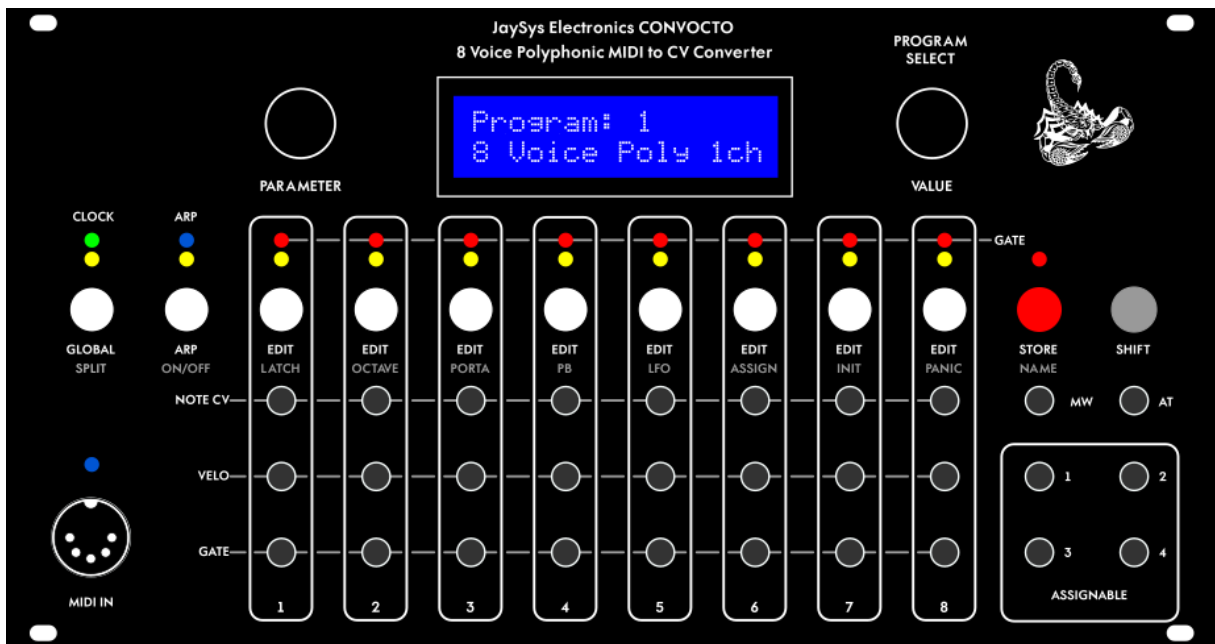


JaySys Electronics

CONVOCTO

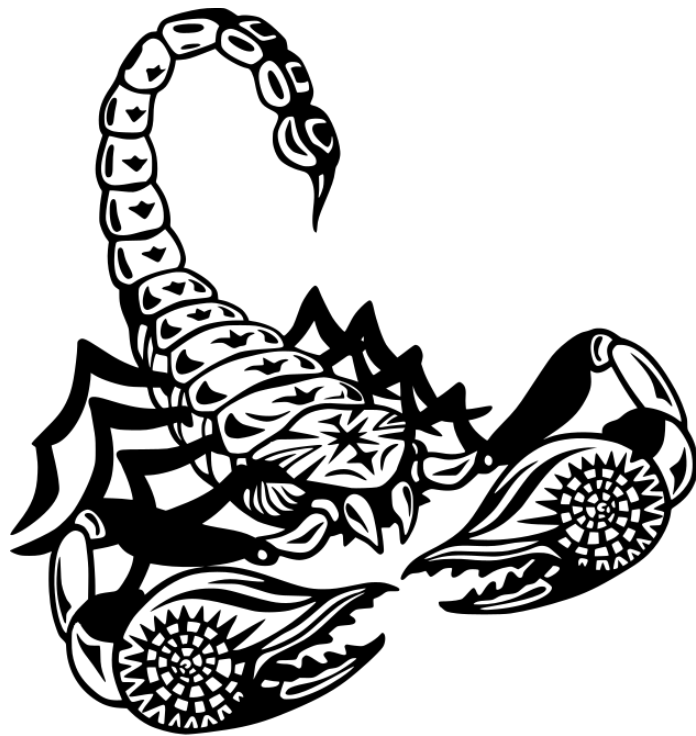
8 Voice Polyphonic MIDI To CV Converter

User Manual Firmware v1.1



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Welcome to the JaySys Electronics CONVOCTO

Hi there, synth enthusiast!

Thank you for choosing the CONVOCTO MIDI to CV Converter. The CONVOCTO is a highly configurable, polyphonic, programmable MIDI to CV converter designed to be the control center of a polyphonic modular CV-controlled synthesizer setup with a focus on keyboard control. Ever wanted to play polyphonically on your Eurorack? Now you can!

The CONVOCTO can control up to 8 independent voices, each with its own 1V/Octave note pitch CV, velocity CV and gate outputs. All the 8 voices can work together or independently in a variety of combinations. Pitchwise, you have portamento control over each CV output and a separate LFO that can be used for vibrato. Each CV channel/voice comes with independent settings for keyboard zone, transposition, tuning and controller settings

It also has dedicated CV outputs for aftertouch and modulation wheel. And it comes with 4 assignable outputs that can be used for different things, like MIDI controllers, the built-in LFO waveforms and trigger/clock signals.

There are 2 keyboard zones, referred to as Lower and Upper. These 2 zones can be used in a variety of ways to create different split/layer/multitimbral configurations.

There's a built-in latching arpeggiator with different patterns, octave ranges, adjustable gate time and trigger chance probability. The arpeggiator can be assigned to either of the keyboard zones.

The CONVOCTO is fully programmable. All of its settings can be stored in one of the 31 memory locations. You can change between monophonic, polyphonic, split or multi-timbral setups by the twist of a knob.

This manual will not only explain the functionality of all the parameters and settings, but also provide tips and tricks on how to combine the different settings to achieve specific goals.

A word of caution

DO NOT CONNECT THE CV OUTPUTS OF THE CONVOCTO TO ANY OTHER OUTPUT IN YOUR SYSTEM!

Only connect the outputs of the Convocto to inputs of other modules!

Apologies for starting this manual with a warning, but this is important. Here's why:

In a polyphonic instrument, correct tuning of each note is vital. Any deviation of one of the notes in a chord, will likely make the chord sound out of tune. In an CV-controlled instrument, those pitches are set with precise voltages.

In most modules, CV outputs have a resistor in series with the output, protecting the internal circuitry from short circuit and current overload. However, any additional resistance in a note CV signal might change the voltage supplied from the CV output (especially when the signal is split with an unbuffered multiple) and thereby compromising the voltage sent and causing a note to go out of tune.

In order to make the pitch CV outputs as precise and constant as possible, the Note CV outputs on the Convocto are directly connected to the internal buffers, with no additional resistance in series with the signal. This means that the CV outputs are less protected against overload or short circuit.

Theoretically, the internal buffers should have their own protection built in, but to be on the safe side, I advise not to connect any of the CV outputs to another (low impedance) output. Only connect the CV outputs to (high impedance) CV inputs in your system. This way your modules will have a long and happy life.

General Operation

MENU buttons

All the settings (from now on referred to as parameters) in the CONVOCTO are divided into 10 menus. These menus can be selected by pressing one of the 10 white menu buttons. The yellow LED corresponding to the selected menu above the white button will light up. When choosing a different menu to the one previously selected, the first parameter of that menu will be active. The 10 menus are:

1. Global
2. Arpeggiator
3. Edit CV channel 1
4. Edit CV channel 2
5. Edit CV channel 3
6. Edit CV channel 4
7. Edit CV channel 5
8. Edit CV channel 6
9. Edit CV channel 7
10. Edit CV channel 8

The menu names are labelled in white under the corresponding white menu buttons. The parameters within the menus can be selected by turning the PARAMETER encoder. The LCD display will show the first parameter of the selected menu on the top line and the value it is currently set to on the bottom line. By pressing the same menu button again, the next parameter within that menu will be selected. This allows scrolling through the parameters by consecutively pressing the same menu button. When the last parameter of a menu is selected, pressing the menu button again will return to the first parameter of that menu.

The PARAMETER encoder allows for scrolling through the different menus. For example: if the first parameter of the ARP menu is selected, turning the PARAMETER encoder to the left will select the last parameter from the GLOBAL menu. You can find a complete list of all the parameters in the exact order in which they appear in the Convecto menu structure in Appendix A.

The value of the selected parameter can be changed with the VALUE encoder.

STORE button

Pressing the STORE button activates program storage mode, where you can save all the settings of the converter in one of the memory locations. See chapter "Store mode".

SHIFT button

The SHIFT button provides shortcuts to certain parameters. Pressing any of the white menu buttons while holding the SHIFT button will select the parameter written in grey text below the white menu buttons. The shortcuts are:

1. **SHIFT+GLOBAL:** Selects the Tempo parameter from the Arpeggiator menu. The yellow ARP LED will light up.
2. **SHIFT+ARP:** Selects the Arpeggiator On/Off menu and switches the arpeggiator on or off. The yellow ARP LED will light up and the red LED above it will show the status of the arpeggiator.
3. **SHIFT+EDIT 1:** Selects the Arpeggiator Latch On/Off parameter and switches the latch on or off. The yellow ARP LED will light up.
4. **SHIFT+EDIT 2:** Selects the Master Octave parameter from the Global menu. The yellow GLOBAL LED will light up.
5. **SHIFT+EDIT 3:** Selects the Portamento Time parameter from the Global menu. The yellow GLOBAL LED will light up.
6. **SHIFT+EDIT 4:** Selects the Pitchbend Up parameter from the Global menu. The yellow GLOBAL LED will light up.
7. **SHIFT+EDIT 5:** Selects the LFO rate parameter from the Global menu. The yellow GLOBAL LED will light up.
8. **SHIFT+EDIT 6:** Selects the Assign 1 Destination parameter from the Global menu. The yellow GLOBAL LED will light up.
9. **SHIFT+EDIT 7: Initialize program:** Initializes the settings in the program buffer. See chapter "Initialize Program".
10. **SHIFT+EDIT 8: Panic:** Switches all gates off. See chapter "Panic"
11. **SHIFT+STORE:** Selects the Program Name Change page allowing to change the name of the program.

Global Menu

The global menu contains all the settings that determine the general behavior of the unit and settings that are common to all the channels. This includes settings for portamento, internal LFO and the assignable outputs. This is also the menu where you select your programs from memory.

Program: 0
Default Program

Program: 0 to 30

Recalls a program from memory. A program stores all the values of all parameters. Changing programs will overwrite internal edit buffer memory and you will lose any unsaved changes. Please be sure to store settings you want to use later on before changing to a different program.

Lower Voice Mode
Unison

Lower Voice Mode

This determines the behavior of the CV channels that are set to the Lower zone. 4 different modes are available: (1) Unison Legato, (2) Unison Retrigger, (3) Poly Single & (4) Poly Dual.

1. In Unison Legato mode, all the CV channels that are set to the Lower zone will all play the same note, working together as a monophonic instrument. In this mode, playing a new note while holding down another note will not retrigger the gate outputs. In Poly Single mode, each note played will only use 1 CV channel, allowing for polyphonic playing. The CV channel that will be allocated to the new note will be the channel that was released the longest ago.
2. In Unison Retrigger mode, all the CV channels that are set to the Lower zone will all play the same note, working together as a monophonic instrument. In this mode, playing any new note will retrigger the gate outputs, no matter if there were notes held down or not.
3. In Poly Single mode, each note played will only use 1 CV channel, allowing for polyphonic playing. The CV channel that will be allocated to the new note will be the channel that was released the longest ago.
4. In Poly Dual mode, the CV channels work in pairs of 2 (1&2, 3&4, 5&6, 7&8). Each note played will use 2 consecutive CV channels. For this to work, the 2 respective channels must both be enabled and set to the same zone (Lower/Upper). This mode can be useful when 2 oscillators are combined for creating sync-sounds or FM-sounds, where a specific pitch relation between the 2 oscillators is desired. The CV channels that will be allocated to the new note will be the channels that were released the longest ago.

Combining one of the Unison modes with individual CV transpose/tuning settings allows for making single note chords and unison detune sounds.

Upper Voice Mode
Unison

Upper Voice Mode

4 different modes are selectable for the Lower zone: (1) Unison Legato, (2) Unison Retrigger, (3) Poly Single & (4) Poly Dual. These modes work in exactly the same way as the Lower Voice Modes describes above, except they only control the behavior of the CV channels that are set to the Upper zone.

Lower Hold Pedal
On

Lower Hold Pedal: Off, On

This determines whether the CV channels that are set to the Lower zone will respond to Hold/Sustain pedal Midi messages (Midi controller #64).

Upper Hold Pedal
On

Upper Hold Pedal: Off, On

This determines whether the CV channels that are set to the Upper zone will respond to Hold/Sustain pedal Midi messages (Midi controller #64)

Lower MIDI RX ch
1

Lower MIDI Receive Channel: 1 to 16

Sets the MIDI channel to which the Lower zone responds. Setting different Midi channels for the Lower and Upper zone allows for multitimbral control.

Upper MIDI RX ch
1

Upper MIDI Receive Channel: 1 to 16

Sets the MIDI channel to which the Upper zone responds. Setting different Midi channels for the Lower and Upper zone allows for multitimbral control.

Voice Steal
Oldest

Voice Steal: Off, On

This setting determines what happens in the polyphonic voice modes when all the active CV channels are in use and a new note is played. When Voice Steal is enabled, the note that was played the longest ago is the one that will be allocated to the newly played note. When Voice Steal is disabled, any new note will be ignored. This allows for holding notes that will never be cut off no matter how many new notes are played. This setting does not have any affect when Voice mode is Unison Legato or Unison Retrigger.

Split Enable
Off

Split Enable: Off, On

The Convecto supports 2 keyboard zones: Lower and Upper. These 2 zones can be used multi-timbrally (when the 2 different zones are set to different MIDI channels) and they can be used in a split configuration, where the lower part of the keyboard controls one set of CV channels and the upper part of the keyboard controls another set of CV channels.

When Split Enable is Off, both the Upper and Lower zone will essentially play the same notes, taking into respect the individual voice modes that the zones are set to (see "Lower Voice Mode" and "Upper Voice Mode"). This can be used to make a layer of 2 different sounds which play together.

When Split Enable is set to On, the keyboard is split into 2 zones: Lower and Upper. All the notes played in the lower part of the keyboard will control the channels which have their Zone set to Lower and vice versa.

Split Point
C4

Split Point: C0 to C10

Sets the split point when Split Enable is On. The Split point sets the lowest note for the Upper range. For example when the Split Point is set to C4, the Lower note range is C0 to B3 and the Upper note range is C4 to C10.

Master Octave
0

Master Octave: -3 to +3 Octaves

Sets the overall octave offset for all the channels. This parameter allows you to shift the octave of your entire system up to 3 octaves up or down.

Master Transpose
0

Master Transpose: -12 to +12 Semitones

Sets the overall note transposition offset for all the channels.

Master Tune
0

Master Tune: -50 to +50

Sets the overall fine tuning for all the voices. This setting allows you to control the overall fine tuning of your entire system with one setting.

Portamento Time
0

Portamento Time: 0 to 127

Sets the overall portamento/glide time for all the voices. Portamento slews the Note CV outputs.

Higher Portamento Time settings will increase the time that it takes for the pitch to slide from one note to the next. Portamento can be switched on or off for each individual CV channel. This setting only has effect when Portamento Mode is set to Normal or Legato.

Portamento Mode
Normal

Portamento Mode: Off/Normal/Legato

Sets the behavior of the portamento. When set to Off, no portamento will be applied at all. When set to Normal, all notes will be affected by portamento. When set to Legato, portamento will only be applied to a new note when another note (in the same zone) is still held down. When a new note is played without any note being held down, no portamento will be applied. Portamento can be switched on or off for each CV channel individually in the EDIT CV Channel menus.

PB Up Range
2

Pitchbend Up Range: -24 to +24 Semitones

Sets the amount in which the upward range of the pitchbend wheel bends up or down the note CV. A setting of 2 means that note will be bent upwards by 2 semitones when the pitchbend wheel is in fully upward position. A setting of -5 means that notes will be bent downwards by 5 semitones when the pitchbend wheel is in fully upward position. Pitchbend can be switched on or off for each individual CV channel.

PB Down Range
-2

Pitchbend Down Range: -24 to +24 Semitones

Sets the amount in which the upward range of the pitchbend wheel bends up or down the note CV. A setting of -2 means that note will be bent downwards by 2 semitones when the pitchbend wheel is in fully downward position. A setting of +5 means that notes will be bent upwards by 5 semitones when the pitchbend wheel is in fully downward position. Pitchbend can be switched on or off for each individual CV channel.

Lfo Rate
50

LFO Rate: 1 to 127

Sets the rate/speed for the internal LFO. At the lowest setting, the LFO takes approx. 30 seconds to complete a full cycle. At the highest setting, the speed is approx. 50 Hz.

Lfo Shape
Triangle

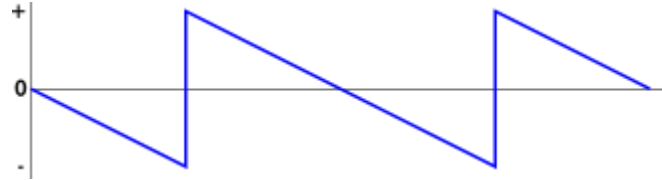
LFO Shape

Sets the shape for the LFO that will be used for Vibrato. 6 different waveshapes are available:

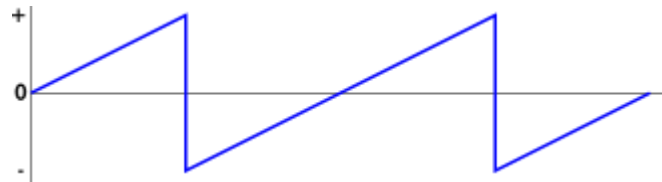
1. Triangle Wave



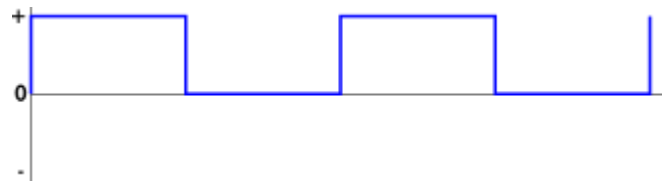
2. Saw Wave



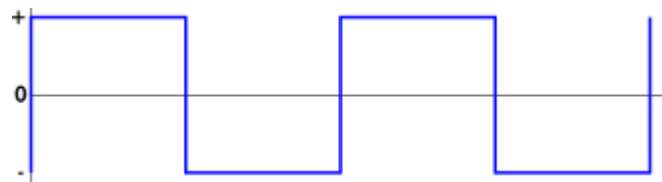
3. Ramp Wave



4. Square Unipolar Wave



5. Square Bipolar Wave



6. Sample & Hold Wave



LFO Key Sync
Off

LFO Key Sync: Off, Lower, Upper, Upper+Lower, Arpeggiator

LFO Key sync resets the internal LFO to its starting position (sets its phase to 0) whenever a it receives a trigger from the source selected here. When set to Off, the LFO will just keep on running uninterrupted. When set to Lower, notes played in the Lower zone will reset the LFO. When set to Upper, notes played in the Upper zone will reset the LFO. When set to Upper+Lower, any note played will reset the LFO regardless of which zone it was played. When set to Arpeggiator, each time a new arpeggiated note is played, the LFO will be reset. This can be useful in combination with a slow Sample & Hold

waveshape of the LFO since a new random value will be generated every time the arpeggiator plays a new note.

Vibrato amount
0

Vibrato Amount: -127 to +127

Sets the amount in which the internal LFO modulates the note CV. Vibrato can be switched on or off for each CV channel individually in the EDIT CV Channel menus.

MW Vibrato Amt
0

Modwheel to Vibrato Amount: -127 to +127

Sets the amount in which the Modulation wheel affects the vibrato. Vibrato can be switched on or off for each CV channel individually in the EDIT CV Channel menus.

AT Vibrato Amt
0

Aftertouch to Vibrato Amount: -127 to +127

Sets the amount in which the aftertouch affects the vibrato. Vibrato can be switched on or off for each CV channel individually in the EDIT CV Channel menus.

MW CV Range
10.0 V

Modwheel CV Range: 0.0 V to 10.0 V

Sets the voltage range for the modwheel (MW) CV output. When the wheel is in fully upward position, the output voltage will be the voltage set here. When the modwheel is in fully downward position, the output voltage will be 0 V.

AT CV Range
5.0 V

Aftertouch CV Range: 0.0 V to 10.0 V

Sets the voltage range for the aftertouch CV outputs. When the aftertouch is fully engaged, the output voltage will be the voltage set here. When no aftertouch is engaged, the output voltage will be 0 V.

Velocity Range
5.0 V

Velocity CV Range: 0.0 V to 10.0 V

Sets the voltage range for the velocity CV outputs. A velocity value of 127 will output the voltage set here. A velocity value of 0 will output 0 V.

```
Assign 1  
PB wheel
```

Assignable CV 1 output destination

Selects which signal is sent to the Assignable CV 1 output. The following sources can be selected:

1. Trigger Lower
2. Trigger Upper
3. Clock
4. LFO Triangle Wave
5. LFO Saw Wave
6. LFO Ramp Wave
7. LFO Square
8. LFO Sample & Hold
9. Pitchbend wheel
10. Expression pedal (Midi controller #11)

```
Assign 1 Range  
5.0 V
```

Assignable CV 1 output range: 0.0 to 10.0 V

Sets the voltage range for the assignable CV 1 output. The output voltage range can be set in

steps of 0.1 V.

```
Assign 2  
PB wheel
```

Assignable CV 2 output destination

Selects which signal is sent to the Assignable CV 2 output. The same sources can be selected as for

assignable CV 1 output.

```
Assign 2 Range  
5.0 V
```

Assignable CV 2 output range: 0.0 to 10.0 V

Sets the voltage range for the assignable CV 2 output. The output voltage range can be set in

steps of 0.1 V.

```
Assign 3  
PB wheel
```

Assignable CV 3 output destination

Selects which signal is sent to the Assignable CV 3 output. The same sources can be selected as for

assignable CV 1 output.

```
Assign 3 Range  
5.0 V
```

steps of 0.1 V.

Assignable CV 3 output range: 0.0 to 10.0 V

Sets the voltage range for the assignable CV 3 output. The output voltage range can be set in

```
Assign 4  
PB wheel
```

assignable CV 1 output.

Assignable CV 4 output destination

Selects which signal is sent to the Assignable CV 4 output. The same sources can be selected as for

```
Assign 4 Range  
5.0 V
```

steps of 0.1 V.

Assignable CV 4 output range: 0.0 to 10.0 V

Sets the voltage range for the assignable CV 4 output. The output voltage range can be set in

```
Trigger PIs Time  
5 ms
```

destinations for on the assignable CV outputs.

Trigger Pulse Time: 1 ms to 50 ms

Sets the length of the trigger pulse in milliseconds. The trigger signal can be selected as one of the

```
Clock PIs Time  
5 ms
```

destinations for the assignable CV outputs. The red CLOCK LED above the GLOBAL MENU button blinks if there is a clock pulse.

Clock Pulse Time: 1 ms to 50 ms

Sets the length of the clock pulse in milliseconds. The clock signal can be selected as one of the

Arpeggiator Menu



Arpeggiator
Off

Arpeggiator: Off/On

Switches the arpeggiator on or off. This setting can also be toggled by holding the Shift button and pressing the Arp button. The blue Arp LED indicates whether the arpeggiator is on or off.



Arp Zone
Lower

Arpeggiator Zone: Lower/Upper

Sets which keyboard zone is used to control the arpeggiator. When set to Lower, only notes below the Split Point will control the arpeggiator and only the channels set to the Lower keyboard zone are used by the arpeggiator. When set to Upper, only the notes from the Split point and up will control the arpeggiator and only the channels set to the Upper keyboard zone will be used by the arpeggiator.



Tempo
120

Tempo: 5 - 250 BPM

Sets the tempo for the arpeggiator in BPM. This also sets the tempo for the clock signal, which is available as one of the destinations for the Assignable outputs. The red CLOCK LED will blink to visually indicate the clock activity.



Arp Latch
Off

Arpeggiator Latch: Off/On

When the arpeggiator latch is on, releasing all the notes will keep the arpeggiator playing. Releasing all notes and pressing new notes will reset the Arpeggiator note memory and consecutively play only the new notes. This allows you to easily change between arpeggiated chords. When latch is off, releasing all the notes will stop the arpeggiator playing.

Clock Division
 1/16

Clock Division:

Sets the clock-division for the arpeggiator and the clock signal.

You can select:

1/1	Whole notes
1/2	Half notes
1/4	Quarter notes
1/8	Eights notes
1/16	Sixteenth notes
1/1.	Dotted whole notes
1/2.	Dotted half notes
1/4.	Dotted quarter notes
1/8.	Dotted eights notes
1/16.	Dotted sixteenth notes
1/1T	Triplet whole notes
1/2T	Triplet half notes
1/4T	Triplet quarter notes
1/8T	Triplet eights notes
1/16T	Triplet sixteenth notes

Arp Mode
 Up

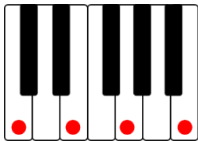
Arpeggiator Mode:

Select between 5 different Arpeggiator modes:

Up:



Down:



Up & Down 1:



Up & Down 2: (repeats the end notes)



Random:

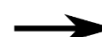


Arp Range
1 Octave

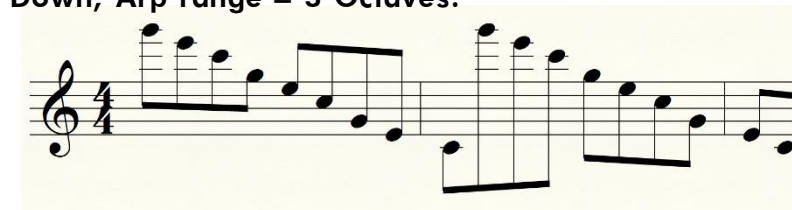
Arpeggiator Range: 1 - 4 Octaves

Sets the number of octaves the arpeggiator runs through.

Example 1: Arp Mode = Up; Arp range = 2 Octaves:



Example 2: Arp Mode = Down; Arp range = 3 Octaves:



Arp TrigChance
100 %

Arpeggiator Trigger Chance: 1 - 100%

Sets the probability percentage for an arpeggiated note to actually sound. A setting of 50 % means that for each arpeggiated note, there is a 50% chance that it will actually play. For each new note, the dice are rolled again.

Arp Gate Time
50 %

Arpeggiator Gate Time: 1 - 100%

Sets the length of the gate time of the arpeggiated notes. A setting of 50 % means the gate-time is half the time of the note duration.

EDIT CV Channel Menus

The following parameters are duplicated for all CV channels. For convenience, the parameters are listed only once, but each of these parameters exists individually for each CV Channel.

CV1 Enable
On

CV Channel Enable: On/Off

This setting enables or disables this CV channel. When this is set to Off, the corresponding CV channel will be ignored when assigning MIDI notes to channels. This is useful when not all the CV channels are connected as you can disable the ones not in use.

CV1 Zone
Lower

CV Channel Zone Select: Lower, Upper

This setting determines which keyboard zone this CV channel is used by. When set to Lower, this CV channel will be used for notes played below the Split point and received on the Lower MIDI receive channel. When set to Upper, this CV channel will be used for notes played from the Split point and up and received on the the Upper MIDI receive channel.

CV1 Transpose
0

CV Channel Transpose: -48 to +48 Semitones

This setting transposes the note CV of the corresponding CV channel. This allows different voices to be set to different octaves or even create single key chords with up to 8 notes.

CV1 Fine Tune
0

CV Channel Fine Tune: -50 to +50

This is the pitch fine tuning offset. Slightly detuning multiple CV channels with different amounts combined with one of the Unison Voice Modes allows creating fat, rich supersaw-like sounds.

CV1 Pitchbend
On

CV Channel Pitchbend Enable: On/Off

This setting determines whether this CV channel will respond to MIDI Pitchbend data. This can be useful in split or multitimbral setups, where one sound will respond to Pitchbend and the other sound will not.

CV1 Portamento
On

CV Channel Portamento Enable: On/Off

This setting determines whether the corresponding CV channel will be affected by the internal portamento settings. This can be useful in split or multitimbral setups, where one sound will glide and the other sound will not.

CV1 Vibrato
On

CV Channel Vibrato Enable: On/Off

This setting determines whether the corresponding CV channel will be affected by the internal vibrato settings. This can be useful in split or multitimbral setups, where one sound will have vibrato and the other sound will not.

STORE mode

Recalling Programs

The first setting in the Global menu is Program Select. When this is selected, turning the Value encoder will select the previous or next program. When changing programs, all the CV channels are switched off, preventing any conflict in CV channel assignments between the 2 programs. Changing programs also overwrites the internal edit buffer. Any unsaved changes to the parameters will be lost. Be sure to save your settings before changing programs if you want to use them later on.

A quick way to access the program selection menu is by pressing any of the white menu buttons other than the Global Menu button and then press the Global Menu button. This will select the first setting in the Global Menu, which is the Program Select page.

Storing Programs

The CONVOCTO is fully programmable. All the parameters in all the 10 menus can be stored in one of the 31 memory locations and they can be recalled at any time. These setups are called programs. The Convecto comes with a number of preprogrammed setups for the most common uses like 8 voice polyphonic setup, 4+4 split and mono/unison configurations.

To store the current program, press the red STORE button. The LCD will show the Store Program page:



Write to: 1
My Setup

Use the Value encoder to select the memory location you want to store the program in. The number of the selected memory location will be shown on the top line of the display. The name of the program currently stored in that memory location will be shown on the bottom line of the display. This helps to prevent accidentally overwriting a program you may want to keep.

Pressing any of the white Menu buttons instead of pressing the STORE button a second time will cancel the store operation.

After selecting the desired memory location, press the red STORE button again to actually save the program in memory. The display will briefly show "Write



Write Complete

complete" to confirm the program has been successfully stored in memory.

IMPORTANT: Storing a program will overwrite anything that was previously present in that memory location. Once the store

operation has been completed, there's no way to retrieve the data that was overwritten.

Naming Programs

While holding down the grey SHIFT button, press the red STORE button to enter the Program Name page:



```
Program Name:  
My Setup
```

The name of the current program will be shown on the bottom line of the display and a cursor will appear under the first letter. Use the PARAMETER encoder to move the cursor left and right in order

to select the character to be changed. Use the VALUE encoder to change the character. Exit the Program Name page by pressing one of the white Menu buttons.

Initialize Program

The Initialize function will reset all the parameters in the internal edit buffer to a predetermined, neutral and consistent setting. This is a great starting point for creating your own setups. As this function overwrites the entire internal edit buffer, be sure to save any changes made previously if you want to use them later on. Refer to Appendix A to see what the initialized settings are.

To execute the Initialize function, Hold down the SHIFT button and press the white EDIT CV 7 button. The display will show:



```
Initialize  
Press WRITE
```

To cancel the Initialize function, press any of the white menu buttons.

In order to proceed with the Initialize function, press the red WRITE button. The display will briefly show the following message and then return to the last parameter changed.



```
Initialize Done
```

Panic

Sometimes things can go wrong in a MIDI-setup. MIDI messages sent could be corrupted, sometimes they are not received correctly, resulting for example in hanging notes or other unwanted artifacts. Whenever something like this happens, there is a PANIC function which resets the notes, turns all the gates off and resets all MIDI controllers.

To execute the Panic function, hold the SHIFT button and press the white EDIT CV 8 button. The display will briefly show the following message and then return to the last parameter changed.



Panic

Example settings

The CONVOCTO is a highly versatile and configurable converter. The amount of available settings may seem complex and overwhelming at first. The following examples are meant to get you started and get you familiar with the device. And along the way, you might discover some interesting possibilities and get new ideas to make your own creative custom setups.

It is advised to start with an initialized program before using these examples to prevent any undesired behavior caused by settings not mentioned in the examples.

Monophonic Program

The initialized program will give you monophonic behavior by default, where all the 8 channels will play the same note. And by default, the initialized program will have a pitchbend range of +/-2 semitones and will have pitch vibrato assigned to the modwheel. After initializing, the portamento is switched off. Go to the Portamento Mode page to switch it on and set the time to taste. For a 4-channel, fat unison detune sound, set the Fine Tune to 0, +4, -4, +8 for channels 1 to 4 respectively.

Polyphonic Program

1. Start by enabling all the channels that you are using and disabling the channels not in use.
2. Set Lower Voice Mode to Poly Single
3. Set all the channels in use to the Lower zone
4. Set the Master Octave to taste
5. By default, the initialized program will have a pitchbend range of +/-2 semitones and will have pitch vibrato assigned to the modwheel.
6. Be sure that the channel transpose and fine tune parameters are set to 0

Bass/Chord (1/3) Split Program

1. Start by enabling channels 1 to 4 and disabling channels 5 to 8
2. Set Zone to Lower for channel 1 and to Upper for channels 2 to 4
3. Set Split Enable to On and select the desired split point
4. Set Lower Voice Mode to Unison Legato or Unison Retrigger
5. Set Upper Voice Mode to Poly Single
6. Set the Lower Midi rx channel and the Upper Midi rx channel to the same channel, which is the channel your keyboard is transmitting from

7. You can use the CV1 channel Transpose parameter to transpose down the bass (for example -12 semitones, which is the same as 1 octave)
8. Set Lower Hold Pedal to Off and Upper Hold Pedal to On. This will allow for holding chords with a pedal and play the bass with 2 hands so you can use the pitchbend and modwheel. You may also want to switch off Pitchbend and Vibrato for channels 2 to 4 in that case
9. Or... set the Arpeggiator Zone to Lower, switch on the arpeggiator and latch it. Set the other arpeggiator parameters to taste

Chord+Arp (3/1) Program

1. Start by enabling channels 1 to 4 and disabling channels 5 to 8
2. Set the Zone to Lower for channels 1 to 3 and to Upper for channel 4
3. Set Lower Voice Mode to Poly Single
4. Set Split Enable to Off
5. Set the Arpeggiator Zone to Upper
6. Switch the Arpeggiator on and latch it. Set other Arpeggiator parameters to taste

4 Note Chord

1. Start by enabling channels 1 to 4 and disabling channels 5 to 8
2. Set the Zone to Lower for channels 1 to 4
3. Set Lower Voice Mode to Unison Legato or Unison Retrigger
4. For a Major 7th Chord: Set CV1 channel transpose to 0, CV2 transpose to +4, CV3 transpose to +7 and CV4 transpose to +11
5. Or... for a Minor 7th chord: Set CV1 transpose to 0, CV2 transpose to +3, CV3 transpose to +7 and CV4 transpose to +10

Pitchbend Chords (4)

1. Follow the first 3 steps from the 4 Note Chord example above
2. Set CV1 and CV2 transpose to 0 and CV3 and CV4 transpose to +7
3. Switch Pitchbend off for CV channels 1 and 3 and switch Pitchbend on for channels 2 and 4
4. Set the Pitchbend Up range to +3, +4 or +5. A setting of +3 will create a Minor 7th chord when the pitchbend wheel is pushed up. A setting of +4 gives a Major 7th when pitchbend is at max and a setting of +5 created a suspended chord.
5. Set the Pitchbend Down range to -3, -4 or -5. A setting of -3 creates a Minor 7th chord with the root note shifted down a minor 3rd. A setting of -4 gives a Major 7th chord with the root shifted down a major third and a setting of 5 makes a suspended chord.

6. Try any combination of Pitchbend Down and Up ranges, I can especially recommend the combinations -3/+4, -4/+3 and -5/+5

Random Arpeggiator (4)

1. Start by enabling channels 1 to 4 and disabling channels 5 to 8
2. Set the Zone to Lower for channels 1 to 4
3. Set Lower Voice Mode to Poly Single
4. Set the Arpeggiator Zone to Lower
5. Set the Tempo between 80 and 140 BPM
6. Set the Clock Division to 1/16
7. Set the Mode to Random
8. Set the Range to 4 Octaves
9. Switch the Arpeggiator on and latch it
10. Play any chord to set it all in action

Extra arpeggiator tips:

11. Pick one channel and switch Vibrato on for that channel and switch it off for all other channels. Set Vibrato Amount to +3 or use the modwheel to introduce vibrato
12. Pick a different channel and switch Portamento on for that channel and switch it off for all others. Set Portamento Mode to Normal and the Portamento Time between 5 and 15
13. Set the Trigger Chance between 75% and 90%. This will create unpredictable rests in the pattern
14. Try enabling one of the unused channels. This will create a predictable rest in the pattern whenever the arpeggiator hits the unused channel
15. It can become even more interesting if you set the sound for each of your voices (slightly) differently. Experiment with different octaves, waveshapes, filter settings and envelope settings for each of the voices. Try adding sync or FM to only one or two of the voices for more interesting effects
16. You can use the LFO to generate a random voltage every time the arpeggiator plays a new note: Set the LFO speed to 50 or lower. Set one of the Assign Sources to Sample&Hold and set LFO Key Sync to Arpeggiator

Specifications

- **Size: 48 HP (Eurorack Format): 244 mm x 128 mm x 51 mm (WxHxD)**
- **Power connector: 16-pin male header (Eurorack standard, +12V, -12V, +5V)**
- **Power consumption: 50 mA @ +12V, 60 mA @ -12V, 100 mA @ +5V**
- **Voice channels: 8, each with its own 1V/Oct Note CV output, Velocity CV output and Gate output**
- **Modwheel CV output: 1**
- **Aftertouch CV output: 1**
- **Assignable CV outputs: 4**
- **Voltage range Note CV outputs: 0 V - 10 V**
- **Voltage range Velocity CV outputs: 0 V - 10 V**
- **Voltage range Modwheel CV outputs: 0 V - 10 V**
- **Voltage range Aftertouch CV outputs: 0 V - 10 V**
- **Voltage range Assignable CV outputs: 0V - 10 V**
- **Gate CV outputs: Positive pulse, 0 V - 5 V**
- **MIDI note range: 121 notes (C0 - C10)**
- **Memory: 31 memory locations**
- **CV-connectors: 3.5 mm mono mini ts jacks**
- **MIDI: In, 5-pin DIN connector**
- **Display: 16x2 Backlit LCD**
- **Included accessories: 2x8 pin Power ribbon cable, Eurorack compatible**

Appendix A: List of all parameters

	MENU	PARAMETER NAME	PARAMETER RANGE	INIT VALUE
1	Global	Program Select	0 to 30	
2	Global	Lower Voice Mode	Unison Legato, Unison Retrigger, Poly Single, Poly Dual	Unison Legato
3	Global	Upper Voice Mode	Unison Legato, Unison Retrigger, Poly Single, Poly Dual	Unison Legato
4	Global	Lower Hold Pedal	Off, On	On
5	Global	Upper Hold Pedal	Off, On	On
6	Global	Lower MIDI RX Channel	1 to 16	1
7	Global	Upper MIDI RX Channel	1 to 16	1
8	Global	Voice Steal	Off, On	On
9	Global	Split Enable	Off, On	Off
10	Global	Split Point	C0 to C10	C4
11	Global	Master Octave	-3 to +3 Octaves	0 Octaves
12	Global	Master Transpose	-12 to +12 Semitones	0 Semitones
13	Global	Master Tune	-50 to +50	0
14	Global	Portamento Time	0 to 127	0
15	Global	Portamento Mode	Off, Normal, Legato	Off
16	Global	Pitchbend Up Range	-24 to + 24 Semitones	+2
17	Global	Pitchbend Down Range	-24 to + 24 Semitones	-2
18	Global	LFO Rate	1 to 127	100
19	Global	LFO Shape	Triangle, Saw, Ramp, Square Unipolar, Square Bipolar, Sample&Hold	Triangle
20	Global	LFO Key Sync	Off, Lower, Upper, Lower+Upper	Off
21	Global	Vibrato Amount	-127 to +127	0
22	Global	Modwheel to Vibrato Amount	-127 to +127	+5
23	Global	Aftertouch to Vibrato Amount	-127 to +127	0
24	Global	Modwheel CV Range	0.0 to 10.0 Volt	10.0 V
25	Global	Aftertouch CV Range	0.0 to 10.0 Volt	5.0 V
26	Global	Velocity CV Range	0.0 to 10.0 Volt	5.0 V
27	Global	Assignable CV 1 Source	See Appendix B	LFO Triangle
28	Global	Assignable CV 1 Output Range	0.0 to 10.0 Volt	5.0 V
29	Global	Assignable CV 2 Source	See Appendix B	LFO Saw
30	Global	Assignable CV 2 Output Range	0.0 to 10.0 Volt	5.0 V
31	Global	Assignable CV 3 Source	See Appendix B	LFO Square
32	Global	Assignable CV 3 Output Range	0.0 to 10.0 Volt	5.0 V
33	Global	Assignable CV 4 Source	See Appendix B	LFO S&H
34	Global	Assignable CV 4 Output Range	0.0 to 10.0 Volt	5.0 V
35	Global	Trigger Pulse Time	1 to 50 ms	5 ms
36	Global	Clock Pulse Time	1 to 50 ms	5 ms
37	Arp	Arpeggiator Enable	Off, On	Off
38	Arp	Arpeggiator Zone	Lower, Upper	Lower
39	Arp	Tempo	5 to 250 BPM	120 BPM

40	Arp	Arpeggiator Latch	Off, On	Off
41	Arp	Clock Division	1/1, 1/2, 1/4, 1/8, 1/16, 1/1 dotted, 1/2 dotted, 1/4 dotted, 1/8 dotted, 1/16 dotted, 1/1 triplets, 1/2 triplets, 1/4 triplets, 1/8 triplets, 1/16 triplets	1/16
42	Arp	Arpeggiator Mode	Up, Down, Up&Down 1, Up&Down 2, Random	Up
43	Arp	Arpeggiator Range	1 to 4 Octaves	1 Octave
44	Arp	Arpeggiator Trigger Chance	1 to 100%	100 %
45	Arp	Arpeggiator Gate Time	1 to 100%	50 %

The following parameters are duplicated for all CV channels. For convenience, the parameters are listed here only once, but each of these parameters exists individually for each CV channel.

	MENU	PARAMETER NAME	PARAMETER RANGE	INIT VALUE
46	Edit CV	Channel Enable	Off, On	On
47	Edit CV	Zone	Lower, Upper	Lower
48	Edit CV	Transpose	-48 to + 48 Semitones	0 Semitones
49	Edit CV	Fine Tune	-50 to + 50	0
50	Edit CV	Pitchbend Enable	Off, On	On
51	Edit CV	Portamento Enable	Off, On	On
52	Edit CV	Vibrato Enable	Off, On	On

Appendix B: List of all assignable destinations

1. Trigger Lower
2. Trigger Upper
3. Clock
4. LFO Triangle Wave
5. LFO Saw Wave
6. LFO Ramp Wave
7. LFO Square
8. LFO Sample & Hold
9. Pitchbend wheel
10. Control pedal (MIDI CC#11)

The JaySys Electronics team wishes you good luck and lots of fun creating your own modular setups and sounds!

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