Alt-tester manual

(excerpted from the alt-tuner manual)

If you want to make sure that alt-tuner will work with your midi set-up <u>before</u> you buy it, and the alt-tuner forum doesn't discuss what you have, you can test your hardware, your softsynth, or your DAW's rewire connection with the free download alt-tester, available at www.TallKite.com. If your set-up works with alt-tester, it'll almost certainly work with alt-tuner.
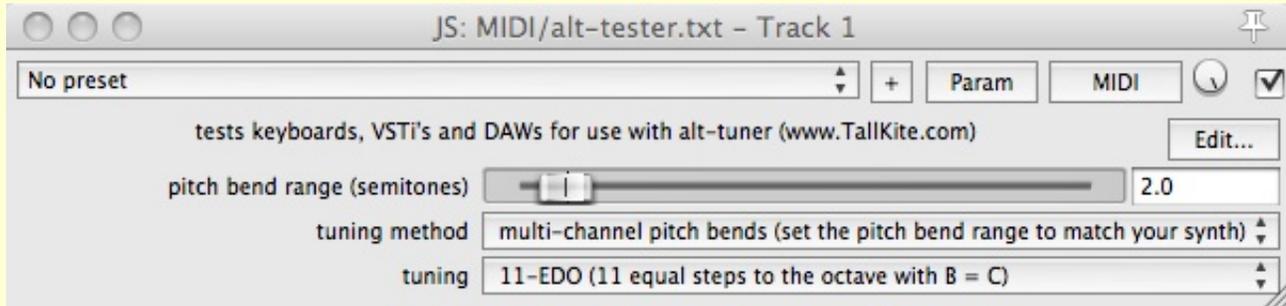
Alt-tester is not full-fledged tuning software like alt-tuner, it's only for testing purposes.

> Unlike alt-tuner, alt-tester doesn't support creating your own scales. You are limited to 2 preset scales.
> Unlike alt-tuner, alt-tester doesn't support using the sustain pedal, the pitch bend wheel or the mod wheel.
> Unlike alt-tuner, alt-tester doesn't support holding down more than 2 keys at once in mono mode.

Installation for Reaper users: first download and install Reaper, selecting rewire under "Additional functionality". Move alt-tester to the midi effects folder. On a mac, that's Users/(*your name*)/Library/Application Support/REAPER/ Effects/MIDI. On a PC, run Reaper, choose Options/Show REAPER resource path, and use the Effects/MIDI subfolder. To uninstall alt-tester, just delete it.

Installation for ReaPlugs/ReaJS users (Windows only): If you're a Windows user and you don't have Reaper, you must use ReaJS, which is part of ReaPlugs. ReaPlugs is free, get it here: http://www.reaper.fm/reaplugs/ Use the latest version, ReaPlugs 2.36, the graphics are broken in earlier versions. To install ReaPlugs, just double-click the exe file.

(If you've already installed ReaPlugs, and you're not sure which version you have: There is no version number on the reaJS effect screen, so check the "date modified" of the reaJS.dll file. Version 2.36 is January 2016. Or read reaplugs_readme.txt. See next paragraph for the location of reaJS.dll)

Next, find your VST folder, which contains all your VSTs, as well as the ReaPlugs folder (which contains reaJS.dll). Assuming it's C:\Program Files\VstPlugins\, move alt-tester to C:\Program Files\VstPlugins\ReaPlugs\JS\Effects\ MIDI\. Alt-tester should show up in the "Load" menu. If not, you may need to remove and reload ReaJS, or possibly even quit and relaunch your DAW.

Reaper users: Open the "tester.RPP" Reaper project. It's all set up with ReaSynth, Reaper's included VSTi. Verify that ReaSynth is being retuned by playing a few notes. Verify that moving your pitch bend wheel bends the notes. You should hear an 11-EDO scale in which all the semitones from C up to B are slightly wider, and B and C are the same note. If you choose 10-EDO, the semitones will be even wider, and not only B and C but also F and F# will be the same note. You can switch EDOs as you play. If there's no sound, check the audio device settings in Reaper's preferences.

You have the choice of six different tuning methods:

> multi-channel pitch bends (assumes the pitch bend range = 2 semitones = 200¢)
> multi-channel pitch bends (same but a "safe" mode requiring 12 instances)
> single-channel pitch bends (for monophonic synths)
> sysex82 (for Xen-Arts synths among others)

sysex88 (for Roland synths among others -- retuning is limited to -64¢ to +63¢)
keyswitch (for Kontakt – requires the microtonal keyswitch script)
multi-channel RPN coarse/fine channel tuning (let me know if anything works with this!)

The first two are the most likely to work with your synth. The "safe" method is for sounds with a lengthy release time. It keeps the notes from "getting their tails bent" by notes that follow. Use the third method for monophonic synths. Most synths don't respond to the sysex methods, but if yours does, it will greatly reduce your set-up time. The sysex88 method limits the retuning range. The keyswitch method is for Kontakt only. It requires the Kontakt instrument receiving the midi to contain the microtonal keyswitch script, available at www.TallKite.com. This script uses keyswitches on midi notes 123-127 (D#9 to G9) to retune the instrument. The RPN method uses midi registered parameter numbers and is a possible alternative to the pitch bending methods. This method is not part of alt-tuner because I don't know of any softsynths or hardsynths that respond to RPNs but not pitch bends. If yours does, let me know, and the RPN tuning method can be added to alt-tuner.

To use any of the three pitch bend methods, first use the pitch bend wheel to determine what your synth's bend range is. For example, usually G can be bent all the way up to A and all the way down to F, and the bend range is 2 semitones or 200¢. Alt-tester's pitch bend range *MUST* match your synth's pitch bend range. If they don't match, change either alt-tester or your synth so that they do. If your synth has a range of only half a semitone, you can type "0.5" in the little box next to the pitch bend range slider. If your synth's range is two octaves, type "24" in the box.

If your synth doesn't respond to your pitch bend wheel, either the pitch bend range of your synth is set to 0, or it flat out ignores all pitch bend messages. If you can't find a way to set the pitch bend range, your synth is unbendable, and untunable with pitch bends. If it doesn't respond to sysex messages or RPNs either, your synth is simply not retunable.

If you use the sustain pedal, the mod wheel, or the pitch bend wheel, it will only affect some of the notes. Alt-tester is for testing purposes only, and doesn't support these or any other controls. However, alt-tuner will work properly with these controls.

To test softsynths (VSTi's, AUi's, etc.): Try the easy way first: Solo the 1st track and put your synth in the effects chain right after alt-tester. If your softsynth is mono, or if it's polyphonic but you've set it to mono, set alt-tester to the third tuning method and you're done. Otherwise, set alt-tester to the first method. If your synth is multi-timbral, set it up with multiple channels all set to the same sound, and you're set. Otherwise, test it by holding down one key and playing short random notes over it. Listen for pitch shifts in the drone note. This will be easier to hear with a sustaining sound. If there are no shifts, your softsynth is multi-midi-channel, and you're good to go. PianoTeq falls into this category. Otherwise, try the two sysex methods. If either one retunes your softsynth, it's sysex-retunable, and you're A-OK. Otherwise, remove it from the effects chain and un-solo the track. You'll have to retune it the hard way by setting up multiple instances of your synth on the other tracks.

Choose one of the multi-channel methods. Replace at least the first 6 instances of ReaSynth with your softsynth. That's usually enough to cover normal playing. If you need to, you can replace the other instances. "Safe" mode requires you to replace all 12 instances. As long as your synth responds to pitch bends, one of the first two methods should work.

To test a hardware synth: Solo the 1st track and in its I/O box, set the midi hardware output to your hardware. On your keyboard, turn local control off. For mono patches, set alt-tester to the third method. Otherwise, try the two sysex methods first. If either one works, you're done. Otherwise, put the synth in multi-timbral mode. Set at least the first 6 channels of your tone generator to be all the same instrument. For "safe" mode, set the first 12 channels. Your synth must be sufficiently multi-timbral to receive all these channels, see the "specs" section of your synth's manual.

To test ReaJS in your DAW: Put ReaJS in your effects chain. Load alt-tester into ReaJS. Send the midi to either your keyboard or to your softsynth.

To test your DAW's rewire connection: Windows users, first download loopMIDI, a free virtual midi cable (VMC) from here: http://www.tobias-erichsen.de/software/loopmidi.html. After installation, run loopMIDI and create 6 ports. OS X users: first run Audio Midi Setup and make sure the built-in VMC called IAC has at least 6 ports.

Rewire Reaper (the slave) into your DAW (the host). In your DAW, create two tracks, "raw midi" and "tuned midi". Set the "raw midi" track's input to your keyboard or controller. Set the output to a VMC midi bus, aka port. Open the appropriate "alt-tester ReWire wrapper.RPP" in Reaper. Set the input of the 1st track to that same VMC bus. Set the midi hardware output to another VMC bus. In your DAW, set the input of the "tuned midi" track to this 2nd bus. Send

the midi from this track to either your keyboard or to your softsynth. You may need to use multiple instances of your softsynth on multiple tracks. See "tester.RPP" for an example of how to do this. To tune more instruments, add more "raw midi" and "tuned midi" tracks to your DAW, and use additional VMC busses to connect them with the 2nd and 3rd tracks in the wrapper.