



TCFX VMod Pro User Guide

The VMod Pro is a professional voice modulation device featuring 11 audio effects, automatic pitch correction with live harmonies, a WAV sample player, preset storage, and a fully customizable control surface. This guide covers firmware version 1.4.0.

What's New in 1.4.0

- Rebuilt pitch shifter with lower latency and natural formant control
- Auto-Tune style pitch correction with key and scale selection, in soft or hard modes
- Harmony chords: add a 3rd, 5th, triad, octave, or doubler to your voice
- Three new effects: compressor/limiter, reverb, and a 4-band parametric EQ
- Re-orderable effect chain with per-effect mix, and overdrive voice modes
- Customizable buttons: assign 20 different actions to four button gestures
- Control lock to prevent accidental knob and button presses
- WAV player with layered playback: background beds plus one-shot samples
- Live input meter in the header on every screen
- Low-battery warnings and graceful power-down
- Smoother LED engine, refined interface, and automatic preset migration from 1.3.0

Getting Started

Powering On

The VMod Pro operates on its built-in rechargeable 4000mAh lithium polymer battery. When the battery is low, connect the included charger.

- The "PHONE" port should be used to connect headphones. The rotary wheel labeled "Vol" controls the headphone volume.
- The "LINE" port should be used to connect an external amplified speaker.
- The "MIC" port should be used to connect your microphone.

Charging Status

The encoder knob features an LED indicator that shows charging status:

- RED: Battery is charging
- GREEN: Battery is fully charged

While charging, a lightning bolt appears next to the battery icon on the display in place of the percentage.

SD Card

The VMod Pro stores presets, settings, and WAV samples on a micro SD card. Insert a card before powering on. A new card can be formatted from Settings > SD Card. The card icon in the display header shows whether a card is detected.

Basic Operation

The VMod Pro uses a combination of an encoder wheel, two control knobs, and two physical buttons to control all of its functions.

Button Controls

Both buttons are customizable (see Custom Button Assignments). Out of the box they work as follows:

- Button 1: Press to mute or unmute the device. Hold to jump to the Mix Settings page.
- Button 2: Press to cycle through saved presets. Hold to save your current settings to the active preset.
- Hold both buttons for one second to lock or unlock the controls (see Control Lock).

The Header

The top of every screen carries the same status row: the page title on the left, and on the right the card icon, the padlock when the controls are locked, and the battery level.

Directly beneath it runs a live input meter that follows your microphone, so you can watch your level from any page without going back to the mix settings. Set your mic sensitivity so the meter moves well across its width on your loudest phrases without pinning to the right.

Main Display Modes

Effects Overview

This is your home screen showing all available effects and menu options. Rotate the encoder to highlight an item and press to select it. When you exit any section, the highlight returns to that section's icon.

Available items include:

- Pitch Shift
- Overdrive
- Bitcrush
- Ring Modulator
- Chorus
- Phaser
- Flanger
- Delay
- Compressor
- Reverb
- EQ
- Mixer
- Presets

- Settings
- Visualizer
- WAV Player

Editing Effect Parameters

When you select an effect, you enter parameter editing mode. Effects have multiple pages of parameters; rotate the encoder past the last footer button to move between pages. The last page of every effect is its Mix (wet/dry) control. The EQ is the exception: it opens onto its own full-screen editor, and its mix is set from the Mixer instead.

Important: The VMod Pro uses a "pickup" feature for safety. When you first enter an effect or load a preset, the knobs are inactive until you move them. Once a knob is active, turning it adjusts the parameter in real time.

The Bypass/Enable button appears in the footer of each effect's first page. To exit the effect and return to the overview, select BACK.

Available Effects

Pitch Shift

Shifts the pitch of your voice up or down without changing speed. The pitch engine was rebuilt in 1.4.0 for lower latency and a cleaner sound. It has six pages:

Page 1 - Pitch:

- Pitch: Shifts your voice up or down by up to 10 semitones
- Formant: Offsets your vocal character independently of pitch
- Formant On/Off (footer): With formant OFF you get the classic chipmunk/monster shifter sound. With formant ON your vocal character is preserved while pitch moves, for natural-sounding voice changes.

Page 2 - Character:

- Bright: Tilts the tone darker or brighter
- Breath: An exciter that adds presence, air, and sibilance generated from your own voice

Page 3 - Movement:

- Flutter: Adds pitch wobble (vibrato)
- Jitter: Adds slow vocal-character movement
- LFO Sine/Rand (footer): Chooses steady, musical movement or irregular, more human movement

Page 4 - Tune (automatic pitch correction):

- On/Off (footer): Master switch for pitch correction
- Key and Scale (footer): Pick your song's key (C through B) and scale (Chromatic, Major, or Minor). With a major or minor scale, notes snap onto the scale for a much stronger effect.
- Soft/Hard (footer): Soft correction pulls you toward the nearest note while still following your own singing. Hard locks absolutely onto the target note, and Speed becomes the glide time between one note and the next - this is the fully synthetic, instrument-like sound.
- Tune: Correction strength

- Speed: How fast notes snap. Low speed preserves your vibrato; full speed is the hard, robotic "auto-tune" sound.

Page 5 - Chords (harmony voices):

- On/Off and Type (footer): Engage harmony and pick the voicing - 3rd, 5th, Triad, Octave, or Dbl. Dbl is a doubler: two lightly detuned copies of your own note, for thickness rather than harmony.
- Chord: The harmony voices' volume
- With a key and scale set, harmonies automatically follow the scale so they stay musical on every note. Harmony fades out on breaths and consonants.

Page 6 - Mix: Blends the effect with your dry voice.

Overdrive

Adds grit and distortion to your voice.

- Drive: Controls the amount of distortion
- Tone: Adjusts the brightness of the distorted sound
- Voice (footer): Full, Phone, or Mega. Full is the plain drive; Phone band-limits the result to a telephone or two-way radio character; Mega narrows it further into a bullhorn.

Bitcrush

Creates a digital, lo-fi sound by reducing audio quality.

- Cutoff: Controls the filter cutoff frequency
- Mod: Controls the bit depth reduction amount
- Resonance and Drive (page 2): Shape the filter character and intensity

Ring Modulator

Creates metallic, robotic tones.

- Carrier: Sets the carrier frequency
- Mod: Adjusts the modulation amount
- Carrier Wave Type: Select from the footer menu to choose between Sine, Saw, Square, and Tri (triangle) waveforms

Chorus

Adds thickness and width to your voice.

- Rate: Controls the speed of the chorus effect
- Depth: Controls how pronounced the effect is
- Delay and Feedback (page 2): Fine-tune the effect's spacing and regeneration

Phaser

Creates a sweeping, whooshing sound.

- Rate and Depth: Control the speed and intensity of the sweep
- Freq and Feedback (page 2): Set the sweep's center and resonance
- Poles (page 3): Sets the strength of the phasing stages

Flanger

Produces a jet-like sweeping effect.

- **Rate:** Controls the speed of the flange
- **Depth:** Controls the intensity
- **Delay and Feedback (page 2):** Fine-tune the sweep and regeneration

Delay

Creates echo effects.

- **Time:** Sets the delay time between repeats
- **Feedback:** Controls how many repeats occur

Compressor

Evens out your level so quiet and loud words sit together. New in this firmware series.

- **Thresh and Ratio:** Where compression starts and how strongly it acts. Maximum ratio acts as a limiter.
- **Attack and Release (page 2):** How quickly compression engages and lets go
- **Makeup (page 3):** Restores volume after compression

Reverb

Adds room and space around your voice. New in 1.4.0.

- **Decay:** How long the tail lasts, from a small room to a long hall
- **Damp:** How quickly the high frequencies fade out of the tail. Higher damping gives a darker, softer space.
- **Pre-Delay (page 2):** A gap of up to 150 ms between your voice and the start of the tail. A little pre-delay keeps your words clear while still giving them a large space.
- **Low Cut (page 2):** Removes low frequencies from the tail only, from 20 to 400 Hz. Raise it if the reverb is muddying the body of your voice.

EQ

A four-band parametric equalizer for shaping your voice, with the response curve drawn live on screen. New in 1.4.0.

The EQ has its own full-screen editor rather than the usual parameter pages. The upper half shows the curve you are creating; the lower half shows the four bands, each with its frequency, gain, and Q.

- **Choose a band:** rotate the encoder. The selected band's column is highlighted.
- **Move a band:** press the encoder to arm it - small arrows appear either side of its frequency - then rotate to sweep that band anywhere from 20 Hz to 20 kHz. Press again to release it and go back to choosing bands. Turning faster sweeps faster.
- **Knob 1 - Gain:** boosts or cuts the selected band by up to 15 dB either way.
- **Knob 2 - Q:** sets how wide the band is, from 0.3 (broad and gentle) to 8 (narrow and surgical). Use a high Q to notch out a single problem frequency, a low Q for general tone shaping.
- **ON/OFF and BACK** are in the footer, as on every effect page.

The EQ's wet/dry mix is set from the Mixer rather than from this screen.

Mixer and Effect Routing

Select Mixer from the home screen to balance and organize your effects:

- Each page shows two effects with their individual wet/dry mix level. Adjust levels with the knobs.
- Each effect row has an EDIT button that jumps straight into that effect's parameter pages. (The EQ row's EDIT opens its mix page; to shape the bands, open EQ from the home screen.)
- The final page is Routing: the order your voice passes through the effects. Highlight an effect, press to grab it, rotate to move it through the chain, and press again to drop it.

Presets

The VMod Pro can store up to 20 custom presets on the SD card containing all of your effect settings, the effect chain order, tune and chord setup, and your WAV sample configuration.

Quick Preset Access

- Press Button 2 to cycle through your saved presets
- Hold Button 2 to save your current settings to the active preset

Browsing Presets

From the main screen, select Presets. Rotate the encoder to browse through saved presets. Press the encoder to open the options for a preset: Load, Save, Rename, Del, and Back. On an empty slot the options are New and Back. Creating, renaming, and deleting work exactly as in previous firmware.

Upgrading from 1.3.0

Presets created on firmware 1.3.0 load automatically. They are upgraded in place the next time you save them. New 1.4.0 settings (tune, chords, LFO shape) start switched off in upgraded presets, so your saved sounds are unchanged.

WAV Player

The WAV player plays sound files from the SD card alongside your voice. Place 16-bit WAV files (mono or stereo) in the **VMOD/samples** folder on the card, then select WAV Player from the home screen to browse and preview them. Press a file to open its settings:

- Enabled: Master switch for this sample's triggers
- Volume: Playback level - adjustable live, even while the sample plays
- Looping: Restart automatically at the end
- Trigger: How the sample starts - Manual, Audio Head (fires when you start speaking), Audio Tail (fires when you stop), Timer (fixed interval), or Random (randomized interval)
- Delay/Timing: The delay or interval used by the trigger modes
- Background: Makes this sample a layer (see below)

Layers and One-Shots

Playback is polyphonic - multiple samples can sound at once:

- Background ON makes a sample a layer. Starting it never interrupts anything, so you can stack looping beds (for example rain plus crowd noise). Trigger a playing layer again to stop just that layer. Layers keep triggering even when you leave the WAV Player screen.

- Background OFF makes a sample a one-shot. A new one-shot replaces the previous one so stingers never pile up, but layers keep playing underneath. Re-triggering the same one-shot restarts it.
- The WAV PLAY button action (see Custom Button Assignments) plays your first manual sample, and acts as a master stop when anything is playing.

Custom Button Assignments

Under Settings > System, the second page (SYSTEM - BTNS) lets you assign an action to each of four gestures. Select a row with the encoder and press to cycle through the actions.

- Button 1 (short press) - default: Mute
- Button 2 (short press) - default: Next preset
- 1+2 Press (both buttons together, quickly) - default: None
- 1+2 Hold (both buttons held 1 second) - default: Lock

Holding Button 1 (Mix screen) and holding Button 2 (save preset) are always available and cannot be reassigned.

Available Actions

- MUTE: Mute or unmute the output
- PRESET + / PRESET -: Step to the next or previous preset
- SAVE: Save the current preset
- REVERT: Reload the current preset, undoing every tweak since you loaded it
- BYP ALL: Panic switch - bypasses every effect; press again to restore exactly the effects that were on
- BYP PITCH: Toggle the pitch shifter for instant natural/effected voice
- FORMANT: Toggle formant preservation
- TUNE: Toggle auto-tune on or off
- HARD TUNE: Instantly set correction to maximum; press again to restore your previous tune settings exactly
- KEY +: Step the auto-tune key up a semitone for live key changes
- CHORD: Step the harmony - Off, 3rd, 5th, Triad, Octave
- OCT UP / OCT DOWN: Jump a full octave up or down; press again to return to your previous pitch
- DLY FREEZE: Hold the delay's repeats as a sustained loop until pressed again
- MIC MUTE: Mute only the microphone - WAV samples keep playing
- WAV PLAY: Play the first manual sample, or stop all samples
- WAV NEXT: Step through your manual samples, playing each one - a soundboard on a single button
- VISUALIZER: Jump to or from the visualizer
- LOCK: Engage the control lock
- NONE: Disable this gesture

Control Lock

The control lock freezes the entire control surface - knobs, encoder, and buttons - so nothing can be changed by accident on stage or in a bag.

- Engage the lock with the LOCK action (by default, hold both buttons for one second). A closed-padlock screen confirms, and a padlock icon then stays in the header alongside the card and battery icons.
- While locked, touching any control briefly wakes the screen so you can see the padlock - nothing else happens.
- To unlock, hold both buttons for one second. Unlocking always works this way, no matter how your buttons are assigned. An open-padlock screen confirms.
- Restarting the device always unlocks it.

Settings Menu

Access the Settings menu from the main screen to adjust global parameters.

Display Settings

- Display Brightness: Adjust the brightness of the OLED screen
- LEDs Brightness: Adjust the brightness of the LEDs
- Auto Sleep: Turn the auto sleep feature on or off
- LED Color: Adjust the default color of the RGB LEDs
- Voice React: Make the LED pulse with your voice

Mix Settings

The Mix menu has three pages that you can navigate through:

Page 1 - Output:

- Master Volume: Controls overall output level
- Effects Mix: Blends between your dry voice and processed effects

Page 2 - Input:

- Mic Gain: Adjusts input sensitivity
- Gate Threshold: Reduces background noise by setting a volume threshold

Page 3 - Notch Filter:

- Frequency: Sets the notch filter frequency (20Hz to 8000Hz)
- Q: Controls the width of the notch filter (0.5 to 10.0)
- Enable/Bypass: Toggle the notch filter on or off

The notch filter is particularly useful for eliminating feedback at specific frequencies.

System Settings

- Auto Sleep: Turn the auto sleep feature on or off
- Encoder: Reverse the encoder direction
- SYSTEM - BTNS (page 2): The four button gesture assignments

SD Card

- Mount an inserted card or format a new one

Visualizer

The visualizer displays real-time audio levels in a graphical format. Access it from the main screen; press the encoder to return.

Battery Information

The VMod Pro is equipped with a 4000mAh lithium polymer battery for extended use. The device comes with a 5V 2A USB charger. For proper charging, use a power adapter that provides at least 2A.

Low Battery Warnings

- At 10% the display shows LOW BATTERY once and the device sounds a short chirp through the output. This is your cue to finish the song and connect the charger.
- Below 5% the display shows BATTERY CRITICAL and a triple beep repeats every 30 seconds until you charge.
- Both warnings are silenced while the device is charging.
- When the battery is genuinely exhausted the device saves its state and powers down on its own rather than cutting out mid-word.

Tips for Best Results

- Quick Mute: The Mute action silences the device instantly - by default it is on Button 1.
- Knob Pickup: When you first select an effect or load a preset, turn a knob past its current value to activate it.
- Combining Effects: Multiple effects can be active simultaneously. Use the Mixer to balance them and Routing to set their order.
- Auto-Tune: Set the key and a major or minor scale for the strongest correction. Chromatic gives the subtlest touch-up.
- Harmonies: Set the key and scale first - the chord voices follow them.
- Live safety: Assign BYP ALL or REVERT to a button gesture as an instant escape hatch, and lock the controls between songs.
- Preventing Feedback: Increase the Gate Threshold, enable the Notch Filter and tune it to the feedback frequency, reduce Master Volume, move the device away from speakers, and lower Mic Gain if feedback persists.

Troubleshooting

No sound output

- Check Master Volume in Mix settings
- If using the headphone output, check that the volume wheel is turned at least half way up
- Verify Mic Gain is not set too low
- Ensure effects are not all bypassed and the device is not muted
- Check that Gate Threshold is not set too high

Controls not responding

- Check for the padlock icon - hold both buttons for one second to unlock
- Knob pickup: turn the knob past the current value to activate it

Distorted or clipping audio

- Reduce Mic Gain, lower Master Volume, or decrease effect intensity

Presets won't load

- Verify the SD card is inserted and mounted (Settings > SD Card)
- Presets from firmware 1.3.0 are supported and upgrade automatically; presets from test firmware versions must be re-saved

WAV sample won't play

- Files must be 16-bit WAV format in the VMOD/samples folder
- Check the sample is Enabled and its Volume is up

Display won't turn on

- Battery may be depleted - connect the charger
- Press the encoder or any control to wake from sleep mode

Firmware Updates

The web-based firmware updater uses WebUSB technology, which is only supported in Chrome-based browsers. To update your VMod Pro firmware:

- From the Settings menu, select Update
- Connect the device to your computer using a Micro USB cable
- Open a Chrome-based web browser and navigate to ymod.tceffect.com
- Follow the on-screen instructions to upload the latest firmware

Care and Maintenance

- Keep the device away from moisture
- Store in a cool, dry place when not in use
- Charge regularly to maintain battery health
- Clean the display with a soft, dry cloth

For additional support, visit www.tceffect.com