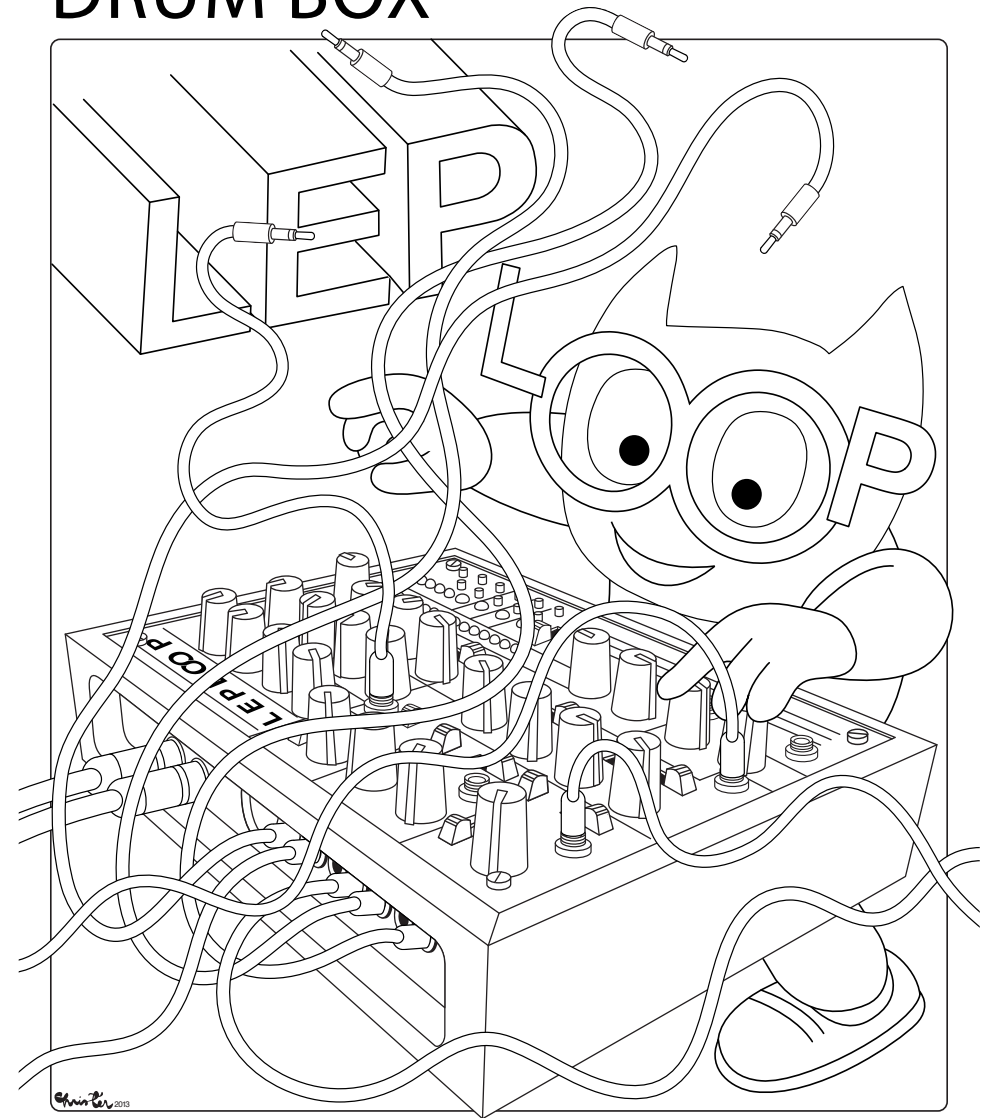


ANALOG SYNTHESIZER, SEQUENCER & DRUM BOX



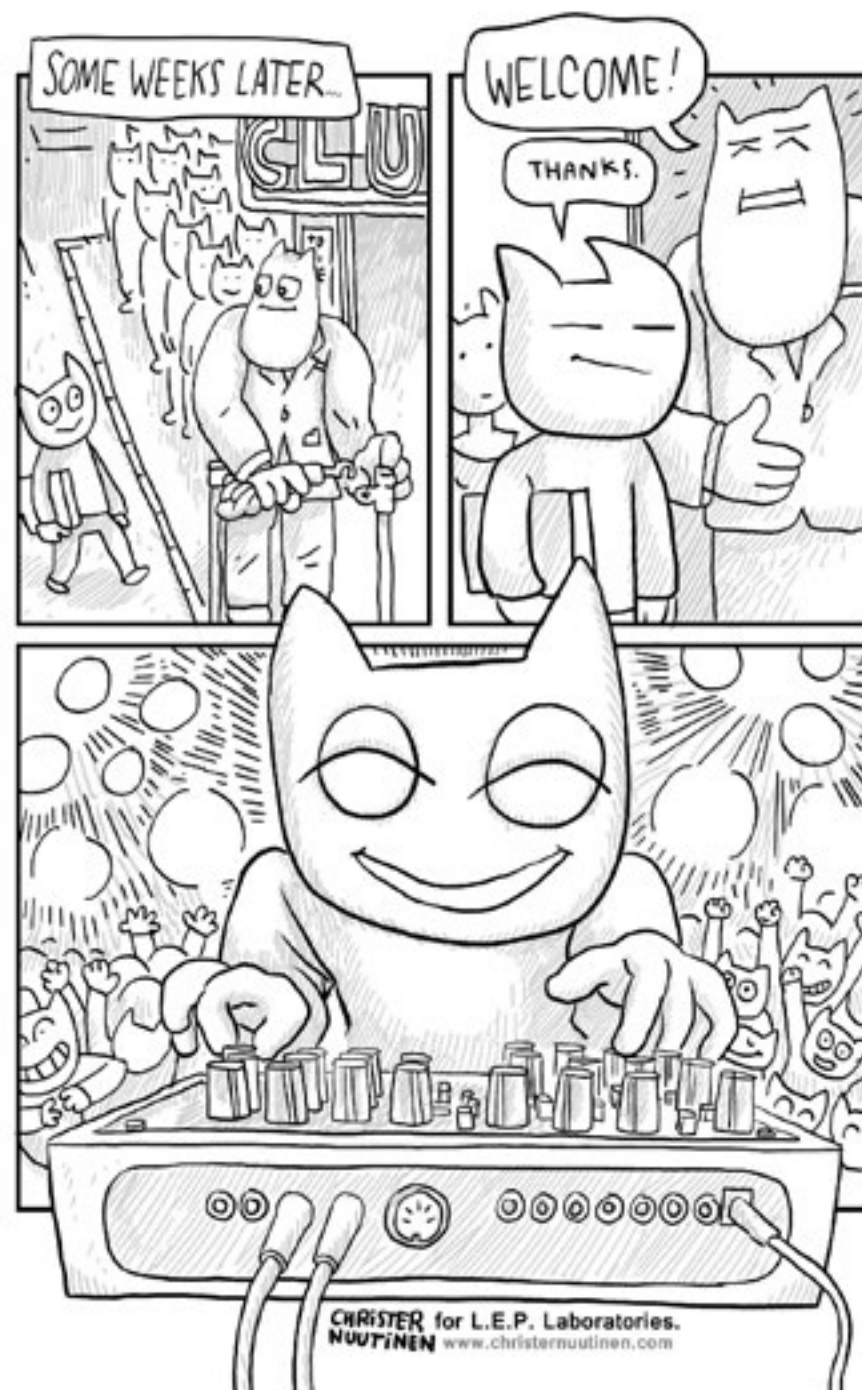
designed by tonylight and
peppo lasagna.



Three years of silence and a sudden release of "CUT", the most experimental album among 8 bit artists, pioneer of the Psycho-MIDI scene. This release, with its 3571 tracks, marks also a break up between Lep Loop and every existing record label. Follows a blasting tour, accompanied by the violent Kick Drums. And then, suddenly... —INTERRUPTED RECORDING —

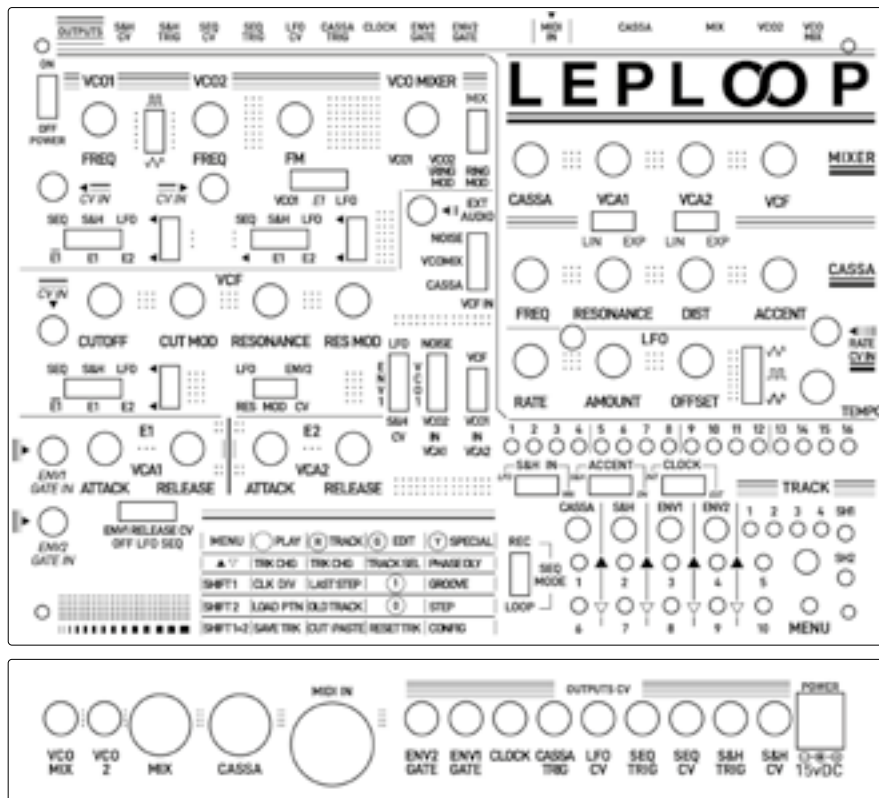


An unexpected wedding with the singer of ENV2, followed by a tour as a couple and once again stirred up trouble with law and order. The performance gets banned in all of the interplanetary states when Lep Loop improvises a solo piece (the only one of his career) using the oscillators of ENV2, provoking their sonic orgasm that lasted for 3 hours and became the longest hit in the music history. The pressure from the Holy See resulted in cancelling the tour, then he rejects Lady Gaga Award.



INTRODUCTION

Laboratorio Elettronico Popolare (L.E.P.) is proud to present to you a one of a kind analog synthesizer, sequencer and drum machine: THE LEPLOOP V3, hand made in Milan (Italy) by Antonio and Giovanni. Small in nature but aggressive in sound, The LEPLOOP was designed to be a minimalistic electronic music live-performance groove-box which can be used to create a variety of electronic musical styles; the user will be able to create a variety of analog timbres and beats. The LEPLOOP can be synced via MIDI to another LEPLOOP for tempo-synced operations or to another MIDI device or sequencer to receive sequence notes, start & stop instructions. Read further to find out what else your LEPLOOP can do.

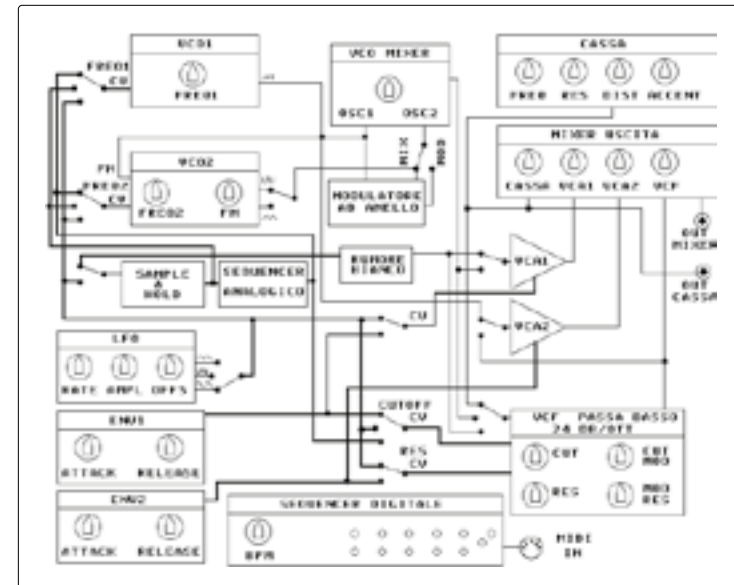


After a short period in custody in the prison of the Silicon Valley, which took 12 beats in 4/4, Lep Loop was released on caution and immediately published a follow up to "Beat", the masterful "Key 7", that contains a stunning cover of a techno-cheek by Folsom Prison Blues, performed in duo with a digital android Jonny Cash 2.0. Both enter (and re-enter) the Rock'n'Roll Hall of Fame.



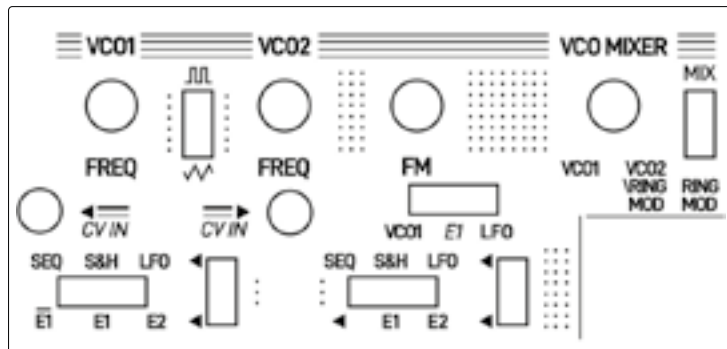
Lep Loop gets arrested by the Google Police for the illegal use of hallucinogens. In the artist's dressing room were found over six hundred thousands decibel of White Noise. The scandal is followed by an unprecedented media process.

BLOCK DIAGRAM



- 1 OSCILLATOR (VCO1) TRIANGULAR/SQUARE WAVE
- 1 OSCILLATOR (VCO2) SAWTOOTH WAVE WITH RING MODULATOR AND FM MODLT. WHITE NOISE GENERATOR
- 24 dB/OCT DIODE LOW PASS FILTER
- KICK DRUM WITH DISTORSION AND TRIGGER MIXER
- 2 VCA'S
- 2 AR ENVELOPE GENERATORS
- 1 LFO
- 16 CAPACITORS ANALOG SEQUENCER PWM PROGRAMMABLE
- 4 TRACK DIGITAL RHYTHM SEQUENCER 64 STEP EACH TRACK
- 4 CHANNEL AUDIO MIXER MIDI INPUT (CLOCK AND NxOTES)
- 5 CV OUT: S&H, SEQ, LFO, ENV1, ENV2
- 3 GATE OUT: S&H, SEQ, CASSA
- 2 GATE IN: ENV1, ENV2
- 4 CV IN: VCO1, VCO2, VCF CUTOFF, LFO RATE
- 1 AUDIO IN (VCF)
- 4 AUDIO OUT: MIXER, CASSA, VCO2, VCO MIX
- 1 CLOCK OUTPUT: CLOCK 24, MINIJACK MIDI START/STOP TYPE C TS MONO
- EEPROM MEMORY, 16 BANKS, 10 PATTERN EACH, 160 PATTERN TOTAL
- 15V DC, 500 MA, TIP + CENTRAL, POWER SUPPLY

OSCILLATOR (VCO) SECTION



VCO1

Square or Triangle wave

CV SELECTOR1:

Select 6 CV for VCO1
SEQ, S&H, LFO
ENV1 negative, ENV1,
ENV2.

for external CV IN select
ENV1 negative.
Linear Hz\VOLT CV
response.

VCO1 FREQ:

Tuning control.

VCO1 WAVE:

Select waveform:
square or triangular.

Each VCO has two
selectors, 2 and 3 way,
it is possible to choose 6
different CV inputs.

VCO2

Sawtooth wave

CV SELECTOR2:

Select 6 CV for VCO2
SEQ, S&H, LFO
SELVCO1, ENV1, ENV2
SELVCO1 is the same CV
selected for VCO1.

for external CV IN select
ENV1 negative.
Linear Hz\VOLT CV
response.

VCO2 FREQ:

Tuning control.

VCO2 FM:

FM modulation level.

SEL. FM:

Select source for FM
VCO1, ENV1, LFO.

VCO MIXER

VCO MIXER KNOB:

The two VCOs can be
separately selected,
mixed or ring modulated,
the resulting signal is
routed to the filter.

VCO MIXER:

Select amount of VCO1
and VCO2 signal.

MIX/MOD SWITCH:

In MOD position VCO2 is
ring modulated by VCO1,
the result is mixed with
VCO1 in VCO MIXER.

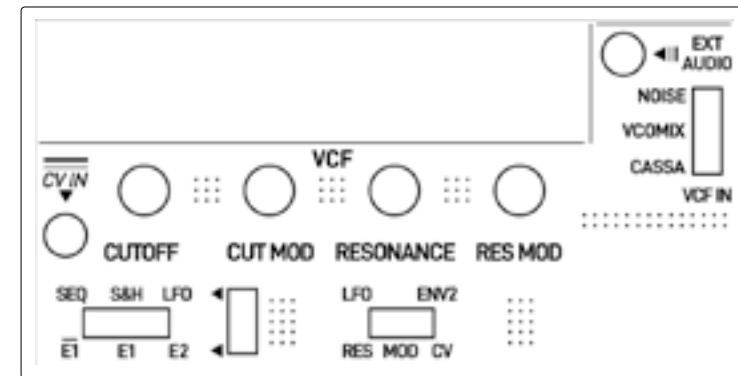


A rare holographic photo has been taken during the terrestrial tour of "Beat". All sold out in all the cities of the world, from New Delhi across New York to the Kepler colony of Abbiategrosso Zerinol. The live show was only 57 minutes long and has taken place contemporarily in billions of cities, pubs, arenas, stadiums, spaceships, virtual realities and abandoned warehouses. The analogic members of Lep Loop recreated by Laboratorio Elettronico Popolare (Common Electronic Laboratory) in countless copies, had played over the entire performance remotely controlled by the artist from his cosy apartment in Paris. Then they exploded. A year after, Grammy.



Buckingham Palace: Lep Loop is awarded a baronet title.
A scandal in front of the British Queen.

FILTER (VCF) SECTION



CUTOFF
Cutoff frequency for VCF
from 0 (no signal) to max
(full range).

CUT MOD
Adjust modulation of
CUTOFF.

CUT MOD CV
Select source for CUT
MOD
2way and 3way selectors:
same as SELVCO1.

RESONANCE
Resonance control;
over a critical level the
filter start to oscillate.

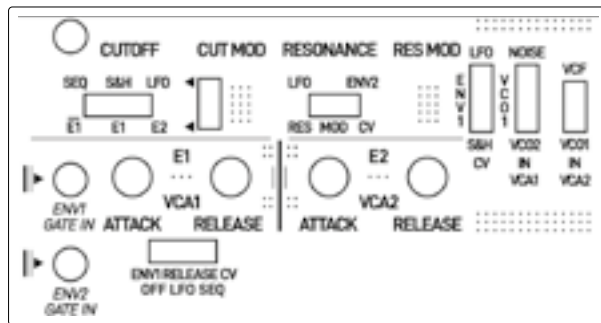
RES MOD
Adjust modulation of
RESONANCE.

RES MOD CV
Select source for RES
MOD, two positions: LFO
- ENV2.

VCF section involves a 24
dB/octave diode low pass
filter.

VCF IN
Select audio signal
for filter input, in the
positions
CASSA (or EXT IN),
VCOMIX, WHITE NOISE.

ENVELOPE (ENV) / VOLTAGE CONTROLLED AMPLIFIER (VCA) SECTION



The ENV/VCA Section generates an ATTACK ramp followed by a RELEASE ramp every pulse from: ENV1 instrument (Yellow LED) or ENV2 (Blue LED).

ENV1 can be routed to VCO1, VCO2, VCA1 and to CUT MOD; it has also a negative output. ENV2 can be routed to VCO1, VCO2, VCA2 and RES MOD. ENV1 RELEASE can be CV controlled by LFO and SEQUENCER.

ENV1\2 GATE IN

Fire the envelopes with an external gate.

ATTACK

Duration of ATTACK ramp.

RELEASE

Duration of RELEASE ramp.

VCA1 controls volume level from selected input using ENV1.

VCA1 IN

Select input signal NOISE, VCO1 and VCO2.

CV

Select control voltage LFO, ENV1 and S&H.

VCA2 controls volume level from selected input using ENV2.

VCA2 IN

Select input signal VCF, VCO1.

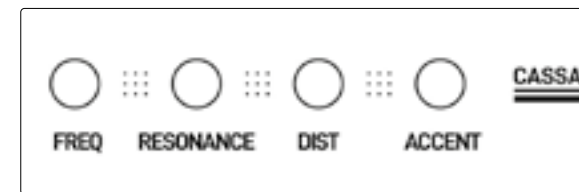


The cover of the first Psycho-disc by Lep Loop, titled simply "Beat", contains only one track, decomposable and reassemblable in infinite variations. A success over the whole Planet and not only.



But let's try to recollect some of the important moments of Lep Loop's career, spotting several essential scenes in his explosive career. Here we can see him with his very first band, the Trigger Mixer, at their first and only appearance at the Ice Pallace. During their performance, the sonic waves emitted from Lep Loop's tracheidal sequences had reached Kepler-186F Planet, and become the wall of sound against apartheid of the venus-neapolitan colonies. That is Revolution.

BASS DRUM (CASSA) SECTION



FREQ

Pitch control, affects resonance too.

RESONANCE

Resonance (i.e. dumping time); above a limit the instrument oscillates.

The FREQ and RESONANCE control are correlated.

The Bass Drum Section generates a kick pulse controlled by CASSA instrument (green LED). If ACCENT is enabled the S&H instrument (red LED) will be mixed with instrument(green LED) giving an accent that can be adjusted with ACCENT control.

DIST

Distorsion level adjustment.

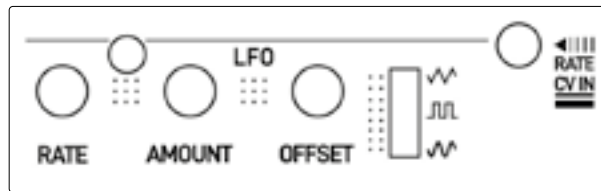
ACCENT (POT)

If Accent is ON mixes control pulse from CASSA and S&H.

ACCENT (selector)

ON position enables accent, S&H is triggered by ENV2 (blue LED). S&H position disables accent, S&H is triggered by red LED.

LFO SECTION



Generates a low frequency CV signal for various purposes, can be routed to: VCO1, VCO2, CUT MOD, RES MOD, VCA1 and S/H. The white LED pulses at the rate and waveform of LFO.

RATE
Frequency control.

AMOUNT
Amplitude control.

OFFSET
Moves wave up or down.

TRIANGLE, SQUARE, SINE
Waveform selection.

RATE CV IN
control the LFO rate with external CV.

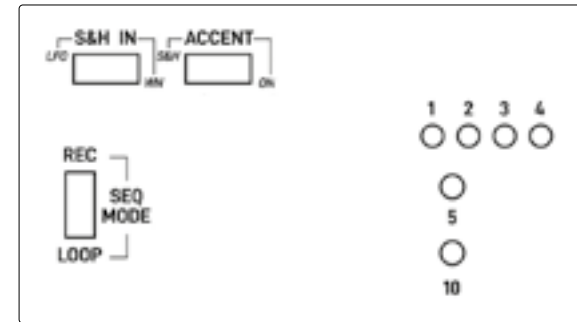


Another more daring hypothesis is picture Lep Loop as a drone remotely controlled by new followers of the Anonymous to battle against the intelligence of iTunes. Others more paranoid, credit him as one another smart advertising idea of Nicola Tesla to promote his travels in time-space. Who is right, then?



There are few discordant versions. Some associate with the case of DJ Axomoxoa, an unfortunate electronic engineer that disappeared after a tragic rave party in the memory of Chemical Brothers, when the extremist fractions of the Lichtenstein bankers had spilled over the crowd over 1500 decibels of sonic Napalm.

SAMPLE & HOLD (S&H)\ ANALOG SEQUENCER SECTION



The selected CV signal is stored into a capacitor at every pulse from S&H (red LED) or ENV2 (blue led). The CV is stored until next pulse, it can be routed to VCO1, VCO2 and SEQ.

S&H IN

Select input signal LFO or NOISE.

ACCENT

Select control pulse from S&H and ENV2 (ON Position). When loading notes from sequencer or MIDI the control pulse is forced by internal PWM.

SEQ MODE

In REC position the notes from S&H are recorded on the analog sequencer and played back at next loop. In LOOP mode the sequencer plays continuously the recorded notes.

ANALOG SEQUENCER

The S&H input samples the LFO, Noise Generator or MIDI NOTES and it will store the CV value for that input and maintain it until the next time it cycles through.

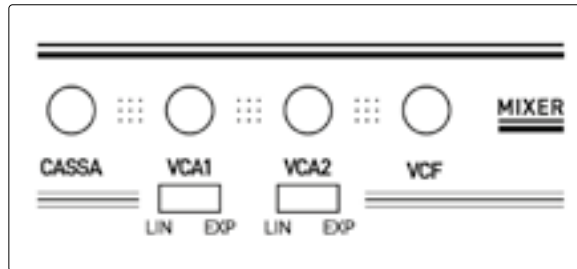
What this means is that the 16 capacitors that store the values for the S&H, will actually "sample" the analog value of the LFO or Noise (and what they trigger, be it an oscillator or envelope) and store it in its analog memory.

Thusly, the LEPLOOP has a 16-step analog recorder, much like an analog delay. Over time, as the analog sequencer cycles through its pattern, the signal will degrade and the sound will change. This is because the capacitor can only store the signal for a limited amount of time.

The analog sequencer is digitally controlled tempo-wise, and will work in conjunction with the digital track sequencer.

In an Analog Sequencer notes are stored into 16 capacitors switched by an analog multiplexer. As the capacitors are subject to discharge, the note pitches will slowly decrease. It's not possible to store the note value in memory.

MIXER SECTION



MIXER

The 4 audio signals CASSA, VCA1, VCA2, VCF are mixed and sent to MIX output.

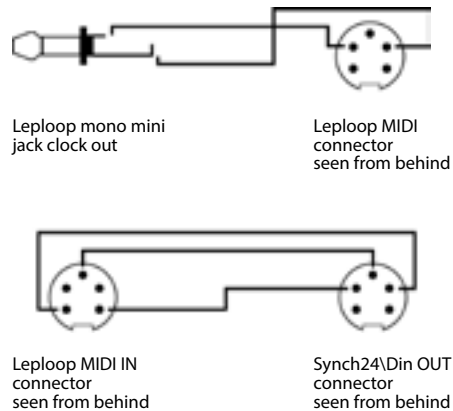
The Bass Drum (CASSA) has its own dedicated output, when connected the CASSA volume knobs remain active for the MIX output.

VCA1\2 LIN\EXP

It's possible to select linear or exponential curve for the VCA output.

SYNCH CABLE

LepLoop with a custom cable can sync to clock24 and output midi clock start\stop message when in external mode using TAP clock function, also the rear mono mini jack clock out merge message at midi in port. Here the schematics for DIY the cable.

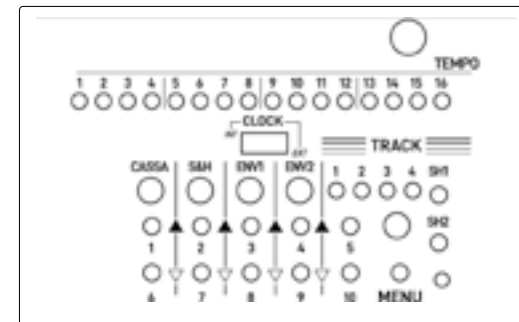


If there had been said already everything, maybe even too much about him entering the show business, the same thing can't be said about his distant past. Who is hiding behind this obscure figure that on that memorable 20th of December 2040 appeared out of nowhere at the door of Blanket Jackson, magnate of the 3D music, after shooting up some 3500 doses, six thousand space-bytes of instruments never heard before by a human or alien ear, and 713 viral hits that would change the world of music forever?



A life committed to success and abuse, a versatile and unpredictable artist elected by the algorithms of the Rolling Stone Magazine as the "great inventor in the music field of the 2041", his vanishing left in the hearts of all, including many detractors, an emptiness without measure.

RHYTHM SEQUENCER SECTION



There are 4 rhythm instruments and 1 capacitor analog sequencer. 4 small red LEDs for track playing or analog sequencer mode. 16 Led's bar shows rhythm sequencer and other informations:

GREEN: Cassa (Bass Drum)
RED: S&H or Cassa Accent
YELLOW: ENV1
BLUE: ENV2 or ENV2 + S&H

Track length can be 64 bit max, it is possible to split into: 2 X 32, 4 X 16, 8 X 8 subtracks. Default is 4 tracks of 16 beats. The maximum length for the analog sequencer is 16 notes. The output of the analog sequencer can be routed to VCO1, VCO2, CUT MOD and ENV1 REL.

TEMPO

Internal clock speed adjustment.

CLOCK

Select internal clock (BPM) external clock (MIDI) or TAP clock. MIDI clock input accepts also clock24 and many others pulse clock inputs. When no external clock is provided TAP clock is active: tapping SHIFT1 twice or more

sets the speed corresponding to 4 beats in the time between the last two taps. To stop the TAP clock press SHIFT1 once after at least 5 sec from last TAP, switching to internal clock or sending MIDI clock also stop the TAP clock.

MENU



MENU(0)	PLAY (LED MENU OFF)
MENU(R)	TRACK (RED)
MENU(G)	EDIT (GREEN)
MENU(Y)	SPECIAL (YELLOW)

Pressing MENU key alternates MENU(R) with MENU(G) keeping pressed for more than 1 sec reset to MENU(0), keeping pressed for more than 3 seconds enters MENU(Y). Power up default is MENU(0).

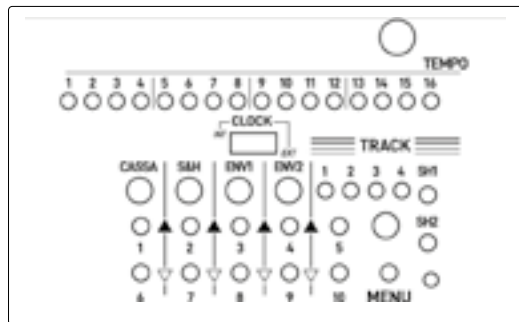
PUSH BUTTON (1-10)

Change parameter selected according to MENU and SHIFT keys pressed.

SH1, SH2

Alternative functions for keys   in MENU (G) write rhythm sequence or change notes.

DIGITAL SEQUENCER OVERVIEW



SEQ MODE

In REC position the notes from S&H are recorded on the analog sequencer and played back at next sequencer loop: this way the sequencer acts as an analog CV delay. In LOOP mode the sequencer plays continuously the recorded notes. Each instrument has its own parameters.

RHYTHM SEQUENCE

the sequence of pulses and pauses played in loop by each instrument, it can be edited in MENU(G).

PHASE MENU(Y), \updownarrow

Is the position that's playing at any time, it moves along the rhythm sequence according to STEP and LAST STEP it appears on the LED bar as a highlight cursor it can be moved back and forth with respect to the other instruments.

CLOCK DIVIDE MENU (0), \updownarrow

It determines the execution speed of each instrument by dividing CLOCK input by a CPP (clock per pulse) number: the larger the number, the slower the speed.

WARNING: Changing speed on separate tracks could bring them out of phase.

LAST STEP (MENU(R), SH1 + \updownarrow)

Determines the number of positions played before looping back : range is 1-64.

STEP (MENU(Y), SH2 + \updownarrow)

Sets the number of steps the cursor position jumps at every beat. Normal step is 1, if step is 0 the cursor is stopped. Setting STEP to LAST STEP -1 causes the cursor to move backwards.

0 = track stopped.

1 = normal increment (1, 2, 3, 4, 5...).

2 = double increment (1, 3, 5, 7, 9... or 2, 4, 6, 8, 10... depends on PHASE.

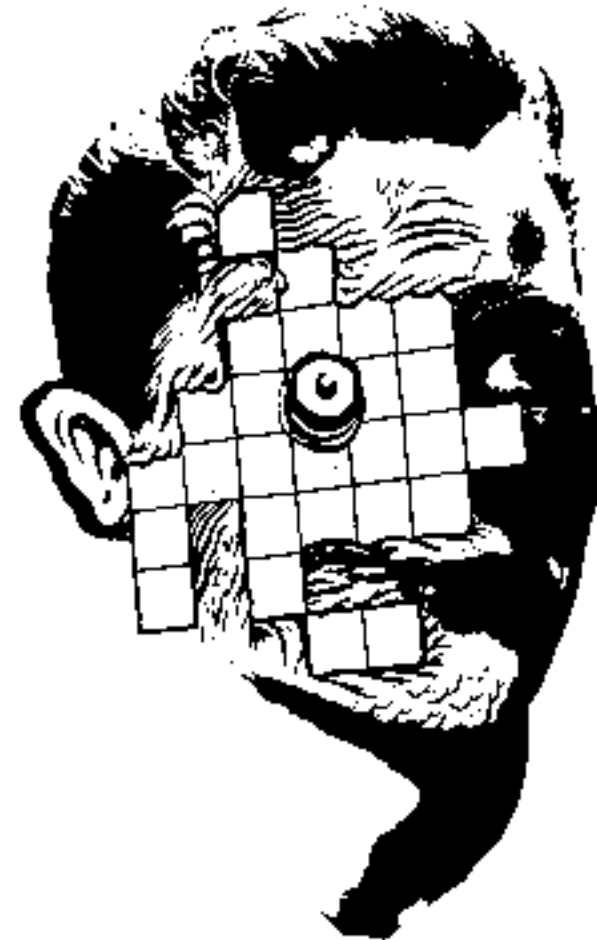
3 = triple increment (1, 4, 7, 10, 13... or 2, 5, 8, 11, 14... or 3, 6, 9, 12, 15...).

30 = reverse double increment (...10, 8, 6, 4, 2 or ...9, 7, 5, 3, 1 depends on PHASE).

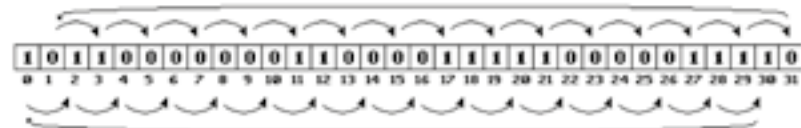
31 = reverse (5, 4, 3, 2, 1 ...).

TRACK

Track being played. If LAST STEP is more than 32 there is only one track available. if 17 to 31 two tracks are available. If 9 to 15 four tracks are available. If 8 or less 8 tracks are available. The portion of rhythm sequence that's playing is showed by the 4 red LED's. Can be changed in MENU(0) and MENU(R) + \updownarrow .



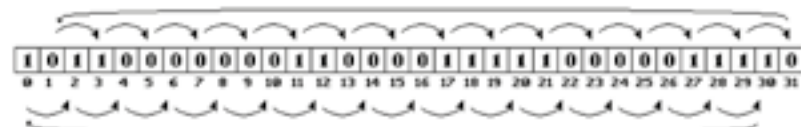
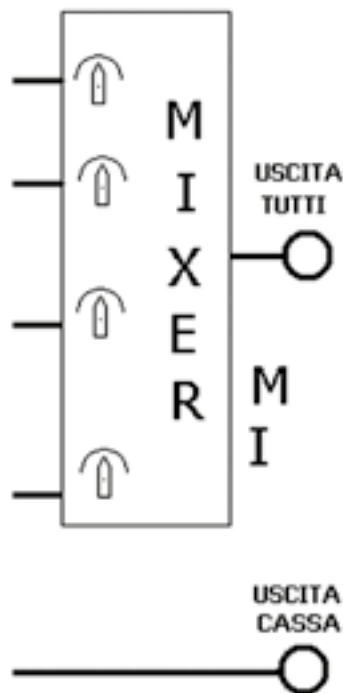
Another anxious day for the fans of Lep Loop, the infamous star of the 3.0 Music who has disappeared without a single trace 20 days ago during the preparations for his long awaited concert all sold out.



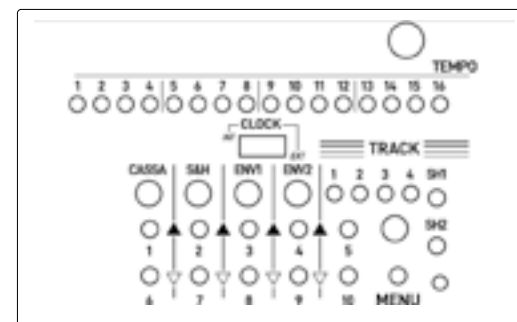
introduction

by Tonylight

It is year 2190, Leploop immersed in the memories of his youth recalls the times when some twenty years ago he was ruling the Env. The Teckno Beat. A new wave of psychedelic Teckno that made vibrate the souls and minds of youngsters ready for a new socio-cultural revolution. Unfortunately things have changed a lot nowadays and the Queen barricaded inside the Buckingham Palace is reestablishing her power to control all the simpleminded youth with no hope for future, transforming the nation and entire planet into a cemetery of bon ton zombies. Leploop got old and he is deprived of energy due to embargo on the LP substance laid by the Queen. Even though, he is attempting to organize a new event and thanks to Yuri's contact with Russian mafia that would guaranteed a secure and massive refueling with the LP substance everyone could take advantage of it...



DIGITAL SEQUENCER MENU (0)



▲ MENU (0) PLAY (MENU LED = OFF)

Select the track of the corresponding instrument. If one of them is pressed for the first time, it only shows on the led bar the rhythm sequence of the selected instrument. The other times it switches from one track to another. The 4 red LEDs show the track being played. NOTE if LAST STEP > 32 it is not possible to change track. If the analog sequencer is selected, these keys select the analog sequencer mode. The four modes related to red LEDs 1 - 4 are:

- 1 - Free run: all parameters are those assigned to analog sequencer.
- 2 - ENV2 clock: sequencer advances one step at each ENV2 trigger (blue LED flash).
- 3 - Same as 2: it is also reset each S&H trigger (red LED flash).
- 4 - Same as 2: reset along with ENV2 track.

If in EXT clock mode and no clock is present the keys act like a trigger for their respective instruments, upper row turns on the instrument permanently, lower row sends pulses. If enabled (see config. menu Y) it plays 1\16 or 1\8 notes.

SH1 + ▲

Changes speed of execution for selected instrument (CLOCK DIVIDE). There are 4 dividers available:

24 (slower), 12, 6, 3 (fastest).

Keeping SH1 + ▲ pressed for 1 second enables triplets.

Keeping SH1 + ▲ pressed for 1 second disables triplets.

When triplets are enabled dividers values are 16, 8, 4, 2.

SH2 + ▲

Load pattern: press SH2+ ▲ key 1-10 to load one of the ten pattern present in a bank. When pressing SH2 two groups of 5 led on the led bar represent the first and second rows of keys, if one of these pattern is actually loaded the corresponding led will blink. An highlighted cursor shows the selected bank (1-16).

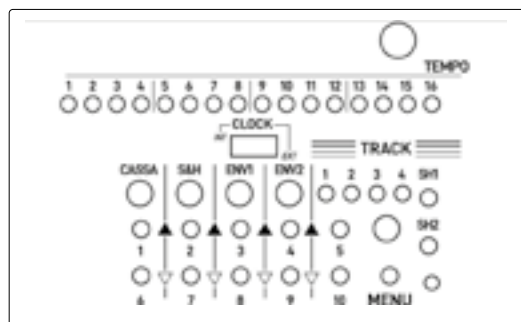
SH1 + SH2 + ▲

Save pattern: same behavior as Load pattern.

SH2 + MENU

Select next bank, keeping pressed for 1 sec resets to bank 1.

DIGITAL SEQUENCER MENU RED\GREEN



▲ MENU(R): TRACKS

(MENU LED = RED)

Select track (same as MENU(0)).

SH1 + ▲

Edit the length of the track (LAST STEP). Default value is 16 (LED strip indicates length). If the length is more than 16, the 4 red LEDs shows the exceeding length (16 each led).

SH2 + ▲

Reload track and load erased patterns. The keys act as follows:

- KEY 1: Reset PHASE for all instruments. This is useful when editing critical parameters such as PHASE, STEP, LAST, STEP that could bring to unpredictable results. This one fixes all.
- KEY 4&9: Restore all patterns that have ever been saved or erased
- KEY 5: Reset PHASE maintaining clock divider, useful when syncing ext instruments
- KEY 6: Reload notes on capacitor sequencer.
- KEY 10: Continuously resetting PHASE while holding down.

SH1 + SH2 + ▲

COPY - PASTE track.

Upper row: copy track of the correspondig instrument. Lower row: paste tracks to instrument, if pressed more than one time, the pasted track will be duplicated as well as the LAST STEP value.

▲ MENU(G): EDIT

(MENU LED = GREEN)

Select instrument to edit, moves the cursor to the desired position. If reaching the last step cursor will stop, but keeping pressing for few times will extend track to 16 further steps (LAST STEP incremented by 16).

SH1

Insert a pulse into the rhythm sequence and moves the cursor.

SH2

Insert a pause and moves the cursor. When the analog sequencer is selected SH1 and SH2 set the note to be written into the analog sequencer: cursor keys will insert note in the melody.



MDI IMPLEMENTATION

When you turn on the LepLoop, default is midi channel 16 for percussive instruments and channel 1 for midi notes. LepLoop uses two midi channels: the first accepts notes for percussive instruments (4 coloured LEDs), the second is used to play PWM notes.

To set a specific MIDI channel go on MENU(Y) hit the button SH1+SH2, KEY 5 - 10 Select MIDI channel. The led strip shows the 2 selected channels that are adjacent. If LEDs are all ON, OMNI mode is selected and all odd channels play percussive instruments, and even channels play PWM notes. Default is channel 16 for percussive instruments and channel 1 for notes.

Select internal clock (BPM), external clock (MIDI) or TAP clock: MIDI clock input accepts also clock24 and many others pulse clock inputs. When no external clock is provided, TAP clock is active. Tapping SHIFT1 twice or more sets the speed corresponding to 4 beats in the time between the last two taps. When using tap tempo midi clock start \ stop message are sent out the mono mini jack clock output.

To stop the TAP clock press SHIFT1 once after at least 5 sec from last TAP: this will send also a midi clock stop message on the mini jack output, switching to internal clock or sending MIDI clock; also stop the TAP clock.

When internal clock (BPM) is selected, clock24 is sent to the mini jack clock output. When the external clock is selected MIDI clock is sent to the mini jack clock output. With custom cables it is possible to receive DIN sync clock signal, output MIDI clock start\stop signal, output DIN clock signal and sync 2 LepLoop. To disable the midi clock in MENU(Y) hold SH1+SH2; KEY 1 - LED 1 when ON disables midi clock.

NOTE mapping for percussive instruments, each group of 16 notes has a different trigger combination:

C -2 \ D# -1
TRIGGERS ENV2 & ADVANCES CAPACITOR SEQUENCER STEP

F -1 \ G0
TRIGGERS THE 4 CHANNEL SHORT GATE TIME

G#0 \ B1
ADVANCES CAPACITOR SEQUENCER STEP BY STEP

C#2 \ D#3
TRIGGERS 4 CHANNEL FREE GATE TIME (DEPENDS ON NOTE DURATION)

E3 \ G4
TRIGGERS ENV2 & ADVANCES CAPACITOR SEQUENCER STEP

A4 \ B5
TRIGGERS THE 4 CHANNEL SHORT GATE TIME

C6 \ D#7
ADVANCES CAPACITOR SEQUENCER STEP BY STEP

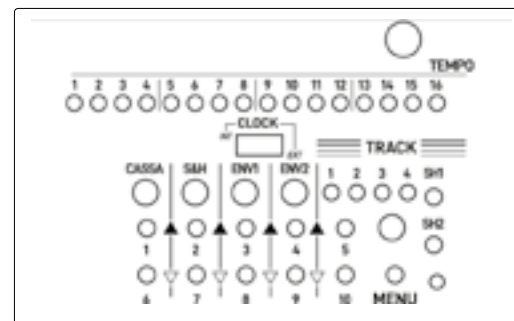
F7 \ G8
TRIGGERS 4 CHANNEL FREE GATE TIME (DEPENDS ON NOTE DURATION)

There are various binary triggering combinations, such as:

Cassa	A4
S/H	A#4
Cassa + S/H	B4
ENV1	C5
Cassa + ENV1	C#5

All the sound generators are analog, power supply 15 Volts DC, 500 mA, TIP+.

DIGITAL SEQUENCER MENU YELLOW



▲MENU (Y)
(SPECIAL) (MENU LED = YELLOW)
Changes PHASE of the selected instrument in respect to the others.

SH1 + ▲
Fine PHASE regulation: advances or retard one clock (usually 1/24 quarter note)

SH2 + ▲
Changes STEP (that is how many places the cursor advances at every pulse).

SH1 + SH2 WW
Configuration word changes behaviour of some function and sets MIDI channels. Led bar shows the bits that are ON (default is all OFF). Available configuration keys are:

KEY 1 - LED 1 when ON disables midi clock.

KEY 2 - LED 2 when ON reset tracks when a midi continue message arrives.

KEY 6 - LED 5 when ON enables dual note mode for MIDI notes.

KEY 7 - LED 6 when ON loads pattern at the end of ENV2 track; when OFF loads pattern immediately.

KEY 8 - LED 7 when ON and midi clock active key, 1-5 1/16th notes, key 6-10 1/8 notes; when OFF change track normally.

KEY 9 - LED 8 enables 16 speed mode: when ON there will be in MENU(0) 16 different clock dividers selectable with SH1+ ▲ 4, 12, 6, 3, 1, 192, 96, 48, 16, 8, 4, 2, 256, 128, 64, 32.

KEY 5 - 10 Select MIDI channel

Two midi channels are active: the first accepts notes for percussive instruments (4 coloured LEDs); the second is used to play PWM notes. The led strip shows the 2 selected channels that are adjacent. If LEDs are all ON, OMNI mode is selected and all odd channels play percussive instruments; all channels play PWM notes. Default is channel 16 for percussive instruments and channel 1 for notes. The keys that are not mentioned should be kept OFF.

A BRIEF TUTORIAL

1. TRACK VARIATION

At power up the first track of the first bank is loaded. Default factory setting contains a 4 track x 16 beat example. You can overwrite this pattern (bank1 pattern1) with the one you made, at power up your pattern will load. The instrument led (green, red, yellow, blue) will flash according with the rhythm data that is programmed. The 16 LED bar shows the rhythm of the selected instrument (default is CASSA). You can set all specific parameters for the instruments that are playing and set the level of each sound with MIXER controls.

Pressing ▲ ▼ keys will change the track that is playing on the selected instrument. Note that selecting an instrument for the first time it will affect only the bar led readout, showing the rhythm sequence of the selected instrument. Subsequent pressures will effectively change the playing track. If 4 tracks are present the 4 red LEDs show the corresponding track as selected by keys. If tracks are longer than 16, the LEDs move automatically to the 16 beat portion of the track displayed by the led bar.

Keeping SH1 pressed, the ▲ ▼ keys doubles or halves the execution speed of the selected track. If the ▲ key is kept pressed for 1 second, enters triplets mode: this way speed is tripled. If the ▼ key is kept pressed for 1 second, exit triplets mode. Note that doubling and then resuming original speed can lead to a different relationship between different instruments (changing of PHASE). Due to the fact that at higher speed the PHASE of one instrument will go ahead the others, resuming

normal speed will maintain this PHASE variation and instrument could remain "out of time".

Now hit the MENU key to get into MENU(R): the MENU led will glow red. You can still select tracks with ▲ ▼ keys. Keep SH1 pressed to show the length of the selected track (LAST STEP). For example: if length = 16, the whole 16 led bar will be on.

Keeping down SH1 press ▲ ▼ will change the length of the selected track. After doing that you probably will get out of phase as you did changing speed. If out of PHASE you can fix it by pressing SH2 + "1" key ("1" key is the ▲ key corresponding to CASSA).

Others less used parameters can be edited in MENU(Y): press MENU(Y) for 3 sec until MENU led becomes yellow.

In MENU(Y) the ▲ ▼ keys will change the PHASE of selected instrument, moving its track one step ahead or before.

SH1 + ▲/▼ will move PHASE of a fraction of STEP, giving groove modulation to the selected instrument.

SH2 + ▲/▼ changes the STEP, i.e. how many position the cursor jumps while playing. Default STEP is 1, which means the cursor advances 1 position to the right every pulse. Setting STEP to 2, the cursor will advance 2 position playing all odd or even position and skipping the others. Different values give interesting results: STEP = 0 stops the cursor, negative values (STEPS = -1) will reverse cursor movement. You can obtain many variations of the original track changing STEP parameter.

2. EDITING SEQUENCER NOTES

From MENU(G): select the analog sequencer pressing key 5 or 10 and move the cursor to desired position SH1 + SH2 will reset all notes OFF. SH1 will move the selected note up, SH2 moves down. To hear the PWM notes you are about to enter, select your VCO input to S&H: the VCO will play the selected note and will allow you to hear what you are doing. Put SEQ MODE switch in LOOP position if you want to edit an existing sequence in REC position, you can insert a new sequence starting each new note from the same point of older. Before exiting MENU2 set SEQ MODE to LOOP otherwise your notes will be overwritten by S&H. However it is always possible to reload PWM notes by pressing SH2 + "6" key from MENU(R). To hear the sequence you should of course set your VCO back to SEQ position.

There are 4 modes for sequencer, that are selected with keys 5 or 10 in MENU(0) or MENU(R):

- Mode 1 Free run using his own clock divider.
- Mode 2 Advances with ENV2 instrument (blue LED).
- Mode 3 Advances with ENV2 and resets each pulse of S&H (red LED).
- Mode 4 Advances and resets with ENV2.

This last mode is useful to insert more complex melodies with different note length. For example you can insert notes into the analog sequencer regardless of their length. Then select the blue LED instrument, you can now write the rhythm sequence associated

with notes. The analog sequencer will be automatically put into mode4 to combine melody and rhythm. This way the sequencer notes will be played at the rhythm given by blue led; it will also reset along with ENV2 thus synchronizing the two instruments. Once you finished editing you may save your pattern this way: go into MENU(0) and do the same as LOAD PATTERN. The only difference is that you have to keep both SH1 and SH2 depressed to save pattern. If you accidentally overwrite an important existing pattern you can rescue it pressing SH2 + key 9 from MENU(R): this will reload old version that can be saved elsewhere.

3. HOW TO LOAD A PATTERN

Go back to MENU(0), keeping MENU key pressed for 1 sec. Keep SH2 depressed: the led bar shows 5 led for the upper row of keys and 5 for the lower. If one of these is blinking it means that its corresponding pattern is loaded. Press one key 1 - 10 to load a new pattern. There are 10 pattern for each bank, the bank is showed by an highlighted led on the bar. Press SH2 + MENU to advance one bank (the loaded pattern doesn't change until a 1 - 10 key is pressed).

4. EDITING TRACKS

Go into MENU(G) by pressing MENU key until led is green. Select the instrument you want to edit and move the cursor to the desired position. Press SH1 along with SH2 to clear the track and set the parameters to default: STEP = 1, LAST STEP = 16, all rhythm OFF. Press SH1 to insert a pulse into the track or SH2 to insert a pause.