1T Panel User Manual
Version 1.0

GUIDE TO 1T PANEL

1T Panel is a Windows program that sends MIDI commands, and is designed for ease of controlling any oneTesla interrupter, particularly tinyTesla's interrupter which is controlled over USB.

Download 1TPanel at onetesla.com/downloads.

1T Panel Features:

- Fixed frequency (single-tone) and MIDI modes of control
- Volume control
- Pitch control in fixed frequency mode
- MIDI song playlist
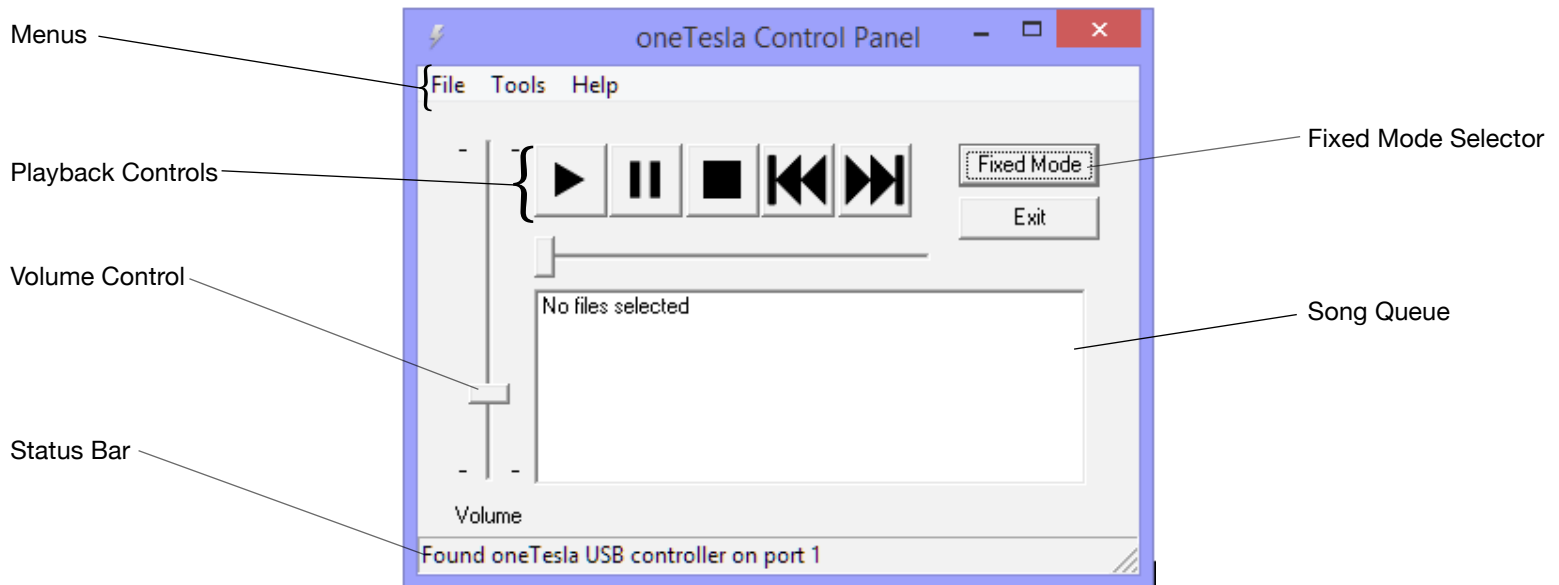- MIDI analysis tools

Overview

Controls

When you open the software, the status bar at the bottom of the window should show *Found oneTesla USB controller on port X.* If no controller is plugged in, or if your controller isn't working, it should show *Error: no controller found.* Furthermore, if your controller is malfunctioning, chances are Windows will throw an error when it tries to initialize the device.

Non-Windows Users

If you're a Mac or Linux user unable to install 1TPanel, you can control your Tesla coil interrupter with any MIDI playback software that supports output to USB devices. Ensure that the software lets you send Master Volume commands in order to set the overall coil power level. The tinyTesla interrupter accepts commands on MIDI channel 0.

Always check your software for correct behavior by looking into the output of the optical transmitter before connecting your interrupter to the coil! This is especially important if using software other than 1T Panel.

Menus

Playback Controls

Volume Control

Status Bar

Fixed Mode Selector

Song Queue

oneTesla Control Panel

File   Tools   Help

Fixed Mode

Exit

No files selected

Volume

Found oneTesla USB controller on port 1

Volume

Drag the **Volume** slider up or down to change the master volume for all modes. If you're starting your coil for the first time or doing a test after changes, you should drag it all the way down before pressing play. Always start on low power and gradually increase the power, watching your coil for problems.
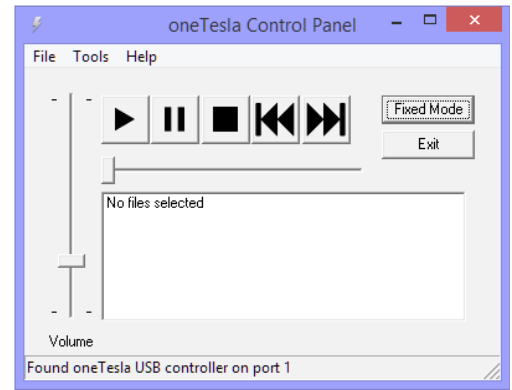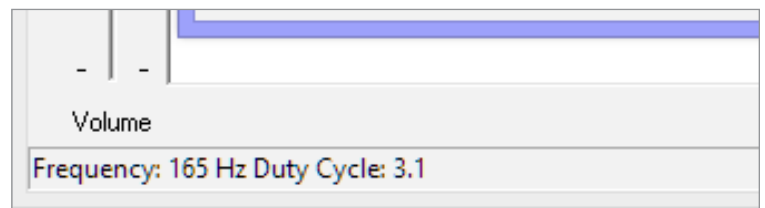
Fixed Mode

If you click **Fixed Mode** the following dialog pops up.
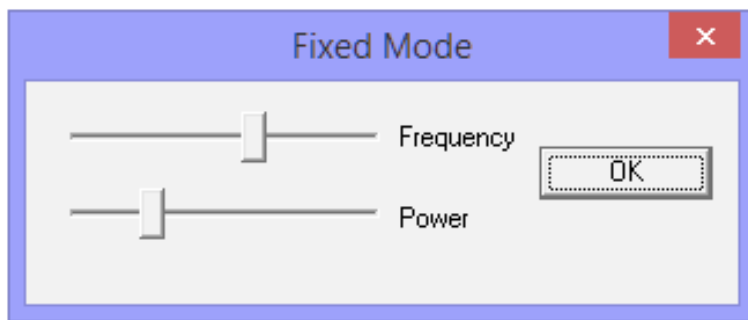
Dragging the sliders changes the frequency and power (note that adjusting fixed mode power does not adjust master volume). In fixed mode, the status bar displays the frequency and the duty cycle. Duty cycle is given in percent.

Frequency: 165 Hz Duty Cycle: 3.1
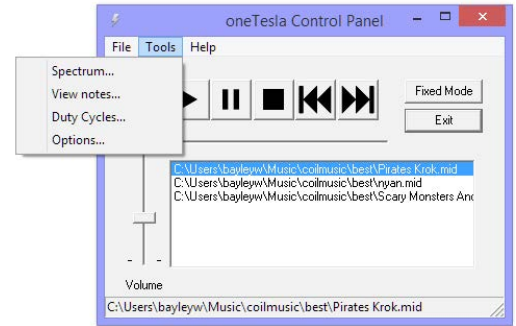
Playing a Song

To open a song, use the **File** menu. **Open** replaces the entire queue with a single song. **Add** adds a song to the end of the queue.

Click a song in the queue and click the **Play** arrow to start it. The slider is an indicator and does not seek.
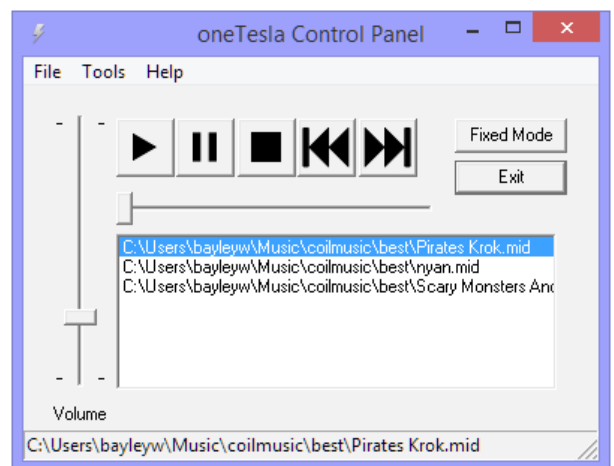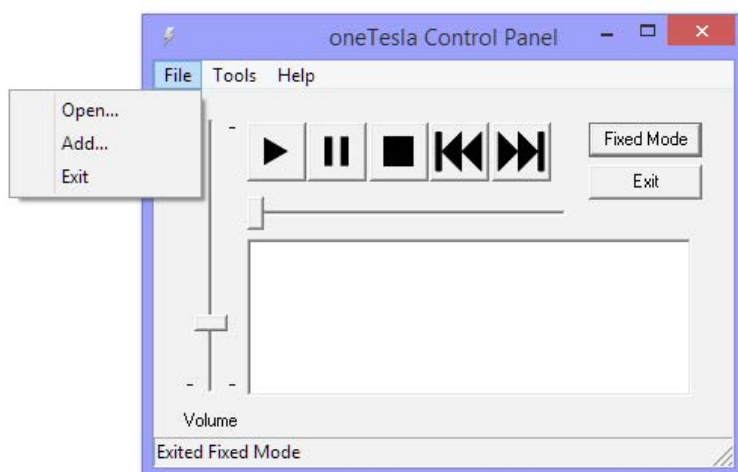
The Tools Menu

The **Tools** menu provides a few useful features to analyze the selected song.

Spectrum

Spectrum provides a chart of note count versus MIDI note number. This is useful for determining how a song will make the coil perform. The coil produces longer sparks with less power draw when playing high notes. Songs in a higher register also tend to sound better.
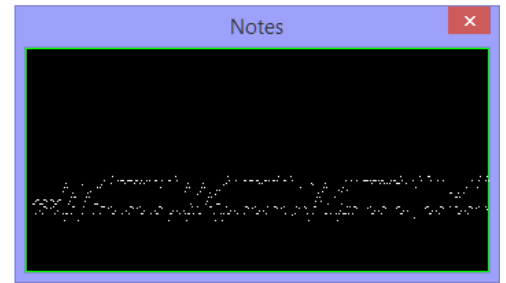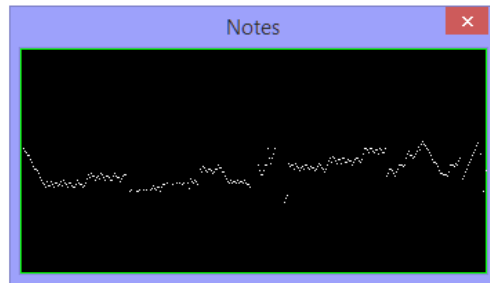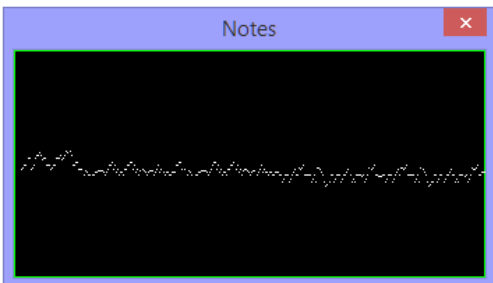
Nyan Cat

Flight of the Bumblebee
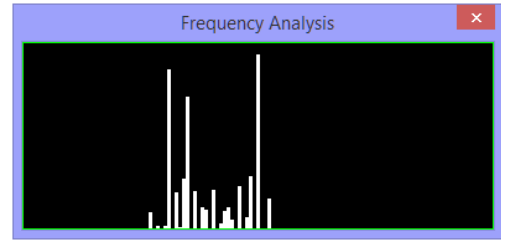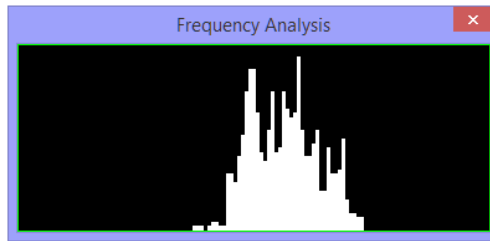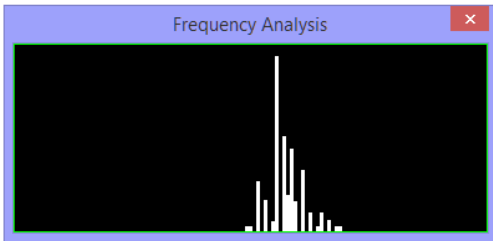
Satisfaction

View Notes

View Notes shows a plot of notes playing versus time:
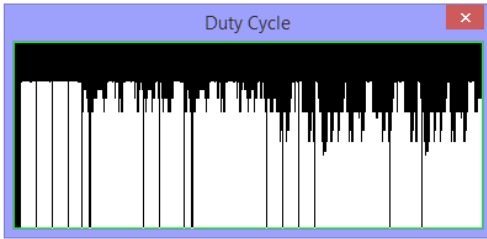
Nyan Cat

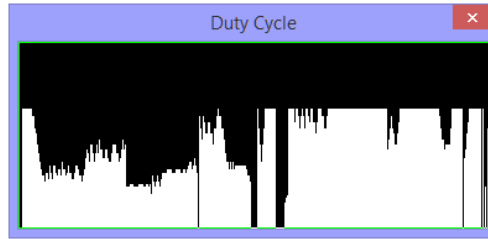*Flight of the Bumblebee*

Satisfaction

Duty Cycles

Duty Cycles plots duty cycle versus time. This is useful for determining how much power the coil will draw while playing a given song. The more white in the dialog, the hotter the coil will run.
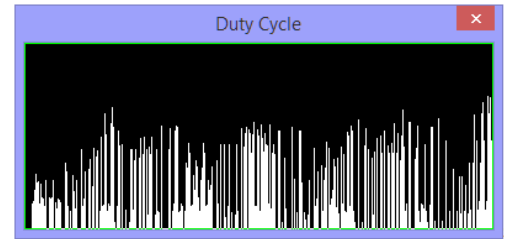
Nyan Cat

*Flight of the Bumblebee*

Satisfaction

Options

Finally, **Options** contains a few useful playback utilities.

Play notes on channel lets you change the MIDI channel that is played back. This is useful if the primary track in your file is not on channel zero.

Shift low notes up adds an octave to low notes. Setting a limit of 127 shifts the entire song up an octave. Limits other than 127 will possibly cause the song to sound off-key, but may be useful for coils which cannot tolerate low notes (fortunately not ours!).
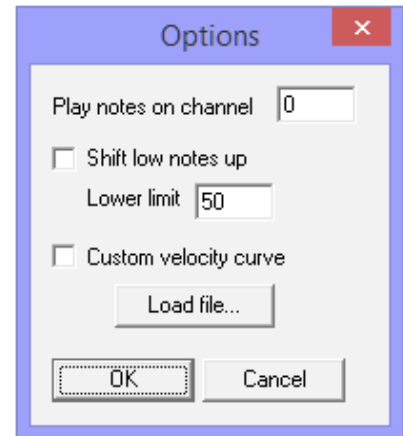
Finally, **Custom velocity curve** allows you to load a lookup table (LUT) for actual velocity versus file velocity. The software expects this as a space or tab-delimited text file containing 128 numbers between 0 and 127 (127 being 100% power), corresponding to the playback duty cycles for MIDI velocity 0 to 127. This is useful for applications such as linearizing the output of the coil.

Need help?
Go to the sub-forum on 1T Panel at **onetesla.com/forum**.