Charisma by Gapjumper

Flagship Multi-Engine Synthesizer & VST3 Workstation — Musician's User Guide

Gapjumper Charisma — Musician's User Guide

Welcome to **Gapjumper Charisma**, a flagship multi-engine software synthesizer and percussion workstation available as a **VST3 / AU Plugin** and **Standalone Instrument**.

Charisma brings together **five synthesis engines** (**Virtual Analog**, **Spectral Wavetable**, **8-Operator FM**, **Granular Clouds**, and **10-Topology Acoustic Physical Modeling**), a **Dual-Filter Architecture**, an **11-Stage Multi-Bus Studio Effects Suite**, a **32-Step Phrase Arpeggiator & Motion Sequencer**, and an autonomous **12-Voice Drums Workstation** — complete with **1,109 factory presets** across **26 musical categories**.

This guide is written for musicians, producers, composers, and sound designers who want to get the most out of Charisma quickly and intuitively — without equations or engineering jargon.

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1. Quick Start (Up and Running in 2 Minutes)

Installation Locations

- **VST3 Plugin**:
  - **Windows**: `C:\Program Files\Common Files\VST3\Charisma.vst3`
  - **macOS**: `/Library/Audio/Plug-Ins/VST3/Charisma.vst3`
- **Standalone Application**:
  - Run `Charisma.exe` directly for instant live playing without opening a DAW.

First-Time Standalone Audio & MIDI Setup

1. Launch `Charisma.exe` and click **Options -> Audio/MIDI Settings** in the top bar.

2. Choose **ASIO** (recommended on Windows for low-latency playing) or **Windows Audio (Exclusive Mode)**.
3. Set your **Audio Buffer Size** to **64–256 samples** and check the boxes next to your MIDI keyboard or controller.

First Sound Check

1. Play a chord on your MIDI keyboard — or click directly on the **Expressive 2D Keyboard** along the bottom of the window.
2. Turn the four large **Performance Super-Knobs (** `Macro 1–4` **)** on **Tab 1 (PERFORMANCE)** to hear the sound morph in real time.
3. Click the **Preset Bar** in the top header to browse all **1,109 factory presets** across 26 categories.

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2. The Global Header Bar, Preset Browser & Parameter Locks



Instant Preset Auditioning & Search

Clicking the preset name in the top header opens the **Full-Screen Preset Browser**:

- **Single-Click & Arrow-Key Live Audition**: Click any preset row — or press your keyboard's `▲` and `▼` arrow keys — to load and audition patches immediately while keeping the browser open so you can test each sound on your MIDI keyboard. Press `Enter` or double-click a preset to close the browser and keep that patch, or press `Esc` to close.
- **Engine & Sequence Badges**: Every preset row displays color-coded badges showing which engines power the patch (`VA` Virtual Analog, `WT` Wavetable, `FM` 8-Op FM, `GRN` Granular, `PM` Physical Modeling, and `SEQ` Arpeggiator/Drum Sequence) alongside an instrument category tag (`Piano` , `Strings` , `Brass` , `Woodwind` , `Drum Groove` , `Bass` , `Lead` , `Pad` , etc.).

- **Multi-Word Search & Category Filtering**: Type any combination of words in the search box (for example, `bowed cello`, `country drum`, `32-step`, `baroque`, or `brass`) or click any of the **26 Categories** on the left to filter the list instantly.
- **Favorites (`★`)**: Click the star icon on any row to bookmark your favorite patches, then click the `[★ Favs]` filter button to view only your starred collection.

The Five Musical Context Locks (`[🔒]`)

When browsing presets, you sometimes want to keep your current tempo, scale, arpeggio pattern, or drum kit while auditioning new synthesizer sounds. Charisma provides backlit **Padlock Buttons (`[🔒]`)**:

1. **Tempo Lock (`[🔒]` next to BPM)**: Keeps your current **BPM** tempo when switching presets.
2. **Scale Lock (`[🔒]` on Tab 1)**: Preserves your active microtonal scale or custom `.scl` tuning across patch changes.
3. **Note Retrigger Lock (`[🔒]` on Tab 1)**: Locks your preferred same-note retrigger behavior.
4. **Arpeggiator Lock (`[🔒]` on Tab 7)**: Locks the current arpeggiator pattern and settings while you flip through different synth patches.
5. **Drum Kit Lock (`[🔒]` on Tab 8)**: Locks your chosen drum kit sounds while you audition different drum grooves or synth presets.

> **Hardware Controller Preferences Never Get Overwritten**: Your touch-keyboard tracking (`Key X/Y`), mouse expression modes, hold/latch toggles, and expression pedal settings are saved globally for your studio rig and are never overwritten when you load presets.

Retroactive MIDI Capture (`[CAPTURE MIDI]`)

Played a great riff while jamming, even when you weren't recording?

- Charisma continuously records your last **64 bars** of live playing in the background.
- Whenever the `[CAPTURE MIDI]` button in the top header glows **cyan**, click it to export your last performance as a standard `.mid` file — or drag the `[≡ DRAG]` pill directly into your DAW timeline!

Real-Time Signal Monitor (`[ SCOPE | SPECTRUM | SPECTROGRAM ]`)

The top-right display in the header bar lets you toggle between three real-time visualizers:

- `SCOPE`: Phase-locked stereo waveform oscilloscope.
- `SPECTRUM`: High-resolution frequency analyzer showing bass weight, midrange formants, and high-frequency air.
- `SPECTROGRAM`: Scrolling waterfall heat-map showing how overtones and rhythms evolve over time.

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3. Tab 1: Performance, Super-Knobs & Expressive Touch Decks



Tab 1 (PERFORMANCE) is your live playing command center:

1. The Four Performance Super-Knobs (`Macro 1–4`)

Every factory preset pre-wires **Macro 1 (`TIMBRE`)**, **Macro 2 (`SPACE / FX`)**, **Macro 3 (`MOTION`)**, and **Macro 4 (`TONE / BITE`)** to multiple internal parameters at once. Turning a single Super-Knob can simultaneously open filters, deepen FM modulation, swell orchestral bow pressure, and expand reverb space.

2. Voice Mode, Poly Smart Glide & Tactile Ribbon

- **Voice Modes**: Choose between **Poly 32**, **Poly 16**, **Poly 8**, **Mono Legato** (smooth single-voice slides when notes overlap), **Mono Retrigger**, and **Unison 4x Detuned**.
- **Poly Smart Glide**: Even in full polyphonic mode, Charisma can smoothly glide whole chords from one voicing to the next by automatically pairing each new chord note with the nearest previous pitch.
- **Tactile Ribbon Controller & Return Mode**: Swipe across the bipolar **Vintage Poly Expression Ribbon** above the keyboard to sweep pitch or any Modulation Matrix target, and choose between **Spring Return** (glides smoothly back to center), **Touch Latch** (holds your last touched position), or **Immediate Snap** (snaps instantly to center on release).

3. Global Microtonal & Historical Tuning Engine

Select from **12 built-in scales** (*12-TET Standard*, *Just Intonation 5-Limit*, *Pythagorean*, *Quarter-Tone Arabic 24-TET*, *Slendro*, *Pelog*, *Bohlen-Pierce*, *Wendy Carlos Alpha*, *19-TET*, *31-TET*, *Werckmeister III*, *Vallotti*) or click `LOAD .SCL` / `LOAD .KBM` to load any custom Scala microtonal tuning file.

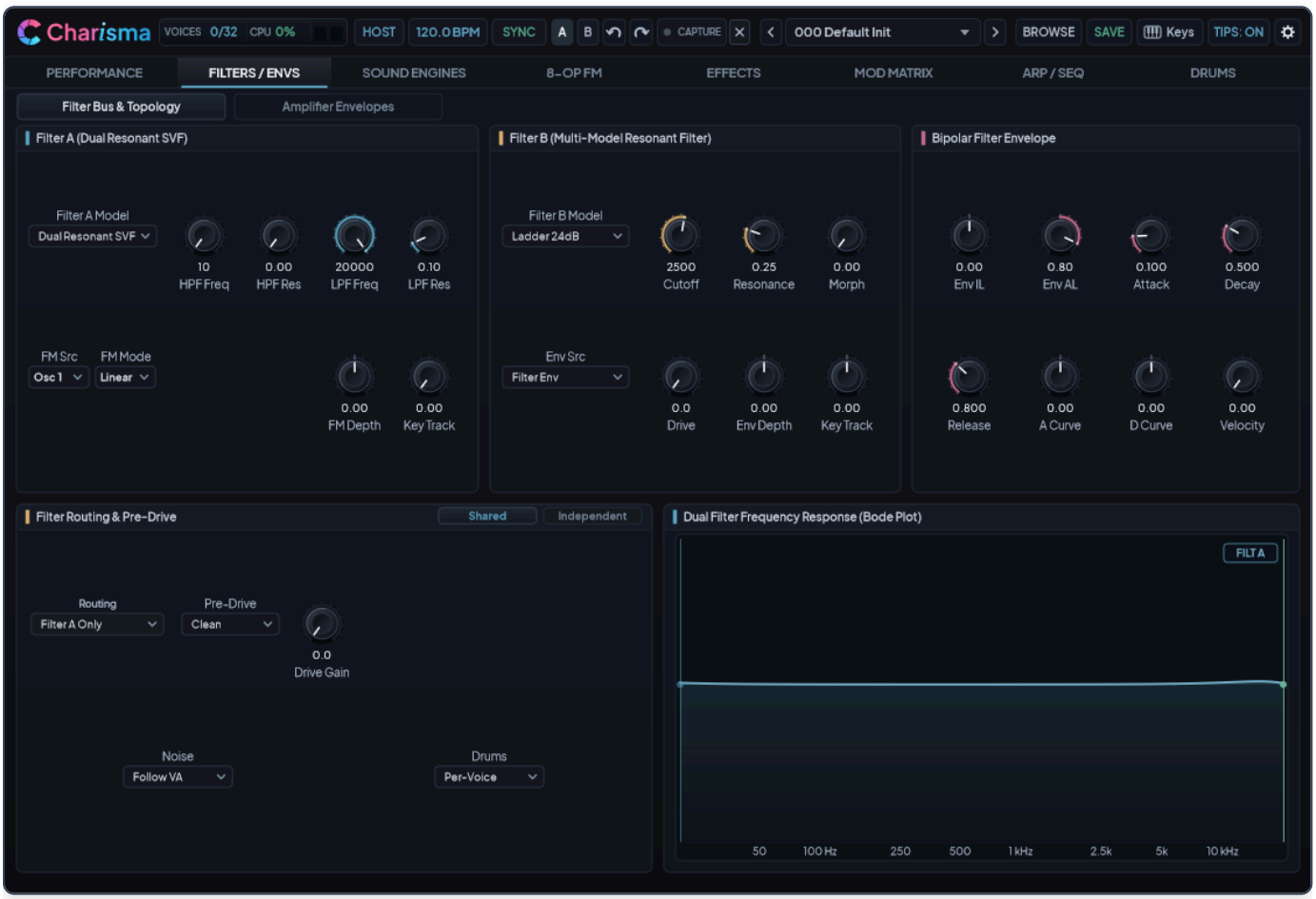
4. The Four Bottom Performance Decks

Switch between four interactive touch surfaces along the bottom of the interface at any time:

1. `[KEYBOARD]`: 2D expressive keyboard where sliding horizontally (`X`) bends pitch or vibrato and sliding vertically (`Y`) swells filter brightness or breath pressure.
2. `[CHORD PADS]`: 8 one-finger harmonic chord pads with selectable musical styles (*Cinematic*, *Jazz 9ths*, *Neo-Soul*, *Synthwave*, *Dark Orchestral*) and voicings.
3. `[STRUMMER]`: Interactive 6-string acoustic/electric guitar strummer — hold a chord on the left pads and swipe across the 6 strings on the right!
4. `[DRUM PADS]`: 2×6 velocity-sensitive finger-drumming pads with instant `[NORMAL]`, `[FLAM]`, `[ROLL]`, and `[RIM]` articulation buttons.

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4. Tab 2: Dual Filters, Envelopes & Vintage Analog Drift



Dual Filter Bus (`Filter A` & `Filter B`)

Charisma pairs a dedicated pre-filter **High-Pass Filter (HPF)** with two multi-mode resonant filters:

- **6 Filter Routing Topologies**:
  - `Serial (A → B)`: Classic cascading filter path (great for vocal brass sweeps and deep sub shaping).
  - `Serial (B → A)`: Routes Filter B's character models into Filter A's smooth ladder/SVF rolloff.
  - `Parallel (A + B)`: Blends both filters side-by-side for dual-formant textures.
  - `Split (Per-Engine)`: Routes each of the 5 sound engines to its own dedicated filter (`Filter A` , `Filter B` , or `Bypass`).

    - `Filter A Only` / `Filter B Only`: Single-filter focus.
- **7 Filter A Models**: *Vintage Dual SVF*, *24dB Transistor Ladder*, *Screaming Sallen-Key*, *OTA Cascade*, *12dB State Variable*, *Bandpass*, and *Notch*.
- **14 Filter B Models**: Includes *Vocal Formant (A-E-I-O-U)*, *Tuned Comb (+)*, *Tuned Comb (-)*, *Phaser Notch*, * Diode Ladder*, *Dirty Steiner*, and *Morphing SVF* with a dedicated `MORPH` knob.

Three Expressive Envelopes

- **Bi-Polar Filter Envelope (`IL – AL – A – D – R`)**: Unlike a standard ADSR, you can set a negative or positive **Initial Level (`IL`)** and **Attack Level (`AL`)**, allowing filters to scoop upward into a note, swell like a brass horn, or dip back down on key release.
- **Dual Curved Amplitude Envelopes (`Amp Env 1` & `Amp Env 2`)**: Route different sound engines to different volume envelopes (for example, a sharp plucked attack on `Amp Env 1` for Physical Modeling, and a delayed, slow-swelling pad on `Amp Env 2` for Granular or Wavetable using `AMP 2 DELAY`).

Vintage Drift (`DRIFT`)

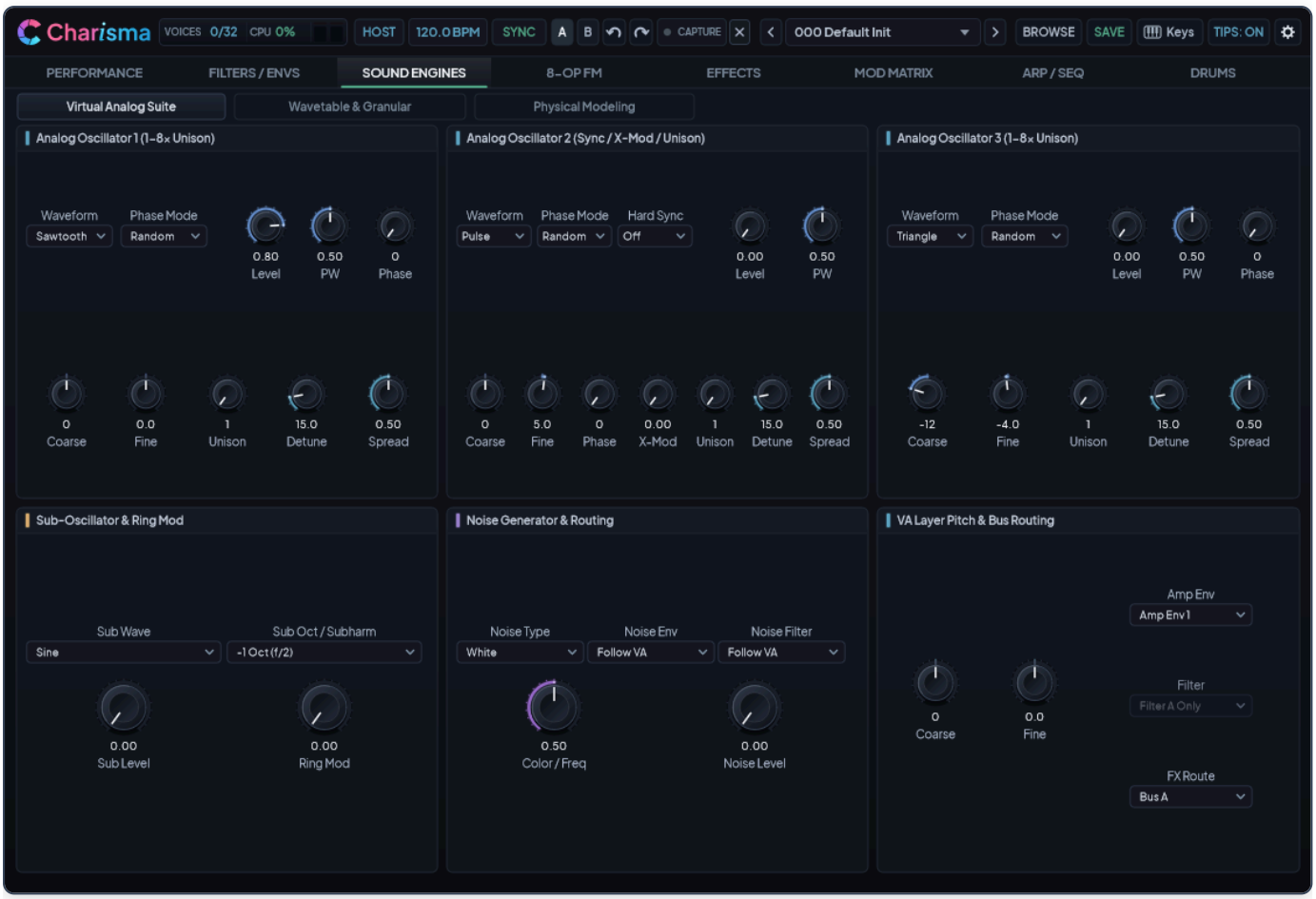
Simulates the natural component variations across 32 hardware analog voice cards — adding subtle organic warmth to pitch, filter cutoff, and envelope timing on vintage synth brass and strings, while staying at `0%` for clean acoustic pianos, mallets, and percussion.

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5. Tab 3: The Five Sound Engines

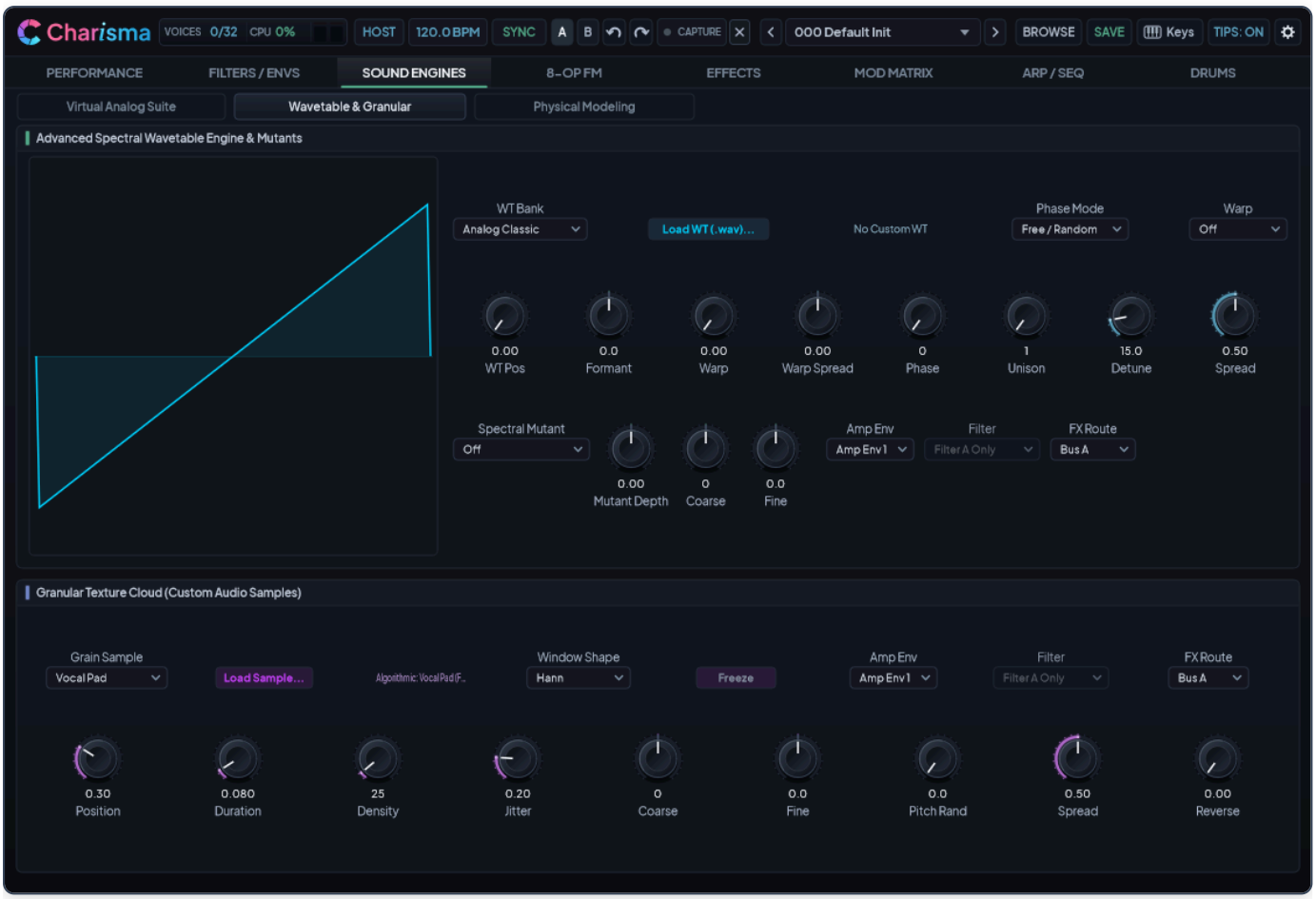
Tab 3 (SOUND ENGINES) is organized into three clean subtabs so you can layer up to five synthesis engines at once:

Subtab 1: Virtual Analog (`[VIRTUAL ANALOG]`)



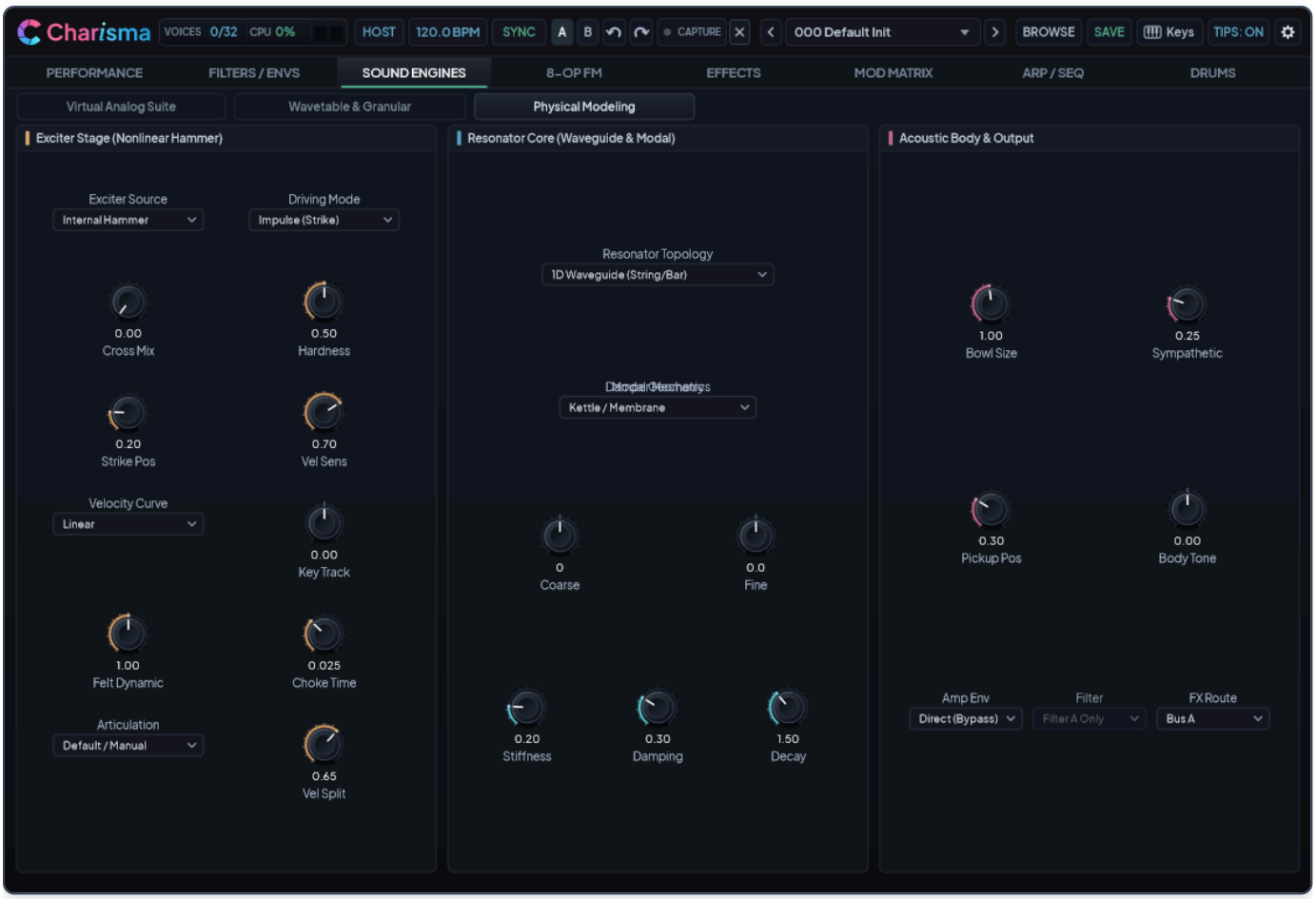
- **3 Band-Limited Oscillators (`Osc 1–3`)**: *Saw*, *Pulse (with PWM)*, *Triangle*, and *Sine* with up to **8× Unison** per oscillator, **Hard Sync** (`Osc 1 → Osc 2`), **Exponential Cross-Mod (`X-Mod`)**, and **Ring Modulation**.
- **Fractional Sub-Harmonic Generator**: Goes far beyond a standard sub-oscillator with 7 musical divisions: `-1 Oct` , `-2 Oct` , `-1.5 Oct (Sub-5th)` , `-2.2 Oct (Sub-3rd)` , `-2.6 Oct` , `-2.8 Oct` , and `-3 Oct` .
- **7-Mode Noise Generator**: *White*, *Pink*, *Brown*, *Blue*, *White Bandpass*, *Pink Bandpass*, and *Clocked Sample & Hold* with its own independent envelope and filter routing.

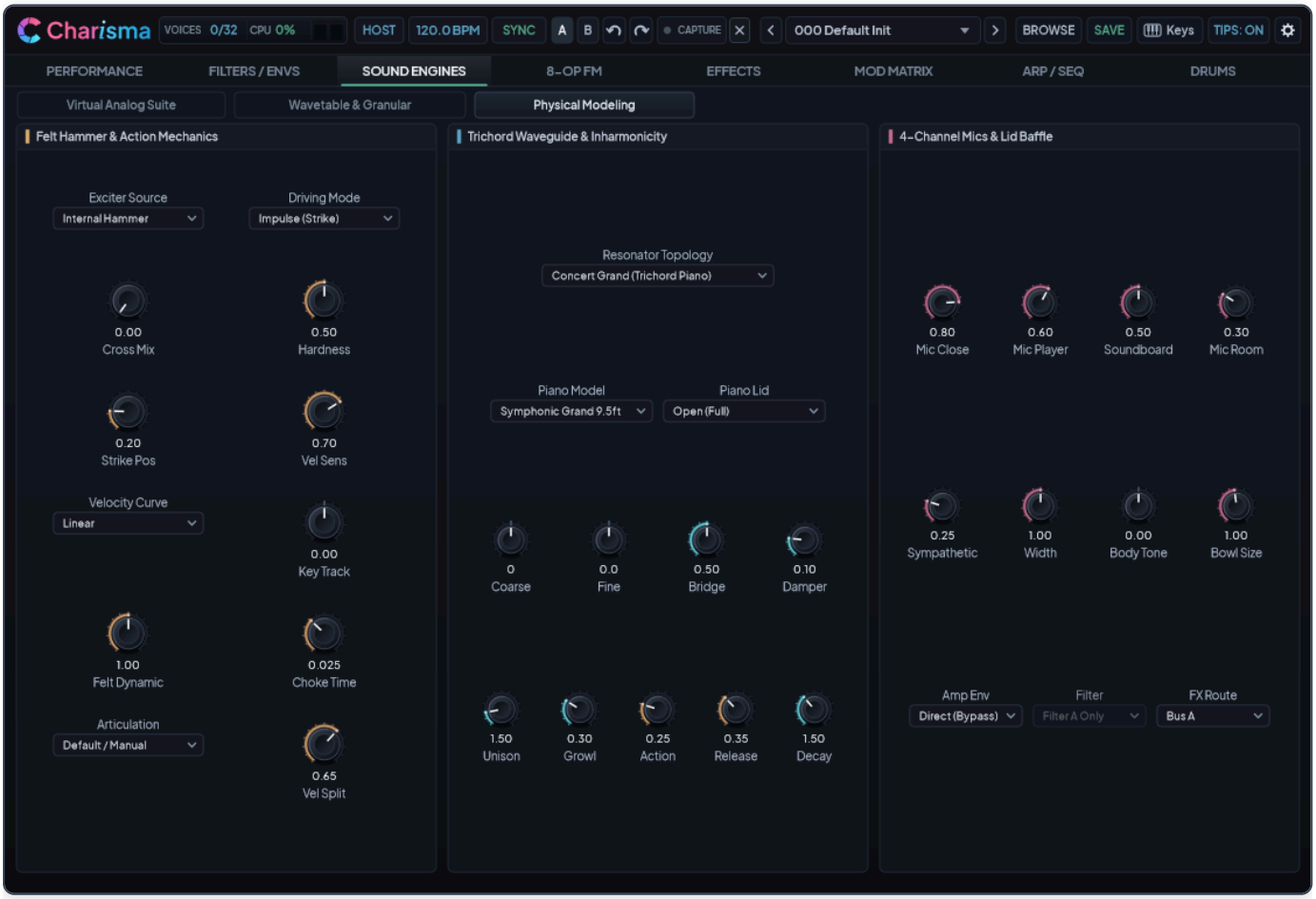
Subtab 2: Wavetable & Granular (`[WAVETABLE & GRANULAR]`)



- **Spectral Wavetable Engine**:
  - **7 Factory Banks + Custom `.wav` Import**: *Analog Classic*, *Spectral Morph*, *Vocal Formant*, *Metallic Bell*, *80s Digital Organ*, *Modern Supersaw*, *Digital Chime*, or drag-and-drop any `.wav` file onto the waveform display.
  - **6 Phase Warps & 4 Spectral Mutants**: Reshape any wavetable in real time with *Sync*, *Bend+/-*, *PWM*, *Wavefold*, *Bitcrush*, *Odd/Even Partials*, *Harmonic Stretch*, *Spectral Invert*, and *Harmonic Warmth*.
  - **Stereo Warp Spread (`WARP SPREAD`)**: Creates wide binaural stereo movement directly at the oscillator level while staying 100% mono-compatible.
- **Granular Texture Cloud Engine**:
  - **5 Built-In Sources + Custom Audio File Import**: Transform *Vocal Pad*, *Cello Bow*, *Granular Rain*, *Metal Bell*, *Vintage Swell*, or any loaded `.wav` / `.mp3` / `.flac` file into lush cloud of up to 32 simultaneous grains per voice.
  - `[FREEZE]` **Button**: Locks the scan position in time to turn any fleeting vocal or instrumental moment into an infinite shimmering pad.

Subtab 3: 10-Topology Physical Modeling (`[PHYSICAL MODELING]`)





Charisma's Physical Modeling engine synthesizes expressive acoustic and orchestral instruments in real time without static sample loops:

Topology #	Topology Name	Acoustic Instruments & Sonic Character
0	`1D Waveguide (String/Bar)`	Plucked guitars, harps, harpsichords, clavichords, kalimbas, and struck bars with natural two-stage string decay.
1	`2D Modal (Membrane/Plate)`	**6 Selectable Geometries**: `0: Kettle / Membrane Timpani`, `1: Gran Cassa Concert Bass Drum`, `2: Orchestral Snare / Field Drum`, `3: Glockenspiel`, `4: Tubular Bells`, and `5: Concert Xylophone` — plus circular gongs and singing bowls.
2	`Aero Flute (Open Bore / Jet)`	Solo Concert Flute, Orchestral Piccolo, Shakuhachi, and Pan Flute with breath chiff and natural octave overblowing.
3	`Acoustic Reed (Closed Bore)`	Solo Concert Clarinet, Bass Clarinet, Chalumeau, and Duduk with woody odd-harmonic warmth.
4	`Concert Grand (Trichord Piano)`	**6 Piano Scale Models**: *Symphonic Grand 9.5ft* (extended sub-bass range down to `C0`), *Concert Grand 9ft*, *Modern Grand 9ft*, *Studio Grand 7.5ft*, *Electro-Acoustic Stage (CP-style)*, and *Nordic Upright Grand* — complete with a **4-Channel Microphone Mixer** (`Close`, `Player`, `Room`, `Soundboard`), **4 Lid Positions**, and **Sympathetic String Resonance**.
5	`Conical Reed (Oboe / Sax / Bassoon)`	Solo Oboe, English Horn, Bassoon, Contrabassoon, Soprano/Alto/Tenor/Baritone Saxophone, and Highland Bagpipe Chanter.
6	`Brass Horn (Lip-Valve)`	Solo Trumpet, French Horn, Tenor/Bass Trombone, Tuba, and Euphonium with high-velocity brass sizzle (`Brass Bite`).
7	`Suspension Bridge (2D Mesh)`	Tensioned steel cables and structural girders that groan, sway, and physically snap under extreme velocity!
8	`Chaotic FDN (Resonator Matrix)`	Self-exciting resonant matrix for dark cinematic drones and unstable metallic textures.
9	`Bowed String (Violin / Cello / Bass)`	Solo Concert Violin, Solo Viola, Solo Cello, and Solo Bowed Double Bass with expressive bow response, natural rosin texture, and warm wooden body resonance.

The Universal Acoustic Resonator Bus (`EXCITER SOURCE`)

You can feed the output of **Virtual Analog**, **Wavetable**, **8-Op FM**, or **Granular** directly into the Physical Modeling resonator (`EXCITER SOURCE` + `CROSS-MIX`). Try bowing a Concert Cello body with a morphing Vocal Wavetable, or striking a Timpani membrane with an 8-Op FM bell!

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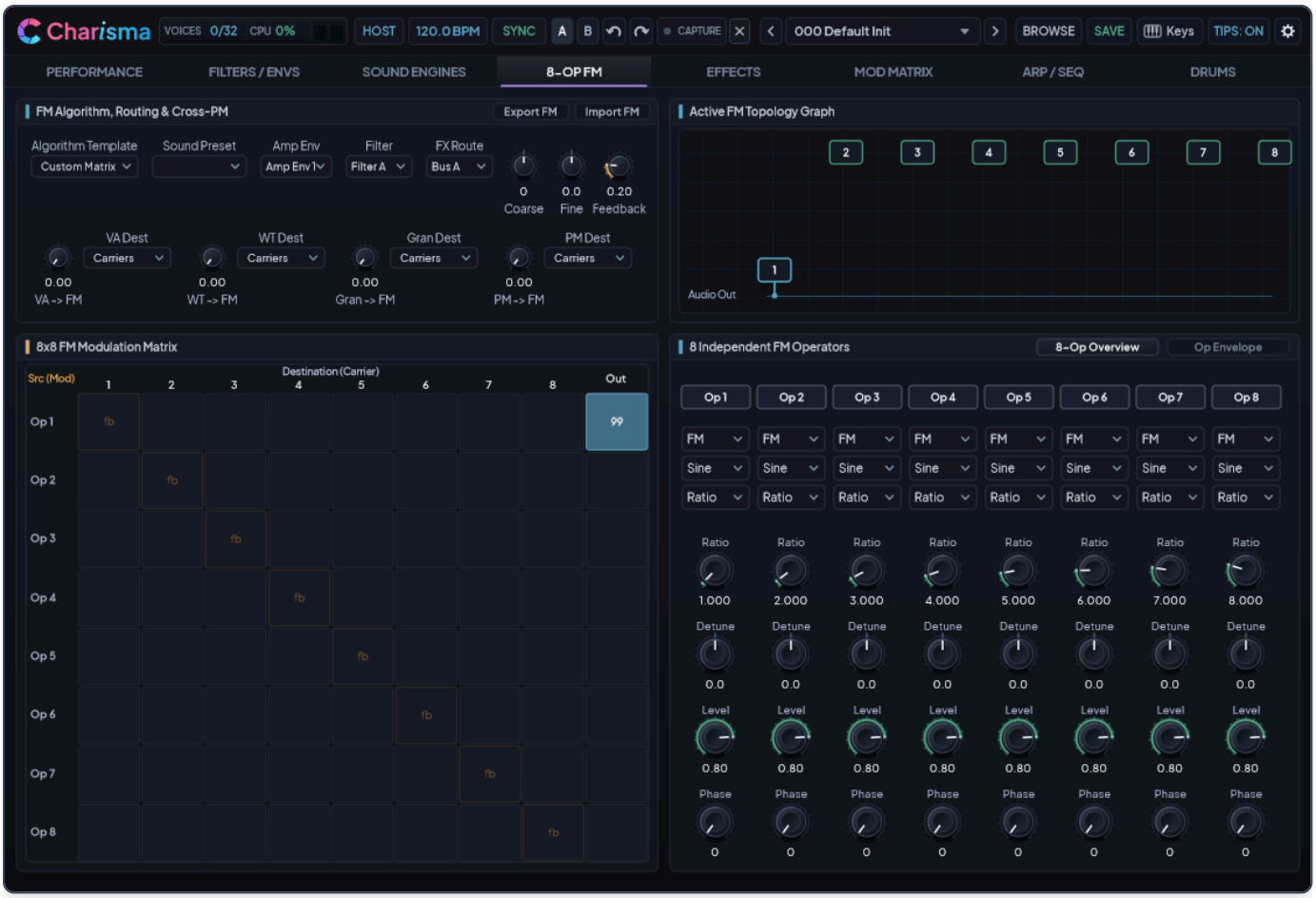
6. Playing Expressive Orchestral & Acoustic Articulations

On **Tab 3 -> Physical Modeling (Card 1)**, the `ARTICULATION MODE` dropdown lets you switch playing techniques without sacrificing any keyboard notes to silent keyswitches. Every single one of the 128 MIDI notes remains playable!

Articulation Mode	Orchestral Woodwinds & Brass (`Topologies 2, 3, 5, 6`)	Concert Percussion, Timpani, Snare & Mallets (`Topology 1`)	Bowed Strings & Waveguides (`Topologies 0, 9`)
`0: Default / Manual`	Natural sustained blowing with delayed vibrato bloom	Follows the `Damper` toggle (`On` or `Let Ring`)	Follows `Impulse` (pluck) vs `Continuous` (bow)
`1: Velocity Split`	Soft playing = smooth sustain; hard strike (`> Vel Split`) = accented transient	Soft = damped strike; hard = open ringing accent	Soft velocity (`≤ Split`) = sustained bow; hard strike (`> Split`) = detached pizzicato pluck!

Articulation Mode	Orchestral Woodwinds & Brass (`Topologies 2, 3, 5, 6`)	Concert Percussion, Timpani, Snare & Mallets (`Topology 1`)	Bowed Strings & Waveguides (`Topologies 0, 9`)
`2: Legato Bow / Pluck`	**Cross-Voice Melodic Legato Slur**: Overlapping notes glide smoothly without re-tonguing; detached notes re-articulate cleanly	Detached strike on staccato; smooth connected swell on legato	First note plucks crisply; overlapping legato notes transition automatically into sustained bowing!
`3: Damper Mute (Hit)`	**Snappy Staccato**: Crisp tongued staccato articulation that releases automatically	**Hand/Felt Damping**: Damps the drumhead or chime on key release (hold Sustain Pedal `CC64` to let ring)	Tight palm-muted / damped release
`4: Free Ring (Let Ring)`	**Sforzando / Accent (`ff`)**: Explosive brass/reed attack flare that settles into warm sustain	**Open Uninhibited Ring**: Lets tubular bells, glockenspiel, and timpani ring out naturally after key release	Open string ring after release
`5: Mid / Rim Strike`	**Dolce / Con Sordino**: Warm, veiled harmonic profile for intimate solo passages	Shifts strike toward the rim/edge for brighter overtones	Sul Ponticello / near-bridge bow harmonic focus
`6: Flam (Grace + Hit)`	**Double-Tongue / Grace Note**: Rapid grace-note ornament leading into the main pitch	**Acoustic Flam**: Quick grace stroke immediately before the primary mallet or stick hit	Grace-note double pluck / bow articulation
`7: Press Roll (Sustain)`	**Flutter-Tongue**: Expressive rolled-tongue wind and brass tremor while the key is held	**Continuous Mallet / Drum Roll**: Sustains a realistic alternating roll while the key or sustain pedal is held (use Mod Wheel `CC1` to swell from `pp` to `ff`!)	Continuous tremolo / sustained excitation
`8: Snares Off / Cuivré`	**Overblown / Cuivré**: Pushes wind/brass into saturated, biting fortissimo overtones	**Snares Off (Throw-Off)**: Disengages bottom snare wires for dry field-drum/tenor tom tone	High-tension harmonic drive

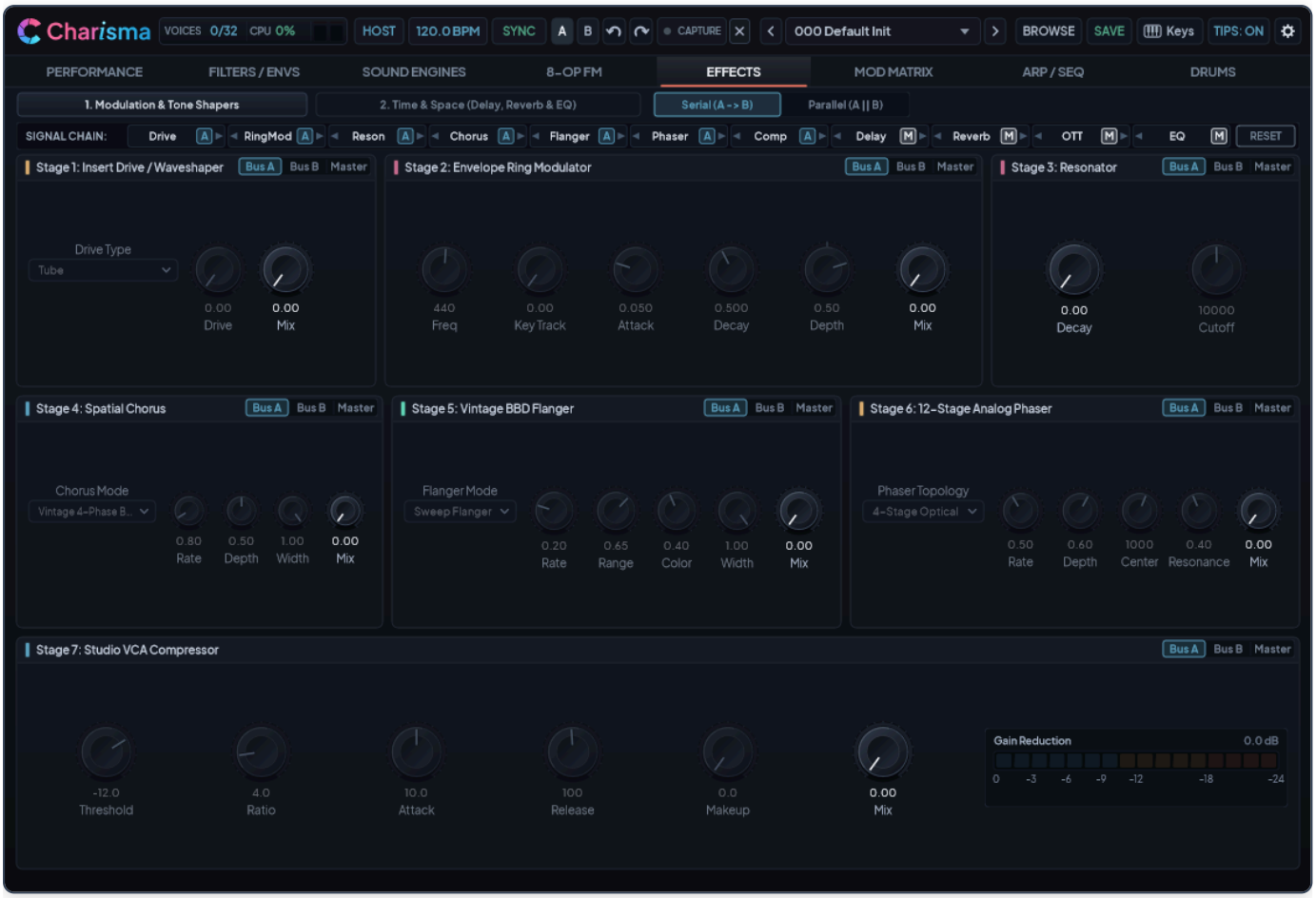
7. Tab 4: 8-Operator FM Synthesis Made Simple

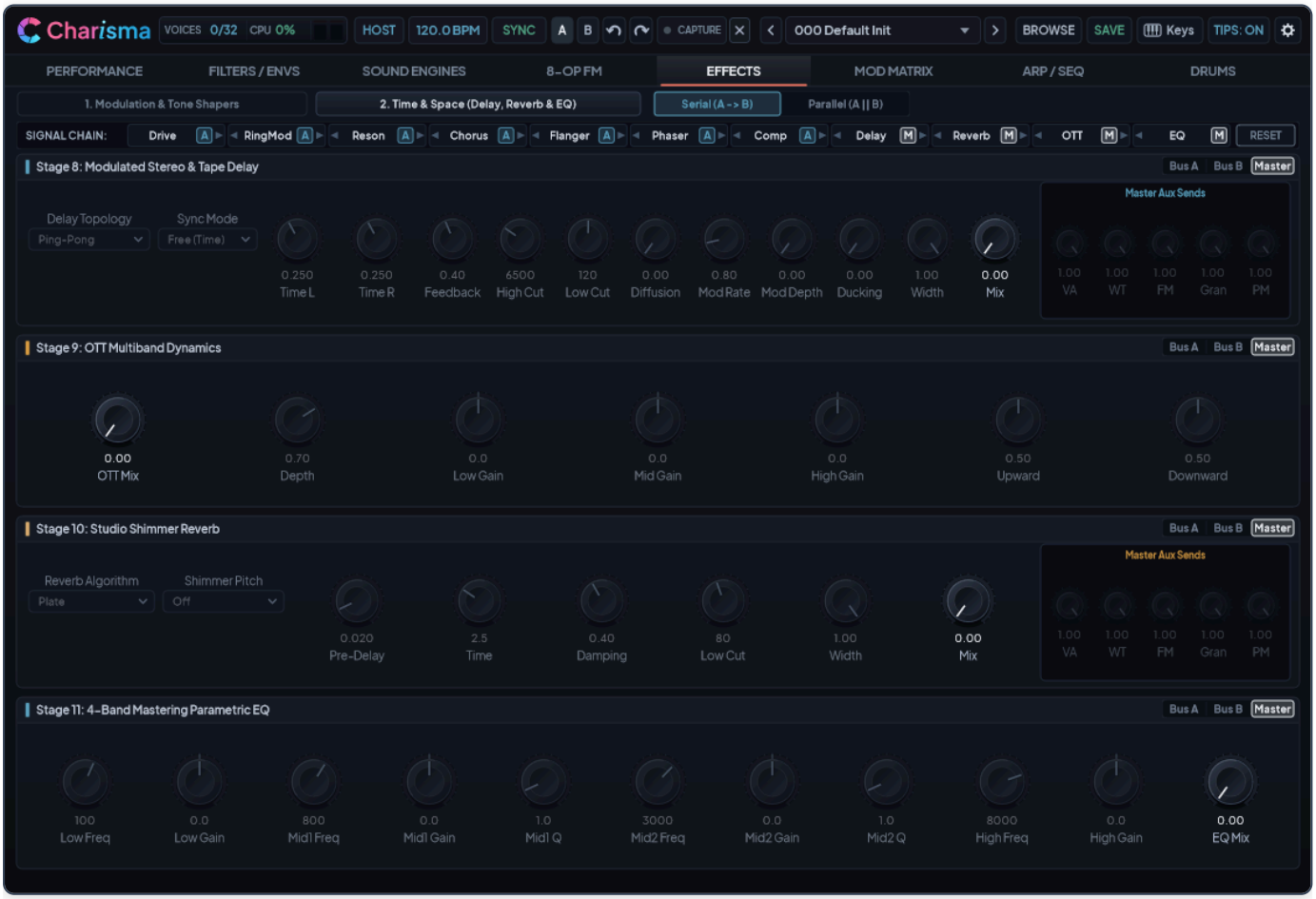


FM synthesis doesn't have to be complicated. Charisma gives you three effortless ways to work with its **8-Operator FM Engine**:

1. **14 Visual Algorithm Templates + One-Click Operator Sound Presets**:
   - Pick any of the **14 Algorithms** (`Classic 4x2 Pairs` , `Dual 3-Op Brass` , `6-Op Club Bass` , `Branching Bells` , `8-Op Additive Organ` , `Formant Vocal Stack` , `Chaotic Feedback Cluster` , etc.) and see the signal flow light up in the interactive **Algorithm Graph**.
   - Then pick a ready-made voice from the **Operator Sound Preset** dropdown to load proven harmonic ratios and envelopes in one click.
2. **The Four FM Macro Knobs**:
   - `TIMBRE` : Sweeps overall FM brightness from warm sine fundamentals to shimmering harmonics.
   - `METAL` : Dials in bell-like inharmonic overtones and feedback.
   - `BITE` : Sharpens the attack transient snap for punchy electric pianos, clavs, and slap basses.
   - `WARMTH` : Boosts deep fundamental and sub-octave body weight.
3. **Multi-Mode Operators (`Sine` , `Wavefolder` , `Resonant Filter` , `Ring Mod`)**:
   - Each of the 8 operators can act not only as an oscillator (`Sine` , `Saw` , `Square` , `Triangle`), but also as an inline **West Coast Wavefolder**, a **Resonant Lowpass Filter**, or a **Ring Modulator** right inside the FM matrix!

8. Tab 5: 11-Stage Multi-Bus Studio Effects





Charisma includes a mastering-grade **11-Stage Studio Effects Rack** split across two clean subtabs:

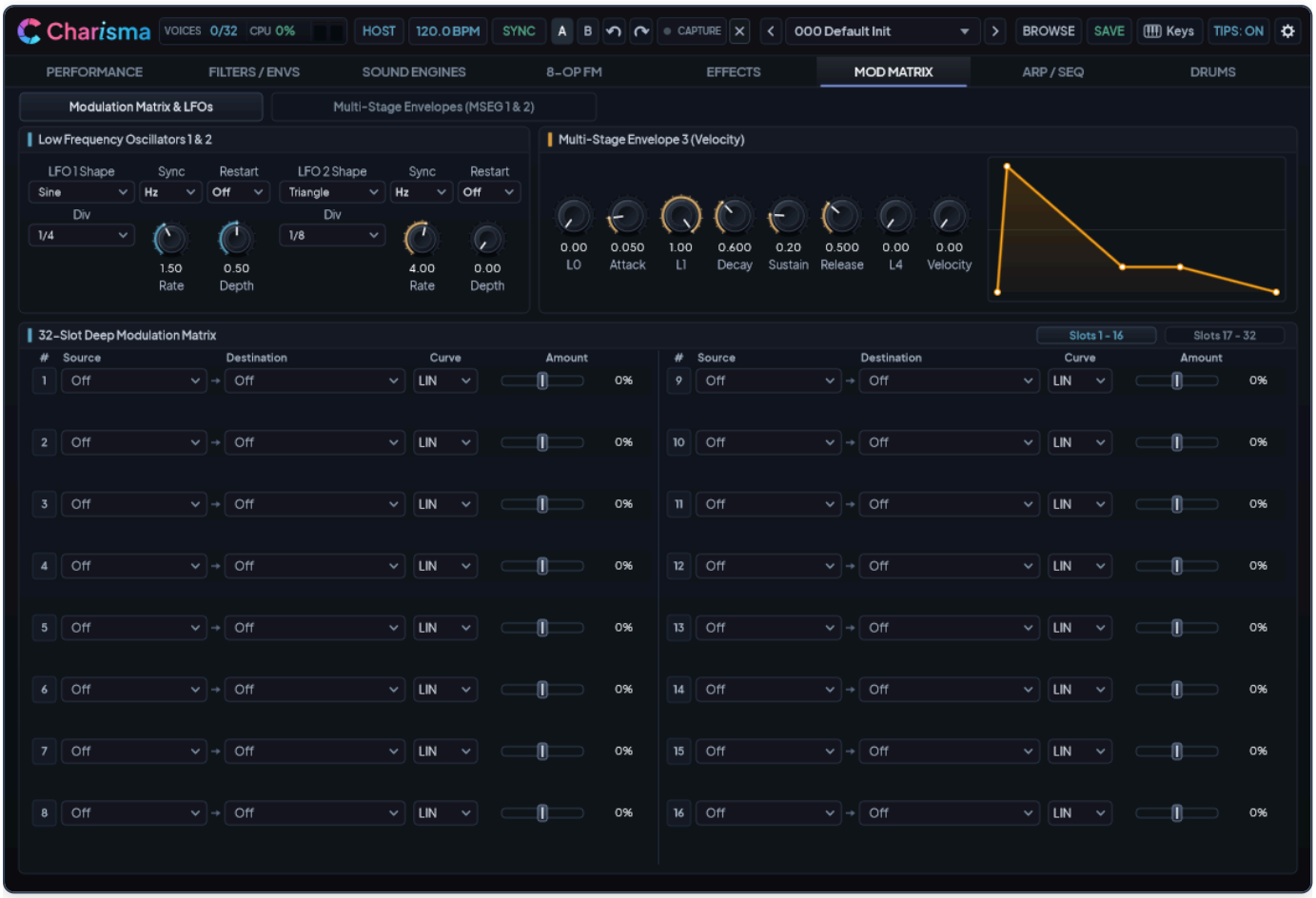
- **Subtab 1 — Modulation & Tone Shapers**:
  1. **Drive & Amp Suite (9 Models)**: *Tube*, *Tape*, *Hard Clip*, *Bitcrush*, *Wavefolder*, *British Stack 100W*, *American Tweed Combo*, *Suitcase EP*, and *Acoustic Piezo DI*.
  2. **Envelope-Swept Ring Modulator**: Classic pitch-tracking or sci-fi bell multiplier.
  3. **Tuned String Resonator (`PHYS MODEL`)**: Turns any percussive or synth sound into a ringing tuned string or resonant body.
  4. **3-Mode Spatial Chorus**: *Vintage Poly 4-Phase*, *Tri-Chorus Ensemble*, and *Hyper-Spatial Widener*.
  5. **Vintage Analog Flanger & Filter Matrix**: Classic jet sweep or frozen comb filter matrix.
  6. **12-Stage Stereo Phaser**: Lush analog phase shifting with stereo offset.
  7. **Studio VCA Compressor**: Punchy dynamics glue with sidechain-friendly attack and release.
- **Subtab 2 — Time & Space**: 8. **4-Mode Stereo / Tape Delay (up to 12s)**: *Digital Stereo*, *Ping-Pong*, *Analog Echo*, and *Magnetic Tape* with automatic `DUCKING` (lowers echo volume while you play notes, then swells up in the gaps) and per-engine Aux Sends. 9. **3-Band OTT Multiband Upward/Downward Compressor**: Brings out microscopic acoustic detail and massive modern presence. 10. **5-Mode Studio Shimmer Reverb (up to 70s)**: *Plate*, *Hall*, *Vintage Spring*, *Concert Hall*, and *Studio Plate* with pitch-shifted `SHIMMER` and per-engine Aux Sends. 11. **4-Band Parametric Mastering EQ**: Interactive frequency curve display with Low Shelf, Low-Mid Peak, High-Mid Peak, and High Shelf.

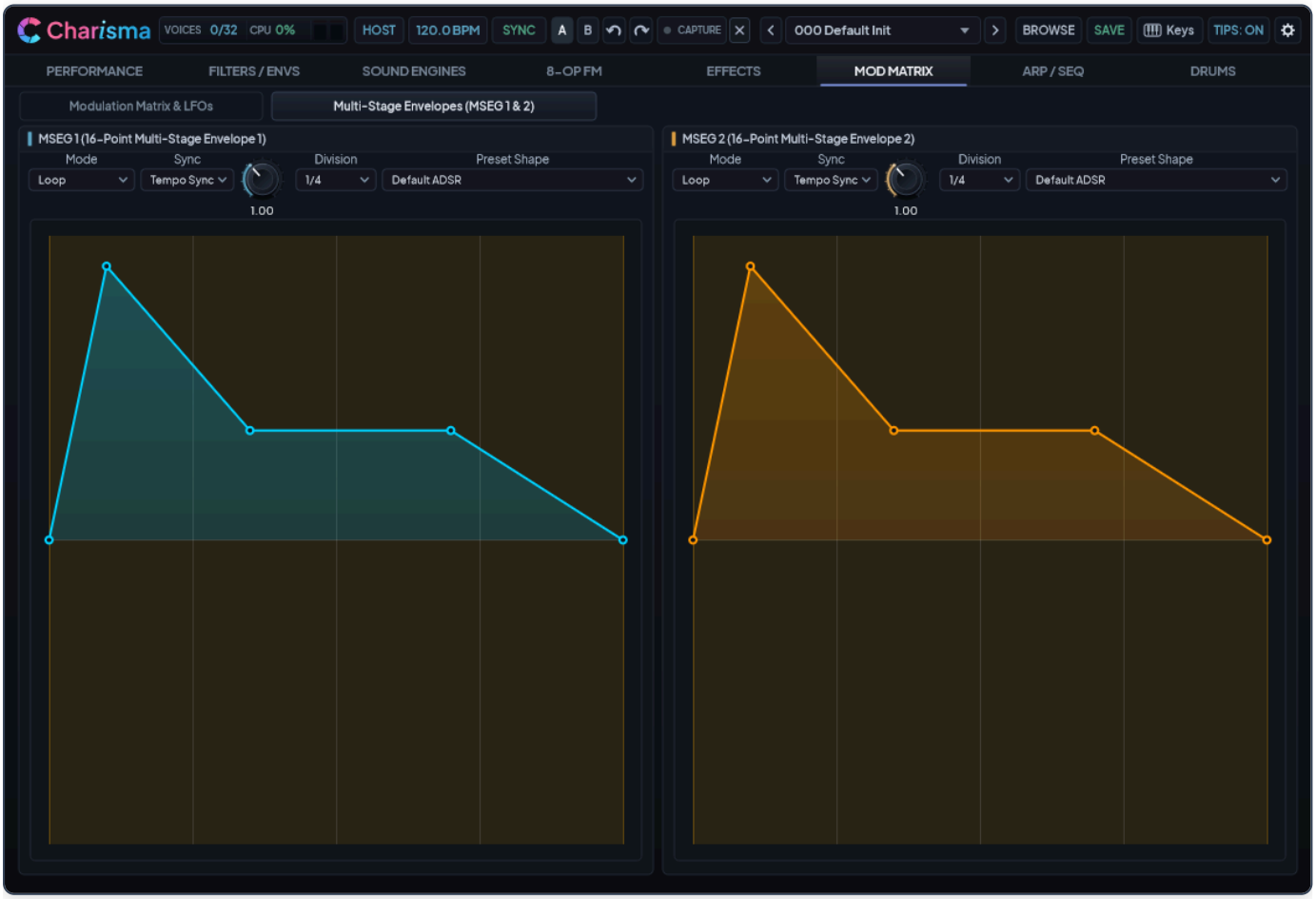
Flexible `[ Bus A | Bus B | Master ]` Routing & Drag-and-Drop Reordering

- Every effect card has a `[ Bus A | Bus B | Master ]` switch in its header. You can route your Lead Synth to **Bus A** (with British Stack Drive) and your Acoustic Piano to **Bus B** (with clean Chorus), while keeping Compressor, Reverb, and EQ on **Master**!
- Drag any stage tag in the top **Effect Order Bar** left or right to reorder the signal chain on the fly.

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9. Tab 6: Modulation Matrix, LFOs & Custom MSEG Curves





- **32-Slot Modulation Matrix**: Connect **30 Modulation Sources** (LFO 1 & 2, MSEG 1 & 2, Motion Seq Lanes 1 & 2, Macro 1–4, Velocity, Key-Track, Aftertouch, MPE Pressure/Slide/Lift, Random Voice, etc.) to **97 Destinations** with selectable response curves (*Linear*, *Exponential*, *Logarithmic*, *S-Curve*, and *Stepped*).
- **Dual 16-Point MSEGs (`Subtab 2`)**: Draw your own custom looping rhythms, sidechain pumps, or evolving pad swells by dragging nodes on the graphical canvas — or pick from 12 built-in curve templates (*Sidechain Pump*, *16th Gate*, *Wobble Formant*, *Stepped Escalator*, *Random Smooth*, etc.).

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10. Tab 7: 32-Step Phrase Arpeggiator, Bi-Timbral Split & Motion Seq





1. 32-Step Polyphonic Phrase Arpeggiator

- **Up to 32 Steps of Multi-Bar Melodic Evolution**: Set `STEPS` anywhere from `1` to `32` steps (including odd meters like `14`, `20`, `24`, `28`, or `30` steps).
- **32 Curated Factory Phrase Presets**: Includes 24 classic 16-step templates (which automatically unlock a musical 2nd-bar turnaround variation when you extend `STEPS` past 16!) plus **8 dedicated multi-bar 24-, 28-, and 32-step flagship sequences**:
  - `25: 32-Step Prog Odyssey` (alternating 7/8 + 9/8 progressive phrasing)
  - `26: 24-Step Celtic Jig 6/8` (compound 6/8 jig with triplet ornaments)
  - `27: 32-Step Berlin Cathedral` (2-bar evolving Tangerine-style sequencer)
  - `28: 28-Step Balkan 7/4 Run` (asymmetric 3+2+2 modal run)
  - `29: 32-Step Baroque Toccata` (pedal-point harpsichord/string toccata figuration)
  - `30: 32-Step Acid Evolution` (2-bar 303 bassline with legato slides and octave pops)
  - `31: 24-Step Waltz Cascade` (3-octave sweeping 3/4 waltz arpeggio)
  - `32: 32-Step Polyrhythm 3v4` (interlocking 3-against-4 harmonic ostinato)
- **Euclidean Rhythm Generator (`EUCLIDEAN HITS` & `ROTATE`)**: Turn `EUCLIDEAN HITS` above `0` to automatically distribute rhythmic pulses across your sequence length (for example, `5` hits over `16` steps for a Bossa Nova groove, or `7` hits over `16` steps for a Brazilian/West African polyrhythm).
- **Ratchet & Mutate**: Add `2x`, `3x`, or `4x` step subdivisions (or velocity-triggered ratchets on hard key strikes), and dial up `MUTATE` for repeatable, transport-locked melodic variations.

2. True Bi-Timbral Keyboard Split (`SPLIT ENABLE`)

Want to hold an arpeggiated bassline in your left hand while playing an expressive, un-arpeggiated solo lead or chord pad in your right hand?

1. Turn on `SPLIT ENABLE` on Tab 7.
2. Set `SPLIT LO` and `SPLIT HI` to define the note range that feeds the Arpeggiator (for example, `C1` to `B3` for a left-hand bass zone).
3. Any notes played **outside** that window (`C4` and above) bypass the Arpeggiator completely and play freely in real time!

3. Dual 16-Step Motion Sequencer (`Subtab 2`)

Paint rhythmic filter sweeps, stereo pan bounces, wavetable scans, or pitch steps across **two independent 16-step automation lanes** (`Motion Seq 1` & `Motion Seq 2`), complete with one-click `[SINE]`, `[RAMP]`, `[RAND]`, and `SMOOTH` glide controls.

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11. Tab 8: 12-Voice Drums Workstation & Multi-Out DAW Stems



Tab 8 (DRUMS WORKSTATION) is a complete 12-voice percussion synthesizer and 32-step polymetric groove machine built right into Charisma:

1. 12 Autonomous Drum Voices, Expressive Cymbal Modeling & Natural Decay Shaping

Every one of the 12 voices (`Kick`, `Snare`, `Clap`, `Closed Hat`, `Open Hat`, `Shaker`, `Low Tom`, `High Tom`, `Crash`, `Ride`, `Rim / Wood Block`, and `Cowbell / Aux`) offers **4 to 6 distinct synthesis models** — spanning classic analog drum machines, electronic percussion, and physically modeled **Symphonic Gran Cassa**, **Orchestral Snare (Wires On/Off)**, **Concert Timpani**, **Xylophone**, **Glockenspiel**, **Tubular Bells**, **Orchestral Wood Blocks A/B/C**, **Steel Cowbells**, and **Large/Small Crash & Ride Cymbals**.

- **Natural Acoustic Decay Control (`DECAY` & `HOLD`)**: On physically modeled drum voices, turning the `DECAY` or `HOLD` dial shapes how long the drumhead, bar, or cymbal rings out naturally rather than abruptly gating the sound. Raising `ATK` above `0 ms` creates a smooth percussive swell, while hi-hat and cymbal choke groups damp the ringing voice smoothly.
- **Continuous Cymbal Restrike Response (`Voice 9: Crash` & `Voice 10: Ride`)**: Rapid strikes on the same Crash or Ride cymbal interact with the already-ringing cymbal rather than triggering disconnected sample layers — letting repeated ride patterns and crash swells build naturally with realistic stick definition and smooth sustain.
- **Selecting Large vs. Small Cymbals & Wood Blocks A/B/C**:
  - **Crash (`Voice 9`)**: `Model 3 (Acoustic Bronze)` selects the **Large 18" Orchestral Crash**; `Model 4 (Dark Trash / China)` selects the **Small 15" Fast Crash**.
  - **Ride (`Voice 10`)**: `Model 1 (Acoustic Ride)` selects the **Large 22" Concert Ride**; `Model 3 (Pure Bell / Cup)` selects the **Small 20" Studio Ride**.
  - **Wood Blocks A/B/C (`Voice 11`, `Model 4: Hollow Woodblock`)**: Turning the `TUNE` dial moves across **Wood Block A (Low)**, **Wood Block B (Medium)**, and **Wood Block C (High)** while allowing fine pitch tuning within each range. Soft velocities produce a warm **Felt Beater** tone, while harder strikes transition to a crisp **Wood Beater** attack.
- **Physical Radial Hit-Position (`Tone`) & Velocity Dynamics**: Turning a drum voice's `Tone` dial (or modulating it in the Mod Matrix) morphs where the stick strikes the instrument:
  - **Crash & Ride Cymbals**: Sweeps smoothly from *Edge Wash* (left) through *Balanced Bow* (center) to *Bell / Cup Ping* (right).
  - **Snare & Toms**: Morphs from deep center-head fundamental body out toward bright rim overtones and wire snap.
  - **Cowbell & Wood Block**: Sweeps from hollow mouth/slit cavity fundamentals (`0.0`) to bright tip/edge metallic clang (`1.0`).

2. 16 Factory Drum Kits & 48 Multi-Genre Groove Patterns

- **16 Curated Drum Kits (`KIT PRESET`)**: From *80s Sub-Boom Sovereign*, *90s Techno Heavyweight*, and *Modern Club & Trap* (tuned for tight, punchy electronic and studio production) to *Symphonic Concert Hall*, *Cinematic War Drums*, *Acoustic Jazz Club*, *Latin Afro-Cuban*, and *Tribal Percussion* (featuring extended acoustic drum, tom, and cymbal sustain).
- **48 Factory Groove Patterns (`PATTERN PRESETS`)**: Covers Electronic, Funk, Hip-Hop, World, Orchestral, and four newly expanded flagship genres:
  - **Country & Americana (`36–38`)**: *Country Train Beat 32* (2-bar snare brush train beat with alternating bass & cross-stick turnaround), *Outlaw Two-Step Shuffle*, and *Bluegrass Brush Breakdown*.
  - **60s Pop, Motown & Surf (`39–41`)**: *60s Motown Four-on-Floor* (tambourine + snare on all four beats), *60s Wall of Sound Halftime* ("Be My Baby" booming halftime kick/snare + castanet/shaker ostinato), and *60s British Beat Surf 32* (2-bar driving surf beat with 32nd-note tom fill turnaround).
  - **Avant-Garde & IDM Glitch (`42–44`)**: *Avant-Garde Prepared Cage* (polymetric 13/11/17/19-step prepared percussion cage), *Stochastic Glitch Fracture* (32-step ratcheted micro-percussion), and *Industrial Metric Modulation* (5-over-4 polymetric anvil & iron groove).
  - **Prog Rock Drum Solos (`45–47`)**: *Prog 7/8 + 9/8 Odyssey Solo* (32-step alternating odd-meter showcase with ride bell syncopation and tom cascades), *Bruford 5/4 Polymetric Solo* (20-step 5/4 cross-stick & melodic tom solo), and *Peart 32-Step Neil Fill Solo* (2-bar virtuoso concert tom, snare roll, woodblock, and bell tree solo).

3. Hands-On 32-Step Sequencer Grid, 3-Axis Humanize & Mod Matrix Expression

- **Left-Click Any Step**: Cycles through `Off` -> `Normal` -> `Accent` (louder punch) -> `Ghost` (soft grace note) -> `Ratchet` (rapid roll) -> `Off`.
- **Right-Click Any Step**: Quickly clears an active step — or inserts a soft **Ghost Note** on an empty step!
- `Shift + Left-Click` **Any Step**: Sets that track's loop length (`1..32` steps) so different drums can cycle in different time signatures simultaneously (polymeter).

- **Swing, 3-Axis Humanize (`Hum`) & Auto-Fills**:
  - Dial in `Swg` (or leave at `0%` to automatically follow the Arpeggiator's swing).
  - Raise `Hum` (`0%–100%`) to introduce natural drummer variation across strike velocity, stick hit position (subtle edge/bow/bell and center/rim movement), and off-beat micro-timing while keeping the Kick anchored to the grid. Setting `Hum = 0%` (or selecting `Synced` in the **Determinism** menu on Tab 1) locks the groove to exact studio timing.
  - Set `Fill` to automatically play a dynamic turnaround drum fill every 2, 4, or 8 bars!
- **MSEG & LFO Hit-Position / Velocity Modulation**: Route `MSEG 1/2` , `LFO 1/2` , or `Motion Seq 1/2` in the Modulation Matrix to `Drum Tone` , `Snare Tone` , or `Drum Drive` to continuously sweep stick strike position (e.g., morphing a ride cymbal between edge wash and bell ping across a 2-bar phrase) and accent dynamics — showcased in factory presets like *Prog-Rock 7/8 Odyssey Solo*, *Bruford Polyrhythmic Excursion*, *Nashville Freight Train Shuffle*, and *Avant-Garde Prepared Foundry*.
- **Drum Bus (`Punch | Glue | Room`) & High-Resolution DAW Mixdown**: Shape the entire drum kit with transient `Punch` , parallel bus compression `Glue` , and stereo studio `Room` ambience. When exporting or freezing tracks in your DAW, Charisma automatically allows long cymbal and percussion tails to ring out smoothly to silence.

4. 18-Channel Multi-Out DAW Stem Mixing (`Aux 1–8`)

When hosted in your DAW, you can enable Charisma's **8 Stereo Auxiliary Outputs** alongside the Master Stereo Output so each drum group appears on its own DAW mixer fader:

- **Ch 1/2 (Master)**: Main Synth + Drum Mix
- **Ch 3/4 (`Aux 1`)**: Kick Drum
- **Ch 5/6 (`Aux 2`)**: Snare & Clap
- **Ch 7/8 (`Aux 3`)**: Closed & Open Hi-Hats
- **Ch 9/10 (`Aux 4`)**: Particle Shaker / Tambourine
- **Ch 11/12 (`Aux 5`)**: Low & High Toms
- **Ch 13/14 (`Aux 6`)**: Crash & Ride Cymbals
- **Ch 15/16 (`Aux 7`)**: Rim / Wood Block
- **Ch 17/18 (`Aux 8`)**: Cowbell / Glockenspiel / Chimes

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12. Four 5-Minute Sound Design Recipes

Recipe 1: Lush 1970s Cinema Brass Swell

1. Load `000 Default Init` from the Preset Browser.
2. On **Tab 3 (Virtual Analog)**, set **Osc 1** and **Osc 2** to *Sawtooth*, detune Osc 2 by `+8 cents` , and set **Unison** to `2x` .
3. On **Tab 2 (Filters & Envelopes)**, raise `HPF Cutoff` to `140 Hz` and set `Filter A Cutoff` to `1,200 Hz` with `Resonance` at `0.30` .
4. Set the Filter Envelope to `IL = -0.45` , `AL = +0.75` , `Attack = 0.35s` , `Decay = 1.2s` , and raise `Vintage Drift` to `0.75` .
5. On **Tab 5 (Studio Effects)**, turn on **Chorus** (*Vintage Poly 4-Phase*, `Mix = 45%`) and **Reverb** (*Concert Hall*, `Time = 4.5s` , `Mix = 30%`).

Recipe 2: Bi-Timbral Split — Left-Hand Synth Bass Arp + Right-Hand Solo Cello

1. Start from `000 Default Init` and enable both **Virtual Analog** (`Level = 0.80`) and **Physical Modeling** (`Level = 0.85` , `Topology = 9: Bowed String` , `Exciter Mode = Continuous`).

2. On **Tab 2**, set `Filter Routing` to `Split (Per-Engine)`. Route **VA** to `Filter A` (`Amp Env 1`, short punchy decay) and **PM** to `Filter B` (`Amp Env 2`, smooth `0.18s` attack and high sustain).
3. On **Tab 7 (Arpeggiator)**, turn on `ARP ENABLE`, pick `Pattern 2: 80s Synthwave Bass`, turn on `SPLIT ENABLE`, and set `SPLIT LO = C1` and `SPLIT HI = B3`.
4. Hold a bass note below `B3` with your left hand to drive the pulsing bassline while playing lyrical bowed cello melodies above `C4` with your right hand!

Recipe 3: Acoustic Marimba Exciting an 8-Op FM Crystal Bell

1. On **Tab 3 (Physical Modeling)**, select `Topology 1: 2D Modal` and `Geometry 5: Xylophone / Marimba` (`Level = 0.75`).
2. On **Tab 4 (8-Op FM)**, select `Algorithm 4: Classic Branching Trees (Bells)` (`FM Level = 0.55`).
3. Turn up `PM → FM Depth` (`0.45`) and set `PM → FM Dest` to `Carriers`. The woody mallet transient and rosewood bar overtones now physically phase-modulate the glassy FM bell carriers!

Recipe 4: Custom 7/8 Prog Rock Groove with Drum Kit Lock

1. Open **Tab 8 (Drums Workstation)**, turn on `DRUMS ENABLE`, and choose `Kit 13: Cinematic War Drums` or `Kit 14: Acoustic Jazz Club`.
2. Click the `[🔒]` **Drum Kit Lock** icon next to the Kit selector so your kit stays locked.
3. Open the `PATTERN PRESETS` dropdown and select `46: Prog 7/8 + 9/8 Odyssey Solo` or `48: Peart 32-Step Neil Fill Solo`.
4. Left-click any step in the 32-step grid to toggle between **Normal**, **Accent**, **Ghost**, and **Ratchet** hits, and raise `Pnch` and `Room` in the Drum Bus strip for instant studio impact.