Modulation

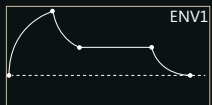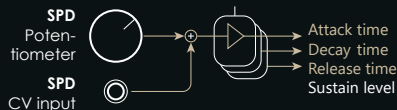ENV1

Drone option
Constant minimum
volume level possible
(oscillator mode)

ADSR, fixed routing to
volume, post-filter.
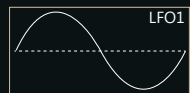
ENV2

Loop option
Turns into
Attack-Hold-
Release then

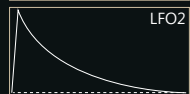ADSR, can be routed to all
targets in modulation matrix.

SPD
Poten-
tiometer

SPD
CV input

Map amount
+-100%

→ Attack time   Attack curve   Drone (ENV1 only)
→ Decay time   Decay curve   Loop (ENV2 only)
→ Release time   Release curve
   Sustain level

LFO1

LFO2

Both LFOs are identical.

OMNI
High performance CV
input, flexible routing
in modulation matrix

KEY
The voice's
current pitch

VELO
MIDI note
velocity

TILT
Any MIDI CC,
e.g. MPE Tilt

AFTR
MIDI
Aftertouch

**Mod
Matrix**

SPD
Poten-
tiometer

SPD
CV input

Map amount
+-100%

→ Frequency
  Waveform
  Trigger mode
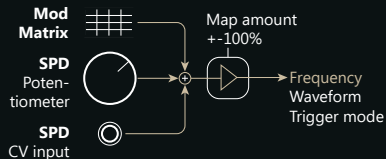
MIDI (**with WarpEx Expander**)
Aftertouch, tilt, pitchbend slew rate
Pitchbend amount
Master MIDI channel
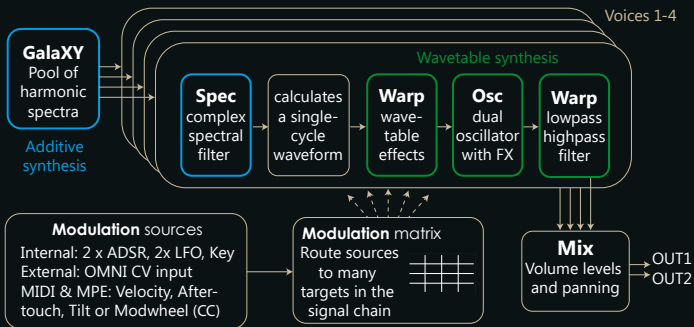MPE MIDI channels
ModWheel CC number
Legato On/Off

Getting Started

Read **Safety instructions** and the full **manual** on
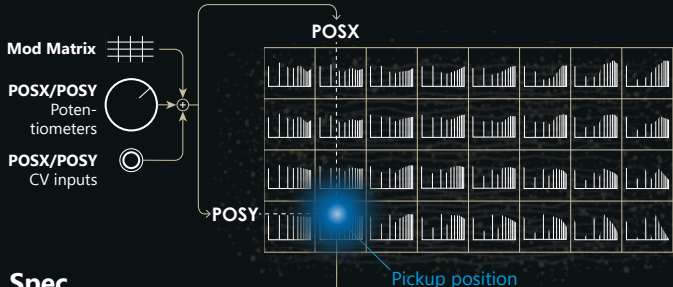www.neuzeit-instruments.com/warp

1. While your rack is powered down,
mount Warp and eventually the WarpEx expander
and then power the rack back on.

2. Patch Warp's **OUT1** and **OUT2** jacks to your speakers.

3. Send a gate CV to Warp's **TRIG** input and a pitch voltage to its **V/Oct** input.

4. Experiment with the **presets** available on the SD-card and adjust the potentiometers to
explore different sounds.

NOTE: Presets contain all internal parameters, but not the position of the potentiometers.

5. If you wish to use Warp as an oscillator rather than a synth voice, navigate to
Settings > Global and activate oscillator mode. This ensures that Envelope 1 (volume)
maintains a consistent minimum output level whenever a new preset is loaded, allowing
Warp to produce output even without a TRIG signal.

neuzeit INSTRUMENTS

Voices 1-4

GalaXY
Pool of
harmonic
spectra

Additive
synthesis

Wavetable synthesis

Spec
complex
spectral
filter

calculates
a single-
cycle
waveform

Warp
wave-
table
effects

Osc
dual
oscillator
with FX

Warp
lowpass
highpass
filter

Modulation sources
Internal: 2 x ADSR, 2x LFO, Key
External: OMNI CV input
MIDI & MPE: Velocity, After-
touch, Tilt or Modwheel (CC)

Modulation matrix
Route sources
to many
targets in the
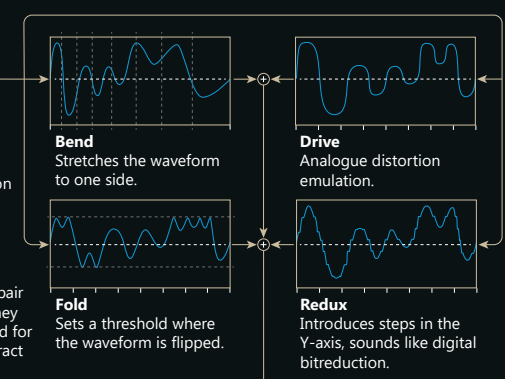signal chain

Mix
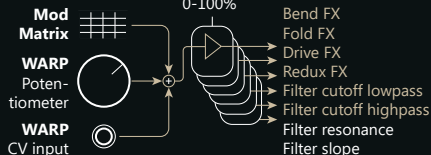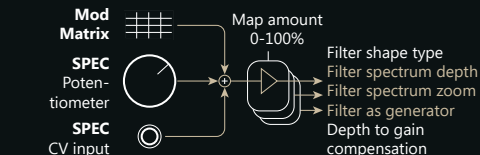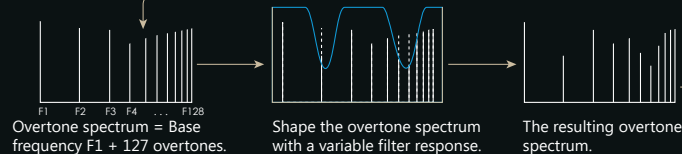Volume levels
and panning

→ OUT1
→ OUT2

GalaXY

Warp's GalaXY comprises a 32 by 16 grid of overtone spectra. Each voice begins by selecting one spectrum, which forms the base for the subsequent signal path and defines the voice's timbre.

Mod Matrix

POSX/POSY Poten-tiometers

POSX/POSY CV inputs

POSX

POSY

Pickup position

Spec

Overtone spectrum = Base frequency F1 + 127 overtones.

Shape the overtone spectrum with a variable filter response.

The resulting overtone spectrum.

Mod Matrix

SPEC Poten-tiometer

SPEC CV input

Map amount 0-100%

→ Filter shape type
→ Filter spectrum depth
→ Filter spectrum zoom
→ Filter as generator
→ Depth to gain compensation

Warp

The overtone spectrum is translated into a one-cycle waveform. The Warp section applies up to four effects on the waveform.

Bend
Stretches the waveform to one side.

Drive
Analogue distortion emulation.

Fold
Sets a threshold where the waveform is flipped.

Redux
Introduces steps in the Y-axis, sounds like digital bitreduction.

Osc & Mix

Each of the 4 voices has a pair of wavetable oscillators. They can be individually adjusted for pitch and volume and interact through a range of effects.

Osc1

Osc2

- Balance of Osc 1/2
- Linear detune
- Frequency mod
- Amplitude mod
- Phase mod
- Filtered noise

Low- & highpass filter
resonance, 12 or 24 dB/Oct

10.0 Hz   22 kHz

Voice mix and pan

V1
V2 → Out 1
V3 → Out 2
V4

Mod Matrix

WARP Poten-tiometer

WARP CV input

Map amount 0-100%

Bend FX
Fold FX
Drive FX
Redux FX
Filter cutoff lowpass
Filter cutoff highpass
Filter resonance
Filter slope

Mod Matrix

DETN Poten-tiometer

DETN CV input

Map amount 0-100%

Voice pitch
Osc1/2 mix
Osc2 pitch
Osc2 FX para
Osc FX type
Voice pan

Level & mute
GalaXY offset X/Y
MIDI pitchbend
Phase auto-reset
Glide
Quantization