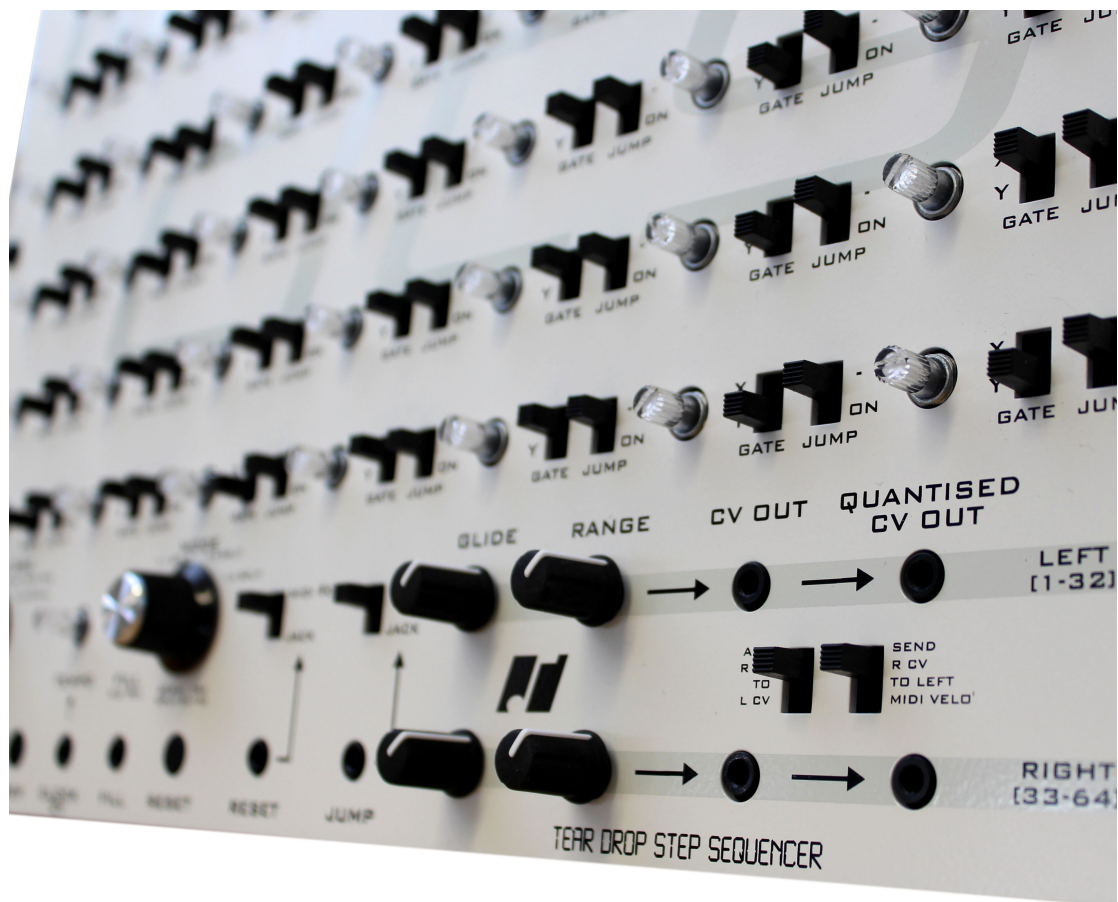# MEGA
ANALOGUE SOLUTIONS
CITY

city under construction

INTRODUCTION

Megacity is a VLF 64 step true analogue sequencer.

The steps can be played in series from step 1 to 64 – series mode, or, 2 channels of 32 steps, parallel mode.

The sequencer can also be split into two halves, L and R, and these halves can then be played in parallel. This then provides two channels of CV and Gate, each with their own Glide, Range, Quantise, CV and Gate controls/sockets.

When in parallel mode, channel R (steps 33 to 64) can be set to play at half or a quarter of the speed of channel L.

There is a Fill-in mode, which allows channel R to act as a fill in pattern to provide bar to bar variation, typically lost with analogue sequencers, outside of basic transposition. When manually triggered via push button, or via MIDI note 03, or via an external voltage channel R will play instead of channel L.

The sequencer can be clocked by an internal VC analogue clock (VCLFO) or via an external voltage (eg. External LFO). The clock speed can be changed using a control voltage.

Megacity can easily be integrated with a MIDI sequencer or DAW. It can be synchronised via a sequence of MIDI notes 00.

Megacity features 64 CV controls, 64 Gate channel select switches and 64 Reset/Jump switches.

Built in quantiser – this can be used to quantise the CV notes into semitones.

MIDI out – Megacity will send MIDI notes to your MIDI synth.

WHY DO I NEED THIS SEQUENCER? WHAT'S SO SPECIAL?

Megacity is formatted differently and operates differently than other step sequencer.

Traditionally step sequencers run horizontally from left to right then loop back to step one. You can make the pattern shorter, but generally that's it.

Megacity patterns run vertically downwards in columns. As the end of each column is played, the next to the right is played.

Megacity has a unique Jump system. When a Jump switch is on, the rest of the column's steps are bypassed and the sequencer jumps straight to the start of the next column

These two features in particular as familiar enough ways of working to be intuitive, but different enough to force you to work and think in a slightly different way. The end result is you will get sequences and patterns that you might not have created otherwise.

MORE VARIATION

Many step sequencers can start to sound repetitive since it's usually the same single pattern looping endlessly.

Megacity allows you to split the sequencer in half and use the right half as a Fill-In pattern to add variation, much like vintage drum machines.

These Fills are activated via a MIDI note, Push Button, or via a trigger pulse from an external modular.

Megacity's format and Jump switches, combined with excellent features like Fill-In, Quantisers, Split sequencers and other features makes Megacity a great sequencer package.

MAIN FEATURES

- True analogue step sequencers using CV pot's not encoders
- Analogue CV circuits
- Massive 64 steps (series mode) or 2 x 32 steps (2 channel parallel mode)
- 2 CV outputs with Range and Glide (Portamento)
- 4 Gate outs (2 per channel)
- 2 CV quantisers
- MIDI Out
- Jump and Reset – activate from MIDI note, Push Button and external Gate
- Fill In and clock divide modes for variation
- Compatible with Eurorack and most analogue synths with CV/Gate input
- Voltage controlled clock
- Many options for sequence control
- Very easy MIDI sync possible using a dedicated MIDI note
- Solid steel and aluminium construction
- High quality sealed potentiometers, sturdy switches.
- Unique green LED matrix style tear drop raining LEDs

USE

If you are familiar with analogue sequencers in general, then most features of Megacity should be fairly self-explanatory, but it would still be worth having a read through this manual.

The sequencer is laid out in vertical columns, eight in total.

The sequencer runs from top to bottom, and left to right.

GENERAL RUNNING:

THE DIFFERENCE BETWEEN RESET AND JUMP

If a Reset is initiated the sequencer returns to step one, the first step of the sequencer.

Use Reset to shorten the sequence.

If a Jump is initiated the sequencer will advance (jump) to step one of the next column to the right.

POWER

Megacity comes with a power supply. It uses a power supply with an AC output (not DC!)

If your power supply comes with a selection of connector plugs, use the one with the yellow coloured centre. You'll know it's the right one as the fit will feel right.

It does not matter which was around you insert the plug into the end of the power supply lead.

Plug the power leads into the rear of Megacity.

MIDI

MIDI In   essentially for MIDI DAW sync

MIDI Thru   outputs a copy of what comes into the MIDI In socket

MIDI Out   MIDI notes sent from the CV quantiser.

MIDI IN

If required, you can control stepping, reset, jump and fill-in from MIDI notes. See relevant sections on the manual for details on these.

MIDI leads do not need to be connected unless you want to sync with a computer DAW or other MIDI sequencer.

EXAMPLE SET UP;

Connect MIDI Out from your computer DAW MIDI interface to MIDI In on Megacity.

Optionally connect MIDI Thru from Megacity to the MIDI In of another device.

Connect MIDI Out from Megacity to the MIDI In of a synthesizer.

CONNECTING AN ANALOGUE SYNTH

Megacity would typically be used to make melodic or effects sequences on a modular synth, or, a synth with CV and Gate sockets like the Analogue Solutions Nyborg, or vintage monosynths like say the Roland SH101.

To connect Megacity to a synth;

Take Left (or right) CV out from Megacity to the pitch CV input of your monosynth.

Take Gate X Left (or right) out from Megacity to the gate or trigger input of your monosynth.
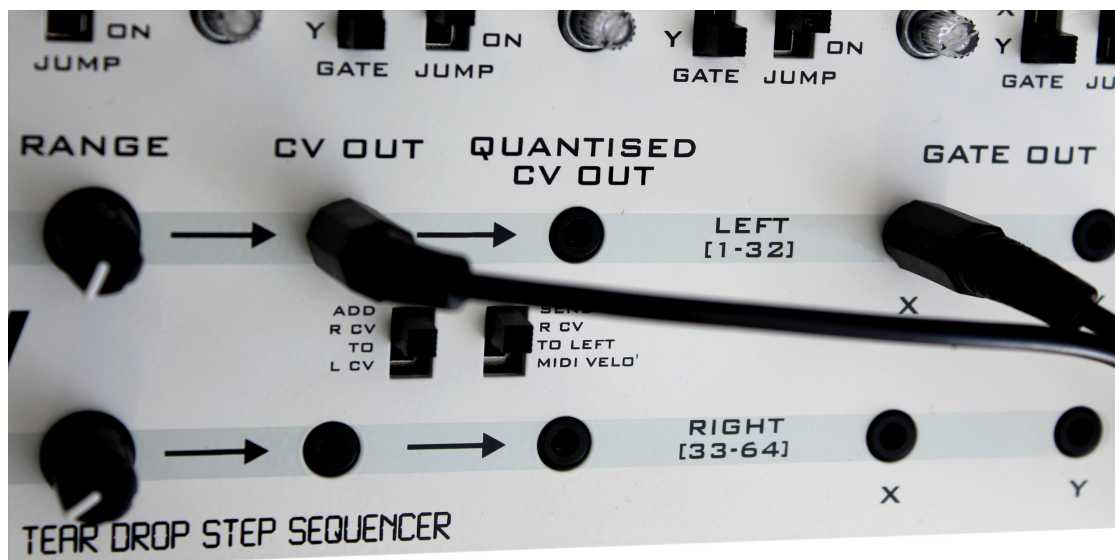
NOTE:

Pitch CV input on your synth may be labelled differently, for example;
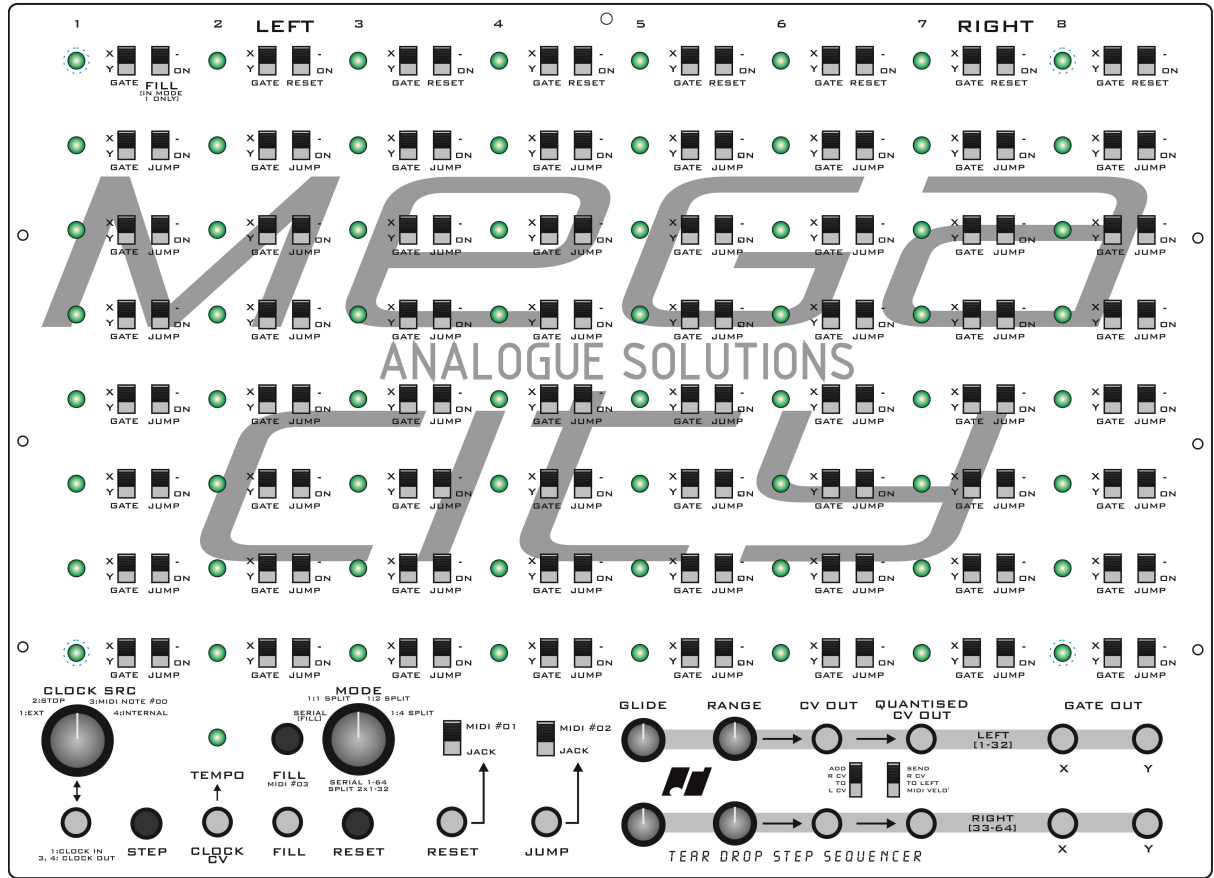
KEY, PITCH, KCV, CV, KBD

Gate input on your synth may be labelled;

TRIG, GATE

Check the user manual of your synth. Unfortunately despite what some people think, Eurorack and vintage modular (and monosynths) are not uniform and standard in their CV and Gate sockets. Generally they all talk together but labeling, ranges etc vary a little.

IMPORTANT NOTES

USING THIS UNIT SAFELY

Before using this unit read this instruction manual.

Do not open or modify this unit or its power supply.

Do not attempt to repair the unit or replace parts within it. Refer servicing to a qualified service engineer.

Never use or store the unit in places that are;

- Subject to extremes of temperature (such as in direct sunlight in an enclosed vehicle, on a heater or near a heating duct, etc).
- that are damp or wet (e.g. bathrooms),
- humid,
- exposed to rain,
- dusty,
- high levels of vibration.

Make sure the unit is placed on a stable and level surface.

Use only the specified AC adaptor. Make sure the mains voltage matches that of the adaptor. Ensure the correct polarity adaptor is used. Other adaptors could be of the wrong type of voltage or polarity and could result in damage, malfunction, or electric shock.

Do not excessively bend or twist the adaptor cable. Doing so may damage the cable. Damaged cables could cause a malfunction, or a shock or fire hazard.

Do not allow any small parts (like pins, coins), liquids, flammable material to enter the unit.

Immediately disconnect the mains supply and adaptor, and contact a qualified service engineer;

- when the AC adaptor or power supply cord has been damaged,
- when objects have fallen onto, or a liquid has been spilled into the unit,
- when the unit has been exposed to rain or other liquids,
- when the unit does not appear to function correctly.

When small children are present adult supervision must be provided.

Protect the unit from strong impact, including being dropped.

If the unit is sharing a power outlet with several other devices when using extension cords/multi-sockets, ensure the current rating of the cords/sockets are not exceeded.

Before using the unit in a different country, check the mains supply is correct for the AC adaptor.

When disconnecting the AC adaptor plug, always grasp it by the plug body, not the wire.

When the unit is to remain unused for a length of time, disconnect the adaptor from the mains.

Cables can be a risk to small children. Always place the out of reach.

Never climb, or place objects on top of the unit.

Never handle the unit, the AC adaptor, or any cables with wet or moist hands.

Before cleaning the unit, disconnect from the mains.

Whenever you suspect lightning in the area, disconnect the AC adaptor.

Did you read all this? Good now you will be safe, but please still use what common sense health and safety assumes we all don't have!

PLACEMENT

This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.

Do not expose the unit to direct sunlight or place it near devices that radiate heat, or leave inside an enclosed vehicle, or otherwise subject it to extremes of heat. Excessive heat may also discolour the unit.

Do not use the unit in a wet area, or expose it to rain or moisture.

MAINTENANCE

For everyday cleaning, wipe it down with a dry soft cloth, or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild non-abrasive detergent. Afterwards be sure to wipe the unit dry thoroughly with a dry cloth.

Be sure to disconnect the AC adaptor before any cleaning.

Never use benzene, thinners, alcohol or other such chemicals and solvents to clean the unit.

ADDITIONAL PRECAUTIONS

Use a reasonable amount of care when using the buttons and knobs. Unreasonable use or rough handling may cause damage or malfunctions.
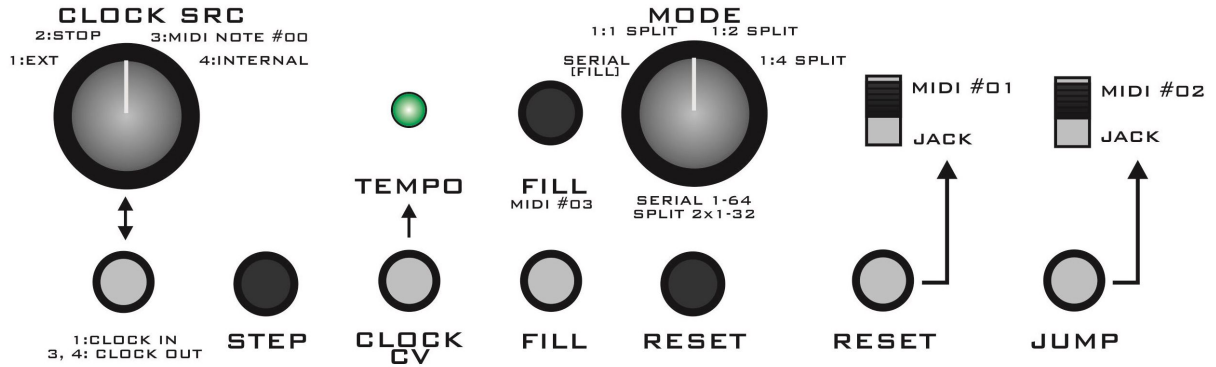
Never strike or apply strong pressure to the unit.

When disconnecting or connecting any cable, hold the cable plug not the cable. Insert or remove straight and perpendicular to the case.

To avoid disturbing your neighbours always keep your volume levels at a reasonable level.

When transporting the unit use the original packaging.

DESCRIPTION OF FUNCTIONS

CLOCK SRC
2:STOP   3:MIDI NOTE #00
1:EXT   4:INTERNAL

1:CLOCK IN
3, 4: CLOCK OUT   **STEP**

TEMPO

CLOCK CV

FILL
MIDI #03

FILL

MODE
1:1 SPLIT   1:2 SPLIT
SERIAL   1:4 SPLIT
(FILL)

SERIAL 1-64
SPLIT 2x1-32

RESET

MIDI #01
JACK

RESET

MIDI #02
JACK

JUMP

QUANTISED CV OUT SOCKET

It can sometimes be a little tricky making melodic melodies using an analogue sequencer since you have to very carefully fine-tune each step to get the right note.

A quantiser is a device that takes the varied analogue pitch voltage and ties it down to a specific semitone. It is the nature of analogue sequencers that even with a quantiser it can be still a bit tricky to hit the right note.
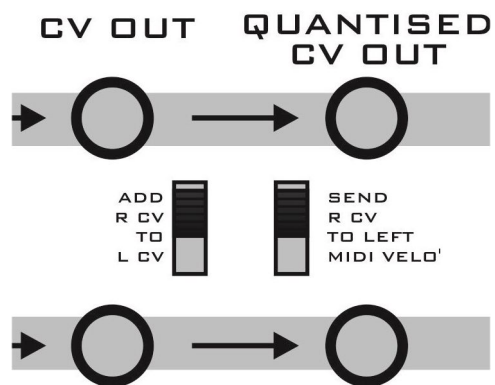
But! If you want easy exact sequencing use a MIDI Sequencer. The point of an analogue sequencer is those happy accidents.

The CV signal from the channel is fed through an analogue to digital converter, quantized, then fed back out through a digital to analogue converter.

Note: Range and Glide will affect the performance of the Quantiser!

There are two Quantisers.

One operates on the left CV channel, and the other on the right CV channel.

```
CV OUT        QUANTISED
              CV OUT

 →  ◯  ——→  ◯

    ADD ▊         SEND
    R CV ▊    ▊   R CV
    TO  ▊     ▊   TO LEFT
    L CV ▊    ▊   MIDI VELO'

 →  ◯  ——→  ◯
```

MIDI OUT

The quantised CV is also used to generate a MIDI Note message sent to the Out socket.

It is best to run the sequencer in parallel modes when using the MIDI Note outputs, since the left and right sides of the sequencer can produce separate MIDI note sequences on their own MIDI channel.

When a Gate is on a note will be sent out the MIDI socket.

A Gate X from the left channel will produce MIDI notes on MIDI channel one,

And a Gate Y from the right channel will produce MIDI notes on MIDI channel two.

CLOCK

CLOCK SOURCE – 4 WAY ROTARY SWITCH

CLOCK S(ou)RC(e)

1:**EXTernal**

Use an external analogue clock, LFO,gate or trigger to act as the sequencer's clock source.
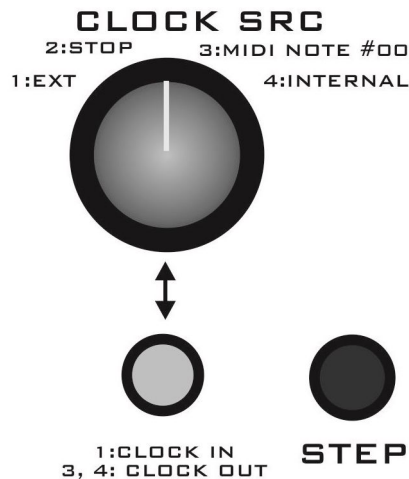
2:**STOP**

The sequencer will not run.

3: **MIDI NOTE #00**

The sequencer will advance each time it receives MIDI note 00, channel 1. Naturally, Megacity must be connected to a MIDI device.

4: **INTERNAL**

Internal VC clock is the clock source.

CLOCK SRC

2:STOP   3:MIDI NOTE #00

1:EXT   4:INTERNAL

1:CLOCK IN
3, 4: CLOCK OUT   STEP

CLOCK JACK SOCKET

This socket can be an input or an output, depending on what **Clock Source** is selected on the rotary switch.

When **Clock Source** is set to position 1 then this socket is a clock input. It can be clocked from a gate, trigger or LFO signal. Use to synchronise to external analogue sequencers. For example, an Oberkorn step sequencer.

When **Clock Source** is set to 2,3 or 4, then this socket is an output. It will provide a 'clock Thru' signal to allow other analogue sequencers, such as an Oberkorn, to synchronise with Megacity.

TEMPO control

This sets the clock speed of the internal clock and incorporates a built in LED indicator.
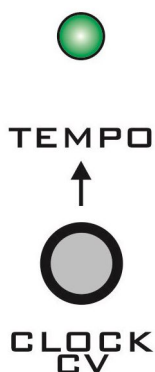
TEMPO

CLOCK
CV

CLOCK CV socket

An external CV, or indeed a CV output of the Megacity itself, can be used to change the tempo/speed of the internal clock.

STEP push button

Use this button to manually advance the sequencer one step.

FILL IN MODE

This mode allows variation by having channel R at as a fill in pattern.

To activate this mode, the very top left slide switch **FILL** must be on (down), AND the **MODE** rotary switch must be in position 1 – **SERIAL (FILL).**

In this mode, only channel L will play.

To activate Fill you need to do one of the following 3 things:

Press the **FILL** button briefly.

Send MIDI note #03, channel 1 to Megacity.

Send a gate or trigger voltage into the **FILL** jack socket.

Channel R will then play once.

If the button, jack or MIDI note #03 is activated more than once whilst channel L is playing, then channel R will play the fill in pattern once for every time Fill was activated.

Note: the fill will play after Channel L has played in full.

MODE

Megacity can play in 4 modes.

Position 1: **SERIAL (FILL)**

The sequencer will play serially from steps 1-64.

Unless the FILL switch is on (see fill section).

Position 2: **SPLIT 1:1**

Channels L and R will play together, in parallel, at the same tempo.

Position 3: **1:2 Split**

Same as position 2, but channel R will play at half tempo.

Position 4: **1:4 Split**

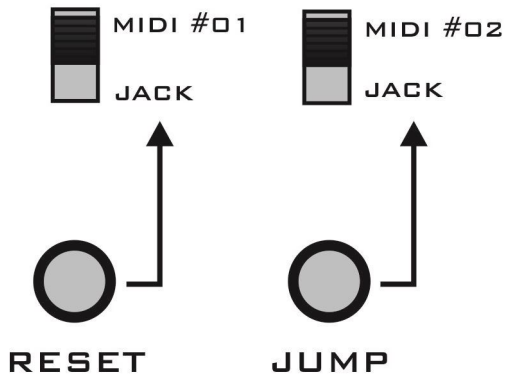Same as position 3, but channel R will play at quarter tempo.

MODE

RESET

RESET push button

The sequencer will reset to step 1 when this button is pressed.

RESET slide switch

When down, the sequencer will reset to step 1 when the **RESET** jack socket receives a positive gate or trigger voltage of about 5 Volts.

MIDI #01

When up, the sequencer will reset to step 1 when it receives MIDI note #01, channel 1.

JUMP

JUMP slide switch

When down, the sequencer will jump to the next column when the JUMP jack socket receives a positive gate or trigger voltage of about 5 Volts.
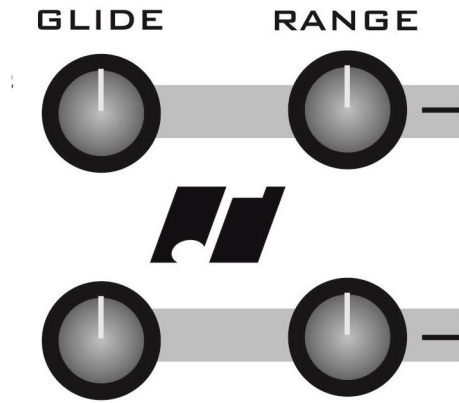
MIDI #02

When up, the sequencer will jump to the next column when it receives MIDI note #02, channel 1.

CV CHANNELS

Each CV channel has a the following;

GLIDE control

This is like portamento. So the voltage output will change gradually rather than instantaneously. The control sets the rate of change.

RANGE control

Changes the output range of the CV output. Maximum output range is approx. 5V.

CV OUT jack socket

The is the CV output.

QUANTISED CV OUT jack socket

This is the CV output, but quantised to the nearest semitone.

GATE OUT X / Y sockets

These are 5V gate output sockets.

Note: when the sequencer is in FILL-IN mode or Serial Mode, the L and R Gate sockets will output the same signals. That is they are essentially mixed (or ANDed, if you like Boolean logic!). So the same X gate signals will come out both L (1-32) and R (33-64) sockets, and the same for the Y gate sockets.
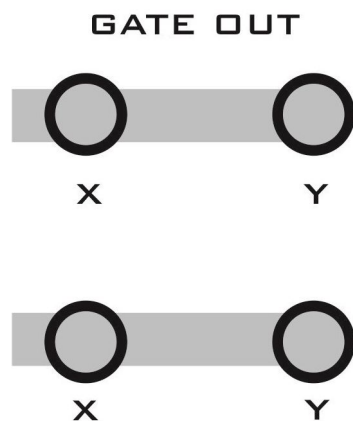
OTHER CONTROLS

ADD R CV TO L CV slide switch

This is used to add the R channel CV to the L channel. This would typically be set to on (down) when the sequencer is in **FILL-IN** mode or in SERIAL MODE.

It literally adds the right CV signal to that coming out of the left CV socket.

With FILL and SERIAL modes you would typically only have one synth connected to Megacity. You would want all 64 steps would play the one synth. Normally the Left and Right CVs would come out of their own Left and Right CV sockets. By Adding the R CV to the L CV signal, it means you don't need to externally mix the 2 CVs to control one synth.

SEND R CV TO LEFT MIDI VELOcity slide switch

When on (down) this will use channel R CV signal to set the MIDI velocity level of channel L's MIDI Output. This allows you to use the R channel to program MIDI velocity, and L channel to control MIDI note.

Ideally you would want the sequencer playing in SPLIT modes when using the R channel to program MIDI velocity.

MIDI

MIDI In

Connect this to your DAW's MIDI Out. Channel 1, notes 00, 01, 02, and 03 can then be used to control various features of Megacity

MIDI Thru

Outputs a copy of what's received at the MIDI In socket.

MIDI Out / CV Quantiser (CV to MIDI)

Outputs MIDI Notes for channel L and R.

CV channel L is preset to MIDI channel 1, and CV channel R is preset to MIDI channel 2.

Velocity is fixed at 127, unless **the SEND R CV TO LEFT MIDI VELOcity** slide switch is on.

The Gate X switch is used to set when a MIDI Note on is sent. When Gate X is on then a Note on is sent. When Gate Y is set then no note is sent.

Note:

The L and R quantisers read a note when a X gate switch is on. As the L and R gate channels are essentially mixed together when the sequencer is running in Serial mode, both quantisers will trigger at the same time.

POWER

Megacity requires an external power supply.

Voltage - Anything from about 12 to 16 Volts AC is OK. That's an adaptor with AC output. DC output will not work.

Minimum current rating of approx. 500mA.

Connector is a standard 2.1mm barrel type.

SIZE:

7U high.

Can be rack mounted using optional 'Telemark' rack ears.

Optional 'Telemark' wood side panels can also be used.

Dimensions:	Height: 306mm
	Width: 430mm.
	Depth: 140mm
Weight	4.4 Kg

SOCKETS:

Uses standard 3.5mm mono mini-jack sockets.

Do not use stereo leads.

Try to avoid using 6.35mm to 3.5mm adaptors. The added length could damage sockets due to the additional leverage. This advice applies to and modular device with jack sockets!

Warranty

Comes with a 1 year (from purchase date) back to base warranty, (i.e. customer must arrange and pay for carriage to and from Analogue Solutions or the dealer from which purchased).

This warranty shall not apply where the product has been subject to alteration, misuse, accident, neglect (such as extremes of temperature and/or moisture) or to wear resulting from normal use.

At the sole discretion of Analogue Solutions, the warranty is deemed to be void should the unit be or considered to have been opened or any other modifications or tampering be carried out by unauthorised parties.

CE Compliance

This unit complies with Complies with EU Directives 73/23/EEC and 89/336/EEC. Standards: EN55103-1, EN55103-2, EN60065

Megacity 'user manual'
Analogue Solutions
web: www.analoguesolutions.com
email: info@analoguesolutions.com