



# POLYGRAPH

User Manual

DirektDSP

July 1, 2026

Every note, on the record.

## Contents

<b>1</b>	<b>Overview</b>	<b>2</b>
1.1	Key Features . . . . .	2
<b>2</b>	<b>Installation</b>	<b>2</b>
2.1	macOS . . . . .	2
2.2	Windows . . . . .	2
2.3	Linux . . . . .	2
<b>3</b>	<b>Controls Reference</b>	<b>2</b>
3.1	Tracking . . . . .	2
3.2	Output . . . . .	3
3.3	MPE Settings . . . . .	3
<b>4</b>	<b>Display</b>	<b>3</b>
4.1	Strip Chart . . . . .	3
4.2	Truth Meter . . . . .	4
4.3	Latency Readout . . . . .	4
<b>5</b>	<b>MIDI and MPE Setup</b>	<b>4</b>
5.1	Standard MIDI . . . . .	4
5.2	MPE Mode . . . . .	4
<b>6</b>	<b>Troubleshooting</b>	<b>4</b>
<b>7</b>	<b>System Requirements</b>	<b>5</b>

# Overview

Polygraph is a real-time polyphonic guitar-to-MIDI plugin. It listens to your guitar signal, detects individual notes (including chords), and outputs MIDI data that can drive synthesisers, samplers, or any MIDI-capable instrument in your DAW.

Polygraph also includes a built-in monitoring synthesiser so you can hear the tracked notes immediately without routing MIDI to another instrument.

## Key Features

- Polyphonic pitch tracking — detects multiple simultaneous notes
- Three latency modes: Fast, Normal, Accurate
- MPE (MIDI Polyphonic Expression) output with per-note pitch bend
- Built-in polyBLEP monitoring synth
- Real-time strip chart (piano roll) display
- Truth meter showing tracking confidence
- Available as VST3, AU, CLAP, and Standalone

# Installation

## macOS

Run the .pkg installer. It places the plugin formats in their standard locations:

- VST3: /Library/Audio/Plug-Ins/VST3/
- AU: /Library/Audio/Plug-Ins/Components/
- CLAP: /Library/Audio/Plug-Ins/CLAP/

## Windows

Run the .exe installer and follow the prompts. Default install paths:

- VST3: C:\Program Files\Common Files\VST3\
- CLAP: C:\Program Files\Common Files\CLAP\

## Linux

Copy the plugin bundles to:

- VST3: ~/.vst3/
- CLAP: ~/.clap/

After installation, rescan plugins in your DAW.

# Controls Reference

## Tracking

### Track Mode (Fast / Normal / Accurate)

Controls the FFT window size used for pitch detection. **Fast** uses a smaller window (lower latency, weaker low-string resolution). **Accurate** uses a larger window (higher latency, better polyphonic separation). **Normal** is the recommended default.

**Sensitivity**

How aggressively the tracker picks up new notes. Higher values detect quieter notes but may introduce false triggers. Lower values are cleaner but may miss soft playing.

**Velocity Sensitivity**

Controls how much the input signal level affects MIDI velocity. At minimum, all notes output at a fixed velocity.

## Output

**Input Gain**

Pre-tracker gain applied to the incoming audio signal.

**Synth Enable**

Toggles the built-in monitoring synthesiser on or off.

**Synth Wave**

Waveform for the monitoring synth (sine, saw, square, triangle).

**Synth Gain**

Volume of the monitoring synth output.

**Dry Gain**

Volume of the original (dry) guitar signal passed through to the output.

**Output Gain**

Master output level.

**MIDI Out**

Enables or disables MIDI note output. When off, the tracker still runs (the strip chart and truth meter update) but no MIDI is sent.

**Bypass**

Bypasses all processing. Audio passes through unmodified, no MIDI output.

## MPE Settings

**MPE Enable**

Switches between standard MIDI (single channel) and MPE mode (per-note channels with individual pitch bend).

**Bend Range**

Pitch bend range in semitones:  $\pm 2$ ,  $\pm 12$ ,  $\pm 24$ , or  $\pm 48$ . Must match the bend range configured on the receiving instrument.

## Display

### Strip Chart

The scrolling piano roll shows detected notes in real time. The vertical axis spans E2 to E5 (covering standard guitar range). Active notes appear as continuous pen traces. A red play-head marks the current position, with red dots on currently sounding notes.

## Truth Meter

The confidence dial shows how cleanly the tracker is reading the input signal. Needle to the right means a strong, unambiguous pitch reading. Needle to the left means the signal is weak, noisy, or harmonically ambiguous. This indicates detection quality, not pitch or level.

## Latency Readout

The **LAT** display in the header shows the current tracking latency in milliseconds, determined by the selected Track Mode.

# MIDI and MPE Setup

## Standard MIDI

In standard mode, Polygraph sends note-on/off messages on MIDI channel 1. Pitch bend is monophonic (applied to all notes). This works with any MIDI-capable instrument.

To use in your DAW:

1. Insert Polygraph on your guitar track
2. Route the MIDI output to a virtual instrument on another track
3. Ensure the receiving instrument is set to receive on channel 1

## MPE Mode

When MPE is enabled, Polygraph uses Zone 1 (channels 2–16) with per-note pitch bend for continuous pitch expression. Each new note is assigned its own MIDI channel.

For MPE setup:

1. Enable **MPE** in Polygraph
2. Set the **Bend Range** to match your target instrument
3. Ensure the receiving instrument supports MPE and is configured for Zone 1 with the same bend range

Polygraph sends RPN 6 (MPE Configuration) and RPN 0 (Pitch Bend Sensitivity) messages automatically when the first note is triggered.

# Troubleshooting

### No MIDI output

Check that **MIDI Out** is enabled. Verify MIDI routing in your DAW — some hosts require explicit MIDI output routing from audio-effect plugins.

### False notes / ghost triggers

Reduce **Sensitivity**. Try **Normal** or **Accurate** mode. Ensure a clean input signal (minimise background noise, use a noise gate before Polygraph if needed).

### Missed notes

Increase **Sensitivity**. Check **Input Gain** — the signal may be too quiet. The truth meter should deflect noticeably when you play.

**Wrong octave / phantom harmonics**

Most common on low strings (E2–A2) in **Fast** mode. Switch to **Normal** or **Accurate** for better low-frequency discrimination.

**MPE pitch bend not working**

Ensure the **Bend Range** in Polygraph matches the receiving instrument exactly. Not all instruments support MPE — check the instrument's documentation.

**High latency**

Switch to **Fast** mode. Note that this reduces pitch tracking accuracy, especially on lower strings.

## System Requirements

- macOS 10.15+ (Intel or Apple Silicon)
- Windows 10+
- Linux (x86\_64, ALSA or JACK)
- A DAW supporting VST3, AU, or CLAP
- Mono audio input (guitar signal)