack (A, B or A+B) to which the corresponding MOD or CV Lane is routed.

[G] Track Assignment : Displays the Track (1, 2 or 1+2) to which the corresponding MOD Lane is routed. Note that CV Lanes can only be routed to OUT jacks, so no Track Display is shown for the two Track CV Lanes.

TRACK BUTTONS

Metropolix is a multitrack sequencer. Two of the tracks (**TRK 1** and **TRK 2**) are designed for traditional note, gate, and CV sequencing, while an additional eight separate lanes of modulation are accessible via the **MOD** button. Specifically:

- **TRK 1** and **TRK 2** are variants of the single main pitch/gate sequencer programmed via the PITCH sliders, PULSE COUNT and GATE TYPE switches. Each track interprets the sequence in a variety of ways — creating complementary sequence variations that enable you to generate counterpoint, polyrhythms, and all manner of sonic movement (both subtle and extreme).

  Each of these tracks has its own playback ORDER, sequence LENgth, clock DIVision, SWING amount, SLIDE time, and track GATE lengths. Other track-based sequence variables are accessible from the TRACK MENU, and include Pitch Slider inversion; sequence note range; track transposition; and more. In addition, Tracks 1 & 2 both have multiple lanes of per-stage playback parameters, including: GATE override; PITCH override; RATCHet count; PROBability of playback; ACCUMulated transposition, and a dedicated CV lane. Each stage also has a SKIP feature, and a pitch SLIDE option.

- **MOD** is a collection of 8 separate and individual modulation lanes. Each MOD Lane has 8-stages of modulation values and its own playback ORDER, LENgth, and clock DIVision; and each lane is routable to one of Metropolix' two assignable outputs or to dozens of internal destinations, allowing for some sophisticated and powerful self-modulation.

Selecting Tracks

1. Press one of the three TRACK BUTTONS (**TRK 1**, **TRK 2** or **MOD**) to designate which is the editing target for any track-based or stage-based editing operations.

   All TRACK-BASED **[7]**, and STAGE-BASED **[8]** buttons (as shown in FRONT PANEL OVERVIEW) apply to TRK 1 or TRK 2.

   For the MOD Lanes, all STAGE-BASED **[8]** buttons apply to MOD Lanes, while only the ORDER, LEN and DIV buttons from the TRACK-BASED 7] section apply.
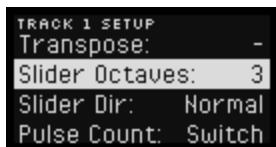
Track Menu

Each of the three buttons has an associated TRACK MENU (or in the case of MOD, a LANE MENU), which contains some basic, but important track/lane-based configurations. See [Track Menu Options for Tracks 1 & 2](#) or [Lane Menu Options for the MOD Lanes](#), depending on which you're editing.

To open and edit a Track/Lane Menu:

1. Press Metropolix' **ALT** button, followed by the button (**TRK 1**, **TRK 2** or **MOD**) whose menu you wish to edit.


```
TRACK 1 SETUP
Transpose:          -
Slider Octaves:     3
Slider Dir:    Normal
Pulse Count:   Switch
```

2. Turn the encoder to scroll through the available functions.

3. Press the encoder to edit the highlighted function.

   If a function has only two options, pressing the encoder toggles between the two.

   If a function has more than two available options, pressing the encoder highlights the choices field, and turning it selects the desired choice.

   TIP: To reset any Track/Lane Menu item to its default value, simply select it (highlighting it), and long-press the encoder.

Track Menu Options for Tracks 1 & 2

The following options are available in the Track Menu for TRK 1 and TRK 2:

FUNCTION	CHOICES	DESCRIPTION
Transpose	(-60 to +60)	Transposes a track's pitch in semitone increments from -60 to +60 semitones. Transposition often results in notes that deviate from the chosen root/scale, and those deviations are indicated by the on-screen keyboard displayed when you move a PITCH SLIDER.
Slider Octaves	(1-4)	Sets the octave range covered by the throw of the PITCH SLIDERS. Slider range can be as little as 1 octave, or as much as 4 octaves.
Slider Dir	Normal	Lowest pitch is at the bottom of the PITCH SLIDER. Raising the slider raises the pitch.
	Inverted	Highest pitches are at the bottom of the PITCH SLIDER. Raising the slider lowers the pitch.
Pulse Count	Switch	Uses the PULSE COUNT switch positions as the default pulse count for each stage in a track.
	(1-8)	Overrides the PULSE COUNT switches, and sets all stages to the selected pulse count.
Gate Type	Switch	Uses the GATE TYPE switches as the default gate type for each stage in a track.
	Single	Overrides the GATE TYPE switches, and sets all stages to the SINGLE Gate Type
	Sngl+Rst	Overrides the GATE TYPE switches, and sets all stages (not set to REST) to the SINGLE Gate Type
	Multi	Overrides the GATE TYPE switches, and sets all stages to the MULTI Gate Type
	Multi+Rst	Overrides the GATE TYPE switches, and sets all stages (not set to REST) to the MULTI Gate Type
	Hold	Overrides the GATE TYPE switches, and sets all stages to the HOLD Gate Type
	Hold+Rst	Overrides the GATE TYPE switches, and sets all stages (not set to REST) to the HOLD Gate Type
Gate Stretching	On	When 'on,' gate lengths stretch proportionally over the length of the stage; the stage length is determined by the stage's pulse count.
		For example, assume a stage has a GATE LENGTH = 50%, a GATE TYPE = SINGLE, and a PULSE COUNT = 4. The gate will open at the beginning of the stage and stay open for two full clock pulses, before going low for the final two clock pulses in the stage.
		Numerous examples that illustrate several ways that Gate Stretching extends your rhythmic options (when combined with other parameters) are given in Gate Stretching - Examples, later in the manual.

| Off | When 'off,' gate lengths always refer to the length of a clock pulse. If a note extends beyond a single clock pulse, the note's gate length does not stretch, and the extra time is filled with rests. |
| | For example, assume a stage has a GATE LENGTH = 50%, a GATE TYPE = SINGLE, and a PULSE COUNT = 4. The gate will open at the beginning of the stage and stay open for half a clock pulse, before going low for the final 3.5 clock pulses in the stage. You can see an example of this (and other) Gate interactions in Gate Stretching - Examples, later in the manual. |

Ratchets		**IMPORTANT:** This parameter applies *only* when **Gate Stretching = On** (as described above). It has **no** effect if a track's Gate Stretching parameter is turned off.
		The Ratchets parameter affects the way ratchets are calculated, as described below. See RATCH, later in the manual, for more information about ratcheting, and numerous examples regarding the use of this parameter.
	Multiply	When you assign **'x'** number of ratchets to a stage, this option creates **'x'** number of ratchets in **'y'** pulse counts, where the value of **'y'** is determined by the stage's PULSE COUNT switch plus the **DIV** screen's PULSE COUNT DIV value (if the GATE TYPE = MULTI) .
		This results in ratchet repeat rates that speed up or slow down depending on how long the non-ratched gate would last. It can yield very interesting rhythmic variations but may not sonically resemble "traditional" ratchets.
	Pulse	When you assign **'x'** number of ratchets to a stage, this option ensures that all **'x'** ratchets will play in the amount of time occupied by a single clock pulse. In this case, **'x'** determines both the repeat rate of the ratchets, and the number of total ratchets played in a gate.
		This creates the 'classic' ratcheting effect of sequencers from the past. It ensures that ratchets always repeat at the same rate (regardless of Gate length), and that the requested number of ratchets are always heard.
	Gated	When you assign **'x'** number of ratchets to a stage, this option ensures that the ratchets will trigger at the rate of **'x'** ratchets per clock pulse. However, the actual number of ratchets played will increase (or decrease) as the non-ratcheted gate lengths stretch or contract. In this case, **'x'** determines the repeat rate of the ratchets, but the Gate Length determines the number of total ratchets played.
		This is a variation on the 'classic' ratcheting effect, in that it ensures the ratchets always repeat at the same rate, but it allows for the number of ratchets to expand or contract with gate length.

Rest Pitch	Hold	When a stage is set to GATE TYPE = REST, the stage's pitch setting is ignored, meaning the previous stage's pitch is held over into the rested stage. So if you're using an envelope with a long decay/release, you won't hear the pitch change as the sequence progresses to the rested stage, and the previous stage's pitch will die out without changing — exactly as you would expect a 'rest' to work.
	Update	When a stage is set to GATE TYPE = REST, the stage's pitch setting is honoured. Since a rested stage does not generate a new gate, you will only hear this effect if you're using an envelope in which the decay/release time is long enough to extend into the rested stage. At this point, you would hear the pitch change as the envelope continues to decay. This can result in some interesting 'ghost' notes or (if using the SLIDE options) a "slur", rather than a "rest."
Global Reset	On	Resets the track's sequence when a trigger arrives at the RESET jack and/or when you press the RESET button.
	Off	Does *not* reset the track's sequence when a trigger arrives at the RESET jack, nor when the RESET button is pressed (unless the TRACK # button is held down).
Velocity		If a track is set to transmit over MIDI, this value is used to derive MIDI velocity. Velocity can also be assigned to OUT **A** or **B** for voltage controlling any parameter on an external module.
	50, 75, 100	Assigns a default, static velocity voltage of either 50%, 75% or 100% to the entire track. This voltage can be modulated using either the **CTRL** knobs, **AUX** inputs or a **MOD** Lane, allowing for dynamic velocity control via Metropolix.
	Track CV	Uses the track's **CV** lane to determine velocity levels per-stage, which can be further modulated using the **CTRL** knobs, **AUX** inputs or a **MOD** Lane.
MIDI Channel	— , 1-16	Sets the MIDI Channel (1-16) over which the Track's data is transmitted, allowing Metropolix to external MIDI devices via its USB port. If you do not want the Track to transmit MIDI over USB, set the value to "—".
CV to CC	— , 0-127	Translates the track's CV lane to a user-selectable MIDI CC value, allowing the CV to control any CC-accessible parameter on an external MIDI device. CC is transmitted over USB using the MIDI Channel selection. If you do not want the track to translate CV to MIDI CC, set the value to "—".
Slide Toggle CC	— , 0-127	Assigns a MIDI CC number to Metropolix' SLIDE function. When Slide is activated on a Stage, Metropolix will transmit a value of 127 on this CC, over USB, using the MIDI Channel selection. Stages without slides will transmit a value of 0 on this CC.
		You can set this CC to match the Glide/Portamento on/off control of an external synth (sometimes CC 65, but not always), or you can assign it to any other function you'd like to have Metropolix toggle on/off.

If you do not want the track to send a CC value for Slid stages, set the value to "—".

NOTE: While the MIDI implementation of Slide honours the Slide Type setting on the SLIDE TIME screen, it manifests somewhat differently over MIDI. Specifically, Analog and Tempo options generate identical MIDI output, while Acid holds the stage's gate high, and places the actual slide at the beginning of the following stage.

Slide Amount CC	— , 0-127	Translates Metropolix' Slide Amount value (set with the **SLIDE** TIME button) into a MIDI value, which it transmits over USB using the CC number selected here (on the selected MIDI Channel). You can set this CC to match the Glide/Portamento time control of an external synth (sometimes CC 5, but not always), or you can assign it to any other function you'd like to control with Metropolix' SLIDE lane. If you do not want the track to send Metropolix' Slide Amount value as a CC, set the value to "—"..
Slide Amount	Toggle	Sends the Slide Amount CC only for Stages that have their SLIDE function turned on (lit), returning to a value of 0 for any stages that do not have SLIDE enabled.
	Always	Sends the Slide Amount CC once at the beginning of the sequence, regardless of whether its SLIDE function is turned on (lit) or not.
Init Trk Defaults...	...	With this function highlighted, click the encoder to reset all track settings (along with a track's stage settings) back to their defaults.

Lane Menu Options for the MOD Lanes
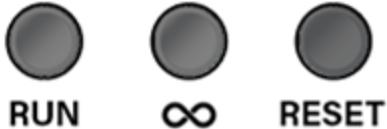
The following options are available in the Lane Menu for the MOD Lanes:

FUNCTION	CHOICES	DESCRIPTION
MIDI Channel	— , 1-16	Sets the MIDI Channel (1-16) over which the Mod Lane's data is transmitted, allowing each MOD Lane to control its own MIDI device via Metropolix' USB port. If you do not want the MOD Lane to transmit MIDI over USB, set the value to "—".
MIDI Mod to CC	— , 0-127	Converts the MOD Lane to a user-selectable MIDI CC value, allowing the MOD Lane to control any CC-accessible parameter on an external MIDI device. CC is transmitted over USB using the MOD Lane's MIDI Channel selection. If you do not want the MOD Lane to output MIDI CC, set the value to "—".
Init Lane <n> Defaults	--	With this function highlighted, click the encoder to reset all modulation stages on currently displayed MOD Lane (1 - 8).
Init All Lane Defaults	--	With this function highlighted, click the encoder to reset all modulation stages on all 8 MOD Lanes

TRANSPORT BUTTONS

(SECTION 5)

RUN

This button toggles between starting and stopping the sequencer. If the sequencer is stopped, press **RUN** to start it playing in sync with the next pulse (or immediately if the pulse happens at the same time). If the sequencer is playing, press the **RUN** button to stop (or pause) it immediately.

In the SETUP MENU, you can assign the **RUN** button to function as either a "Run/Stop" button or a "Run/Pause" button. When configured as a "Run/Stop" button, pressing **RUN** while the sequencer plays will stop the sequence and trigger a reset. When configured as a "Run/Pause" button, pressing **RUN** while the sequencer plays will *pause* the sequence, but not reset it — meaning a subsequent press of the **RUN** button will start the sequence from its current position, and not from the beginning.

When the sequencer is stopped, the gate outputs return to 0V.

The **RUN** button (and the corresponding **RESET** jack, if configured as a **RUN** jack in the SETUP MENU) will simultaneously start/stop playback of all three Metropolix tracks (**TRK 1**, **TRK 2** and **MOD**). You can, however, mute and unmute individual tracks (and even individual MOD Lanes), by holding the **LOOPY** button while pressing the TRACK button or MOD Lane button that you want muted. For more information, see Muting Tracks and MOD Lanes.

NOTE : In order to run, Metropolix needs a clock, either internally generated or externally supplied. See the CLK section, later in this manual, to learn about the different ways to clock Metropolix.

RESET

This button manually resets the sequencer. The reset is synchronized to the first clock pulse after you press the **RESET** button. When the sequencer is reset, the stage position returns to its original starting stage and the Cumulative Transpose counters are reset.

The **RESET** button (and the corresponding **RESET** jack, if configured as a **RESET** jack in the SETUP MENU) simultaneously resets all Metropolix tracks and MOD Lanes. That is, it's a *global* reset. It will also set the Track 1 and Track 2 **GATE** outputs to 0v.

*NOTE: To reset only a single Track (or all MOD Lanes), hold-down the desired button (**TRK 1**, **TRK 2** or **MOD**) while pressing the **RESET** button.*

LOOPY (∞)

Press the ∞ (**LOOPY**) button to activate Metropolix's Loopy mode.

Loopy enables you to interject a short, linear sub-loop into the current sequencer pattern, which will play either forward or backward, depending on the **ORDER** Screen's Direction parameter.

You can set the beginning stage of this sub-loop by pressing and holding down a single Stage button, and the sub-loop will play for however many pulses you set using the LOOP PULSES parameter. If LOOP PULSES = 'Auto,' then Loopy repeats the single stage. This technique is called "1-Finger Loopy."

You can hold down a second Stage button to help further define the Loopy length. Specifically, Loopy will continue to honour the LOOP PULSES count, wrapping back around to the starting stage if the number of LOOP PULSES exceeds the total PULSE COUNT contained in the stages. If LOOP PULSES = 'Auto,' then Loopy dynamically alters the loop length based on the PULSE COUNTS of all looped stages, ensuring each Stage plays its full pulse count. This technique is called "2-finger Loopy."

Loopy ignores a stage's Skip state, meaning all looped stages play, regardless of their Skip status, and Loopy playback can be either latched or momentary.

When the track is not running, the Stage buttons all glow **blue** to indicate the Stage Player functionality is active. Here, you can press any stage button to transmit that stage's corresponding pitch, gate and CV value. This lets you quickly set up custom 'keyboards,' enabling you to perform with Stage buttons, exactly as you would perform with a keyboard.

*NOTE: If you press and hold down on the **LOOPY** button, the three TRACK buttons and eight STAGE/LANE buttons light yellow. Pressing a TRACK or LANE button while holding down the **LOOPY** button will mute (**blinking red**) or unmute (**yellow**) the respective Track/Lane. This is defined further in Muting Tracks and MOD Lanes.*

The following sections describe Loopy Mode, the Loopy button, and the various Loopy techniques.

Enter and Configure Loopy Mode

1. Press the **LOOPY (∞)** button to turn on Loopy mode.

If the sequencer is running, then the eight stage buttons light up in a "Loopywave" of pink and blue. If the sequencer is stopped, the buttons glow solid blue and can be used as a sort of 'keyboard' (described in the Stage Player section, below).

The LOOPY SETTINGS screen appears with two parameters:

LOOP PULSES : Displays the number of pulses that will be repeatedly looped. This setting has no effect on Loopy's Stage Player functionality.

'Auto' : Primarily used by the 2-finger method, 'Auto' dynamically and automatically varies the number of Loopy pulses to always play all possible pulses between the left and right Loopy points. As you change the Loopy end points, the pulse count changes based on the total number of pulses contained between those two endpoints.

1 - 64 : You can select from 1 to 64 pulses and Loopy will always play that many pulses in a loop.

LOOP TARGET : Indicates whether Loopy impacts only to the current track ('Current') or both **TRK 1** and **TRK 2** ('1+2').

*NOTE: Loopy works only with TRK 1 and TRK 2, and not on the MOD Lanes. If the MOD button is lit when you press the **LOOPY** button, Metropolix automatically switches to TRK 1, making it the 'Current' track.*

2. Turn the encoder to set the desired number of LOOP PULSES (in number of pulses, or 'Auto').

3. Press the encoder to toggle whether Loopy applies only to the 'Current' note track (as indicated by the lit **TRK <n>** button), or if it applies to *both* note tracks (in which case the LOOP TARGET value reads "1+2').

4. Use Loopy with 1-finger, 2-fingers, or as a Stage Player as discussed in their respective sections, below.

5. Exit Loopy by pressing the **EXIT** button, or any of the Global Settings buttons or Track Settings buttons).

The following sections will describe three ways to perform using Loopy (1-Finger, 2-Finger, and Stage Player).

1-Finger Loopy

The loop begins at the Stage button being held, and lasts for the number of pulses set in the LOOPY Screen's LOOP PULSES field.

Specifically:

1. Enter and configure Loopy as described in [Enter and Configure Loopy Mode](#).

2. If the sequencer is currently stopped, press the **RUN** button (or use one of the remote RUN options) to start track playback.

    The eight stage buttons light up in a "Loopywave" of pink and blue, and the Action Display on the screen reads "Loop Stage(s)".

3. Press and hold one of the eight Stage buttons.

    Beginning with the next clock pulse, playback will jump to that stage, and the sequencer will then loop *linearly* (honoring the **ORDER** button's 'Forward' or 'Reverse' DIRECTION setting) for the number of pulses defined by the Loopy Screen's LOOP PULSES parameter.

    The **LOOPY (∞)** button will glow **blue** for as long as your finger is on a Stage button *(or if [Loopy is latched](#)). The blue **LOOPY** button indicates you're currently hearing the track playback via its Loopy settings, and not its Track settings).*

    NOTE: If LOOP PULSES = 'Auto', then the 1-finger loop length is one stage, and the held stage simply repeats, playing any and all PULSE COUNTS. The Auto option provides the most utility when used with 2-finger Loopy patterns, discussed later.

4. Lift your finger, then press and hold a different Stage button to shift the loopy region to begin at that stage.

5. Release the held Stage button.

    Loopy returns to playing your original sequence at the point it would be at had Loopy not been triggered.

2-Finger Loopy

When the track is playing, and you press *two* Stage buttons, Loopy (on the next clock pulse) begins to play a linear loop (either Forward or Reverse) that begins at one finger's Stage button and ends at the second finger's Stage button. It will still honor the LOOP PULSES count, or (if set to 'Auto') it will auto-set the number of pulses based on the stages themselves.

Specifically:

1. Enter and configure Loopy as described in <u>Enter and Configure Loopy Mode</u>.

2. If the sequencer is currently stopped, press the **RUN** button (or use one of the remote RUN options) to start playback.

   The eight stage buttons light up in a "Loopywave" of pink and blue, and the Action Display on the screen reads "Loop Stage(s)".

3. Press and hold *two* Stage buttons.

   The two held Stage buttons set the left and right limits of the Loopy cycle.

   If DIRECTION = 'Forward' on the **ORDER** screen : beginning with the next clock pulse, loopy will jump to the left finger's stage and cycle linearly up to the limit set by the right finger's stage.

   If DIRECTION = 'Reverse' on the **ORDER** screen : beginning with the next clock pulse, loopy will jump to the right finger's stage and cycle linearly down to the limit set by the left finger's stage.

   The LOOPY screen's LOOP PULSES setting further affects the loopy cycle. Specifically:

   - If LOOP PULSES = 'Auto', then all pulses assigned to the stages within the two Loopy end points will play in the loop. This means the loopy length changes dynamically depending on the number of stages spanned by the 2-finger loopy, and by the PULSE COUNTS of those stages.

     For example, assume each stage has a PULSE COUNT = 1, and you hold down the Stage 1 and Stage 4 buttons. If LOOP PULSES = 'Auto', then Loopy will play the following pattern:

     > Forward :   1 2 3 4 | 1 2 3 4 | etc…
     >
     > Reverse :   4 3 2 1 | 4 3 2 1 | etc…

   - If LOOP PULSES < the PULSE COUNT total of the stages within the loopy cycle, then loopy will cycle after the requested number of pulses, and before it reaches the final stage. In this situation, Loopy performs as if only 1-finger were used.

For example, assume each stage has a PULSE COUNT = 1, and you hold down the Stage 1 and Stage 4 buttons. If LOOP PULSES = 3, then Loopy will play the following pattern:

Forward :   1 2 3 | 1 2 3 | etc…

Reverse :   4 3 2 | 4 3 2 | etc…

- If LOOP PULSES > the PULSE COUNT total of the stages within the loopy cycle, then loopy will continue cycling through all the stages until it has played the requested number of pulses. For example, assume each stage has a PULSE COUNT = 1, and you hold down the Stage 1 and Stage 4 buttons: If LOOP PULSES = 5, then Loopy will play the following pattern:

Forward :   1 2 3 4 1 | 1 2 3 4 1 | etc…

Reverse :   4 3 2 1 4 | 4 3 2 1 4 | etc…

*NOTE: The **LOOPY (∞)** button will glow **blue** while your two fingers are on the Stage buttons (or if Loopy is latched). The blue **LOOPY** button indicates you're currently hearing the track playback via its Loopy settings, and not its Track settings).*

4. Press and hold any other combination of two Stage buttons to shift the loopy region to begin and end at those stages.

5. Release the held Stage buttons.

Loopy returns to playing your original sequence at the point it would be at had Loopy not been triggered.

Stage Player

When the sequencer is stopped, the Stage buttons glow solid **blue**, indicating the Stage Player functionality is active. Here, you can press any stage button to transmit that stage's corresponding pitch, gate and CV values. This lets you quickly create and modify a custom 'keyboard,' enabling you to perform with Stage buttons, exactly as you would perform with a keyboard.

1. Enter and configure Loopy as described in [Enter and Configure Loopy Mode](#).

2. If the track is currently playing back, press the **RUN** button (or use one of the remote RUN options) to stop playback.

    The eight stage buttons will all glow solid **blue**, indicating that Loopy Mode's Stage Player functionality is now enabled, and the Action Display on the screen reads "Audit Stage".

3. Press a Stage button to "play" that single stage, transmitting its pitch, gate and mod values.

    There are a few important caveats regarding this mode:

    - GATE: The stage's Gate length is set by how long the button is pressed (and NOT by the setting of the GATE TYPE switch).

    - PITCH: If a Stage has an active PITCH override, that pitch will play rather than the pitch shown by the PITCH SLIDER.

    - CV: The stage's CV value (if set) will also be output, and will honour all internal or external routings.

    - POSITION: Using the Stage Player does not affect the Sequencer playback position.

    - SLIDE settings are respected, but since the sequence isn't running, slide times only operate in Analog mode, and not in Tempo-sync mode.

    - UPDATES: Any changes you make to a Stage's settings (the PITCH SLIDER, for example) while the Stage button is being held will not be heard. In order to hear the changes, you must press the Stage button again after making the changes.

Loopy Latching

You can latch the Loopy cycle, so it continues to play when you lift your finger(s) off the Stage buttons. Even when you navigate to another screen, a latched Loopy cycle will continue to play.

To latch Loopy playback:

1. Play a Loopy cycle using either the 1-finger or 2-finger technique (described above).

2. While the loopy cycle is playing (and the LOOPY screen is visible), perform either of the following actions to latch Loopy playback:

    ● Press the **LOOPY** button again, or

    ● Navigate to a different screen while continuing to hold the Stage button(s) down.

    When Loopy is latched, a lock icon appears in the Action Display at the bottom of the screen.

3. To unlatch Loopy, navigate back to the LOOPY screen (if you're not already on it), then press either the LOOPY button or the encoder.

Muting Tracks and MOD Lanes

A special function of the **LOOPY** button enables it to mute and unmute individual tracks and MOD Lanes. To do so:

1. Press and hold down the desired **LOOPY** button.

    The Action Display at the bottom of the Metropolix screen will say "MUTE TRK/LANE" and the three TRACK and eight STAGE/LANE buttons will light.

2. While still pressing the **LOOPY** button, press a TRACK button to mute that track's playback.

    For example, to mute TRK 2, press **LOOPY** + **TRK 2**. To simultaneously mute both TRK 2 & all MOD Lanes, press and hold **LOOPY** + **TRK 2** + **MOD**.

    Muted TRACK buttons **blink red** (brightly if the track is the current track, and dimly if it's not the current track), while unmuted TRACK buttons are lit **yellow**. In addition, any muted tracks are 'greyed out' (crosshatched) on the Home screens. Track mutes always occur on the next pulse (or immediately if the pulse happens at the same time). Different types of track data behave differently when muted. Specifically:

    -   Gates, CV and MOD Lanes are set to 0V and are muted (ignored).

    -   A pitch slide on a muted track will finish to it's target voltage and remain there.

3. You can also mute individual MOD Lanes by pressing-and-holding the **LOOPY** button followed by one of the eight **LANE** (Stage) buttons.

    For example, to mute MOD Lane 3, press **LOOPY** + the **LANE 3** (Stage 3) button.

    A muted lane's output voltage is set to 0V and any programmed voltage values are muted (ignored). Muted MOD Lanes **blink red**; unmuted MOD Lanes are **yellow**.

4. To unmute any tracks or MOD Lanes, repeat the operation. That is, press and hold the **LOOPY** button while pressing whichever TRACK or MOD Lane button(s) you wish to unmute.

NOTE: Mute states are *saved with presets*.

GLOBAL SETTINGS

(SECTION 6)

Although Metropolix is a three track sequencer, there are many parameters that apply to the entire unit, as a whole — and thus affect all Tracks at a global level. These are the "global settings," and they are accessed by the set of three grey buttons to the right of the red Transport buttons:

- SETUP button - Opens the SETUP MENU, which contains numerous settings that apply across all tracks.

- BPM button - Opens the global tempo (BPM) screen, which displays the current tempo (in Beats Per Minute), along with any relevant settings. The appearance of the BPM screen changes slightly depending on whether Metropolix is clocked internally or externally.

- SCALE button - Opens Metropolix's SCALE screen, which defines the scale (and root) used by Metropolix's pitch-related tracks.

The following sections describe each of these buttons in detail.
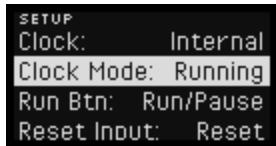
SETUP

This button accesses the SETUP MENU, which contains numerous settings that apply across all tracks, and are typically not changed during a performance.

In Use:

1. Press the **SETUP** button to access the SETUP MENU.

    ```
    SETUP
    Clock:        Internal
    Clock Mode:  Running
    Run Btn:   Run/Pause
    Reset Input:   Reset
    ```

2. Turn the encoder to scroll through the available functions.

3. Press the encoder to edit the highlighted function.

    In most instances, if a function has only two options, then pressing the encoder toggles between the two choices. If a function has more than two available options (or the feature requires a confirmation), pressing the encoder highlights the choices field; turning it selects the desired choice; and pressing it again applies the choice.

    TIP: To reset any SETUP MENU item to its default value, simply select it (highlighting it), and long-press the encoder.

SETUP MENU options are grouped under different headings, such as GLOBAL, PRESET and ADVANCED, and are discussed on the following pages.

SETUP > GLOBAL Options

FUNCTION	OPTIONS	DESCRIPTION
Clock Src	Internal	Metropolix uses its own internal clock, which runs at the tempo set in the BPM field (accessed via the **BPM** button).
	External	Metropolix uses an external clock patched into its **CLK IN** jack.
	MIDI	Metropolix uses an external MIDI clock that arrives over its USB port.
Clk/Rset Out	Always	Metropolix is always outputting the clock — either its own internal clock, or the external clock (if running) — even if the sequencer is stopped. This affects any clock & global reset outputs on the module itself, as well as any clocked expander outputs.
	Running	Metropolix (and a connected expander module) output clocks & resets only when the sequencer is running. Stopping the sequencer stops the clock & global reset outputs. NOTE: This option affects only the *analog* clock outputs, and does not affect MIDI Clock. If MIDI Clock Out = On (described in <u>SETUP>MIDI Options</u>) then the clock is always transmitted over MIDI regardless of this setting.
Reset Input	Reset	Metropolix uses a trigger signal patched into its **RESET** jack to reset the sequencer. When the trigger goes high (> 1.5 V), the sequence resets.
	Run	Metropolix uses the gate signal patched into its **RESET** jack to start and stop the sequencer, rather than using it to reset the sequencer. When the gate is high (> 1.5 V), the sequence runs. When the gate is low, it stops.
Bottom Pitch	C	Assigns a C note to the bottom of the PITCH SLIDER, regardless of the scale being used. NOTE: if the current scale does not include a C note, then the bottom pitch will be the first in-scale pitch above C.
	ROOT	Assigns the current scale's ROOT note (chosen via the **SCALE** button) to the bottom of the PITCH SLIDER.

Tuner...

With this function highlighted, click the encoder to activate TUNER MODE and display the Tuner Screen. Click the EXIT button to exit Tuner Mode.

Tuner Mode sends a static, octave-selectable pitch to the PITCH out jacks and a high (or pulsing) gate to the GATE out jacks, making it easy to quickly tune the connected oscillators. The Tuner Screen contains two parameters.

Tuner Pitches	C-5 - C+5	Rotating the encoder selects the tuning octave. By default, the Tuner outputs 0V (C0), but you can tune to a higher or lower octave by setting this parameter to ±C1, ±C2, ±C3, ±C4 or ±C5.
Tuner Gates		Pressing the encoder switches between two output gate types.
	High	Outputs a gate that is "High" for the entire time you're in TUNER MODE (thus letting oscillators drone steadily while you tune them),
	Clock	Outputs a gate that pulses with the sequencer clock, making it easier to tune percussive voices or any oscillator that runs through a VCA with a fast closing AD-type envelope. When set to 'Clock,' the sequencer must be running in order to transmit a clocked gated.

SETUP > PRESET Options

FUNCTION	**OPTIONS**	**DESCRIPTION**

Total Pulses

Defines an overall length (in pulses) for the entire sequence. When this count is reached, *all* tracks and MOD Lanes are reset regardless of the current position of each track and MOD Lane's **LEN** setting.

The Total Pulses setting is saved with a preset, and is also used for Queued Loads and Preset Chaining.

—

Setting the value to a dash means that no Total Pulses setting exists. All track and MOD Lanes reset at their natural positions, and all will reset simultaneously only at their lowest common denominator.

For example: Assume TRK 1's **LEN** screen has PULSES = 4; TRK 2's **LEN** screen has PULSES = 6; and MOD Lane 1's **LEN** screen has PULSES = 8. With Total Pulses = "—" (i.e. no length is defined), then it will take 24 bars before all three sequences resync and reset simultaneously (TRK 1 plays 6 times; TRK 2 plays 4 times; and MOD 1 plays 3 times before they resync).

If Total Pulses = "-"   ...   THEN   ....   All Patterns Simultaneously Reset at the Lowest Common Denominator

1-1024

Sets the length (in pulses) for the entire sequence. All track and MOD Lanes reset after the selected number of pulses regardless of their programmed LEN.

For example: Assume the same **LEN** settings as above, but instead of setting Total Pulses = "—", you set Total Pulses = 18. This forces all tracks/MOD Lanes to resync after 18 pulses, no matter where each is in its own LEN cycle. So TRK 1 plays 4 1/2 times; TRK 2 plays 3 times; and MOD 1 plays 2 1/4 times).

If Total Pulses = "18"   ...   THEN   ...   All Patterns Simultaneously Reset After 18 Pulses

Init Preset...

With this function highlighted, click the encoder to load an initialized preset, which restores all Track and Stage-level parameters back to their original settings — giving you a clean slate with which to build a new sequence. This does not overwrite your global SETUP parameters, so they will continue to function as assigned. If you ever want to restore ALL settings back to their factory defaults, use the Factory Reset option available from the Factory Menu.

Preset Chains...

Opens the PRESET CHAINS screen, in which you can arrange presets into a chain, edit the chain, and play the chain. A Preset Chain has a maximum length of

32 links, though each preset in that chain can repeat as many as 64 times before advancing to the next preset.

Preset Chains are discussed thoroughly in PRESET CHAINING.

*SHORTCUT: You can switch directly to the PRESET CHAIN screen from any screen by long-pressing (>1 sec) the **SETUP** button.*

If you're currently viewing the PRESET CHAIN screen, simply press the **EXIT** button, or any of the numerous Track Settings or Global Settings buttons to exit.

SETUP > MIDI Options

FUNCTION	OPTIONS	DESCRIPTION
MIDI Clock Out	Off	Does not transmit MIDI Clock when the sequence plays.
	On	Sends MIDI Clock, allowing Metropolix to control the tempo of any other devices or DAW's which are set to synchronize to an incoming MIDI clock.
MIDI Transport	Off	Does not send MIDI Transport control information over MIDI.
	On	Sends MIDI Transport information over MIDI. This means that starting, stopping, or resetting Metropolix' sequencer will start, stop and reset the sequencer of an external device or DAW (if it's so configured).
SysEx Transfer…		Opens a submenu of options for selecting which specific Metropolix settings you wish to transmit over MIDI System Exclusive. The options are:

FUNCTION	DESCRIPTION
Send All (Backup)	Transmits the entire Metropolix configuration over MIDI using SysEx, enabling you to back up the entire Metropolix. Specifically, this includes the following data:
	SETTINGS/STATE: All Global settings, custom shortcuts and custom scales, plus all the stored per-Track/Lane settings; the per-stage settings; and the current state.
	PRESETS: All 64 saved Metropolix presets.
Send Settings/State	Transmits only the SETTINGS/STATE configuration (as described above) over SysEx. PRESET data is excluded.
Send Presets...	Transmits only the individual PRESETS over SysEx, and not the SETTINGS/STATE configuration. You can select which Presets you want to send:
	ALL : Transmits all 64 Presets.
	FILLED : Transmits only those Presets for which data has been stored.
	1 - 8 : Sends only the 8 presets associated with the selected bank.

Receive Any...   Readies Metropolix to receive SysEx. Screen flashes "Ready", indicating you must initiate a transfer from an external device. Flashing stops once messages are received, and the bottom of the screen indicates receipt of SysEx messages.

SETUP > ADVANCED Options

Presets Setup...   Opens a submenu of options related to Preset loading, including when Presets load, and exactly what type of data is loaded (or ignored) when a Preset Loads. To exit the submenu, press the **EXIT** button.

The options are:

FUNCTION	OPTIONS	DESCRIPTION
Queue Pulses		Metropolix presets can be loaded instantaneously, or delayed (queued) until a user-specified number of queued pulses passes, or a manual RESET is triggered. The Queue Pulses setting applies only if the Action parameter is set to 'Queued Load' on the **LOAD** Preset screen, and the currently playing sequence's Pulses value is set to 'Auto' on the LEN screen.
	—	If set to '—', any queued preset loads occur only when Metropolix is RESET manually (via the **RESET** button or a properly configured **RESET** input jack). Without a reset signal, the patch will never load (until the sequencer is stopped).
	1-4096	This sets the number of pulses that must pass before a queued preset loads (without triggering a manual reset).
Pitch Load	Off	Loading a preset does not load the pitch slider values that are saved with it. Instead, the pitch slider positions always represent the actual pitch being played, and the loaded sequence uses the existing slider positions to determine pitch. This is ideal for those who wish to take full advantage of Metropolix' hands-on, jam-oriented approach to sequencing. This is the factory default setting.
	Thru	Loading a preset also loads the pitch values that were saved with the preset — overriding their current position as set on the front panel. Additionally, this option will only override the stored pitch value when the slider moves through a position that matches the stored pitch value. This is ideal for those who want to load a saved pitch sequence, and then modify it over time (but without experiencing any sudden jumps in pitch).
	Jump	As with 'Thru,' loading a preset also loads the pitch values that were saved with the preset — overriding their current position as set on the front panel. However, in this case,

moving a pitch slider results in the pitch instantly jumping to the new value. This is often ideal in the studio, where you want to recall your last sequence state, but want instantaneous control of pitch (without having to find the passthrough pitch).

Switch Load	Off	Loading a preset does not load the PULSE COUNT or GATE TYPE slider values that are saved with it. Instead, the front panel switch positions are always representative of what the sequence plays. This is ideal for those who wish to take full advantage of Metropolix' hands-on, jam-oriented approach to sequencing. This is the factory default setting.
	Jump	Loading a preset also loads the PULSE COUNT and GATE TYPE switch settings that were saved with the preset — overriding their current positions as set on the front panel. Moving a switch results in the PULSE COUNT or GATE TYPE immediately jumping to that new setting. This is often ideal on stage (or when returning to a song in the studio), where you want to recall the saved switch settings.
Ctrl Load	Off	Loading a preset loads neither the CTRL knob parameter assignments, nor the parameter values that were saved with a Preset. Instead, the CTRL knob always uses the front panel assignment and knob position. This is ideal for those who use the CTRL knobs consistently across multiple sequences, and want to maintain full live control of those knobs (without having the assignments or positions modified by a loaded preset).
	Assigns	Loading a preset loads the saved CTRL knob parameter assignments, but not the actual position of the knob. Instead, the front panel's CTRL knob position always displays the actual setting of the CTRL knob, and the loaded sequence uses the front panel's knob position to determine the value of the memorized parameter assignment. This is ideal for those who wish to load CTRL assignments with a sequencer, but not the saved values of those parameters. This is the factory default setting.
	Thru	Loading a preset also loads the CTRL knob values that were saved with the preset — overriding their current position as set on the front panel. Additionally, this option will only override the stored value when a knob moves through a position that matches the stored knob value. This is ideal for those who want to load a saved sequence, and then modify it over time (but without experiencing any sudden jumps in the parameters currently assigned to CTRL knobs).
	Jump	As with 'Thru,' loading a preset also loads the CTRL knob values that were saved with the preset — overriding their current position as set on the front panel. However, in this case, moving a CTRL knob results in an immediate jump to

the new value. This is often ideal in the studio, where you want to recall your last sequence state, but want instantaneous control of the CTRL knobs (without having to find the passthrough position).

Aux Load	Off	Loading a preset does not load the AUX jack (X, Y, Z) assignments. Instead, the AUX inputs always uses the front panel assignments. This is ideal for those who use the AUX inputs consistently across multiple sequences, and don't want assignments to possibly change when presets are loaded.
	Assigns	Loading a preset loads the saved AUX jack assignments, overwriting any settings that may have been made on the front panel, but not saved as a preset. This is ideal for those who require different sequences/presets to use different AUX jack assignments. This is the factory default setting.

UI Setup... Opens a submenu of various options related to the front panel UI. To exit the submenu, press the **EXIT** button. The options are:

FUNCTION	OPTIONS	DESCRIPTION
Run on Boot	Off	Metropolix boots with RUN turned off.
	On	Metropolix boots with RUN turned on.
Run Btn		If Metropolix is currently running (and the **RUN** button is lit), this setting determines whether a subsequent press of the **RUN** button *pauses* the sequencer or *stops* it.
	Run/Pause	If the sequencer is running and you press the **RUN** button, the sequence pauses playback, but does not reset it — meaning a subsequent press of the RUN button will start the sequencer from its current position, and not from the beginning.
	Run/Stop	If the sequencer is running and you press the **RUN** button, the sequence stops playback, and resets it to the beginning.
Enc. Confirm	Off	Disables the need to press the encoder to confirm changes you make to a parameter value. When *'Off'*, changing the value of most[(note)] screen parameters happens instantly (or on the next clock pulse, when running) — you do not need to press the encoder to 'apply' the choice. This makes parameter changes highly responsive, but may result in hearing some potentially unwanted changes as you scroll through various options to find the one you want.

NOTE: Some parameters always require encoder confirmation. Specifically: the AUX input settings; the MOD Lane destinations; and OUT A/B assignments.

| | On | Changing the value of a screen parameter requires that you press the encoder to 'apply' the new value. This prevents you from hearing any potentially unwanted changes as you scroll through options to find the one you want. However, it reduces the immediacy of your selections. |

NOTE: Any parameter change that requires you to press the encoder to apply it will display a "?" after the new parameter value.

For example if **Enc. Confirm = On**, and you go to the **LEN** screen and change the Stages values from *'8'* to *'7'*, a "?" will appear after the *'7'*, indicating you must press the encoder to confirm the choice. If **Enc. Confirm = Off**, then no "?" would appear, and the Stages value would change to *'7'* immediately (without pressing the encoder).

Show Pos. — If desired, you can have Metropolix' screen display a small position indicator, which (like the PITCH SLIDER LEDs) identifies which of the active track's Stages is currently playing. This parameter determines when and where this position indicator is displayed, as discussed here:

On — The sequence position pointer appears on all Stage parameter editing screens.

Off — The sequence position pointer does not appear on any Stage parameter overview or editing screen. However the currently playing stage is always indicated by the lit LEDs on the PITCH SLIDERS.

Button LED Level — 1-4 — Sets the brightness of all backlit buttons, with "1" being the dimmest setting and "4" being the brightest.

Slider LED Level — 1-4 — Sets the brightness of the LEDs on the Pitch Sliders, with "1" being the dimmest setting and "4" being the brightest.

Screen Level — 1-4 — Sets the brightness of the screen, with "1" being the dimmest setting and "4" being the brightest.

Update Firmware… — When you select this option, and answer ⟨Yes⟩ when asked if you want to enter Bootloader, then you can perform a firmware upgrade (provided you have a USB cable connected to the rear panel) without pulling the module from the case and holding in the rear-panel button on power up.

Version — (FW version) — Displays the module's firmware version.

Hidden behind the Version display is the [Factory menu](#), which (if instructed by Intellijel Tech Support) is opened by highlighting the Version display, then holding the **MOD** button and clicking the encoder.

This is described in the following section.

Factory Menu

Metropolix' Factory menu contains various housekeeping, test, and maintenance features. These modes are meant for use at (or by) Intellijel, and will likely never be needed in the field.

To access the Factory Menu, highlight the Version number in the SETUP menu, then press down and hold the **MOD** button while pressing the encoder.

Factory Menu options are:

Factory Reset :   With this function highlighted, click the encoder to reset all module settings back to their Factory default settings.

NOTE: This will overwrite any Global SETUP options you've configured, and erase any custom Shortcuts you've memorized. So it should not be used as an 'INIT' Preset (which is the function of the Init Preset option), but as a way to return Metropolix to factory settings.

Clear All Presets :   With this function highlighted, click the encoder to clear (erase) all of Metropolix' presets.

Test Mode :   ***IMPORTANT! Do not use unless instructed by Technical Support.*** *Should you accidentally enter Test Mode, press the **EXIT** button to escape.*

This selection is used by Intellijel to test LEDs and jacks, and is a factory-level troubleshooting tool. As such, Intellijel's technical support department will provide additional instructions in the unlikely scenario that it's deemed necessary.

Calibration :   This selection calibrates Metropolix' four variable output jacks (**TRK 1 PITCH**, **TRK 2 PITCH**, **OUT A**, and **OUT B**), plus its three variable input jacks (**X**, **Y**, and **Z**). Metropolix is calibrated at the factory prior to shipment, so it's unlikely you'll ever need to perform any custom calibration. But if you do, the process is described in [Calibration](#), later in this manual.
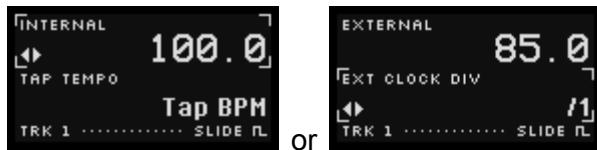
Test EEPROM :   ***IMPORTANT! Do not use unless instructed by Technical Support.*** *Should you accidentally press the Test EEPROM Mode, select "No" if asked to Test/Erase (or press the **EXIT** button).*

This selection is used by Intellijel to test the EEPROM, and is a factory-level troubleshooting tool. As such, Intellijel's technical support department will provide additional instructions in the unlikely scenario that it's deemed necessary.

BPM

This button accesses Metropolix's global tempo (BPM) display, plus any relevant settings. The BPM screen changes slightly depending on whether the global clock source (as set in the SETUP MENU) is set to 'Internal' or 'External.'

 or

There are two main regions on the BPM screen:

- BPM : Displays the current tempo in 'Beats Per Minute.' The BPM display functions differently depending on whether the SETUP MENU's Clock source parameter is set to 'Internal' or 'External.'

  If clocked *internally*, then Metropolix' internal clock is used, and INTERNAL is displayed as the parameter title. Turn the encoder to change the internal tempo in whole number increments (from 0.1 - 400 BPM). Push-turn the encoder to change the tempo in *tenths* of a BPM. As an alternative, you can tap the BPM button to set a tempo.

  If clocked *externally*, then EXTERNAL is displayed as the parameter title, and the tempo cannot be edited directly. Rather, it is derived from the **CLK** input and EXT CLOCK DIV setting (as discussed below).

- BPM INFO : The bottom parameter changes function depending on whether the SETUP MENU's Clock source parameter is set to 'Internal' or 'External.'
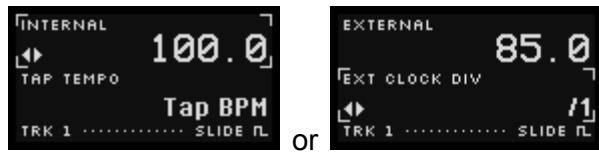
  If clocked *internally*, then Metropolix's internal clock is used and the BPM INFO informs you that you can also tap the BPM button to set a tempo (as an alternative to entering it manually with the encoder).

  If clocked *externally*, then the BPM INFO field is used to set the global EXT CLOCK DIV. This lets you divide a high-speed external system clock down to a standard sixteenth note pulse clock. For example, if you feed a 24ppq clock directly into Metropolix's **CLK IN** jack from an external device, then choosing /6 will result in a standard sixteenth note pulse, and the BPM will be automatically calculated and displayed in the BPM field. Note that this clock divider is used solely for the purpose of defining the system clock speed. Individual Track clocks can be divided even further, as can the **CLK OUT** jack.

In Use:

1. First, select a Clock source by pressing the **SETUP** button, highlighting the Clock parameter, and selecting between 'Internal' and 'External.'

2. Press the **BPM** button to access the BPM screen.

 or

The screen functions differently depending on the clock source.

- If the SETUP Menu's Clock parameter is set to 'Internal' turn the encoder to set the whole-number BPM value of the internal clock. Press-and-turn the encoder to finely adjust the tempo in tenths of a BPM. Alternatively, tap the **BPM** button at the desired beat to set the tempo rhythmically.

  *SHORTCUT: If Clock = 'Internal', hold down the **BPM** button and press one of the eight stage buttons to directly set a tempo ranging from 20 - 160 BPM (with each Stage button increasing the tempo by 20 BPM).*

- If the SETUP Menu's Clock parameter is set to 'External' turn the encoder to divide down the external clock (EXT CLOCK DIV) to achieve the desired tempo. This is likely necessary only if, for example, you're feeding Metropolix with a clock (such as 24 ppq or 48 ppq) sent from an external device. The actual tempo (based on sixteenth note pulses) is displayed in the BPM field (which is not directly editable).

  *SHORTCUT: If Clock = External, hold down the **BPM** button and press one of the eight stage buttons to directly set the EXT CLOCK DIV to one of 8 commonly-selected options. Specifically, buttons 1-8 correspond to EXT CLOCK DIV values of /1, /2, /3, /4, /6/, /12, /24 and /48 respectively.*

NOTE: If the SETUP Menu's Clock parameter is set to 'Internal', you can modulate the tempo using any of the **AUX** inputs; a **MOD** Lane, or a **CTRL** knob. When modulated via **AUX** or **MOD**, an extra BPM field appears to the left of the main BPM field, to indicate the current value of the modulated tempo.

SCALE

This button accesses Metropolix's SCALE screen, which selects the scale (and root) used by Metropolix, and also enables you to create and edit your own custom User Scales.

The built-in scales are a superset of those available in other Intellijel products, such as *Scales* and *Tête*, while also offering scales based on chord shapes, plus 100 user-definable scales.

The Scale screen contains several parameters, in two fields. These are:

- SCALE : The top parameter displays the scale (or chord shape) to which any quantized tracks will conform. There are 149 available scales: 35 traditional scales reside in the first 7 banks (arranged by scale class), beginning with the *Major* scales (and modes); then the *Melodic Minor* scales (and modes); *Harmonic Minor* scales (and modes); special *Miscellaneous* scales; and finally *World* scales. Next, are two more banks containing a total of 14 scales based on chord shapes. These can be particularly useful (and melodic) when used in conjunction with Metropolix' [accumulator](#) feature. Finally, there are 100 User Scales (arranged in 10 banks of 20 scales each). Within a chosen User Scale bank, you can use CV or internal modulation to switch between scales, making this feature ideal for tracking chord changes in your music.

  When active (enclosed in a box with pulsing corners), the ◄► symbol is beside the SCALE name, indicating that you can turn the encoder to select a different SCALE. If, instead, the ROOT parameter is active, press the **ALT** button to return encoder control to the SCALE parameter.

  You can also [lock scales](#), or create and edit your own [custom scales](#) — both of which are discussed later.

  NOTE: Note values for each scale/chord (in the ROOT key) are displayed in the miniature keyboard graphic beneath the SCALE parameter. Notes not included in the scale/chord are "greyed out" (hashed).

- ROOT : The right parameter displays and selects the root note of the chosen SCALE.

  When active, the ◄► symbol is beside the ROOT value, indicating that you can turn the encoder to select a different ROOT note. If, instead, the SCALE parameter is active, press the **ALT** button to return encoder control to the ROOT parameter.

A small keyboard displays the notes contained within the chosen SCALE and ROOT. In-scale white keys are white; in-scale black keys are black; out-of scale keys (black or white) are 'grey.' The scale's ROOT note is indicated by a small dot on the keyboard.

The following tables illustrate all the factory scales & chords in the root of C. Changing the Root will transpose the scale/chord accordingly.

MAJOR SCALES — MAJOR (IONIAN), DORIAN, PHRYGIAN, LYDIAN, MIXOLYDIAN, MINOR (AEOLIAN), LOCRIAN

MELODIC MINOR SCALES — MELODIC MINOR, DORIAN b2, LYDIAN AUGMENTED, LYDIAN DOMINANT, MIXOLYDIAN b6 (HINDU), AEOLIAN b5 (LOCRIAN nat2), SUPER LOCRIAN

HARMONIC MINOR SCALES — HARMONIC MINOR, LOCRIAN NAT-6, IONIAN #5 (AUG), DORIAN #4, PHRYGN DOM (SP GYPSY), LYDIAN #2, ALTERED

MISCELLANEOUS SCALES — MAJOR PENTATONIC, MINOR PENTATONIC, WHOLE TONE, WHOLE HALF DIMINISHED, HALF WHOLE DIMINISHED, MINOR BLUES, CHROMATIC

WORLD SCALES	**BHAIRAV / ARABIC**	**HUNGARIAN MINOR**	**CHINESE**
	HIRAJOSHI	**IN-SEN**	**KUMOI**	**PELOG**

MAJOR CHORDS	**MAJOR**	**MAJOR 6TH**	**MAJOR 7TH**
	MAJOR 7TH (b5)	**MAJOR 7TH (#5)**	**DOMINANT 7TH**	**MAJOR 9TH**

MINOR CHORDS	**MINOR**	**MINOR 6TH**	**MINOR 7TH**
	MINOR 7TH (b5)	**DIMINISHED 7TH**	**MINOR 9TH**	**MINOR 11TH**

In Use:

1. Press the **SCALE** button to access the SCALE screen.

2. Press the **ALT** button to toggle between editing the `SCALE` and `ROOT` parameters.

3. When the `SCALE` parameter is active (◄► indicator is beside the `Scale` setting), turn the encoder to select the desired scale.

    NOTE: If you want a particular scale to remain active while you scroll through other scales, press the encoder to lock the scale. This is discussed in [Locking and Unlocking Scales](#), below.

4. When the `ROOT` parameter is active (◄► indicator is beside the `Root` setting), turn the encoder to set the root of the selected scale.

    SHORTCUT: Hold down the **SCALE** button (lighting all stage buttons white), and quickly press one of the eight Stage buttons to load a preset `SCALE/ROOT` combination directly. You can assign your own Scale/Root shortcuts to each button, as described below.

    NOTE: Root selection behaves somewhat differently when working with [User Scales](#), as described later.

Customizing Scale Shortcuts

You can store eight of your own favorite `SCALE` & `ROOT` combinations to a shortcut. To do so:

1. Press the **SCALE** button to access the SCALE screen.

2. Dial in the desired `SCALE` and `ROOT` (as described above).

3. Hold down the **SCALE** button (lighting all the Stage buttons white), then long-press one of the eight Stage buttons to save the `SCALE/ROOT` combination.

    The Stage buttons will all blink once to indicate the save operation is complete.

Your `SCALE/ROOT` combination is saved, and can be recalled any time by holding down the **SCALE** button and short-pressing the desired Stage button.

Locking and Unlocking Scales

Locking a scale means you will hear that scale applied regardless of the scale name that appears on screen. This allows you to scroll through the scale list without actually loading the scales as you view them. Locking a User Scale has an additional feature: it not only locks the scale, but defines it as the "starting" scale when you apply modulation to a User Bank.

To lock a scale:

1. With the Scales parameter enclosed in brackets, rotate the encoder to select the desired scale.

2. Press the encoder to lock in the scale.

    A small lock icon appears in the upper-right corner.

3. Turn the encoder to view other scale options.

    When you do this, a magnifying glass icon replaces the lock icon, which indicates that you're only searching through scales, but are not actually hearing the one shown in the display.

4. If you find a scale you want to apply instead of the locked scale, simply press the encoder.

    The currently shown scale will become the locked scale, and will now be the scale you hear.

To unlock a scale:

🔒 If you see a lock icon in the upper right corner, it means the currently viewed scale is locked. Simply press the encoder to unlock it, and the icon will disappear.

🔍 If you see a magnifying glass in the upper right corner, it means the currently viewed scale is *not* active, but that there is a locked scale somewhere in the list. Simply press the encoder twice (once to lock in the currently displayed scale, and a second time to toggle off the lock feature entirely). The lock icon will disappear.

If no scales are locked, then turning the encoder to scroll through the scale list will automatically apply each displayed scale to Metropolix. This is useful if you're experimenting with how a sequence sounds when played by different scales, but is probably not desirable if you're wanting to change scales mid-song, and don't want any interim scales to load.

Creating & Editing User Scales

User Scales are stored in ten banks (called User (Bank n), where n = 1 - 10), which are located at the end of the scrolling list of scales. There are 10 User Scales per bank, each named numerically. For example, the scales in User (Bank 3) are named Scale 3-1; Scale 3-2; Scale; 3-3; … Scale 3-10.

Unlike the 49 factory scales, which recall the scale pattern separately from the root note, User Scales store and recall *both* the Scale pattern and the Root note. This is in keeping with their intended purpose: which is to create scales that conform to chord changes or key modulations, which you can then select via internal modulation or external CV.

To create a User Scale:

1. With the Scales parameter enclosed in brackets, rotate the encoder to select one of the User Scales.
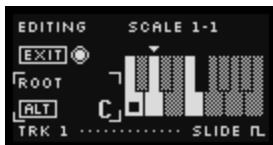
2. Long-press (>1 sec) the encoder to enter Scale Edit Mode.

3. Turn the encoder to move the note indicator triangle (above the keyboard display), and press the encoder to toggle the indicated note on or off.

   Notes that are 'on' are solid white (or black) and are part of the scale. Notes that are grey are 'off' and are not part of the scale.

4. Press the **ALT** button to toggle editing of the User Scale's root note.

   Changing the root note transposes the notes, as indicated by the keyboard graphic.

5. Long-press the encoder to exit Scale Edit Mode.

   Your User Scale is automatically saved.

Sequencing User Scale Selection

Scales stored within the same User Scales bank may be recalled via internal modulation or external CV. Because there are 10 scales in a bank, each ±1V change in CV (or MOD) voltage changes to the next higher (+ voltage) or lower (- voltage) numbered scale.

To Sequence (modulate) User Scale selection:

1. As described above, create a bank of User Scales through which you want to modulate.

2. Press the encoder to lock one of the User Scales. A MOD LOCK Icon appears in the top right corner of the screen.
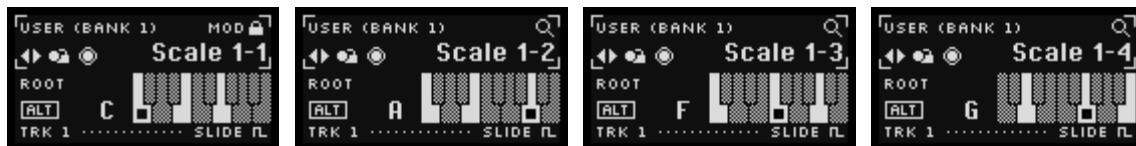
 This indicates the 'starting' scale that's used when you assign Scale (User) modulation to a **MOD** Lane, **AUX** input or **CTRL** knob. That is, it defines both the User Scale bank in which modulation will occur, and the actual scale to which you assign 0V.

3. Assign a Scale (User) destination to a MOD Lane , AUX input; or CTRL knob.

4. Modulate Scale selection using the assigned **MOD** Lane, **AUX** Input or **CTRL** knob.

Positive voltages will select higher-numbered scales, with each +1V increase incrementing the scale. Negative voltages will select lower-numbered scales, with each -1V decrease decrementing the scale. Scale selection wraps. For example, assume you locked Scale 2-9. If you send +1V to an AUX, MOD or CTRL Scale (User) destination, then Scale 2-10 will load. If you send +2V to the destination, then Scale 2-1 will load (since scale selection wraps back to the beginning).

Example:

In the following example, we've set up 4 custom scales — each a three-note triad, conforming to: C maj; A minor; F maj; G maj, and pressed the encoder to lock Custom Scale 1-1 (C maj triad):
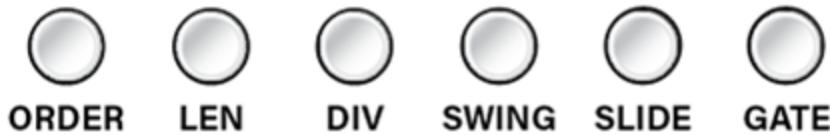
By assigning Scale (User) as a modulation destination, you can sequence playback of the other scales in the same User Bank. Sending 0V selects the locked scale (Cmaj). Sending 1V selects the second scale (Am triad); sending 2V selects the third scale (Fmaj triad), and sending 3V selects the fourth scale (Gmaj triad). Sequencing the voltage changes allows you to move through the scales — in this case replicating an overly popular 1950's pop chord progression.

TRACK SETTINGS

(SECTION 7)

These six buttons access per-track parameters (rather than global parameters). All edits are applied to the track number whose TRACK button (TRK 1, TRK 2 or MOD) button is currently iit. To edit a different track number (or MOD Lane), press a different TRACK button (TRK 1, TRK 2 or MOD).

ORDER   LEN   DIV   SWING   SLIDE   GATE

The Track Settings buttons include:

- **ORDER** button - Opens the ORDER screen, which controls the order that stages play back in the currently selected track.

- **LEN** button - Opens the LENGTH screen, which controls the sequence length (using a combination of both stage and pulse counts) for the currently selected track.

- **DIV** button - Opens the DIV screen that, for the selected track, divides the global clock and the Pulse gates.

- **SWING** button - Opens the SWING screen, which sets the swing amount between successive clock pulses.

  NOTE: Swing is not available on the MOD Lanes.

- **SLIDE TIME** button - Opens the SLIDE TIME screen, which controls the slide (portamento) amount for any stages that have the SLIDE function activated on the currently selected track.

  NOTE: Slide Time is not available on the MOD Lanes.

- (Track) **GATE** button - Opens the TRACK GATE screen, which sets the selected track's default gate length for all the pulses (and ratchets) in the current track.

  NOTE: Track Gate is not available on the MOD Lanes.

ORDER

This button opens the ORDER screen, which controls the order that stages play back in the currently selected track.

There are two main parameters accessible by the button:

- PLAY ORDER : The upper parameter defines the order in which any enabled stages will play back. Metropolix features many order choices, as discussed in Order Options, later.

  Turn the encoder to select a different playback order.

- DIRECTION : The lower parameter sets whether the chosen PLAY ORDER occurs in a *forward* or *reverse* direction (toggled by *pressing the encoder*). Specifically:

  Forward :   When the DIRECTION parameter is set to 'Forward,' the sequencer advances through stages in the chosen order.

  Reverse :   When the DIRECTION parameter is set to 'Reverse,' the sequencer advances through stages in the opposite order.

Patterns repeat and the sequencer resets when the sequence reaches the length defined by the **LEN** (LENGTH) screen. Specifically:

- If the **LEN** screen's PULSES value is set to 'Auto', then the pattern repeats after playing through the chosen number of STAGES.

- If the **LEN** screen's PULSES value is set to a number, then the pattern repeats after playing the chosen number of PULSES.

Order Options

The following playback order options are available on the ORDER screen.

Each example illustrates the playback order (forward and reverse) of a basic 8-stage sequence (with the **LEN**gth screen's PULSES set to "Auto" and its stage OFFSET = 0). Defining a pulse length, a stage offset, or altering the number of stages will obviously change the playback accordingly.

- **Linear**

  Forward: 1 2 3 4 5 6 7 8 | 1 2 3 4 5 6 7 8 | etc…

  Reverse: 8 7 6 5 4 3 2 1 | 8 7 6 5 4 3 2 1 | etc...

- **Ping Pong**

  Forward: 1 2 3 4 5 6 7 8 8 7 6 5 4 3 2 1 | 1 2 3 4 5 6 7 8 8 7 6 5 4 3 2 1 | etc…

  Reverse: 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8 | 8 7 6 5 4 3 2 1 1 2 3 4 5 6 7 8 | etc...

- **Pendulum**

  Forward: 1 2 3 4 5 6 7 8 7 6 5 4 3 2 | 1 2 3 4 5 6 7 8 7 6 5 4 3 2 | etc…

  Reverse: 8 7 6 5 4 3 2 1 2 3 4 5 6 7 | 8 7 6 5 4 3 2 1 2 3 4 5 6 7 | etc...

- **Odd/Even**

  Forward: 1 3 5 7 2 4 6 8 | 1 3 5 7 2 4 6 8 | etc…

  Reverse: 8 6 4 2 7 5 3 1 | 8 6 4 2 7 5 3 1 | etc…

- **Jump by 2**

  Forward: 1 3 5 7 | 1 3 5 7 | etc…

  Reverse: 8 6 4 2 | 8 6 4 2 | etc...

- **Jump by 3**

  Forward: 1 4 7 2 5 8 3 6 | 1 4 7 2 5 8 3 6 | etc...

  Reverse: 8 5 2 7 4 1 6 3 | 8 5 2 7 4 1 6 3 | etc..

- **Jump by 4**

  Forward: 1 5 | 1 5 | etc...

  Reverse: 8 4 | 8 4 | etc…

- **Jump by 5**

  Forward: 1 6 3 8 5 2 7 4 | 1 6 3 8 5 2 7 4 | etc...

  Reverse: 8 3 6 1 4 7 2 5 | 8 3 6 1 4 7 2 5 | etc...

- **Hopscotch**

  Forward: 1 3 2 4 3 5 4 6 5 7 6 8 7 1 8 2 | 1 3 2 4 3 5 4 6 5 7 6 8 7 1 8 2 | etc...

  Reverse: 8 6 7 5 6 4 5 3 4 2 3 1 2 8 1 7 | 8 6 7 5 6 4 5 3 4 2 3 1 2 8 1 7 | etc…

- **Arp 3 Shift -1**

  Forward: 123 234 345 456 567 678 781 812 | 123 234 etc...

  Reverse: 876 765 654 543 432 321 218 187 | 876 765 etc...

- **Arp 4 Shift -2**

  Forward: 1234 2345 3456 4567 5678 6781 7812 8123 | 1234 2345 etc...

  Reverse: 8765 7654 6543 5432 4321 3218 2187 1876 | 8765 7654 etc...

- **Arp 4 Shift -1**

  Forward: 1234 3456 5678 7812 | 1234 3456 etc...

  Reverse: 8765 6543 4321 2187 | 8765 6543 etc...

- **Converge**

  Forward: 1 8 2 7 3 6 4 5 | 1 8 2 7 3 6 4 5 | etc...

  Reverse: 8 1 7 2 6 3 5 4 | 8 1 7 2 6 3 5 4 | etc...

- **Diverge**

  Forward: 4 5 3 6 2 7 1 8 | 4 5 3 6 2 7 1 8 | etc...

  Reverse: 5 4 6 3 7 2 8 1 | 5 4 6 3 7 2 8 1 | etc...

- **Growing**

  Forward: 1 12 123 1234 12345 123456 1234567 12345678 | 1 12 123 etc...

  Reverse: 8 87 876 8765 87654 876543 8765432 87654321 | 8 87 876 etc...

- **Shrinking**

  Forward: 12345678 1234567 123456 12345 1234 123 12 1 | 12345678 etc...

  Reverse: 87654321 8765432 876543 87654 8765 876 87 8 | 87654321 etc…

- **Pedal Point**

  Forward: 1 2 1 3 1 4 1 5 1 6 1 7 1 8 | 1 2 1 3 1 4 1 5 1 6 1 7 1 8 etc...

  Reverse: 8 7 8 6 8 5 8 4 8 3 8 2 8 1 | 8 7 8 6 8 5 8 4 8 3 8 2 8 1 etc...

- **Brownian**

  Generative: The sequence advances through stages in a pseudo-random pattern known as a "drunken walk." It has a 50% chance of moving forward, a 25% chance of staying on the same stage, and a 25% chance of moving backward. This results in a sequence that generally trends forward with some repetition (or backward if played in reverse).

  Because every stage is pseudo-randomly selected, sequences do not cycle and do not automatically reset.

- **Shuffle**

  Generative: The playback order of the stages is randomized, and once all the stages (or pulses) have played, then each subsequent pass through the sequence plays in that same order. Resetting the sequence (either by pressing the **RESET** button; sending a trigger to the **RESET** jack; or reaching the PULSES count set on the **LEN** screen) retriggers the shuffle — creating a new repeating order of playback. So, too, does changing the setting a new STAGES length on the **LEN** screen.

  Note that *Shuffle* (which is like shuffling the order of a fixed number of cards in a deck) is different from *Random* (which is like a dice-roll, where the odds of the next number do not depend on previous numbers).

- **Random**

  Generative: Each stage choice is totally random. The choice of which stage to play next is made each time a stage completes, and is selected from the pool of active stages (that is, the number of stages set in the LENGTH screen, plus any Stage Offset applied).

  For example, if you had a 3 stage sequence, the first stage to play could be 1, 2, or 3; the next stage could be 1, 2 or 3; the next could be 1, 2 or 3; etc. Note that this is not the same as

playing the pool of stages in random order, since every stage has an equal chance of being the next stage in the sequence, meaning stages can (and will) repeat.

Because every stage is randomly selected, sequences do not cycle and do not automatically reset.

In Use:

1. Press the **TRK 1, TRK 2** or **MOD** button corresponding to the track whose order you wish to edit.

2. Press the **ORDER** button to access the ORDER screen.

3. Turn the encoder to select the desired playback PLAY ORDER from the list).

4. Press the encoder to toggle the DIRECTION between 'Forward' and 'Reverse.'

   SHORTCUT: Hold down the **ORDER** button (lighting all stage buttons white), and quickly press one of the eight Stage buttons to load a preset PLAY ORDER/DIRECTION combination directly. You can create your own PLAY ORDER/DIRECTION presets as described below.

5. To reset all ORDER parameters back to their default values, long-press the encoder.

Customizing ORDER Shortcuts

You can store eight of your own favorite PLAY ORDER & DIRECTION combinations to a shortcut. To do so:

1. Press the **ORDER** button to access the ORDER screen.

2. Dial in the desired PLAY ORDER and DIRECTION (as described above).

3. Hold down the **ORDER** button (lighting all the Stage buttons white), then long-press one of the eight Stage buttons to save the PLAY ORDER/DIRECTION combination.

   The screen will indicate that the shortcut has been saved.

Your PLAY ORDER/DIRECTION combination is saved, and can be recalled any time by holding down the **ORDER** button and short-pressing the desired Stage button.

LEN (LENGTH)

This button opens the LENGTH screen, which controls the sequence length (using a combination of both stage and pulse counts) for the currently selected track.

There are three main parameters accessible by the button:

- STAGES : The top-left parameter sets the number of stages used by the sequence. If active (the ◀▶ symbol is beside the STAGES parameter), turn the encoder to set the sequence length (expressed as the 'number of stages'). If, instead, the PULSES parameter is active, press the encoder to return encoder control to the STAGES parameter.

- OFFSET : The top-right parameter sets the stage offset, which is accessed by holding **ALT** while turning the encoder. This setting offsets Metropolix' definition of "Stage 1." For example, if the OFFSET = '1', then Metropolix starts (and resets) playback on Stage 2, rather than Stage 1 (since the starting stage is offset by a count of one).

- PULSES : The bottom parameter sets the number of pulses the sequence will play before resetting (from 1-64 pulses, or 'Auto', as described below).

  If active (◀▶ symbol is beside the PULSES parameter), turn the encoder to set the number of pulses. If, instead, the STAGES parameter is active, press the encoder to return encoder control to the PULSES parameter.

STAGES and PULSES interact with each other (and with the playback **ORDER** and per-stage **PULSE COUNT**) allowing for the creation of some surprisingly complex patterns and polyrhythms. Specifically:

- If PULSES is set to a number, then that number defines the length of the sequence (in clock pulses). The sequence progresses through the selected number of STAGES, following the chosen playback **ORDER**, and honoring the **PULSE COUNT** of each stage until the chosen number of pulses has been reached — at which point the sequence resets automatically back to the beginning.

  ***EXAMPLE**: Assume you set a sequence to STAGES = 3 and PULSES = 4, and that each Stage has a PULSE COUNT = 1 and DIRECTION = 'Forward' on the ORDER screen. The sequence would play Stage 1 for one pulse; Stage 2 for one pulse; Stage 3 for one pulse, then go back to Stage 1 for the fourth pulse. The playback pattern would be:*

  > *S1 S2 S3 S1 S1 S2 S3 S1 S1 S2 S3 S1, etc..*

  Next, assume you change the PULSE COUNT of Stage 2 to "4". The sequence would play Stage 1 for one pulse; then Stage 2 for only three of its four pulse counts (since the sequence will have reached its four pulse limit), then reset. So the pattern would be:

  > *S1 S2 S2 S2 S1 S2 S2 S2 S1 S2 S2 S2, etc.*

- If PULSES is set to "Auto" then a sequence is of indefinite length. The sequence progresses through the selected number of STAGES, following the chosen playback ORDER, and using the full PULSE COUNT of each stage. Even with an immutable stage count, the sequence length can vary with changes to the playback ORDER and per-stage PULSE COUNT. Therefore, in this situation, a sequence is reset only when you press the **RESET** button, or send a trigger into the **RESET** jack.

In Use:

1. Press the **TRK 1, TRK 2** or **MOD** button corresponding to the track whose sequence length you wish to edit.

2. Press the **LEN** button to access the LENGTH screen.

3. Press the encoder to toggle between editing the STAGES field and the PULSES field.

4. With the ◀▶ indicator beside the STAGES parameter, turn the encoder to adjust the number of stages in the track.

   SHORTCUT: With the STAGES field active, hold down the **LEN** button and press one of the eight stage buttons to set the number of stages directly.

5. With the ◀▶ indicator beneath the PULSES parameter, turn the encoder to adjust the number of pulses in the track (Auto, 1-64).

   SHORTCUT: With the PULSES parameter active, hold down the **LEN** button and press one of the eight stage buttons to enter the number of pulses (adding 8 pulses per each stage button).

6. To set a Stage Offset, hold down the **ALT** button and turn the encoder.

   Without a Stage Offset, a sequence always resets back to using Stage 1 as the "first stage" in the pool. Applying a Stage Offset lets you define which of the 8 stages is considered the "first stage" when a sequence is reset.

7. To reset all LENGTH parameters back to their default values, long-press the encoder.

DIV

This button opens the DIV screen, which (for the selected track), divides the sequencer's global clock (internal or external), plus any stage-based Pulse gates.

There are two main parameters accessible by the button:

- CLOCK DIV : This divides the global clock by a factor of 1 to 64. For example, a division of '/2' causes the sequencer to run at ½ speed; a division of '/3' causes it to run at ⅓ speed; etc.

  If active (the ◄► symbol is beside the CLOCK DIV parameter), turn the encoder to set the clock division. If, instead, the PULSE COUNT DIV parameter is active, press the encoder to return encoder control to the CLOCK DIV parameter.

  > NOTE: If Metropolix is clocking to an external source, then two different clock dividers are at work. One clock divider, called the EXT CLOCK DIV, is accessible via the **BPM** button and its purpose is to divide down a high speed external system clock (such as might be generated by an external 24 ppq or 48 ppq device) to sixteenth note pulses. The per-track CLOCK DIV setting is used to further divide the global clock, allowing you to create sequences that pulse on eighth notes, quarter notes, half notes, etc.

  > For example, if the CLOCK DIV = /1, then the track plays back with 16th note pulses at the tempo displayed by the **BPM** button. If CLOCK DIV = /2, then it plays back 8th note pulses. A CLOCK DIV = /3 makes the track play dotted-eighth pulses, etc.

- PULSE COUNT DIV : When a stage has a PULSE COUNT > 1 and a GATE TYPE = MULTI, this parameter determines how many clock pulses are combined into a single gate.

  > '1' : The gate output goes high on every pulse
  > '2' : The gate output goes high on every second pulse
  > '3' : The gate output goes high on every third pulse
  > '4' : The gate output goes high on every fourth pulse.
  > '5' : The gate output goes high on every fifth pulse
  > '6' : The gate output goes high on every sixth pulse
  > '7' : The gate output goes high on every seventh pulse.
  > '8' : The gate output goes high on every eighth pulse

  > *EXAMPLE: If a stage has a GATE TYPE = MULTI, a PULSE COUNT = 5, and* PULSE COUNT DIV = '2'*, then the stage would produce three gates, where the first two are each 2 clock pulses long (1/8th notes) and the third would be a single pulse (1/16th).*

In Use:

1. Press the **TRK 1, TRK 2** or **MOD** button corresponding to the track whose divisions you wish to edit.

2. Press the **DIV** button to access the DIV screen.

3. Press the encoder to toggle between editing the CLOCK DIV and PULSE COUNT DIV parameters.

4. With the CLOCK DIV parameter active (and the ◀▶ indicator beside it), turn the encoder to set the desired per-track Clock Division (from 1 to 64).

   SHORTCUT: Hold down the **DIV** button and press one of the eight stage buttons to enter a CLOCK DIV value directly. (Stage buttons 1 - 8 select: /1, /4, /8, /12, /16, /20, /24, /28).

5. With the PULSE COUNT DIV parameter active (and the ◀▶ indicator beside it), turn the encoder to set the desired Pulse Count Division (from 1 to 8).

   SHORTCUT: Hold down the **DIV** button and press one of the first eight stage buttons to set the PULSE COUNT DIV value directly.

6. To reset all DIV parameters back to their default values, long-press the encoder.

SWING

This button opens the SWING screen, which (for the selected track), sets the swing amount between successive clock pulses. Swing delays each even numbered clock pulse by a percentage of the current clock interval. With a value of 50%, no swing is applied (straight time). The more you increase the swing percentage above 50% the more your music will have a 'swing' feel. Metropolix' supports swing percentages from 50% to 78%.

There is a single parameters accessible by the button:

● SWING : Swing delays each odd numbered clock pulse by a percentage of the current clock interval. With a value of 50%, no swing is applied (straight time). The more you increase the swing percentage above 50% the more your music will have a 'swing' feel. Metropolix' supports swing percentages from 50% to 78%.

In Use:

1. Press either the **TRK 1** or **TRK 2** button (corresponding to the track you wish to swing).

   NOTE: Swing settings are not available for the MOD Lanes.

2. Press the **SWING** button to access the SWING screen, shown above.

3. Turn the encoder to set a SWING percentage between 50% (no swing) and 78%.

   SHORTCUT: Hold down the **SWING** button and press one of the eight stage buttons to set a SWING value directly. Note that the default swing shortcuts conform to MPC 'standard' values, with the addition of 78%. These values also match the preset swing choices in other Intellijel products, such as *Tête* and *Scales*.

4. To reset SWING back to its default value (50%), long-press the encoder.

SLIDE TIME

This button opens the SLIDE TIME screen, which determines how the pitch of one stage slides (transitions) into the pitch of the next stage, creating a portamento effect. The settings you make on the SLIDE TIME screen apply only to stages that have their SLIDE function activated.

There are two main parameters accessible by the button:

- SLIDE AMOUNT : This sets the amount of time it takes to move from one pitch to the next. Turn the encoder to set the slide amount.

  An amount of '0' means pitch changes happen instantly (as would happen if you played notes on a piano). Values greater than '0' make notes slide from one value to the next (as would happen if you slid your finger up the neck of a fretless bass). The higher the SLIDE AMOUNT, the longer it takes to slide from one pitch to the next.

  NOTE: Slide times affect only those stages for which the SLIDE function has been activated.

  MIDI FUNCTION: When sequencing a MIDI device, SLIDE AMOUNT is translated into a user-selectable CC value (or to "—", in which case it is not transmitted over MIDI). This selection (along with the MIDI Channel) is set in the Track Menu using the SLIDE AMOUNT CC option. Using the Slide Amount option in the Track Menu, you can also set whether the SLIDE AMOUNT CC value is sent only for Stages that have their SLIDE function turned on ("Toggle"), or whether it's set once at the beginning of the sequence ("Always").

- SLIDE TYPE : Pushing the encoder toggles between three flavours of slide:

  'Analog'   The slide time remains constant regardless of the sequencer tempo, and is also independent of the pitch interval between notes. This means, because the slide time is constant, it takes less time to slide between notes that are close together than those that are far apart.

  When a stage's SLIDE function is turned on, the slide occurs at the beginning of the stage.

  'Tempo'   Slide times are relative, and scale up/down as the sequence tempo rises/falls. They also change to ensure that slide times remain the same regardless of the interval between notes.

  When a stage's SLIDE function is turned on, the slide occurs at the beginning of the stage.

  'Acid'   Like the 'Analog'' option, 'Acid' is also a constant-time portamento, similar to the type used in the Roland TB303, meaning it remains constant regardless of both

the tempo and the pitch interval between notes. The difference is in when and how the slide is applied.
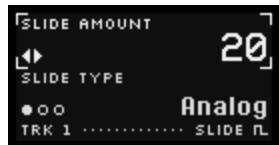
When a stage's SLIDE function is turned on, the slide occurs at the beginning of the *following* stage. In addition, to get that classic 'acid' sound, the stage on which the SLIDE function is enabled will automatically hold its gate high for all of its pulses (as if you switched its GATE TYPE to 'HOLD').

In Use:

1. Press either the **TRK 1** or **TRK 2** button (corresponding to the track whose slide time you wish to edit).

   NOTE: Slide Time settings are not available for the MOD Lanes.

2. Press the **SLIDE TIME** button to access the SLIDE TIME screen.

3. Turn the encoder to set a SLIDE AMOUNT between 0 (no slide) and 100 (maximum slide).

   This sets the Slide Time used by any stages for which the SLIDE function is enabled.

   SHORTCUT: Hold down the **SLIDE TIME** button and press one of the eight stage buttons to set a SLIDE AMOUNT **value directly.**

4. Press the encoder to toggle the slide SLIDE TYPE between 'Analog', 'Tempo' and 'Acid'.

   This determines the type of slide, as described above.

5. To reset the SLIDE parameters back to their default values, long-press the encoder.

(TRACK) GATE

This button opens the TRACK GATE screen, which sets the selected track's default gate length for all the pulses (and ratchets) in the current track.

There are two main parameters accessible by the button:

- GATE LENGTH : Sets the default gate length as a percentage of a single pulse (or a single ratchet). This determines how long each gate signal is held high. Settings range from 1% to 99%, with a 'Hold' value accessible at the very end of the list.

  If active (the ◀▶ symbol is beside the GATE LENGTH parameter), turn the encoder to set the Gate length. If, instead, the GATE SCALE parameter is active, press the encoder to return encoder control to the GATE LENGTH parameter.

  > NOTE: You can override a track's gate length on a per-stage basis using the (STAGE) **GATE** button, as described in *(Stage) GATE, later in this manual.*

- GATE SCALE : Uniformly and simultaneously scales *both* the track's gate length, plus any per-stage gate length overrides (accessed via the (Stage) **GATE** button).

  If active (the ◀▶ symbol is beside the GATE SCALE parameter), turn the encoder to set the scaling. If, instead, the GATE LENGTH parameter is active, press the encoder to move encoder control to the GATE SCALE parameter.

EXAMPLE: Assume you have a four stage track with one pulse per stage and a 2-gate ratchet assigned to Stage 2. If the GATE LENGTH = 50% *and* GATE SCALE = 100%*, then the gate output of this sequence looks like ROW 1, below.*

	(TRACK) GATE		STAGE 1 PULSES = 1	STAGE 2 PULSES = 1 RATCHETS = 2	STAGE 3 PULSES = 1	STAGE 4 PULSES = 1
	LENGTH	SCALE				
1	50%	100%	Stage Gate Override = NONE	Stage Gate Override = NONE	Stage Gate Override = NONE	Stage Gate Override = NONE
2	50%	100%	Stage Gate Override = NONE	Stage Gate Override = NONE	Stage Gate Override = 13%	Stage Gate Override = 88%
3	50%	50%	Stage Gate Override = NONE	Stage Gate Override = NONE	Stage Gate Override = 13%	Stage Gate Override = 88%
4	75%	50%	Stage Gate Override = NONE	Stage Gate Override = NONE	Stage Gate Override = 13%	Stage Gate Override = 88%

Next, assume you use the **STAGE GATE** *screen to assign gate overrides of 13% to Stage 3, and 88% to Stage 4. Nothing else changes. The gate output of this sequence now looks like ROW 2, above.*

Now, change only the **TRACK GATE** *screen's* GATE SCALE *from 100% to 50%. The gate output of this sequence looks like ROW 3.*

Finally, change only the **TRACK GATE** *screen's* GATE LENGTH *from 50% to 75%. The gate output of this sequence looks like ROW 4.*

In Use:

1. Press either the **TRK 1** or **TRK 2** button (corresponding to the track whose gate length you wish to edit).

    NOTE: Gate length settings are not available for the MOD Lanes.

2. Press the **(TRACK) GATE** button.

    ```
    ┌GATE LENGTH        ┐
    ◄►          50%
    GATE SCALE
    ●          100%
    TRK 1 ············ SLIDE ⊓
    ```

3. Press the encoder to toggle between editing the GATE LENGTH and GATE SCALE parameters.

4. With the GATE LENGTH parameter active (◄► indicator beside it), turn the encoder to set the desired track gate (as a percentage of a pulse/ratchet length). When turned fully clockwise, track gates are set to 'Hold.'

    SHORTCUT: With the GATE LENGTH parameter active, hold down the **(TRACK) GATE** button and press one of the eight stage buttons to set the GATE LENGTH value directly, with Stage buttons 1-8 setting GATE LENGTH values of 1, 15, 30, 45, 60 75, 90, and 'hold', respectively.

5. With the GATE SCALE parameter active (◄► indicator beside it), turn the encoder to set the desired gate scaling.
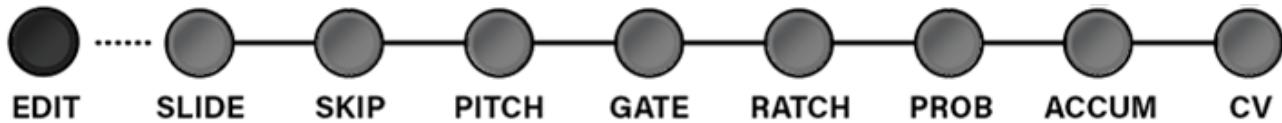
    SHORTCUT: With the GATE SCALE parameter active, hold down the **(TRACK) GATE** button and press one of the eight stage buttons to enter a GATE SCALE value directly, with Stage buttons 1-8 setting GATE SCALE times of 1, 15, 30, 45, 60, 75, 90, and 100%, respectively.

6. To reset all TRACK GATE parameters back to their default values, long-press the encoder.

STAGE BUTTONS

(SECTION 8)

Besides allowing numerous track-based edits (discussed earlier in TRACK SETTINGS), Metropolix also enables you to edit individual *STAGES* within each track. This is the purpose of the Stage buttons, described here.

In general, you need to:

1. Press the Track button (**TRK 1** or **TRK 2**) to select which track's stages you wish to edit.

   Note that Stage buttons function entirely differently for **MOD** Lanes, and are discussed in THE MOD LANES, later in this manual.

2. Select which per-stage function you wish to edit.

   This is done by first pressing the **EDIT** button (lighting each Stage button a different representational color), then pressing the button that corresponds to the function (SLIDE, SKIP, PITCH, GATE, RATCH, PROB, ACCUM,, or MOD) you wish to edit.

   An overview screen of the settings for all eight stages will appear.

3. Then, to *edit* the chosen function on a particular stage, press that stage's corresponding Stage button (each of the eight buttons corresponds to each of the eight stages).

   A detailed edit screen will appear for that Stage.

The following sections describe the operation of each Stage button and setting in detail.

*NOTE: Various alternate functions are accessed by pressing the **ALT** button, followed by one of the Stage buttons. The ALT functions are labelled above the Stage buttons, and are discussed in ALT BUTTONS, later in this manual.*

SLIDE

Press **EDIT + SLIDE** to access the per-stage SLIDE feature. SLIDE can be turned on or off for each stage by clicking its corresponding Stage button. When a stage's slide is enabled, its corresponding stage button lights **RED**. The screen also displays an overview of the slide status for each stage, and the Action Display at the bottom indicates the Track:Stage currently being edited.

When SLIDE is enabled for a stage, one of two behaviours occurs:

● If SLIDE TYPE is set to either 'Analog' or 'Tempo' on the SLIDE TIME screen, its PITCH output will not immediately change to the stage's pitch, but will instead glide (slide) from the previous stage's pitch over a period of time (also set on the SLIDE TIME screen).

● If SLIDE TYPE is set to 'Acid' on the SLIDE TIME screen, the slide occurs at the beginning of the *following* stage, while the enabled stage holds its gate high for all of its pulses (as if you switched its GATE TYPE to 'HOLD').

MIDI FUNCTION: When sequencing a MIDI device, you can use the Track Menu's Slide Toggle CC option to assign a MIDI CC number to follow Metropolix' SLIDE trigger. When Slide is activated on a Stage, Metropolix will transmit a value of 127 using the Track's MIDI Channel assignment. Stages without slides will transmit a value of 0 on this CC.

You can set this CC to match the Glide/Portamento on/off control of an external synth (sometimes CC 65, but not always), or you can assign it to any other function you'd like to have Metropolix toggle on/off.

Similarly, you can translate the SLIDE AMOUNT value into a user-selectable CC value (or to "—", in which case it is not transmitted over MIDI). This selection (along with the MIDI Channel) is also set in the Track Menu using the SLIDE AMOUNT CC option. Using the Slide Amount option in the Track Menu, you can also set whether the SLIDE AMOUNT CC value is sent only for Stages that have their SLIDE function turned on ("Toggle"), or whether it's set once at the beginning of the sequence ("Always").

In Use:

1. Press either the **TRK 1** or **TRK 2** button**,** depending on which track's stages you wish to SLIDE.

2. Press the **EDIT** button, followed by the **SLIDE** button to its right.

   The screen displays an overview of every stage's SLIDE setting, and the eight stage buttons are used to select which stages you wish to slide.

3. Press any of the stage buttons to toggle its slide function on/off.

   Any stage with slide activated has a red button. Buttons will be unlit for any stages with slide turned off. The screen will also update to show the slide settings for each of the eight stages.

   In the following example, Stages 5 and 6 are set to SLIDE.

   NOTE: If Show Pos. = ON in the SETUP menu, then an underline appears beneath the currently playing stage.

*SHORTCUT: You can edit all Stages simultaneously. Specifically: A) Hold **ALT** while turning the encoder to rotate/wrap the Slide pattern forward or backward; B) Hold **ALT** while pushing the encoder to invert the pattern ("on" states turn off, and vice-versa); or C) Hold **ALT** while long-pressing the encoder to set the pattern back to its default state. Alternatively (as with other ALT functions), you can press the **ALT** button to enter ALT mode, perform the various ALT actions, then press **ALT** again to exit ALT mode.*

SKIP

Press **EDIT + SKIP** to access the per-stage SKIP feature. SKIP can be turned on or off for each stage by clicking its corresponding Stage button. When a stage is skipped, its corresponding stage button lights **ORANGE**. The screen also displays an overview of each stage's skip status, with skipped stages indicated by an "X". The Action Display at the bottom indicates the Track:Stage currently being edited.

When SKIP is enabled for a stage, the sequencer treats the stage as if it did not exist — jumping past it to the next stage in the sequence (as defined by the [ORDER](#) screen). The stage's PULSE COUNT is also ignored completely, and does not count toward the total number of pulses in the sequence length.

In Use:

1. Press either the **TRK 1** or **TRK 2** button**,** depending on which track's stages you wish to SKIP.

2. Press the **EDIT** button, followed by the **SKIP** button.

   The screen displays an overview of every stage's SKIP setting, and the eight stage buttons are used to select which stages you wish to skip.

3. Press any of the stage buttons to toggle its skip function on/off.

   All skipped stages will have an **ORANGE** Stage button. Buttons are not lit for any stages with skip turned off. The screen will also update — showing an "X" for any skipped stage.

   In the example shown here, Stages 3, 5 and 6 will be skipped.
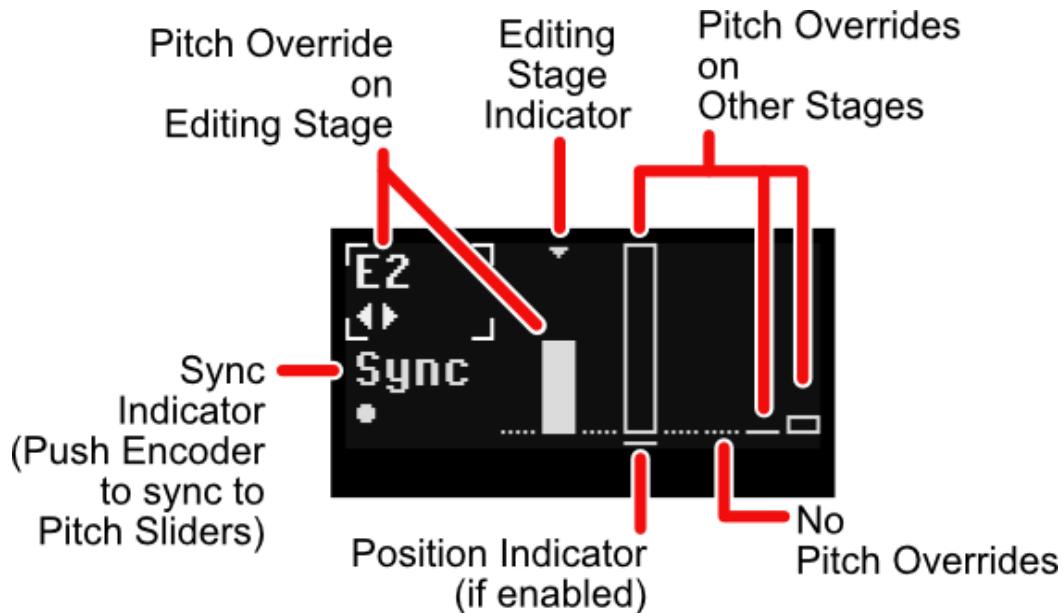
*TIP: You can quickly swap which steps are skipped and which are un-skipped if you assign "Skip Invert" as the destination of a CTRL knob, AUX Input (**X, Y** or **Z**) input or a MOD Lane. In the previous example, an inverted skip would result in Stages 1, 2, 4, 7 and 8 being skipped.*

*SHORTCUT: You can edit all Stages simultaneously. Specifically: A) Hold **ALT** while turning the encoder to rotate/wrap the Skip pattern forward or backward; B) Hold **ALT** while pushing the encoder to invert the pattern ("on" states turn off, and vice-versa); or C) Hold **ALT** while long-pressing the encoder to set the pattern back to its default state. Alternatively (as with other ALT functions), you can press the **ALT** button to enter ALT mode, perform the various ALT actions, then press **ALT** again to exit ALT mode.*

PITCH

Press **EDIT** + **PITCH** to access the per-stage PITCH override feature. This feature overrides, on a stage-by stage basis, the track's PITCH output. To edit a Stage's PITCH override, press the Stage button corresponding to the Stage you wish to edit.

There are two main parameters accessible by the button:

- PITCH OVERRIDE : Turning the encoder sets the note value sent to the track's PITCH output each time the stage is played. You can enter any note (in the current scale) between 'C0' and 'C5.' If you turn the encoder fully counterclockwise, you'll enter a value of '--', which means the stage does not contain a pitch override.

  Keep in mind that the actual note being sent to the PITCH output can still vary from this setting if you change the current SCALE, modulate the track's pitch, or use cumulative transposition (ACCUM).

- SYNC : Sets the PITCH OVERRIDE to the current PITCH SLIDER position(s), which is an alternative to dialing it in with the encoder. You can match the note on a single stage, or you can match all notes on all stages. Specifically:

    - Push the encoder to set the current stage's PITCH OVERRIDE to the PITCH SLIDER'S position at that stage.

    - Hold **ALT** and push the encoder to set all eight stage's PITCH OVERRIDE values to their corresponding PITCH SLIDER positions.

In Use:

1. Press either the **TRK 1** or **TRK 2** button**,** depending on which track's per-stage pitches you wish to edit.

2. Press the **EDIT** button, followed by the **PITCH** button.

    The screen displays an overview of every stage's Pitch Override, and the eight stage buttons are used to select which stage you wish to edit.

3. Press the button corresponding to the stage you want to edit.

    That stage's button will flash yellow to indicate which stage number is being edited. On the screen, the downward pointing arrow indicates the edited stage, and the Action Display at the bottom also indicates the Track:Stage currently being edited.

4. Turn the encoder to assign a pitch override (note value) to the current stage.

    If you turn the encoder fully counterclockwise (value is '--'), then no pitch override is applied to the stage.

5. Alternatively, you can push the encoder to synchronize (set) the current stage's PITCH OVERRIDE to the PITCH SLIDER'S position at that stage.

    SHORTCUT: You can match all 8 stage's PITCH OVERRIDE *values to the current PITCH SLIDER positions by holding **ALT** while pushing the encoder.*

6. Repeat Steps 3-5 for any other stages to which you wish to assign pitch overrides.

    As long as you remain on the PITCH edit screen, any of the eight stage buttons to which you've assigned a pitch override will light yellow.
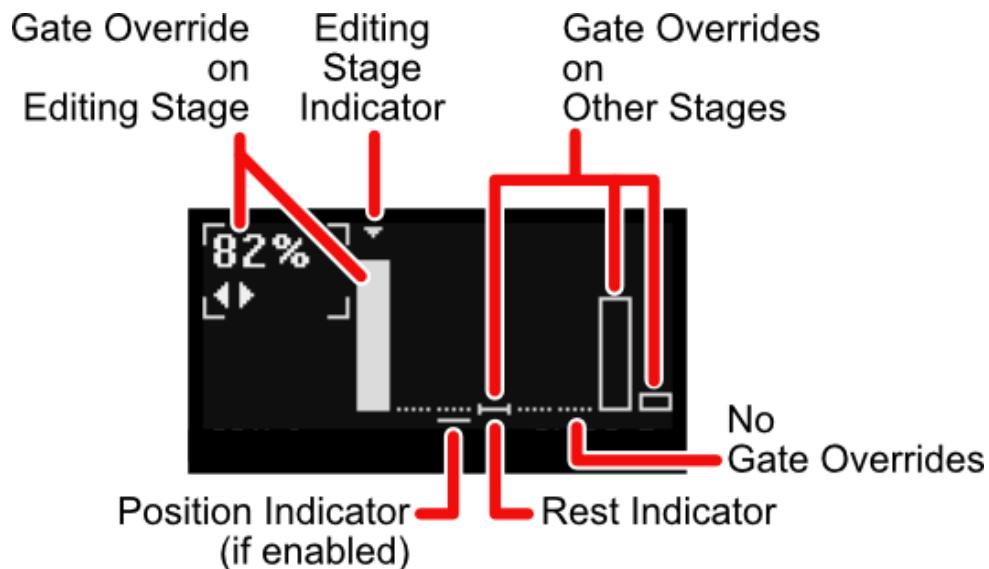
Various shortcuts are also available:

*   Long-press the encoder to remove the pitch override from the *current stage*.

*   Hold the **ALT** button while turning the encoder to change the pitch override across all stages simultaneously. Alternatively, you can press the **ALT** button to enter ALT mode, then turn the encoder, and then press the **ALT** button again to exit ALT mode.

*   Hold the **ALT** button and long-press the encoder to remove pitch overrides from *every* stage.

(STAGE) GATE

Press **EDIT** + **(STAGE) GATE** to access the per-stage GATE override feature. This feature overrides, on a stage-by stage basis, the <u>TRACK GATE</u> settings (including ratchets).

To edit a stage's GATE override, press the Stage button corresponding to the Stage you wish to edit (using the STAGE GATE screen shown below):

There is one main parameter accessible on this screen:

● GATE OVERRIDE : Set's the gate length for that stage, overriding the gate length set on the TRACK GATE screen.

As you turn the encoder clockwise, you will scroll through the following options:

'--' : Tells the stage to use the TRACK GATE length value (i.e. there is no gate override applied to the stage). This is the default value.

'Rest' : No gate is generated by the stage, meaning it plays a "rest."

1-99% : The stage's gate length, expressed as a percentage of a single clock pulse/ratchet.

'100%' : When turned fully clockwise, the per-stage gate is held high for the entire duration (a "hold"), and does not go low before the sequence advances to the next stage.

NOTE: Setting a per-stage GATE OVERRIDE will not affect any cumulative transposition that might be assigned. Also, any gate GATE SCALE function (accessed via the track's **GATE** button) will still apply to any per-stage gate length overrides.
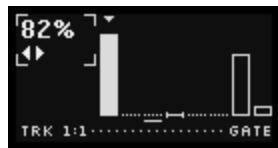
In Use:

1. Press either the **TRK 1** or **TRK 2** button**,** depending on which track's per-stage gates you wish to edit.

2. Press the **EDIT** button, followed by the **GATE** button.

   The screen displays an overview of every stage's gate length overrides, and the eight stage buttons are used to select which stage you wish to edit.

3. Press the button corresponding to the stage you want to edit.

   That stage's button will flash **green** to indicate which stage number is being edited. On the screen, the downward pointing arrow indicates the edited stage, and the Action Display at the bottom also indicates the Track:Stage currently being edited.

4. Turn the encoder to set a gate length override for that stage.

   This setting always overrides the track's GATE length setting.

5. Repeat Steps 3-4 for any other stages to which you wish to assign pitch or gate values.

   As long as you remain on the GATE edit screen, any of the eight stage buttons to which you've assigned a GATE override will light **green**.
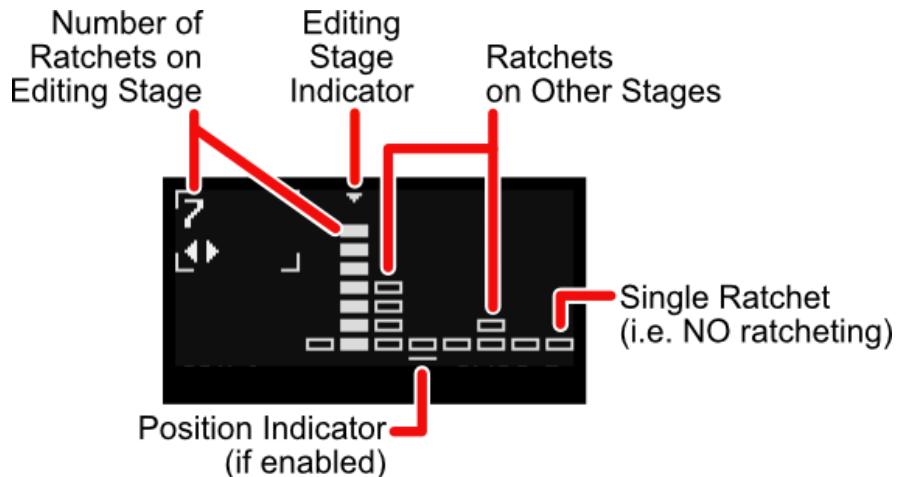
Various shortcuts are also available:

- Long-press the encoder to remove the gate length override from the *current stage*.

- Hold the **ALT** button while turning the encoder to change the gate length override across all stages simultaneously. Alternatively, you can press the **ALT** button to enter ALT mode, then turn the encoder, and then press the **ALT** button again to exit ALT mode.

- Hold the **ALT** button and long-press the encoder to remove the gate length overrides from *all stages*.

RATCH

Press **EDIT** + **RATCH** to access the per-stage RATCHET feature. To edit a Stage's RATCHET count, press the Stage button corresponding to the Stage you wish to edit.

Each stage has a ratchet count from 1 to 8, and the interpretation of this count depends on whether or not **Gate Stretching** (as set in the Track Menu) is ON or OFF, as discussed later in this section.

In Use:

1. Press either the **TRK 1** or **TRK 2** button, depending on which track's ratchets you wish to edit.

2. Press the **EDIT** button, followed by the **RATCH** button.

   The screen displays an overview of every stage's ratchet count, and the eight stage buttons are used to select which stage you wish to edit.

3. Press the button corresponding to the stage you want to ratchet.

   That stage's button will flash **cyan** to indicate which stage number is being edited. On the screen, the downward pointing arrow indicates the edited stage, and the Action Display at the bottom also indicates the Track:Stage currently being edited.

4. Turn the encoder to set the number of ratchets (1 - 8) that you want applied to that stage.

5. Repeat Steps 3-4 for any other stages to which you wish to assign ratchets.

   As long as you remain on the RATCH edit screen, any of the eight stage buttons to which you've assigned a ratchet (that is, a value greater than 1) will light **cyan**.

Various shortcuts are also available:
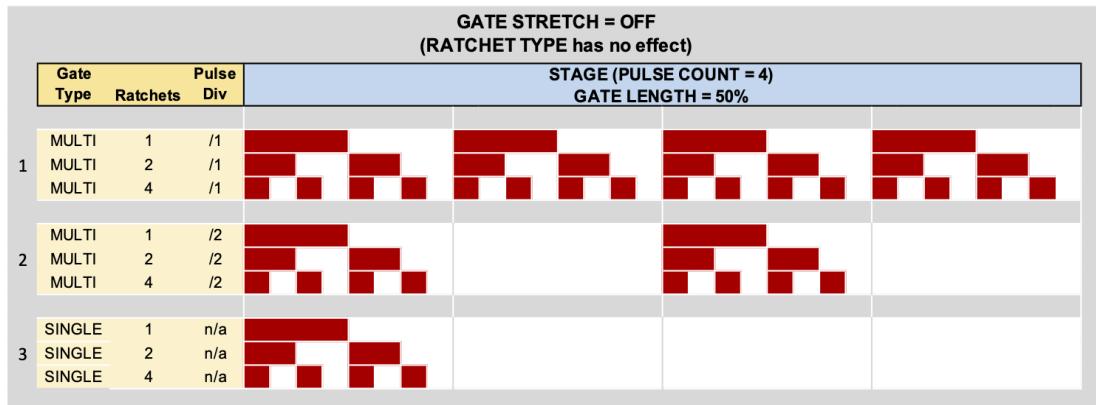
- Long-press the encoder to reset the *current stage* to its default ratchet count (i.e., ratcheting is turned off, which is a ratchet count of "1").

- Hold the **ALT** button while turning the encoder to change the number of ratchets across all stages simultaneously. Alternatively, you can press the **ALT** button to enter ALT mode, then turn the encoder, and then press the **ALT** button again to exit ALT mode.

- Hold the **ALT** button and long-press the encoder to reset *all stages* to their default ratchet count amounts (i.e., ratcheting is turned off).

Ratcheting with Gate Stretching = OFF

If **Gate Stretching** is OFF (set in the [TRACK MENU](#)), then ratcheting subdivides a single clock pulse into the selected number of separate gates. With a ratchet count of 1, there is no subdivision and thus no ratcheting — each pulse simply fires off a single gate.

Ratcheting is heard when the value is greater than "1," which means each pulse fires off either 2, 3, 4, 5, 6, 7 or 8 gates before the next pulse.

Look at the example below:

- ➔ Group 1 (top three rows) illustrates the effect of different Ratchet values when GATE TYPE = MULTI and the **DIV** screen's PULSE COUNT DIV is set to '/1.' The red regions indicate the gates that are generated (and their length).

- ➔ Group 2 (middle three rows) illustrates the same conditions at Group 1, except the **DIV** screen's PULSE COUNT DIV is set to '/2.'

- ➔ Group 3 (bottom three rows) illustrates the effect of different Ratchet values when GATE TYPE = SINGLE (in which case PULSE COUNT DIV has no effect).

Ratcheting with Gate Stretching = ON

If **Gate Stretching** is ON (set in the TRACK MENU), then ratcheting works in one of three different ways, which you select using the **Ratchets** parameter in the TRACK MENU. There are three options: Multiply; Pulse; and Gated — each of which is described below.

- **MULTIPLY**

When you assign **'x'** number of ratchets to a stage, this option creates **'x'** number of ratchets in **'y'** pulse counts, where the value of **'y'** is determined by the stage's PULSE COUNT switch plus the **DIV** screen's PULSE COUNT DIV value (if the GATE TYPE = MULTI) .

This results in ratchet repeat rates that speed up or slow down depending on how long the non-ratched gate would last. It can yield very interesting rhythmic variations but may not sonically resemble "traditional" ratchets.

The following example shows the relationship between number of RATCHETS, GATE TYPE, PULSE COUNT DIV, and a Stage's PULSE COUNT when **Gate Stretching = ON** and **Ratchets = Multiply** in the TRACK MENU.

- **PULSE**

When you assign **'x'** number of ratchets to a stage, this option ensures that all **'x'** ratchets will play in the amount of time occupied by a single clock pulse. In this case, **'x'** determines both the repeat rate of the ratchets, and the number of total ratchets played in a gate.

This creates the 'classic' ratcheting effect of sequencers from the past. It ensures that ratchets always repeat at the same rate (regardless of Gate Length), and that the requested number of ratchets are always heard.

The following example shows the relationship between the number of RATCHETS, GATE TYPE, PULSE COUNT DIV, and a Stage's PULSE COUNT when **Gate Stretching = ON** and **Ratchets = Pulse** in the TRACK MENU.
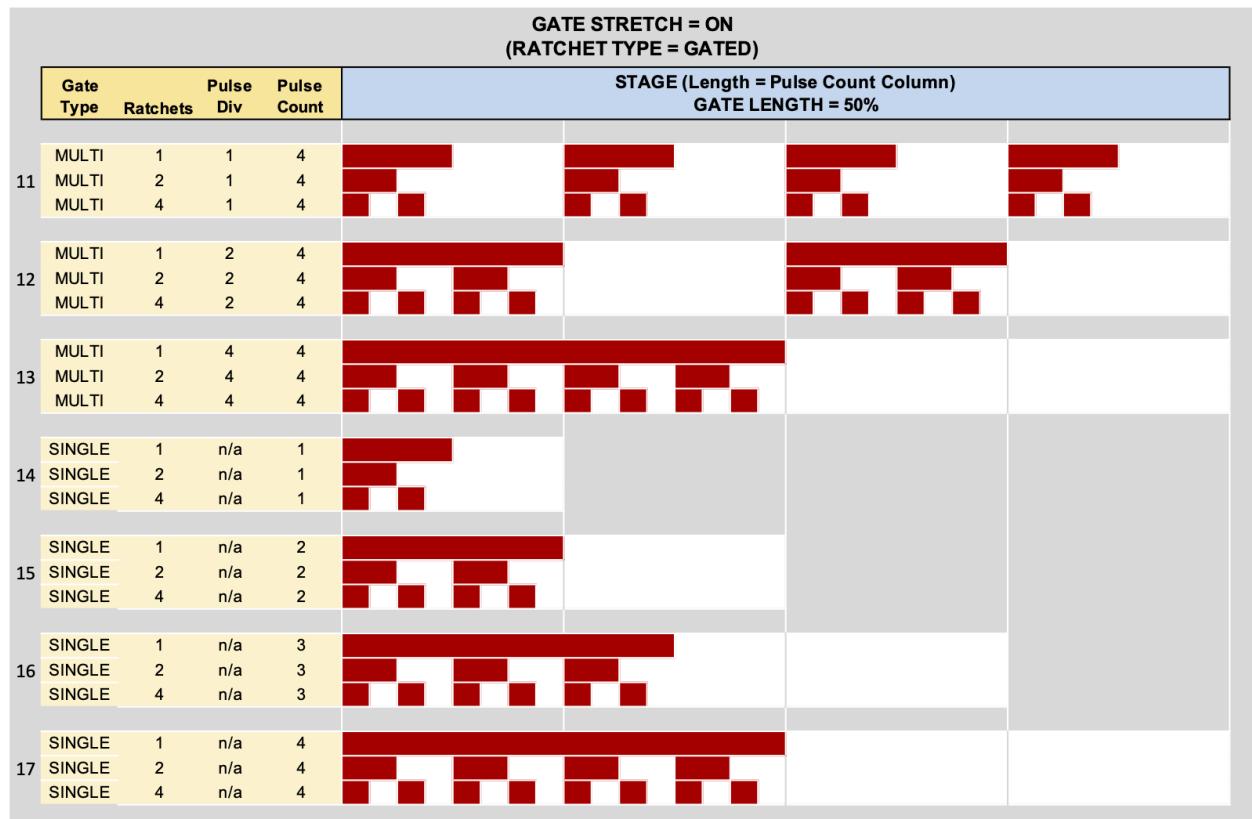
- **GATED**

  When you assign **'x'** number of ratchets to a stage, this option ensures that the ratchets will trigger at the rate of **'x'** ratchets per clock pulse. However, the actual number of ratchets played will increase (or decrease) as the non-ratcheted gate lengths stretch or contract. In this case, '**x**' determines the repeat rate of the ratchets, but the Gate Length determines the number of total ratchets played.

  This is a variation on the 'classic' ratcheting effect, in that it ensures the ratchets always repeat at the same rate, but it allows for the number of ratchets to expand or contract with gate length.

  The following example shows the relationship between RATCHETS, GATE TYPE, PULSE COUNT DIV, and a Stage's PULSE COUNT when **Gate Stretching = ON** and **Ratchets = Gated** in the [TRACK MENU](#).

PROB

Press **EDIT** + **PROB** to access the per-stage PROBABILITY feature. This sets the probability that a stage will generate gate event(s). To edit a Stage's probability, press the Stage button corresponding to the Stage you wish to edit.

There are two main parameters accessible by the button:

- PROBABILITY AMOUNT : Turning the encoder sets the likelihood that a programmed gate will actually play. You can set a probability from 0% (the programmed gate will *never* play) to 100% (the programmed gate will *always* play). A value of 50% means a programmed gate has an equal chance of playing or not playing, with each pass through the sequence.

- PROBABILITY TARGET : Pressing the encoder toggles between two probability targets. The choices are:

  'Stage' : Determines the probability that *every* pulse plays on the corresponding stage. For example, if a stage has a PULSE COUNT = 4 and a PROBABILITY AMOUNT of 50%, then there is a 50% chance that all four pulses will play and a 50% chance that none of the four pulses will play.

  'Pulse' : Determines the probability that *each* pulse plays on the corresponding stage. For example, if a stage has a PULSE COUNT = 4 and the PROBABILITY AMOUNT is 50%, then there is a 50% chance that the stage's first pulses will play, and then a 50% chance that the stage's next pulse will play, etc.

In Use:

1. Press either the **TRK 1** or **TRK 2** button, depending on which track's probability you wish to edit.

2. Press the **EDIT** button, followed by the **PROB** button.

   The screen displays an overview of every stage's probability value, and the eight stage buttons are used to select which stage you wish to edit.

3. Press the button corresponding to the stage to which you want to assign a probability.

   That stage's button will flash **blue** to indicate which stage number is being edited. On the screen, the downward pointing arrow indicates the edited stage, and the Action Display at the bottom also indicates the Track:Stage currently being edited.

4. Turn the encoder to set the desired PROBABILITY AMOUNT.

5. Press the encoder to toggle between the probability choices (as described above).

6. Repeat Steps 3-5 for any other stages to which you wish to assign probabilities.

   As long as you remain on the PROB edit screen, any of the eight stage buttons to which you've assigned a probability amount (less than 100%) will light **blue**.
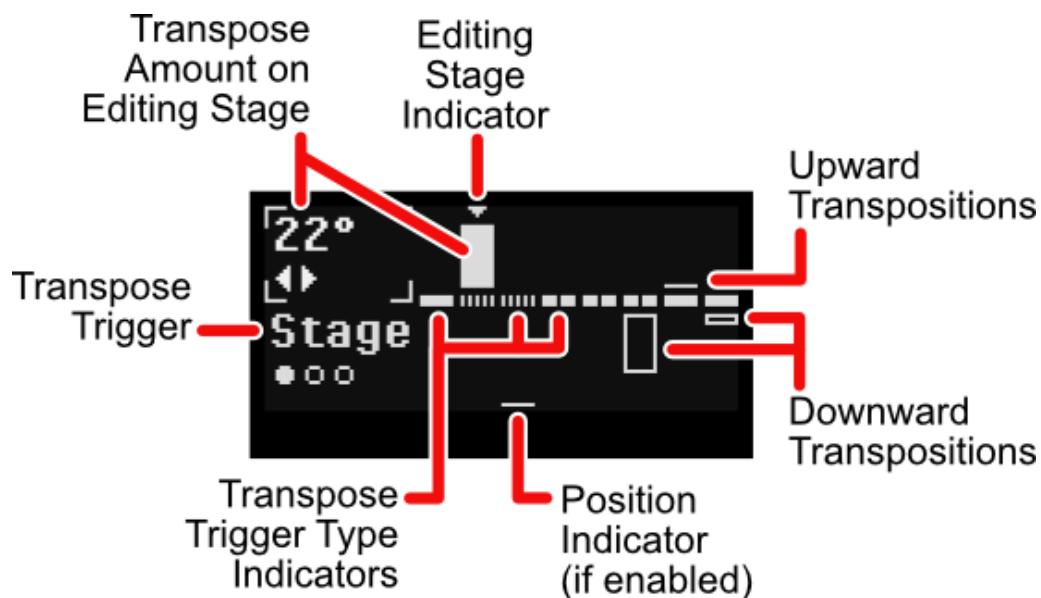
Various shortcuts are also available:

- Long-press the encoder to reset the *current* stage to its default PROBABILITY AMOUNT ('100%') and PROBABILITY TARGET ('Stage').

- Hold the **ALT** button while turning the encoder to change the PROBABILITY AMOUNT across all stages simultaneously. Alternatively, you can press the **ALT** button to enter ALT mode, then turn the encoder, and then press the **ALT** button again to exit ALT mode.

- Hold the **ALT** button and long-press the encoder to reset *all* stages to their default PROBABILITY AMOUNTS ('100%') and PROBABILITY TARGETS ('Stage').

- Hold the **ALT** button and short-press the encoder to set all PROBABILITY TARGETS to the same value.

ACCUM

Press **EDIT** + **ACCUM** to access the per-stage ACCUMULATOR feature. This lets you diatonically and cumulatively increase or decrease a stage's pitch as the sequence continues to cycle. You can define when each transposition occurs (either on each STAGE; each PULSE; or each RATCHET), and you can also define the amount of transposition to apply with each accumulation, and the range over which those transpositions occur. Using the Mode option on the LIM screen, you can also set whether the accumulator applies only to the current stage, or to the entire track.

To edit a Stage's accumulator value, press the Stage button corresponding to the Stage you wish to edit.

There are two main parameters accessible by the button:

- TRANSPOSE AMOUNT : Turning the encoder sets the amount of transposition that occurs on each pass. Transpose values relate to the current SCALE, and are expressed as a number of scale degrees (°), with ±7being the default.

- TRANSPOSE TRIGGER : Pressing the encoder cycles through the three choices for what triggers each transposition (i.e. when the accumulation occurs). The choices are:

    'Stage' : Applies the transposition amount each time the stage is played. This is the default selection.

    'Pulse' : Applies the transposition amount each time a pulse is played.

    'Ratch' : Applies the transposition amount each time a ratchet event is played.

In Use:

1. Press either the **TRK 1** or **TRK 2** button**,** depending on which track's cumulative transposition you wish to edit.

2. Press the **EDIT** button, followed by the **ACCUM** button.

   The screen displays an overview of every stage's Accumulated Transposition setting, and the eight stage buttons are used to select which stage you wish to edit.

3. Press the button corresponding to the stage you want to transpose.

   That stage's button will flash **magenta** to indicate which stage number is being edited. On the screen, the downward pointing arrow indicates the edited stage, and the Action Display at the bottom also indicates the Track:Stage currently being edited.

4. Turn the encoder to set the TRANSPOSE AMOUNT that you want to apply with each pass.

5. Press the encoder to cycle through the three choices for what triggers each transposition (as described above).

6. Repeat Steps 3-5 for any other stages to which you wish to assign an Accumulated Transposition.

   As long as you remain on the ACCUM edit screen, any of the eight stage buttons to which you've assigned a transposition amount will light **magenta**.

Various shortcuts are also available:

● Long-press the encoder to reset the current stage to its default TRANSPOSE AMOUNT (0 semitones) and default Transpose Trigger (Stage).

● Hold the **ALT** button while turning the encoder to change the TRANSPOSE AMOUNT across all stages simultaneously. Alternatively, you can press the **ALT** button to enter ALT mode, then turn the encoder, and then press the **ALT** button again to exit ALT mode.

● Hold the **ALT** button and long-press the encoder to reset all stages to their default TRANSPOSE AMOUNT (0 semitones) and default TRANSPOSE TRIGGER (Stage).

● Hold the **ALT** button and short-press the encoder to set all TRANSPOSE TRIGGERS to the same value.

Range Limits, Order, Polarity and Resets

The range over which transpositions are allowed to accumulate is set by the **LIM** button, accessed by pressing the **ALT** button, followed by the **LIM** (Stage 7) button. See LIM (ACCUM OPTIONS) to learn how to set the positive and negative pitch accumulation limits, and to configure various other accumulator parameters, such as the accumulation order; polarity; and how to reset the accumulator.

Interaction with Gate Modes and Ratchets

Cumulative transpositions interact with other Metropolix features as follows:

● **RESET**: When a sequence is RESET, all accumulated transpositions reset to their starting pitches, and will begin to re-accumulate on the next pass through the sequence. Resets can be manually or automatically triggered, as set on the LIM screen.

● **PROB**: When a stage's PROB setting stops a Stage (or Pulse) from firing, then Cumulative Transpose treats this like a GATE MODE that's set to REST, meaning it does not trigger a cumulative transposition.

● **GATE TYPE**: In conjunction with the TRANSPOSE TRIGGER, the Gate Type determines when transpositions actually accumulate, as shown in the chart below:

		GATE TYPE			
		HOLD	**MULTI**	**SINGLE**	**REST**
TRANPOSITION TRIGGER	**STAGE**	Transpose with each STAGE play	Transpose with each STAGE play	Transpose with each STAGE play	NO Transpose
	PULSE	Transpose with each STAGE play	Transpose on EVERY pulse of each STAGE play	Transpose on FIRST pulse of each STAGE play	NO Transpose
	RATCHET	Transpose with each STAGE play	Transpose on each ratchet in EVERY pulse of each STAGE play	Transpose on each ratchet in the FIRST pulse of each STAGE play	NO Transpose

NOTE: Ratchets do not affect Cumulative Transpose when the transposition trigger is set to either STAGE or PULSE. In these cases, multiple ratchets will only create new gates, but not pitch accumulations.

CV

Press **EDIT** + **CV** to access the per-stage CV Lane. This is a per-track sequencer "lane" that generates an additional control voltage on each stage. You can control external gear by sending the CV lane out one of Metropolix's two assignable outputs (**A** or **B**), as described in OUT A & B.

To edit a Stage's CV value, press the Stage button corresponding to the Stage you wish to edit.

The CV Lane screen functions differently depending on the *type* of CV it contains, and this is chosen by pressing the **ALT** + **TYPE** (Stage 8) buttons to access the CV TYPE screen (described in TYPE (CV TYPE), later in the manual), and selecting a CV TYPE of either 'CV Value' or 'Gate Toggle.'

Briefly:

When CV TYPE = CV Value, the CV Stage Editing screen looks like this..
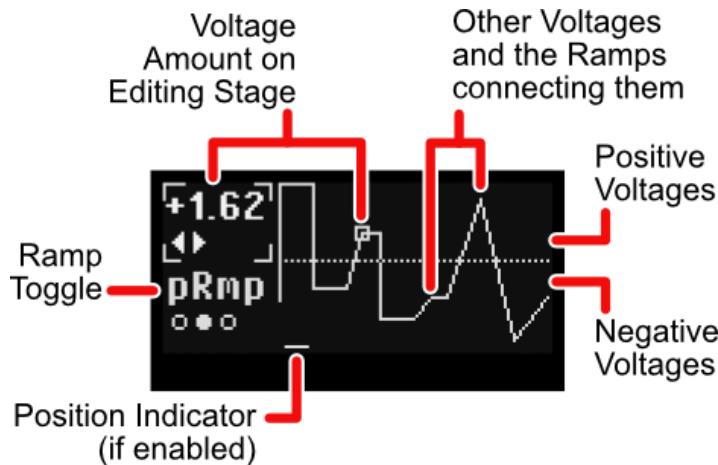
When CV TYPE = Gate Toggle, the CV Stage Editing screen looks like this.

The following two sections will describe how to program a CV lane, depending on whether CV Type = CV Value or CV Type = Gate Toggle is selected.

CV TYPE = CV Value

If CV TYPE = 'CV Value' (as set by pressing the **ALT** + **TYPE** (Stage 8) buttons and selecting 'CV Value' from the CV TYPE screen), then the CV LANE screen (accessed by pressing the **EDIT** + **CV** buttons) will display the stage voltages and the ramps that connect them:

- VOLTAGE : Turn the encoder to set a stage's CV value to a voltage between ±5V.

- RAMP TYPE : Push the encoder to toggle between three different ways that the previous stage's VOLTAGE can transition into this stage's VOLTAGE. Specifically:

'Step' :	VOLTAGE changes instantly — jumping from the previous stage's value into this stage's value at the beginning of the stage.
'sRamp' :	VOLTAGE glides smoothly from the previous stage's value into this stage's over the length of the entire stage — reaching the full voltage at the end of the stage.
	With 'sRamp,' the ramp time changes with the number of pulses in a stage. For example, if a stage has 4 pulses, then the voltage will take a full 4 pulses to reach the assigned Voltage.
'pRamp' :	VOLTAGE glides smoothly from the previous stage's value to this stage's value over the length of a single pulse. It doesn't matter how many pulses a Stage has — the ramp time always occupies one pulse length.
	For example, if a stage has 4 pulses, the voltage will take one full pulse to reach the assigned Voltage, and it will remain at that voltage for the next 3 pulses.
	Note that, if a Stage is only one pulse in length, then 'pRmp' and 'sRmp' have the same effect.

*NOTE: To assign all 8 stages to the same ramp setting, hold down the **EDIT** button while pressing the encoder — this assigns all 8 stages at once, rather than just the current stage.*

In Use:

1. Press the **TRK 1 or TRK 2** button, depending on which track's CV lane you wish to program.

2. Make sure the CV TYPE is set to 'CV Value' (accessed by pressing the **ALT** + **TYPE** (Stage 8) buttons, described in TYPE (CV TYPE), later in the manual).

3. Press the **EDIT** button, followed by the **CV** button.

   The screen displays an overview of every stage's CV value, and the eight stage buttons are used to select which stage you wish to edit.

4. Press the button corresponding to the stage you want to edit.

   That stage's button will flash **pink** to indicate which stage is being edited. On the screen, the larger triangle points to the edited stage, and a little box demarcates that stage's vertex. The Action Display at the bottom also indicates the Track:Stage currently being edited.

5. Turn the encoder to set the desired VOLTAGE for that stage (±5V).

6. Press the encoder to toggle through the RAMP TYPE options: 'Step,' 'sRmp,' or 'pRmp' (as described above).

   *NOTE: Hold down the **ALT** button while pressing the encoder to set the Ramp type for all 8 stages simultaneously.*

7. Repeat Steps 3-6 for any other stages to which you wish to assign a control voltage.

   As long as you remain on the CV edit screen, any of the eight stage buttons to which you've assigned a voltage (other than 0V) will light **pink**.

Various shortcuts are also available:

● Press-and-hold the **ALT** button to see all vertex markers, not just the current stage's.

● Hold the **ALT** button and turn the encoder to change the control voltages across all stages simultaneously.

● Long-press the encoder to reset the current stage's CV to 0V.

● Hold the **ALT** button and long-press the encoder to reset the CV to 0V on *every* stage.

● Hold the **ALT** button and short-press the encoder to set all RAMP TYPES to the same value.

REMINDER: *In order to hear the effect of the CV Lane, you must assign it to one of Metropolix' two assignable outputs (**A** or **B**), as discussed in OUT A & B , later in this manual.*

CV TYPE = Gate Toggle

If CV TYPE = 'Gate Toggle' (as set by pressing the **ALT** + **TYPE** (Stage 8) buttons and selecting 'Gate Toggle' from the CV TYPE screen), then the CV LANE screen (accessed by pressing the **EDIT** + **CV** buttons) will display a series of gate indicator dots. The Action Display at the bottom indicates the Track:Stage currently being edited.

Each Stage has one of two gate states: on or off. Repeatedly pressing a Stage button toggles between setting that Stage's Gate value either high (5V) or low (0V). A high gate value (+5V) is indicated by a solid dot (along with a lit Stage button, when viewing the CV Lane). A low gate value (0V) is indicated by a hollow dot (along with an unlit Stage button, when viewing the CV Lane).

In Use:

1. Press the **TRK 1 or TRK 2** button, depending on which track's CV lane you wish to program.

2. Make sure the CV TYPE is set to 'Gate Toggle' (accessed by pressing the ALT + **TYPE** (Stage 8) buttons, described in TYPE (CV TYPE), later in the manual).

3. Press the **EDIT** button, followed by the **CV** button.

    The screen displays an overview of every stage's Gate setting, and the eight stage buttons are used to select whether the corresponding stage's gate is high (+5V) or low (0V).

4. Press a stage button to toggle the gate (high or low) for the corresponding stage.

    A high gate value (+5V) is indicated by a solid dot (along with a lit **pink** Stage button, when viewing the CV Lane). A low gate value (0V) is indicated by a hollow dot (along with an unlit Stage button, when viewing the CV Lane).

5. Set all the Stage gates to their desired states.

6. Long-press the encoder to reset the current stage gates to their low (0V) values.
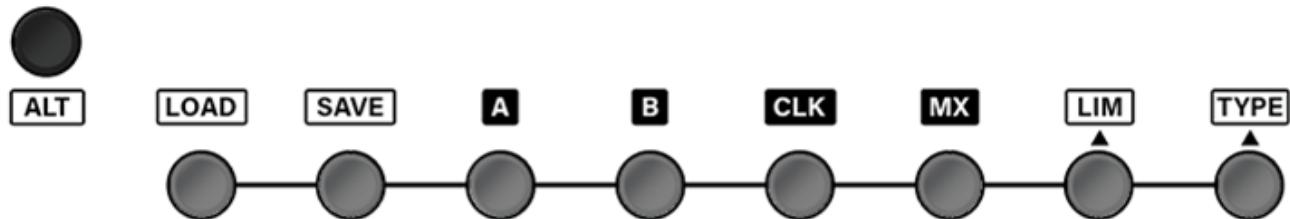
*SHORTCUT: You can edit all Stages simultaneously. Specifically: A) Hold **ALT** while turning the encoder to rotate/wrap the CV gate pattern forward or backward; B) Hold **ALT** while pushing the encoder to invert the pattern ("on" states turn off, and vice-versa); or C) Hold **ALT** while long-pressing the encoder to set the pattern back to its default state. Alternatively (as with other ALT functions), you can press the **ALT** button to enter ALT mode, perform the various ALT actions, then press **ALT** again to exit ALT mode.*

*REMINDER: In order to hear the effect of the CV Lane, you must assign it to one of Metropolix' two assignable outputs (**A** or **B**), as discussed in OUT A & B , later in this manual.*

ALT BUTTONS

Each Stage button has an alternate function, indicated by the text above the button, and accessed by pressing the **ALT** button prior to pressing a Stage button.

NOTE: The three Track buttons also have ALT functions, which are described in [TRACK BUTTONS](#)*, earlier in this manual.*

The following sections describe each of the Stage buttons' ALT functions.

LOAD

The first two Stage buttons in ALT Mode are used to manage Metropolix presets. Metropolix can store 64 sequencing presets, arranged in 8 banks of 8 presets each. Each preset stores and loads:

- all Track-level and Stage-level parameter values
- the SCALE settings

Additionally, stored with each preset (but optionally loaded) are:

- the current pitch values as set with the PITCH SLIDERS
- the current position of all PULSE COUNT and GATE TYPE switches.
- the parameter to which each CTRL knob is assigned and the value of those parameters.
- the parameter to which each AUX input (X, Y and Z) is assigned.

Although Metropolix saves the previous four data types in a preset, you can choose whether or not you want to *load* this data when you load a patch. For example, if you choose to not load the Pitch and Switch values, then you ensure that the front panel **PITCH SLIDERS**, **PULSE COUNT** and **GATE TYPE** switches always reflect what the sequence plays back (and are not overridden by the loaded Preset). Similarly, **AUX** input assignments can be loaded or ignored — your choice, depending on whether you always use the same **AUX** input assignments, or if you change them with every preset. Also you can choose whether to load **CTRL** knob parameter assignments and, if so, whether you also want to load their memorized parameter values. Your choice to load or not load these options is made in the global [SETUP](#) menu By default, the PITCH SLIDER and SWITCH loads are turned *off*, while the CTRL and AUX loads are set to "Assign," meaning the parameter assignments are loaded, but not the actual values of those parameters.

The only settings *not* saved with a preset are: all Global SETUP MENU settings; the BPM screen; and any custom Shortcuts you may have configured.

The first Stage button in ALT Mode is used to load presets. Pressing it opens the LOAD screen, which contains two parameters:

- PRESET BANK : Turn the encoder to select between 8 banks of presets. Banks are indicated by color (Red, Orange, Yellow, Green, Cyan, Blue, Magenta, Pink), and the eight stage buttons will glow with the color of the selected bank. Each of the eight stage buttons represents a different storage slot within the chosen bank.

  NOTE: Once you select a bank with this parameter, you select a preset from within the bank using the eight Stage buttons, as discussed in Loading Presets, below.

- LOAD DELAY : This setting determines when, exactly, a preset loads. Press the encoder to toggle through all three options, which are:

  ○ **Instant** : After pressing one of the bank's 8 stage buttons, the preset loads instantly.

  ○ **Queue Pulses** : After pressing one of the bank's 8 stage buttons, the preset loads only when the sequence resets, or (if the LEN screen's Pulses = Auto) after the number of pulses specified by the Queue Pulses option in the SETUP menu.

    If Queue Pulses = "–", then presets will load only when Metropolix manually resets. That is: 1) you press the **RESET** button; or 2) you send a trigger into the **RESET** jack (if it's configure as a reset input); or 3) you send a trigger into AUX **X**, **Y** or **Z** (if it's assigned to 'Reset' on TRK 1).

  ○ **Total Pulses** : After pressing one of the bank's 8 stage buttons, the preset loads only after the number of pulses specified by the Total Pulses option in the SETUP menu. Total Pulses are saved with presets, so choosing this as the LOAD DELAY can result in presets changing after different amounts of time — but it allows for a sequence to finish playing entirely before a new preset loads.

    If the currently playing preset's Total Pulses = "–", then the new preset will instead load after the specified number of Queue Pulses (exactly as if you had selected "Queue Pulses" for the LOAD DELAY). And, as such. If Queue Pulses = "–", then presets will load only when Metropolix manually resets (as described above).
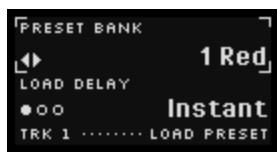
Loading Presets

You can choose to load presets instantly, or you may delay (queue) the load until a sequence's saved Total Pulses count is reached (as defined in the **SETUP** menu); or until a specified number of 'Queue Pulses' (also defined in the SETUP menu) has accumulated; or if Queue Pulses = "-", until you trigger a manual reset via the **RESET** button or a properly configured **RESET** input jack).

NOTE: You cannot load presets if Metropolix's Preset Chain playback is currently enabled.

To Instantly Load a Preset:

1. Press the **ALT** button followed by the **LOAD** (Stage 1) button to access the LOAD screen.

2. Turn the encoder to select the PRESET BANK that contains the preset you wish to load.

Banks are named by color. Selecting a bank causes all 8 Stage buttons to light with the chosen color. Each of the 8 Stage buttons corresponds to a Preset location in that bank. Brightly lit Stage buttons contain presets. Dimly lit Stage buttons are empty. A flashing Stage button indicates the most recently loaded preset (if you don't switch banks).

3. Make sure the LOAD DELAY parameter is set to Instant.' Pressing the encoder toggles through the three options.

4. Press the Stage button (1-8) that corresponds to the preset you wish to load.

   The preset loads, resetting the sequence, and the screen flashes a message to confirm the preset has loaded.

To Load a Preset on the "Queue Pulses" count:

1. Open the LOAD screen, as outlined earlier.

2. Make sure the `LOAD DELAY` parameter is set to 'Queue Pulses.' Pressing the encoder toggles through the three load options.

3. Press the Stage button (1-8) corresponding to the preset you wish to load.

   The button will flash indicating that the preset is queued and waiting to load.

4. The preset loads after the number of pulses specified by the Queue Pulses option in the SETUP menu.

   *When the **SETUP** menu's Queue Pulses is set to some number 'n', then the preset will load only when a multiple of 'n' pulses has transpired since the last reset signal. For example, if Queue Pulses = '32', then a queued preset can only load 32 (or 64, 96, 128, 160, etc) pulses after the last reset. If your sequence is in 4/4 time, then pulse divisions of 16 or 64 will keep pulse loads in sync with your patterns.*

   If Queue Pulses = "–", then presets load only when Metropolix manually resets. That is: 1) you press the **RESET** button; or 2) you send a trigger into the **RESET** jack (if it's configured as a reset input)..
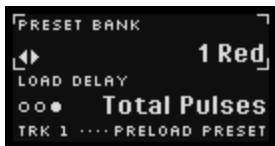
   The queued preset loads and the screen flashes a message to confirm your preset has loaded.

NOTE 1: Queued Presets will also load when Metropolix is stopped, ensuring they are loaded prior to restarting the sequencer.

NOTE 2: You can cancel a queued load by pressing the same (or an empty) preset button. Or you can pick a different preset to load by selecting it before the reset signal.

To Load a Preset on the "Total Pulses" count:

1. Open the LOAD screen, as outlined above.

2. Make sure the LOAD DELAY parameter is set to 'Total Pules.' Pressing the encoder toggles through the three load options.

3. Press the Stage button (1-8) corresponding to the preset you wish to load.

   The button will flash indicating that the preset is queued and waiting to load.

4. The preset loads after the number of pulses specified by the Total Pulses option in the SETUP menu.

   Total Pulses are saved with presets, so choosing this as the LOAD DELAY can result in presets changing after different amounts of time — but it allows for a sequence to finish playing entirely before a new preset loads.

   If the currently playing preset's Total Pulses = "−", then the LOAD DELAY conditions will fallback to LOAD DELAY = "Queue Pulses" behaviour.

SAVE

The first two Stage buttons in ALT Mode are used to manage Metropolix presets. Metropolix can store 64 sequencing presets, arranged in 8 banks of 8 presets each. Each preset stores and loads:

- all Track-level and Stage-level parameter values
- the SCALE settings

Additionally, stored with each preset (but optionally loaded) are:

- the current pitch values as set with the PITCH SLIDERS
- the current position of all PULSE COUNT and GATE TYPE switches.
- the parameter to which each CTRL knob is assigned and the value of those parameters.
- the parameter to which each AUX input (X, Y and Z) is assigned.

Although Metropolix saves the previous four data types in a preset, you can choose whether or not you want to *load* this data when you load a patch. For example, if you choose to not load the Pitch and Switch values, then you ensure that the front panel **PITCH SLIDERS**, **PULSE COUNT** and **GATE TYPE** switches always reflect what the sequence plays back (and are not overridden by the loaded Preset). Similarly, **AUX** input assignments can be loaded or ignored — your choice, depending on whether you always use the same **AUX** input assignments, or if you change them with every preset. Also you can choose whether to load **CTRL** knob parameter assignments and, if so, whether you also want to load their memorized parameter values. Your choice to load or not load these options is made in the global [SETUP](#) menu By default, the PITCH SLIDER and SWITCH loads are turned *off*, while the CTRL and AUX loads are set to "Assign," meaning the parameter assignments are loaded, but not the actual values of those parameters.

The only settings *not* saved with a preset are: all SETUP MENU settings; the BPM screen; and any custom Shortcuts you may have configured.

The second Stage button in ALT Mode is used to *save* presets. Pressing it opens the SAVE screen, which contains two parameters:

- PRESET BANK : Turn the encoder to select between 8 banks of presets. Banks are indicated by color (Red, Orange, Yellow, Green, Cyan, Blue, Magenta, Pink), and the eight stage buttons will glow with the color of the selected bank. Each of the eight stage buttons represents a different storage slot within the chosen bank.

- ACTION : Press the encoder to toggle between 'Save + Exit', 'Save' and 'Clear.' Specifically:

  Save + Exit : Saving a preset to one of the 8 locations (in one of the 8 banks) saves the preset and exits the SAVE screen.

Save : Saving a preset saves the preset to the selected location, but keeps the SAVE screen active (useful for preset management).

Clear : Clears (deletes) the selected location, rather than saving to it. This is useful for emptying preset locations that you don't need.

Saving Presets

1. Press the **ALT** button followed by the **SAVE** (Stage 2) button to access the SAVE screen.


```
┌PRESET BANK        ┐
◄►             1 Red┘
ACTION
●○○     Save + Exit
TRK 1 ······· SAVE PRESET
```

2. Press the encoder to toggle the ACTION value between 'Save + Exit', 'Save' and 'Clear'. In this case, because you are *SAVING* a patch, make sure the parameter is set to either 'Save + Exit' or 'Save'.

   Save + Exit (the default) closes the SAVE screen after saving a preset, while Save keeps the SAVE screen active, for additional save operations.

3. Turn the encoder to select the PRESET BANK into which you wish to save the preset.

   Banks are named by color. Selecting a bank causes all 8 Stage buttons to light with the chosen color. Each of the 8 Stage buttons corresponds to a Preset location in that bank. Brightly lit Stage buttons contain presets. Dimly lit Stage buttons are empty. You can, of course, save your preset over top of an existing preset if you wish.

4. Press the Stage button (1-8) that corresponds to the memory location into which you want to save your preset.

   The screen flashes a message to confirm your preset has been saved. If Action = Save + Exit, Metropolix exits the SAVE screen. If Action = Save, then the SAVE screen remains active.

   NOTE 1: If you try to save to a Preset location for which a preset already exists (i.e. a brightly lit button), you will be asked to confirm whether or not you wish to overwrite the existing Preset. If you save to a Preset location that's currently empty, the Preset will be saved without requiring confirmation.

NOTE 2: You cannot save presets if Metropolix's [Preset Chain playback](#) is currently enabled. Nor can you save a preset while Metropolix is waiting to [load](#) a queued preset.

Clearing Presets

1. Press the **ALT** button followed by the **SAVE** (Stage 2) button to access the SAVE screen.

2. Press the encoder to toggle the ACTION value between 'Save' and 'Clear'. In this case, because you are *CLEARING* a patch, make sure the parameter is set to 'Clear.'

3. Turn the encoder to select the PRESET BANK containing the preset you wish to clear.

    Banks are named by color. Selecting a bank causes all 8 Stage buttons to light with the chosen color. Each of the 8 Stage buttons corresponds to a Preset location in that bank. Brightly lit Stage buttons contain presets. Dimly lit Stage buttons are empty. A flashing Stage button indicates the most recently saved preset (if you don't switch banks).

4. Press the Stage button (1-8) that corresponds to the preset you wish to clear.

    The screen flashes a message to confirm your preset has been saved.

NOTE: If you want to ***all*** presets simultaneously, you can do this one of two ways:

*   Access the [Factory Menu](#) and select the Clear all Presets option, or...

*   … turn off power to Metropolix, then press and hold the Stage 2 (SAVE) button while turning the power back on.

OUT A & B

The third and fourth Stage buttons in ALT Mode are used to assign a function to Metropolix's **OUT A** and **OUT B** jacks. Specifically, for each output, you can assign the type of signal sent to the output jack, and the track from which the signal is sent.

There are two main parameters on each of the OUT (**A** and **B**) assignment screens:

● OUTPUT <n> : This parameter contains a list of signal types that can be sent to the **A** (or **B**) output jack. Output options are:

Ctrl 1 ±	Uses the **CTRL 1** knob to send a ±5V signal to the designated OUT jack. At the knob's noon (straight up) position, 0V is sent to the OUT. Turning the knob CW from noon sends increasingly greater positive voltages (up to a maximum of +5V). Turning the knob CCW from noon sends increasingly greater negative voltages (bottoming out at -5V).
Ctrl 1 +	Uses the **CTRL 1** knob to send a 0-5V signal to the designated OUT jack. When fully CCW, the knob sends 0V to the OUT. Turning the knob CW sends increasingly greater positive voltages (up to a maximum of +5V).
Ctrl 2 ±	Uses the **CTRL 2** knob to send a ±5V signal to the designated OUT jack. At the knob's noon (straight up) position, 0V is sent to the OUT. Turning the knob CW from noon sends increasingly greater positive voltages (up to a maximum of +5V). Turning the knob CCW from noon sends increasingly greater negative voltages (bottoming out at -5V).
Ctrl 2 +	Uses the **CTRL 2** knob to send a 0-5V signal to the designated OUT jack. When fully CCW, the knob sends 0V to the OUT. Turning the knob CW sends increasingly greater positive voltages (up to a maximum of +5V).
CV	Sends the CV Lane values from the track selected by the OUTPUT ASSIGN parameter. This is the default setting (on Track 1) for OUT **A**.

First Pulse	Sends a Reset trigger based from the track selected by the OUTPUT ASSIGN parameter. This is the default setting (on Track 1) for OUT **B**.

'First Pulse' means a trigger is sent on the first clock pulse of a sequence. Each time the sequence resets, the trigger is re-sent on the first clock pulse of the reset sequence. Note that a sequence must have a Pulses length other than 'Auto' (as set with the **LEN** button), otherwise the pulse is sent only when a RESET is triggered manually (or via an external input).

For example, a four-stage, four-pulse Linear sequence plays four single-pulse stages (1 > 2 > 3 > 4), then resets back to Stage 1. 'First Pulse' would always send a trigger on the first clock pulse of Stage 1.

If a Reset is triggered manually (either by pressing the **RESET** button or sending a trigger to the RESET jack), it will always send a trigger to any output assigned to 'First Pulse' (unless the Track's Global Reset option is set to 'Off' in the TRACK MENU).

Last Pulse	Sends a Reset trigger based from the track selected by the OUTPUT ASSIGN parameter.

'Last Pulse' means a trigger is sent on the last clock pulse of the last stage in a sequence. Each time the sequence resets, the trigger is sent on the final clock pulse prior to it resetting. Note that a sequence must have a Pulses length other than 'Auto' (as set with the **LEN** button), otherwise the pulse cannot fire.

For example, a four-stage, four-pulse Linear sequence plays four single-pulse stages (1 > 2 > 3 > 4), then resets back to Stage 1. 'Last Pulse' would always send a trigger on the last clock pulse (Stage 4 in this case).

*NOTE: Because this option is designed to trigger a reset signal **before** the actual reset occurs, pressing the RESET button (or sending a trigger to the RESET jack) will not trigger a Reset on the output (unless it happens to coincide with the last pulse).*

MOD Clock	Outputs a clock signal derived from the MOD Lane, which you select with the OUTPUT ASSIGN parameter.
Mod	Uses a MOD Lane as the signal source. Once you select this option, use the OUTPUT ASSIGN parameter to select which of the eight MOD Lanes is sent to the output.

New Stage	Sends a trigger on the first clock pulse for each new stage that plays in the track selected by the OUTPUT ASSIGN parameter.
Reset	Sends a trigger signal each time Metropolix globally resets (such as when the number of [Total Pulses](#) (if set) is reached; or a new link is loaded in a [Preset Chain](#); or a manual global [reset](#) is triggered; etc.
Root	Sends the Root note's pitch value (conforming to V/oct format) from the track selected by the OUTPUT ASSIGN parameter. The Root note is set on the SCALE screen.
Run	Outputs a high gate (+5V) when the track selected by the OUTPUT ASSIGN parameter is running. Output 0V when the track is stopped.
Slider (0-5V)	Outputs a voltage based on the current stage's PITCH slider position, with 0V being output at a slider's bottom, and +5V at its top. Nothing that affects pitch (i.e. scale, accumulation, per-stage pitch overrides, etc) has any effect on the voltage, nor does the Track Menu's Slider Octaves and Slider Dir. settings. Output always ranges between 0V and 5V based entirely on the position of each PITCH slider.
Slider (Range)	Similar to the Slider (0-5V) assignment (detailed above), in that the OUT voltage is based on the current stage's PITCH slider position. Only in this case, the Track Menu's Slider Octaves and Slider Dir. settings affect the voltage range and orientation of the PITCH sliders. With this assignment, the PITCH slider voltage is related to the Slider Octaves setting, so if Slider Octaves = 4, then the range of the PITCH slider is 0V - 4V. If Slider Octave = 3, then the range of the PITCH slider is 0V - 3V; etc. If Slider Dir. = Inverted, then 0V is at the top of the slider, rather than the bottom. Nothing else that affects pitch (i.e. scale, accumulation, per-stage pitch overrides, etc) has any effect on the voltage.
Velocity	Outputs a velocity voltage derived from the track selected by the OUTPUT ASSIGN parameter. Use the Velocity parameter in the [Track Menu](#) to set a track's overall velocity. It can be a default static level (which can be further modulated using the **CTRL** knobs; **AUX** inputs, or a **MOD** Lane), or it can be derived from the Track's **CV** Lane).

- OUTPUT ASSIGN : This parameter displays the Track number (or MOD Lane) whose signal is sent to the **A** (or **B**) OUT jack. It is set by 1) pressing the encoder to move the ◄?► indicator next to the OUTPUT ASSIGN parameter (activating it), then 2) rotating the encoder to set the source of the signal, then 3) pressing the encoder to apply your selection.

    - If OUTPUT <n> is assigned to 'Ctrl <n>' or 'Run', this parameter is global, and no OUTPUT ASSIGN settings are available.

    - If OUTPUT <n> is assigned to 'Mod', this parameter selects which of the eight MOD Lanes is the output source.

    - If OUTPUT <n> is assigned to a source other than 'Ctrl <n>', 'Run' or 'Mod', this parameter selects which of the two Tracks is the output source.

NOTE: If you assign the Trk Out Swap *parameter to a* [CTRL knob](#) *or an* [AUX input or MOD Lane](#)*, then any Track Assignments will "swap" when a high gate initiates the Track Out Swap feature. For example, if you assigned a TRK 1 parameter to OUT A and TRK 2 parameter to OUT B, then* Trk Out Swap *would "swap" the assignments, such that the TRK 1 parameter is sent to OUT B; and the TRK 2 parameter is sent to OUT A.*

OUT Assignments In Use:

1. Press the **ALT** button followed by the A (Stage 3) button (or the B (Stage 4) button) to open the OUT A (or OUT B) Assignment Screen.

```
┌OUTPUT A          ┐
◄?►            CV┘
OUTPUT ASSIGN
  ●      Trk 1 ＞ Out A
TRK 1 ············· SKIP ⊓
```

2. Press the encoder to toggle between editing the OUTPUT <n> and OUTPUT ASSIGN parameters.

3. With the OUTPUT <n> parameter active (and the ◄?► indicator beside it), turn the encoder to select which signal type you wish to send to the output.

   A question mark (?) follows the name of each option, indicating you must press the encoder to confirm it. A (?) does not appear next to the name of the currently applied option.

4. Press the encoder to confirm your choice.

5. With the OUTPUT ASSIGN parameter active (and the ◄?► indicator beside it), turn the encoder to select which Track (or MOD Lane) is the source of the OUTPUT <n> signal.

   Specifically, if you selected any OUTPUT <n> parameter other than 'Mod', 'Run' or a CTRL <n> knob, turning the encoder selects the source track. If OUTPUT <n> = Mod, turning the encoder selects one of eight MOD Lanes as the source. If OUTPUT <n> = Run (or CTRL <n>), the source is global and the output assignment can not be edited.

   A question mark (?) follows the assignment option, indicating you must press the encoder to confirm it. A (?) does not appear next to the name of the currently applied option.

6. Press the encoder to confirm your choice.

7. To reset all Output Assignment parameters back to their default values, long-press the encoder.

CLK

The fifth Stage button in ALT Mode is used to configure Metropolix's **CLK OUT** jack. Pressing it opens the CLK output assignment screen, which contains two parameters:

- CLK OUT : This divides Metropolix' global clock source (as set with the **BPM** button) by a factor of /1 to /256, prior to sending it to the **CLK OUT** jack.

  For example, if the global input clock runs at a rate that generates sixteenth notes, then a CLK OUT of '/1' means the clock output also generates a trigger every sixteenth note; a division of '/2' means the clock output generates a trigger every eighth note (2 sixteenth notes); a division of '/3' means the clock output generates a trigger every dotted eighth note (3 sixteenth notes); etc.

- CLK OFFSET : This offsets a divided clock output by the selected number of clock pulses. The range of available offsets is one less than the number of clock divisions.

  For example, if the global input clock generates sixteenth notes and CLK OUT is set to /4, then the output clock generates quarter notes, and the available CLK OFFSET options are 0, 1, 2 and 3 — each shifting the clock output a pulse later in time (as shown below):

In Use:

1. Press the **ALT** button followed by the **CLK** (Stage 5) button to open the CLOCK OUT configuration screen.

2. Press the encoder to toggle between editing the CLK OUT and CLK OFFSET parameters.

3. With the CLK OUT field active, turn the encoder to set the desired output clock division (from /1 to /256).

4. With the CLK OFFSET field active, turn the encoder to set the desired clock offset (from '0' to 'one less than the CLK OUT value').

5. To reset all **CLK** parameters back to their default values, long-press the encoder.

MX

The sixth Stage button in ALT Mode is used to route signals to outputs on an optional expander module, which is connected to the Metropolix via the I2C jack on its back panel (as described earlier in Connecting an Optional Expander Module).

"MX" is an acronym for "**M**etropolix e**X**pander," and Metropolix supports use of either the **Gx** or **Qx** gate expander modules. Either of these expanders adds additional gate, clock, reset and run outputs to the Metropolix, and operates in one of seven modes, selectable via this button.

```
 MX - EXPANDER      GATE
◄?►    Transport A
MX ASSIGN
       Global/All > MX
TRK 1 ············· SLIDE
```

There are two main parameters on the MX output assignment screen:
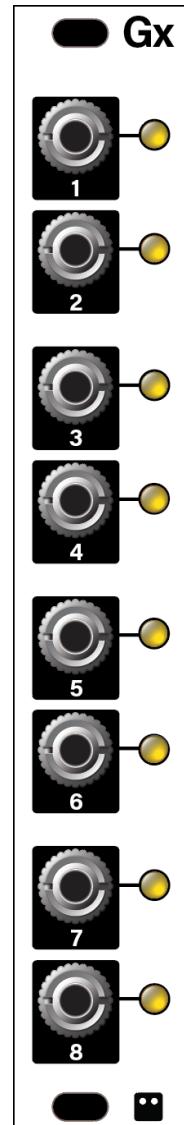
- MX - EXPANDER : This sets the source of the gates being sent to the **Gx/Qx** outputs. The following options are available:

  Transport A :   **Gx/Qx** jacks 1-8 will output the following global signals, and the MX ASSIGN parameter is not used.

  1 : Run - High Gate while sequence plays
  2 : Reset - Global Reset trigger signal
  3 : /1 Clock
  4 : /2 Clock
  5 : /4 Clock
  6 : /4 Clock (w/ +2 Offset)
  7 : /8 Clock
  8 : /16 Clock

  Transport B :   **Gx/Qx** jacks 1-8 will output the following signals, and the MX ASSIGN parameter is not used.

  1 : Run - High Gate while sequence plays
  2 : Reset - Global Reset trigger signal
  3 : /1 Clock
  4 : /3 Clock
  5 : /4 Clock
  6 : /5 Clock
  7 : /8 Clock
  8 : /16 Clock

Transport C :   **Gx/Qx** jacks 1-8 will output the following signals, and the MX ASSIGN parameter is not used.

1 : Run - High Gate while sequence plays
2 : Reset - Global Reset trigger signal
3 : x4 Clock
4 : x2 Clock
5 : x1 Clock
6 : /2 Clock
7 : /4 Clock
8 : /8 Clock

Prob Clocks: **Gx/Qx** jacks 1-4 will output a x1 clock, but with decreasing probability. Jacks 5-8 will output a /2 clock, also with decreasing probability.

1 : x1 Clock (100% probability)
2 : x1 Clock (75% probability)
3 : x1 Clock (50% probability)
4 : x1 Clock (25% probability)
5 : /2 Clock (100% probability)
6 : /2 Clock (75% probability)
7 : /2 Clock (50% probability)
8 : /2 Clock (25% probability)

Mod Clocks :   When set to 'Mod Clocks,' **Gx/Qx** outputs 1-8 will correspond to the 8 MOD Lane clocks, as configured for each lane using the CLOCK DIV parameter on the DIV screen.

1 : MOD Lane 1 CLOCK DIV
2 : MOD Lane 2 CLOCK DIV
3 : MOD Lane 3 CLOCK DIV
4 : MOD Lane 4 CLOCK DIV
5 : MOD Lane 5 CLOCK DIV
6 : MOD Lane 6 CLOCK DIV
7 : MOD Lane 7 CLOCK DIV
8 : MOD Lane 8 CLOCK DIV

Stage Num :   When set to 'Stage Num,' each output (1-8) on the **Gx/Qx** transmits a gate signal that is high for as long as the correspondingly numbered stage is playing on the Track selected by the MX ASSIGN parameter. These gate outputs are not affected by Metropolix' Gate Length settings.

This option lets you trigger/gate external events that happen only when certain stages play back.

If the sequencer is not running, but Loopy is turned on, then outputs on the **Gx/Qx** play individual stage gates when you 'play' the stage buttons using the [Stage Player](#) feature in Loopy.

NOTE: If the selected Track is muted, MX Stage Num gates are also muted.

Mod Stage Num : When set to 'Mod Stage Num', each output (1-8) on the **Gx/Qx** transmits a gate signal that is high for as long as the correspondingly numbered stage is playing on the MOD Lane selected by the MX ASSIGN parameter.

These gate outputs are not affected by Metropolix' Gate Length settings. The 'Mod Stage Num' setting enables you to trigger/gate external events that are synchronized with a particular stage number on a particular MOD Lane.

NOTE: If a MOD Lane is muted, MX Mod Stage Gates are also muted.

● MX ASSIGN : This parameter displays the Track number (or MOD Lane) that is the source of the **Gx/Qx** outputs. It is set by 1) pressing the encoder to activate the parameter (moving the ◄?► indicator beside the MX ASSIGN value), then 2) rotating the encoder to select the source, then 3) pressing the encoder to apply your selection.

The parameter label and selection options change depending on the selection you made in the MX EXPANDER parameter field. Specifically:

If MX EXPANDER = 'Transport A, B or C' or 'Prob Clocks,' then there is no MX ASSIGN option, since the outputs are derived globally, rather than per-track or MOD Lane.

If MX EXPANDER = 'Mod Clocks" then there is no MX ASSIGN option, since the CLOCK DIV setting for each of Metropolix' eight MOD Lanes is used as the source.

If MX EXPANDER = 'Stage Num", then rotating the encoder (when the MX ASSIGN parameter is active) selects which Track is used as the Stage number source.

If MX EXPANDER = 'Mod Stage Num', then rotating the encoder (when the MX ASSIGN parameter is active) selects which of the 8 MOD Lanes is the **Gx/Qx** output source.

NOTE: If you assign the Trk Out Swap parameter to a [CTRL knob](#) or an [AUX input or MOD Lane](#), then any MX TRK Assignments will "swap" when a high gate initiates the Track Out Swap feature.
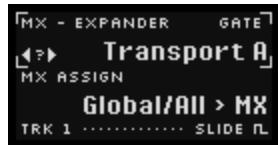
In Use:

Before you can use an optional expander module, you must first connect it to both power and to the 6-pin I2C connector on Metropolix, as described in <u>Connecting an Optional Expander Module</u>.

IMPORTANT !!! : Always power down both the Mx and Metropolix before connecting or disconnecting an I2C cable between them.

1. Press the **ALT** button followed by the `MX` (Stage 6) button to open the MX (Metropolix Expander) output assignment screen.

```
┌MX - EXPANDER     GATE┐
│◄?►   Transport A     │
│MX ASSIGN             │
│    Global/All > MX   │
│TRK 1 ············ SLIDE ⊓│
```

2. Press the encoder to toggle between editing the MX EXPANDER and MX ASSIGN parameters.

3. With the MX EXPANDER parameter active (and the ◄?► indicator beside it), turn the encoder to select which type of signal (described above) that you want sent from the **Gx/Qx** expander.

   A question mark (?) follows the name of each option, indicating you must press the encoder to confirm it. A (?) does not appear next to the name of the currently applied option.

4. Press the encoder to confirm your choice.

5. With the MX ASSIGN parameter active (and the ◄?► indicator beside it), turn the encoder to select which Track (or MOD Lane) is the source of the MX signal.
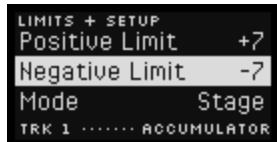
   A question mark (?) follows the assignment option, indicating you must press the encoder to confirm it. A (?) does not appear next to the name of the currently applied option.

   *NOTE: The MX ASSIGN **parameter is not available if** MX EXPANDER **is set to** 'Transport A, B, or C' **or** 'Prob Clocks' **or** 'Mod Clocks'.*

6. Press the encoder to confirm your choice.

7. To reset all output assignment parameters back to their default values, long-press the encoder.

LIM (ACCUM OPTIONS)

The seventh Stage button in ALT Mode opens a menu for setting various accumulator options, such as positive and negative transposition limits; whether the accumulation applies to the stage or the track; the order traversed by the accumulator; whether the accumulation is bipolar or unipolar; and whether accumulations are reset manually or automatically.

```
LIMITS + SETUP
Positive Limit      +7
Negative Limit      -7
Mode              Stage
TRK 1 ....... ACCUMULATOR
```

Settings on the LIM screen work in conjunction with the per-stage ACCUM function (accessed by pressing **EDIT** + **ACCUM**), and contain the following parameters:

Positive Limit (1 - 28) Sets how high (in scale degrees) a stage's cumulative transposition is allowed to rise above the starting pitch. The range is from +1 to +28 scale degrees (which, for the typical 7-note scale, is 4 octaves).

Negative Limit (1 - 28) Sets how low (in scale degrees) any stage's cumulative transposition is allowed to fall below the starting pitch. The range is from -1 to -28 scale degrees (which, for the typical 7-note scale, is 4 octaves).

Mode Controls whether a Stage's ACCUM value affects only that Stage, or the entire Track.

*NOTE: if a **CTRL** knob is assigned to the Accum Mode destination, it will control the Mode directly, and the menu item is greyed out.*

Stage The TRANSPOSE AMOUNT assigned to a stage on the **ACCUM** screen governs *only* the accumulation of that stage. It has no effect on the accumulations applied to any other stages in the sequencer. This is the method used by the original Metropolix, and is ideal for spicing up a sequence with an occasional accumulation on a stage or two.

Example: Assume you had a 4-stage linear sequence, assigned to a C-major scale with PITCH values of C, D, E, F. Without accumulation, the sequence would play:

C D E F | C D E F | C D E F | C D E F | etc…

However, if you set the **ACCUM** screen's TRANSPOSE AMOUNT to "+1" on the first stage, and set Mode = Stage, then the sequence would play:

C D E F | D D E F | E D E F | F D E F | etc…

Track	A single stage's **ACCUM** value affects every stage in the track.

Example: For example, assume you had a 4-stage linear sequence, assigned to a C-major scale with PITCH values of C, D, E, F. Without accumulation, the sequence would play:

C D E F | C D E F | C D E F | C D E F | etc…

However, if you set the **ACCUM** screen's TRANSPOSE AMOUNT to "+1" on the first stage, and set Mode = Track, then the sequence would play:

C D E F | D E F G | E F G A | F G A B | etc..

Experiment with setting different TRANSPOSE AMOUNTS (both positive and negative) on different stages, and use some of the alternative play <u>ORDER</u> options (including the generative orders) for some mind-blowing generative sequences.

Order	This setting determines what happens once the pitch accumulation reaches its Positive Limit (or Negative Limit), and the path it takes to get there.
Wrap	Pitch accumulates in the direction set by the stage's TRANSPOSE AMOUNT. When the accumulated pitch reaches its Positive Limit (or Negative Limit), the next pass wraps back to either:
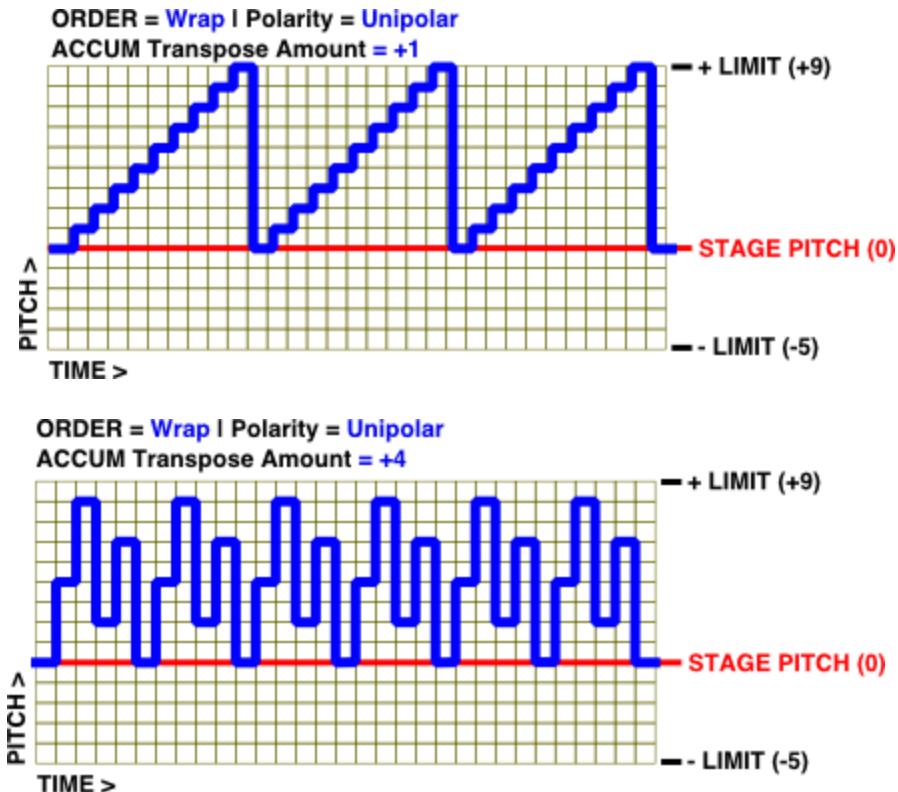
1) The stage's starting pitch (if the LIM menu's Polarity = Unipolar)
   or
2) The pitch defined by the opposite Limit (if the LIM menu's Polarity = Bipolar).

Examples of each are shown on the following page.

UNIPOLAR WRAP: If the LIM menu's Polarity = Unipolar, and you set a *positive* TRANSPOSE AMOUNT, accumulations will accrue in an upward direction beginning at the stage pitch; rise to the Positive Limit, then wrap back to the stage pitch and continue to accumulate. No pitches below the stage pitch will occur.

The following examples Illustrate a unipolar wrap with two different TRANSPOSE AMOUNT values (+1 and +4).
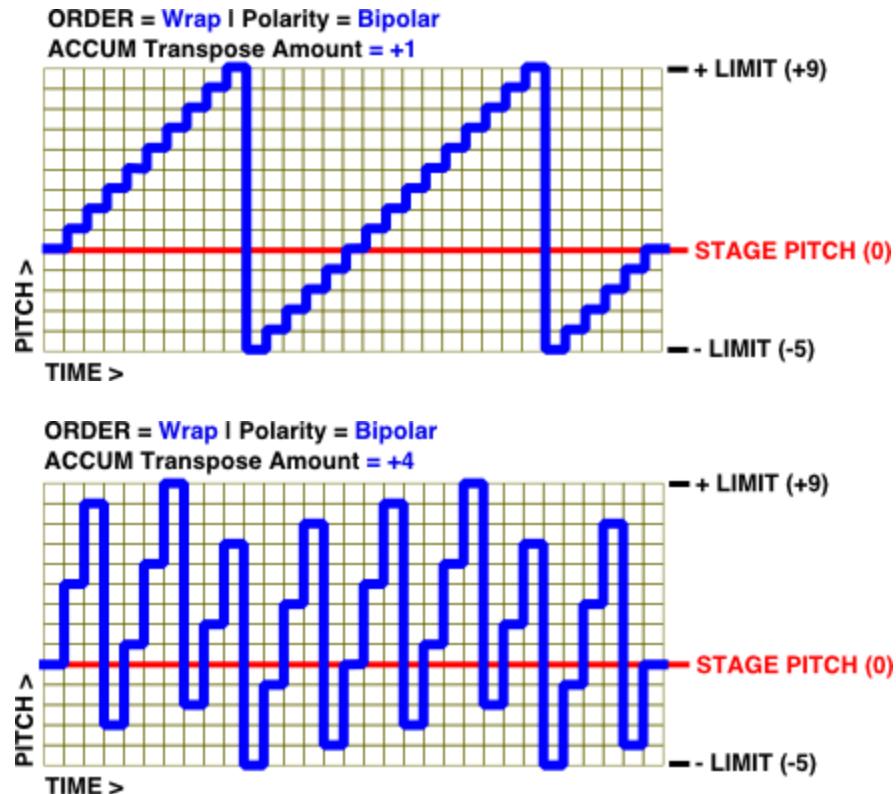
If you set a *negative* TRANSPOSE AMOUNT, accumulations will accrue in a downward direction beginning at the stage pitch; fall to the Negative Limit, then wrap back to the stage pitch and continue accumulating. No pitches above the stage pitch will occur.

BIPOLAR WRAP: If the LIM menu's Polarity = Unipolar, and you set a *positive* TRANSPOSE AMOUNT, accumulations will accrue in an upward direction beginning at the stage pitch; rise to the Positive Limit, then wrap back to the pitch defined by the opposite Negative Limit, and continue the accumulation from there. Unlike Unipolar, pitches occur both above and below the stage pitch.

The following examples Illustrate a bipolar wrap with two different TRANSPOSE AMOUNT values (+1 and +4).

Pendulum   Pitch accumulates in the direction set by the stage's TRANSPOSE AMOUNT. When the accumulated pitch reaches its Positive Limit (or Negative Limit), it reverses direction and continues accumulating in the opposite direction until it reaches either:
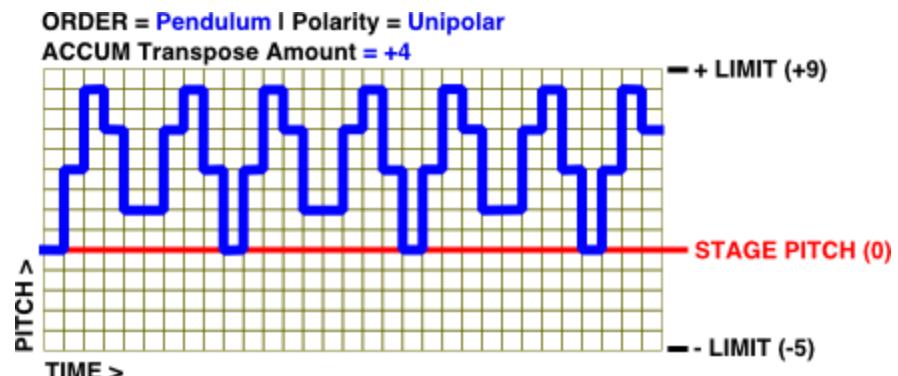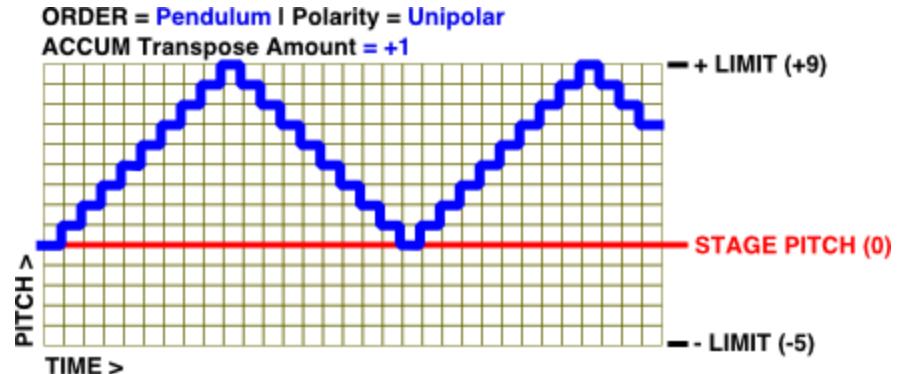
1) The stage's starting pitch (if the LIM menu's Polarity = Unipolar)
   or
2) The pitch defined by the opposite Limit (if the LIM menu's Polarity = Bipolar).

Examples of each are shown on the next page:

UNIPOLAR PENDULUM: If the LIM menu's Polarity = Unipolar, and you set a *positive* TRANSPOSE AMOUNT, accumulations will accrue in an upward direction beginning at the stage pitch; rise to the Positive Limit, then reverse direction and continue accumulating downward until the stage's starting pitch is reached, then the accumulation reverses again. No pitches below the stage pitch will occur.

The following examples Illustrate a unipolar pendulum with two different TRANSPOSE AMOUNT values (+1 and +4).
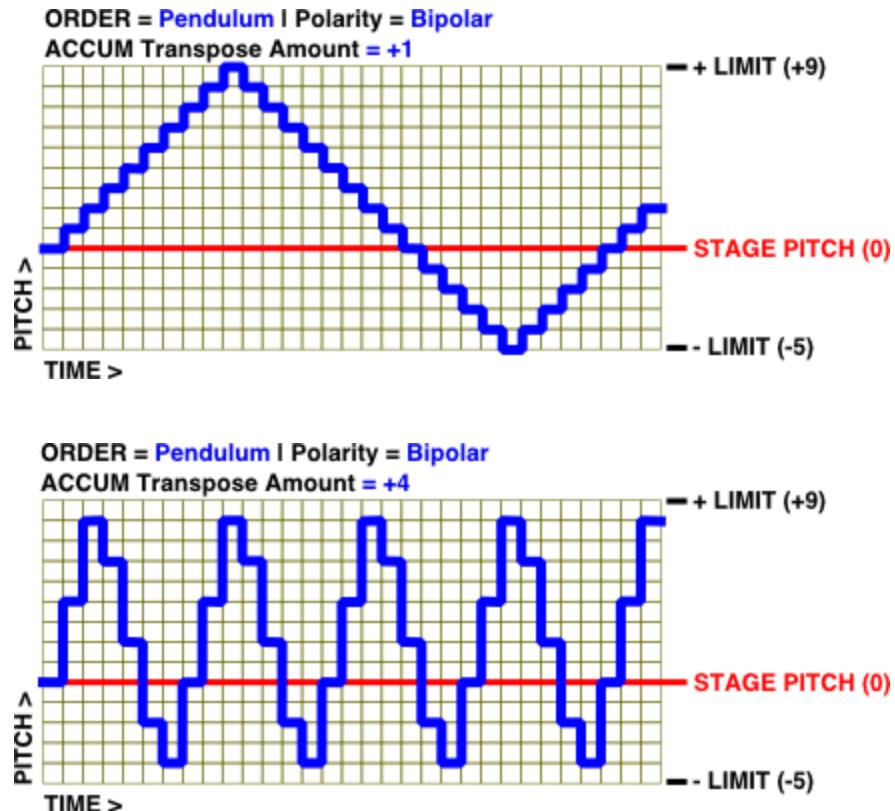
If you set a *negative* TRANSPOSE AMOUNT, accumulations will accrue in a downward direction beginning at the stage pitch; descend to the Negative Limit, then reverse direction and ascend back to the stage pitch, then reverse again. No pitches above the stage pitch will occur.

BIPOLAR PENDULUM: If the LIM menu's Polarity = Bipolar, and you set a *positive* TRANSPOSE AMOUNT, accumulations will accrue in an upward direction beginning at the stage pitch; rise to the Positive Limit, then reverse direction and continue accumulating downward until the Negative Limit is reached, then the accumulation reverses again. Unlike Unipolar, pitches occur both above and below the stage pitch.

The following examples Illustrate a bipolar pendulum with two different TRANSPOSE AMOUNT values (+1 and +4).

Random   The accumulations occur in a pseudo-random pattern known as a "drunken walk." Each time the sequence accumulates, it has a 50% chance of moving in the direction set by the stage's TRANSPOSE AMOUNT; a 30% chance of moving in the opposite direction; and a 20% chance of not accumulating.

The accumulation distance of each step is randomized between 1 scale degree and the value set by the stage's TRANSPOSE AMOUNT.

This results in an accumulation that generally trends in the direction set by the TRANSPOSE AMOUNT, only 'drunkenly' so.
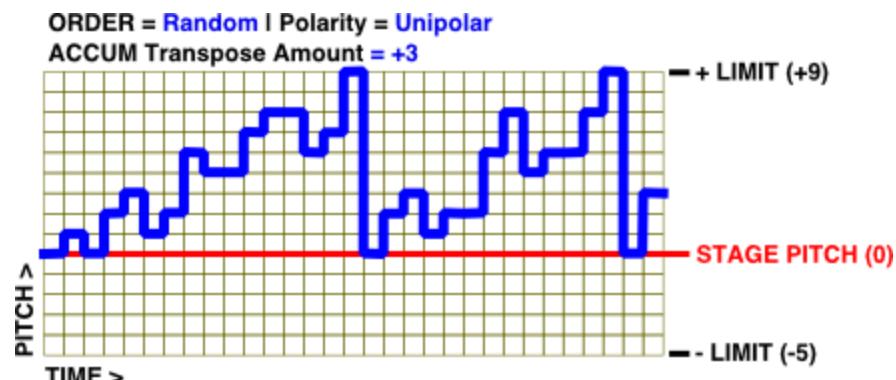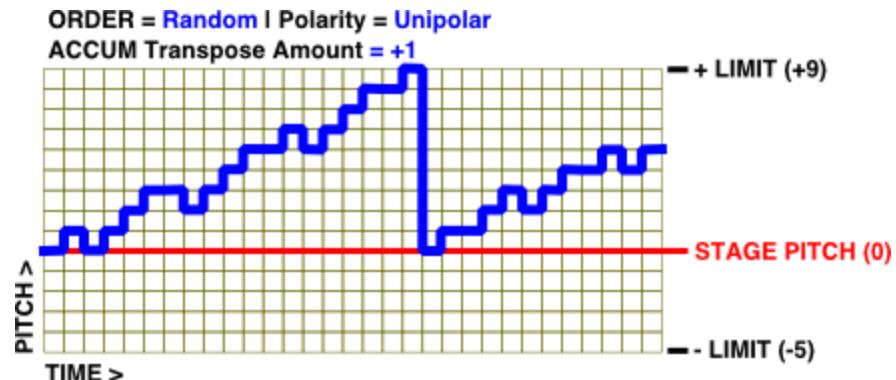
A Random accumulation will constrain pitches to either:

1) A unipolar pitch range between the starting pitch and one of the two pitch Limits (if the LIM menu's Polarity = Unipolar)

or

2) A bipolar range defined by the both pitch Limits (if the LIM menu's Polarity = Bipolar).

Examples of each are shown below:
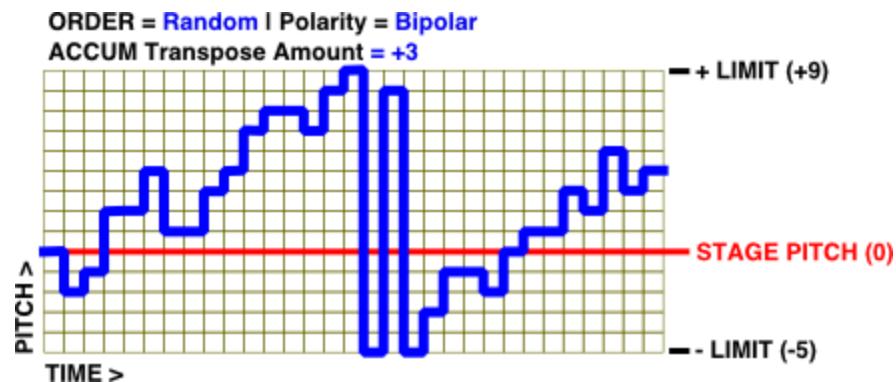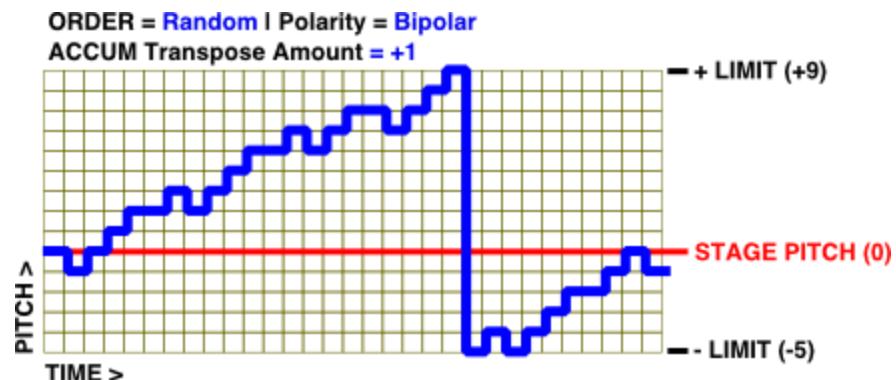
UNIPOLAR RANDOM: The following examples illustrate a unipolar random sequence with two different TRANSPOSE AMOUNT values (+1 and +3).

TIP: You can achieve something similar to pure, in-scale randomization if you set the stage's TRANSPOSE AMOUNT to the same value as the accumulation Limits — albeit with a 20% chance to replay the last pitch.
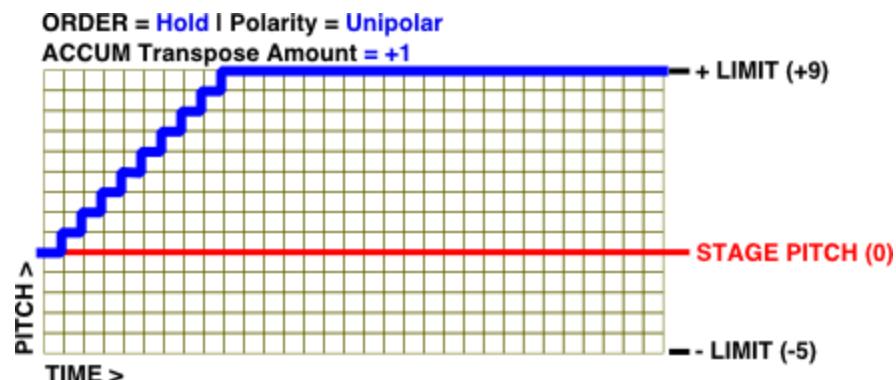
BIPOLAR RANDOM: The following examples illustrate a bipolar random sequence with two different TRANSPOSE AMOUNT values (+1 and +3).

ORDER = Random | Polarity = Bipolar
ACCUM Transpose Amount = +1

— + LIMIT (+9)

— STAGE PITCH (0)

— - LIMIT (-5)

PITCH >

TIME >

ORDER = Random | Polarity = Bipolar
ACCUM Transpose Amount = +3

— + LIMIT (+9)

— STAGE PITCH (0)

— - LIMIT (-5)

PITCH >

TIME >

NOTE: Since the 'drunken walk' can extend both above and below the stage pitch, and accumulations wrap to the opposite limit (rather than back to the stage pitch), this can result in some wider pitch swings — particularly when the 'walk' occurs near a limit.

Hold   When the accumulated pitch reaches its Positive Limit (or Negative Limit), it stays at that value until the accumulator is reset, which can be either an automatic or manual action, as described below.
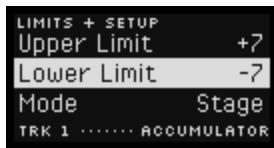
ORDER = Hold | Polarity = Unipolar
ACCUM Transpose Amount = +1

— + LIMIT (+9)

— STAGE PITCH (0)

— - LIMIT (-5)

PITCH >

TIME >

Polarity		Sets whether accumulated pitches range between both limits (bipolar), or between the stage pitch and one of the limits (unipolar).

Polarity Sets whether accumulated pitches range between both limits (bipolar), or between the stage pitch and one of the limits (unipolar).

*NOTE: if a **CTRL** knob is assigned to the Accum Polar destination, it will control the Polarity value directly, and the menu item is greyed out.*

Unipolar Pitches can accumulate only between the Stage Pitch and either the Positive Limit **or** Negative Limit (depending on whether the Stage Accumulator's TRANSPOSE LIMIT is set to a positive or negative number, respectively). Examples of Unipolar (vs. Bipolar) operations are shown in the Order parameter discussion, above.

Bipolar Pitches can accumulate on either side of the Stage Pitch, moving between the values defined by the Positive Limit **and** Negative Limit. Examples of Bipolar (vs. Unipolar) operations are shown in the Order parameter discussion.

Reset Manual Accumulations will continue to accumulate until you *manually* reset them in one of several ways, such as: 1) pressing the **RESET** button; 2) sending a trigger into a jack configured to be a RESET jack; or 3) resetting the sequencer via the **RUN** button (if Run Btn = Run/Stop in the **SETUP MENU**).

Auto Accumulations reset any time the sequence resets. This can be done using any of the manual means (discussed above), or it can be done automatically by setting the **LEN** screen's Pulses count to anything other than 'Auto.' In this case, the accumulations will reset after the selected number of pulses.

Aux/Mod Accumulations reset *only* when triggered via an **AUX** (**X**, **Y** or **Z**) input or **MOD** Lane assigned to the Accum Reset destination. Sequencer resets (either manual or automatic) will not reset the accumulator — only an Accum Reset received by an **AUX** input or generated by a **MOD** Lane will reset the accumulator.

In Use:

1. Press the button (**TRK 1** or **TRK 2**) corresponding to the track whose accumulation options you wish to edit.

2. Press the **ALT** button followed by the **LIM** (Stage 7) button to open the LIM screen.

3. Turn the encoder to select which parameter you wish to edit.

4. Press the encoder.

    If a parameter has only two choices, such as Mode or Reset, pressing the encoder toggles between the choices.

    If a parameter has multiple choices, pressing the encoder highlights the value field. In this case, turn the encoder to select a new value, then press the encoder to apply the selection and return to the menu.

5. To reset any parameter back to its default value, select it in the menu, then long-press the encoder.

TYPE (CV TYPE)

The eighth Stage button in ALT Mode is used to set whether the TRK 1 or TRK 2 CV Lane acts as a *gate* CV or as a *continuous* voltage source.

Pressing it opens the CV TYPE screen, which contains a single parameter:

CV TYPE : Selects whether a track's CV lane is a gate pattern or a continuous control voltage, as determined by the two choices:

> **CV Value** : When set to this value, each stage in a track's CV Lane (accessed by pressing **EDIT** + **CV**) can be set to a voltage between ±5V, along with an option for determining how that voltage is reached (step vs ramp), as described in **CV**, earlier in the manual.

> **Gate Toggle** : When set to this value, each stage in a track's CV Lane (accessed by pressing **EDIT** + **CV**) can be set to transmit either a high (+5V) gate or a low (0V) gate, as described in **CV**, earlier in the manual.

In Use:

1. Press the button (**TRK 1** or **TRK 2**) corresponding to the track whose CV TYPE you wish to define.

2. Press the **ALT** button followed by the **TYPE** (Stage 8) button to open the CV TYPE screen.

3. Turn the encoder to select between 'CV Value' and 'Gate Toggle'.

The change is applied immediately, and you will now be able to edit the CV Lane (accessed by pressing **EDIT** followed by the **CV** button).

To reset CV TYPE back to its default setting, long-press the encoder.

THE MOD LANES

Metropolix features eight independent and separate MOD Lanes — each with 8 different voltage stages, and each capable of being routed to either of the two assignable OUT jacks (**A** or **B**), or to many of Metropolix' numerous internal parameters for complex, fluid, and evolving self-modulation.

Each MOD Lanes contains either variable stage voltages or stage gates (depending on the destination of the MOD Lane)

 or

Each MOD lane can have its own playback ORDER, LENgth and clock DIVision, but the three track timing buttons (SWING, SLIDE and GATE) are not used.

Selecting a MOD Lane to Edit

1. Press the **MOD** button.

   The **MOD** button lights indicating all buttons now affect MOD Lane selection and settings.

2. Press the **EDIT** button, followed by the STAGE button (1-8) corresponding to the MOD lane you wish to edit.

   For example, to edit MOD Lane 1, press **EDIT** + **STAGE 1** (SLIDE).
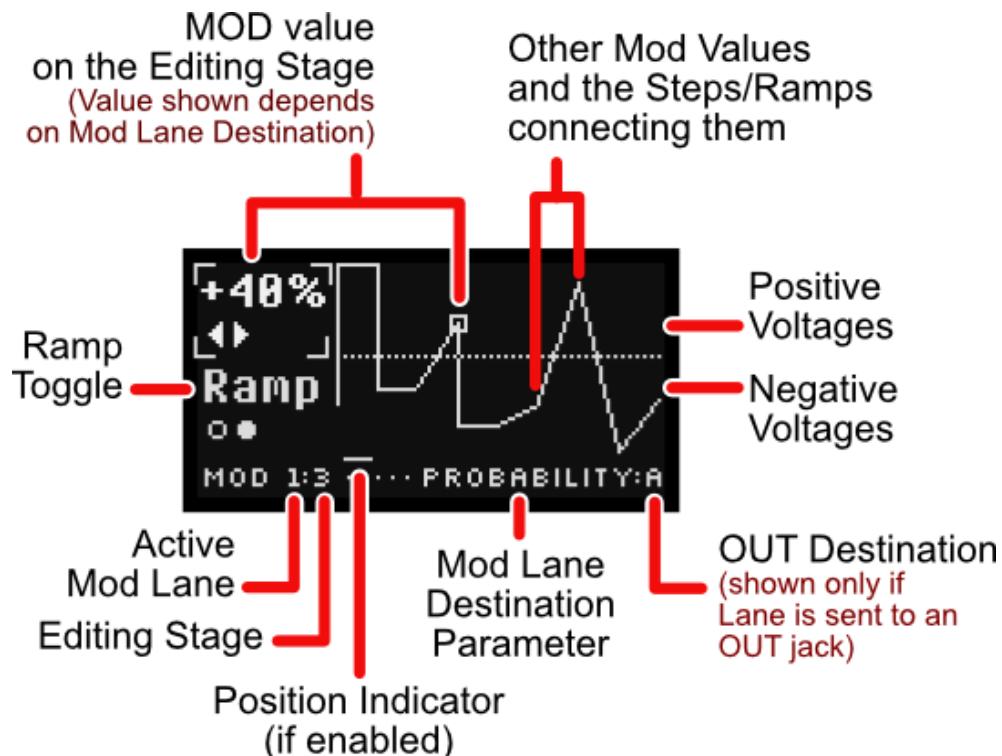
Editing Stage Voltage in a MOD Lane

Each MOD lane has 8 different voltage stages, corresponding to the 8 Metropolix stages. To assign a voltage to each stage in a Mod Lane:

1. As described above, with the **MOD** button lit, press **EDIT** + the STAGE button (1-8) corresponding to the MOD Lane you wish to edit.

2. Press the STAGE button corresponding to the stage you wish to edit.

   For example if you wish to edit the MOD value on Stage 1, press the STAGE 1 (SLIDE) button

   The MOD Lane Edit Screen appears and (unless the MOD lane is currently routed to a gate) it displays an overview of the MOD voltage on all 8 stages, with the larger, upward pointing arrow indicating the stage currently being edited. In addition, a little box demarcates that stage's vertex.

> NOTE: If you have not yet assigned a MOD Lane Destination (discussed in *Assigning a MOD Lane to an Internal Parameter*), or if you assigned it to OUT A or B, the editable MOD Value range is +-5.00 V. If the MOD Lane destination controls a variable parameter (rather than a gated parameter), then the MOD Lane Edit Screen works as shown above. If you've assigned a MOD Lane to a gated destination, the MOD Lane Edit Screen works as described in *Editing Gates in a MOD Lane*.

There are two main parameters available on this screen:

- MOD Voltage : Turn the encoder to set a stage's MOD voltage to a value between ±5V. The displayed value of this voltage may change depending on what, exactly, is being modulated (as described in 'Assigning a Mod Lane to an Internal Parameter', later). For example, if you assign a MOD Lane to 'Pitch Pre,' the MOD Voltage is displayed in semitones (rather than voltage) to make editing easier.

  If you assign a MOD Lane to control a gated parameter, then the MOD Stage screen changes entirely, as discussed in Editing Gates in a MOD Lane.

- Ramp Toggle : Push the encoder to toggle between two different ways that the previous stage's MOD Voltage can transition into this stage's MOD Voltage. Specifically:

  'Step' :   MOD Voltage changes instantly — jumping from the previous stage's value to this stage's value at the beginning of the stage.

  'Ramp' :   MOD Voltage glides smoothly from the previous stage's value to this stage's value over the length of the entire stage — reaching the full voltage at the end of the stage.

3. Turn the encoder to set the desired MOD Voltage for that stage (±5V or other value, depending on destination).

4. Press the encoder to toggle between 'Step' and 'Ramp'.

   NOTE: Hold down the **ALT** button while short-pressing the encoder to set the Ramp type for all 8 stages simultaneously.

5. Repeat Steps 3-4 for any other stages to which you wish to assign a MOD voltage.

Various shortcuts are also available:

- Press-and-hold the **ALT** button to see all vertex markers, not just the current stage's.

- Hold the **ALT** button and turn the encoder to change the MOD voltages across all stages simultaneously.

- Long-press the encoder to reset the current stage's MOD voltage to 0V.

- Hold the **ALT** button and long-press the encoder to reset the MOD voltage to 0V on every stage.

*NOTE: You can mute and unmute individual MOD Lanes by holding down the **LOOPY** button while pressing the MOD Lane button (1-8) corresponding to the lane you want muted. For more information, see Muting Tracks and MOD Lanes, earlier in the manual.*

Editing Gates in a MOD Lane

If you have not yet assigned a MOD Lane Destination (discussed in Assigning a MOD Lane to an Internal Parameter), or if the Mod Lane destination controls a variable parameter (rather than a gated parameter), then the MOD Lane Edit Screen works as discussed above.

However, if you assign a Mod Lane to a gated destination, then Mod Lane Edit Screen displays simple Gate toggles, rather than actual voltages.

In the above example, we have assigned MOD Lane 2 to control the Playback Direction, which is a simple gate function, rather than a continuous voltage.

In this situation, the Mod Lane Edit screen shows a series of on/off switches (one for each of the eight MOD stages). Press a Stage button to enable/disable modulation on the corresponding Stage. When a Stage's circle is white, the MOD Lane will toggle the state of the destination parameter. When a Stage's circle is dark, the MOD Lane will not affect the destination parameter.

For example, if you assign MOD Lane 1 to 'Direction ⌐' then the MOD Stage Edit Screen displays 8 dots. If you press Stage button 5 (making the 5th circle white), then the playback direction of the destination track will reverse every time stage 6 plays.

*SHORTCUT: You can edit all Stages simultaneously. Specifically: A) Hold **ALT** while turning the encoder to rotate/wrap the MOD Lane's gate pattern forward or backward; B) Hold **ALT** while pushing the encoder to invert the pattern ("on" states turn off, and vice-versa); or C) Hold **ALT** while long-pressing the encoder to set the pattern back to its default state. Alternatively (as with other ALT functions), you can press the **ALT** button to enter ALT mode, perform the various ALT actions, then press **ALT** again to exit ALT mode.*

Assigning a MOD Lane to an OUT Jack

Each MOD Lane can have its own destination. You can send a MOD Lane to an output jack, or to an Internal parameter (as described in Assigning a MOD Lane to an Internal Parameter).

To assign a MOD Lane to one of Metropolix' two output jacks, select 'Mod' as the OUTPUT <n> source in either the OUT A or OUT B assignment screen, discussed earlier in OUT A & B. Specifically:

1. Press the **ALT** button followed by the A (Stage 3) button to open the OUT A Assignment Screen (or the B (Stage 4) button to open the OUT B Assignment Screen).

2. Turn the encoder to select 'Mod' as the output source for OUTPUT <n>, then press the encoder to confirm your choice.

    A MOD Lane is now selected as the output jack's source.

3. Press the encoder again to highlight the OUTPUT ASSIGN parameter, and select it for editing.

4. Turn the encoder to select which MOD Lane (1 - 8) you want sent to the output jack, then press the encoder to confirm your MOD Lane choice.
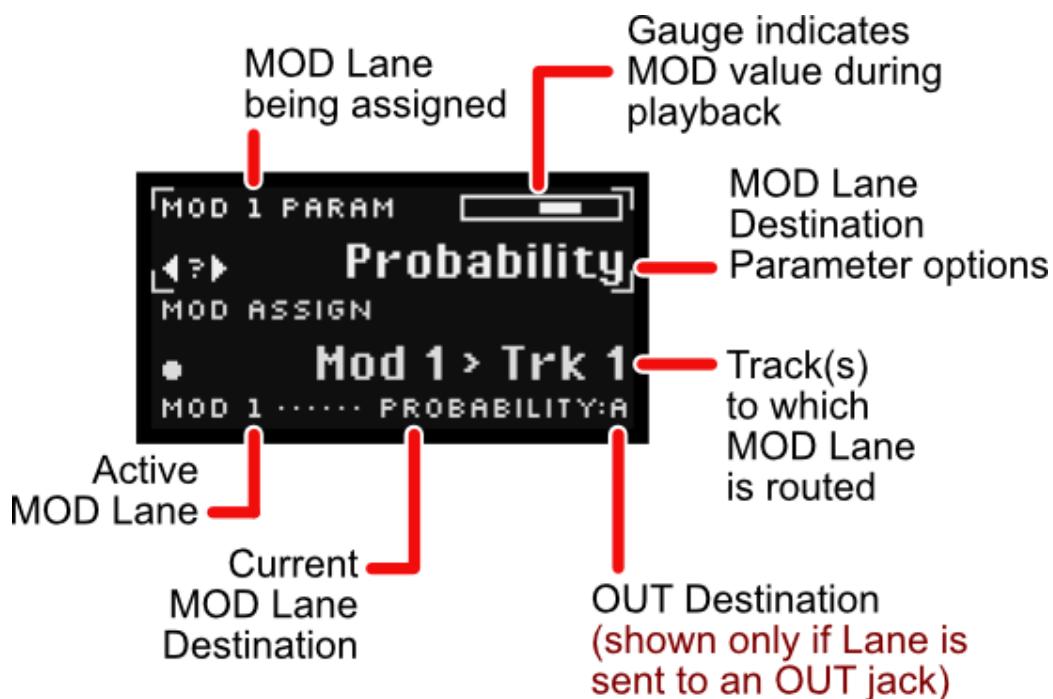
Assigning a MOD Lane to an Internal Parameter

Each MOD Lane can have its own destination. You can send a MOD Lane to an Internal parameter, or to one of Metropolix' two output jacks (**A** or **B**) (as described in Assigning a MOD Lane to an OUT Jack).

To assign a MOD Lane to an internal parameter:

1. Make sure the **MOD** button is lit.

2. Hold down the **EDIT** button then press the Stage button (1 - 8) corresponding to the MOD Lane you wish to route.

3. Press the MOD button to toggle between displaying the MOD Lane Assignment screen and the MOD Lane Editing screen.

   The MOD Lane Assignment screen shows the currently selected MOD Lane's assignment.

At the top of the screen is a small gauge displaying the current stage's modulation value. Bars extending to the right of center indicate positive modulation, while bars extending to the left of center indicate negative modulation. Any modulation assigned to a trigger or gate function will display a gate icon instead, so you always have visible feedback of your modulation effect.

There are two main parameters on the MOD Lane Assignment screen: *MOD Lane Destination Parameter* (MOD PARAM) and *Track(s) to which the MOD Lane is Routed* (MOD ASSIGN).

Turning an encoder edits the active (enclosed) parameter. Pressing the encoder toggles activation to the other parameter for editing.

NOTE: If a MOD Lane is routed to one of Metropolix' two OUT jacks (as described in [Assigning a MOD Lane to an OUT Jack](#)), then a small indicator appears, as shown above.

MOD PARAM :   With the MOD PARAM field active, turn the encoder to select which internal parameter you wish to modulate with the currently selected MOD Lane. Choices are:

None	**Loopy Pulses**	**Reset** (⎍)
Accumulate (⎍)	**Loopy Offset**	**Root**
Accum Reverse (⎍)	**Mute** (⎍)	**Scale (User)**
Accum Invert (⎍)	**Octave**	**Skip Invert** (⎍)
Accum Mode (⎍)	**Pitch Offset**	**Slide** (⎍)
Accum Polar (⎍)	**Pitch Post**	**Slide Amount**
Accum Reset (⎍)	**Pitch Pre**	**Slider Invert** (⎍)
BPM (INT)	**Play Order**	**Slider Range**
Clock In Div	**Probability**	**Stages Len**
Direction (⎍)	**Pulse Count**	**Stage Offset**
Gate Length	**Pulse Div**	**Swing**
Gate Scale	**Pulses Len**	**Trk Out Swap** (⎍)
Loopy (⎍)	**Ratchet**	**Velocity**

The list above indicates Gate and Trigger signals with a gate symbol (⎍), meaning the indicated function will occur when the gate is high (or the leading edge of the trigger signal is detected). Gate or trigger signals must be at least 1.5V to turn on.

See [AUX & MOD DESTINATIONS](#) for a detailed description of each option.

MOD ASSIGN :   This parameter displays which Track(s) you wish to modulate. To set it:

a) Press the encoder to activate editing of the MOD ASSIGN field.

b) Rotate the encoder to set the indicated MOD Lane's destination to either **TRK 1**, **TRK 2**, or **TRK 1+2**.

c) Press the encoder to apply your selection.

4. With the MOD PARAM field active, turn the encoder to select the Metropolix parameter you wish to control with the currently indicated MOD Lane.

5. Press the encoder to confirm your choice.

The MOD Lane destination parameter is set, and your choice is indicated in the Action Display at the bottom of the screen

6. Press the encoder to toggle activation to the MOD ASSIGN field, enclosing it.

7. Turn the encoder to select which Track (**1**, **2**, or **1+2**) you wish to control with the indicated MOD Lane.

8. Press the encoder to confirm your choice.

The MOD Lane will now modulate the assigned parameter on the chosen track(s).

9. To reset a MOD Lane assignment back to its default value (i.e. NO assignment), long-press the encoder.

Assigning Order, Length & Clock Div to MOD Lanes

Each MOD Lane can have its own ORDER, LEN and DIV settings.

To assign an ORDER, LEN or DIV to a MOD Lane:

1. Select a MOD Lane to edit, as described earlier.

2. Press the **ORDER**, **LEN** or **DIV** button to enter the respective editing screen.

3. Use the ORDER screen to set the MOD Lane's playback order (Order) and direction (Dir), as described in ORDER, earlier in the manual.

4. Use the LEN screen to set the MOD Lane's sequence length (in Stages or Pulses), as well as any Offset, as described in LEN (LENGTH), earlier in the manual.

5. Use the DIV screen to set an internal clock divider (CLOCK DIV) as described earlier in DIV. Note that the PULSE COUNT DIV option (which appears on this screen for Tracks 1 & 2), is not available on any MOD Lanes.

6. Continue editing the desired ORDER, LEN and DIV settings for any other Mod Lanes.
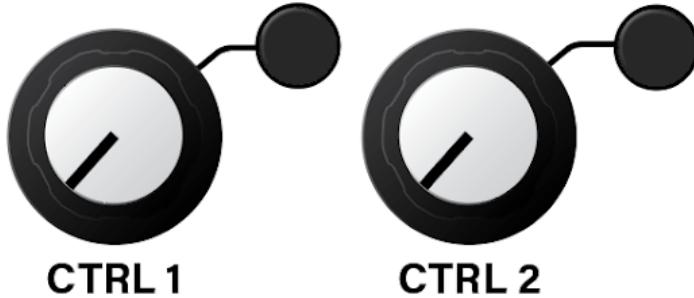
NOTE: The SWING, SLIDE and GATE timings do not apply to the MOD Lanes, and are thus unavailable when editing a MOD Lane.

From this screen, you can press the stage buttons (no modifier) to select the track you want to assign.

CONTROL KNOBS

(SECTION 10)

Metropolix was conceived and designed as a 'playable' sequencer — allowing sequences to evolve and mutate with the simplest of gestures. The two programmable CTRL knobs further enhance these capabilities — allowing you to control any two Metropolix parameters with a twist of the wrist.

Each **CTRL** knob has its own CTRL SETTINGS screen (accessed by pushing the **CTRL** knob's corresponding black button), from which you select the parameter and track(s) that you want the knob to control.

There are two main parameters visible on each of the CTRL SETTINGS screen:

CTRL <n> PARAM : Selects the parameter you wish to control with the corresponding **CTRL** knob (**CTRL 1** or **CTRL 2**). Choices are:

None	**Pitch Offset ±**	**Scale (User) ±**
Accum Dir	**Pitch Post ±**	**Skip Invert ±**
Accum Mode	**Pitch Pre ±**	**Slide Amount**
Accum Polar	**Play Order**	**Slider Invert ±**
BPM (INT)	**Prob ±**	**Slider Range**
Clock Div In	**Pulse Count ±**	**Stages Len**
Direction ±	**Pulse Div**	**Stages Offset**
Gate Length	**Pulses Len**	**Swing**
Gate Scale	**Ratchet ±**	**Trk Out Swap ±**
Octave ±	**Root ±**	**Velocity ±**

Bipolar parameters are indicated by a '±' symbol following the parameter name. Bipolar parameters output the sequencer's programmed value when a **CTRL** knob is pointing straight up (noon position). Turning the knob counterclockwise

from vertical decreases the parameter's value. Turning the knob clockwise increases the value.

Tri-state parameters (such as Accum Dir), have three states: One when the knob is CCW; one when it's CW; and one when it's at noon.

Unipolar parameters (those that are *not* indicated by the '±' symbol, nor are tri-state) output the minimum parameter value when a **CTRL** knob is fully counterclockwise, and the maximum parameter value when the knob is fully clockwise. For example, if you set CTRL <n> PARAM = 'Stages Len', then the LEN screen's STAGES parameter is set to "1" when the CTRL 1 knob is fully CCW, and to "8" when the knob is fully CW.

IMPORTANT: Note that unipolar CTRL functions work differently than their corresponding AUX or MOD functions. Specifically, AUX and MOD destinations apply an offset to the values set by the front panel, thereby modulating the values away from their default settings. But CTRL destinations change the default panel settings directly, as if the assigned destination had a dedicated programming knob.

CTRL ASSIGN :   This parameter displays which Track you wish to control. To set it:

a) Press the encoder to activate (enclose) the CTRL ASSIGN field.

b) Rotate the encoder to select either **TRK 1**, **TRK 2**, or **TRK 1+2**.

c) Press the encoder to apply your selection.

CTRL Knob Assignments In Use:

1. Press the black button next to whichever **CTRL** knob (**CTRL 1** or **CTRL 2**) you wish to configure.

    The CTRL SETTINGS screen appears, with the CTRL <n> PARAM field active, indicating its value can be set by turning the encoder.

    ```
    CTRL 1 PARAM    [====  ]
    ◄?►      Play Order
    CTRL ASSIGN
      •       Ctrl 1 > Trk 1
    TRK 1 ············· SLIDE ⌐
    ```

    NOTE: Notice the small rectangular gauge at the top of the CTRL SETTINGS screen. This will graphically indicate the current value of the CTRL knob.

2. Turn the encoder to select the parameter you wish to control with the knob, then press the encoder to confirm your selection.

3. Press the encoder again to activate the CTRL ASSIGN parameter, selecting it for editing.

4. With the CTRL ASSIGN parameter active, turn the encoder to select which Track(s) (**1**, **2**, or **1+2**) you wish to control with the knob, then press the encoder to confirm your track selection.

    The CTRL knob will now provide direct control of the assigned parameter on the chosen track(s), facilitating hands-on modulation without the necessity of navigating to the parameter on the screen.

    NOTE : When you navigate to a screen that has a parameter mapped to a CTRL knob, you will see a number in a circle beside the parameter value, like this: ②

    *This indicates that the parameter is controlled by the CTRL knob, and **not** the encoder. A "1" indicates the **CTRL 1** knob, and a "2" indicates the **CTRL 2** knob.*

5. To reset an **CTRL** knob back to its default value (i.e. NO assignment), long-press the encoder.

Control Knob Destinations

The following describe each assignable CTRL knob destination:

None   The current CTRL knob has no destination, and does not control anything.

Accum Dir   This is a tri-state parameter, with the knob controlling three different states, depending on its position:

Clockwise: Any stages for which the **ACCUM** function is active will accumulate as programmed.

Noon (straight up): Any stages for which the **ACCUM** function is active will stop accumulating, and freeze any previously accumulated pitches at their current value.

Counterclockwise: Any stages for which the **ACCUM** function is active will play the pitches calculated by the accumulator in the reverse order.

Direction: Forward
Freeze: ON

Direction: Reverse
Freeze: OFF

Direction: Forward
Freeze: OFF

CTRL Knob = Accum Dir
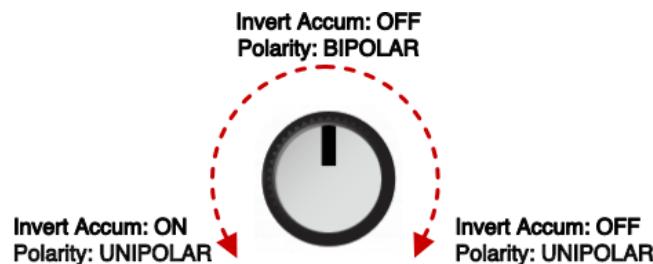
Accum Mode   Turning the knob toggles between an accumulation MODE of "Stage" or "Track" (normally set with the Mode parameter on the **LIM** screen).

Clockwise position: Sets Accum MODE = Track.

Counterclockwise position: Sets Accum MODE = Stage.

*NOTE: When this function is assigned to a **CTRL** knob, it overtakes the ability to set the value on the **LIM** screen, greying out the MODE option.*

Accum Polar   This is a tri-state parameter, with the knob controlling three different states, depending on its position:

Clockwise: Any stages for which the **ACCUM** function is active will accumulate as programmed, and the **LIM** screen's Polarity setting will be set to Unipolar.

Noon (straight up): Any stages for which the **ACCUM** function is active accumulate as programmed, and the **LIM** screen's Polarity setting will be set to Bipolar.

Counterclockwise: Any stages for which an **ACCUM** value is assigned will invert the TRANSPOSE AMOUNT direction — positive accumulations will become negative; and vice versa. It will also set the **LIM** screen's Polarity setting to Unipolar.

Invert Accum: OFF
Polarity: BIPOLAR

Invert Accum: ON
Polarity: UNIPOLAR

Invert Accum: OFF
Polarity: UNIPOLAR

CTRL Knob = Accum Polar

*NOTE: When this function is assigned to a **CTRL** knob, it overtakes the ability to set Polarity on the **LIM** screen, greying out the Polarity option.*

BPM (INT)   If Metropolix' Clock is set to 'Internal' (in the SETUP menu), then turning the knob directly changes the BPM screen's value from 0.1 BPM (when fully counterclockwise), to 400 BPM (when fully clockwise).

Clock Div In   Turning the knob directly changes the DIV screen's CLOCK DIV value on the destination track(s).

Direction ±   Turning the knob clockwise from the noon position causes the sequence to play in the forward direction. Turning the knob counterclockwise from the noon position causes the sequence to play in the reverse direction.

Gate Length	Turning the knob directly changes the TRACK GATE screen's GATE LENGTH value. This is the default assignment for CTRL 1.
Gate Scale	Turning the knob directly changes the TRACK GATE screen's GATE SCALE value.
Octave ±	Turning the knob clockwise from the noon position increases the octave of all stages on the destination track(s). Turning the knob counterclockwise from the noon position decreases the octave.
Pitch Offset ±	Much like the **Pitch Post** option (described above), this option also applies pitch shift after the quantizer, but unlike that option, the actual amount of pitch shifting is not limited to chromatic note values. Turning the knob clockwise from the noon position increases the pitch of all stages on the destination track(s) after the quantization stage. Turning the knob counterclockwise from the noon position decreases the post-quantization pitch.
Pitch Post ±	Turning the knob clockwise from the noon position increases the pitch of all stages on the destination track(s) *after* the quantization stage. This means it's possible (and likely) that you will hear pitches that do not conform to the selected scale. Turning the knob counterclockwise from the noon position decreases the post-quantization pitch values.
Pitch Pre ±	Turning the knob clockwise from the noon position increases the pitch of all stages on the destination track(s) *prior t*o quantization. This means the pitch changes will also be quantized, and all pitch outputs will conform to the selected scale. Turning the knob counterclockwise from the noon position decreases the pre-quantization pitch values.
Play Order	Turning the knob directly changes the ORDER screen's PLAY ORDER on the destination track(s).
Prob ±	Turning the knob clockwise from the noon position uniformly increases the probability values of all stages, up to 100% probability for all stages. Turning the knob counterclockwise from the noon position uniformly decreases the probability values of all stages, down to 0% probability for all stages.

Pulse Count ±   Turning the knob clockwise from the noon position increases the pulse count (as set by the **PULSE COUNT** switches) for all stages. Turning the knob counterclockwise from the noon position decreases the pulse count for all stages. With the knob at the noon position, stages play for the number of pulses set by the **PULSE COUNT** switches.

Pulse Div   Turning the knob directly changes the DIV screen's PULSE COUNT DIV value on the destination track(s).

Pulses Len   Turning the knob directly changes the LEN screen's PULSES value on the destination track(s).

Ratchet ±   Turning the knob clockwise from the noon position uniformly increases the ratchet counts of all stages (up to a maximum of 8). Turning the knob counterclockwise from the noon position uniformly decreases the probability values of all stages (down to 'no' ratcheting).

Root ±   Turning the knob clockwise from noon raises the root note of the current scale on the destination track(s). Turning the knob counterclockwise from noon lowers the root note.

Scale(User) ±   Turning the knob clockwise from the noon position increments the User Scale selection within the custom User Bank that contains the locked scale. Turning the knob counterclockwise from the noon position decrements the User Scale selection. Scale selection changes every ±1V, and the scales wrap when either end of the 10-scale bank is reached. For more information, see "Sequencing User Scale Selection."

Skip Invert ±   Turning the knob clockwise from the noon position causes the SKIP state of each stage to invert, such that any previously skipped stages are played, and any previously played stages are skipped. Turning the knob counterclockwise from the noon position results in normal (uninverted) SKIP playback. "Skip Invert" is a convenient way to set up and trigger split sequences. Note that any time the Skip inverts, the sequence resets — meaning the first stage remains predictable.

Slide Amount   Turning the knob directly changes the SLIDE screen's SLIDE AMOUNT value. This is the default assignment for CTRL 2.

Slider Invert ±   Turning the knob clockwise from the noon position inverts the Slider Direction (as set by the Slider Dir parameter in the Track Menu). Turning the knob counterclockwise from the noon position causes the sliders to affect pitch in the direction set by the Slider Dir parameter in the Track Menu.

Slider Range   Turning the knob directly changes the octave range of the PITCH SLIDERS (as normally set by the Slider Octaves setting in the TRACK MENU.

Stages Len   Turning the knob directly changes the LEN screen's STAGES value on the destination track(s).

Stages Offset   Turning the knob directly changes the stage offset on the destination track(s).

Swing   Turning the knob directly changes the SWING screen's SWING value.

Trk Out Swap ±   Turning the knob clockwise from the noon position swaps the Track output assignment jacks, such that TRK 1's **PITCH** and **GATE** outputs are routed to TRK 2's **PITCH** and **GATE** outputs, and vice-versa. Similarly, if tracks are sending data to either **OUT A** or **OUT B** they, too, will swap assignments. This enables you to create elaborate sequence variations and rhythms that can extend beyond the various permutations available with the 8 stages. Turning the knob counterclockwise from the noon position causes the TRK 1 and TRK 2 output assignments to appear at their designated output jacks.

Velocity ±   Turning the knob clockwise from the noon position increases a track's velocity voltage — adding to the velocity value set with the Velocity parameter in the [Track Menu](#). Turning the knob counter-clockwise from the noon position decreases a track's velocity voltage.

NOTE: In order to hear the effect, you must be transmitting Velocity to [OUT A or B](#), or over MIDI.
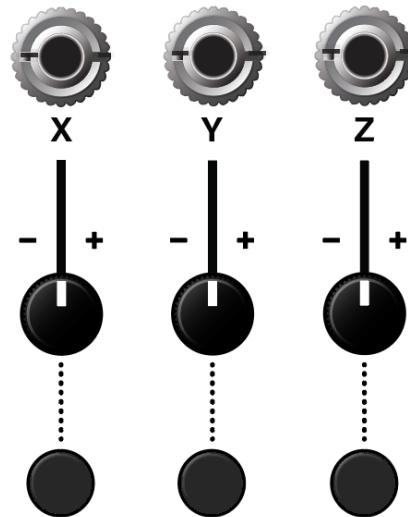
AUX INPUT SETTINGS

SECTION 11

X, Y and Z are three user-configurable control voltage inputs for Metropolix — each with an associated attenuverter — which allows you to externally control and modulate an extensive number of sequence parameters, per-track. An input voltage of ±5V is required to span the full range of an assigned destination.

Each input has its own setup menu (accessed by pushing its corresponding AUX Settings button), from which you can select the track(s) and the parameter you wish to control.

Attenuverters scale and/or invert any incoming control voltages. In the case of gate inputs, turning the inverter counterclockwise from noon inverts the function of the gate.

There are two main parameters on each of the AUX Settings screen:

AUX <n> PARAM : Selects the parameter you wish to control with the corresponding input (**X**, **Y**, or **Z**). Choices are:

None	**Loopy Pulses**	**Reset** (⊓)
Accumulate (⊓)	**Loopy Offset**	**Root**
Accum Reverse (⊓)	**Mute** (⊓)	**Scale (User)**
Accum Invert (⊓)	**Octave**	**Skip Invert** (⊓)
Accum Mode (⊓)	**Pitch Offset**	**Slide** (⊓)
Accum Polar (⊓)	**Pitch Post**	**Slide Amount**
Accum Reset (⊓)	**Pitch Pre**	**Slider Invert** (⊓)
BPM (INT)	**Play Order**	**Slider Range**
Clock In Div	**Probability**	**Stages Len**
Direction (⊓)	**Pulse Count**	**Stage Offset**
Gate Length	**Pulse Div**	**Swing**
Gate Scale	**Pulses Len**	**Trk Out Swap** (⊓)
Loopy (⊓)	**Ratchet**	**Velocity**

The list above indicates Gate and Trigger signals with a gate symbol (⊓),
meaning the indicated function will occur when the gate is high (or the leading
edge of the trigger signal is detected). Gate or trigger signals must be at least
1.5V to turn on.

*NOTE: Because the attenuverter inverts the gate that goes to any gate
parameter assigned to an AUX input, this gives you the ability to manually
generate gates by turning the attenuverter (without even patching a signal into
the AUX input). Setting the attenuverter CCW from noon outputs a low gate
voltage, while setting it CW from noon outputs a high gate voltage. Therefore,
manually turning the attenuverter to either side of noon has the effect of manually
turning on/off gates to the assigned parameter.*

AUX ASSIGN :   This parameter displays which Track you wish to control. To set it:

a) Press the encoder to activates the AUX ASSIGN field.

b) Rotate the encoder to select either **TRK 1**, **TRK 2**, or **TRK 1+2**.

c) Press the encoder to apply your selection.

AUX Input Assignments In Use:

1. Press the black AUX SETTINGS button beneath whichever AUX input (**X**, **Y** or **Z**) you wish to configure.

    The AUX SETTINGS screen appears, with the AUX <n> PARAM field activated, indicating its value can be set by turning the encoder.

    NOTE: Notice the small rectangular gauge at the top of the AUX Settings screen. This will graphically indicate the amount of post-attenuverted CV being applied. Bars extending to the right of center indicate positive CV, while bars extending to the left of center indicate negative CV. Any AUX inputs assigned to a trigger or gate function will display an on/off switch (rather than a continuous voltage bar), so you always have visible feedback of your AUX input's effect.

2. Turn the encoder to select the parameter you wish to control with the AUX input, then press the encoder to confirm your selection.

3. Press the encoder again to activate the AUX ASSIGN parameter, selecting it for editing.

4. With the AUX ASSIGN parameter active, turn the encoder to select which Track(s) (**1**, **2**, or **1+2**) you wish to control with the AUX input, then press the encoder to confirm your track selection.

    The incoming AUX CV will now affect the assigned parameter on the chosen track(s).

5. To reset an AUX assignment back to its default value (i.e. NO assignment), long-press the encoder.

*NOTE: The three AUX SETTINGS buttons (**AUX X**, **AUX Y** and **AUX Z**) have a separate, secondary function that's unrelated to input modulation. Specifically, when used in combination with the **ALT** button, these buttons enable you to randomize parameters on the current Track Setting, Stage setting or MOD Lane screen. For detailed information, see RANDOMIZING PARAMETERS, later in this manual.*
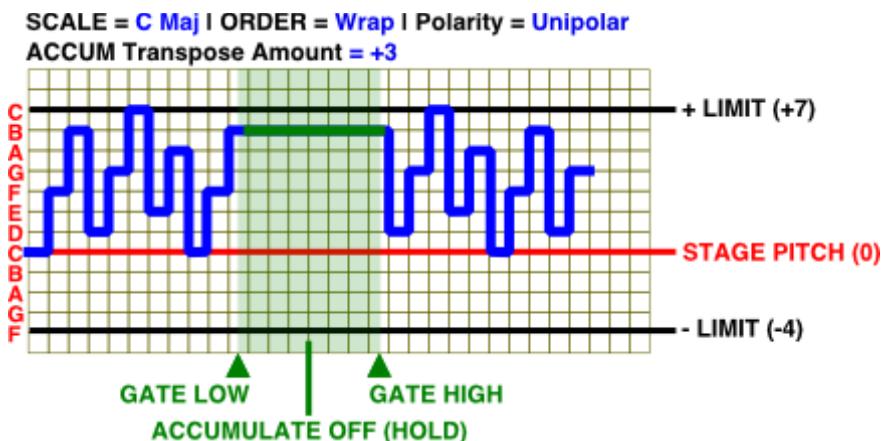
AUX & MOD DESTINATIONS

The following modulation destinations are available for all three AUX inputs, and all internal MOD lane routings. Some destinations have a variable range of voltages, while others are gates or triggers (meaning the indicated function will occur when the gate is high, or the leading edge of the trigger signal is detected). Gate or Trigger signals must be at least 1.5V, while continuous voltages are ±5V.

None	----	The current MOD Lane or AUX input has no destination, and does not control anything.
Accumulate	Gate	Any Stage to which a pitch **ACCUM** function is applied will accumulate *only* when the gate is high at the time the accumulation is scheduled to occur; and will not accumulate when the gate is low. When no CV or MOD values are assigned to the **Accumulate** destination, then the pitch accumulation *always* occurs on any stages for which the **ACCUM** function is enabled. When accumulation is stopped (Gate is low), the most recently accumulated pitch value is retained (held).
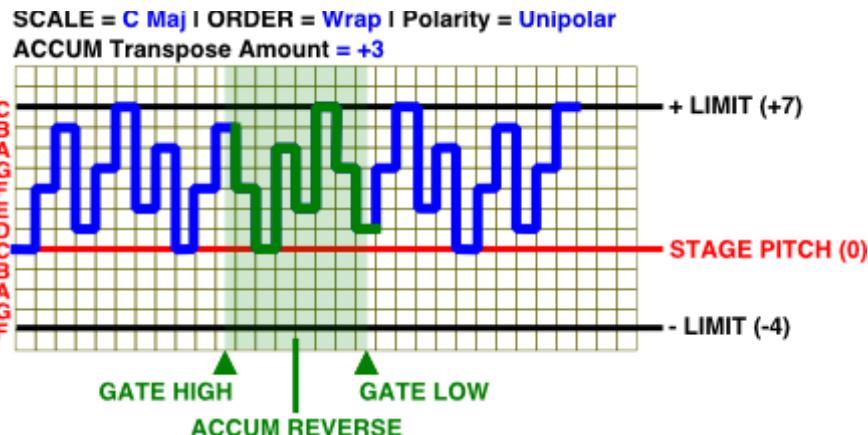
The following example (using an ACCUM TRANSPOSE AMOUNT = +3, and **LIM** screen settings of Positive Limit = +7, Negative Limit = -4, Order = Wrap and Polarity = Unipolar) illustrates how the playback of accumulated notes is paused (and held) when the gate is low:
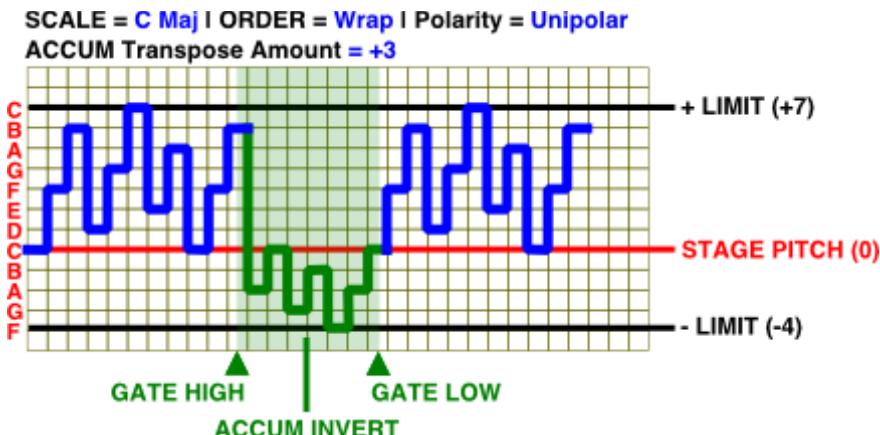
Accum Rev   Gate   When the gate is low, stages accumulate as programmed. When the gate is high, stages will play the pitches calculated by the accumulator in the reverse order.

The following example (using an ACCUM TRANSPOSE AMOUNT = +3, and **LIM** screen settings of Positive Limit = +7, Negative Limit = -4, Order = Wrap **and** Polarity = Unipolar) illustrates how the playback of accumulated notes is reversed for as long as the gate is high:

Accum Invert   Gate   When the gate is high, the ACCUM direction inverts, such that any **ACCUM** screen TRANSPOSE AMOUNTS that are set to a positive value, become negative; and vice versa. When the gate is low, normal (programmed) accumulations occur.

The following example (using an ACCUM TRANSPOSE AMOUNT = +3, and **LIM** screen settings of Positive Limit = +7, Negative Limit = -4, Order = Wrap **and** Polarity = Unipolar) illustrates how the playback of accumulated notes is inverted for as long as the gate is high:

Accum Mode   Gate   When the gate is high, the programmed accumulation Mode ("Stage" or "Track," as set on the **LIM** screen) will toggle to the other option; and be restored to the programmed value when the gate is low.

Accum Polar   Gate   When the gate is high, the programmed accumulation Polarity ("Unipolar" or "Bipolar," as set on the **LIM** screen) will toggle to the other option; and be restored to the programmed value when the gate is low.

**Accum Reset**   Trig   Resets all Stage Accumulator Counters on the destination track, effective on the next clock pulse (or immediately if the trigger arrives on the pulse). Note that this destination does not reset the sequencer or any other values — only the pitch accumulations.

BPM (INT)   ±5V   If Metropolix' Clock is set to 'Internal' (in the [SETUP menu](#)), then this selection modulates the internal tempo. Specifically, at 0V, the tempo is unchanged. Positive voltages increase the tempo (up to 400 BPM), while negative voltages decrease the tempo (down to 0.1 BPM). The value of the modulated tempo is displayed on the BPM screen, in small letters to the left of the large tempo display.

Clock In Div   ±5V   Changes the value of the destination track's internal clock divider. Specifically, at 0V, it uses the clock division set by the **DIV** screen's CLOCK DIV parameter. Positive voltages increase the number of clock divisions, making the sequencer run 'slower' (up to a maximum of /64). Negative voltages decrease the number of clock divisions, making the sequencer run 'faster' (down to a minimum of /1).

Direction   Gate   The programmed playback direction is reversed when the gate is high; and restored when the gate is low.

Gate Length   ±5V   Changes the Gate Length on the destination track(s). Specifically, at 0V, the GATE LENGTH length (as set with the **(TRACK) GATE** button) is used. Positive voltages increase the Gate Length, until the maximum value is reached ("100%"). Negative voltages decrease the Gate Length, until the minimum value is reached ("rest").

Gate Scale   ±5V   Changes the Gate Scale on the destination track(s). Specifically, at 0V, the GATE SCALE value (as set via the **(TRACK) GATE** button) is used. Positive voltages increase the Gate Scale, until the maximum value is reached (100%). Negative voltages decrease the Gate Scale, until the minimum value is reached (0%).

Loopy	Gate	Loopy is automatically activated and played when the gate is high, and deactivated when the gate is low. Gate-activated Loopy is a 'hands free' operation, with the loop beginning playback at Stage 1 and honouring the **LOOPY** screen's LOOP PULSES and LOOP TARGET settings. These can both be modulated with the **Loopy Offset** and **Loopy Pulses** functions, discussed below.
Loopy Pulses	±5V	Positive voltages increase the number of Loopy pulses (up to Loopy's maximum 64 pulse limit). Negative voltages decrease the number of Loopy pulses (down to Loopy's minimum 1 pulse limit).
Loopy Offset	±5V	Positive voltages shift the Loopy starting Stage to the right; negative voltages shift it to the left. This is particularly useful when used in conjunction with another AUX In or MOD Lane that's assigned to **Loopy⊓**, since it shifts Loopy's starting stage to something other than Stage 1.
Mute	Gate	The track to which the AUX In or MOD Lane is assigned will toggle its mute state when the gate input is high, and will revert when the gate input is low.
Octave	±5V	Positive voltages increase the octave of all stages on the destination track(s). Negative voltages decrease the octave. **Octave** tracks 1V/octave, making it convenient to use an external keyboard or another sequencer track to change octaves. Note that octave increases (or decreases) occur every 1V. Interim voltages do not change octaves.
Pitch Offset	±5V	Much like the **Pitch Post** option (described above), this option also applies pitch shift after the quantizer, but unlike the Pitch Post option, the actual amount of pitch shifting is not limited to chromatic note values. Positive voltages increase the pitch of all stages on the destination track(s) after the quantization stage, while negative voltages decrease the post-quantization pitch.
Pitch Post	±5V	Positive voltages increase the pitch of all stages on the destination track(s) after the quantization stage. This means it's possible (and likely) that you will hear pitches that do not conform to the selected scale. Negative voltages decrease the post-quantization pitch values. **Pitch Post** tracks 1V/octave, making it convenient to use an external keyboard or another sequencer track to change pitch.

Pitch Pre	±5V	Positive voltages increase the pitch of all stages on the destination track(s) prior to quantization. This means the pitch changes will also be quantized, and all pitch outputs will conform to the selected scale. Negative voltages decrease the pre-quantization pitch values.
		Pitch Pre tracks 1V/octave, making it convenient to use an external keyboard or another sequencer track to change pitch.
Play Order	±5V	Changes the playback order of the stages on the destination track(s). Specifically, at 0V, it applies the playback order chosen by the **ORDER** button. Positive voltages select playback orders above the current order (see the list of <u>Order Options</u> earlier in the manual). Negative voltages select playback orders below the current order.
Probability	±5V	Changes the probability that a clock pulse will generate a corresponding output gate on the destination track(s). Specifically, at 0V, each stage uses its corresponding probability value (as set by the **PROB** button). Positive voltages uniformly increase the probability that a stage's pulses will play. Negative voltages uniformly decrease the probability that the stage's pulses will play.
Pulse Count	±5V	Increases the pulse count for all stages. Specifically, at 0V, each stage lasts for the number of pulses set via the front panel PULSE COUNT switches. Positive voltages uniformly increase the number of pulses played by each stage (up to a maximum total of 8 pulses/stage). Negative voltages uniformly decrease the number of pulses played by each stage, down to a minimum of 1 pulse/stage.
Pulse Div	±5V	Changes the value of the destination track's pulse count divider. Specifically, at 0V, it uses the pulse count division set by the **DIV** screen's PULSE COUNT DIV parameter. Positive voltages increase the number of pulse count divisions (up to a maximum of /8). Negative voltages decrease the number of pulse count divisions (down to a minimum of /1).
		Keep in mind that a track needs to have a PULSE COUNT > 1 and a GATE TYPE = MULTI in order to hear the modulation's effect.
Pulses Len	±5V	Changes the Length (in pulses) of the destination track(s). Specifically, at 0V, it plays the number of pulses set by the **LEN** screen's PULSES parameter. Positive voltages increase the number of pulses in the sequence (up to a maximum of 64 pulses). Negative voltages decrease the number of pulses in the sequence (down to either 1 pulse (or 'Auto' if PULSES = *'Auto'* on the **LEN** screen).

Ratchet	±5V	Changes the number of ratchets for all stages of the destination track(s). Specifically, at 0V, each stage uses its corresponding ratchet count (as set by the **RATCH** button). Positive voltages uniformly increase the number of ratchets played by each stage (up to a maximum total of 8 ratchets). Negative voltages uniformly decrease the number of ratchets played by each stage, down to minimum of 1 (no) ratchets.
Reset	Trig	The sequencer playing on the track to which the AUX In or MOD Lane is assigned will reset when a trigger voltage is received.
Root	±5V	Positive voltages increase the root note of the current scale on the destination track(s), while negative voltages decrease the root note.
		Root tracks 1V/octave, but only the pitch name (not its octave) is considered. So, for example, both 0V and 1V will result in no shifting of the root note, while 0.083V and 1.083V will both create a root note shift of one semitone.
Scale (User)	±5V	Select different User Scales from within whichever User Scale bank contains the locked scale. Positive voltages increment the Scale number, while negative voltages decrement it. Scale selection changes every ±1V, and the scales wrap when either end of the 10-scale bank is reached. For more information, see "Sequencing User Scale Selection."
Skip Invert	Gate	When the gate is high, the SKIP state of each stage inverts, such that any previously skipped stages are played, and any previously played stages are skipped. When the gate is low, normal (uninverted) SKIP playback occurs. Inverting Skip is a convenient way to set up and trigger split sequences. Note that any time the Skip inverts, the sequence resets — meaning the first stage remains predictable.
Slide	Gate	When the gate is high, the Slide function is enabled for all Stages on the destination track(s), regardless of whether the individual **SLIDE** stage buttons are turned on. When the gate is low, only those Stages that have their **SLIDE** buttons turned on will slide.
Slide Amount	±5V	Changes the Slide time applied to the destination track(s). Specifically, at 0V, slid Stages use the value set with the **SLIDE TIME** button. Positive voltages increase the Slide Time, up to the 100 maximum. Negative voltages decrease the Slide Time, down to 0.
Slider Invert	Gate	The programmed PITCH SLIDER orientation direction is inverted when the gate is high; and restored when the gate is low.
Slider Range	±5V	Changes the octave range of the PITCH SLIDERS. Specifically, at 0V, the PITCH SLIDERS cover the octave range set by the Slider Octaves setting in the TRACK MENU. Positive voltages increase the octave range, up to a maximum of 4 octaves. Negative voltages decrease the octave range, down to a minimum of 1 octave.

Stages Len	±5V	Changes the number of stages that play in the destination track(s). Specifically, at 0V, it uses the number of stages set by the **LEN** button. Positive voltages increase the number of stages (up to a maximum length of 8 stages). Negative voltages decrease the number of stages (down to a minimum length of 1 stage).
Stages Offset	±5V	Changes the stage offset on the destination track(s). Specifically, at 0V, it uses the stage offset value set by the **LEN** button. Positive voltages increase the stage offset to higher numbered stages (up to Stage 8). Negative voltages decrease the stage offset to a lower numbered stage (down to Stage 1).
Swing	±5V	Changes the Swing amount applied to the destination track(s). Specifically, at 0V, it plays the swing value set with the **SWING** button. Positive voltages increase the swing amount, up to the 78% maximum. Negative voltages decrease the swing amount, down to 50%.
Trk Out Swap	Gate	When the gate is high, the Track Output assignments swap with each other, such that TRK 1's **PITCH** and **GATE** outputs are routed to TRK 2's **PITCH** and **GATE** outputs, and vice-versa. Similarly, if tracks are sending data to either **OUT A** or **OUT B** they, too, will swap assignments. This enables you to create elaborate sequence variations and rhythms that can extend beyond the various permutations available with the 8 stages. When the gate is low, the TRK 1 and TRK 2 output assignments appear at their designated output jacks.
Velocity	±5V	Modulates the velocity voltage, with positive voltages adding to the initial velocity value and negative voltages subtracting from the initial velocity value.
		*NOTE: In order to hear the effect, you must be transmitting Velocity to OUT **A** or **B**, or over MIDI.*

COPY & PASTE

You can copy and paste <u>Stage Buttons</u>, <u>Track Parameters</u>, <u>MOD Lanes</u>, and/or <u>Track Menu</u> settings from one place to another. To do so:

Stage Copy:

1. Press the desired Track button (**TRK 1** or **TRK 2**), and navigate to the per-Stage function you wish to copy.

   For example, if you wish to copy one of TRK 1's PROB stages to another, you would hold **EDIT** and press the **PROB** button.

2. Hold down the Stage # button (1 - 8) corresponding to the Stage number you wish to copy from.

   The Action Display at the bottom of the screen will say "Copy Stage <n>", where <n> is the Stage number you're currently holding down.

3. While *continuing to hold down* the "copy from" Stage button, press the Stage # button (1 - 8) corresponding to the Stage number you wish to paste it to.

   The screen flashes a message to confirm the copied stage has been pasted.

   You can copy one stage to more than one stage by continuing to hold the "Copy From" stage while pressing different Stage destination buttons.

   NOTE: This same technique works for copying individual stages within a MOD Lane.

Track Settings Copy:

1. Press the Track Settings button (i.e., ORDER, LEN, etc.) corresponding to the settings you wish to copy.

   For example, if you wish to copy TRK 1's DIV setting to TRK 2, you would press the DIV button to tell Metropolix what parameters you'll be copying.

2. Hold down the Track button (**TRK 1** or **TRK 2**) corresponding to the Track whose settings you wish to copy from.

   The Action Display at the bottom of the screen will say "Copy Track <n>", where <n> is the Track number you're currently holding down.

3. While *continuing to hold down* the "copy from" Track button, press the Track button (**TRK 1** or **TRK 2**) corresponding to the Track you wish to paste those settings to.

   The screen flashes a message to confirm the copied Track settings have been pasted.

Track Menu Copy:

1. Hold **ALT** and press the desired Track button (**TRK 1** or **TRK 2**) to enter the TRACK MENU.

2. Hold down the Track button (**TRK 1** or **TRK 2**) corresponding to the Track you wish to copy all menu settings from.

    The Action Display at the bottom of the screen will say "Copy Track <n>", where <n> is the Track number you're currently holding down.

3. While *continuing to hold down* the "copy from" Track button, press the Track button (**TRK 1** or **TRK 2**) corresponding to the Track you wish to paste those menu settings to.

    The screen flashes a message to confirm the copied Track Menu configuration has been pasted.

MOD Lane Copy:

1. Press the **MOD** button.

    The MOD button lights indicating you are now working with MOD Lanes.

2. *Press and hold down* both the **EDIT** button and the STAGE button (1-8) corresponding to the MOD Lane (1 - 8) you wish to copy.

    The MOD Lane Edit Screen says "Copy Lane <n>", where <n> is the Lane number your're currently holding down.

    For example, to copy MOD Lane 1, press-and-hold **EDIT** + STAGE 1 (SLIDE).

3. While continuing to hold both the **EDIT** and "copy from" Stage # buttons, press the Stage # button (1 - 8) corresponding to the Lane number you wish to paste it to.

    The screen flashes a message to confirm the copied Mod Lane has been pasted.

    You can copy one MOD Lane to multiple MOD Lanes by continuing to hold the **EDIT** button and the "Copy From" Lane button while pressing different Lane destination buttons.

EXPANDED EXPOSITIONS

The following sections provide a bit more information about a couple of the concepts discussed within the manual.

Gate Stretching - Examples

This section provides a more in-depth look at the **Gate Stretching** parameter, which is enabled per-track in the [Track Menu](). Specifically:

- When **Gate Stretching = OFF**, Gate Lengths are expressed as a percentage of one clock pulse.

- When **Gate Stretching = ON**, Gate Lengths are expressed as a percentage of a 'note's length,' meaning gate lengths 'stretch' as notes grow longer or shorter.

For example:

Assume you have a GATE LENGTH = 75% and a note that's TWO clock pulse long:

- With Gate Stretching = OFF, the gate will be high for 75% of a single clock pulse. Since the note is 2 clock pulses in duration, the gate will be high for .75 clock pulses and low for the next 1.25 clock pulses.

- With Gate Stretching = ON, the gate will be high for 75% of the entire note length. Since the note is 2 clock pulses in duration, the gate will be high for 1.5 clock pulses and low for 0.5 clock pulses.

NOTE: Gates cannot be stretched beyond the confines of the Stage in which they're generated.

The examples shown on the following page illustrate how the **Gate Stretch** parameter (shown in Column 1) affects the rhythm and note values when combined with different GATE TYPE settings (Column 2) and with different Pulse Divisions (Column 3).

It assumes the TRACK GATE screen's Gate parameter is set to 75%, and there are no per-stage overrides. It also assumes a 3-stage, linear, forward playing sequence — with four pulses on Stage 1, two pulses on Stage 2, and three pulses on Stage 3.

SCENARIO (all GATE TIMES = 75%)			STAGE 1 (4 PULSES)	STAGE 2 (2 PULSES)	STAGE 3 (3 PULSES)
Gate Stretch	Gate Type	Pulse Div			
1 OFF	SINGLE	n/a			
2 ON	SINGLE	n/a			
3 OFF	MULTI	/3			
4 ON	MULTI	/3			
5 OFF	MULTI	/2			
6 ON	MULTI	/2			
7 OFF	MULTI	/1			
8 ON	MULTI	/1			

Of particular interest are:

Row 1 & 2 : Notice, when **Gate Stretching = ON**, that the gate length of each stage's single pulse is stretched beyond the limits of one clock pulse, and now occupies 75% of the entire note/stage width.

Row 3 & 4 : Here, the pulse is divided by /3. Because GATE TYPE = MULTI and Stage 1 is 4-pulses long, this generates an extra gate (after the first three pulses) on the fourth pulse of the first stage.

Notice that, when **Gate Stretching = ON** (ROW 4), the gate length of each pulse increases to fill 75% of the note's length, rather than 75% of one clock pulse (which is what happens when **Gate Stretching = OFF**). Also notice that gates cannot stretch beyond the boundary of a Stage. So (on ROW 4) the gate that's triggered on Stage 1, Pulse 4 will go low one "tick" (1/96th of a clock pulse) prior to Stage 2.

Row 5 & 6 : Here, the pulse is divided by /2. Because GATE TYPE = MULTI and both Stage 1 and Stage 3 are longer than 2 clock pulses, those two stages generate an extra gate after two clock pulses.

Besides the effect of Note Stretching on ROW 6, notice also how its final Gate is truncated (ending one tick shy of the end of Stage 3) since gates cannot stretch beyond Stage boundaries.

Row 7 & 8 : Here, with GATE TYPE = MULTI, we are dividing the pulse by /1. This results in a new pulse being generated every clock pulse. Therefore, it doesn't matter whether Gate Stretching is on or off, because each note is one clock pulse long, resulting in identical gate lengths.

Understanding Pulse Hierarchy

As described previously, Metropolix operations happen on 3 main levels.

- **Global Level** : Operations performed at this, the highest level, affect the entire unit and all levels below it — including tracks/lanes; and individual stages.

- **Per-Track/Lane Level** : Operations performed at this level affect only the currently selected Track (or MOD Lane) and any stages associated with that Track or Lane. It does not affect any Global settings.

- **Per-Stage Level** : Operations performed at this, the lowest level, affect only the current Stage of the currently selected Track or MOD Lane. It does not affect any other stages in a Track/Lane, nor the Global settings.

At each level, we may refer to "Pulses" or "Clock Pulses." Each Level passes it's pulses down to a lower level.

A Clock Pulse at the Global level is referring to the Internal or External clock. This Clock pulse is then passed down and used to drive the Track and Mod Lanes. Queued Loading, Total Pulses, and Preset Chains all deal with Global Level Clock Pulses.

When you are working with Per-Track/Lane settings like the LEN screen's Pulses parameter, or a DIV screen's Clock Div, you are referencing and dividing Clock Pulse that were passed down from the Global level.

At the Per-Stage level, settings that deal with pulses such as PULSE COUNT, Probability, or the Accumulator are applied and referencing pulses from those established by the Track or MOD Lane to which it belongs — further dividing, modulating, or otherwise deviating from the Global Clock Pulse.

Therefore, when counting, calculating or Managing "Pulses", it's important to remember to which level the edited pulse-related parameter belongs.

What's Stored Where

With a product as richly featured as Metropolix, it's possible one might occasionally lose track of where a particular parameter is saved. Is it remembered globally or is it saved with a preset? Does the parameter affect all stages on a single track, or each Stage individually? While there's a logic to Metropolix' hierarchy, some of you might find the following "What's Stored Where" overview to be a handy quick-reference:

	Stored in Preset (x64)	Stored In Global Settings
These Settings Apply Metropolix-Wide	Loopy Num Pulses Loopy Tracks Current Scale Scale Lock Current Root Total Pulses All Mod Mute State Panel State Aux (x3) - Parameter - Track Controls (x2) - Parameter - Track	Clock Source Clk/Rset Out Run Mode Bottom Pitch Queue Pulse Queue & Loopy Preset Load Pitches Preset Load Switches Preset Load Ctrls Preset Load Aux Run On Boot Reset Input Mode Encoder Confirm Show Stage Position Button Led Level Slider Led Level Screen Level Tuner Octave Tuner Gate Clock Out Div Clock Out Offset Internal Clock BPM Ext Clock Div User Shortcuts - Scale + Root (x8) - Play Mode (x8) - Direction (x8) Mx - Parameter - Track/Lan A+B Outputs (x2) - Parameter - Track/Lan Saved UI State - Current Home Screen - Current Preset Bank Idx - Current Preset Load Mode - Current Stage Edit Mode Idx - Current Mod Lane Idx Custom Scales (x100) Preset Chains (x8) MIDI Clock Out MIDI Transport
Per-Track (x2)	Play Mode Direction Num Pulses	

Per-Track (cont'd)	Num Stages Stages Offset Pulse Div Clock In Div Swing Slide Slide Mode Gate Length Gate Length Scale Accum Mode Accum Order Accum Reset Accum Polarity Accum Upper Limit Accum Lower Limit Transpose Pitch Slider Mode Pitch Output Type Pulse Count Source Gate Type Source Global Reset Slider Range Gate Stretching Ratchet Type Rest Pitch Update MIDI Channel MIDI CV > CC MIDI Slide Type MIDI Slide Toggle CC MIDI Slide Amount CC Velocity Source/Value Mute State	
Per-Stage (8x per Track)	Slide Toggle Skip Toggle Pitch Override Gate Length Ratchets Probability Probability Trig Type Accumulator Amount Accumulator Trig Type CV Value CV Ramp Type	
Per-Mod Lane (8x)	Destination Track Destination Param Play Mode Direction Num Pulses Num Stages Stages Offset Clock In Div MIDI Channel MIDI Mod > CC Mute State	
Per-Stage (8x per Lane)	Stage CV Value Stage CV Ramp Type	

PRESET CHAINING

You can create chains of presets such that, as Metropolix plays, it steps through the chain — triggering each preset change automatically. This lets you develop complex song structures and play them back in a predictable way.

The PRESET CHAIN Screen

The bulk of the Preset Chaining operation occurs within the PRESET CHAIN screen.

To access the PRESET CHAIN screen:
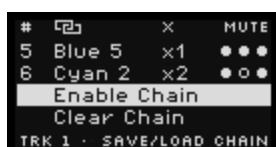
1. Press the **SETUP** button to open the SETUP MENU.

2. Turn the encoder to select the Preset Chains option, then press the encoder to open the PRESET CHAIN screen.

SHORTCUT: You can also access the PRESET CHAIN screen from any other screen by long-pressing (>1 sec) the SETUP button.

If a Preset Chain does not currently exist, the screen looks similar to the following:
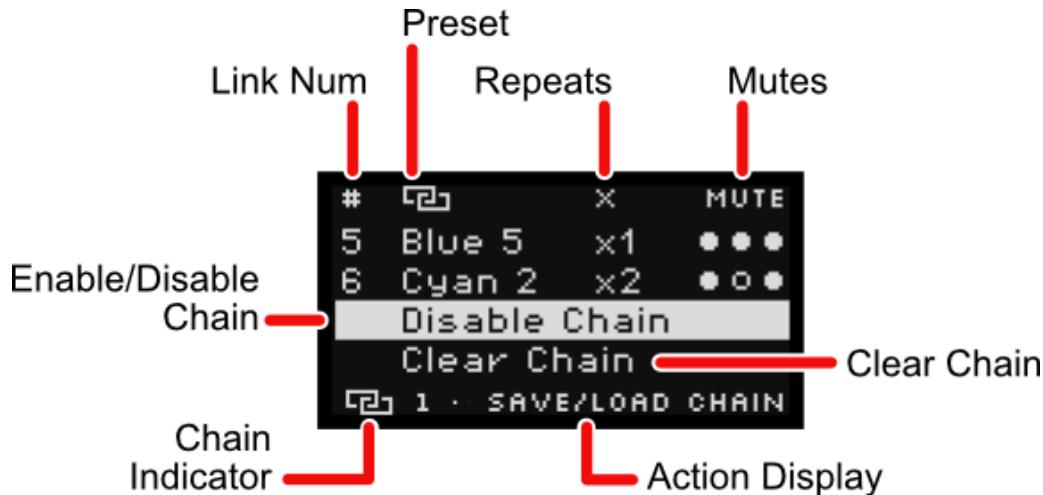
If a Preset Chain already exists, the screen shows a scrolling list of all the presets (links) contained within the chain, plus various per-link settings, and a couple of chain actions at the end of the list:

The following sections describe how the PRESET CHAIN screen functions; how to create and edit chains; and how to save, load and play the chains you create.

PRESET CHAIN Screen Overview

The appearance of the PRESET CHAIN Screen changes depending on whether or not a chain exists, what's in the chain, what's selected, and whether or not the chain is currently enabled or disabled. That said, the basic elements that appear on most chains are detailed below:

|	
Link Num	In this column, each numbered line represents a link in the Preset Chain. A Preset Chain has a maximum length of 32 links (though each preset in that chain can repeat as many as 64 times before advancing to the next preset).
Preset	This column defines/displays the preset that's loaded with each link. As discussed in the SAVE section of the manual, saved presets are named by bank color (Red, Orange, Yellow, Green, Cyan, Blue, Magenta, and Pink) and Stage button (1 - 8), and are displayed here accordingly. Chained presets load in accordance with the SETUP menu's "Presets Setup…" options (i.e. "Pitch Load", "Switch Load" and "Ctrl Load").
Repeats	This column defines/displays the number of times the particular preset repeats playback before moving to the next preset in the chain.
	Note that the length of time for which each preset plays is determined by its Total Pulses value (as set per-preset on the SETUP screen). Specifically, the number of pulses set there will determine the length of 1x playback. So if a preset's Total Pulses = 32 and Repeat = 1x, the link plays for 32 pulses before moving to the next link. If Repeat = 4x, then the link plays for 128 pulses (32 x 4) before advancing to the next link.
	If a preset's Total Pulses = "—", then the link's length is instead determined by the Queue Pulses parameter (also set on the SETUP screen). If Queue Pulses = "—", then the chain plays the preset continuously, without advancing to the next link. Manually resetting Metropolix (using either the

RESET button or a properly configured **RESET** input) will return playback to Link 1 in the Preset Chain.

Mutes	This column defines/displays which (if any) Tracks are muted for each link. The three circles indicate (from left to right): TRK 1, TRK 2, and MOD Lanes. Muted tracks are indicated by a hollow circle, Unmuted tracks are solid.
Enable/Disable Chain	This command, which appears after all the links in the Preset Chain, toggles Chain Mode on and off.

When Chain Mode is off (disabled), the option reads "Enable Chain" (indicating you must highlight the option and press the encoder to enable Chain Mode). With Chain Mode disabled, Preset Chains are ignored and pressing the **RUN** button works normally.

When Chain Mode is on (enabled), the option reads "Disable Chain" (indicating you must highlight the option and press the encoder to disable Chain Mode). With Chain Mode enabled, pressing the **RUN** button causes Metropolix to step through the Preset Chain, beginning with Link 1. Once the end of the Preset Chain is reached, playback loops back to Link 1 and continues until Metropolix is stopped.

Clear Chain	Highlighting this option and pressing the encoder completely clears the current Preset Chain from working memory (but does not clear a saved Preset Chain).
Chain Indicator	If Chain Mode is currently enabled, then a Chain icon flashes here.
Action Display	This section displays what action the various Stage Buttons perform, such as "Save/Load Chain," "Edit Link" or "Add to Chain."

Creating a Preset Chain

If you have never created a chain (or one is not currently loaded into flash memory), you'll see a blank PRESET CHAIN screen when you first access it. If the screen shows an existing Preset Chain, you can clear it.

To clear a Preset Chain from flash memory:

1. Turn the encoder to the end of the chain list, and highlight the Clear Chain item.

2. Press the encoder.

   The Preset Chain that was loaded into memory is cleared, and a fresh new chain can be programmed.

Once you have an empty Preset Chain, you can create a new one.

To create a new Preset Chain:

1. Turn the encoder to highlight the "New Chain" option at the top of the PRESET CHAIN screen.

2. Press the encoder to begin editing the first link in the Preset Chain.

   The Preset parameter highlights, indicating this is what you'll first be editing.

3. Turn the encoder to select a different Preset Bank colour, then press one of the eight stage buttons to select which preset number to assign to the link.

4. Press the encoder again, highlight just the Repeat parameter for editing.

5. Turn the encoder to select the number of times to repeat playback of the Preset's sequence.

6. You can also set the Track and MOD Lane mute states (indicated by the flashing Mute state indicators). To do so, simply press the **TRK 1**, **TRK 2**, or **MOD** buttons to mute/unmute the corresponding Track.

   Yellow buttons (and solid circles in the Mute column) indicate unmuted tracks. Flashing **red** buttons (and hollow circles in the Mute column) indicate muted tracks.

7. When you're done defining a link's Preset, Repeat and Mute parameters, press the encoder again to move to the next link, and repeat steps 3-7 for each link you create.

8. When finished, press the **EXIT** button to exit out of the chain creation UI.

Quick Chain Creation

Metropolix offers an additional "Quick Chain" technique for creating a Preset Chain.

To create a Quick Chain:

1. If you're not already on the PRESET CHAIN screen, press and hold the **SETUP** button until the screen appears.

2. Once on the PRESET CHAIN screen, press and hold down on the **SETUP** button

   The **SETUP** button must be held down throughout the entire Quick Chain creation process that follows.

3. In Quick Chain, you must first define a link's mute state (if needed), so press the **TRK 1**, **TRK 2**, or **MOD** buttons to toggle their mute states for the current link.

4. While continuing to hold the **SETUP** button, turn the encoder to select the desired Preset Bank colour.

5. While continuing to hold the **SETUP** button, press one of the eight stage buttons to select which preset number to assign to the link.

   A new Preset Chain link is made, and the cursor moves to the next link in the chain. However, a "+" symbol remains next to the previous link's Repeat value, indicating you can still increase the number of times the link repeats.

6. If you want the previous link to repeat, simply press the same stage button again. Each time you press the stage button, the link's repeat count will advance by one.

7. Select a different Preset or mute state, and a new link will be added to the Preset Chain.

8. When you're finished creating your chain, simply release the **SETUP** button.

   Chain Mode will automatically become enabled, and you can play back your chain by pressing the **RUN** button.

*NOTE: If you don't want Quick Chain to automatically enable the Preset Chain for playback, press the **EXIT** button before you release the **SETUP** button (in Step 7, above).*

Playing a Preset Chain

Metropolix will only play back a Preset Chain if you specifically enable Chain playback from the PRESET CHAIN screen. When a Preset Chain plays, Metropolix is in "read only" mode, meaning you can't make changes to any presets (nothing is written to flash memory) and, as such, saving and loading Metropolix Presets is disabled.

To enable and play a Preset Chain:

1. Create a new chain or load one from memory.

2. Turn the encoder to the end of the chain list, and highlight the Enable Chain item.

3. Press the encoder to enable Preset Chain playback.

   When enabled, the menu item reads "Disable Chain", and a chain icon flashes in the lower left corner of the screen.

4. Press the **RUN** button.

   Metropolix will begin playing back your Preset Chain, either from the beginning or from the paused location (depending on how you've assigned the SETUP screen's Run Btn option). When the end of the chain is reached, playback cycles back to the first link.

To disable a Preset Chain:

1. Turn the encoder to the end of the chain list, and highlight the Disable Chain item.

   Metropolix' **RUN** button will now work as normal, and not cause the Preset Chain to play.

Chain Follow

When Chain Mode is enabled, you can press the encoder to toggle whether or not the list of Presets scrolls as the chain plays, or if the screen remains static. To do so:

1. Make sure that Chain Mode is enabled (i.e., a flashing chain icon appears in the lower left corner of the screen).

2. Press the encoder to toggle between enabling and disabling Chain Follow.

   When Chain Following is on, the Action Display says "Following Chain", and the links scroll as the chain plays back.

Editing a Preset Chain

Once you've created a Preset Chain, you can go back and edit any link in the Chain. Specifically:

To edit a link's Preset assignment, Repeat count or Mute states:

1. Make sure that Chain Mode playback is disabled (i.e. the "Enable Chain / Disable Chain" option says "Enable Chain" and there is no flashing chain icon in the bottom left corner of the screen).

2. Turn the encoder to highlight the link you wish to edit.

3. Press the encoder, highlighting just the Preset parameter for editing.

4. Turn the encoder to select a different Preset Bank colour, then press one of the eight stage buttons to select which preset number to assign to the link.

5. Press the encoder again, highlighting just the Repeat parameter for editing.

6. Turn the encoder to select the number of times to repeat playback of the Preset's sequence.

7. You can also edit the Track and MOD Lane mute states (indicated by the flashing Mute state indicators). To do so, simply press the **TRK 1**, **TRK 2**, or **MOD** buttons to mute/unmute the corresponding Track, as previously described.

8. When you're done editing a link's Preset, Repeat and Mute parameters, press the encoder again to highlight the entire link.

9. Turn the encoder to select other links you wish to edit, and repeat steps 3-8 as needed.

To insert a link into a Chain:

1. Make sure that Chain Mode playback is disabled (i.e. the "Enable Chain / Disable Chain" option says "Enable Chain" and there is no flashing chain icon in the bottom left corner of the screen).

2. Turn the encoder to place an insert line between two links.

   Press the encoder and a new, empty link is inserted.

   Enter the desired Preset bank and number; Repeat count; and Mute states as described above.

To delete a link:

1. Make sure that Chain Mode playback is disabled (i.e. the "Enable Chain / Disable Chain" option says "Enable Chain", and there is no flashing chain icon in the bottom left corner of the screen).

2. Turn the encoder to highlight the link you wish to delete.

3. Long-press (>1 sec) the encoder to delete the highlighted link.

Saving and Loading Preset Chains

You can save up to eight different Preset Chains, and recall them later. With the PRESET CHAIN screen visible and Chain Mode playback disabled, the 8 stage buttons light up white. Bright white buttons indicate the presence of a saved Chain. Dim white buttons indicate empty Chains. Preset Chains are saved globally.

To save a Preset Chain:

1. Create a Preset Chain as described above.

2. Make sure that Chain Mode playback is disabled (i.e. the "Enable Chain / Disable Chain" option says "Enable Chain", and there is no flashing chain icon in the bottom left corner of the screen).

   The eight stage buttons glow white, indicating these are the eight Preset Chain storage slots. Bright buttons indicate the presence of a previously stored Chain. Dim white buttons indicate that no Chain Preset has been stored. A flashing button indicates the currently loaded Preset Chain.

3. Long-press (> 2 sec) the Stage button (1 - 8) corresponding to the slot number to which you'll save the Preset Chain.

   You can save to either an empty slot, or overwrite an existing slot. When you save to an empty slot, a confirmation message will appear when the Preset Chain saves. When you save to an existing slot, a dialog box will appear asking whether or not you wish to overwrite the existing Chain.

To load a Preset Chain:

1. Make sure that Chain Mode playback is disabled (i.e. the "Enable Chain / Disable Chain" option says "Enable Chain", and there is no flashing chain icon in the bottom left corner of the screen).

   The eight stage buttons glow white, indicating these are the eight Preset Chain storage slots. Bright buttons indicate the presence of a previously stored Chain. Dim white buttons indicate that no Chain Preset has been stored. A flashing button indicates the currently loaded Preset Chain.

2. Press any brightly lit white Stage button to load its corresponding Preset Chain.

   NOTE: If you load a Preset Chain that references a Metropolix Preset that no longer exists, then the currently playing Preset takes its place in the chain (using the Repeat and Mute settings assigned to that link).

RANDOMIZING PARAMETERS

For those wishing to spice up their performances with an infusion of serendipity, Metropolix supports the randomization of a vast number of its Track Settings, Stage parameters, and MOD Lanes values for whichever screen is active.

In general:

1. Navigate to one of the Track Settings; per-Stage functions, or a Mod Lane edit screen to view its on-screen parameters. For example:

    a) If you wanted to randomize ORDER parameters on TRK 1, first press **TRK 1** (to select Track 1 for editing). Next, press the **ORDER** button to view the ORDER screen.

    b) If you wanted to randomize RATCH values on TRK 2, first press **TRK 2** (selecting it for editing). Next, press the **EDIT** + **RATCH** buttons to view the RATCH Edit screen.

    c) If you wanted to randomize values on MOD Lane 3, first press **MOD** (to select MOD Lanes for editing). Next, press **EDIT** + **STAGE 3** buttons to view MOD Lane 3.

2. Press the **ALT** button to put Metropolix into ALT mode.

    The Action Display at the bottom of the screen will invert, and the word "ALT" will appear to indicate you're in ALT mode.

3. Press one of the three **AUX** buttons, depending on the randomization option you wish to perform. Specifically:

    ○ **AUX X** : Pressing the **AUX X** button totally randomize all the current screen parameters.

    EXCEPTION: The Pulses on the LEN screen will never be randomized, since that is a very intentional setting.

    ○ **AUX Y** : Pressing the **AUX Y** button modifies (morphs) the screen's current values up or down by a small percentage. Specifically:

    a) Toggled parameters: have a 20% chance of flipping state.

    b) Parameters with < 10 options: have a 20% Chance of being adjusted by ±1.

    c) Parameters with > 10 options: parameters change by a minimum of ±1 unit, up to a maximum of ±10% of the total range.

    ○ **AUX Z** : Pressing the **AUX X** button resets the screen's parameters to the state they were in when you first pushed the **ALT** button to enter ALT mode.

4. Press the **ALT** button to exit ALT mode.

    NOTE: If you want to quickly randomize a screen without entering/exiting ALT mode, you can simply hold down the ALT button while pressing one of the AUX buttons. Recognize, however, that this method will not let you restore the pre-randomization function (via AUX Z).

MIDI FUNCTIONALITY

Metropolix can transmit each track's note and CV lane (assigned to a user-selectable CC) via MIDI over the back panel's USB jack. Similarly, each MOD Lane can also be assigned a user-selectable CC and sent over MIDI. MIDI clock and MIDI Transport messages can also be sent, as well as SysEx. Metropolix can also lock to an external MIDI clock arriving via the USB port.

The following sections discuss Metropolix' MIDI functionality it more detail:

MIDI Connections

MIDI is transmitted to/from Metropolix over the micro-USB port on the back panel of Metropolix. Connect a USB cable between this port and a USB port on your MIDI host (i.e. a computer hosting a DAW, or some other host device).

Although you *could* connect a micro-USB cable to the back of your Metropolix and snake it out to your DAW through a little gap somewhere between modules, the more elegant solution is to use Intellijel's *USB Micro Extender 3U/1U* module.

The little 3U, 2 hp module features a passthrough USB-micro connector. Use the included (or any third-party) cable to connect the micro-USB jack from the back of your Metropolix to the micro-USB jack from the back of the extender module. You can then patch a USB cable directly between your DAW and the front of this module — allowing front panel access to Metropolix' USB port, and its MIDI sequencing features.

The module also includes a pair of passive mults — handy for multiplying a couple of Metropolix' clock, gate, or CV jacks.

In addition, the *USB Micro Extender 3U/1U* module ships with a 1U panel. This allows you to patch your USB cable into a 1U row, if you prefer. Simply unscrew the micro-USB passthrough connector from the 1U module and screw it to the 1U panel. You could still use the 3U module's two passive mults, if you wish.

Global Settings

You will need to configure a few global MIDI settings by pressing **SETUP** to enter Metropolix' Global SETUP menu. Specifically:

Clock Src	(various)	You have the option of clocking Metropolix with it's Internal clock; an External analog clock, or via MIDI clock. Make your selection with this menu item.
MIDI Clock Out	Off	Does not transmit MIDI Clock when the sequence plays.
	On	Sends MIDI Clock, allowing Metropolix to control the tempo of any other devices or DAW's which are set to synchronize to an incoming MIDI clock.
MIDI Transport	Off	If Clock Src = MIDI, then this means Metropolix ignores MIDI Transport start/stop messages received over MIDI. If Clock Src = Internal (or External), it means Metropolix will not transmit MIDI Transport messages over MIDI.
	On	If Clock Src = MIDI, then this means Metropolix responds to MIDI Transport start/stop messages received over MIDI. If Clock Src = Internal (or External), it means that starting, stopping, or resetting Metropolix' sequencer will start, stop and reset the sequencer of an external device or DAW (if that device is so configured). Resets use Song Position Pointer = 0 messages. Noe that SPP Resets and Manual Resets do not reset MIDI clock phase, only Start and Continue messages.
SysEx Transfer…		Opens a submenu of options for selecting which specific Metropolix settings you wish to transmit over MIDI System Exclusive. The options are:

FUNCTION	DESCRIPTION
Send All (Backup)	Transmits the entire Metropolix configuration over MIDI using SysEx, enabling you to back up the entire Metropolix. Specifically, this includes the following data:
	SETTINGS/STATE: All Global settings, custom shortcuts and custom scales, plus all the stored per-Track/Lane settings; the per-stage settings; and the current state.
	PRESETS: All 64 saved Metropolix presets.
Send Settings/State	Transmits only the SETTINGS/STATE configuration (as described above) over SysEx. PRESET data is excluded.
Send All Presets	Transmits only the 64 stored PRESETS (as described above) over SysEx. SETTINGS/STATE configurations are excluded.
Receive Any	Readies Metropolix to receive SysEx. Screen flashes "Ready", indicating you must initiate a transfer from an external device. Flashing stops once messages are received, and the bottom of the screen indicates receipt of SysEx messages.

Track Settings

Track 1 and Track 2 each has its own MIDI options, allowing Metropolix to control two entirely different devices on different MIDI channels, or only one MIDI device on one channel, or no MIDI device. These options are set in each Track's [Track Menu](#), accessed by pressing **ALT** + **TRK 1** (for Track 1) or **ALT** + **TRK 2** (for Track 2).

The relevant MIDI settings are:

Velocity		If a track is set to transmit over MIDI, this value is used to derive MIDI velocity. Velocity can also be assigned to OUT **A** or **B** for voltage controlling any parameter on an external module.
	50, 75, 100	Assigns a default, static velocity voltage of either 50%, 75% or 100% to the entire track. This voltage can be modulated using either the **CTRL** knobs, **AUX** inputs or a **MOD** Lane, allowing for dynamic velocity control via Metropolix.
	Track CV	Uses the track's **CV** lane to determine velocity levels per-stage, which can be further modulated using the **CTRL** knobs, **AUX** inputs or a **MOD** Lane.
MIDI Channel	— , 1-16	Sets the MIDI Channel (1-16) over which the Track's data is transmitted, allowing Metropolix to external MIDI devices via its USB port. If you do not want the Track to transmit MIDI over USB, set the value to "—".
CV to CC	— , 0-127	Translates the track's CV lane to a user-selectable MIDI CC value, allowing the CV to control any CC-accessible parameter on an external MIDI device. CC is transmitted over USB using the MIDI Channel selection. If you do not want the track to translate CV to MIDI CC, set the value to "—".
Slide Toggle CC	— , 0-127	Assigns a MIDI CC number to Metropolix' SLIDE function. When Slide is activated on a Stage, Metropolix will transmit a value of 127 on this CC, over USB, using the MIDI Channel selection. Stages without slides will transmit a value of 0 on this CC.
		You can set this CC to match the Glide/Portamento on/off control of an external synth (sometimes CC 65, but not always), or you can assign it to any other function you'd like to have Metropolix toggle on/off.
		If you do not want the track to send a CC value for Slid stages, set the value to "—".
		NOTE: While the MIDI implementation of Slide honours the Slide Type setting on the [SLIDE TIME](#) screen, it manifests somewhat differently over MIDI. Specifically, Analog and Tempo options

generate identical MIDI output, while Acid holds the stage's gate high, and places the actual slide at the beginning of the following stage.

Slide Amount CC — , 0-127   Translates Metropolix' Slide Amount value (set with the **SLIDE** TIME button) into a MIDI value, which it transmits over USB using the CC number selected here (on the selected MIDI Channel).

You can set this CC to match the Glide/Portamento time control of an external synth (sometimes CC 5, but not always), or you can assign it to any other function you'd like to control with Metropolix' SLIDE lane.

If you do not want the track to send Metropolix' Slide Amount value as a CC, set the value to "—"..

Slide Amount   Toggle   Sends the Slide Amount CC only for Stages that have their SLIDE function turned on (lit), returning to a value of 0 for any stages that do not have SLIDE enabled.

Always   Sends the Slide Amount CC once at the beginning of the sequence, regardless of whether its SLIDE function is turned on (lit) or not.

MOD Lane Settings

Each MOD Lane has its own MIDI options, allowing Metropolix to control eight entirely different parameters over MIDI CC — each on any of 16 MIDI channels. These options are set in each MOD Lane's [Track (MOD) Menu](link), accessed by pressing **ALT** + **MOD**. You can switch between MOD Lanes by pressing **EDIT** + **LANE (Stage) button** (1 - 8)).

The relevant MIDI settings are:

MIDI Channel — , 1-16   Sets the MIDI Channel (1-16) over which the Mod Lane's data is transmitted, allowing each MOD Lane to control its own MIDI device via Metropolix' USB port. If you do not want the MOD Lane to transmit MIDI over USB, set the value to "—".

MIDI Mod to CC — , 0-127   Converts the MOD Lane to a user-selectable MIDI CC value, allowing the MOD Lane to control any CC-accessible parameter on an external MIDI device. CC is transmitted over USB using the MOD Lane's MIDI Channel selection. If you do not want the MOD Lane to output MIDI CC, set the value to "—".

Learning CC Assignments in your DAW

Learning external CC assignments in a DAW requires that you tell the DAW to "listen" for an incoming MIDI CC, then send an isolated CC value to the DAW.

Because Metropolix can potentially send many different CC values when running, it's been designed to send isolated CC values when stopped. So, if you've designated a MIDI CC assignment within Metropolix (such as a Track's **CV to CC**, **Slide Toggle/Amount CC**, or a Mod Lane's **MIDI Mod to CC** setting) then, when Metropolix is stopped, the corresponding MIDI CC will output as you adjust the connected parameter.

For example, if you adjust a Stage's CV value when that track's CV Lane has been assigned a CC number then, if the sequencer is stopped and MIDI is connected over USB, Metropolix will output the corresponding CC message so it can be learned by your DAW.

CALIBRATION

Metropolix is calibrated at the factory prior to shipment, so it's unlikely you'll ever need to perform any custom calibration. But if you do, these instructions (along with an external voltage meter) are all you need to calibrate it.

Entering Calibration Mode

To enter Calibration Mode:

1. Press the **SETUP** button to open the global SETUP MENU.

2. Turn the encoder until the **Version** number is highlighted.

3. Hold down the MOD button while pressing the encoder.

    Metropolix enters Factory Mode and displays the Factory Menu.

4. Turn the encoder to highlight the **Calibration** option, then press the encoder.

    The Calibration Screen appears.

*IMPORTANT : DO NOT select any of the other Factory Menu options unless specifically told to do so by Intellijel Tech Support. If you accidentally select a different Factory Menu item, press the **EXIT** button to cancel out of the operation.*

Calibrating Metropolix Outputs

You can calibrate all four of Metropolix' variable outputs (**TRK 1 PITCH**, **TRK 2 PITCH**, **OUT A**, **OUT B**) using the same technique.

*TIP: If you make a mistake at any point during the following calibration procedure, you can scroll to the bottom of the Calibration menu, select **Reload All**, and press the encoder. This will reload the current, previously saved values back into Metropolix. Once you enact a **Save All**, this is no longer possible, since your edited values will overwrite the previous calibration.*

To Calibrate Metropolix' Outputs:

1. Patch the **OUT A** into a calibrated voltmeter with .001V accuracy.

2. Enter Calibration Mode, as discussed earlier.

3. Turn the encoder to highlight '**OUT A 0V: [number]**', then press the encoder.

   The **[number]** field is highlighted.

4. Turn the encoder (either clockwise or counterclockwise) to adjust the internal trim **[number]** until your voltmeter reads as close to 0.000V as possible, then press the encoder to lock in the offset.

5. Turn the encoder to highlight '**OUT A 1V: [number]**', then press the encoder.

   The **[number]** field is highlighted.

6. Turn the encoder (either clockwise or counterclockwise) to adjust the internal trim **[number]** until your voltmeter reads as close to +1.000V as possible, then press the encoder to lock in the offset.

7. Patch **OUT B** into your voltmeter, turn the encoder to '**OUT B 0V: [number]**' and repeat Step 4, then turn the encoder to '**OUT B 1V: [number]**' and repeat Step 6.

8. Patch **TRK 1 PITCH** into your voltmeter, turn the encoder to '**Pitch 1 0V: [number]**' and repeat Step 4, then turn the encoder to '**Pitch 1 1V: [number]**' and repeat Step 6.

9. Patch **TRK 2 PITCH** into your voltmeter, turn the encoder to '**Pitch 2 0V: [number]**' and repeat Step 4, then turn the encoder to '**Pitch 2 1V: [number]**' and repeat Step 6.

To Save the Calibration:

1. Turn the encoder to select **'Save All'**, then press the encoder to save your calibration.

Calibrating Metropolix Inputs

You can calibrate all three of Metropolix' variable inputs (**X**, **Y**, and **Z**) using the same technique.To Calibrate Metropolix' inputs:

*TIP: If you make a mistake at any point during the following calibration procedure, you can scroll to the bottom of the Calibration menu, select **Reload All**, and press the encoder. This will reload the current, previously saved values back into Metropolix. Once you enact a **Save All**, this is no longer possible, since your edited values will overwrite the previous calibration.*

To Calibrate Metropolix' Inputs:

1. Enter Calibration Mode, as discussed above.

2. Prior to calibrating Metropolix' inputs, you *must* calibrate its outputs using the technique discussed above.

    Calibrated outputs are a necessity, since they will be used as the reference source for calibrating Metropolix' inputs.

3. Patch Metropolix' calibrated **OUT A** jack into Metropolix' **X** input jack

    Although this example uses **OUT A** as a reference source, you can use any of the four calibrated outputs: T**RK 1 PITCH**, **TRK 2 PITCH**, **OUT A** or **OUT B**.

    NOTE: The positions of the X, Y, and Z attenuverters are ignored while calibrating.

4. Turn the encoder to highlight '**Aux X: [number] / [number]'**, then press the encoder.

    Input **X** is automatically calibrated upon pressing the encoder.

5. Move one end of the patch cable to the **Y** input; turn the encoder to highlight '**Aux Y: [number] / [number]'**, then press the encoder.

    Input **Y** is automatically calibrated upon pressing the encoder.

6. Move one end of the patch cable to the **Z** input; turn the encoder to highlight '**Aux Z: [number] / [number]'**, then press the encoder.

    Input **Z** is automatically calibrated upon pressing the encoder.

To Save the Calibration:

1. Turn the encoder to select **'Save All'**, then press the encoder to save your calibration.

FACTORY RESET

To restore Metropolix to its default factory configuration:

1. Press the **SETUP** button to open the global SETUP MENU.

2. Turn the encoder until the FW Version number is highlighted.

3. Hold down the **MOD** button while pressing the encoder.

    Metropolix enters Factory Mode and displays the [Factory Menu](#).

4. Turn the encoder to highlight the Factory Reset option, then press the encoder.

    Metropolix' global, track, and stage parameters are all reset, along with the CTRL knob, AUX input, OUT and MOD assignments, custom shortcuts, etc.

    NOTE: Alternatively, you can perform a Factory Reset by turning off power to the Metropolix then hold the SETUP button down while powering the unit back on.

Performing a Factory Reset will not overwrite your presets. If you wish to erase all your presets:

1. Turn off power to the Metropolix.

2. Press and hold the Stage 2 (SAVE) button while turning on the power.

    All presets are erased.

FIRMWARE UPDATES

Firmware updates, if available, are contained within the latest *Intellijel Firmware Updater* application, which you can download from the product's page on the Intellijel.com website. The application is available in both Macintosh and Windows formats, and will install firmware into your module over USB. Download the app, then use the drop-down list at the top of the application to select the product you wish to update, and the firmware version you want to install. Click the **Instructions** button to read specific instructions for updating your module.

Metropolix's current firmware is displayed on the screen during boot. If the module is already powered on, you can see it's firmware version in the global SETUP MENU:

1. Press the **SETUP** button to view the SETUP MENU.

2. Turn the encoder to scroll down to the Version item.

3. The version number is displayed on the right.

Firmware Change Log

1.4 (JAN 2022)

- **NEW**: USB MIDI support

    - **NEW**: MIDI Clock Out toggle in the SETUP menu

    - **NEW**: MIDI Transport toggle in the SETUP menu

    - **NEW**: SysEx Transfer options, accessed via the SETUP menu, for backing up and restoring Metropolix's settings and/or patches.

    - **NEW**: MIDI Setup options sub-grouping in the SETUP Menu

    - **NEW**: MIDI Channel option in each of the Track Menus and Mod Lane Menus.

    - **NEW**: MIDI CV to CC option in each Track Menu. Use this to assign the Track's CV Lane to a MIDI CC value for controlling an external MIDI device

    - **NEW**: MIDI Mod to CC option in each Mod Lane Menu. Use this to assign a Mod Lane to a MIDI CC value for controlling an external MIDI device.

    - **NEW**: Slide Toggle CC option in each Track Menu. Use this to assign a MIDI CC number to Metropolix' SLIDE function. When Slide is activated on a Stage, Metropolix will transmit a value of 127 on this CC, over USB, using the MIDI Channel selection. Stages without slides will transmit a value of 0 on this CC.

○ **NEW**: Slide Amount CC option in each Track Menu. This translates Metropolix' Slide Amount value (set with the SLIDE TIME button) into a MIDI value, which it transmits over USB using the CC number selected here (on the selected MIDI Channel).

○ **NEW**: Slide Amount option in each Track Menu. This determines whether the Slide Amount value is transmitted over MIDI only when a stage has its SLIDE function turned on (lit), or if it always transmits, regardless of whether a stage's SLIDE function is turned on.

○ **NEW**: For the most elegant solution to accessing Metropolix' rear-panel micro-USB port and all this expanded MIDI functionality, Intellijel now offers the USB Micro Extender 3U/1U module, which provides a passthrough connector for accessing Metropolix' USB port from the front panel. The new module also features a pair of passive Mults, and comes with a 1U panel for those wishing to have their passthrough connector in a 1U row, rather than a 3U.

● **NEW**: Velocity support

○ **NEW**: Velocity level option in the Track Menu. Tracks can now be assigned a default Velocity level (50%, 75%, 100% or derived from the CV Lane). You can further modulate this value using a **CTRL** knob, **AUX** input or **MOD** Lane, and you can route Velocity voltages to **OUT A** and/or **OUT B** or to MIDI.

○ **NEW**: Velocity can be output as a voltage over OUT A and/or OUT B.

○ **NEW**: CTRL knobs can be assigned to Velocity ± for real time control of the Velocity voltage.

○ **NEW**: AUX inputs and MOD Lanes can be assigned to Velocity for modulating the Velocity voltage.

○ **NEW**: Tracks set to transmit over MIDI include MIDI Velocity, derived from Metropolix' Velocity voltage.

● **NEW**: Parameter value randomization. You can now randomize the vast majority of Metropolix' Track Settings, Stage parameters, and MOD Lanes values. In general, you do this by 1) navigating to the screen whose parameters you wish to randomize, 2) pressing the **ALT** button to enter ALT mode, then 3) pressing one of the three **AUX** buttons. The three AUX buttons perform different randomization options. Specifically:

○ **ALT** + **AUX X** : Totally randomizes all the current screen parameters.

○ **ALT** + **AUX Y** : Modifies (morphs) the screen's current values up or down by a small percentage.

○ **ALT** + **AUX Z** : Resets the screen's parameters to the state they were in when you first pushed the **ALT** button to enter ALT mode.

- **NEW**: Pedal Point play order option added to the ORDER menu. Plays stages back in the following order: 1 2 1 3 1 4 1 5 1 6 1 7 1 8 | 1 2 1 3 1 4 1 5 1 6 1 7 1 8 | etc…

- **NEW**: New **Mx** Modes for the *Gx Gate Expander* module. Specifically:

  - Old Transport option is now called Transport A.

  - New Transport B option: Odd/Even Mix, which assigns Gx outputs as follows:

    OUT 1:   Run - follows the screen's track assignment
    OUT 2:   Reset (First Pulse) - follows the screen's track assignment
    OUT 3:   /1 Clock
    OUT 4:   /3 Clock
    OUT 5:   /4 Clock
    OUT 6:   /5 Clock
    OUT 7:   /8 Clock
    OUT 8:   /16 Clock

  - New Transport C option: Div/Mult Mix, which assigns Gx outputs as follows:

    OUT 1:   Run - follows the screen's track assignment
    OUT 2:   Reset (First Pulse) - follows the screen's track assignment
    OUT 3:   x4 Clock
    OUT 4:   x2 Clock
    OUT 5:   x1 Clock
    OUT 6:   /2 Clock
    OUT 7:   /4 Clock
    OUT 8:   /8 Clock

  - New Probability Clock option, which assigns Gx outputs as follows:

    OUT 1:   x1 Clock (100% probability)
    OUT 2:   x1 Clock (75% probability)
    OUT 3:   x1 Clock (50% probability)
    OUT 4:   x1 Clock (25% probability)
    OUT 5:   /2 Clock (100% probability)
    OUT 6:   /2 Clock (75% probability)
    OUT 7:   /2 Clock (50% probability)
    OUT 8:   /2 Clock (25% probability)

- **NEW**: Simultaneous editing of all gated stages. Previously, when using the **ALT** button to edit all stage parameters simultaneously, the encoder would affect only *continuous* voltage settings for all stages, but would have no effect on *gated* settings. Now it does. Specifically (when editing SKIP, SLIDE, CV (gates) or MOD (gates), you can edit all gates simultaneously. Specifically: A) hold **ALT** while turning the encoder to rotate/wrap the gate pattern forward or backward; B) hold **ALT** while pushing the encoder to invert the pattern ("on" states turn off, and vice-versa); or C) hold **ALT** while long-pressing the encoder to set the pattern back to its default state. Alternatively (as with other ALT functions), you can press the **ALT** button to enter ALT mode, perform the various ALT actions, then press **ALT** again to exit ALT mode.

- **NEW**: New OUT A & B assignment option, called Reset, which sends a trigger signal each time Metropolix globally resets (such as when the number of Total Pulses (if set) is reached; or a manual global reset is triggered).

- **NEW**: New OUT A & B assignment options, called Slider (0-5V) and Slider (Range) which provide unquantized voltage outputs derived from the PITCH sliders. Specifically:

  - Slider (0-5V) : Outputs a voltage based on the current stage's PITCH slider position, with 0V being output at a slider's bottom, and +5V at its top. Nothing that affects pitch (i.e. scale, accumulation, per-stage pitch overrides, etc) has any effect on the voltage, nor does the Track Menu's Slider Octaves and Slider Dir. settings. Output always ranges between 0V and 5V based entirely on the position of each PITCH slider.

  - Slider (Range) : Similar to the Slider (0-5V) assignment (detailed above), in that the OUT voltage is based on the current stage's PITCH slider position. Only in this case, the Track Menu's Slider Octaves and Slider Dir. settings affect the voltage range and orientation of the PITCH sliders. With this assignment, the PITCH slider voltage is related to the Slider Octaves setting, so if Slider Octaves = 4, then the range of the PITCH slider is 0V - 4V. If Slider Octave = 3, then the range of the PITCH slider is 0V - 3V; etc. If Slider Dir. = Inverted, then 0V is at the top of the slider, rather than the bottom. Nothing else that affects pitch (i.e. scale, accumulation, per-stage pitch overrides, etc) has any effect on the voltage.

- **NEW**: Screen Level option lets you adjust the brightness of the screen. This option is in the UI Setup submenu in the ADVANCED section of the **SETUP** menu).

- **NEW**: When saving or loading Preset Chains, the most recently loaded Preset Chain will be indicated by a flashing Stage LED. Clearing, or making a new Quick Chain will unset the "Last Loaded Preset Chain" indicator, and stop the flashing LED.

- **NEW**: New Update Firmware… command near the bottom of the **SETUP** Menu. Now that Metropolix offers an option for accessing the rear USB port without pulling the module from the case, this new command provides an alternative way to access Metropolix' Bootloader for installing future Firmware updates. It performs the same function as powering on the module with the rear button held down.

- **CHANGE**: In the SETUP menu, the old Clock Mode option has been renamed Clk/Rset Out to indicate that the setting now affects Global Reset outputs as well as Clock.

- **CHANGE**: Transport Options for Gx/Qx now use the Global Reset Flag rather than the reset flag from a selected track.

- **CHANGE**: When in ALT mode, the text in the Action Display (at the bottom of the screen) now reads: "EDIT ALL / ALT" rather than "ALT / EDIT ALL".

- **FIX**: Minor bug fixes, including an Accumulator bug when using Acid slides, and another involving resetting Total Pulses or Queued Loads.

1.3.2 (AUG 2021)

- **FIX**: Adding preset Red 1 to the first slot of a Quick Chain.

- **FIX**: Freezing issue when overwriting a saved Preset Chain.

- **FIX**: Issue where presets would stop loading after long sessions with lots of preset loading/chaining.

1.3.1 (JUL 2021)

- **FIX**: Fixed incorrect Mod Lane assignments when loading presets saved on an older firmware version.

- **FIX**: Fixed when tracks are set to ignore the Global Reset, they should still reset in a Preset Chain or Delayed Load.

- **FIX**: Fixed Factory Reset boot shortcut, it was clearing settings, but not properly setting defaults.

1.3 (JUN 2021)

- **NEW:** [Preset Chaining](#) feature. You can create chains of presets such that, as Metropolix plays, it steps through the chain — triggering each preset change automatically. This lets you develop complex song structures and play them back in a predictable way.

  The bulk of the Preset Chaining operation occurs within the [PRESET CHAIN](#) screen, which is accessed via the Preset Chains option in the SETUP Menu. You can also access the PRESET CHAIN screen directly by long-pressing (>1 sec) the **SETUP** button.

  You can create Preset Chains containing up to 32 Preset changes (links), each of which can repeat up to 64 times; and each of which can have individual Track/MOD mute states. Chains can be [edited](#), and up to 8 Preset Chains can be [saved and recalled](#).

- **NEW**: Added a Total Pulses setting to the [SETUP MENU](#). This defines an overall length (in pulses) for the entire sequence. When this count is reached, all Tracks and MOD Lanes are reset regardless of the current position of each track and MOD Lane's **LEN** setting. The Total Pulses setting is saved with a preset (meaning each preset can have its own Total Pulses count), and can also used for queued loads (as described in the [LOAD](#) button description) and the new [Preset Chaining](#) feature.

- **NEW**: New [AUX/MOD](#) and [CTRL knob](#) destination, called BPM (INT), for controlling Metropolix' internal tempo (i.e., the SETUP Menu's Clock option must be set to 'Internal' in order to control it).

- **NEW**: The [SETUP MENU](#) has been reordered slightly, and the options are now arranged into three grouped sections: [Global options](#); [Preset options](#); and [Advanced options](#).

- **NEW :** Added a three-option LOAD DELAY setting to the **LOAD** screen. Queued loading no longer uses the LEN>Pulses parameter of track 1 to determine when to load the next preset. Instead, it now uses the LOAD DELAY setting to define when, exactly, a preset loads. You can now select whether a preset load is Instant; determined by some number of Queue Pulses (or manually triggered); or determined by the new Total Pulses setting. These new methodologies are described thoroughly in the LOAD section of the manual.

- **NEW**: CTRL knob positions can now be output as voltage on OUTS **A** and **B**, and can function either as a unipolar voltage source (0-5V) or bipolar (±5V). For more information see the description for OUT A & B.

- **CHANGE**: The maximum number of Queue Pulses has been increased from 64 to 4096 (to match the maximum number of pulses available via the new Total Pulses setting).

- **CHANGE**: On the DIV screen, the old Pulse Div parameter has been given the slightly more accurate name of "Pulse Count Div". However, due to space constraints, it's still called "Pulse Div" on the MOD, AUX and CTRL assignment screens.

- **CHANGE**: When selecting MOD Lanes, each lane's assigned destination is now shown in the action display at the bottom of the screen (along with the MOD Lane number, which was previously shown).

- **CHANGE**: When accessing shortcuts on the SCALE and ORDER screens, the Action Display now says "User Shortcut" rather than simply "Shortcut". This reminds you that the shortcuts on these two screens are user-programmable.

- **CHANGE**: Minimum tempo is now 0.1 BPM (instead of 1.0 BPM).

- **FIX**: General memory optimizations and minor bug fixes.

1.2 (APR 2021)

- **NEW**: Customizable *User Scales*, defined thoroughly in the Scale section of this manual.

    - **NEW**: 100 User Scale locations, arranged in 10 banks of 10 scales each.

    - **NEW**: The Root note is saved with each User Scale.

    - **NEW**: To edit a User Scale, select the scale and hold the encoder for 1 second. When editing, use the encoder to select and toggle notes on and off. Edits are heard in real time, and while you're editing you can press **ALT** to change the root. Exit the Scale Edit screen by: holding the encoder; or pressing Exit; or switching to another function.

    - **NEW**: Added a Scale (User) modulation destination in the AUX, MOD and CTRL destination screens. This option enables per-track Modulation of Scale selection within the User Bank containing the locked User Scale (see below). Because there are 10 scales in a bank, each ±1V change in CV (or MOD) voltage changes to the next higher (+ voltage) or lower (- voltage) numbered scale within the current User Bank.

    - **NEW**: Scale Lock feature on the SCALE screen. Locking a scale means you will hear that scale applied regardless of the scale name that appears on screen. This allows you to scroll through the scale list without actually loading the scales as you view them. Locking a User Scale has an additional feature: it not only locks the scale, but defines it as the "starting" scale when you use the new Scale (User) destination to apply modulation to a User Bank.

    - **CHANGE**: Scale Root is now updated using the **ALT** button when selecting or editing Scales (rather than an Encoder press).

- **NEW**: Home Screen 2: Note Overview screen has been updated to reflect live Quantizer Modulations, including: Root; Scale; Pitch Pre; and Pitch Post values.

- **NEW**: Added a Run on Boot option in the UI Setup section of the SETUP Menu, which determines whether Metropolix boots with the **RUN** button turned On or Off.

- **NEW**: Added a Save + Exit action on the Save Screen, making it the new default. For more information, see SAVE.

- **NEW**: New Confirmation Dialog when overwriting an existing Preset (see SAVE).

- **NEW**: Added a third option (Aux/Mod) to the Reset setting on the LIM screen. This option resets the accumulator *only* when triggered via an **AUX** (**X**, **Y**, or **Z**) input or **MOD** Lane assigned to the Accum Reset destination.

- **CHANGE**: Root ± **CTRL** assignment is now bipolar, with CW rotations raising the root note; CCW rotation lowering the root note; and the noon position having no effect.

- **FIX**: Acid SLIDE bug when using Probability.

- **FIX**: Cleaner gate output when Tuner Gates = Clock in Tuner Mode (accessed via the SETUP Menu).

- **FIX**: Other minor bug fixes.

1.1 (MAR 2021)

- **NEW**: Expanded accumulator features.

  The LIM button now opens a menu of options, which contains several new and changed features. Specifically:

  - Positive Limit and Negative Limit : **Previously called** Upper Limit **and** Lower Limit, **the default setting for each is now ±7 (rather than ±8), and limits can no longer be set to "0."**

  - Mode : **Sets whether the accumulation applies only to the "Stage" (the original Metropolix setting), or if it affects the entire "Track."**

  - Order : **Select from different accumulator orders: Wrap; Pendulum; Random; and Hold.**

  - Polarity : **Sets whether accumulated pitches range between the** Positive Limit **and** Negative Limit **("Bipolar"), or between the stage pitch and one of the limits ("Unipolar").**

  - Reset : **Sets whether the accumulator should reset automatically (based on a certain number of Pulses), or if it should only reset manually.**

- **NEW**: New and changed CTRL destinations. Specifically, the old Accum and Accum Invert destinations have been removed, and replaced with Accum Mode and two new tri-state destinations: Accum Dir and Accum Polar:

  - Accum Mode : **Gate destination. Turning the knob toggles between an accumulation** Mode **of** "Stage" **or** "Track" **(normally set with the Mode parameter on the LIM screen).**

  - Accum Dir : **Tri-state destination. When the knob is Clockwise, stages accumulate as programmed. When the knob is Counterclockwise, stages play the pitches calculated by the accumulator in the reverse order. When the knob is in the noon position, stages hold their accumulated pitches at their current values.**

  - Accum Polar : **Tri-state destination. When the knob is Clockwise, stages accumulate as programmed, and the LIM screen's** Polarity **setting will be set to** Unipolar. **When the knob is in the noon position, stages accumulate as programmed, and the LIM screen's** Polarity **setting will be set to** Bipolar. **When the knob is Counterclockwise, any stages for which an ACCUM value is assigned will invert the** TRANSPOSE AMOUNT **direction — positive accumulations will become negative; and vice versa. It will also set the LIM screen's** Polarity **setting to** Unipolar.

- **NEW**: New [AUX/MOD](#) destinations:

  - Accum Rev : Gate destination. When the gate is low, stages accumulate as programmed. When the gate is high, stages will play the pitches calculated by the accumulator in the reverse order. This differs from Accum Invert, which inverts the [ACCUM](#) screen's TRANSPOSE AMOUNTS (causing the accumulation to recalculate).

  - Accum Mode : Gate destination. When the gate is high, the programmed accumulation Mode ("Stage" or "Track," as set on the **LIM** screen) will toggle to the other option; and be restored to the programmed value when the gate is low.

  - Accum Polar : Gate destination. When the gate is high, the programmed accumulation Polarity ("Unipolar" or "Bipolar," as set on the **LIM** screen) will toggle to the other option; and be restored to the programmed value when the gate is low.

- **NEW**: 14 chord shapes (7 Major and 7 Minor) have been added to the end of the [Scales](#) list, which confine notes to a particular chord shape, rather than a scale. These can be particularly useful (and melodic) when used in conjunction with Metropolix' accumulator feature.

- **NEW**: Added a Clock Mode function in the [SETUP MENU](#), which determines whether Metropolix (and an expander) outputs clock signals only while the sequencer is running (Clock Mode = Running), or if it outputs clocks even when the sequencer is stopped (Clock Mode = Always). *NOTE: In v1.4, the name was changed to Clk/Rset Out*.

- **NEW**: Added a Run Btn function in the [SETUP MENU](#), which sets how Metropolix behaves when the **RUN** button is pressed. In both cases, if the sequencer is not running, pressing **RUN** will start the sequencer. The difference is in what happens when you press the **RUN** button to stop a running sequence. If set to Run/Pause, pressing the **RUN** button pauses playback, but does not reset the sequencer — meaning a subsequent press of the **RUN** button will start the sequencer from its current position, and not from the beginning. If set to Run/Stop, pressing the **RUN** button stops playback and resets the sequencer to the beginning.

- **NEW**: "Panic" button: Press the **RESET** button when Metropolix is not running to set Track 1 & 2's **GATE** outputs to 0V.

- **CHANGE**: Updated menus with new visual features: disabled items; dividers.

- **CHANGE**: Pitch offset modulation is applied when a track is muted, but it will continue to ignore *updates* to the modulation when a track is muted.

- **CHANGE**: When EDIT is active, the selected STAGE number button will blink — in both Track and MOD views.

- **FIX**: Fixed Mod Lane resets on queued Preset loads.

- **FIX**: Crash when RUN goes low before a queued preset loads.

- **FIX**: Miscellaneous manual corrections and improvements.

- **FIX**: Other minor bug fixes.

1.0.1 (MAR 2021)

- **CHANGE**: The active screen parameter is no longer indicated by a white background, but by pulsing corners that surround the parameter.

- **CHANGE**: Muted Tracks and Mod Lanes now *blink* red when the Loopy button is held down. Previously they were lit *solid* red.

- **CHANGE**: The Loopy Stage Player buttons are lit in muted blue, rather than blinding white.

- **CHANGE**: LED brightness choices now range from 1 to 4.

- **CHANGE**: Darker UI; less drastic contrast changes in a dark environment.

- **CHANGE**: Setup Menu arranged in a more logical order.

- **CHANGE**: Slightly longer hold (~1 sec) required to save a shortcut, making it less likely that you'll save a shortcut when you merely wanted to load one.

- **FIX**: Fix for missed gates when set to very short length at faster BPM (the shortest effective gate is 0.333ms).

- **FIX**: Other minor bug fixes.

1.0.0.5 (FEB 2021)

- Initial Release

TECHNICAL SPECIFICATIONS

Width :	**Metropolix** :	34 hp
	Gx (or Qx) :	4 hp (optional)
Maximum Depth :	**Metropolix** :	25 mm
	Gx (or Qx) :	22 mm
Current Draw :	**Metropolix** :	95 mA @ +12V 10 mA @ -12V
	Gx (or Qx) :	8 mA @ +12V 0 mA @ -12V