Cobalt Drift Neo 1.3 Manual (English)

Manual version: 1.3.3

Manual revision: GUI_Fix_04 v1.3 release update

1. Overview

Cobalt Drift Neo is a Windows software synthesizer designed for Progressive Trance, Melodic House, Deep Progressive, and Modern Trance.

It is focused on wide SuperWave leads, short plucks, warm basses, Reese basses, 808 basses, pads, keys, arps, and atmospheric sounds.

The synth uses a focused one-layer design. Instead of a large multi-layer architecture, it provides OSC A / OSC B / OSC C, Filter 1 / Filter 2, Envelope, LFO, FX Rack, Mod Matrix, and Preset Browser in a direct workflow.

2. System Requirements

- OS: Windows 11 64-bit recommended
- Formats: VST3 / CLAP / Standalone
- Host: 64-bit DAW with VST3 or CLAP support
- Standalone Audio: Windows Audio / WASAPI / DirectSound / ASIO
- ASIO: An installed ASIO driver is required when using ASIO, such as the driver for your audio interface

3. Installation

Cobalt Drift Neo is distributed as a Zip file. There is no installer. Product and Demo packages are exported separately: the Product package contains only the Product build, and the Demo package contains only the Demo build. Unzip the package you are using, then manually place the format you want to use.

After unzipping the package, Cobalt Drift Neo itself starts with only the Init bank and Init preset. The VST3, CLAP, and Standalone applications do not embed `.neo` Expansion banks. The release package includes the approved Factory `.neo` banks in the `Expansions` folder for manual import only:

- `Factory.neo`
- `Factory Lite.neo`
- `Factory 1.1.neo`
- `Factory Lite 1.1.neo`

Recommended first imported bank:

- `Factory Lite.neo`

For Cobalt Drift Neo, start with the Lite `.neo` bank first after you choose to import Expansions. The Lite banks are the recommended default for most systems because they keep the sound direction while reducing CPU load. If you have a high-performance CPU and want the densest version of the presets, import and use the regular bank without the `Lite` suffix, such as `Factory.neo`.

VST3

Place the VST3 file or folder in one of these locations:

```
C:\Program Files\Common Files\VST3\
```

Or:

```
%LOCALAPPDATA%\Programs\Common\VST3\
```

After copying the file, rescan plugins in your DAW.

CLAP

Place the CLAP file or folder in one of these locations:

```
C:\Program Files\Common Files\CLAP\
```

Or:

```
%LOCALAPPDATA%\Programs\Common\CLAP\
```

After copying the file, rescan plugins in your CLAP-compatible DAW.

Standalone

The Standalone app can be placed anywhere.

Example:

```
C:\Program Files\Cobalt Drift Neo\
```

Or:

```
Documents\Cobalt Drift Neo\
```

After launching the app, open Audio/MIDI settings from Options and select your Audio Output Device.

4. First Sound Check

VST3 / CLAP

1. Load Cobalt Drift Neo as an Instrument / Synth in your DAW.

2. Send MIDI notes to the instrument track.

3. Check track monitoring, mute state, track volume, and master output.

4. Open the Bank menu, choose Import Bank, and import `Expansions\Factory Lite.neo` first. On high-performance CPUs, you can also import `Expansions\Factory.neo`, `Expansions\Factory 1.1.neo`, or `Expansions\Factory Lite 1.1.neo` as needed.

5. Select the imported bank and preset from Bank, CAT, and PRESET.

The VST3 and CLAP versions need incoming MIDI notes to produce sound.

Standalone

1. Launch Cobalt Drift Neo.exe.

2. Open Audio/MIDI settings from Options.

3. Select an Audio Output Device.

4. Click the Performance Keyboard at the bottom of the GUI to test sound.

5. To use an external MIDI keyboard, enable the MIDI Input Device from Options.

The Performance Keyboard in the Standalone version is internally connected to the synth engine, so you can test sound without an external MIDI controller.

5. Presets

Cobalt Drift Neo starts with only the Init bank on first launch. Each new launch starts from `Init Basic Saw Neo`, with Filter 1 and Filter 2 set to `None`.

Built-in bank:

- Init

Built-in preset:

- Init Basic Saw Neo

Factory sounds are not embedded in the application builds. The release package includes these `.neo` Expansion Banks under `Expansions` for manual import. Import them from the Bank menu before using them:

- `Factory.neo`
- `Factory Lite.neo`
- `Factory 1.1.neo`
- `Factory Lite 1.1.neo`

Bonus and purchased banks are separate optional `.neo` packages when supplied. They are not embedded in the application builds and are not part of the standard Factory release package unless delivered separately.

Use Bank to switch between Init, User, and imported `.neo` banks. CAT only shows categories that actually exist in the currently selected bank. Use PRESET to select a preset in the current category.

Use the `<` / `>` buttons to move through presets. Pressing `>` at the end of a category moves to the next category.

6. Expansions

Cobalt Drift Neo supports `.neo` expansion files.

After importing an expansion, the `.neo` file name becomes selectable from Bank or Browser. Expansion presets are managed separately from the Init bank and User presets.

Importing Separate Expansions

1. Unzip the package.
2. Launch Cobalt Drift Neo.
3. Open the Bank menu at the top of the plug-in.
4. Choose Import Bank.
5. Select `Expansions\Factory Lite.neo` from the unzipped package first.

6. If you have a high-performance CPU and want the regular full-density presets, also import `Expansions\Factory.neo`, `Expansions\Factory 1.1.neo`, or `Expansions\Factory Lite 1.1.neo` as needed.

7. Select `Factory Lite.neo` from Bank first, or select `Factory.neo` on high-performance systems.

The Bank field displays the actual `.neo` file name, not the internal metadata name stored inside the bank.

Expansion location:

```
%APPDATA%\CobaltDriftNeo\Presets\Factory\Expansions\
```

User preset location:

```
%APPDATA%\CobaltDriftNeo\Presets\User\
```

Lite Expansions

Version 1.3 includes Lite Expansion banks alongside the regular expansion files.

Lite presets keep the original sound direction but use CPU Lv Normal or Eco and more conservative settings for Delay, Reverb, Chorus, Saturator, and Distortion. They are intended for production sessions, live use, laptops, and projects where CPU headroom matters.

Included Factory Lite Expansions:

- `Factory Lite.neo`
- `Factory Lite 1.1.neo`

The regular presets are not overwritten. Use the Lite versions when you want a lighter starting point, and use the regular versions when maximum density and space are the priority.

7. Basic Controls

Bank

Selects the main preset source, such as Init, User, or an imported `.neo` bank.

CAT

Selects the preset category, such as Lead, Pluck, Pad, or Bass. CAT only shows categories that exist in the currently selected bank. Selecting a category loads the first preset in that category.

PRESET

Selects a preset in the current category.

CPU Lv

Sets the balance between CPU usage and sound quality. Use a lower setting if playback becomes unstable. Use a higher setting when sound quality is the priority.

- Eco: the lightest setting. It reduces oscillator support content, SuperWave side density, and FX modulation update cost.
- Normal: the recommended production setting. It uses SuperWave Lite and Wavetable Hybrid behavior while preserving the preset identity.

- Rich: the quality-priority setting. It keeps more density where possible, but still uses CPU-aware guards when dense polyphony would otherwise spike.

CPU Lv does not rewrite saved preset polyphony, unison, or wave_index values. It changes the internal DSP workload while keeping the saved sound recipe intact.

Save

Saves the current sound. The Demo version can also save presets.

8. Sound Design Sections

OSC A / OSC B / OSC C

Three oscillators create the core sound. Available wave types include Saw, Square, Triangle, Sine, Noise, Digital-style waves, and SuperWave-style waves.

Each oscillator provides controls for level, pitch, detune, stereo spread, morph, tone, and shaping.

SuperWave

SuperWave is designed for wide saw leads and thick trance-style sounds. It creates density and stereo width similar to layered saw oscillators.

In Version 1.3, SuperWave Lite is used when CPU Lv is set to Normal or Eco. Rich can also enter the lightweight SuperWave path during dense polyphonic SuperWave playback. The center lane remains quality-focused, while the side density uses lighter wavetable and phase-offset support. This keeps width while reducing CPU usage.

If a SuperSaw or HyperSaw preset feels too heavy, first try CPU Lv Normal. Use Eco when stability is more important than maximum density.

Filter

The Filter section shapes brightness, weight, presence, and movement. Use Cutoff, Resonance, Drive, and Envelope Amount to create pluck attack, bass weight, darker pads, and open lead sounds.

Version 1.3 adds a routing selector beside the Filter type navigation buttons. Use Serial when you want Filter 1 to feed Filter 2 for stacked lowpass shapes, darker sweeps, or stronger resonance shaping. Use Parallel when you want both filters to process the routed oscillator signal in separate paths for broader bandpass, notch, or layered filter textures.

Each oscillator also has a Filter Destination selector beside its Voice control. Route OSC A / B / C to Filter 1, Filter 2, or None. None keeps that oscillator out of the filter path, which is useful for a clean sub layer, noise layer, or bright attack component while other oscillators move through the filters.

Envelope

Envelopes shape how a sound changes over time.

- Attack: how quickly the sound starts
- Decay: how quickly it falls after the attack
- Sustain: the held level while a note is pressed
- Release: the fade-out after the note is released

LFO

LFOs create repeating movement. Assign them to pitch, filter, volume, pan, or other destinations to create motion, tremolo, evolving pads, and rhythmic arps.

FX Rack

The FX Rack can combine up to six effects.

Main effects:

- Dual Delay
- Reverb
- Equalizer
- Distortion
- Chorus X
- Multiband Saturator Lite

Delay and Reverb add space to plucks and leads. Distortion and Saturator add presence to basses and leads. Equalizer helps clean up and balance the tone.

In the FX Editor, some large displays are also direct controls. For Equalizer, drag the LOW / MID / HIGH points to adjust frequency and gain. For Reverb, drag LC / HC / TAIL / W points to shape Low Cut, High Cut, Mix, Damp, Density, Decay, Width, and modulation. The visible knobs update with the graph edits.

When CPU load is high, reducing Reverb Mix, Reverb Decay, Delay Feedback, Delay Mod, Chorus Voices, and Saturator Drive is usually effective. The Lite Expansions already use more conservative values in these areas.

MOD

The Mod Matrix connects sources such as LFOs, envelopes, and macros to synth parameters. Use it to create animated and performance-ready sounds.

Browser

The Browser shows Init, User, and imported `.neo` bank presets and lets you select sounds from a list.

Use the SORT dropdown to choose Preset Name, Type, Character, BPM, or Rating. Use ORDER to choose Asc or Desc. Rating is a local 1-5 value; set it from the dropdown on each browser row.

9. Demo Version Limitations

The Demo version has these limitations:

- Audio output stops after about 30 minutes
- Preset Save is enabled
- Expansion Import is enabled, including drag-and-drop `.neo` import
- Expansion Export / Delete / Rename are disabled
- DEMO is shown near the product logo

When the 30-minute limit is reached, audio output stops and the Demo Time Limit Reached popup is shown.

10. Troubleshooting

The plugin does not appear in my DAW

- Make sure the VST3 or CLAP file is in the correct folder.
- Run a plugin rescan in your DAW.
- Use a 64-bit DAW.

No sound

VST3 / CLAP:

- Make sure MIDI notes are reaching the plugin.
- Check track monitoring, mute state, and track volume in your DAW.
- Make sure the master output is not muted.

Standalone:

- Make sure an Audio Output Device is selected.
- Click the Performance Keyboard at the bottom of the GUI.
- To use an external MIDI keyboard, enable the MIDI Input Device from Options.

ASIO does not appear

- Install the ASIO driver for your audio interface.
- Restart the Standalone app after installing the driver.

Expansion presets do not appear

- Import a `.neo` file from the Bank menu.
- Start with `Expansions\Factory Lite.neo` when CPU headroom matters. Use `Factory.neo` or `Factory 1.1.neo` on high-performance CPUs when you want the full-density presets.
- After import, switch Bank or Browser views and check again.

Sound keeps playing after MIDI or DAW stop

- Stop the DAW transport once. The plug-in listens for the host transport changing from playing to stopped and immediately clears active voices and FX tails.
- If your host provides a MIDI panic command, send All Sound Off or All Notes Off.
- Check that your MIDI controller is not sending a stuck sustain pedal or held note.
- If the problem returns in a DAW, unload and reload the plug-in instance, then test the same preset with CPU Lv Normal.

DAW playback or the plug-in window becomes unresponsive

- Use the GUI_Fix_03 build or later.
- In DAW plug-in formats, Cobalt Drift Neo disables its own editor resizing to avoid taking mouse focus outside the plug-in window.
- Avoid resizing the DAW plug-in container while holding notes.

- If a dense chord preset causes instability, set CPU Lv to Normal or use the Lite Expansion version of the preset.

11. Recommended Genres

- Progressive Trance
- Melodic House
- Deep Progressive
- Modern Trance
- Wide Lead
- Pluck
- Pad
- Reese Bass
- Rolling Bass
- Atmosphere

12. Version 1.3 Features and Workflow

Version 1.3 builds on the 1.1 stabilization work and focuses on filter workflow, oscillator routing, CPU behavior, preset switching safety, and closed-cutoff filter response. The plug-in continues to start with only Init built in, while the included Factory sounds are installed by the user as external `.neo` banks. Bonus and purchased banks remain separate optional `.neo` packages when supplied. Compatibility is still a priority: saved preset polyphony, unison, wave_index, APVTS parameter IDs, and filter type indices are preserved.

Main Additions

- Filter routing selector with Serial and Parallel modes.
- Per-oscillator Filter Destination selectors for Filter 1, Filter 2, or None.
- Browser SORT and ORDER dropdowns for Preset Name, Type, Character, BPM, and Rating sorting.
- Browser Rating local 1-5 dropdowns that do not rewrite Factory or Expansion `.neo` banks.
- Filter routing diagnostics for Serial / Parallel behavior.
- OSC destination diagnostics to confirm that Filter 1, Filter 2, and None produce distinct render results.
- Same-note retrigger diagnostics to confirm voice reuse and release-tail prioritization.
- Closed-cutoff filter leakage diagnostics for high-resonance lowpass behavior.
- Wavetable Hybrid rendering for Saw, Square, Pulse, Bright Saw, Soft Wide Saw, Reece Saw, and Pluck Saw.
- Clearer Eco / Normal / Rich CPU Lv behavior.
- SuperWave Lite Engine for Normal and Eco modes, plus CPU-aware Rich polyphonic guard behavior.
- Attack Budget Scheduler to spread non-critical work during note-on bursts.
- Factory / Factory Lite sounds are handled as external `.neo` banks.
- Separate Lite Expansion banks.
- New diagnostics including oscillator wave CPU profile, Wavetable A/B parity, and SuperWave CPU quality scaling.

Musical Character

The goal of Version 1.3 is not to make the synth sound like a different instrument. The goal is to keep the deeper, wide, slightly dark Cobalt Drift Neo character while making the filter section more central to sound design.

- Leads: SuperWave and HyperSaw sounds keep width, while Normal and Eco make them easier to run.
- Plucks: short attacks and delay/reverb response are preserved, with improved loudness balance.
- Pads: wide break and intro sounds remain spacious, with less category-to-category level mismatch.
- Bass / Reese Bass: low-end stability and filter drive presence remain central.
- Arp / Sequence: levels and space are balanced so rhythmic presets do not disappear next to leads and basses.
- Atmos / FX: long tails remain possible while avoiding unnecessary reverb load.
- Filter routing: Serial is useful for darker, more controlled stacked filtering; Parallel is useful for wider or more animated filter colors.
- OSC destinations: None can preserve a clean layer while another oscillator carries the filtered movement.

Using CPU Lv

If CPU load is high, start by setting CPU Lv to Normal. Normal enables SuperWave Lite, Wavetable Hybrid behavior, and lighter control-rate updates while preserving the sound direction.

Use Eco when stability is more important than maximum density. Eco further reduces oscillator support content, FX modulation cost, and SuperWave side density. It is useful for sketching, live use, laptops, or dense arrangements.

Use Rich when sound quality is the priority and CPU headroom is available. Rich is the quality-priority path, but it still protects dense polyphonic SuperWave and heavy filter cases from large real-time CPU spikes.

Using Lite Expansions

Lite Expansions do not replace the regular presets. Import `Factory Lite.neo` or another Lite `.neo` bank from the Bank menu, then select it from Bank or Browser when you want the same general sound family with lower CPU cost.

Lite presets use more conservative values for:

- CPU Lv: Normal
- Delay Mix / Feedback / Mod
- Reverb Mix / Decay / Feedback / Modulation
- Chorus Depth / Voices
- Saturator Drive / Quality
- Distortion Drive / Oversampling

A practical workflow is to write and arrange with Lite presets, then switch to the regular version or raise CPU Lv to Rich when you want more density for final sound design.

Filter Improvements

The MS20 Lowpass cutoff step/drop behavior was improved. Some bite, resonance, and grit were restored after the stability pass while keeping the resonance safety behavior.

Several filters were adjusted so they do not sound too similar. Resonance curves, open-cutoff behavior, dry blend, and model-specific response were refined. MG Ladder 6 / 12 / 18 / 24 slope differences are also easier to hear.

Version 1.3 also tightens MG Ladder closed-cutoff behavior. When MG Ladder 12 / 18 / 24 are used with high resonance and very low cutoff, the driven and dry-derived support paths now fade more strongly with cutoff. This keeps the ladder character, but avoids the impression that the original source signal is still leaking through when a 24 dB lowpass is fully closed.

Use Serial routing when you want a stronger closed-filter effect. Use Parallel routing when you want a blend of two filter colors and do not need the darkest possible cutoff.

Voice And UI Stability

Version 1.3 improves repeated-note behavior by reusing same-pitch voices and prioritizing release-stage voices of the same pitch. This reduces unnecessary active voices during repeated MIDI notes while keeping the musical envelope behavior intact.

Standalone UI responsiveness was also improved by reducing unnecessary repaint and timer work when returning to the Cobalt Drift Neo window from another application.

GUI_Fix_03 adds plug-in host stability fixes. In VST3 and CLAP, the editor no longer exposes its own resize handle, mouse and wheel events outside the editor bounds are ignored, and heavy visual refresh work is reduced while voices are active. When the DAW transport stops, active synth voices and FX tails are cleared immediately. MIDI All Sound Off, Reset All Controllers, and All Notes Off messages are also handled so stuck-note recovery is more reliable.

Compatibility

Version 1.3 is designed to preserve existing presets, expansions, and DAW automation.

- APVTS parameter IDs were not removed.
- Filter type indices were not changed.
- Existing `.neo` files do not need conversion.
- `voice_polyphony` is not automatically rounded.
- `osc*_unison_voices` is not automatically rounded.
- Existing `wave_index` values are not changed.

Use the regular presets when you want the original behavior. Use CPU Lv or Lite Expansions when you want a lighter version.