

Waldorf Microwave 1 Plug-In Specification

New version 2.0 Features marked in blue

Faithful recreation of Waldorf's first generation Microwave Synthesizer based on the famous Waldorf ASIC chip (Application Specific Integrated Circuit).

Digital Section (ASIC)

- Internally running with 250 kHz sampling rate to match original ASIC sampling rate.
- Modeling of digital-to-analog converters for each voice (DAC).
- Two oscillators based on same wavetable per multi instrument.
- Unique digital noise generator based on ASIC technology.
- Digital mixer of oscillators and noise based on original ASIC including overflow bug.
- Faithful recreation of non-interpolated pitch generation.

Wavetables

- All original wavetables of Microwave 1 based on the original coding and bit-identical to original.
- Including algorithmic and speech wavetables.
- Faithful recreation of 8-bit quantization and aliasing.
- Easy to use wavetable editor based on internal control tables.
- Full waveform catalogue of original instrument can be accessed.
- User waveform editor.

Filter

- Faithful modeling of revision A and B analogue filters.
- Voice individual calibration of cutoff and resonance to model detuned hardware.
- Cutoff and resonance modulations.
- Frequency response graphic animated by live modulations

Amplifier

- Modeling of voltage controlled analogue amplifiers and panning section.
- Faithful recreation of control voltage DACs including stepping effects.

Modulators

- Recreation of unique envelope and LFO timings based of original 68k code.
- Modeling of beautiful micro variations in timings due to limitations of the original hardware.
- Filter envelope with ADSR and additional delay parameter.
- Volume envelope with ADSR.
- All filter and volume envelope timings and levels can be modulated.
- Unique 8 stage wave envelope with variable key-off point and looping.
- Wave envelope levels and timings can be modulated.
- Attack-Decay envelope for LFO1 with additional delay.

- 2 LFOs with various waveforms, symmetry and humanize parameters.
 - LFOs can be phase shifted to each other.
 - LFO1 with global option, rate & level modulation.
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Non-Standard Tunings

- 4 user tunings can be individually edited.
 - Will be stored into user presets.
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Multi-Mode

- Up to 8 instruments which can be layered and split or any combination of both.
 - Split by key zone and velocity range.
 - Multi instrument mixer with volume, panning, detuning, transpose and many more parameters.
 - Individual tuning per instrument possible,
 - Huge catalogue of all original multi sounds.
 - [New modes for triggering parts in Round Robin and Random Robin orders.](#)
 - [Simultaneous editing of multiple instrument parts in absolute or relative mode.](#)
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Polyphony

- 8 voice polyphony like the original hardware.
 - Dynamic assignment of the voices to the multi instruments.
 - [Up to 3 additional voices cards with 8 voices each increasing total polyphony to 32.](#)
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Polyphonic Arpeggiators

- [Advanced Polyphonic Arpeggiator for each instrument part.](#)
 - [Global Arpeggiator including round robin modes.](#)
 - [Animated piano roll for arpeggiator output.](#)
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Effects

- [Creative delay effect including filter, tremolo, EQ, diffusion and pitch shifting.](#)
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Presets

- All factory single and multi presets included.
 - 5 additional original sound sets.
 - [4 new sound sets](#) from contemporary sound designers.
 - Can import original .mid and .syx files with preset dumps including user tables and wavetables.
 - User presets store all additional data like user wavetables and tuning & velocity tables.
 - [Preset browser with favourites, search and direct instrument part loading.](#)
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Hardware Control

- Plug-in can be used to control original hard in single mode via MIDI interface,
- Control optionally in live mode where each control is transferred automatically.

Extras

- Configurable spectrum analyzer.
- Resizable graphical user interface.
- [Multi-level Undo / Redo for parameter editing.](#)

Plug-In Formats

- macOS: VST, VST3, AudioUnit and AAX
- Windows: VST, VST and AAX

iPad Version

- According to Apple's rule of app distribution the iPad version is a separate product from the plug-in version available only via Apple's AppStore and not connected to the plug-in license.
- On-screen playing surface ready to play in a chromatic piano layout or in a scale-based layout.
- Supporting virtual Core MIDI compliant devices as well as external devices connected via class compliant USB MIDI like MIDI keyboards or controllers.
- Connects MIDI and audio to macOS hardware via USB C using Apple's standard methods.
- Contains an AUv3 extension supporting iPad hosts like Garage Band, Logic Pro, Cubasis 3 or AUM.
- Presets are fully compatible with the plug-in version and can be shared via the "Microwave 1" folder in the iPad Files app's section "On my iPad".