

GOLDVOLTRON

GV Pattern Engine Handbook

Practical Guide - Version 5.0

Generator, DLT, Motion Map, practice, audio, PWA/offline, backup, and Pro tools

Start simple. Get the motion clean. Add more only when it helps.

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What Changed in 5.0

Version 5.0 is a stability and mechanics release. The feature set remains familiar, but several systems underneath the interface were made more rigorous.

- DLT now validates physical atomic record movements rather than relying on simple forward/reverse labels.
- Baby, Chirp, Orbit and Stab include their full return legs in the movement model; Stab's return is a silent reset.
- Current Combo terminology is more precise and the interface presents combo phrases in lowercase with restrained gold connectors.
- Backup/import now uses a schema, structural validation, size limits, and rollback-style protection.
- Shared-combo payloads and dynamic saved-library rendering were hardened against malformed or hostile input.
- Local audio loading is protected from stale asynchronous decode/fetch races.
- iPhone/iPad Home Screen offline launch now covers both slash and no-slash app URLs.
- PWA updates are atomic and self-updating: a new version must prepare its offline launch cache before the old working cache is removed.
- The mobile Motion Map follows its native wide aspect ratio so the graph fills the panel cleanly.
- The DLT Technical Reference PDF is bundled with the plugin for deeper technical documentation.

1. Start Here

The GV Pattern Engine turns scratch movements into readable combinations, draws the record motion, and gives you a structured place to practice them at a tempo you control. You can stay in Simple Mode until you actually need the deeper tools.

- Choose Simple Mode if this is new to you.
- Start with Beginner + 2 Parts.
- Create New Combo.
- Read the lowercase scratch labels and Motion Map before worrying about speed.
- Use playback and metronome slowly enough to keep the movement clean.
- Save only combinations worth revisiting.

Guided First Session configures an easy starting setup and walks through setup, map, labels, timing, and repetitions.

2. Know the Main Screen

Area	Purpose
TTM Attribution	Credits the source method and links to official TTM material.
What's New	Shows current Pattern Engine release notes, including the 5.0 release.
Pattern Engine Manual	Opens this v5.0 handbook.
Saved Combos	Browser-based practice library with search, tags, crates, favorites, notes, export, and practice rotation.
Combo Settings	Controls level, length, style, training filter, and practice source.
Current Combo	Shows level, DLT status, version, combo phrase, cue chips, Motion Map, playback, metronome, and practice tools.

3. Simple Mode and Pro Mode

Simple Mode hides advanced controls; it does not use a different generator and it does not delete data.

- Simple keeps generation, Current Combo, Motion Map, playback, metronome, Guided First Session, What Should I Practice?, and core practice tools.
- Pro reveals advanced Session Lab controls, Variation Lab, Local Audio, statistics, adaptive practice, filters, presets, crates, sets, MIDI, sharing, studio views, and backup tools.
- Switching modes changes what you see, not the underlying saved data.

4. Generate a Combo

Control	What it does
Level	All Levels mixes difficulty; Beginner limits complexity; Intermediate and Advanced allow denser ideas.
Combo Length	Sets 2, 3, or 4 parts.
Playback Style	Linear uses clean visual motion; Organic adds more natural curve variation.
Training Filter	True Beginner Mode limits generation to simpler movement/click patterns.
Practice Source	Generator creates new patterns; Saved Only rotates the saved library.
Create New Combo	Builds a new pattern and immediately loads it into the trainer.

What Should I Practice? uses the practice data stored in your browser to suggest a useful next drill. Treat the suggested BPM as a starting point, not a challenge to beat.

5. Smart Skcratch Logic and DLT

Smart Skcratch Logic is the Pattern Engine concept/identity for scratch-aware pattern checking. Direction Logic Technology (DLT) is the modern runtime engine underneath it.

- DLT normalizes each segment into a physical movement model.
- It compares the final movement leg of one technique with the first leg of the next.
- When a safe correction is possible, it solves for the smallest number of direction mirrors.
- The corrected path is validated again before it reaches Current Combo.
- DLT works on a temporary runtime clone; it does not rewrite the stored WordPress combo or saved source pattern.
- Open the DLT status control for the explanation panel and Technical Reference PDF.

A visible combo can look sensible in text while still asking the record hand to repeat the same travel direction at a boundary. DLT exists to catch that before practice.

6. Read the Motion Map

Element	Meaning
Blue curve	Physical record motion.
Gold dots	Actual fader clicks.
White rings	Turns and major endpoints.
Cyan arrow	Current playback direction.
Scratch labels	Technique names tied to the corrected runtime combo.
Focus Mode	Highlights the active segment during playback.

Version 5.0 uses complete physical movement legs. A Baby visibly contains two movements; a Chirp goes out and back; an Orbit is a round trip; a Stab includes the silent re-cue motion. The mobile map is sized to its native wide aspect ratio so the graph fills the panel cleanly.

7. Playback and Metronome

Control	Purpose
Play / Pause	Starts or stops Motion Map playback.
Playback Speed	Slow, Medium, or Fast visual demonstration when BPM sync is off.
BPM	40-220 BPM metronome range.
Tap Tempo	Estimates a comfortable tempo.
Count-In	Optional lead-in before playback.
Subdivision	Quarter, Eighth, or Sixteenth note grid.
Sync Motion to BPM	Moves the visual demonstration according to musical tempo and subdivision.

Keep the tempo boring at first. Raise BPM only when the movement remains repeatable and relaxed.

8. Session Lab

- Loop a single section when one transition is weak.
- Return to Full Combo when the section is clean.
- Progressive practice starts with Part 1 and adds sections until the entire phrase is present.
- Optional session timers, random-after repetition counts, and count-ins can turn a generated phrase into a structured drill.

Simple 10-minute routine: 2 minutes record motion, 3 minutes add fader articulation, 3 minutes with metronome, 2 minutes slight BPM increase only if clean.

9. Create and Variation Lab

Control	Purpose
Lock Part	Protects a segment so regeneration leaves it unchanged.
Regenerate Unlocked	Rebuilds only unlocked sections.
Create Variation	Makes a related version of the current combination.
Make This Harder	Raises complexity while preserving the phrase idea where possible.
Custom Builder	Defines direction, click count, and labels segment by segment.
Load Current	Copies the current runtime combo into the builder.

DLT still preflights combinations created through these tools before they reach the normal runtime display.

10. Local Audio

The Audio tab lets you practice over a file from your device. The audio stays local; it is not uploaded to GoldVoltron.com.

Control	Purpose
Choose Audio	Selects a local audio file.
Waveform	Displays decoded audio visually when the browser can decode it.
START / END	Drag or use keyboard controls to define a loop.
Beat BPM / Tap / Auto Detect	Stores or estimates the beat tempo.
Use Beat BPM	Copies the beat BPM into the Pattern Engine metronome.
Hear Current Technique	Creates a local browser-only technique reference from the current combo.

5.0 adds stale-load protection: if you quickly replace or clear a track, an older decode/fetch cannot finish late and overwrite the newer waveform or buffer.

11. Session Stats and Practice History

- Total practice time, sessions, unique combos, most-used BPM, streaks, recent practice, timing data, personal bests, and technique heat maps remain browser-local.
- Reset Stats clears the practice history in this browser. Export My Data first if you might want it later.

12. Pro: Smart Training

Tool	Purpose
Adaptive Practice	Weights generation toward weak techniques/dimensions.
Mark Clean Rep	Records a successful repetition and updates related statistics.
Needs Work	Increases weakness weighting for the current technique/movement.
Timing Tap	Compares taps to the metronome and reports timing tendency.
BPM Ramp	Raises BPM after a chosen number of clean repetitions.
Memory Hide / Blind	Progressively removes visual guidance.
Call / Response	Presents a phrase and pauses for response.
Endurance	Runs continuous rotating-combo practice.
Session Goal	Tracks clean reps, target BPM, or minutes.

13. Pro: Vocabulary and Pattern Tools

- Vocabulary includes Baby, Stab, Chirp, Transformer, 1-Click Flare, 2-Click Flare, and Orbit.
- Technique exclusions can temporarily remove a family from generation.
- Combo DNA identifies an exact pattern for copy/share/reload.
- Daily Scratch, Weekly Archive, Surprise Me, mirror/reverse, A/B practice, mutation, and expansion tools reshape or select practice material.

In 5.0, the visible names and the mechanical model are deliberately separate: lowercase display styling never changes the underlying scratch family, entry direction, movement legs, or DLT state.

14. Pro: Presets, Crates, and Practice Sets

- Practice Presets store a reusable configuration.
- Crates organize Saved Combos by technique, routine, difficulty, or any scheme you choose.
- Practice Set Builder creates an ordered routine of saved combinations and can run them in sequence.

15. Pro: MIDI Controller

If the browser supports Web MIDI, pads, keys, buttons, or pedals can be mapped to Pattern Engine actions.

- Play / Pause
- Generate
- Previous Combo
- Next Combo
- Save Combo
- Timing Tap
- Mark Clean Rep
- Full Combo

Web MIDI support varies by browser/device; the rest of the Pattern Engine does not depend on it.

16. Practice Views, Sharing, and App Tools

Tool	Purpose
Practice Mode	Distraction-reduced full-screen presentation.
Trainer View	Compact trainer layout.
Turntable View	Touch-friendly layout beside the decks.
Studio / TV Mode	Large-screen readable presentation.
Share Combo	Creates a shareable combo URL.
Export PNG / Share Card	Exports visual combo material.
Print / PDF	Creates a printable combo card.
QR Code	Encodes the current share URL.
Install Pattern Engine	Installs/helps add the Pattern Engine to the device Home Screen where supported.

On iPhone/iPad, use Safari Share -> Add to Home Screen. Version 5.0 supports offline launch and automatic update migration after the app sees the internet again.

17. Back Up and Restore Data

Export My Data creates a JSON backup of Pattern Engine browser data - not a backup of the WordPress website and not a copy of local audio files.

- Includes Saved Combos, tags, notes, crates, practice counts, clean reps, personal bests, settings, stats, presets, Practice Sets, MIDI mappings, current-session restore data, and Local Audio BPM/loop setup.
- Does not include the actual local audio file.
- 5.0 uses a formal backup schema and validates recognized sections before changing storage.
- Malformed or future-schema backups are rejected instead of guessed at.
- Unknown keys are ignored and imports have a 10 MB safety ceiling.
- If a browser-storage write fails mid-import, the importer attempts to restore the previous data.

18. Saved Combos Library

- Search, sort, tag, crate, favorite, note, export, and practice saved patterns.
- The 5.0 rendering pass uses safer DOM APIs for saved metadata rather than interpolating user values into HTML attributes.
- Save combinations that expose a weak transition, teach a useful phrase, or genuinely deserve another practice session.

19. Keyboard Shortcuts

Key	Action
Space	Play / Pause
N	Create new combo
S	Save current combo
F	Toggle Focus Mode
P	Toggle Practice Mode
T	Tap Tempo
Arrow Up	Metronome +1 BPM
Arrow Down	Metronome -1 BPM

20. Scratch Glossary and Movement Model

Technique	Plain-language reminder	5.0 movement model
baby	Open-fader back-and-forth record control.	F -> R; returns to origin.
reverse baby	Baby beginning in reverse.	R -> F; returns to origin.
stab	Short gated attack with a silent physical re-cue.	Attack leg + opposite silent return.
chirp	Out-and-back motion; fader closes at the turnaround and reopens on return.	F -> R.
reverse chirp	Reverse-starting chirp variation.	R -> F.
transformer	Repeated fader cuts over a directional record movement.	One directional leg.
1-click flare	One fader click divides a directional record stroke into two audible notes.	F or R one-way stroke.
2-click flare	Two clicks divide the directional stroke into three audible notes.	F or R one-way stroke.
orbit	Flare-style action carried through both directions as a complete cycle.	F -> R or R -> F.

DLT cares about the entire movement sequence. Returning to the cue point does not erase the direction of the final physical leg.

21. First-Week Practice Plan

Day	Suggested focus
1	Guided First Session; one 2-part Beginner combo at 60-72 BPM.
2	Generate three Beginner combos; save only the most useful.
3	Use What Should I Practice? and lower BPM if needed.
4	Practice a saved combo with section looping, then Full Combo.
5	Use Tap Beat BPM with a local beat and a short loop.
6	Open Pro Mode; use Clean Rep and Needs Work honestly.
7	Review Stats/Saved Combos and export your first data backup.

22. Troubleshooting

Problem	Try this
No combo appears	Try another level, set Practice Source to Generator, or ensure Saved Only has material.
Motion Map too fast	Use Slow playback or lower BPM when Motion Sync is enabled.
Motion Map has large empty space on mobile	Make sure the app is on 5.0 or newer; the 5.0 mobile map uses its native wide aspect ratio.
Metronome silent	Turn it on, raise volume, and interact once so the browser can allow audio.
Waveform blank	Try another common audio format; decoding support varies.
Old waveform appears after loading another track	Update to 5.0; stale audio callbacks are rejected.
MIDI will not connect	Use a browser/device with Web MIDI and verify OS-level connection.
Home Screen app says no internet	Open it online once on 5.0 so the service worker can prepare offline launch.
Home Screen app shows an old version offline	5.0 automatically checks for updates on launch/foreground/online return; open online once, allow the verified update/reload, then test offline again.
Imported data looks unchanged	Reload after import so every panel rereads restored state.
Interface overwhelming	Return to Simple Mode; advanced data is not deleted.

23. TTM Attribution and Respect for the Source

The GV Pattern Engine is an independent educational implementation inspired by the Turntablist Transcription Method (TTM). TTM was developed by John Carluccio, Ethan Imboden, and Ray “DJ Raedawn” Pirtle. The method, notation, and related intellectual property remain with their respective owners.

For the original method and official documentation, visit www.ttm-dj.com. The GV Pattern Engine is not affiliated with or endorsed by the original TTM creators.

Respect the craft. Study the source. This handbook explains the GoldVoltron tool; there is no substitute for slow hands-on practice.

Quick Reference

26. Simple Mode
27. Guided First Session or Beginner + 2 Parts
28. Create New Combo
29. Read the lowercase scratch labels
30. Follow the Motion Map
31. Start playback slowly
32. Add metronome / BPM
33. Repeat until clean
34. Save useful patterns
35. Use What Should I Practice? for the next drill

Need more controls? Switch to Pro Mode. Want the clutter gone again? Return to Simple Mode. Your combinations and practice data remain in place.

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