FLAME

ARPEGGIATOR 2013 + X-2013

MANUAL

Version 1.01
revision 1

Inhalt

1. Short description

ARPEGGIATOR-2013 Module

The module is a two-channel arpeggiator with seperatly analoge outputs for notes and two optional movable outputs for the sequence clock and the velocity. Both arpeggio tracks (referred to as "ARP" and "BASS") plays notes also via MIDI-out (different MIDI-channels 1 and 2). The first four notes of the ARP track notebuffer forms the chord. The chord analoge outputs are the CV-outputs 1-4 (notes 1-4). The MIDI-channel of the transmitted chord is channel 3.

Use the module-keyboard for setting the chord/scale notes. The one octave of the module-keyboard can move over four octaves (KEYZONE). It's possible to load preset chords/scales and user defined chords/scales (organized respectively 16 user patches U01..U16).

The arpeggiator mode included 9 arpeggio play modes with additional different running directions, like up, down, updown, downup and different variations of noterepeats.

You can control functions (as well as Arpeggio-Mode, Noterepeat, Octave-Range, Sequence-Pattern, Transpose ore others) via CV-inputs. Two CV-inputs (USER-1 and USER-2) can be set with individual functions.

The internal sequencer can be synchronized from external MIDI-clock. The module included two MIDI-clock divider for incomming or transmitted MIDI-clock (halftime playing sequencer and/or external sequencers).

Each of all 10 sequencer tracks (ARP, BASS, X-OUT 1-8) included a clockdivider (based of internal or external MIDI-clock ticks) and/or a different sequence pattern.

The CV-input LIST can be easy control the both arpeggio tracks ARP and BASS. The 12 list places can be use for auto-playing different chords/scales of ARP and BASS track with common keynote (chord/scale sequencer).

All individual settings can be saved permanently (to the internal EEPROM).

X-2013 Xpander-module

The X-2013 module features additional 8 clock/gate outputs and the jacks for MIDI-In, MIDI-Out and MIDI Thru. The 8 clock/gate outputs can be used like 8 independently clockdivider or sequencer tracks with internal or external MIDI-clock. Each output features different sequence-pattern, clock or gate of the track.
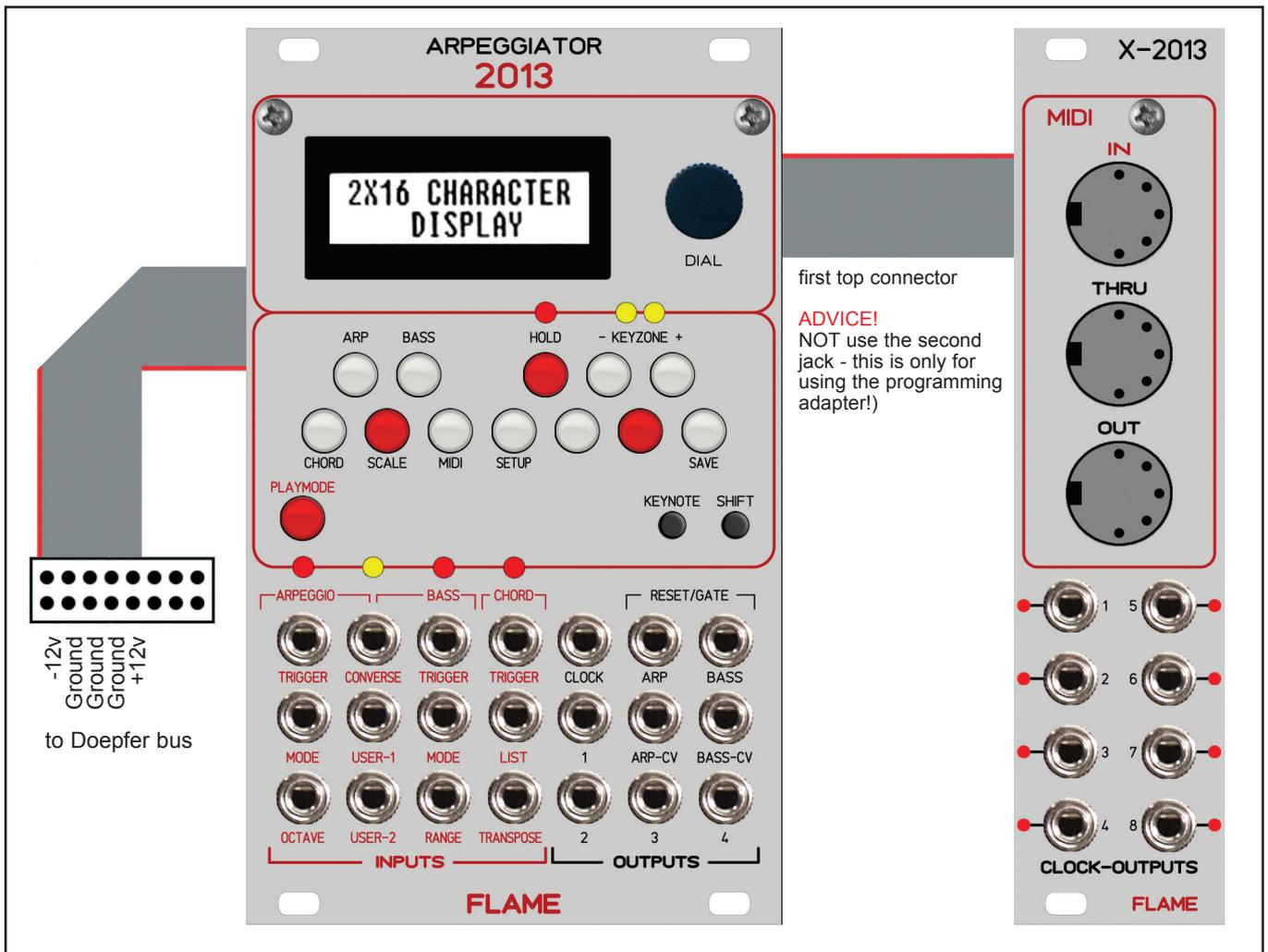
Advice:
You can use the Arpeggiator-module without the X-2013 module, but without MIDI-options and the additional clock outputs.

Firmware verssions can be loaded with an optional usb programming adapter (only with PC with Atmel FLIP).

2. Hardware / Connections

2.1 Connection to the modular system (Doepfer bus)

The module is delivered with a connected ribbon cable for the Doepfer bus. The red lead marks -12 volt. Connecting the module please note the right polarity!
If the module is poled accidentally wrong safety diodes avoid the immediate destruction of the module but further damages cannot be excepted. So please pay attention: Check the connection various times before switching on!

Advice ! Please check the correct connection several times before switching-on the module!

Please note: All the miniature precision rulers at the board are adjusted exactly to the correct justification of the reference voltage for the AD and DA converter. It must not be readjusted! The module would not more run precisely. A probably to big voltage could also damage the circuits.

2.2 Connecting X-2013 Xpander-module

We deliver both modules with connected cable. The X-2013 module is connected at the top first connector on right side. The subjacent second connector is the port for the optional programming adapter (firmware updates)

Advice !
Do NOT connected the programming adapter with the top port - this destroy the programming adapter!

4

2.3 Module frontpanel overview

2x16 character display + Data entry knob with push button

Keyboard

ARPEGGIATOR 2013

X-2013

2X16 CHARACTER DISPLAY

DIAL

ARP BASS HOLD − KEYZONE +

CHORD SCALE MIDI SETUP SAVE

PLAYMODE KEYNOTE SHIFT

ARPEGGIO BASS CHORD RESET/GATE

TRIGGER CONVERSE TRIGGER TRIGGER CLOCK ARP BASS

MODE USER-1 MODE LIST 1 ARP-CV BASS-CV

OCTAVE USER-2 RANGE TRANSPOSE 2 3 4

INPUTS OUTPUTS

FLAME

MIDI IN THRU OUT — MIDI Input / MIDI Thru / MIDI Output

1 5
2 6
3 7
4 8
CLOCK-OUTPUTS

FLAME

8x Clockdivider Outputs (0/5volt)

4x Trigger Inputs (0/5volt)
8x CV-Inputs (0..5V)

3x Clock/Gate Outputs (0/5volt)
6x CV- Outputs (0..5V + 0..10V)

Sequencer structure:

intern Clock

extern Midi-Clock (halftime options)

SEQUENCER

Track Arpeggio ARP
Track Arpeggio BASS
Track X-OUT-1
Track X-OUT 2
Track X-OUT 3
Track X-OUT-4
Track X-OUT 5
Track X-OUT-6
Track X-OUT 7
Track X-OUT 8

1x 16th clock output
1x Midi-Clock Output (halftime options)

2x Notes Out Arp/Bass
4x Notes Out Chord

10x Clock/Gate Output

3. FUNCTION

3.1 STRUCTURE SCHEMATA

MODUL-KEYBOARD

CHORD+SCALE
(Preset+User Patches)

KEYNOTE

CV-LIST Input
Chord Trigger

LIST

	ARP	KN	BASS
1	Ch:P01	C	Sc:P01
2	Ch:P09	C	Sc:P02
3	Ch:P02	#C	Sc:P03
4	Sc:U01	C	Sc:P01
5	Ch:U01	D	Ch:P01
6	Ch:P21	E	Ch:U02
7	Ch:U16	#F	Sc:P01
8	Ch:P01	C	Sc:P01
9	Ch:P05	A	Sc:P02
10	Ch:P14	C	Sc:P01
11	Sc:P01	H	Sc:P05
12	Ch:U01	C	Sc:U01

Lenght: 12

KN: keynote

< example liste

ARP
Arpeggiator

ARP
DATA

BASS
DATA

BASS
Arpeggiator

Notes 1..4

CHORD
Out

Resets

Sequence

Velocity

Velocity

Sequence

Resets

OUT
Reset/Gate
ARP

CV-OUT
ARP

OUT
CV-3

OUT
CV-1

OUT
CV-2

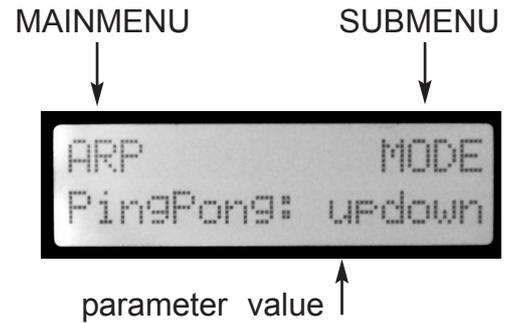OUT
CV-4

CV-OUT
BASS

OUT
Reset/Gate
BASS

6

4. MENU ARP / BASS

Call MENU ARP:
Push down Key SHIFT and Key ARP ("CIS")

Call MENU BASS:
Push down Key SHIFT and Key BASS ("DIS")

MAINMENU   SUBMENU

```
ARP          MODE
PingPong: updown
```

parameter value

Call SubMenus and set values:

Toggle between Submenu selection and value selection: Push data-entry-knob
Blink Submenu ON: you select the submenu of your choise by turning the data-entryknob
Blinking OFF: you select the parameter of your choise by turning the data-entryknob

Both menus ARP and BASS are identical exept the setting of the CV-output VELOCITY:
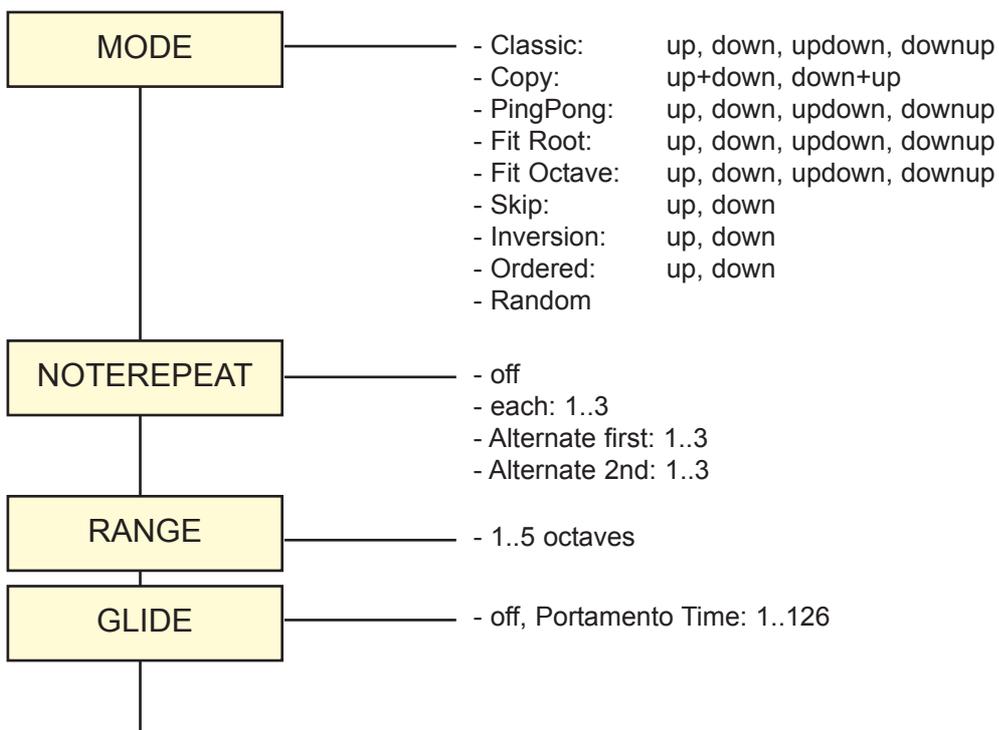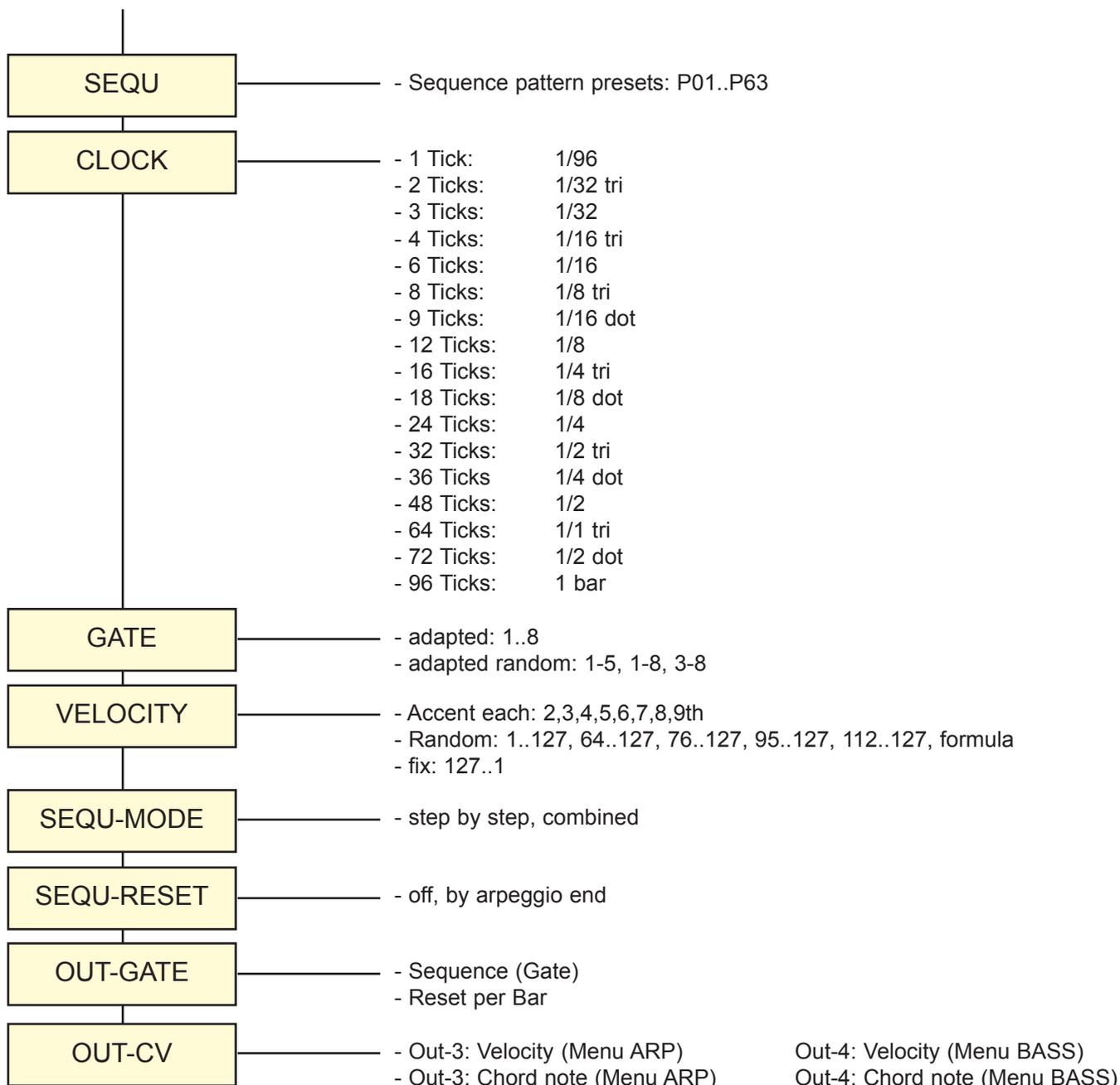
Velocity ARP output CV-out 3
Velocity BASS output CV-out 4

You can set directly notes on/off (please note HOLD option).

Please use for loading preset/user chords/scales the menus CHORD and SCALE (see below).

4.1 Menu ARP / BASS: Functions with parameters

MODE
- Classic: up, down, updown, downup
- Copy: up+down, down+up
- PingPong: up, down, updown, downup
- Fit Root: up, down, updown, downup
- Fit Octave: up, down, updown, downup
- Skip: up, down
- Inversion: up, down
- Ordered: up, down
- Random

NOTEREPEAT
- off
- each: 1..3
- Alternate first: 1..3
- Alternate 2nd: 1..3

RANGE
- 1..5 octaves

GLIDE
- off, Portamento Time: 1..126

SEQU	- Sequence pattern presets: P01..P63

CLOCK	- 1 Tick:	1/96
	- 2 Ticks:	1/32 tri
	- 3 Ticks:	1/32
	- 4 Ticks:	1/16 tri
	- 6 Ticks:	1/16
	- 8 Ticks:	1/8 tri
	- 9 Ticks:	1/16 dot
	- 12 Ticks:	1/8
	- 16 Ticks:	1/4 tri
	- 18 Ticks:	1/8 dot
	- 24 Ticks:	1/4
	- 32 Ticks:	1/2 tri
	- 36 Ticks	1/4 dot
	- 48 Ticks:	1/2
	- 64 Ticks:	1/1 tri
	- 72 Ticks:	1/2 dot
	- 96 Ticks:	1 bar

GATE
- adapted: 1..8
- adapted random: 1-5, 1-8, 3-8

VELOCITY
- Accent each: 2,3,4,5,6,7,8,9th
- Random: 1..127, 64..127, 76..127, 95..127, 112..127, formula
- fix: 127..1

SEQU-MODE
- step by step, combined

SEQU-RESET
- off, by arpeggio end

OUT-GATE
- Sequence (Gate)
- Reset per Bar

OUT-CV
- Out-3: Velocity (Menu ARP)   Out-4: Velocity (Menu BASS)
- Out-3: Chord note (Menu ARP)   Out-4: Chord note (Menu BASS)

4.2 Menu ARP / BASS: MODE

MODE = Play algorithm of the arpeggios

1. MODE: CLASSIC

UP:
classic mode plays notes from down to up and loop ...
DOWN:
classic mode plays notes from up to down and loop ...
UPDOWN:
arpeggion begins down and play alternated updown in loop ...
DOWNUP:
arpeggio begins up and play alternated downup in loop...

2. MODE: COPY

UP+DOWN:
plays mode Classic UP and DOWN in series.
(as distinguished from CLASSIC UPDOWN: the Most High and the deepest notes plays done twice).
DOWN+UP:
plays mode Classic DOWN and UP in series.
(as distinguished from CLASSIC UPDOWN: the Most High and the deepest notes plays done twice).

3.MODE: PINGPONG
Plays notes alternatly from down and up:
Example chord C-major 6, pressed notes: C E G A

UP:	C A E G
DOWN:	A C G E
UPDOWN:	C A E G A C G E
DOWNUP:	A C G E C A E G

4. MODE: FIT ROOT
Insert root note (deepest note):
Example chord C-major 6, pressed notes: C E G A

UP:	C E C G C A
DOWN:	A C G C E C
UPDOWN:	C E C G C A C G C E
DOWN:	A C G C E C E C G C

5. MODE: FIT OCTAVE
Insert root note (deepest note), transposed one octave higher:
Example chord C-major 6, pressed notes: C E G A

UP:	C C1 E C1 G C1 A C1
DOWN:	A C1 G C1 E C1 C C1
UPDOWN:	C C1 E C1 G C1 A C1 A C1 G C1 E C1 C C1
DOWN:	A C1 G C1 E C1 C C1 C C1 E C1 G C1 A C1

6. MODE: SKIP
Skipping notes:
Example chord C-major 6, pressed notes: C E G A

UP:	**C** E G A **E** G A C **G** A C E **A** C E G
DOWN:	**A** G E C **G** E C A **E** C A G **C** A G E

7. MODE: INVERSION

Plays threefold chord inversions: root, 1st and 2nd inversion:
Example chord C-major 6, pressed notes: C E G A

UP: C E G A **E G A C1** G A C1 E1
DOWN: E1 C1 A **G C1 A G** E A G E C

8. MODE: ORDERED

Plays notes in order of input (sort OFF).

UP: normaly.
DOWN: UP backwards

9. MODE: RANDOM

Plays notes in randomized order.

CONVERSE

Trigger-Input "CONVERSE" set the MODE of Arpeggio ARP converse to the MODE of BASS.
Booth Arpeggios plays then in converse mode.

Example:
CONVERSE OFF: BASS Mode: classic up >> ARP Mode: Fit root updown
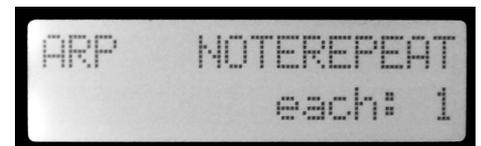CONVERSE ON: BASS Mode: classic up >> ARP Mode: classic down (converse)

4.3 Menu ARP / BASS: NOTEREPEAT

NOTEREPEAT of playing notes.

OFF
Don't repeat notes:
Beispiel: C D E   Noterepeat OFF: C D E

```
ARP    NOTEREPEAT
            each: 1
```

EACH (1..3)
Each notes repeat 1, 2 or 3x. (If Repeat= 3 then the note plays four times!)
Example: C D E   Noterepeat Each: 1   CC DD EE CC DD EE ...
                            Noterepeat Each: 2   CCC DDD EEE CCC DDD EEE ...

ALTERNATE 1st (1..3)
Each second notes (beginning from first note) repeat 1, 2 or 3x.
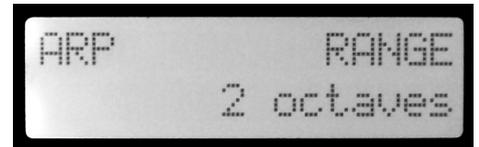Example: C D E   Noterepeat Alternate 1st: 2   CCC D EEE C DDD E ...
                            Noterepeat Alternate 1st: 3   CCCC D EEEE C DDDD E ...

ALTERNATE 2nd (1..3)
Each second notes (beginning from second note) repeat 1, 2 or 3x.
Example: C D E   Noterepeat Alternate 2nd: 1   C DD E CC D EE ...
   Noterepeat Alternate 2nd: 2   C DDD E CCC D EEE ...

4.4 Menu ARP / BASS: RANGE

```
ARP            RANGE
       2 octaves
```

RANGE determines the range of the single notes in octaves. When it is set to 1 octave, the note list will be played back in the same octave as originally entered. Greater values mean that the note list is repeated in higher or lower octaves. If you play notes that span more than one octave, they are still kept in the note list and played back before the note list is transposed.

RANGE values: 1..5 octaves

4.5 Menu ARP / BASS: GLIDE

```
ARP             GLIDE
Portam.Time:  005
```
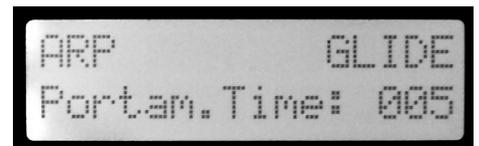
GLIDE determines the portamento time of the notes (from CV-outputs), die über den CV-Ausgang gespielt werden eingestellt. (Advice: Not the Portamento of MIDI-notes!).

GLIDE values: - OFF (portamento is deactiv)
                           - Portam.Time: 001 ...126
                             (small values: fast, larger values: slowly)

The speed of the portamento is automatically conform in different tempi.
(internal tempo only)

4.6 Menu ARP / BASS: SEQU (PATTERN)

```
ARP           SEQ-P10
```
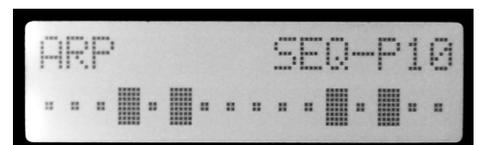
Here sets the sequence pattern that is used for generating the arpeggio.

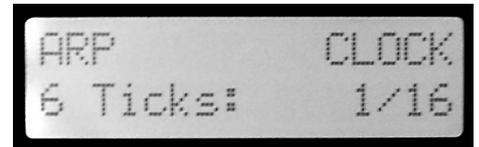You can use 63 preset ROM sequence pattern.

Sequence P01 play each step:
The arpeggiator plays back a continuous sequence of notes with the current Clock setting.

Sequence P02 don't play steps (all steps of pattern Off):
The arpeggiator track is OFF.

You can set also the sequence pattern with CV-inputs USER (see below Menu SETUP)
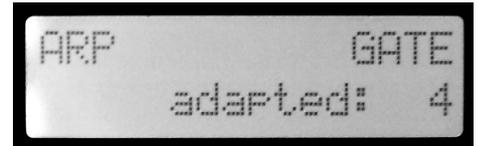
4.7 Menu ARP / BASS: CLOCK

```
ARP              CLOCK
6 Ticks:         1/16
```

Sets the note value for the steps of the rhythm pattern (SEQU pattern) in a
range from one tick to one bar (whole note). Additional triplets and dotted notes are available
for every note value.

Examples: 6 Ticks: 1/16   16th notes
            9 Ticks: 1/16 dot   16th dotted notes
            4 Ticks: 1/16 tri   16th triplets

4.8 Menu ARP / BASS: GATE

```
ARP               GATE
        adapted:     4
```

GATE is the time between Note-On and Note-Off. The GATE time values are adapted in relation
to the Clock of the sequence ("adapted").

The Reset/gate outputs from ARP and BASS plays the clock/gate sequences.

For that purpose you have to set the value of submenu "OUT-GATE" to "Sequencer(Gate)"
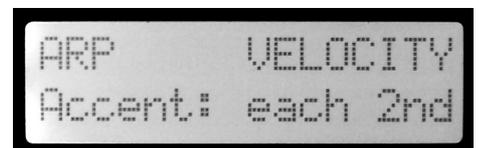(see below).

Following values are allways definitely:

adapted: 1   GATE time is allways the time of 1 tick.
adapted: 8   GATE time is allways the time of value CLOCK of the sequence.

With "adapted:8" you can play notes
without note off (bonded):
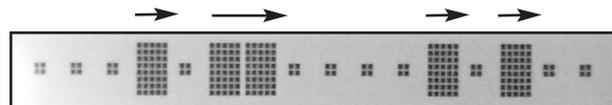
4.9 Menu ARP / BASS: VELOCITY

```
ARP           VELOCITY
Accent: each 2nd
```

Determined the Velocity of transmitted MIDI-notes of the arpeggio.
Also you can issue the velocity as voltage 0..5volt on CV-output 3 (velocity of ARP track) and
CV-output 4 (velocity of BASS track). For that purpose you have to set the value of submenu
"OUT-CV" to "Velocity"" (see below).

Following values are possible:

FIX: 1..127   fix value between 1..127
ACCENT: each 2nd..9th   accent
RANDOM: x..127   range of randomized velocity
RANDOM: formula   random formula

4.10 Menu ARP / BASS: SEQU-MODE

```
ARP      SEQU-MODE
   step by step
```
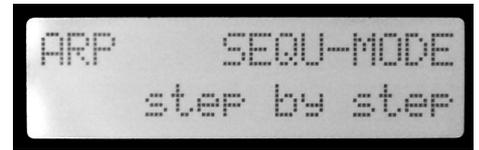
SEQUENCE-MODE determines the match of the arpeggio steps with steps of the sequence.

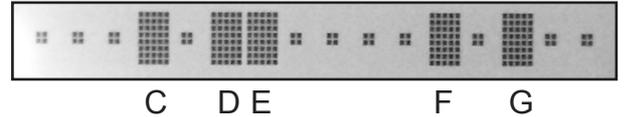**step by step:**
Each step of sequence play the next note of the arpeggio (normaly mode).

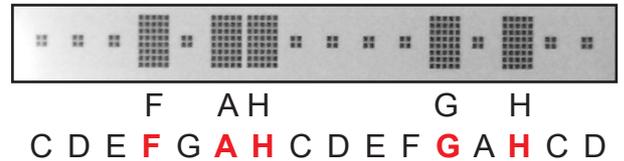Example:
Arpeggio notes: C D E F G A H ...   Sequence
play:

```
C    D E        F    G
```

combined :
The "combined mode" merge the sequence with the arpeggio notes.

Example:
Arpeggio notes: C D E F G A H ...   Sequence
play:
than:

```
        F    A H            G    H
   C D E F G A H C D E F G A H C D
```

4.11 Menu ARP / BASS: SEQU-RESET

```
ARP     SEQU-RESET
   at arpeggio end
```
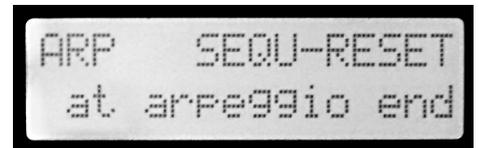
SEQUENCE-RESET determines a Reset of the sequence pattern at end of the arpeggio.

4.12 Menu ARP / BASS: OUT-GATE

```
ARP       OUT-GATE
   Sequence(Gate)
```
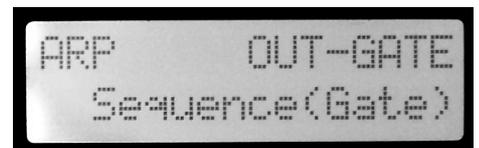
SEQUENCE(GATE): Sequence output over Reset/Gate output jack
RESET PER BAR: Reset impulse per bar over Reset/Gate output jack

4.13 Menu ARP / BASS: OUT-CV

```
ARP         OUT-CV
Out-3:   Velocity
```
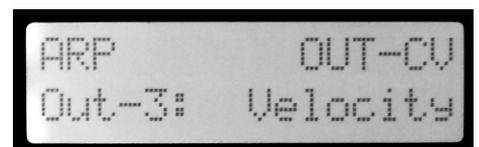
VELOCITY: Velocity voltage output over CV-3 output jack (BASS CV-4 output)
CHORD NOTE: Chord note 3 output over CV-3 output jack
                  (BASS: chord note 4 over CV-4 output jack)

5. MENU CHORD / SCALE

5.1 Beschreibung
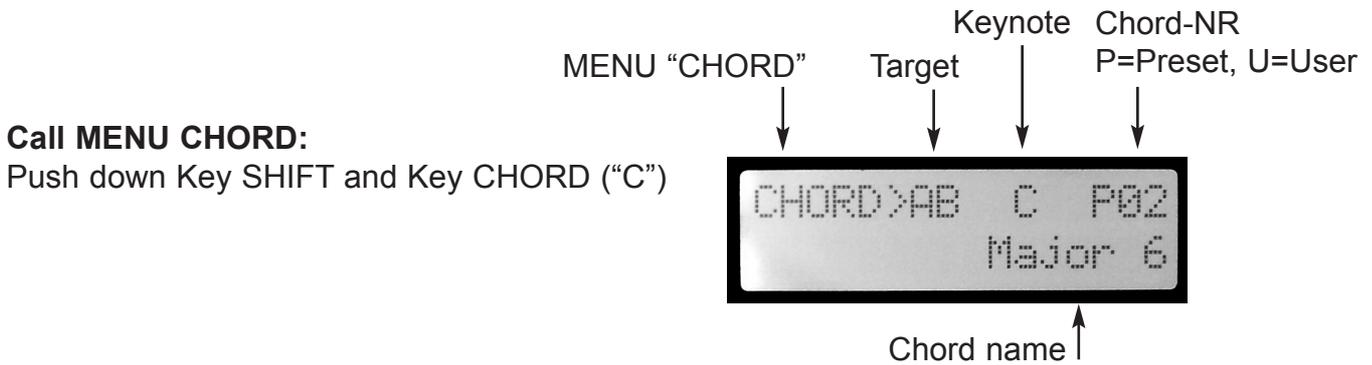
Call MENU CHORD:
Push down Key SHIFT and Key CHORD ("C")

MENU "CHORD" Target Keynote Chord-NR P=Preset, U=User

`CHORD>AB   C   P02`
`          Major 6`

Chord name

Call MENU SCALE:
Push down Key SHIFT and Key SCALE ("D")

MENU "SCALE" Target Keynote Scale-NR P=Preset, U=User

`SCALE>AB   C   P01`
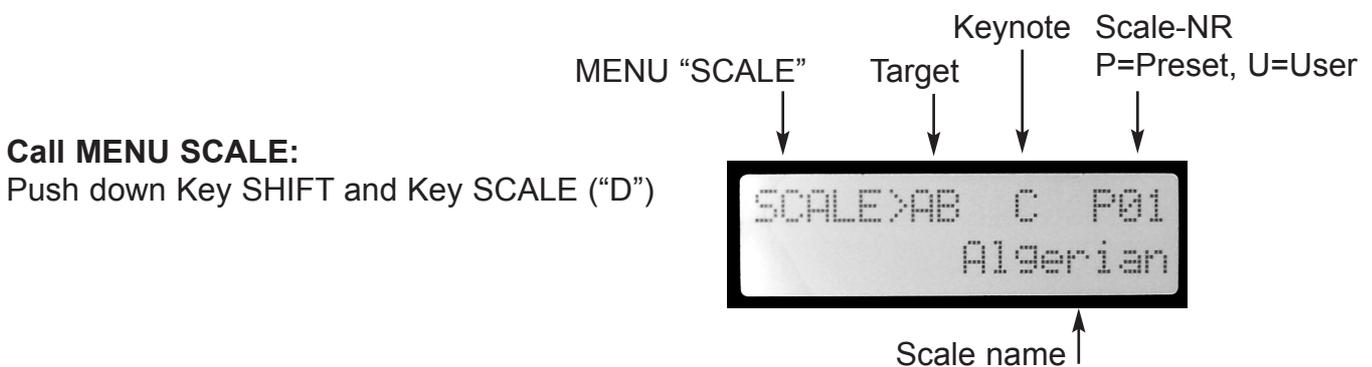`          Algerian`

Scale name

Set the KEYNOTE:
Push and Hold down key "KEYNOTE " and push the key for set the Keynote. The LED of the key displays the Keynote.
After the setting you found the Keynote in the first row of the display.

Target:
"Target" means, that the notes are loaded likewise to ARP and BASS buffer.
For setting different notes in ARP / BASS buffer please use the LIST function (see below).

Load preset/user chords/scales:
Turn the data-entryknob.
Notes begins to load (automatically transposed) to the octave 1 of the modul keyboard.
You can see the notes on the LEDs of the keys.

While loading notes, "HOLD" will be set to "ON" automatically. You can clear all notes if you set the "HOLD" function "OFF" (Push and hold down key SHIFT and HOLD).

5.2   Preset chords   Preset scales

NR	NAME	NR	NAME
P01	Major	P01	Agerian
P02	Major 6	P02	Arabian
P03	Major 7	P03	Balinesian
P04	Major 7b5	P04	Blues major
P05	Major 7#5	P05	Blues minor
P06	add 2	P06	Byzantine
P07	add 4	P07	Chromatic
P08	add 9	P08	Diatonic
P09	Diminished	P09	Dorian
P10	7	P10	Double Harmonic
P11	7b5	P11	Enigmatic
P12	sus 4	P12	Egyptian
P13	sus 4 sus 2	P13	Hindustan
P14	Pentatonic	P14	Hungarian major
P15	Minor	P15	Hungarian minor
P16	Minor 6	P16	Japan: hira-yoshi
P17	Minor 7	P17	Japan: iwato-yoshi
P18	Minor 7 b5	P18	Japan: kumoi-yoshi
P19	Minor 7 #5	P19	Japan: insen
P20	Minor add 2	P20	Japan: yosen
P21	Minor add 4	P21	Japan: ritsusen
P22	Minor add 9	P22	Japan: ryosen
P23	Diminished 7	P23	Locrian
P24	half dim 7	P24	major Locrian
P25	Augmented	P25	super Locrian
P26	7 #5	P26	Lydian
P27	sus 2	P27	Lydian minor
P28	7 sus 4	P28	Major
P29	Fourths	P29	Major 6
P30	Intervall 0-0	P30	Major 7
P31	Intervall 0-1	P31	Major 7 b5
P32	Intervall 0-2	P32	Minor (Aeolian)
P33	Intervall 0-3	P33	Minor 6
P34	Intervall 0-4	P34	Minor 7
P35	Intervall 0-5	P35	Minor harmonic
P36	Intervall 0-6	P36	Mixolydian
P37	Intervall 0-7	P37	Neapolitan major
P38	Intervall 0-8	P38	Neapolitan minor
P39	Intervall 0-9	P39	Nine Tone
P40	Intervall 0-10	P40	Octatonic
P41	Intervall 0-11	P41	Oriental
P42	Intervall 0-12	P42	Overtone
		P43	Pelog
U01-U16	User chords	P44	Pentatonic
		P45	major Pentatonic
		P46	minor Pentatonic
		P47	Phrygian
		P48	Prometheus
		P49	Spanish
		P50	Symmetrical
		P51	Wholetone
		P52	leading Wholetone
		U01-U16	User scales

6. MENU LIST

6.1 Structure Arp/Bass List

LIST		
ARP	KN	BASS
Ch:P01	C	Sc:P01
Ch:P09	C	Sc:P02
Ch:P02	#C	Sc:P03
Sc:U01	C	Sc:P01
Ch:U01	D	Ch:P01
Ch:P21	E	Ch:U02
Ch:U16	#F	Sc:P01
Ch:P01	C	Sc:P01
Ch:P05	A	Sc:P02
Ch:P14	C	Sc:P01
Sc:P01	H	Sc:P05
Ch:U01	C	Sc:U01
Lenght: 12		

list places (rows 1–12)

< list example

lenght of list

KN: KEYNOTE
ARP: Memory chord or scale-Nr
BASS: Memory chord or scale-Nr

The CV-input LIST (0..5volt) can be easy control the both arpeggio tracks ARP and BASS. The 12 list places can be use for auto-playing different chords/scales of ARP and BASS track with common keynote (chord/scale sequencer).

0volt:	- List deactivated
>0...+5volt:	- List places 1..Lenght selectable (at chord trigger impulse)

You can select a list place manually in menu LIST (push note keys for select the place - see below)

Limit the size of the list for the CV-input LIST with "LENGHT".

.

TRANSPOSE

The List can be transposed additional with the voltage from CV-input TRANSPOSE (11 semitones). (Chord-Trigger-Impuls set the value activ)

6.1 Arp/Bass Liste festlegen

Call MENU LIST:
Push down Key SHIFT and Key "A"

MENU "LIST"   Submenu   Chord- / Scale-Nr
   Place   Ch=Chord Sc=Scale
   P=Preset, U=User

```
LIST 01:A Ch:P01
           Major
```

chord/scale name
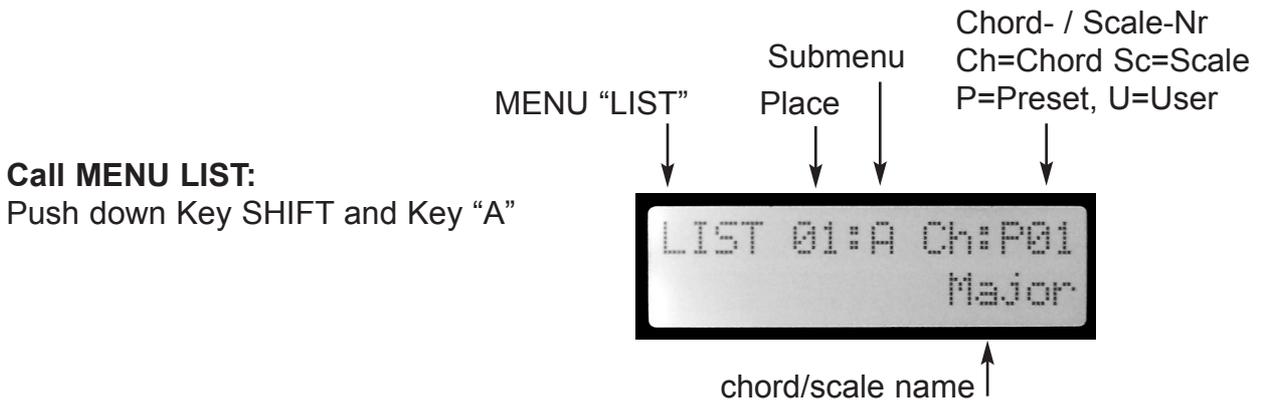
Call SUBMENUs: "A" ARP, "B" BASS, "LENGHT" list lenght and set values:

Toggle between Submenu selection and value selection: Push data-entry-knob
Blink Submenu ON: you select the submenu of your choise by turning the data-entryknob
Blinking OFF: you select the parameter of your choise by turning the data-entryknob

.
Possible values:
A (ARP):   chords Ch:P01-U16 or scales Sc:P01-U16
B (BASS):   chords Ch:P01-U16 or scales Sc:P01-U16
Lenght: 1..12

Place:
This is one of 12 list places. Select list place with note keys C-B.
On each place you can set a chord/scale for ARP, a chord/scale for BASS and a common Keynote.

Set the KEYNOTE:
Push and Hold down key "KEYNOTE " and push the key for set the Keynote.
The LED of the key displays the Keynote.

Load Chord or Scale (Submenu A or B, Blinking OFF!):
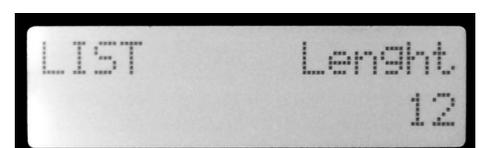Turn the data-entryknob.
Notes begins to load (automatically transposed) to the octave 1 of the modul keyboard.
You can see the notes on the LEDs of the keys.

While loading the "HOLD" will be set to "ON" automatically. You can clear all notes while set the "HOLD" function "OFF" : Push and hold down key SHIFT and HOLD. (Please note: This clear not the listplace - only the note buffer!)
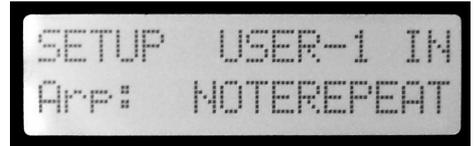
Submenu Lenght:

Limit the list places for the CV-Input LIST .

```
LIST      Lenght
              12
```

7. MENU SETUP

Call MENU SETUP:
Push down Key SHIFT and Key SETUP ("F")

```
SETUP   USER-1 IN
Arp:   NOTEREPEAT
```

Call SubMenus and set values:

Toggle between Submenu selection and value selection: Push data-entry-knob
Blink Submenu ON: you select the submenu of your choise by turning the data-entryknob
Blinking OFF: you select the parameter of your choise by turning the data-entryknob

7.1 Setup USER-1/2 Inputs

Determines the function (parameter control) of the CV-inputs USER-1 and USER-2. You can use the booth inputs for control different parameters of the arpeggiator channels ARP and BASS. USER-1 control ARP parameters and USER-2 control BASS parameters. Activate the values from USER-1 with Trigger Arp and USER-2 with Trigger Bass.

Parameter:

USER-1	USER-2
Arp: GLIDE	Bass: GLIDE
Arp: NOTEREPEAT	Bass: NOTEREPEAT
Arp: SEQUENCE	Bass: SEQUENCE
Arp: CLOCK	Bass: CLOCK
Arp: GATE	Bass: GATE
Arp: VELO 1..127	Bass: VELO 1..127
Arp: VELOAccent+Random	Bass: VELOAccent+Random

TUNE-MODE

```
SETUP   TUNE-MODE
Set CV-OUTs:  +0V
```

Set all CV-outputs of the module in UNISONO mode
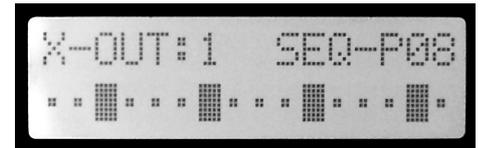for better tuning connected oscillators.
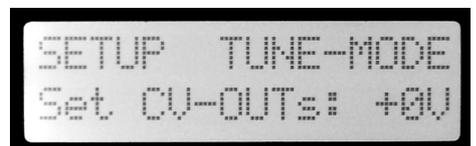
You can set the voltage on all CV output jacks in 1 volt steps from 0 to +5volt
(note C in octave steps).

Advice: While the sequencer is run, the output setting is inactiv.

8. MENU X-OUT

Call MENU X-OUT:
Push down Key SHIFT and Key "G")

Call SubMenus and set values:

Toggle between Submenu selection and value selection: Push data-entry-knob
Blink Submenu ON: you select the submenu of your choise by turning the data-entryknob
Blinking OFF: you select the parameter of your choise by turning the data-entryknob
.

Following values are possible for each x-out:

SEQ-P01..P63   - 16-step preset sequence pattern
CLOCK   - Clockdivider value (intern or extern MIDI clock)
GATE   - Gatetime of the steps

Sequence pattern P02 switch OFF the X-out channel (all steps off).

Start/Stop sequencer with key PLAYMODE (only with internal clock - Sync=intern)

GATE
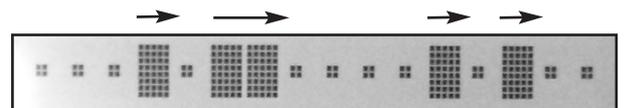GATE is the time between Note-On and Note-Off.
The GATE time values are adapted in relation to the Clock of the sequence ("adapted").

Following values are allways definitely:

adapted: 1   GATE time is allways the time of 1 tick.
adapted: 8   GATE time is allways the time of value CLOCK of the sequence.

With "adapted:8" you can play notes
without note off (bonded):

9. MENU MIDI

Call MENU MIDI:
Push down Key SHIFT and Key MIDI ("E")

Call SubMenus and set values:

Toggle between Submenu selection and value selection: Push data-entry-knob
Blink Submenu ON: you select the submenu of your choise by turning the data-entryknob
Blinking OFF: you select the parameter of your choise by turning the data-entryknob
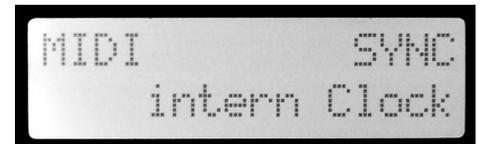
1.**TEMPO**
Sets the basic tempo of the arpeggiator of
Tempo 20..255 bpm. If SYNC="extern MidiClock"
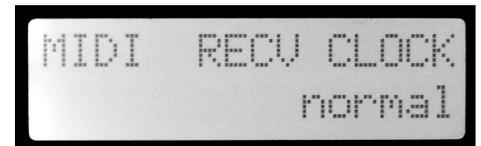then the value is "extern".

```
MIDI          TEMPO
              130
```

2.**SYNC**
Set the Basic clock source:
external clock or internal clock.
Start / Stop with key "PLAYMODE" (only if "intern")!

```
MIDI           SYNC
         intern Clock
```
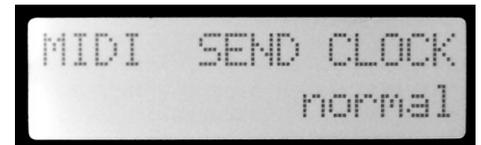
3. **RECV CLOCK**
Set the MIDI clock divider on/off
HALF: MIDI-Input-Clock Divider on   **NORMAL**: off

```
MIDI     RECV CLOCK
              normal
```

4. **SEND CLOCK**
Set following values:
OFF: - transmitt clock off
NORMAL: - transmitt clock (normal)
HALF: - transmitt clock with half speed
                  (MIDI clock out divider on)

```
MIDI     SEND CLOCK
              normal
```

MIDI-Einstellungen

All MIDI-receive- and Transmitt channels are determined:

Receive notes and control change:	MIDI channel 1
Transmitt notes arpeggiator ARP:	MIDI channel 1
Transmitt notes arpeggiator BASS:	MIDI channel 2
Transmitt notes CHORD:	MIDI channel 3

List of MIDI- controllers

(Control change, Receive channel 1):

MIDI-Controller number	Parameter
20	Arp: GLIDE
21	Arp: GATE
22	Arp: NOTEREPEAT
23	Arp: MODE
24	Arp: RANGE
25	Bass: GLIDE
26	Bass: GATE
27	Bass: NOTEREPEAT
28	Bass: MODE
29	Bass: RANGE

Splitzone external MIDI-Keyboard

Notes 12..35
Arpeggio-BASS

SPLIT

Notes 36..128
Arpeggio-ARP

Splitzone for separatly playing of ARP- and BASS-Arpeggio (from Note-Nr 36)

Arpeggio-BASS
Received notes (2 Octaves) in range of 12..35 (Midi channel 1) creates BASS-Arpeggio-notes 36-59 on Midi channel 1.

Arpeggio-ARP
Received notes from 36 (Midi channel 1) creates ARP-Arpeggio-notes from 36 on Midi channel 2.

CHORD
Received ARP-arpeggio-notes from 36 (Midi channel 1) creates also the 4-notes chord (note numbers from 36, transmitt-Midi channel 3).

10. Anhang

Technical details

Current consumption: ca. +180mA / -20mA
Size: Arpeggiator-2013:   Euro format 3U / 15HP   76 x 128,5 x 50mm
        X-2013:   Euro format 3U / 6HP   30 x 128,5 x 35mm

Warrenty

Beginning from the date of purchase a 2-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

Updated and additional informations, updates, downloads and more see:
http://flame.fortschritt-musik.de

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