



FLAME ECHOMETER

USER MANUAL (Version 1.08)

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|---|------------|
| CONTENT | 1-2 |
| ■ SHORT DESCRIPTION | 3 |
| ■ SECURITY ADVICES | 4 |
| ■ CONSIGNMENT | 4 |
| ■ REAR PANEL | 4 |
| ■ FRONT PANEL | 5-6 |
| ■ SCHEME OF THE POTS, SWITCHES AND KEY BUTTONS | 7-8 |
| ■ START/STOP | 7 |
| ■ SYNC INTERN/EXTERN | 7 |
| ■ EDIT | 7 |
| ■ SHOTS: VALUE, RESOLUTION, OFFBEAT | 7 |
| ■ ECHO: TIME, DEPTH | 7 |
| ■ LOOP: RELEASE, VARIATIONS | 7 |
| ■ QUANTIZE | 8 |
| ■ INSTRUMENT | 8 |
| ■ HOLD/ECHO-SWITCHES | 8 |
| ■ DIAL-POT/KEY | 8 |
| ■ PLAY MODI | 8 |
| ■ BAR - LOOP (Loop-Lenght) | 8 |
| ■ CV / GATE OUTPUTS | 8 |
| ■ GATE-TRIGGER INPUTS | 8 |
| ■ VISUALIZATIONS OF FUNCTIONS (CHARTS) | 9-12 |
| ■ QUANTIZE: REAL, LOOP QUANTIZE (LQ), QUANTIZE (Q) | 9 |
| ■ ECHO: DEPTH | 10 |
| ■ ECHO: VELOCITY / VALUE | 10 |
| ■ SHOTS: RESOLUTION | 11 |
| ■ SHOTS: MANUALLY VALUES (Velocity, Value) | 11 |
| ■ SHOTS: AUTOMATIC RANDOM VALUES | 11 |
| ■ SHOTS: LFO`s (sawtooth, inverted sawtooth) | 12 |
| ■ SHOTS: OFFBEAT (Example HiHat) | 12 |
| ■ LOOP (Recording schemata) | 13 |
| ■ VARIATIONS (Examples and normally play modi) | 14 |
| ■ A SIMPLE EXAMPLE | 15 |
| ■ EDIT (Adjustment of the parameters) | 16-18 |
| ■ GENERALLY | 16 |
| ■ INSTRUMENT | 16 |
| ■ MIDI CHANNEL | 17 |
| ■ UTILITY: DUMP SEND, DUMP RECEIVE, LOW DATA, HALF TIME | 17 |
| ■ ANALOG OUT | 18 |
| ■ SHUFFLE ON/OFF | 18 |
| ■ SEND CLOCK ON/OFF | 18 |

| | |
|-----------------------------|-------|
| ■ INIT (Reset user data) | 19 |
| ■ MIDI | 19-23 |
| ■ MIDI RECEIVE | 19-22 |
| ■ MIDI SEND | 22 |
| ■ MIDI SYNCHRONIZATION | 22 |
| ■ MIDI IMPLEMENTATION CHART | 23 |
| ■ LIST OF SYSEX DATA | 24 |
| ■ SAMPLE APPLICATIONS | 25-26 |
| ■ ADDITIONAL INFORMATIONS | 27-28 |
| ■ DISTRIBUTION | 27 |
| ■ WARRENTY | 28 |
| ■ TERMS OF PRODUCTIONS | 28 |
| ■ DISPOSAL | 28 |
| ■ SUPPORT | 28 |
| ■ ACKNOWLEDGMENT | 28 |

SHORT DESCRIPTIONS

The echometer is a midi sequencer/looper where you can record and playback midi notes and/or controller values from three independent tracks over up to four bars length in realtime or quantized if you want.

Over implemented buttons, external Midipads or keys you can just record the timing of the events up to Midi. You can also trigger them analogwise over the gate input switch per track.

The echometer is mainly designed to create, play and edit drums and percussion beats on the fly. Still you can edit basslines or melodies to be given out in addition or as it. Over up to six voltage control outputs for 0 to 5 volts you can also control and manage analogue components such as filters, analogue synthesizers or such stuff in a modular system. The enormous possibilities in combination with the midi are uncountable.

In opposite to a classical step sequencer the echometer always sets the real step directly to the beat scheme, quantized or not, more as a looper does. To set/record steps there are several ways: SHOTS generate a note repeat quantized between 96th ticks over triolic schemes down to just quarter notes, The choice can be changed at any time on the fly.

Alternatively you can also set single notes quantized or not. In realtime recording there will be also held the gate time, what is needed for notes and melodies at least. The Loop quantization (LQ) can also be choosend afterwards.

The Echometer has several echo or repeat functions:

A loop with up to 4 bars length can be played either endless, once or - comparable with a real echo - slowly going down with the volume; this can be set with the release button. New steps can be added or deleted at any time that the loop can vary constantly.

Echos can be added or deleted from single steps with the echo buttons called time and depth without changing the looped beat in his structure. These changes can be recorded over four bars length separately per track to be played back automatically, what is a part of the hold function.

The hold function is freezing the current state of the loops to play them back endless To still get additional variations, you can go ahead playing more things with it without changing the loop. The Echo still can be set on or off all the time.

With the mute function you can temporary cut one of the tracks, The Length of the Loops can be varied between one, two or four bars on the fly. With the VARIATIONS-pot you can add random functions to the running loops and the loop lengths. So you can easily realize playable arrangements live.

The Sequencer can run with the internal clock in tempi from 15 til 230 bpm or external-ly synced over Midi-clock. Each of the three tracks can also be a monophonic line of notes, sending control changes and pitch bend in addition, the midi channel can be choosen free for every track. Two additional Control-Voltage outputs from 0 to 5V per Track can be set in different combinations.

Many additional configuration settings can be choosen over the edit menu individually. All settings are stored in the unit and can not be lost by turning it off. They can be saved in addition externally over Midi-Dump.

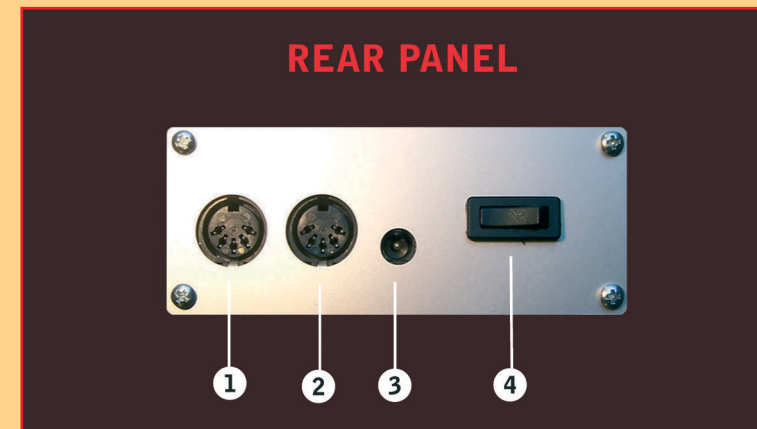
SECURITY ADVICES

- don't use the tool in humid environment
- don't install close to heating places (radiators, stoves, open fire, direct sun-radiation)
- please pay attention to use the correct power supply adapter
- don't let the tool fall down, even if it is quiet robust
- don't put external voltage at the output-jacks
- for cleaning, don't use chemical cleanser or solvent, but only dry cloths

CONSIGNMENT

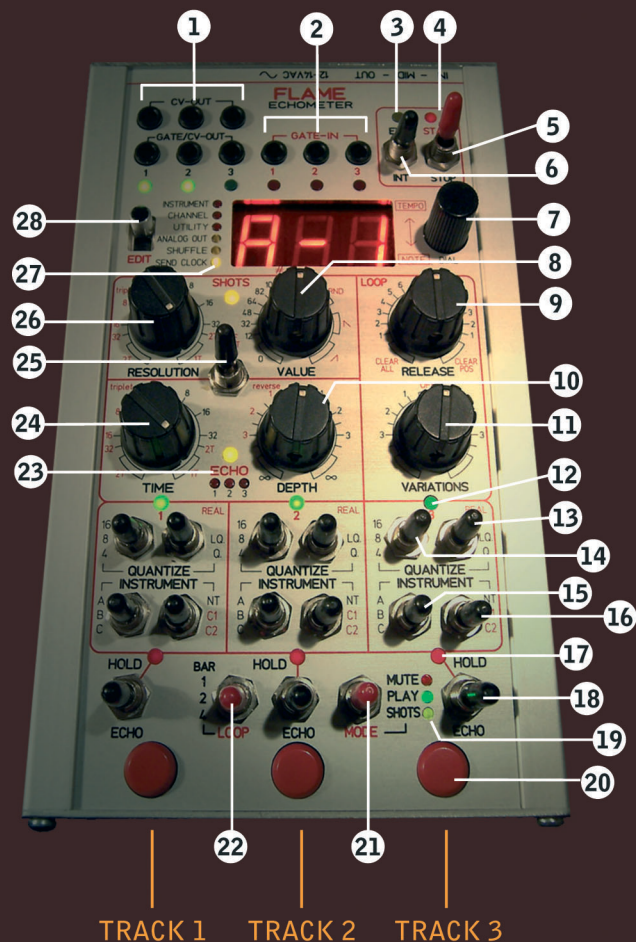
We deliver following accessories with the tool:

- Power supply adapter AC/AC (230VAC - induced 14VAC, 300mA)
- Quickstart manual, optionally additional informations
- Step-up Plug-in Voltage Converter 45W (Convert 110V to 230V) for USA



- 1 MIDI-IN connector
- 2 MIDI-OUT connector
- 3 AC-IN jack max.12..14VAC / min.500mA
- 4 Power switch (off-site=on)

FRONT PANEL



- 1 OUTPUTs CV/gate (0..5V) (3,5mm mono jack*)+LED's
- 2 INPUTs gate (3,5mm mono jack*)+LED's
- 3 LED yellow: extern receive MIDI data
- 4 LED red: start/stop, LED yellow: beat
- 5 Switch start/stop sequencer
- 6 Switch extern/intern MIDI Clock
- 7 Data entry ruler + push button
- 8 SHOTS: Value ruler (velocity/control change value)
- 9 LOOP: ruler release ruler (loop release time)
- 10 ECHO: ruler depth (echo depth, reverse, forward)
- 11 LOOP: ruler variations (random)
- 12 LED's beat output tracks
- 13 14 Switches select quantize
- 15 16 Switches select instrument
- 17 LED HOLD / MUTE (3x for tracks 1..3)
- 18 Key switches HOLD on/off / ECHO on/off
- 19 LED's MODE (Mute, Play, Shots)
- 20 PLAY buttons red (3x for tracks 1..3)
- 21 Switch MODE
- 22 Switch Bar LOOP
- 23 LED's ECHO yellow: Beat, red: Track-echo on/off
- 24 ECHO: Time ruler (echo time)
- 25 SHOTS: switch Offbeat (pulse offbeat)
- 26 SHOTS: Resolution ruler (pulse time)
- 27 LED's EDIT mode
- 28 Switch EDIT

* 3,5mm=1/8th inch

SCHEME OF THE POTS, SWITCHES AND KEY BUTTONS

■ START/STOP

Starts or stops the internal sequencer with adjusted tempo (sync-switch aside must be in position INT, EDIT off)

■ SYNC INT/EXT

Sequencer gets started internal INT or external EXT via Midi-Clock

■ EDIT

Activates the EDIT-mode to adjust parameters and to record them (sequencer must be stopped)

■ SHOTS: VALUE-Pot

Adjustment of Velocity/Value

LEFT: fixed value 0..127,

RIGHT: RND - Random-value,

DOWN - LFO: sawtooth from 4 values

UP - LFO: inverted sawtooth from 4 values

OFFBEAT-switch:

Raster displaced per half

■ SHOTS: RESOLUTION-Pot

Adjustment of the Note-Repeat-Raster

■ ECHO: TIME-Pot

Adjustment of the Note-Repeat-Raster

■ ECHO: DEPTH-Pot

LEFT: Feedback+value reverse

RIGHT: Feedback+value decaying

To the steps of the running sequence can be added a midi echo. The grid as well as the decay- and attack time can be constantly modified during the session. The movements of the controllers are constantly recorded and, after activating MUTE, at the according track automatically played. The echo also can be switched on and off at MUTE. There are separate recordings for every track possible.

■ LOOP: RELEASE-Pot

Determines the decay of the loop (decrease of Velocity/Value)

CENTER: endless Loop (no Release)

CLEAR ALL: all played sequence-data will be deleted (except for Mute/Hold)

CLEAR POS: all sequence-data at active position will be deleted (except for Mute/Hold)

PLEASE NOTE: The notes and controller of a track can't be deleted separately.

Advice: But there is a possibility to delete notes pointedly with played SHOTS at VALUE=0, even screened. Equally controller values can be put screened.

■ LOOP: VARIATIONS-Pot

You can vary a leveled loop while it is playing.

CENTER: Variations off

TO LEFT/RIGHT: Random on Velocity/Value (different procedures)

To the right additionally: Random too on Velocity/Value and additionally playback-variations on/off: The order of the measures of the 4-measured loops are generated and played by random. This sequence is 8 measures long and depends on the adjusted length of the loops (1, 2 or 4 measures).

If BAR=1 measure 1,2,3 or 4 of the loop will be chosen and be played 8 measures.

If BAR=2 of all measures will be chosen two and be repeated 4 times.

If Bar=4 of all measures will be chosen 4 and be repeated 2 times.

After run-off the 8 measures a new scene will be generated and played. The variation can be stopped any time (pot OFF) or started again (pot to the right). You should rather use this function when no steps are recorded, because you never know which measure of the loop is activated (maybe for experiments).

■ QUANTIZE: Right switch

REAL = no Quantize, play with Gatetime (play in Tick-mode). Pushing the red push-button generates Note-On, to let loose Note-Off. As long as the button is pushed, before placed notes will be deleted.

LQ (LOOP QUANTIZE) = Play as with REAL, but the LOOP will be quantized belated in the memory, depending from the left switch. As long as the button is pushed, before placed notes will be deleted.

Q (QUANTIZE) = play quantized. Depending from the left switch, the notes will be played at the following raster-point. Note -Off is placed automatically in front of the note (not via releasing the button). With this you can generate quantized bounded notes (important for drumloop-samples). Notes will always be added.

PLEASE NOTE:

REAL+LQ = Bass Mode (Playing of notes in realtime / Quantize with Gatetime)

Q = Drum Mode (quantized bounded notes)

■ INSTRUMENT: Right switch

NT: NOTE - With the left switch adjusted note A, B or C is played. A and B are fixed adjusted notes. The same is C adjusted in EDIT-mode, but can be diversified with the DIAL-pot.

C1, C2: Controller 1 or C2 will be played (pitch bend or control change)

■ HOLD/ECHO - key button

Keybutton switched forward activates HOLD of the track on/off (red LED permanent on/off). Keybutton switched backwards activates/ deactivates the echo of the track (little red ECHO-LED on/off)

HOLD: Activating HOLD freezes the LOOP of the track. RELEASE becomes effectless. Nothing more can be recorded.

ECHO: Only notes can generate an echo (no controller). But the Echo can be notes or controller or both (adjustable in EDIT-mode)

■ DIAL - Data Entry

The function of the dial controller in the edit mode is changing values and navigating through the menus.

In the play menu there can be switched between tempo and view/ entering of notes by pushing the controller. Nearer descriptions can be found in the according chapters.

■ MODE - Here you choose the play-mode:

MUTE: the red push-buttons mute the according track (red HOLD-LED is blinking)

PLAY: with the red key-buttons several steps can be placed in dependence of the adjustments of the QUANTIZE-switch.

SHOTS: as long as the red button is pushed note-sequences (or controller) are generated depending on the adjustments of the SHOT-pot.

■ BAR-LOOP-switch

Determines the playback-time of the sequence. It can be 1, 2 or 4 measures. To arrange LOOPS faster, at position 1 or 2 the according steps of the not played measures are recorded too. That means:

if BAR is at 1 all other measures are recorded with the same played steps. So the sequence goes on looping, even if you switch to BAR 4 (because all measures are the same). Because of this, you can play the measures only separately when BAR= 4.

If BAR is =2, the scene is always 2-measured and recorded are always 1 and 3, as well as 2 and 4.

■ CV/GATE-OUTPUTS

Analogue CV- output of tracks 0..5V. Can be configured differently: gate of the note, note-number, velocity, value controller 1, value controller 2 or all together, accordingly value from ECHO on/off.

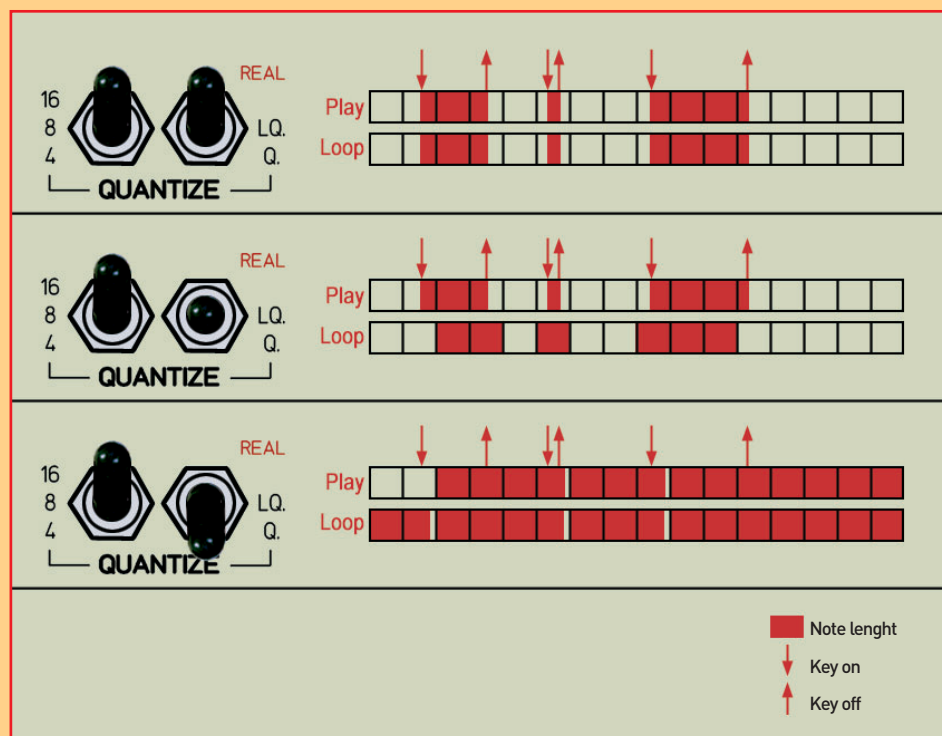
■ GATE-INPUTS

Analogue 5V-Trigger (as external possibility to play the track, the same as with the red push-buttons)

VISUALIZATIONS OF FUNCTIONS (CHARTS)

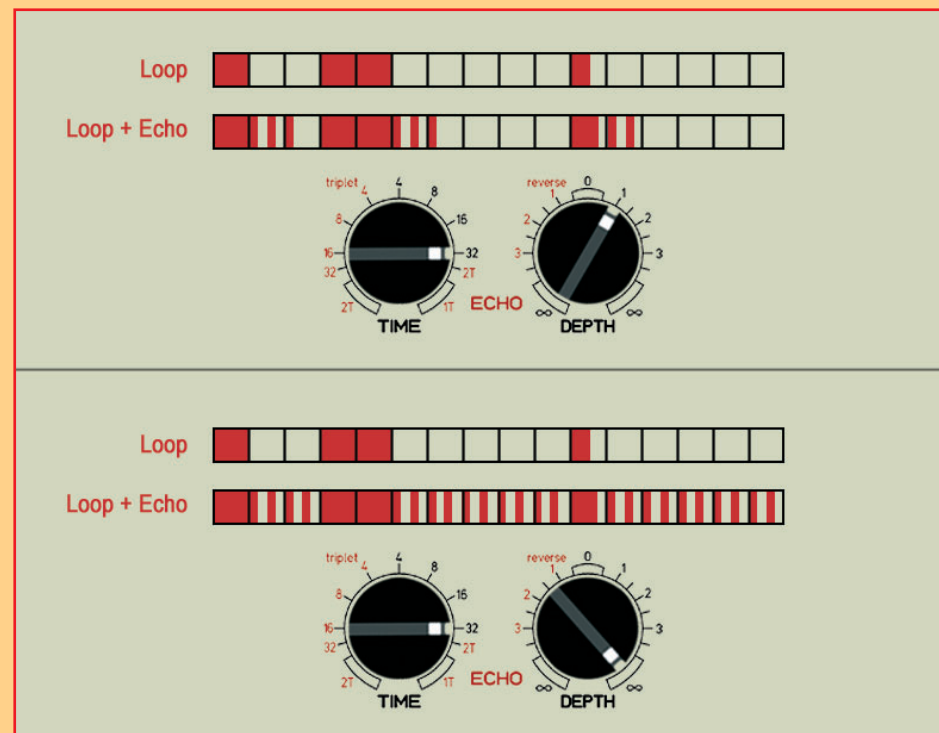
■ QUANTIZE FUNCTIONS

REAL, LOOPQUANTIZE (LQ) and QUANTIZE (Q)



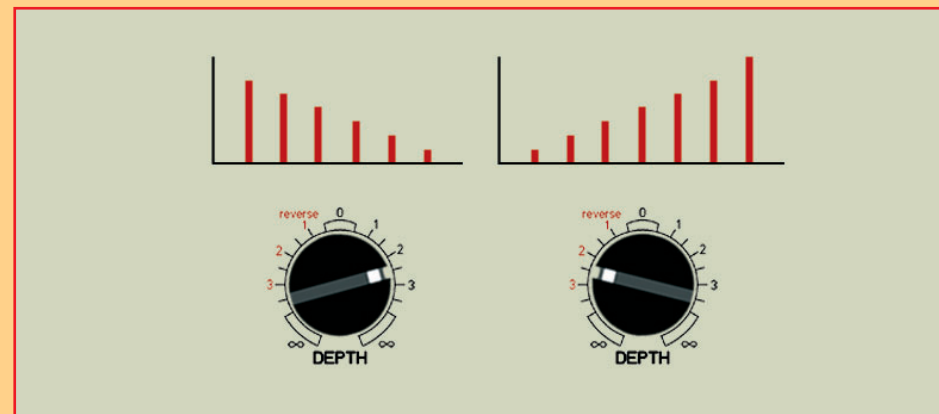
■ ECHO

different effects of DEPTH



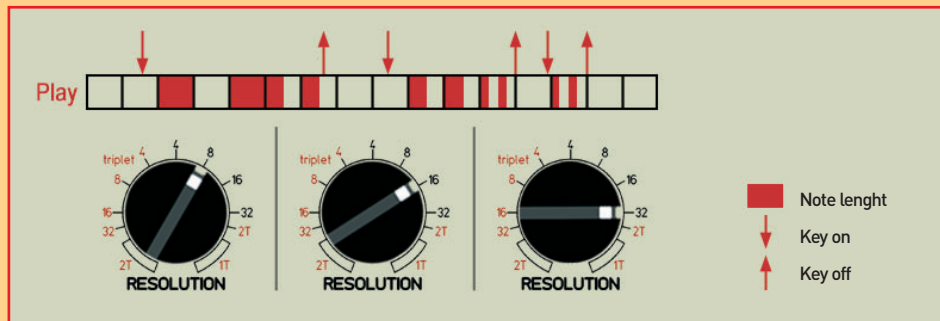
■ ECHO - VELOCITY / VALUE

different effects of DOWN and REVERSE



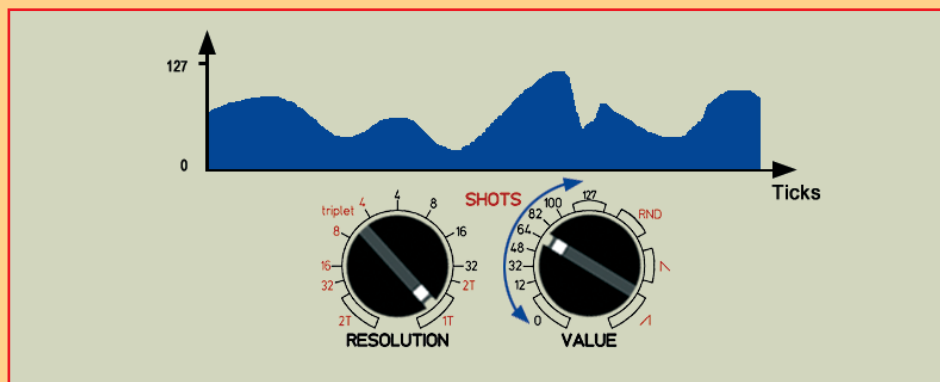
■ SHOTS

different effects of RESOLUTION (Pulses)



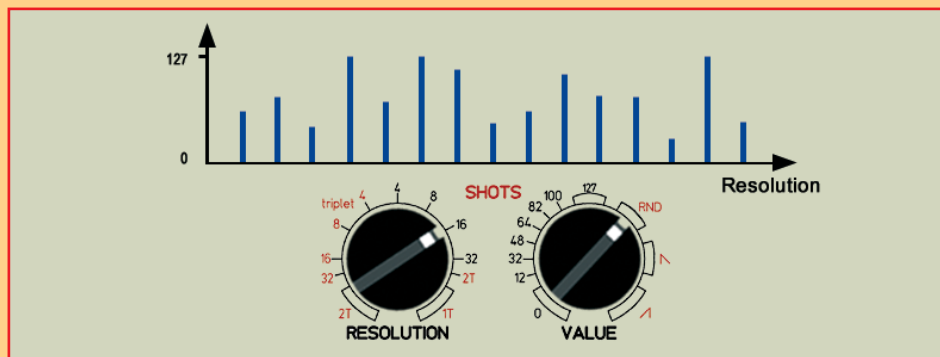
■ SHOTS: manually adjust

Create manually continuous controller value waves or velocity waves (with Tick resolution).



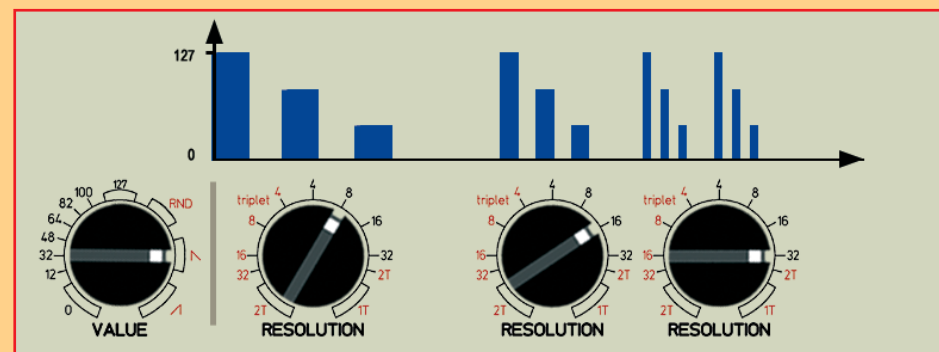
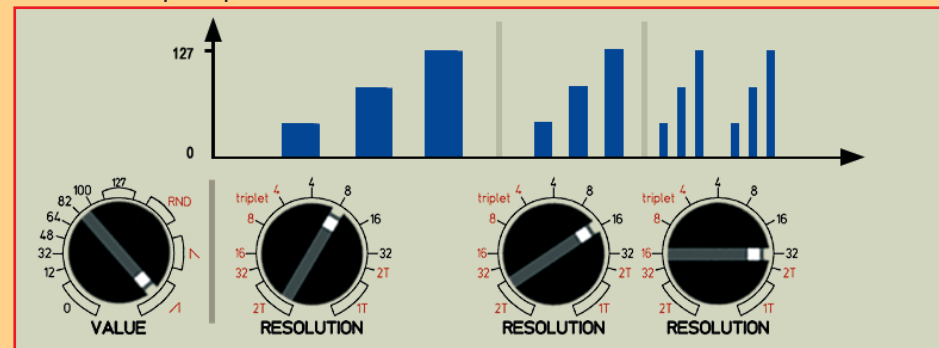
■ SHOTS: automatically random values

Create randomized values (velocity or controller values)with 8th resolution.



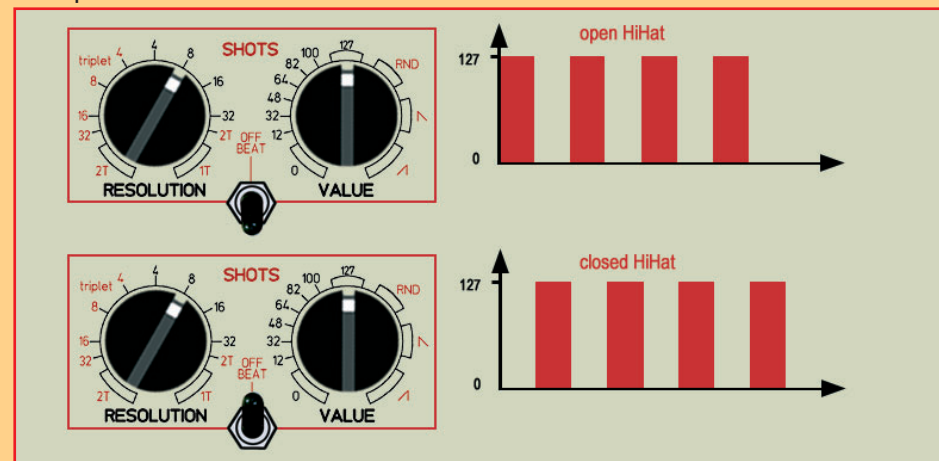
■ SHOTS: LFO's

Sawtooth and inverted sawtooth with different resolutions. The LFO's have ever 3 values and the zero point per time interval.



■ SHOTS: OFFBEAT (push pull - shifting)

Example of OFFBEAT: two shifted HiHats in off beat



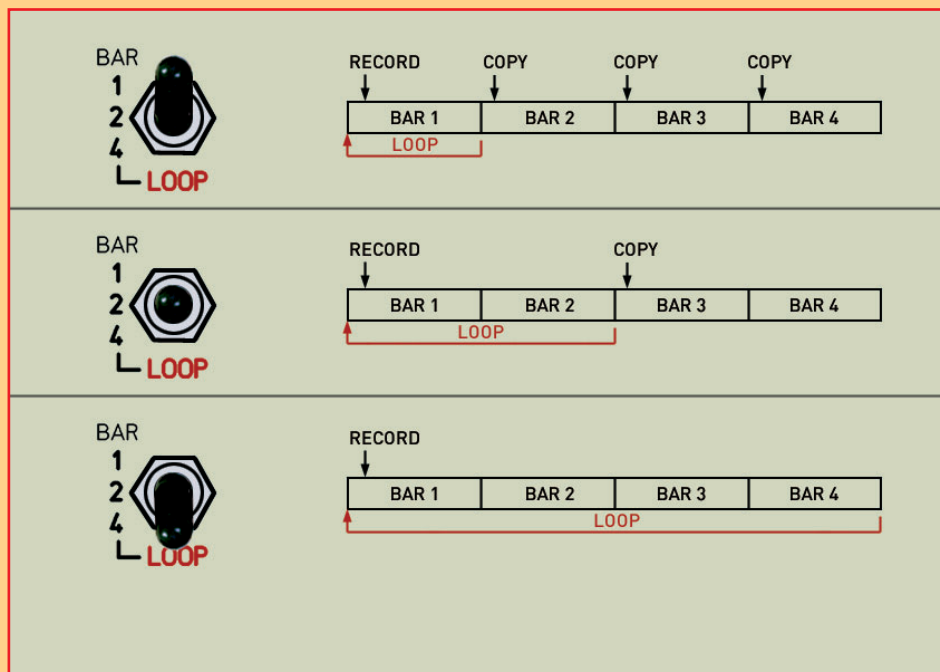
■ LOOP: Recording steps with different length of the loop

To arrange LOOPS faster, at position 1 or 2 the according steps of the not played measures are recorded too.

That means:

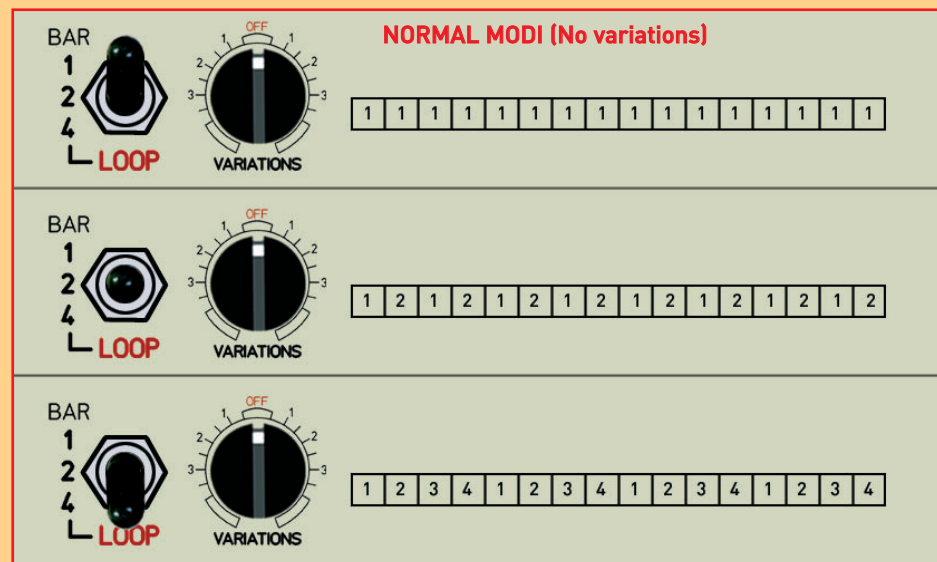
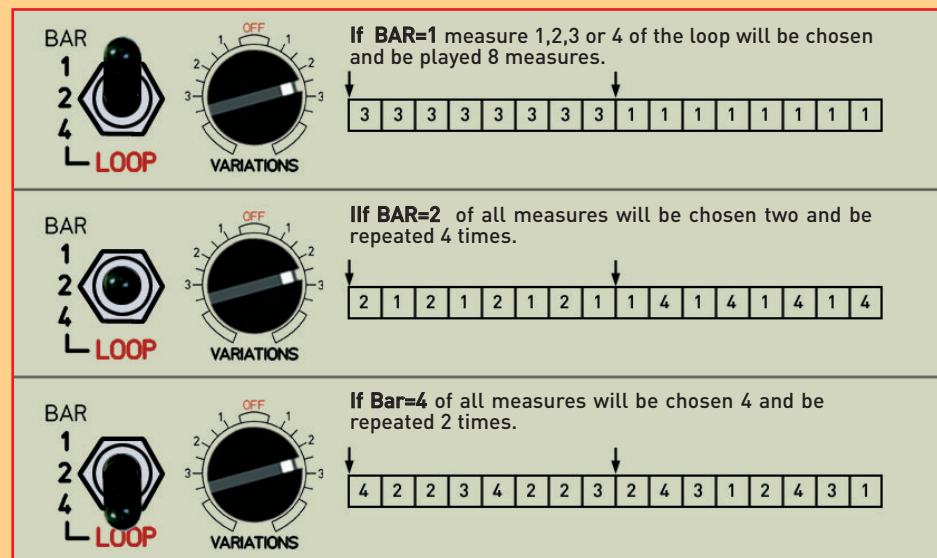
if BAR is at 1 all other measures are recorded with the same played steps. So the sequence goes on looping, even if you switch to BAR 4 (because all measures are the same). Because of this, you can play the measures only separately when BAR= 4.

If BAR is =2, the sceme is always 2-measured and reorded are always 1 and 3, as well as 2 and 4.



■ LOOP VARIATIONS

You can vary a leveled loop while it is playing. The order of the measures of the 4-measured loops are generated and played by random. This sequence is 8 measures long and depends on the adjusted length of the loops (1, 2 or 4 measures). After run-off the 8 measures a new sceme will be generated and played. The variation can be stopped any time (pot OFF) or started again (pot to the right). You should rather use this function when no steps are recorded, because you never know which measure of the loop is activated (maybe for experiments).



A SIMPLE EXAMPLE

With a simple example we would like to demonstrate the functionality of this tool. Please let the tool switched off. Put the switches and pots into following positions: All pots in center-position, all QUANTIZE- and INSTRUMENT-switches upwards. LOOP-BAR-switch at 1 (LOOP-length= 1 measure), MODE-switch on PLAY (green LED is illuminated), EDIT-switch upwards, SYNC-switch downwards at INT (internal sequencer), switch aside on STOP.

1. Please connect a sound- expander (drum-module, sampler, synthesizer e.g.) via MIDI (Echometer-MIDI-out in expander-MIDI-in)
2. Adjust the MIDI-channel of the expander at 1 (or the value changed in the Echometer)
3. Switch the tools on
4. In the display of the Echometer appear one after the other the version-number, message about loading of the user-data (Err or Yes) and at least the adjusted tempo.
5. With the dial-pot you can adjust the tempo (revolving the pot)
6. By pushing on the dial-pot you switch between notes/controller-display and the tempo-display
7. The sequencer is stopped. Nevertheless you can actuate notes with the red push-buttons.
8. Push the red button of track 1. Now the note A from track 1 must be hearable with velocity 127 (velocity adjustable with SHOT-value- pot). Please note that the expander-sound-volume depends on velocity.
9. If you cannot hear anything, check the MIDI-channel or the audio-output of the expander. (How to change the MIDI-channel in the Echometer see beneath EDIT-mode)
10. Now you can start the sequencer (switch top right at START)
11. A one-measured loop is running now. By pushing/releasing the red push-button from track 1 you can play a rhythm. The rhythm will be recorded in realtime-raster (ticks) and be played endlessly (RELEASE-pot in center-position).
12. If you want: Delete the sequence completely by revolving shortly the RELEASE-pot to CLEAR ALL or delete only several notes by revolving shortly to CLEAR POS.
13. Turn the RELEASE-pot at a value between 1 and 6. Now the loop accordingly sounds slow or fast out. Everytime you can put new steps.
14. Delete the sequence and switch the right QUANTIZE-pot on LQ (LOOP QUANTIZE).
15. Play again steps and then listen to the result: At the beginning the notes sound in realtime and then in the repetition quantized as 16th notes.
16. Delete the sequence, let the RELEASE-pot at CLEAR ALL and switch the MODE-switch upwards to SHOTS (yellow LED is illuminated). Keep the red push-button pushed and at the same time dial the SHOTS-resolution-pot. Now you will hear automatically generated notes in SHOT-raster. If you want to record the notes, turn on the RELEASE-pot again.
17. Instead of the RESOLUTION-pot now you turn the VALUE-pot. So you can vary the velocity of the played notes. Try the effects of RND (RANDOM) and of the two LFO-positions up/down.
18. Delete the sequence and switch the INSTRUMENT-switch from track 1 to C. Push the dial- pot to reach the note-sight. Now you can change the note with the dial-pot. Play SHOTS and revolve the dial-pot- and then listen to the result. Attention: the note-track is monofon. You can always generate only one note per track.
19. With help of SHOTS play 4th -notes and then activate ECHO (ECHO-push-button shortly down). Turn on both ECHO-pots to listen to the result. The movements of the pots will be recorded always in the back and be played automatically with HOLD (each track separately).
20. Nevertheless the echo always can be switched on or off.

EDIT MODE (Edit user data)

In the EDIT-mode you fulfill the following adjustments:

- **INSTRUMENT**
 - Instrument-configuration of the push-buttons A, B, C (note numbers) C1,C2 (control change or pitch bend)
 - Echo of the track: Notes: on/off, Controller: off, Pb=pitch bend, control change number)
- **CHANNEL** - the MIDI channel of the tracks (1..16)
- **UTILITY**
 - Midi-Dump send/receive
 - Data reduction on/off (L=LowData)): limit RESOLUTION/TIME to max. 32th
 - Sequencer in Half-Time on/off (H=Halftime)
- **ANALOGUE OUT** - the routing for the analogue-outputs (All, Gate, Note, Velo, CC1, CC2)
- **SHUFFLE** - global Shuffle on/off, (fix 8th-shuffle)
- **SEND CLOCK** - Sends MIDI-realtime-data (START,STOP,CLOCK) at external Sync on/off

Edit of parameters:

1. Switch the EDIT-pot in stopped sequence-mode to EDIT (downwards)
2. One of the EDIT-mode-LEDs shines permanently or blinks. Pushing the dial-pot you can switch between the EDIT- menu-selection (LED blinks) and the menu itself (LED shines permanently).
3. While blinking LED you can choose the menu by dialing the dial-pot and you change into menu by pushing the dial-pot (LED shines permanently).
4. The menus are edited differently:

INSTRUMENT

You can switch into the INSTRUMENT menu as follows:

- EDIT switch on EDIT
- at blinking menu LED by turning the dial controller switch to INSTRUMENT (in case of permanent blinking LED push the dial controller before)
- in case of selected INSTRUMENT menu (blinking INSTRUMENT LED) push the dial controller to get to the menu.

Note numbers A,B,C / Controller C1, C2:

The red push-buttons select the track. Turn the push-button you want to edit into according position. In the display you can see the value, which changes by revolving the dial-pot.

Echos of the Tracks:

With the HOLD/ECHO-push-buttons you can change to the adjustments of echo. The echo-LED of the selected track is illuminated. Switch the right INSTRUMENT-switch to NT (note) and turn ON or OFF (echo-note on or off). Switch on C1 or C2 . If the echo shall be a controller choose the controllernumber, at pitchbend Pb. If no controller shall be sendet: OFF.

Range:

Notes: 0..127 (C-2..G8)

Controller: off, Pb (pitch bend), 0..119 (Control change numbers)

MIDI CHANNEL

You can switch into the CHANNEL menu as follows:

- EDIT switch on EDIT
- at blinking menu LED by turning the dial controller switch to CHANNEL (in case of permanent blinking LED push the dial controller before)
- in case of selected CHANNEL menu (blinking CHANNEL LED) push the dial controller to get to the menu.

The red push-buttons select the track. With the dial-pot you adjust the MIDI channel: **1..16**

UTILITY

You can switch into the UTILITY menu as follows:

- EDIT switch on EDIT
 - at blinking menu LED by turning the dial controller switch to UTILITY (in case of permanent blinking LED push the dial controller before)
 - in case of selected UTILITY menu (blinking UTILITY LED) push the dial controller to get to the menu.
- In these menus the functions/ values are activated with the red push-button of track 1.

4 UTILITY-menus exist:

- d S** - Dump Send - sending of the adjusted data via Midi-out per SYSEX
 - shortly push on red key 1 sends data via MIDI - out
- d r** - Dump Receive - receiving of SYSEX-data
 - shortly push on red key 1 → Echometer wait of incoming Sysex data
 - now send Sysex data from external device to the MIDI-Input
 - Display receipt the Receiving with OK or Err
 - Dump receive can be stopped with the red push buttons 2 or 3.
- L** - Low Data - Datareduction
- H** - Half Time - the internal sequencer runs at adjusted tempo only with half of the tempo

LOW DATA (Datareductions):

The data amount sent per a time-unit by MIDI is limited, but the echometer is able to generate more data already at middle tempo (for example permanent sending of ticks on various tracks). Therefore the output of the controllers RESOLUTION and TIME can be delimited to a maximum of thirty-second notes.

Short tick cluster mostly won't be a problem. Maybe there should be experimented. Please consider, the cable-connected sound expander could have problems with too large data amounts, because the receiving memories (input-buffer) may overflow.

HALF TIME

(the internal sequencer runs at adjusted tempo only with half of the tempo):

At HALF TIME the internal loop runs a half slower. Please consider, in relation to the MIDI-Clock all temporarily indications of the controllers RESOLUTION/ TIME of course will show twice as fast grids than really played in that case.

An example: A RESOLUTION of 4 does not mean a quarter note anymore, but a half note.

ANALOG OUT

You can switch into the ANALOG OUT menu as follows:

- EDIT switch on EDIT
 - at blinking menu LED by turning the dial controller switch to ANALOG OUT (in case of permanent blinking LED push the dial controller before)
 - in case of selected ANALOG OUT menu (blinking ANALOG OUT LED) push the dial controller to get to the menu.
- Selecting of the output-jack with the red push-buttons of the track : double pushing switches between jack up/down (green LED shines at jack down).
- With the dial-pot you adjust the value.
- The ECHO-push-buttons turn the analogue echo on/off (ECHO-LED displays the condition)

Valuation: **All:** (all values without gate), **GAt:**Gate, **nt:**Note number, **VEL:**Velocity, **CC1:** CC1-value, **CC2:** CC2-value

SHUFFLE

You can switch into the SHUFFLE menu as follows:

- EDIT switch on EDIT
- at blinking menu LED by turning the dial controller switch to SHUFFLE (in case of permanent blinking LED push the dial controller before)
- in case of selected SHUFFLE menu (blinking SHUFFLE LED) push the dial controller to get to the menu.

→ Switch ON/OFF with the dial-pot (turn the pot).

The rhythm only can be modulated on SHUFFLE globally (ON or OFF). It is not variable. With activated SHUFFLE all RESOLUTION/TIME-values are adapted to the SHUFFLE (don't accord always with the scale-values), because the shuffle is based on shifted triplets.

SEND CLOCK

You can switch into the SEND CLOCK menu as follows:

- EDIT switch on EDIT
 - at blinking menu LED by turning the dial controller switch to SEND CLOCK (in case of permanent blinking LED push the dial controller before)
 - in case of selected SEND CLOCK menu (blinking SEND CLOCK LED) push the dial controller to get to the menu.
- Switch ON/OFF with the dial-pot (turn the pot).
- See below in chapter MIDI SYNCHRONIZATION

ADVICE: Outside of EDIT the conditions of SHUFFLE, SEND CLOCK and halftime are signalled by shining EDIT-LED (at halftime: utility-LED). You can leave the EDIT-mode out of any position by switching the EDIT-switch. Only now the data will be stored permanently in the internal EEPROM (signalled by YES on the display). If you turn off the echometer while editing, the at least changed data will get lost.

INIT (Reset user data)

Turning on the machine the internal data can be back-uped to the factory settings. For this purpose push all three red push-buttons while turning on as long as in the display appears **INI** → Let the buttons off in that case → then **YES** appears shortly as affirmation and the visual display returns into the according mode. Now the data is reseted.

Attention! Consider the deletion of all prior USER data in the internal memory. If necessary it should be saved first via MIDI-Dump.

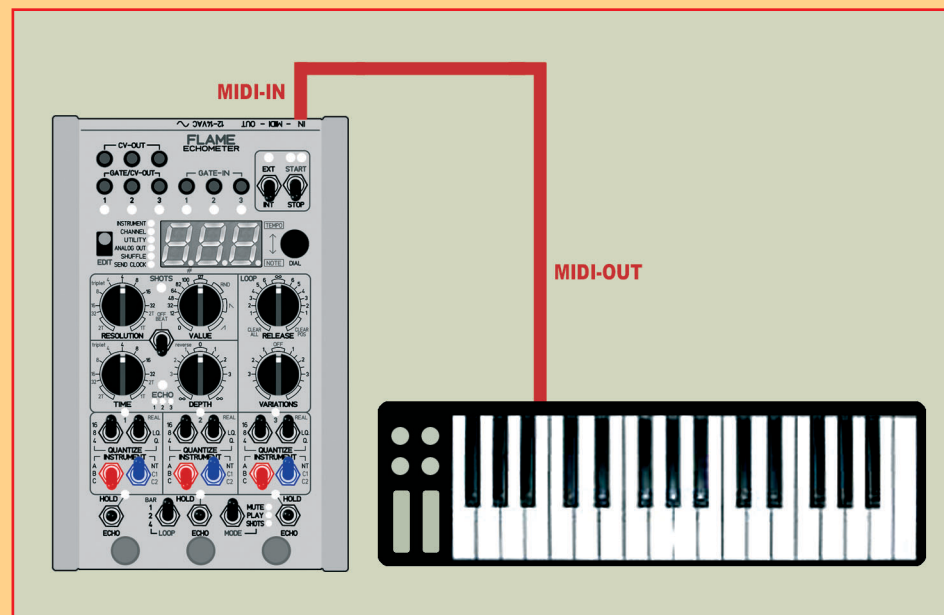
MIDI - HOW TO RECEIVE MIDI-DATA

■ HOW TO PLAY NOTES

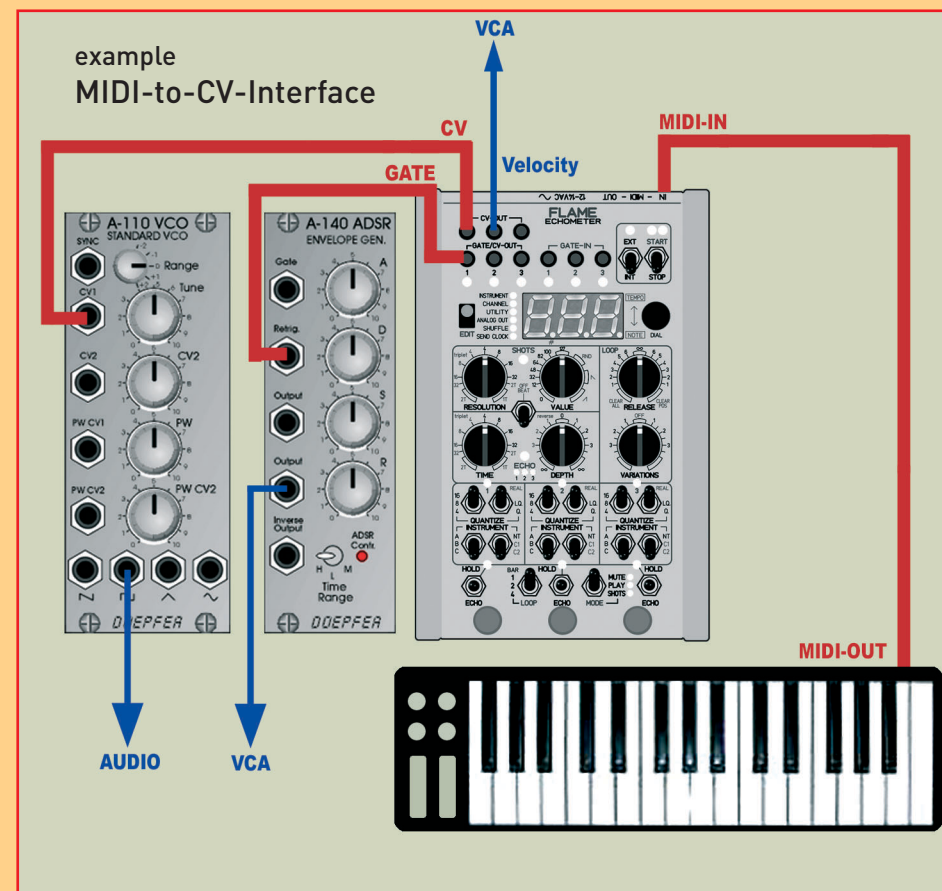
With a connected keyboard via MIDI-in you can play notes with VELOCITY. With a keyboard all notes are availability at the same time, therefore with the left instrument-switches (15) you can adjust two different ways of playing:

Switch (16) on NT (Note) and Switch (15) on C

In this common modus the echometer can identify and let run all notes played with the keyboard on the adjusted MIDI-channel. In this case it doesn't matter which notes are assigned to the switch (15) wether to A,B or C. Velocity is identified too.



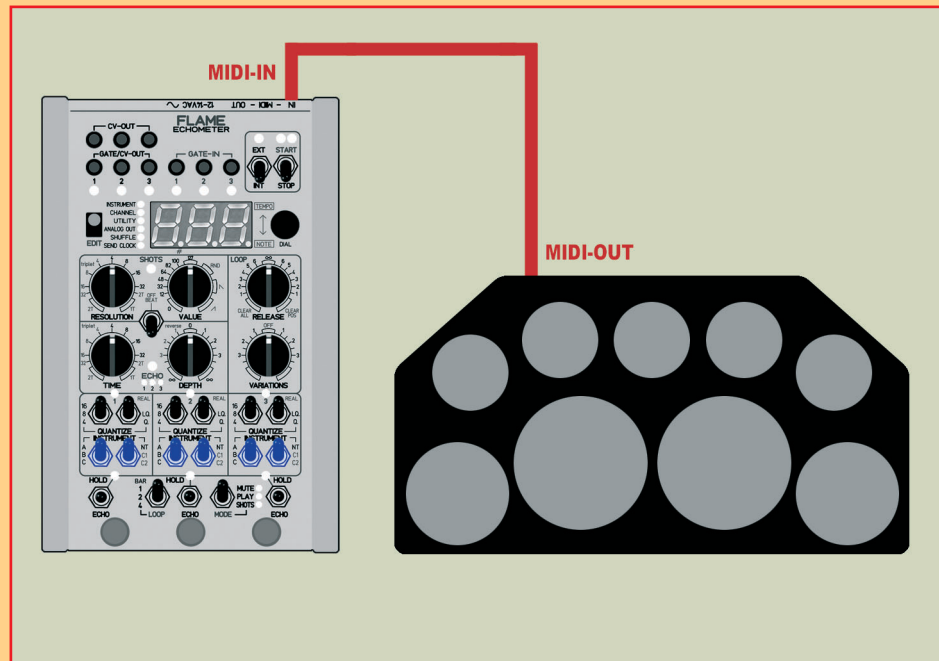
This modus can be used as a MIDI-to-CV-Interface in connection with CV-outputs. The note numbers are displayed with Moog- characteristic (1V per octave) on 5 octaves. The range is determined in the following way: note numbers from 24- 83 correspond voltage from 0..5 Volt.



Switch (16) on NT(note) and switch (15) on A or B

In this mode the echometer can only identify and play the notenumbers according to switch-position A,B or C in EDIT-mode instrument . All other notes sended via keyboard will be ignored.

With this function it is possible to controll all three tracks on the same MIDI-channel with max. 9 different notes. This might be important for the connection of drumpads, e.g., which all send on the same MIDI-channel and differ only in note numbers.

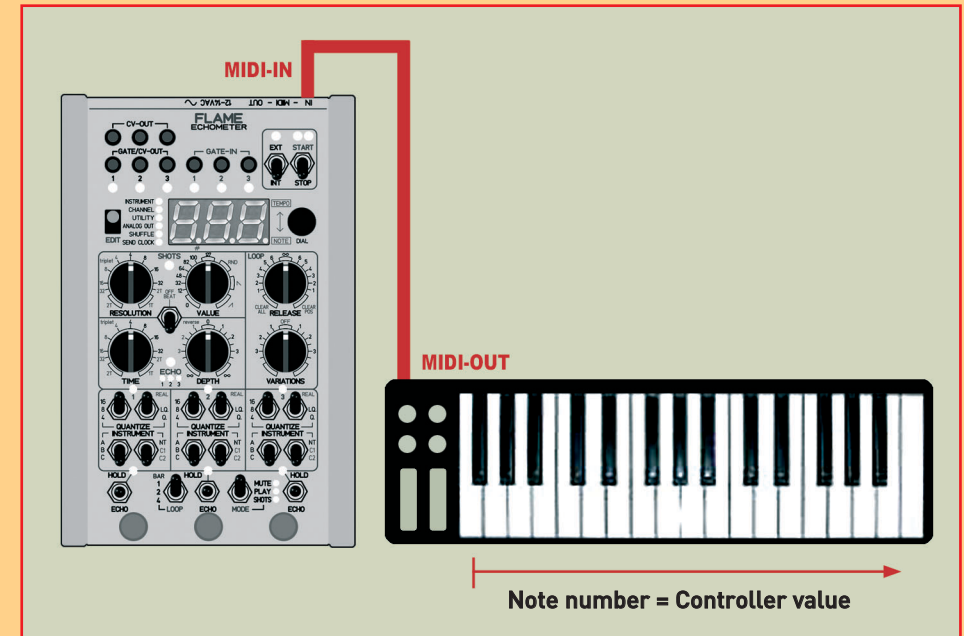


■ HOW TO CREATE CONTROLLER

When the right instrument- switch (16) is on position C1 or C2, the arriving notes create the according value of the defined controller or pitchbend command of the track. Deep notes create small values and high notes create big values.

Range: Note numbers 24 .. 84 = control change values values 0 .. 120

ADVICE: The ECHOMETER follows only midi-notes, no controller or pitchbend- commands!



MIDI - HOW TO SEND MIDI-DATA

The echometer can send a noteline with 4 bar length per track, and it is possible that each tick can have a different note number (max.384 notes). Additionally you have 2 controller tracks, on which you can send the data of a controller or of pitch bend. All three lines per track (1x note, 2x controller) always send on the same MIDI-channel. Further on the notes of the notetrack (only these!) can create an echo which is made of notes with a rising or decaying velocity or made of controller/pitch bend with rising or decaying values.

MIDI - SYNCHRONIZATION

The sequencer can be started and synchronized externally via MIDI-CLOCK. Please put the switch SYNC (6) on EXT. Then it can be started and stopped with a connected sequencer. Now the switch START (5) has no function. The velocity now is determined from the external sequencer. In the display appears **Snc** . The ECHOMETER follows following instructions: START, STOP, CLOCK, CONTINUE (but than always starts on One).

Running with internal clock the echometer sends the according MIDI-clock-data. Running with external clock the sending of clock-data can be switched on or off in EDIT-mode (SENDLOCK ON/OFF).

| Modell Flame Echometer | | Midi Implementation Chart | | Date: Nov. 04, 2008 Version: 1.08 |
|------------------------|-----------------------|--|------------------------------|--------------------------------------|
| Function | | Transmitted | Recognized | Remarks |
| Basic Channel | Default | 1-16* | 1-16* | * memorized |
| | Changed | 1-16 | 1-16 | |
| Mode | Default | 4 | 4 | (per Track) |
| | Messages Altered | Mono (M=4) x | Mono (M=4) x | |
| Note Number: | True Voice | 0-127 0-127 | 0-127** 0-127** | |
| Velocity | Note ON Note OFF | o 9nh, v=1-127 x 9nh, v=0 | o 9nh, v=1-127 o 9nh, v=0 | o = since Version 1.07 |
| After Touch | Key's Ch's | x x | x x | |
| Pitch Bender | | o | x | 7 bit resolution |
| Control Change 0-119 | | o | x | |
| Prog Change : True # | | x x | x x | |
| System Exclusive | | o*** | o*** | Dump User Data |
| System Common | : Song Pos | x | x | |
| | : Song Sel | x | x | |
| | : Tune | x | x | |
| System Real Time | : Clock : Commands | o**** o**** | o o | don't transmit CONTINUE ***** |
| Aux Messages | : Local ON/OFF | x | x | |
| | : All Notes OFF | x | x | |
| | : Active Sensing | x | x | |
| | : Reset | x | x | |
| Notes | | * recognized Channel = Transmitted Channel ** MIDI-to-CV fix Note-Range: 24-83 (5 Octaves) *** only in Edit-Mode **** can be set ON/OFF for extern Sync (Slave) in Edit Mode ***** recognized CONTINUE = transmit START (reset Position) | | |

Mode 1: OMNI ON, POLY
Mode 3: OMNI OFF, POLY

MODE 2: OMNI ON, MONO
MODE 4: OMNI OFF, MONO

o: Yes
x: No

MIDI - LIST OF SYSEX DATA

SYSEX BULK DUMP (nonreal sysex data)

FORMAT:

| Header | Data | End of sysex |
|--------|------|--------------|
|--------|------|--------------|

HEADER:

| HEX | F0 7D 09 01 06 |
|-----|----------------|
|-----|----------------|

description:

| | |
|----|------------------------|
| F0 | begin sysex data |
| 7D | ID |
| 09 | device Flame Echometer |
| 01 | version 1 |
| 06 | command: all data |

DATA:

140 bytes

(70 bytes user data cut into low nibble
and high nibble = 140 bytes)

example:

1 data byte: 11110001
low nibble: 0001
high nibble: 1111
send 2 bytes low+high: 00000001+00001111

END OF SYSEX:

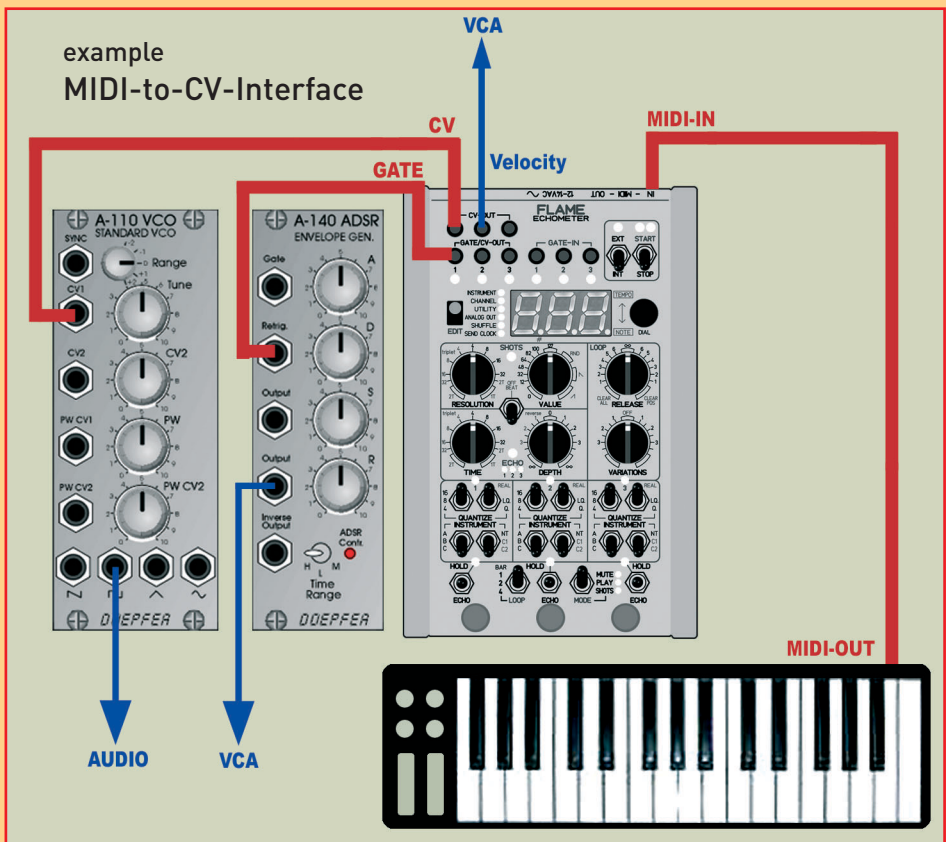
| HEX | F7 |
|-----|----|
|-----|----|

| DATA description: | | |
|-------------------|-------|--|
| Nr | bytes | parameter |
| 1 | 1 | Tempo |
| 2 | 1 | Midi-channel Track 1 |
| 3 | 1 | Midi-channel Track 2 |
| 4 | 1 | Midi-channel Track 3 |
| 5 | 1 | Note number A Track1 |
| 6 | 1 | Note number A Track2 |
| 7 | 1 | Note number A Track3 |
| 8 | 1 | Note number B Track1 |
| 9 | 1 | Note number B Track2 |
| 10 | 1 | Note number B Track3 |
| 11 | 1 | Note number C Track1 |
| 12 | 1 | Note number C Track2 |
| 13 | 1 | Note number C Track3 |
| 14 | 1 | Echo controller Track 1 |
| 15 | 1 | Echo controller Track 2 |
| 16 | 1 | Echo controller Track 3 |
| 17 | 1 | Flag Echo Note on/off Track 1 |
| 18 | 1 | Flag Echo Note on/off Track 2 |
| 19 | 1 | Flag Echo Note on/off Track 3 |
| 20 | 1 | Controller number C1 Track 1 |
| 21 | 1 | Controller number C2 Track 1 |
| 22 | 1 | Controller number C1 Track 2 |
| 23 | 1 | Controller number C2 Track 2 |
| 24 | 1 | Controller number C1 Track 3 |
| 25 | 1 | Controller number C2 Track 3 |
| 26 | 1 | Routing analog out jack top Track 1 |
| 27 | 1 | Routing analog out jack bottom Track 1 |
| 28 | 1 | Routing analog out jack top Track 2 |
| 29 | 1 | Routing analog out jack bottom Track 2 |
| 30 | 1 | Routing analog out jack top Track 3 |
| 31 | 1 | Routing analog out jack bottom Track 3 |
| 32 | 1 | Flags analog echo jacks Track 1 |
| 33 | 1 | Flags analog echo jacks Track 2 |
| 34 | 1 | Flags analog echo jacks Track 3 |
| 35 | 1 | Flag shuffle on/off |
| 36 | 1 | Flag send clock on/off |
| 37-40 | 4 | Edit menus |
| 41 | 1 | Flag data reduction |
| 42 | 1 | Flag half clock intern sequencer |
| 43-70 | 28 | reserved |

SAMPLE APPLICATIONS

■ **MIDI-TO-CV INTERFACE**
Note numbers 24-83 = voltage 0-5Volt (5 Octaves per 1V/Oct.)

Note numbers 24-83 = voltage 0-5Volt (5 Octaves per 1V/Oct.)



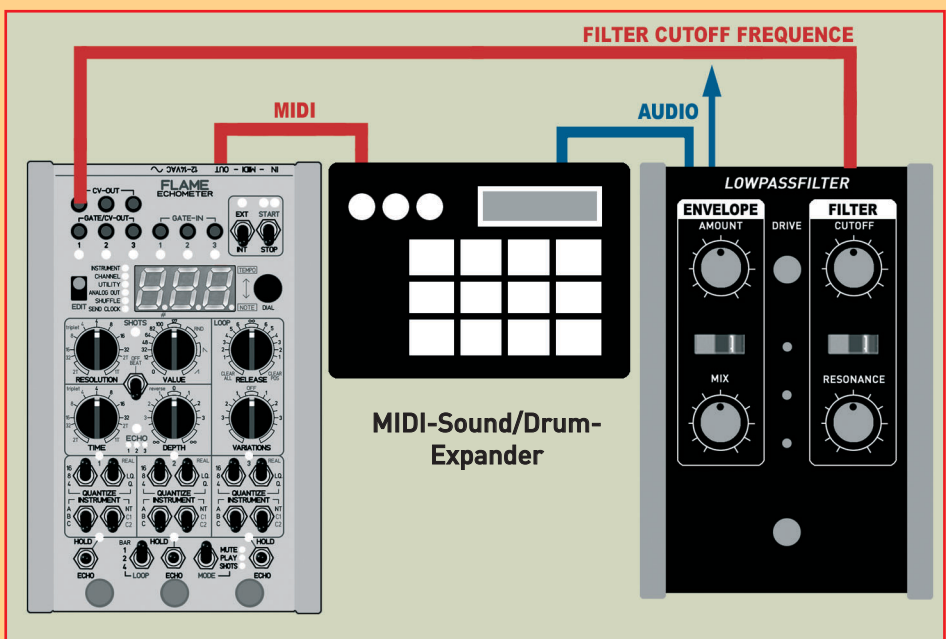
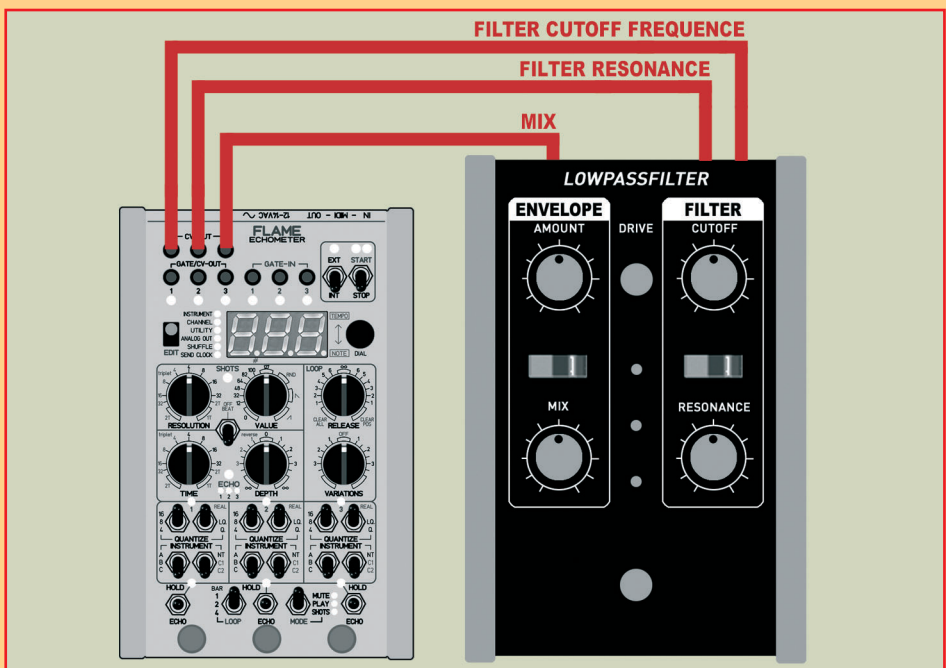
CONTROL MIDI-SOUND/DRUM-EXPANDER + ANALOGUE FILTER ■

Example for a combination of MIDI-Expander (control via MIDI) and analogue effect (control via CV)

■ CONTROL A ANALOGUE LOWPASS FILTER

With this setup you can create rhythmically filter sweeps synchronized to MIDI-Clock. The

With this setup you can create rhythmically filter sweeps synchronized to MIDI-Clock. The CV-outputs of the Echometer control the CV-inputs of the filter.



ADDITIONAL INFORMATION

DISTRIBUTION

EUROPA

Schneiders Buero - Sales & Distribution

Andreas Schneider
Alexanderstraße 7
10178 Berlin
Germany

phone: +49-(0)30-9789 4131
fax: +49-(0)30-9789 4132
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web: www.schneiders-buero.de

USA

Analogue Haven

Shawn Cleary
1223 Wilshire Blvd. # 597
Santa Monica, CA 90403
USA

phone: 310-451-7744
email: email@analoguehaven.com
web: www.analoguehaven.com

WARRENTY

Beginning from the date of purchase a 1-year warranty is guaranteed for this device in case of any manufacturing errors or other functional deficiencies during runtime. The warranty does not apply in case of:

- damage caused by misuse
- mechanical damage arising from careless treatment (dropping, vigorous shaking, mishandling, etc)
- damage caused by liquids penetrating the device
- heat damage caused by overexposure to sunlight or heating
- electric damage caused by improper connecting (wrong power supply/ jacks/ MIDI connections/ voltage problems)

If you have any complaints please contact your dealer or send an e-mail to: **service@flame.fortschritt-musik.de**

TERMS OF PRODUCTION

conformity: CE, RoHS, UL

DISPOSAL

The device is produced with RoHS-conformity (subject to the regulations of the European Union) and is free of hazardous substances (like mercury, plumb, cadmium and hexavalent chrome). But electronical scrap is hazardous waste. Please don't add this to consumer waste. For an environment-friendly disposal of waste please contact your distributor or specialist dealer.

SUPPORT

Actually and additional informations, updates, downloads, and more:

<http://flame.fortschritt-musik.de>

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