PNEUMA

VIRTUAL POLYPHONIC SYNTHESIZER

MANUAL

Pneuma v1.3.1

Developed by Ronan Fed

Requirements:

- Windows 8 or higher (Windows 10 or 11 recommended)
- Visual C++ Redistributable Packages (x64)

CONTENTS

1. INTRODUCTION

Pneuma is a virtual subtractive polyphonic synthesizer that features:

• 4 Multi-Voice Oscillators (8 voices with Detune and Stereo)

• 1 Noise Oscillator (Stereo, with Filter and Amp Envelopes)

• 2 Sample Oscillators (4 voices with Detune and Stereo)

• 2 Filters (Including: State Variable LP, Moog LP, BP and HP)

• 2 ADSR Filter Envelopes with curve shapes controls

• 1 ADSR Amplitude Envelope with curve shapes controls

• 2 ADSR Modulation Envelopes with curve shapes controls

• 2 LFOs with Random and Host BPM sync.

• Modulation Matrix (2 Sources and 4 Destinations)

• Arpeggiator

• Chords Generator

• Step Sequencer (16 Steps)

• Parametric EQ (3 Bands)

• Chorus (2 and 4 Voices)

• Phaser

• Delay

• Reverb

• Compressor

• Distortion (Overdrive and HardClip) and Saturation

• Stereo imaging (Haas Effect)

• Bass Boost

• Oscilloscope and Freq. Spectrum Monitor

Hint 1: Double click on a Knob or Slider to reset the value.

Hint 2: Press the Ctrl key while moving a Knob of Slider to fine adjust the value.

2. INSTALLATION

VST2 Version:

Install with setup. This will create a "Ronan Fed\Pneuma" folder in your 64-bit plugins folder.

By default: **C:\Program Files\Vstplugins\Ronan Fed\Pneuma**

Open your DAW and search for new installed plugins.

VST3 Version:

Install with setup. This will create a "Ronan Fed\Pneuma" folder in your VST3 system folder.

By default: **C:\Program Files\Common Files\VST3\Ronan Fed\Pneuma**

Open your DAW and search for new installed plugins.

Presets

VST2 plugin Factory Presets location (Inside the same folder as the plugin):

By default: **C:\Program Files\VSTplugins\Ronan Fed\Pneuma\vst2FactoryPresets**

VST3 plugin Factory Presets location (Inside the VST3 system folder):

The setup additionally will create a "**VST3 Presets\Ronan Fed\Pneuma**" folder in your system "Documents" folder.

By default: **C:\Users\[*yourusername*]\Documents\VST3 Presets\Ronan Fed\Pneuma**

Note: If you remove the folder from this default location, the VST3 presets will not be found by the plugin.

3. TOP BAR

MIDI IN: MIDI controller input signal.

POLYPHONY: Sets the maximum number of polyphony voices (max. 32)

OVERLAP: In polyphony mode enables Voices Overlap. Previous voice is faded out slowly when you play.

MONO: Selects mono mode (Polyphony off)

MONO LEGATO: Sets mono legato (Mono retrigger off)

the same key repeatedly (Uses more CPU)

PRESETS: Presets browser.

PRESETS MENU: Options to load and save banks and presets.

MAIN MENU: About, Manual and Website links.

4. OSCILLATOR

Each oscillator on the synthesizer can generate from 1 to 8 voices in unison.

WAVEFORM: Selects the shape of the sound between 7 Waveforms [Saw (sawtooth), Sine, Ramp

(inverted Saw), Pulse (Square), Triangle, White Noise & Pink Noise]

VOICES: Number of voices per note (1 to 8)

RETRIGGER: Synchronize all the voices.

OCTAVE: Adjusts the range to -3/+3 octaves.

NOTE: Adjusts the range to -11/+11 semitones.

FINE: Fine Tuning: -1/+1 semitone.

PW (Pulse Width): Affects only the Pulse wave (square shape) making the sound thinner.

PHASE: Change the phase of the waveform: -180/+180 degrees.

DETUNE: Detunes the voices. This can be used to create a **supersaw** effect.

STEREO: Sets the stereo spread of all the voices.

PAN (Panning): Pans the Oscillator left or right.

VOLUME: Output volume of the Oscillator.

FILTER: Selects the filter that will affect the Oscillator (1 or 2)

OSC SWITCH: Switches between Oscillator panels (1-3 and 2-4)

5. NOISE OSCILLATOR

Generates a noise waveform.

TYPE: Selects the Noise Type (**Noise 1: White**, **Noise 2: Pink**)

FILTER MODE: Selects the filter mode (Low Pass, High Pass, Band Pass and Band Reject)

CUTOFF: Sets the Cutoff Frequency of the filter.

ATTACK: Adjust the noise amplitude Attack time.

DECAY: Adjust the noise amplitude Decay time.

SUSTAIN: Adjust the noise amplitude Sustain Level.

RELEASE: Adjust the noise amplitude Release Time.

FILTER: Selects the filter that will affect the Oscillator (1 or 2)

STEREO: Sets Stereo separation**.**

PAN (Panning): Pans the Oscillator left or right.

VOLUME: Output volume of the Oscillator.

6. SAMPLE OSCILLATOR

It allows you to load and play samples in .wav format.

SAMPLE: Click to load a .wav sample.

REMOVE (Trash Can): Removes the current sample.

OCT: Adjusts the octave range to -3/+3.

NOTE: Sets the root note (original pitch) of the sample.

VOICES: Number of voices per note (1 to 4)

DETUNE: Detunes the voices.

SPREAD: Sets the stereo spread of the voices.

FILTER: Selects the filter that will affect the Oscillator (1 or 2)

FINE: Fine Tuning: -1/+1 semitone.

PAN (Panning): Pans the Oscillator left or right.

VOLUME: Output volume of the Oscillator.

OSC SWITCH: Switches between Sample Oscillator 1 and 2.

7. FILTER

Shapes the tones of the sound from the oscillators' output. Cuts some frequencies while letting others through.

TYPE: Selects between 2 type of Filters [State Variable Filter and Moog Filter (Low Pass)]

MODE: Selects the filter mode for the State Variable Filter (SVF):

- **LP24** - 24 dB low-pass filter
- **BP12** - 12 dB band-pass filter
- **HP24** - 24 dB high-pass filter

   The Moog Filter only has Low Pass Mode

CUTOFF: Adjusts the filter cutoff frequency.

RESO (Resonance): Adjusts the filter resonance.

KEYTRACK: The keyboard track makes the cutoff frequency dependent on the actual note played.

Higher notes mean higher cutoff, lower notes mean lower cutoff.

VELOCITY: Cutoff changes according to the velocity (intensity) of the pressed key.

ENV / CURVES: Toggles between Envelope and Curves settings.

FILTER ENVELOPE (ADSR) / CURVES

A (Attack): Specifies the time that passes before the filter cutoff reaches the maximum level.

D (Decay): Specifies the time that passes before the filter cutoff decrease to the level specified by the Sustain parameter.

S (Sustain): The filter cutoff sustains at this level, for as long as the key is being held.

R (Release): When the key is released, the envelope releases and drops back to the minimum level after the period of time specified by the Release parameter.

AMOUNT (Envelope amount): The maximum amount of filter cutoff frequency.

CURVES: Sets the shapes of the **Attack**, **Decay** and **Release** parameters (0= Exponential, 10= Linear)

8. AMPLITUDE ENVELOPE

The sound created by the Oscillators and Filter can be shaped using the Amplitude Envelope.
This is a ADSR envelope, with Attack, Decay, Sustain and Release parameters.
You can use it to make the sound fade in and out, or add punch to it.

A (Attack): Specifies the time that passes before the amplitude reaches the maximum level.

D (Decay): The envelope drops down to the level specified by the Sustain parameter, during the time

specified by the Decay parameter.

S (Sustain): The envelope then sustains at this level, for as long as the key is being held.

R (Release): When the key is released, the envelope releases and drops back to the minimum level after

the period of time specified by the Release parameter.

VELOCITY: Volume changes according to the velocity (intensity) of the pressed key.

ENV / CURVES: Toggles between Envelope and Curves settings.

CURVES: Sets the shapes of the **Attack**, **Decay** and **Release** parameters (0= Exponential, 10= Linear)

9. LFO

The LFO (Low Frequency Oscillator) is used to create modulation of the sound.

SHAPE: Selects the waveform to modulate the destination parameter.

DESTINATION: Selects the parameter to modulate (Pitch, Filter Cutoff, Pulse Width or Panning)

RATE: Change the Speed (Frequency) of the waveform (0 to 15 Hz)

DEPTH: Sets the Amplitude of the waveform.

RANDOM: Randomize the shape with "Sample and Hold".

SYNC: Synchronizes the frequency of the LFO to a multiple of the current tempo (BPM) of the Host.

10. MODULATION ENVELOPE

**The Modulation Envelope is a ADSR envelope
with Attack, Decay, Sustain and Release settings, similar
to the Amplitude Envelope.
It can be used for all kinds of modulation, but two commonly used
destinations are the Pitch and the Filter Cutoff.**

DESTINATION: Modulates the Pitch, Pulse Width and Panning of Oscillators 1 to 4 and Sample

Oscillators, also the Cutoff Freq. of the Noise Oscillator.

AMOUNT: Sets the level of the selected destination parameter.

A (Attack): Adjusts the attack time.

D (Decay): Adjust the decay time.

S (Sustain): Adjust the sustain level.

R (Release): Adjust the release time.

ENV / CURVES: Toggles between Envelope and Curves settings.

CURVES: Sets the shapes of the **Attack**, **Decay** and **Release** parameters (0= Exponential, 10= Linear)

11. MODULATION MATRIX

The Modulation Matrix offers 2 assignable modulation sources with 2 destinations each and adjustable depth/amount.
Source controls to assign: Mod Wheel, Velocity and After Touch.
Destination parameters to assign: Cutoff, Resonance, Pulse Width and Vibrato.

SOURCE: Selects the source MIDI Control.

DESTINATION 1: Selects the first parameter to control.

DESTINATION 2: Selects the second parameter to control.

AMOUNT: Sets the maximum depth/amount of the parameter to control.

12. EFFECTS

ARPEGGIATOR

RANGE: Sets the range of the arpeggiated notes in octaves.

MODE: Selects the mode of playing the notes (ascending, descending, etc.)

SPEED: Change the speed of the arpeggio in musical notes values.

HOLD: Sustains pressed keys.

GATE: Adjusts the duration of the notes.

SWING: Adds swing (shuffle) to the arpeggiated notes.

DISTORTION

TYPE: Selects the distortion type between **Overdrive** and **HardClip**.

AMOUNT: Adjusts the amount of distortion.

SATURATION: Sets the amount of saturation.

PARAMETRIC EQ

LEVEL: Controls the volume of each band (-18/+18 dB)

FREQ: Selects the frequency of each band.

WIDTH: Controls the width of each band (0 to 100%)

PHASER

RATE: Sets the speed of the phaser (frequency)

DEPTH: Sets the intensity of the phaser.

WIDTH: Sets the stereo width of the phaser.

FEEDBACK: Resonance. Sets the amount of phase signal that gets fed back.

DRY/WET: Amount of phaser (Dry=none, Wet=full)

CHORUS

RATE: Sets the frequency of the LFO modulating the delayed signal.

DEPTH: Sets the amplitude of the LFO.

VOICES: Number of voices (2 or 4)

WIDTH: Shifts the phase of the LFO.

DRY/WET: Amount of chorus (Dry=none, Wet=full)

DELAY

TIME: Sets the Delay time in musical notes values.

FEEDBACK: Sets the amount of feedback to create echoes.

MODE: Selects the mode between Stereo and Ping-Pong (stereo bounce).

OFFSET: In Stereo mode, offsets left and right delay to make some stereo spread.

DAMP: Sets the lowpass damping.

VOLUME: Amount of Delay.

REVERB

DECAY: Time of the Reverb (0.1 to 12 seconds)

HIGH CUT: Cut the high frequencies above the selected value (0 to 15 kHz).

DAMP: Cuts high frequencies (0= full, 10=off)

VOLUME: Amount of Reverb.

COMPRESSOR

THRESHOLD: Determines at what dB level the compressor will begin working.

RATIO: Selects the **output:input** ratio level (max. **30:1**)

OVEREASY: Gradually changes gain once the signal nears the Threshold.

GAIN: Sets the compressed signal amplification in dB.

13. OUTPUT

Main Output Controls.

STEREO: Enables stereo imaging (Haas effect)

VIBRATO: Sets the vibrato amount.

OCTAVE: Adjusts the main octave to -3/+3.

GLIDE: Sets the portamento time.

MODE: Sets the glide mode between **Legato** and **Always**.

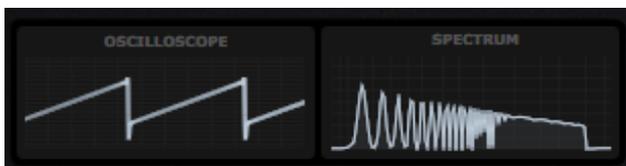**BASS:** Increments the bass boost.

GAIN: Amplifies the output signal in dB.

PANNING: Sets the main panning.

VOLUME: Sets the main volume.

VU METER: Volume dB meter Left and Right.

MONITOR: Shows the Oscilloscope and the Frequency Spectrum.

14. KEYBOARD

KEYBOARD: Shows the Keyboard.

STEP SEQ: Shows the Step Sequencer.

BEND RANGE: Sets the Pitch Bend range (0 to 12 semitones)

PITCH BEND WHEEL: Varies the pitch of the notes, up and down, according to the bend range.

MOD WHEEL: Modulates (change) the value of an assigned parameter.

15. STEP SEQUENCER

STEPS: Shows the currently played step when the Step Sequencer is enabled and you press a key.

ON: Enable or disable steps (Cut note)

SLIDE: Produces a portamento to the next step (The slide time is set by the main Slide knob)

GATE: Sets the step note length.

VELOCITY: Sets the step note Volume and/or Filter Cutoff (If "Velocity to Volume" is enabled, then controls the volume, if "Velocity to Filter Cutoff" is enabled, then controls the Cutoff, or both)

NOTE: Sets the number of semitones up or down of the current played note in your keyboard.

MODE: Selects between **Step** and **Chord** mode.

The **Step** mode is designed to play single notes for step. Don't work well with polyphony active.

 If you want to slide notes, make sure you put the synth in Mono mode.

The **Chord** mode allows you to play chords at each step, you need polyphony active, so always use it with Mono off.

If you want to use the step sequencer with the Auto Chords player, always use Chord mode and with Mono off.

STEPS: Maximum number of steps to play (1 to 16)

SPEED: Sets the sequence time.

GATE: Main step length control. Applies to all the steps.

SWING: Adds swing (shuffle) to the notes.

SLIDE: Sets the slide time.

MENU (Floppy icon): Options to **save** and **load** sequencer's presets in text format and to **reset** the sequencer's values.

COPY: Copy the current sequencer's values to the clipboard.

PASTE: Paste the sequencer's values from the clipboard (works between different instances of the plugin)

ENABLE: Enables the step sequencer (This automatically disables the Arpeggiator)

Important: The Step Sequencer and the Arpeggiator don't work at the same time, the Step Sequencer has priority.

16. CHORDS

Automatic Chords generator.

ENABLE: Enables the **Chords** mode and shows a blue keyboard.

KEY: Selects the Key Signature (Tonality) of the chords (C to B)

MODE: Selects the chord mode between **Major** or **Minor**.

NOTES: Selects the number of notes of the chord (4 notes: 7th chords, 5 notes: 9th chords)

OPEN: Enables open-position chords.

C (Chromatic Mode): Play major or minor chords in the Chromatic Scale.

D (Diatonic Mode): Play chords adjusted to the selected Key Signature (Diatonic Scale)

Chords Viewer: Shows the keys of the chords.