Rave Generation

LATELY

FM Bass Operator

User Manual

Overview

Lately is an FM bass synthesizer plugin based on the Yamaha TX81Z. It runs the YM2414 (OPZ) chip emulation internally and loads the complete Bank C bass section from the original hardware - the eight presets C-9 through C-16, including the legendary Lately Bass (C-15). Designed for electronic music producers and sound designers who want the authentic FM character of classic DX/TX-series basses without booting a hardware unit.
Features include eight ROM presets sourced from the TX81Z Bank C bass bank, eight FM operator algorithms (overrideable per patch), per-preset key-velocity scaling with a global Velocity depth control, four performance macros (Growl, Bright, Attack, Release) that offset the selected preset's internal values, a built-in stereo chorus modeled after the Boss RCE-10, one-knob tanh drive with even-harmonic warmth, clean 1st-order shelf EQ (Bass and Treble), portamento glide in mono mode, configurable pitch bend range, and a mono/poly toggle.

Signal Flow

MIDI Note → OPZ FM Engine (4-op, 8 algorithms) → Chorus (RCE-10) → Drive (tanh) → Tone (Bass shelf + Treble shelf) → Output Volume → Master

The signal starts with the YM2414 FM engine, which generates the bass tone from the selected preset's operator structure, frequency ratios, envelopes, and waveforms. Key velocity is applied per-operator through the authentic TX81Z KVS curve, scaled globally by the Velocity knob. The Growl, Bright, Attack and Release macros are applied as offsets to the preset's operator feedback and modulator levels. The FM output then passes through the RCE-10 chorus (bypassable), followed by the Drive stage for asymmetric tanh saturation. Tone shaping comes next via the Bass and Treble shelves. Finally the Volume knob sets the output level into the master bus. In mono mode the oscillator tracks a single voice with optional portamento glide.

CORE

The Core section contains the preset bank, FM algorithm selector, and four performance macros that offset the selected preset's internal values.
PRESET: Selects one of the eight TX81Z Bank C bass presets: Elec Bass 1 (C-9), Sqncr Bass (C-10), Syn Funk Bas (C-11), Elec Bass 2 (C-12), Analog Bas (C-13), Jaco Bass (C-14), Lately Bass (C-15, default), Monoph Bass (C-16). Each preset loads all four operators' parameters - waveforms, frequency ratios, total levels, envelope rates, and key-velocity sensitivity values - exactly as stored in the original TX81Z ROM.
ALGORITHM: Selects the FM operator routing (1–8). Overrides the preset's default algorithm for experimentation. Different algorithms change which operators modulate which carriers, dramatically altering the tonal character of the patch.
GROWL: Offsets OP4 self-feedback amount from the preset's default value. Higher settings add harmonic richness and bite; 0 removes feedback for a cleaner tone. 100% matches the original TX81Z factory feedback amount.
BRIGHT: Shifts modulator total levels. Positive values increase modulator drive for more harmonics and a brighter tone; negative values reduce modulation for a softer, darker patch. Offsets are applied on top of each operator's preset-defined TL.
ATTACK: Offsets the attack rate of all operators. Negative values slow the attack for a smoother note onset; positive values sharpen it for a more percussive start.
RELEASE: Offsets the release rate of all operators. Negative values extend the tail for a longer note-off ring; positive values shorten it for tighter notes.

CHORUS

The Chorus section adds a stereo chorus modeled after the Boss RCE-10 Digital Chorus Ensemble, the signature chorus used on countless 80s FM bass records.
ON: Enables or disables the chorus stage. When off, the dry FM signal passes straight through to the drive stage.
RATE: LFO rate of the chorus modulation.
DEPTH: Modulation depth. Higher values produce a wider, more pronounced chorus.
PRE-DLY: Pre-delay before the chorused signal (0–35 ms). The RCE-10's signature feature - adds separation between the dry and wet signal and thickens the stereo image.
MIX: Dry/wet blend for the chorus.
WIDTH: Stereo spread of the chorus output.

DRIVE

The Drive section provides a single-knob tanh saturation stage that sits between the chorus and the tone filters. Kept in its own panel to make the signal path clear.
DRIVE: Gentle asymmetric tanh saturation (0–100%). Adds even-harmonic warmth and low-end weight without aggressive distortion. Works well paired with the Bass shelf for a fuller bottom end.

TONE

The Tone section provides clean 1st-order shelving EQ plus glide and pitch bend range controls.
BASS: Low shelf at 120 Hz (±12 dB). Controls the fundamental weight of the bass patch. Uses a clean 1st-order shelf design (JP-8000 style) with no resonant peaking.
TREBLE: High shelf at 3500 Hz (±12 dB). Controls the FM harmonic bite and presence. Same clean 1st-order shelf character as the Bass control.
GLIDE: Portamento time in milliseconds. Applies a pitch slide between consecutive notes. Only active in mono mode - in poly mode each new note gets a fresh pitch.
PB RNG: Pitch bend wheel range in semitones (0–12). Sets how far the pitch bend wheel moves the oscillator up or down at full deflection.

OUTPUT

The Output section contains the global velocity amount, output volume, and voice mode toggle.
VELOCITY: Scales the depth of the key-velocity (KVS) response curve (0–100%). At 100% each preset uses its original TX81Z per-operator KVS values -- different operators respond to velocity by different amounts (for example Lately Bass drives OP4 hard with velocity while OP1 stays steady). At 0% velocity has no effect on the tone. Intermediate values scale the existing curve uniformly without distorting the per-preset character.
VOLUME: Output level (−40 to +6 dB). Final gain stage before the host.
MONO: Toggles between polyphonic and monophonic voice modes. In mono, only one note sounds at a time and Glide is active. In poly, multiple notes can ring simultaneously and Glide is disabled.

Quick Start

Classic Lately Bass: Leave PRESET on Lately Bass (C-15), ALGORITHM on the preset default (6). Set GROWL to 100 and BRIGHT to 0 for the factory tone. Enable CHORUS with DEPTH around 60% and PRE-DLY around 25 ms for the authentic wide stereo image.
Tight mono bassline: Engage MONO. Set GLIDE to 80–120 ms for smooth pitch slides between notes. Keep DRIVE at 0 and CHORUS off for a focused, direct tone. Works best with Sqncr Bass (C-10) or Monoph Bass (C-16) for sequencer-style patterns.
Dirty modern FM bass: Select Elec Bass 2 (C-12). Push GROWL to 100 and BRIGHT to +30 for more harmonics. Set DRIVE to 40–60% for asymmetric saturation warmth. Add a little TREBLE boost (+3 to +6 dB) for presence and cut the BASS by a couple dB to keep the low end tight.
Soft velocity-responsive FM pad: Select Analog Bas (C-13). Turn VELOCITY down to 40–50% so soft playing stays consistently warm instead of dropping to near-silence on light touches. Enable poly mode. Set ATTACK to around −20 for a smoother onset. Keep DRIVE off.
Jaco-style fretless: Select Jaco Bass (C-14). Enable MONO and set GLIDE to 150–200 ms for that sliding fretless feel. Set PB RNG to 12 for full octave bends. Keep the chorus on with a slower RATE for gentle movement.

Technical Notes

The FM engine is powered by YM2414 (OPZ) core, the same chip variant used in the original TX81Z. The eight included presets are direct ROM dumps of the factory Bank C bass section, extracted from TX81Z firmware and stored internally as VCED structures so all operator parameters load exactly as they do on hardware.
Key velocity follows the authentic TX81Z velocity curve. Each preset has independent per-operator values. The Velocity knob applies a single global scalar to the output of the curve lookup, uniformly reducing depth across all operators without altering their relative ratios. This preserves each preset's velocity character (the "OP4 bites, OP1 holds steady" behavior of Lately Bass) while still giving you a single control to tame or exaggerate velocity response overall.
The Growl, Bright, Attack and Release macros are applied as offsets to the preset's internal operator values rather than absolute settings. This means the macros behave musically across all eight presets - Bright +30 brightens each preset by the same amount relative to its own starting point, rather than forcing every preset to the same brightness.
The chorus section is an emulation of the Boss RCE-10 / DC-3 Digital Chorus Ensemble, including its signature pre-delay parameter which is key to the wide, three-dimensional character heard on countless 80s productions. All chorus parameters update per-sample to avoid zipper noise during automation.
The drive stage uses asymmetric hyperbolic tangent saturation for gentle even-harmonic warmth. The Bass and Treble shelves giving a natural tonal shift that complements the FM harmonic structure. Portamento glide is intentionally mono-only.

Support

For technical support, updates, and additional information: ravegeneration.io