

Metropolis

Complex Multi-Stage Pitch and Gate 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.

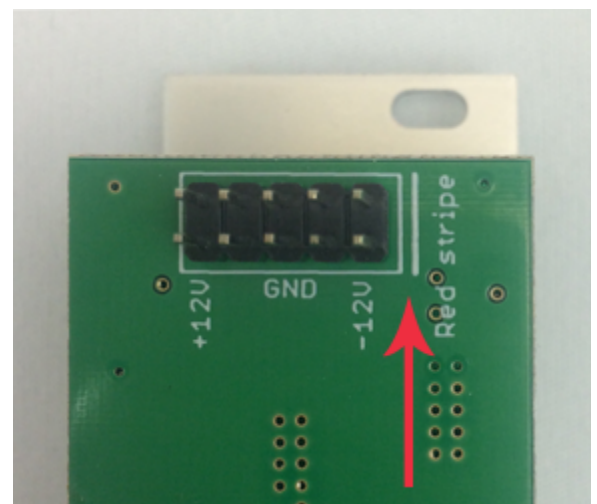
You will also need to ensure your case has enough free space (hp) to fit the new module. To prevent screws or other debris from falling into the case and shorting any electrical contacts, do not leave gaps between adjacent modules, and cover all unused areas with blank panels. Similarly, do not use open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

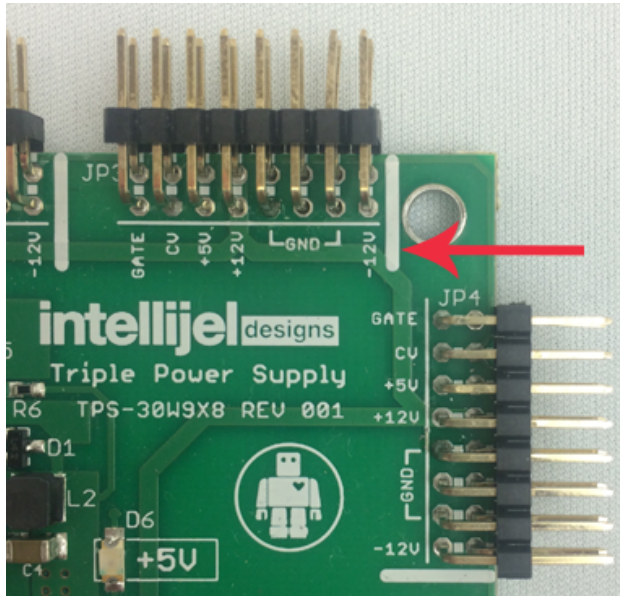
Installing Your Module

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. The pins are indicated with the label -12V, a white stripe next to the connector, the words "red stripe", or some combination of those indicators.



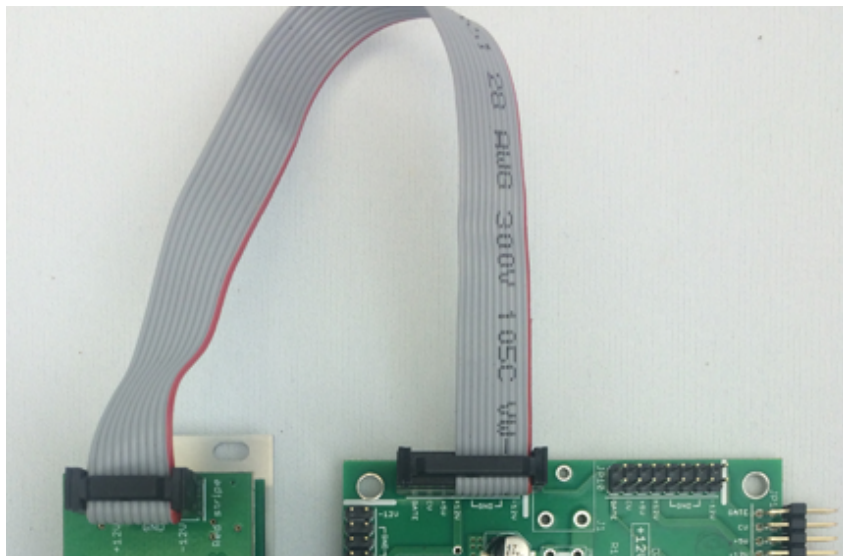
Most modules will come with the cable already connected but it is good to double check the orientation. Be aware that some modules may have headers that serve other purposes so ensure the cable is connected to the right one.



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:

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.

Overview

The Intellijel Metropolis is a unique and powerful Eurorack format musical sequencer inspired by the Ryk M-185 (a Roland System 100m format sequencer.) but with many additional enhancements and functions.

The Metropolis comprises eight **STAGES**, each with its own assignable gate mode, pulse count, ratchet count, and pitch value. Each stage can also have slide or skip activated. The slide functionality is a constant time portamento very similar to the Roland TB303 which produces a very musical and interesting result.

In addition to the base sequencer settings set with the sliders and switches there is a full menu of controls and auxiliary modifiers that allows the user to control and manipulate the sequence in many powerful ways including sequencer direction modes, pitch quantization and scale manipulators, clock dividers, shuffle and much more.

The operation of the Metropolis is optimized for live performance and jamming, with quick button combos available to access all of the commonly used features. A pair of **AUX** inputs allows modulation of the sequencer playback for even greater variation.

Features

- Sequencer modes: Forward, Forward-fixed, Reverse, Reverse-fixed, PingPong, PingPong-Fixed, Random, Random-fixed, Brownian, Brownian-fixed
- TB-303 style slide (constant time portamento) with adjustable time.
- Internal quantizing in any key and a choice of 30 different scales
- Can act as a master clock with tap tempo BPM control or slave to an external clock.
- SAVE/LOAD panel settings to EEPROM
- Shuffle
- Internal clock divider
- Sync output
- Two assignable AUX inputs which can control: gate length, transpose, key shift, root shift, sequence length, step divisor and octave offset.
- Config menu to set slider pitch range, clock div type, sync type and reset type
- All menu actions are one level deep. i.e. press the menu button and spin the encoder. There are no hidden levels or sub menus (except for the CONFIG menu)
- All the core original RYK m185 functions. Read more about the original project [here](#) and [here](#)

Front Panel



1. **AUX A input** - Patch a -5 to +5V source here for modulating the sequencer parameter assigned to AUX A.
2. **GATE output** - The sequencer gate signal (0V for off, +5V for on) is produced here. Typically you would patch this to the gate input of an ADSR or AHD envelope generator.
3. **PITCH output** - The pitch control voltage (CV) is produced here. This would usually be patched to the 1V/Oct or PITCH/FM inputs of a VCO. The signal is in the range of 0-5V and is scaled 1V/Oct.
4. **SYNC output** - A gate is produced here at either the first or last clock pulse in a sequence depending on the SYNC setting in the CONFIG menu. The yellow LED indicates the output state.
5. **AUX B input** - Patch a -5 to +5V source here for modulating the sequencer parameter assigned to AUX B.
6. **RESET input** - Patch a gate signal (0 - 5V) to reset the sequencer on either the next clock pulse or immediately, depending on the RESET option in the CONFIG menu.
7. **CLK input** - Patch an external clock source (0 - 5V logic level, or a pulse from an LFO) here. This input is only active when external clock mode is selected from the INT/EXT menu.
8. **CLK output** - When the Metropolis is in internal clock mode (INT CLK) the BPM based clock is generated here. In external clock mode (EXT CLK) the external clock is divided and produced at this output. This clock frequency is divided by a value set with the DIV menu and is in a range of 1 (no division at all) to 32 (32 clock pulse internally must occur before one clock pulse externally is generated). In the CONFIG menu DIV TYPE submenu there is an option to change this output to generate a pulse at the beginning of each new stage instead of acting as a clock output.
9. **DISPLAY** - All menu values and realtime sequencer data are displayed here.
10. **BUTTON menu** - This array of 18 buttons comprises the main configuration and controls for the sequencer. They are colour-coded according to function:
 - RED - Transport functions
 - GREY - Timing functions
 - WHITE - Pattern function
 - BLACK - System configuration
11. **GATE TIME knob** - This knob allows you to set the gate time from the shortest possible (full counter-clockwise) to the longest (full clockwise). If one of the AUX inputs has been assigned to G.LEN then the value set by this knob is summed with the aux modulation.
12. **EXIT button** - This button immediately exits any menu and returns to the default sequencer display.
13. **DATA encoder** - This rotary encoder is for setting values under the different menus and submenus. For menus where the selection is blinking, the encoder must be clicked to confirm the selection or enter a submenu. In all other menus clicking the encoder returns to the default sequencer display.

- 14. SLIDE TIME knob** - This knob sets the pitch slide time for any sequence stage that has slide activated. The time ranges from approximately 0 seconds (no slide) when fully counter-clockwise to approximately 1 second when fully clockwise. This slide is constant time regardless of the pitch interval between the two stages, much like the classic Roland TB-303.
- 15. SLIDE / SKIP buttons** - These buttons have several functions:
- Single click - activates the pitch glide for the selected stage. The LED will light as solid green to indicate this is active.
 - Double click - activates skip for the selected stage. The LED will blink to indicate this is active.
 - Hold and turn encoder - Activates ratcheting for the selected stage. The display will indicate the ratchet amount from 1 (no ratcheting) to 4.
 - Hold other button and single click - Activate the shortcut for the held button. See the shortcuts section for more details.
- 16. GATE MODE switches** - Each switch sets the gate mode for its respective stage, either HOLD, REPEAT, SINGLE, or REST.
- 17. PULSE COUNT switches** - Each of these switches sets the pulse count for the associated stage in the range of 1 to 8.
- 18. PITCH sliders** - Each of the sliders sets the pitch for the associated stage. The LED on the slider indicates the current gate state for the stage when the sequence is running. The slider position is quantized to a note in the current scale. The quantized note value is shown on the display when the sequence is playing or when a slider is moved.

Pattern Editing

On the Metropolis a pattern consists of 8 stages. Each stage has 6 settings:

- **PITCH** - Is set by the **PITCH sliders**. The slider's position is quantized to a note in the current scale. When the sequencer advances to a new stage the **PITCH** output will change to reflect that stage's pitch, unless the stage is a **REST** or rPC (Rest Pitch) is enabled in the **CONFIG** menu.
- **PULSE COUNT** - Is set by the **PULSE COUNT switches**. The pulse count determines how many clock cycles the sequencer stays on a stage. For example if the sequencer is currently on a stage with PULSE COUNT 1 it will advance to the next stage as determined by the **MODE** upon the next clock. If the PULSE COUNT is 3, it will stay on the stage for 3 clock cycles before advancing.
- **GATE MODE** - Each stage has four possible modes gate operation:
 - **HOLD** - The gate output is held high for the number of clock pulses set by the PULSE COUNT for the stage.
 - **REPEAT** - The gate output is repeatedly pulsed based on the current STEP/DIV setting and PULSE COUNT for the stage. If the PULSE COUNT is 1, then this behaves the same as SINGLE. The length of time each gate is high is determined by the **GATE TIME** knob.
 - **SINGLE** - The gate goes high at the beginning of the first pulse in the stage for a duration set by the **GATE TIME** knob.
 - **REST** - The gate is held low for the number of clock pulses set by the PULSE COUNT switch for that stage.
- **SLIDE** - When **SLIDE** is enabled for a stage the **PITCH** output will not immediately change to the stage's pitch. Instead, an analog pitch glide circuit is engaged that will gradually slide the pitch over a period of time determined by the **SLIDE TIME** knob. A stage with **SLIDE** activated will have its green LED lit.
- **SKIP** - When **SKIP** is enabled for a stage the sequencer skips over it to the next stage when it comes time to advance. The stage's **PULSE COUNT** doesn't count towards the total sequence length. A blinking green LED indicates a skipped stage.
- **RATCHET** - Each stage has a "ratchet" value from 1 to 4 that can be set by holding a stage's **SLIDE / SKIP button** and turning the encoder. The ratchet is a subdivision of a pulse. With a value of 1, there is no subdivision. With a value of two, two gates will be output for each pulse that would normally have one gate. The gate time of each is half the setting of the **GATE TIME** knob. All ratchets can be cleared by holding the **EXIT** button and turning the encoder until the screen displays **r_CLR**.

Patterns are also affected by the options described in the "Pattern Functions" section. Patterns can be saved and loaded using the **SAVE** and **LOAD** buttons as described in the "Shortcut Keys" section.

Menu Functions

Transport Functions

RUN

Toggles the start / stop of the sequence.

RESET

Resets the sequence. The behaviour depends on the **CONFIG -> RESET** mode:

If **rST_n** then the reset occurs on the next clock pulse.

If **rST_F** then the reset occurs if the **CLK input** is high at the same time as the **RST** input is high.

PREV

If the sequencer is running, stays on the current stage on the next clock pulse. If the sequencer is stopped this button can be used to scroll forwards through the stages to preview the pitches.

NEXT

If the sequencer is running, skips the sequence ahead by one stage on the next clock pulse. If the sequencer is stopped this button is used to scroll forwards through the stages to preview the pitches.

Timing Functions

BPM

When **INT CLK** mode is active you can use this button to set the rate of the internal clock from 20 to 320 bpm. Click the button once to enter the menu and then turn the **ENCODER** to adjust the BPM. Alternatively you can tap the tempo on the **BPM** button.

When **EXT CLK** mode is active the **BPM** menu displays the rate of the external clock. The pulse is also indicated by a blinking dot after the letters **bp**. Clicking the **BPM** button when already in the menu locks the tempo for the purpose of gate length calculation. This is useful if you are using an irregular clock but wish to have consistent gate lengths. After being locked, the tempo

can be further adjusted via the encoder. The tempo lock is indicated by a solid dot after the letters **bP**, and can be deactivated by clicking the **BPM** button again.

SWING

This menu sets the shuffle amount between successive clock pulses when in **INT CLK** mode. Every odd numbered clock pulse will be delayed by a percentage of the current clock interval. The swing ranges in value from 50 (0% swing) to 72 (33% swing). Shuffle also affects the gate length so that even steps will have longer gates than odd steps.

INT/EXT

The **INT/EXT** button allows you to select between three clock modes:

- **C_InT** uses the Metropolis internal clock, with the tempo set in the **BPM** menu.
- **C_EXT** advances the sequencer each time it receives a trigger on the **CLK input**. The interval between successive pulses determines the tempo and gate length, which can be locked in the **BPM** menu,
- **C_d24** is for syncing to DIN sync (Sync24) compatible devices. In this mode Metropolis expects a 24PPQ clock on the **CLK input** and only runs when the **RESET** input is high. The sequence is reset each time **RESET** goes low. The **CLK input** should be connected to pin 1 of a DIN sync cable and the **RESET** input to pin 5.

In this menu the display flashes to indicate that your choice of clock mode is not active until you click the encoder.

DIV

The **DIV** button accesses a menu composed of two flashing submenu choices. Select the submenu by turning the **ENCODER** and then click the **ENCODER** to enter the menu.

- **di** - Incoming clock division. Divides the incoming or internal clock by a factor of 1 to 64. When divided by 2, the sequencer will run at $\frac{1}{2}$ speed, divided by 3 at $\frac{1}{3}$ speed. Etc.
- **do** - Outgoing clock division. Divides the outgoing clock on the **CLK output**. The setting in the **CONFIG** menu determines the allowable values:
 - **d_ALL** - Any division from 1 to 64.
 - **d_Odd** - Any odd division from 1 to 64, eg: [1, 3, 5, ...].
 - **d_EvE** - Any even division from 1 to 64, eg: [1, 2, 4, ...].
 - **d_STA** - No divider value can be set. Instead, a clock pulse is generated each time the sequencer advances to a new stage.

Pattern Functions

MODE

The **MODE** menu is used to choose how the sequencer advances between stages:

- **Frd** - Forward Mode: The sequencer advances to each new stage in the forward direction, starting at stage 1. The last stage is set in the **STAGES** menu.
- **rEv** - Reverse Mode: The sequencer advances to each new stage in the reverse direction starting at the stage of the sequence set in the **STAGES** menu.
- **PnG** - Ping-Pong Mode: The sequence advances first in the forward direction starting at stage 1 until it reaches the stage set in the **STAGES** menu. It then switches direction to advance in reverse until it reaches stage 1 again.
- **brn** - Brownian Mode: This mode advances in a pseudo-random pattern known as a “drunken walk”. Starting at stage 1 it has a 50% chance of moving forward, 25% chance of staying at the same stage, and 25% chance of moving backwards. This results in a sequence that generally trends forward with some repetition. The **STAGES** menu sets the total number of stages before resetting to stage 1.
- **rnd** - Random Mode: The sequencer advances to each stage in a random order. The **STAGES** menu sets the total number of stages to be included in the random choices. E.g. if **STAGES** is 4 then only the first four stages of the sequence are considered.
- **Frd-F** - Fixed Forward Mode: The same as **Frd** mode except that the **STAGES** button sets the total number of *pulses*. This is useful to sync the length of the sequence to another sequencer with a precise number of steps.
- **rEv-F** - Fixed Reverse Mode: The same as **rEv** mode that the **STAGES** button sets the total number of *pulses*.
- **PnG-F** - Fixed Ping-Pong Mode: The same as **PnG** mode that the **STAGES** button sets the total number of *pulses*.
- **brn-F** - Fixed Brownian Mode: The same as **brn** mode that the **STAGES** button sets the total number of *pulses*.
- **rnd-F** - Fixed Random Mode: The same as **rnd** mode that the **STAGES** button sets the total number of *pulses*.

STAGES

This menu sets the length of the sequence in terms of the number of **STAGES** or **PULSES** depending on the direction **MODE** that is currently active.

STEP/DIV

The **STEP/DIV** value determines how many clock pulses form a single gate if the gate mode for the stage is **REPEAT**. The range of values is 1 to 4 pulses.

- **STEP1** - The gate output goes high on every clock pulse.
- **STEP2** - The gate output goes high on every second clock pulse.
- **STEP3** - The gate output goes high on every third clock pulse.
- **STEP4** - The gate output goes high on every fourth clock pulse.

E.g. If the **PULSE COUNT** for a stage is '5' and the **STEP/DIV** is '2' then the result would be three gates produced where the first two are each 2 clock pulses long (1/8th notes) and the third would be a single clock pulse (1/16th).

SCALE

This menu allows you to select one of the scales used to quantize the values of the sliders:

Scale	Display	Intervals
Chromatic	CHrOM	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Major	MAJOr	0, 2, 4, 5, 7, 9, 11
Minor	MInOr	0, 2, 3, 5, 7, 8, 10
Dorian	dOrIA	0, 2, 3, 5, 7, 9, 10
Mixolydian	MIXOL	0, 2, 4, 5, 7, 9, 10
Lydia	LYdIA	0, 2, 4, 6, 7, 9, 11
Phrygian	PHrYG	0, 1, 3, 5, 7, 8, 10
Locrian	LOCrI	0, 1, 3, 4, 7, 8, 10
Diminished	dIMIn	0, 1, 3, 4, 6, 7, 9, 10
Whole-Half	-HALF	0, 2, 3, 5, 6, 8, 9, 11
Whole Tone	-HOLE	0, 2, 4, 6, 8, 10
Minor Blues	bLUES	0, 3, 5, 6, 7, 10
Minor Pentatonic	PEnt-	0, 3, 5, 7, 10

Major Pentatonic	PEntA	0, 2, 4, 7, 9
Harmonic Minor	HArMI	0, 2, 3, 5, 7, 8, 11
Melodic Minor	MELMI	0, 2, 3, 5, 7, 9, 11
Super Locrian	SULOC	0, 1, 3, 4, 6, 8, 10
Arabic / Bhairav	ArAbI	0, 1, 4, 5, 7, 8, 11
Hungarian Minor	HUnGA	0, 2, 3, 6, 7, 8, 11
Minor Gypsy	GYPSY	0, 1, 4, 5, 7, 8, 10
Hirojoshi	HIrOJ	0, 2, 3, 7, 8
In-Sen	InSEn	0, 1, 5, 7, 10
Japanese / Iwato	JAPAn	0, 1, 5, 6, 10
Kumoi	KUMOI	0, 2, 3, 7, 9
Pelog	PELOG	0, 1, 3, 4, 7, 8
Spanish	SPAI	0, 1, 3, 4, 5, 6, 8, 10
Tritone	3TOnE	0, 1, 4, 6, 7, 10
Prometheus	PrOME	0, 2, 4, 6, 9, 10
Augmented	AUGME	0, 3, 4, 7, 8, 11
Enigmatic	EnIGM	0, 1, 4, 6, 8, 10, 11

ROOT

In this menu you can set the root note of the currently active scale. If the the active scale is **CHROMATIC** then changing the **ROOT** will have no perceivable effect.

System Configuration

AUX A / AUX B

These buttons set the target of the **AUX A** and **AUX B** inputs, which can be used to modify the sequencer behaviour.

- **G.LEn** - Alter the gate length. This value is summed with the position of the **GATE TIME** knob.
- **STAGE** - Alter the number of sequence **STAGES** or pulses (if in a fixed mode) by +/- 16.
- **STEPd** - Change the **STEP/DIV** value by +/- 4
- **d.In** - Change the clock division of the incoming clock by +/- 32
- **rATch** - Offset the ratchet level of the currently playing step.
- **P.PrE** - Shift the sequence *before* the quantizer, tracks 1V/octave.
- **P.PrEL** - Shift the sequence *before* the quantizer by +/- 12 semitones. Suitable for use with an LFO or other modulation source that is not pitch based.
- **P.OCT** - Shift the sequence +/- 4 octaves.
- **P.PoS**T - Shift the sequence *after* the quantizer. Tracks 1V/octave.
- **P.PoS**L - Shift the sequence *after* the quantizer by +/- 12 semitones. Suitable for use with an LFO or other modulation source that is not pitch based.
- **root** - Shift the root note of the current scale. Tracks 1V/octave, but only takes into account the pitch class. E.g. 0 and 1V are both considered no shift, 0.083 and 1.083 will both shift by one semitone.
- **root**L - Shift the root note of the current scale by +/- 12 semitones.

Note that in order to use the 1V/octave transpose destination your **AUX** inputs need to be calibrated. If you purchased a Metropolis with firmware 1.30 or later this will have been done at the factory. Otherwise please follow the instructions in the **CALib (Calibration Mode)** section of the **CONFIG** portion of the manual.

SAVE

The **SAVE** button enters a menu which allows you to save the system settings to one of 8 slots. Turn the **ENCODER** to select the save slot and then click the **ENCODER** to commit the settings to the EEPROM memory. The last saved slot is loaded the next time the power is turned on to the sequencer.

LOAD

The **LOAD** button enters a menu that allows you to recall one of the 8 global settings slots from the EEPROM memory. Turn the **ENCODER** to select the slot and then click the **ENCODER** to load the settings.

CONFIG

The **CONFIG** button enters the configuration menu. Turn the **ENCODER** to select a configuration option and then click the **ENCODER** to edit that option. When done editing either click the **ENCODER** to return to the **CONFIG** menu or click **EXIT** to return to the default screen. Each option is described in a subsection below.

OCT (Octaves)

Sets the octave range of the pitch sliders, from 1 to 3.

d (Dividers)

Restricts which divisions are available in **DIV** menu.

- **d_ALL** - All values from 1 to 64.
- **d_Odd** - Odd values, eg: [1, 3, 5, ...].
- **d_EvE** - Even values, eg: [1, 2, 4, ...].
- **d_STA** - A special mode where the **CLK** output goes high when the sequencer advances to a new stage.

SYn (Sync Mode)

Sets the behaviour of the **SYNC** output.

- **SYn_F** - The sync pulse rises on the first clock pulse of the first stage of the sequence.
- **SYn_L** - The sync pulse rises on the last clock pulse of the last stage of the sequence.

rST (Reset Mode)

Sets the behaviour of the **RESET** input.

- **rST_F** - The sequencer resets immediately when the reset signal is high at the same time as the clock.
- **rST_n** - The sequencer will reset on the next clock pulse. This mode is useful if your DAW sends a reset signal when you stop the DAW clock and you want the sequencer to start at 1 when you restart.
- **rST_r** - The **RESET** input functions as a “run” input. The sequencer runs when the gate is high, but stops and resets when the gate is low. Some MIDI modules such as the Intellijel µMIDI provide a way to interpret MIDI Start and Stop messages as a gate.

rPC (Rest Pitch)

Sets the **PITCH** output behaviour for stages that are set to **REST** mode.

- **rPC_Y** - The **PITCH** output is updated on rest stages.
- **rPC_n** - The **PITCH** output is not updated for rest stages.

ScAIE (Scale Shortcuts)

Configures the scales used in conjunction with the **SCALE** shortcut key. Upon entering the submenu one of the **SLIDE / SKIP** LEDs will begin to blink to indicate the shortcut currently being edited. You can select a scale for this shortcut by turning the **ENCODER**. To edit another shortcut key, push the corresponding **SLIDE / SKIP** button.

ModES (Mode Shortcuts)

Configures the modes used in conjunction with the **MODE** shortcut key. Upon entering the submenu one of the **SLIDE / SKIP** LEDs will begin to blink to indicate the shortcut currently being edited. You can select a mode for this shortcut by turning the **ENCODER**. To edit another shortcut key, push the corresponding **SLIDE / SKIP** button.

b (SLIDE/SKIP Button Function)

This sets the single / double click behaviour of the **SLIDE / SKIP** buttons.

- **bSLId** - A single click toggles slide, a double click toggles skip.
- **bSKIP** - A single click toggles skip, a double click toggles slide.

TunE (Tuning Mode)

Upon clicking the **ENCODER** to enter this menu, the Metropolis enters “tuning mode”. The pitch output produces 0 V and the gate goes high. This is useful for tuning the base pitch of your oscillator which is connected to the Metropolis. Click the **ENCODER** again to exit tuning mode.

CALib (Aux Calibration Mode)

Starts the 1V/octave calibration of the **AUX A** and **AUX B** inputs. The calibration is required to effectively use the 1V/octave transposition modes of the auxiliary inputs.

The calibration process requires a tuned voltage source that can precisely output 0V and 1V. A MIDI-CV interface or quantizer is suitable for this purpose.

- When this menu is entered the display will indicate CALA0.
- Connect the voltage source set to 0V to the **AUX A** input, turn the input attenuator fully clockwise, and click the **ENCODER**.
- The display will now indicate CALA1. Set the voltage source to 1V and click the **ENCODER**.

- The display will now indicate CALb0. Set the voltage source to 0V, connect it to the **AUX B** input, turn the input attenuator fully clockwise, and click the **ENCODER**.
- The display will now indicate CALb1. Set the voltage source to 1V and click the **ENCODER**.
- The calibration is now complete and stored in the EEPROM.

Vr (Version Display)

Displays the current firmware version, eg: 1.30.

Shortcut Keys

A new feature in Metropolis 1.30 is that some of the menu buttons can also double as shortcut keys to enable instant access to commonly used settings without having to enter a menu and use the encoder. To use a menu button as a shortcut, *press and hold* the button (eg: **MODE**) and then press one of the **SLIDE / SKIP** buttons.

SWING

Selects between 8 commonly used swing settings. The values range from no swing (50%) at button 1 to 64% at button 8, in increments of 2%.

DIV

Sets the incoming clock divider to a value equal to the button, 1 through 8.

SAVE

Saves the current sequence to a slot 1 through 8. The saved sequences are stored to the internal EEPROM and persist even when Metropolis is powered down. A sequence can be recalled using the **LOAD** button. A saved sequence contains all the values of **PITCH, PULSE COUNT, GATE MODE, SLIDE, SKIP, RATCHET, MODE, STAGES, STEP/DIV, SCALE** and **ROOT**. Once saved the display will indicate SPAT# (Saved Pattern #), where # is the number of the saved pattern.

LOAD

Loads a sequence from slot 1 through 8. The display will indicate LPAT# (Loaded Pattern #) where # is the number of the loaded pattern. Furthermore a dot will blink between the currently playing note name and the animation on the right side of the display to indicate that Metropolis is playing from a loaded sequence.

A loaded sequence replaces all the current values of **PITCH, PULSE COUNT, GATE MODE, SLIDE, SKIP, RATCHET, MODE, STAGES, STEP/DIV, SCALE** and **ROOT**. Since the **PITCH, PULSE COUNT**, and **GATE MODE** sliders can't be moved by the CPU, they are not updated to match the values in the sequence. If these controls are moved they will immediately override the loaded value of the sequence. This is called "jump mode" on many synthesizers.

To “unload” the pattern and return all pitches, pulse counts, and gate modes to their physical reality you can hold **LOAD** and push **EXIT**. The display will indicate PAnEL.

MODE

Selects one of the 8 sequencer mode shortcuts. To choose which mode corresponds to each button use the ModES (Mode Shortcuts) menu of the **CONFIG** button.

STAGES

In non-fixed sequencer modes the **SLIDE/SKIP** buttons set the last stage of the sequence. In fixed sequencer modes they set the length of the sequence in multiples of 8 pulses.

STEP/DIV

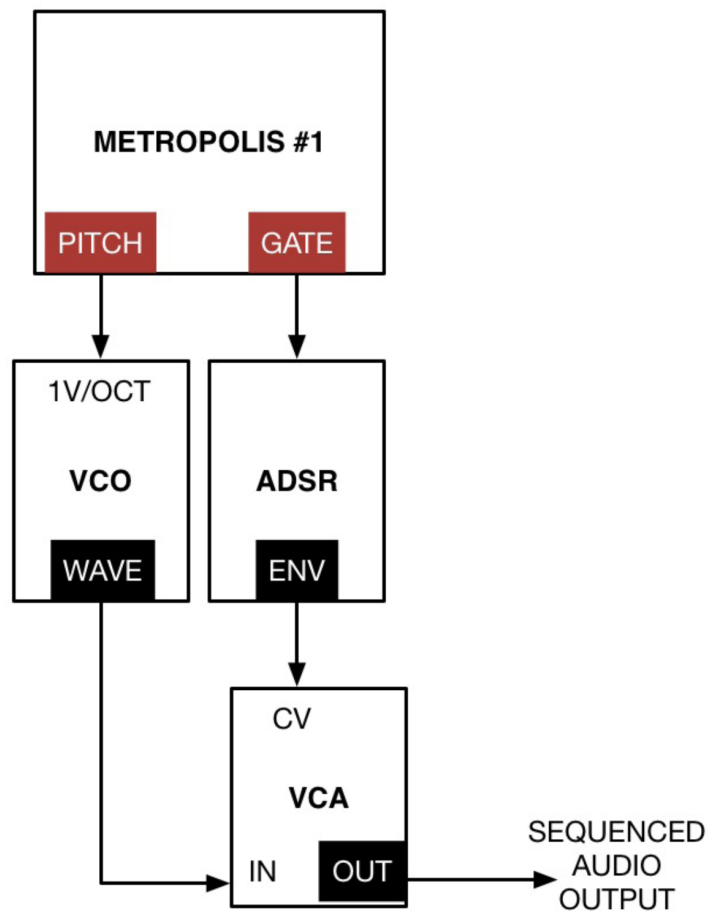
The first four buttons select the **STEP/DIV** setting from 1 to 4. Buttons 5 through 8 do nothing.

SCALE

Selects one of the 8 scale shortcuts. To choose which scale corresponds to each button use the ScAIE (Scale Shortcuts) menu of the **CONFIG** button.

Patch Examples

Basic Patch

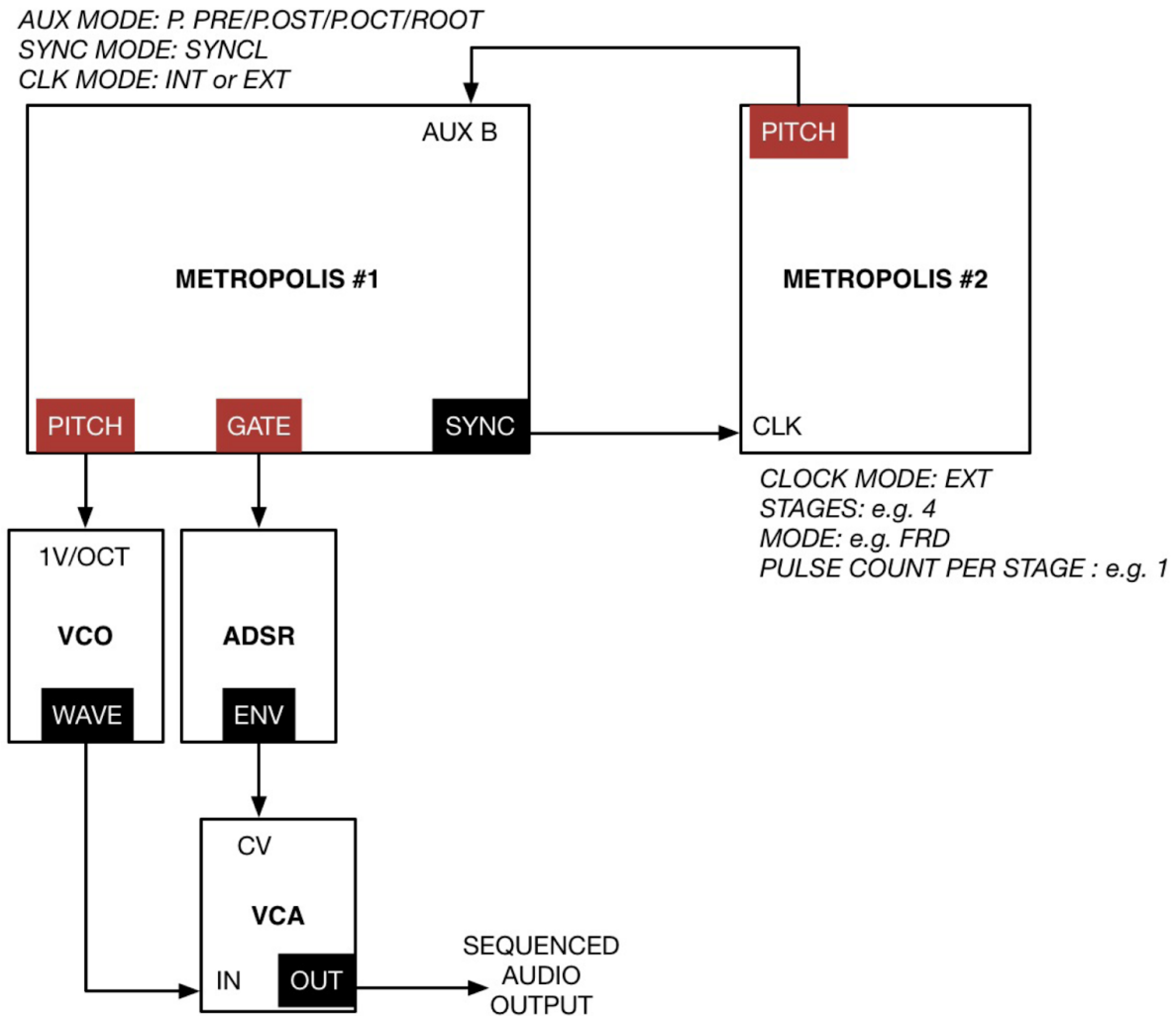


In this patch the Metropolis is being used in its most common configuration to control the pitch and amplitude of a VCO. The **PITCH** output from the Metropolis is connected to the 1V/Oct input of the VCO. One of the VCO's output waveforms (e.g. a saw wave) is then connected to the audio input of a VCA.

The **GATE** output is connected to the gate input of an ADSR. The envelope output of the ADSR is then connected to the CV input of the VCA in order to control the amplitude.

It is important to adjust the ADSR levels to get the desired response when the Metropolis gate length is set to its minimum value. i.e. you want to make sure that it results in a short click with a tiny bit of decay.

Modulated Sequence



This patch demonstrates a way to generate a sequence that is being modulated. Metropolis #1 can be in either **EXT** or **INT CLK** mode and is connected to a VCO, VCA and envelope generator as in the first example.

The **SYNC** output jack is used to clock the **CLK** input of the second Metropolis (or any other CV sequencer). The **SYNC** pulse has been configured to fire on the last clock pulse of Metropolis #1 by choosing the **CONFIG->SYNCL** option. Metropolis #2 should be in **EXT CLK** mode but it can be in any direction **MODE**, **STAGE** length etc. For this example it is suggested to try setting stages to 4 with a pulse count of 1 on each stage and **MODE** to **Frd**. This means that every time Metropolis #1 completes one cycle of its sequence Metropolis #2 will advance by one stage and cycle through its 4 different pitches. The **PITCH** output of Metropolis #2 is connected to one of the **AUX** inputs of Metropolis #1. If this **AUX** input is set to **P. PITCH**, **P. OCT**, **P.POST** or **ROOT** then you will get an interesting, repeatable musical change on every sequence cycle. If the sequence on Metropolis #1 was 1 bar long then the repeating resultant musical sequence would be a 4 bar phrase.

Firmware Updates

The Metropolis firmware is updateable via the Intellijel USB ISP. For more details see <https://intellijel.com/firmware-updates/>

Technical Specifications

Width	34 hp
Maximum Depth	45 mm
Current Draw	195 mA @ +12V 8 mA @ -12V