Firmware updates for the GND-1T will be available on the website to incorporate any bug fixes, or add occasional features. If you believe you've found a bug, please try updating to the latest version. If you still see an issue, please send bug reports to gnd1T@richardvanhoesel.com.The update procedure below requires access to a computer with Windows 10 or later or MAC OS Catalina 10.15 or later. Earlier OS versions may work but have not been tested by us. We recommend closing all other software while performing the update. If you have any trouble, power cycle the GND-1T and reconnect the USB cable to your computer before running the loader.

Update Instructions:

Check your current firmware by holding the Patch button on your GND-1T during power up, and compare it to the latest version indicated on the website at https://richardvanhoesel.com/gnd1t.

Download the latest firmware using the "Latest firmware download" button on the website

You will also need these tools installed:

1. Teensy loader app:

Windows (exe file)

https://www.dropbox.com/scl/fi/38e6aa1chyjawl9vr2ndu/teensy.exe?rlkey=zya7oeijin9pqt53fw1b7mse7&st=qxrr2b0e&dl=0

MAC OS (tar file requires unzipping)

https://www.dropbox.com/scl/fi/et96e1orxejxdzt424gls/teensy-tools-0.60.3-macos.tar?rlkey=e15gjc62cad46x1u8d7qkgt7p&st=uc720z5u&dl=0

2. TyTools (latest version for Windows or MAC)

https://github.com/Koromix/tytools/releases

In the TyTools package, we'll be using just TyCommander.

Instructions to load the ehex firmware:

Start the Teensy app (MAC) or run teensy.exe (Windows):
File>Open Hex File (direct it to where you have downloaded the firmware)
Enable the "Auto" button underneath Help

Start TyCommander:
Press the Bootloader button. This will get the Teensy process started, which is all we're using TyCommander for.

The GND-1T screen should go blank at this point. After a second or two you should see the Teensy program starting the upload process, saying 'erasing' After up to about 20 seconds, this should switch to "Programming". After programming is completed, it's usually a good idea to power cycle the GND-1T to run the new firmware.
If after the erasing stage you get an error message, try re-enabling the Auto button on Teensy loader. If that doesn't start the program cycle, restart the Teensy loader and try Auto again. This time the upload should start automatically, and there should be no error.
Any issues, just get in touch.

From November 2024 onwards FW changes will be described in this document:

FW 241103 (Manual V 1.02) *November 2024*

Addition of drum overdrive control (Drum2 page), and a new Erode bend (Bends2 page), and deletion of warp-bend parameter. Manual and MIDI ref versions 1.02 describe these two new parameters.

Bug fix for the 'clear parameter' button on the XP mapping page (and extension to now also allow clearing of global matrix parameters).

FW 241211 (Manual version 1.03) *December 11, 2024*

New "Rungler" style modulator waveforms "mfo.lfo1" and "mfo.lfo2". These are shift register based waveforms sampling the mfo waveform at lfo1 or lfo2 rates.

Addition of two new NoteXP modes on the XP mapping page: Patch(4) and Note+Patch (5). These modes allow each key (MIDI note) to play a different patch. Set the patch selected by middle C (MIDI note 60) by selecting a patch in the usual way without pressing any keyboard notes.

Addition of LOOP Restore function (ALT RAND LOOP) on the Loop edit page, which allows reinstating the original loop (e.g. a spoken word) after multiple RAND LOOP presses. See the Loop edit page in the revised manual.

BLOCK morph button on the main patch page now always shows the number of patches in a block in the top right corner

New SysEx commands to ask the GND-1T whether a specific drift-buffer or Scene exits (MIDI Ref)

Bug fix for "excludes" when using external MIDI control of pot-parameters but not morphing.

FW 241225 (Manual version 1.04) *December 25, 2024*

New MIDI-clock based drum trigger option, selected by setting the Dsrc=0 selector to "clk" on the Drum1 Page (replaces previous LFO1+2 option). This new option creates a drum trigger every 6 MIDI clocks (i.e. 16th notes). The count can be restarted using a MIDI Start command. The clk based triggers are subsequently rate-limited by the Drate parameter as per usual, which in turn can be varied using clkDrum/ppq Drm. Accordingly, the Drum PPQN controls only affect the Drate parameter, and not the underlying Dsrc clk rate that responds strictly to MIDI clocks.

When this mode is active, as long as clocks are sent to the 1T and Drums are enabled, it will fire drums whenever RUN, run-drums-only, or NoteOn events are issued. The run-drums-only option may be particularly useful for DAW synchronous control of the 1T's drums/synth along with other devices, but I'm sure you will find various interesting ways to make use of this new mode.

Addition of two new NoteXP modes on the XP mapping page: Patch(4) and Note+Patch (5). These modes allow each key (MIDI note) to play a different patch. Set the patch selected by middle C (MIDI note 60) by selecting a patch in the usual way without pressing any keyboard notes.

Addition of a LOOP Restore function (ALT RAND LOOP on the Loop edit page). Allows restoring the loop ROM address after any number of RAND LOOP commands. Great for restoring e.g. intelligible

speech sounds after glitching them out using RAND LOOP. The restore address is reset by Word changes, patch changes and Save commands.

FW 250109 (Manual version 1.05) *January 9, 2025*

Added the ability to set Touch expression mode (Tch XP) and Note Expression Mode (Note XP) via MIDI NRPN CC 98 = 69, 70. Added new ENC XP (encoder expression) modes to allow permanent Drift Buffers to be loaded directly from the MAIN PATCH page. New modes:

Driftbuf: Turn the encoder to increment or decrement the current permanent DriftBuffer number. If the buffer exists (i.e. has been saved previously) it is loaded immediately. To skip over buffers and scroll to a particular one, hold [Xpress] while scrolling.

ModWL XPDbf: Turn the encoder to affect modwheel, hold [Xpress] + turn to select DriftBuffer

Breath XPDbf: Turn the encoder to affect breath control, hold [Xpress] + turn to select DriftBuffer

AfterT XPDbf: Turn the encoder to affect aftertouch, hold [Xpress] + turn to select DriftBuffer