

# ETCHES

## User Manual

*Stereo Output · 160 seconds total recording · 24-bit / 48kHz · 9V DC center-negative*

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### Overview

Etches is a layered soundscape synthesizer. It's a palette for playing with sound, sketching melodic sections and building evolving tapestries. It moves between cinematic washes, percussive pizzicatos, and atmospheres worn smooth through ambient processing.

We designed Etches to be performed. Every control is on the surface, and every gesture is audible the moment you make it. There are no traditional envelopes or filters. You shape the timbre as you play.

Pick a root note and choose from eleven scales and modes. The pads stay locked to that key while you move. It's hard to play a wrong note, which means you can focus on phrasing instead of finger positions.

At the center is a monophonic voice generator and a splice Sampler with overdub, so you can layer sounds into something bigger than individual patches. An internal LFO modulates each splice, altering where the recording starts and ends. It's a behavior we first used in our LAPS and JOTS pedals. Around all of that: a tape-style delay, and a stereo space processor you can get lost in.

### Calibrating Pad Sensitivity

Etches' pads are touch-resistive: they read the change in conductance when your finger contacts the surface. That reading shifts with environmental conditions: humidity, temperature, body chemistry, and even the surface the instrument is resting on will move the noise floor. A setting that feels perfect in your studio at night may behave differently the next morning, or in a different room entirely.

#### **Automatic Calibration at Power-On**

Each time Etches powers on, it measures the resting noise floor of every pad and uses that as a per-pad zero point. This happens automatically in the first moment after startup, so the pads read clean regardless of the conditions in the room.

Keep your hands off the pads while Etches starts up. If a pad is being touched during power-on, that touch is mistaken for the resting floor and the calibration for that pad will be off.

If anything seems off — ghost notes, dead pads, or uneven response — power cycle the instrument with nothing touching the pads, then re-adjust SENS to taste.

SENS sets the threshold above which the pads register a press. It's the first thing to dial in when you sit down with Etches.

- Too low and the noise floor sneaks above the threshold, producing false triggers and errant notes when nothing is touching the pads.
- Too high and pads stop responding to light touch and the instrument loses expressivity. Soft articulation disappears.

In our testing, a setting between 1:00 and 3:00 works for most users in typical studio environments. Start there, play with your usual touch, and adjust until light presses register reliably without ghost notes appearing.

**TIP** *Re-check SENS if you move Etches to a new room, if the weather shifts substantially, or if you notice performance changes in the instrument.*

## Signal Flow

Note pads play an oscillator whose frequency is modulated by a second oscillator. This is basic FM synthesis. The signal passes through an overdrive, then into the splice Sampler, a tape-style delay, and the stereo space processor. Two routing modes change the order (see Routing Modes).

Both articulation pads, SWELL and STAC, share the same oscillator and pitch source. Pressing SWELL holds the note open; pressing STAC triggers the repeating decay envelope. When you move between them the sound articulation crossfades.

## Note Pads

Etches has 24 note pads laid out across the bottom of the instrument. Press a pad to choose your note; press SWELL to control the volume level. Pads are scale-quantized. The SCALE and ROOT knobs determine which notes are available, and the INDEX slider transposes across octaves.

Available scales: Chromatic, Major, Minor, Major Pentatonic, Minor Pentatonic, Major Blues, Dorian, Mixolydian, Lydian, Phrygian, In-Sen.

As the SCALE knob is rotated and a new scale is selected, the status LED blinks to indicate the scale has changed.

## Articulation Pads

**Important:** Your index finger will be on SWELL most of the time. SWELL is your volume control.

**Regarding Pressure:** *References to pressure describe pad surface contact area. While pressing harder increases this contact, Etches uses touch-resistive technology rather than mechanical pressure sensitivity.*

Four articulation pads sit alongside the note pads. While they aren't notes themselves, they shape the oscillator's response.

**SWELL** holds notes open for as long as you press. Pressure controls level. Release the pad and the note falls silent.

## DRIVE

The DRIVE pad is a pressure-sensitive expression pad with two simultaneous functions:

- **Overdrive** is an 8-stage overdrive with progressive asymmetry. Light pressure adds warmth; heavy pressure pushes into saturation.
- Drive pressure also multiplies the FM index set by FLUX. With FLUX and ORBIT engaged, DRIVE pressure makes the FM voice more aggressive.

With FLUX at zero, DRIVE just adds overdrive character, no FM.

**STAC** triggers a decay envelope. Pressure controls how fast the decay happens. Light touch makes the envelope rate slower while heavy pressure speeds it up. Its intention is for articulations like pizzicato attacks or rhythmic plucks.

**INVERT** turns the slider settings into starting points instead of fixed values. Press it and seven parameters begin drifting, each on its own random LFO whose rate itself modulates. Pressure controls how far the drift travels.

Modulated parameters:

- Waveshape (EDGE)
- Drive
- FM Depth (FLUX)
- Reverb Time (SUSTAIN)
- Reverb Diffusion (FORM)
- Reverb Filter (WALLS)
- Delay Feedback

Light pressure produces a slow, evolving drift around your knob settings. Full pressure opens the modulation up to wide random wandering. Release the pad and everything returns instantly to where the knobs are set.

**TIP** *The drift INVERT produces is captured to the Sampler when you record. The random LFO state at the moment of capture is baked into the splice.*

## Knobs

Etches has 19 knobs. The top three Sampler section knobs are dual-function. Hold SHIFT and they take on a second behavior. The rest are direct controls.

### Direct knobs

CONTROL	FUNCTION	DESCRIPTION
ROOT	Tonic	Selects the root note (C through B). Quantized to 12 semitones with a status-LED flash on change.
SCALE	Scale Selection	Selects from 11 scales. Status LED color changes to indicate the selected scale.
INDEX	Octave / Degree	Transposes the pads across $\pm 3$ octaves of scale degrees. Center is no transposition.

CONTROL	FUNCTION	DESCRIPTION
SENS	Pad Sensitivity	Sets the threshold above which a pad press registers. Lower values are more sensitive.
EDGE	Waveshape	Morphs the oscillator's waveshape from sine through triangle to square.
CYCLE	Decay Time	Sets the STAC envelope decay. Longer values let the note ring; shorter values clip it tight.
FLUX	FM Depth	FM modulation index, 0 to 5. Combined with ORBIT, controls how much pitch deviation the modulator imposes. With drive engaged, the index can reach 10.
ORBIT	FM Rate	FM modulator frequency, 10Hz to 1kHz on an exponential curve. Slow rates produce evolving textures; high rates produce metallic, bell-like FM tones. ORBIT at zero kills FM regardless of FLUX.
TIME	Delay Time	Tape-style delay length, exponential. Short settings give slapback; long settings give long, drifting echoes.
REPEAT	Delay Feedback	Delay regeneration. Above ~0.8 the delay self-oscillates.
MIX (Echo)	Delay Mix	Wet/dry balance for the delay.
SUSTAIN	Reverb Time	Decay length of the stereo space.
FORM	Reverb Diffusion	From metallic and grainy at the bottom to thick and smeared at the top.
WALLS	Reverb Filter	A low-pass filter on the reverb tail. Lower settings darken; higher settings open the space up.
MIX (Space)	Reverb Mix	Wet/dry balance for the reverb.
LEVEL	Master Output	Master output level.

### Dual-Function knobs (with SHIFT held)

Hold the SHIFT button and three of the looper-related knobs take on their second function. Release SHIFT to return to the primary control.

CONTROL	FUNCTION	DESCRIPTION
START / SPEED	Loop Start / Pitch	Default: sets the splice's loop start point. With SHIFT held: sets playback speed and pitch (center is unity, full travel up/down an octave in semitones+).
END / TRAVEL	Loop End / Modulation	Default: sets the splice's loop end point. With SHIFT held: controls how far the internal LFO walks the start and end points away from where you set them. For

CONTROL	FUNCTION	DESCRIPTION
		TRAVEL: Noon is no modulation. Left of noon is a sample and hold LFO while right of noon is a smooth random LFO. Turn it more left or right for more modulation.
BLEND / SCROLL	Input Mix / Scroll	Default: blends between input and playback (0 = input only, full = loop only, center = both at unity). With SHIFT held: scrolls the splice selector through the buffer without changing its start and end points.

*Like our other devices, Etches uses hard overtake when you press SHIFT. The slider keeps its current setting until you move it. Move it, and the new knob function takes over.*

**TIP** *FLUX and ORBIT relate to each other. ORBIT at zero kills FM regardless of how high FLUX is set, and FLUX at zero produces no modulation no matter what ORBIT is doing. To hear FM, both need to be above zero.*

## Splice Sampler

The Sampler holds 160 seconds of combined mono audio across all splices. Each pass of the REC button creates a new splice. When you hit record, everything you hear will be recorded to a new splice (see tip below).

Splices play back one at a time. Press REC again to add another splice. Navigate through splices while turning the SCROLL knob. The white flash on the record LED marks the moment a splice changes.

### Recording

1. Press REC to start recording. The record LED turns red.
2. Press REC again to stop. The recording becomes the active splice and begins looping.
3. Press REC a third time to start a new splice. Splices are not fully parameter independent as they share loop points, speed, and travel.
4. Press OVERDUB to layer onto the active splice. Whatever is at the input (note pads, articulation, drive, FM) is added to what's already there.

### Clearing

- **SHIFT + REC** Clears all splices and resets the Sampler. Sampler controls stay put.
- **SHIFT + LONG REC PRESS** Clears all splices, resets the Sampler and all Sampler controls to default.

## Loop Window Behavior

Each splice has independent loop START and END points. Move them and the playback window shrinks or shifts in real time.

The TRAVEL control (SHIFT-END) sets how far the internal LFO modulates those points. At noon, the loop points do not modulate; turn it left for increased sample and hold modulation. Turn it right for increased smooth random LFO modulation.

SCROLL (SHIFT-BLEND) scrolls through all recorded splices. Use it to build up sections and parts and easily move between them. The combined maximum recording time for all splices is 160 seconds.

**TIP** To record a “clean” splice without the previous splice’s content on it, simply move the BLEND control fully to the left. This way, you only record the input signal. This is useful if you wish to build up new splices alongside existing ones on the same buffer.

## Routing Modes

Etches has two routing modes. Double-click SHIFT (when not recording) to toggle between them. The record LED color tells you which mode is active.

### Mode 1 — Looper → Delay → Reverb (Green LED)

This is the default. Note pads are recorded clean into the loop. Delay and reverb are applied after the looper. Effect changes don’t bake into your recordings so you can adjust delay or reverb freely without altering what’s been captured.

### Mode 2 — Delay → Looper → Reverb (Yellow LED)

The delay is placed before the looper. Whatever you record now includes the delay at the moment of capture. Sweep the TIME slider during recording and that motion gets baked in. Reverb remains chained to the end of the signal.

Use Mode 1 for clean overdubs you’ll shape after. Use Mode 2 when you want delay as part of the recorded material.

## LED Status

### Record LED (Sampler state)

LED COLOR	STATUS
Red (solid)	Recording in progress
White (flash)	Splice changed (120ms)
Off (brief flash)	Loop hit indicator
Green	Idle, Mode 1 (Looper → Delay → Reverb)
Yellow	Idle, Mode 2 (Delay → Looper → Reverb)

## Status LED (scale and note feedback)

LED COLOR	STATUS
Blue (flash)	Root note changed (ROOT slider moved)
Amber (flash)	Scale changed (SCALE slider moved)
Orange → Purple	While playing notes the color shifts toward purple as pressure increases
Orange (idle)	Default state

## Buttons

**REC** — Single click: toggle recording on/off. Each time you press record, you record to a new splice. Anything you hear gets recorded to the new splice.

**OVERDUB** — Single click: toggle overdub on the active splice.

**SHIFT** — Hold to access secondary slider functions. Double-click (when not recording) to toggle routing modes.

**SHIFT + REC** — Clears all splices and buffer content.

**SHIFT + LONG REC PRESS** — Clears all splices, resets the Sampler and all Sampler controls to default.

## Power & I/O

Etches runs on a standard Boss-style 9V DC center-negative power supply.

- Stereo output with an 1/8" mini (3.5 mm) connector.

To enter the bootloader for firmware updates, do not apply 9V power and hold SHIFT while plugging in the USB cable.

## Techniques

### Splice Stacking

Build a layered piece without overdubbing. Splices stay independent, but each one can use a different fragment of the same buffer.

1. Record a long phrase (REC, play, REC). This becomes Splice 1.
2. Press REC again. Record a shorter phrase on top. Splice 2.
3. Now move SCROLL on each splice independently. Each splice plays a different region of the buffer.

### Pizzicato Cloud

SWELLED note pads, percussive STAC, and slow random drift on everything else.

1. Hold a note pad with light SWELL pressure.
2. Tap STAC rhythmically with the same hand. CYCLE controls how each pluck rings out.
3. Press INVERT lightly. Reverb time, diffusion, and filter all begin drifting around your settings.
4. Record into a splice. The drift is captured.

### FM Acoustics

ORBIT plus FLUX produce complex FM textures that can feel acoustic — especially with plucked articulations.

1. Set CYCLE to 10:00, ORBIT and FLUX to 1:00.
2. Turn down ECHO and SPACE MIXES.
3. Play higher pitched notes while holding SWELL and STAC.
4. You should hear a repeating acoustic-like pluck.
5. Modify EDGE to get timbre variations. Apply pressure to DRIVE to change FM ratios.

### Bake the Sweep

Use Mode 2 to record a delay sweep into a splice.

1. Switch to Mode 2 (double-click SHIFT, Yellow LED).
2. Press REC. Play a phrase while sweeping the TIME slider.
3. Stop recording. The pitched delay artifacts are now part of the splice and they'll loop with it.
4. Switch back to Mode 1 to layer clean material on top.

### Window Walk

Use TRAVEL and SCROLL together to make a single recording feel like an instrument that's playing itself.

1. Record 30+ seconds of varied material into Splice 1.
2. Set START and END low so there's a short loop window near the start of the buffer.
3. Hold SHIFT and bring TRAVEL to about 2:00 so it modulates the loop window smoothly inside that small region.

4. Slowly bring START up and the whole window climbs through the buffer while still modulating inside itself.

## Inverse Performance

INVERT is most musical when used as a performed gesture, not a setting.

1. Set knobs to a sound you like.
2. Play. Press INVERT lightly with one finger to introduce drift, harder for chaos.
3. Use INVERT pressure as a fourth articulation alongside SWELL, STAC, and DRIVE.
4. Record a pass with INVERT moving. The random modulations get printed to the performance.

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