

ODDSOUND : MTS-ESP MINI

User Guide
Version 1.08 (15 Dec 2021)

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Windows

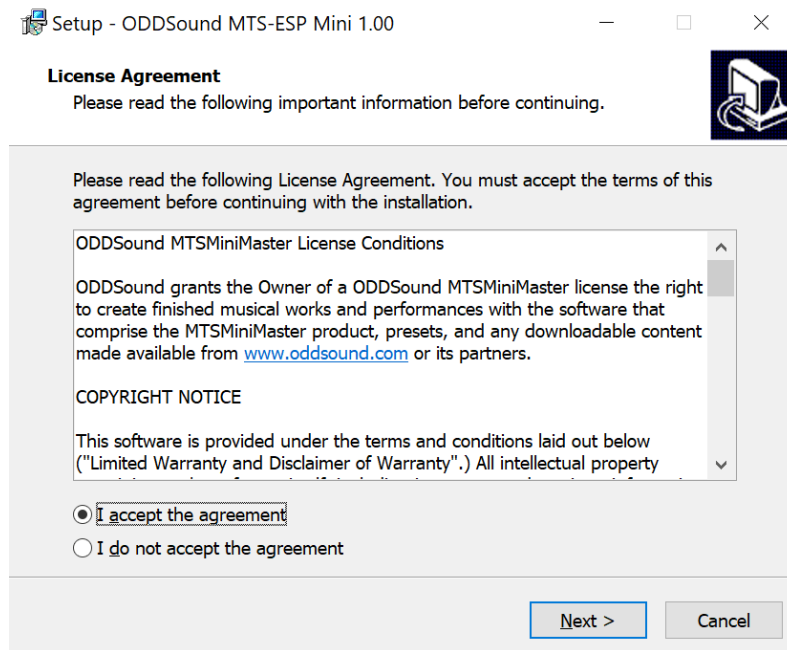
- MTS-ESP Mini works with Windows 7, 8, and 10, 32bit and 64bit.
- VST, VST3 and AAX are supported in both 32bit and 64bit hosts.
- Your graphics card must support OpenGL2. Most cards do support it but performance with integrated Intel graphics may be poor.

Mac OS

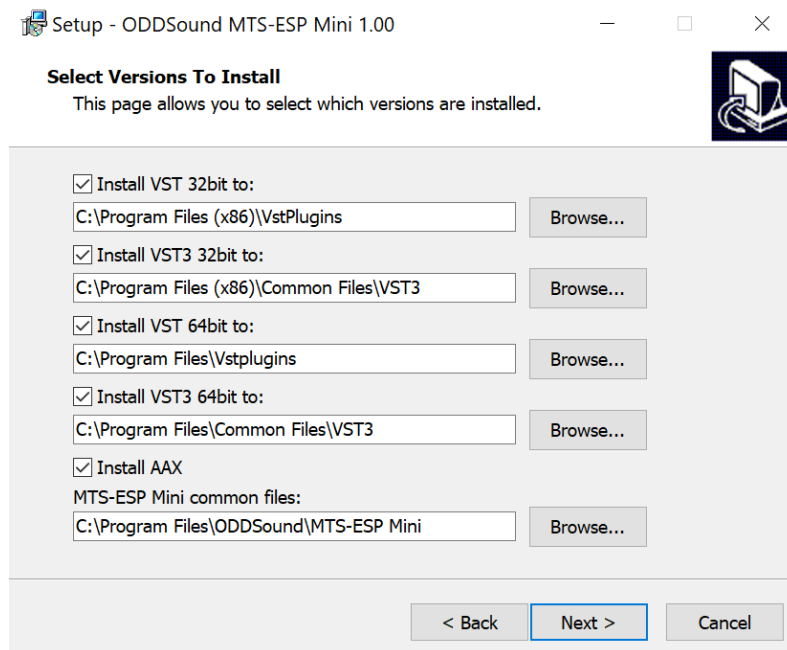
- MTS-ESP Mini requires OS X 10.7 or newer on Intel or ARM Mac.
- VST, VST3, AU and AAX are supported in 64bit hosts only.

How To Install On Windows

There is a single installer which includes both 32 and 64 bit versions as required. Download the installer from <https://oddsound.com>, unzip and double-click to run it. It will look like this:



Accept the agreement and click 'Next' to choose which plugin formats to install:

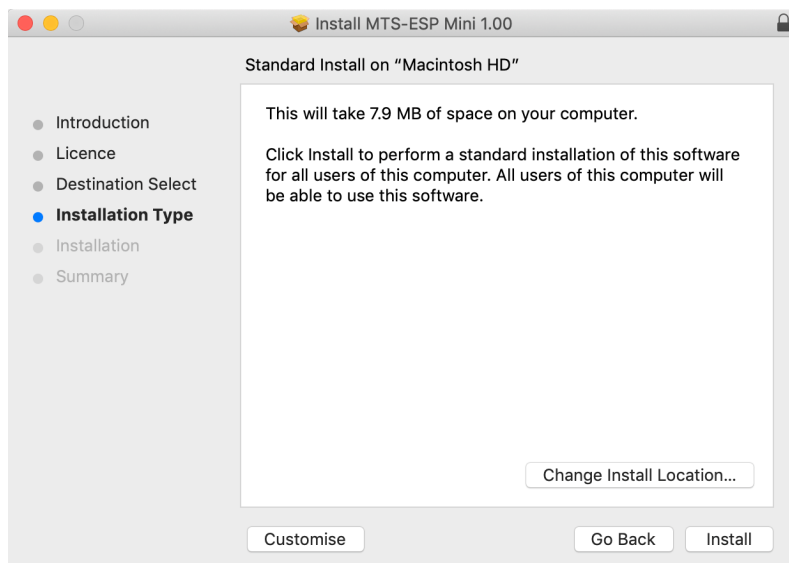


Enable the check boxes for the plugins formats to be installed. The install location for each format can be set in the box below the relevant check box. AAX has no location option as it must be installed to a specific folder.

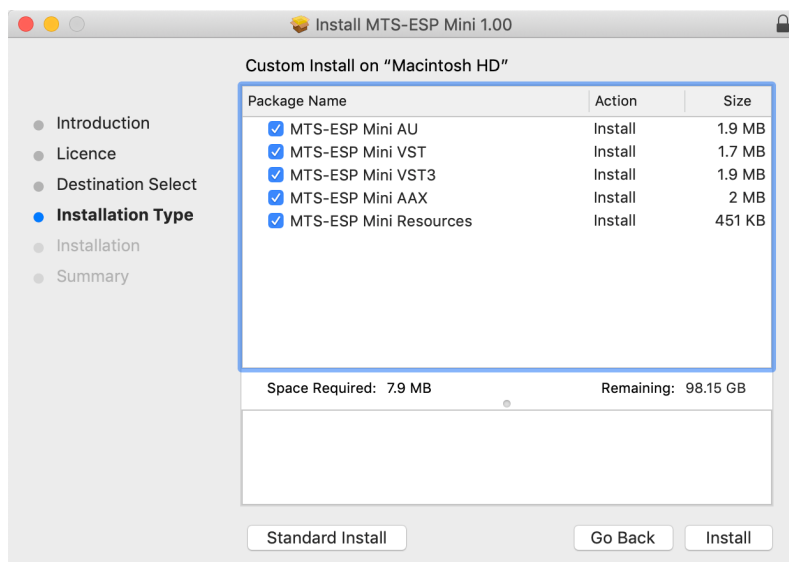
Once all options have been set, click 'Next' and 'Install', then start/re-start your DAW to begin playing!

How To Install On OSX

Download the installer from <https://oddsound.com>, unzipping if required. Right-click the installer .pkg file, select 'Open' and continue through installation to the 'Installation Type' page:



To specify which plugin formats get installed click 'Customise':



Finally click 'Install', then start/re-start your DAW to begin playing!

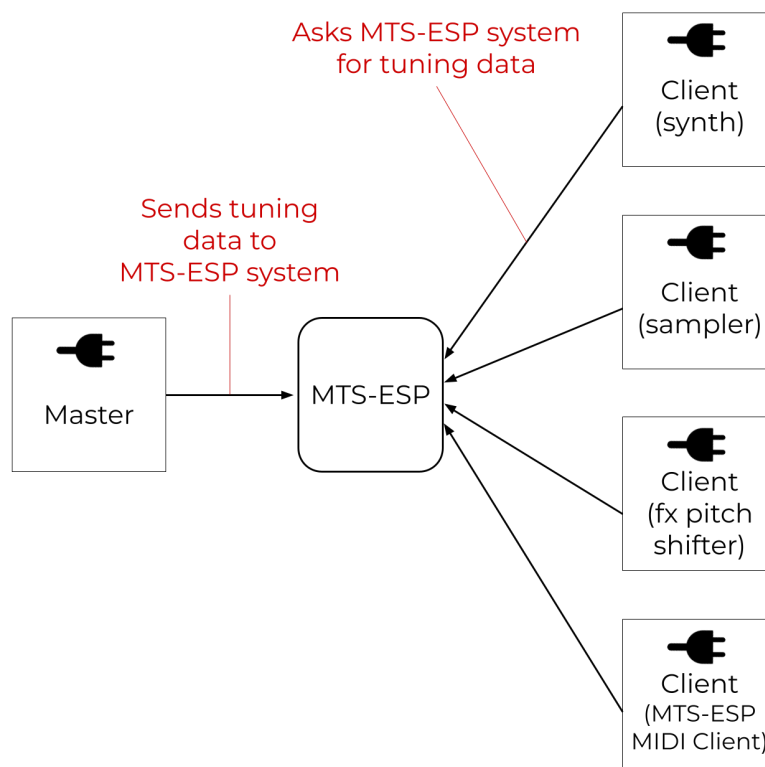
MTS: "MIDI Tuning Standard". A part of the MIDI specification allowing for transfer of tuning data between MIDI devices using system exclusive (SysEx) messages. MTS-ESP continues to use this acronym as it is a software counterpart to MTS, allowing transfer of tuning data between plugins in a DAW session.

ESP: "Extrasensory perception". In the MTS-ESP system, the transfer of tuning data is automatic and invisible. The synths "just know" what frequencies to play!

MTS-ESP is a protocol for implementing centrally-controlled microtuning in virtual instruments. It allows the tuning of all synths in a DAW session to be set from a single source. This all happens automatically and in real-time, with no setup required and no need to load tuning files separately into each synth.

A virtual instrument plugin *must* support the MTS-ESP protocol for it to work with this system. A list of plugins that support it can be found at <https://oddsound.com>.

The way MTS-ESP works is simple. A 'master' plugin is one which defines the tuning. Its job is to tell the MTS-ESP system what frequency each MIDI note should play. There can only be one master connected to the system at any one time. A 'client' plugin is one which follows that tuning (e.g. a synth or sampler). When a client plugin plays a note, it repeatedly asks the MTS-ESP system for the frequency it should play, updating it in real-time if required. There is no limit to the number of clients that can connect.



IPC Support

MTS-ESP supports inter-process communication (IPC). Some hosts, including Bitwig, FLStudio, Reaper and Waveform, offer support for running plug-ins in separate processes and MTS-ESP connection will work if this is configured. This may be referred to as 'sandboxing' or 'bridging' depending on the DAW. Plug-ins running in completely separate applications on the same computer will also automatically connect.

If the process in which MTS-ESP Mini is running crashes, the plug-in will not have a chance to deregister itself from the MTS-ESP system. On re-loading the plug-in or session you may see the following error message when opening the MTS-ESP Mini UI:

ERROR

Either an MTS-ESP master plugin is already instanced, or did not shut down correctly. Only one MTS-ESP master may be in use at one time. If you experienced a crash, click below to re-initialize MTS-ESP.

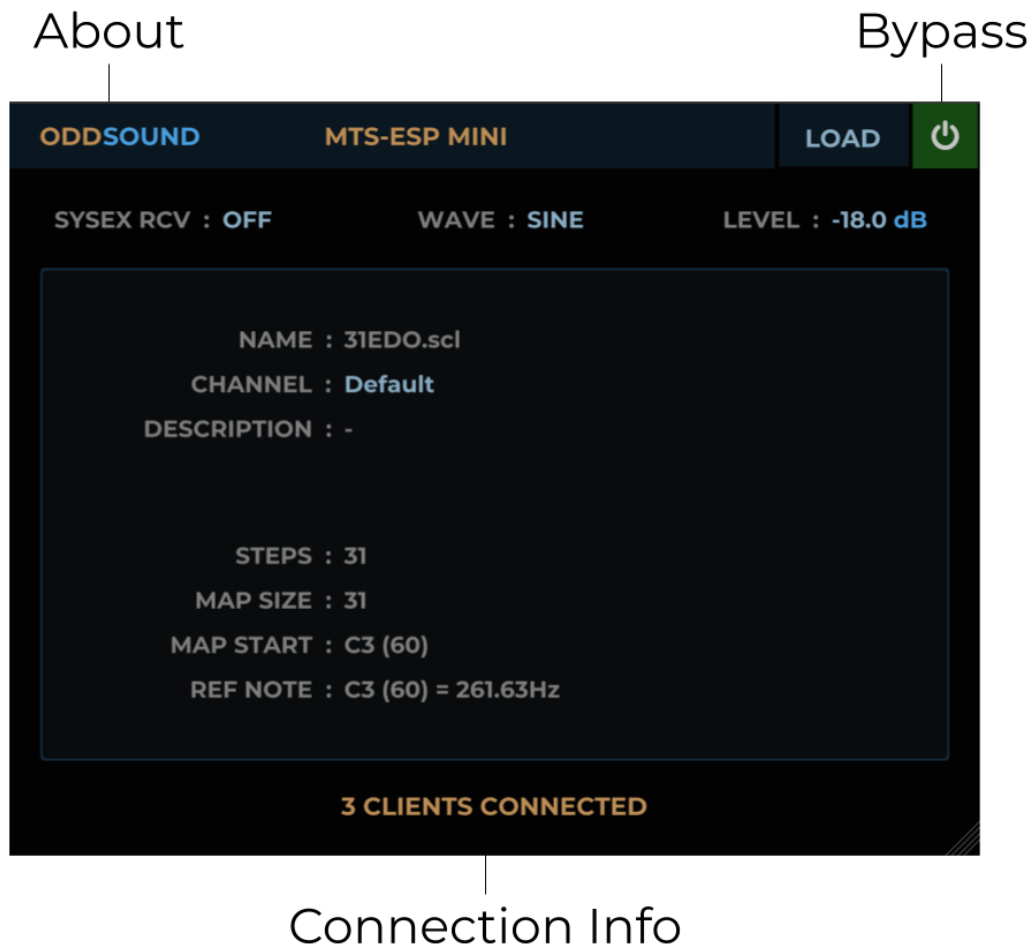
RE-INITIALIZE MTS-ESP

If no other MTS-ESP master plug-in is instanced in any running application then it is safe to click 'Re-initialize MTS-ESP' to allow the plug-in to register itself as master. Note that doing this will reset the connected client count, which may then show an incorrect number. Re-loading the session or DAW will correct the client count.

It is possible to disable IPC support. Whilst this should rarely be required, one use could be to allow for multiple instances of MTS-ESP Mini with different tunings. If a DAW supports plug-in sandboxing then multiple instances of a sandboxed hoster plug-in could be used to host separate instances of MTS-ESP Mini along with one or more MTS-ESP client plug-ins. To disable IPC support locate the 'MTS-ESP.conf' file and open it in a text editor. Change the line 'ipc_support = 1' to 'ipc_support = 0', save the file and then restart all applications using MTS-ESP. The 'MTS-ESP.conf' file can be found in the following locations:

Win: Program Files\Common Files\MTS-ESP (or Program Files (x86)\Common Files\MTS-ESP for 32-bit library on 64-bit Windows)

OSX: Library/Application Support/MTS-ESP



MTS-ESP Mini is an MTS-ESP master plugin. It provides a free and simple way to start using the MTS-ESP microtuning system. It can load commonly used tuning file formats (see below). Any client plugins loaded in the same session will automatically adapt to the loaded tuning.

MTS-ESP Mini is an instrument plugin and must be loaded into an instrument track or synth slot in a DAW. It features a small internal synth to audition the current tuning.

About

Click the OddSound logo for version number and about info.

Load

Click to load a tuning file into MTS-ESP Mini. Supported file types are:

- **.tun** : Anamark tuning file - http://en.xen.wiki/w/Anamark_tuning_file_format
- **.msf** : Anamark multiple scale file - http://en.xen.wiki/w/Anamark_tuning_file_format
- **.scl** : Scala scale file - http://www.huygens-fokker.org/scala/scl_format.html
- **.kbm** : Scala keyboard mapping - <http://www.huygens-fokker.org/scala/help.htm#mappings>
- **.syx** : MIDI Tuning Standard System Exclusive (MTS SysEx) - <https://www.midi.org/specifications/midi1-specifications/midi-1-addenda/midi-tuning-updated>

It is also possible to load files into MTS-ESP Mini by dragging them from Explorer/Finder and dropping them on the plugin window.

Bypass

Click to bypass MTS-ESP Mini and return all connected clients to using 12-TET tuning. Right-click for MIDI learn options to assign a MIDI CC to Bypass. The MIDI CC assignment is stored globally and applies to all instances in all sessions.

Internal Synth

MTS-ESP Mini features a small internal synth that can be used to audition the current tuning or act as a reference against which to check the tuning of other synths. The following parameters are available:

- **Wave** : Switch between either a sine or saw wave, or set to 'OFF' to silence the internal synth.
- **Level** : Set the output level of the internal synth.

As with the Bypass button, all three synth parameters can be assigned to a MIDI CC by right-clicking them to open the MIDI learn menu.

Scale Info

The main section of the window shows information about the currently loaded scale and mapping. Scale information includes the scale name, a description and the number of scale steps. Mapping information includes the map size, map start key and reference note and frequency. Octave labelling for the map start key and reference note use -2 as the lowest octave i.e. middle C (midi note 60) = C3.

On loading a new instance of MTS-ESP Mini, it will default to 12-TET.

If using a multi-channel mapping, the 'Channel' value will turn light blue. Click or mouse-wheel on it to view the information for a specific MIDI channel. See [Multi-Channel Mapping And MTS-ESP \(page 11\)](#) for further info.

Connection Info

The number of connected clients is shown at the bottom of the plugin window. If retuning seems not to be working, check that clients are showing as connected here.

Sci/Kbm

Scala .scl and .kbm files are often used together. To do this with MTS-ESP Mini, first load a .scl file and then load a .kbm file. If no .kbm file is loaded after a .scl file, a default keyboard mapping will be used, starting on MIDI note 60 (middle C), which will be set to 261.63 Hz (the frequency of middle C in standard 12-TET tuning).

When loading an .scl file, if an accompanying .kbm keyboard mapping file is present in the same folder and with the same name, it will automatically be loaded.

Multi-Channel Mapping And MTS-ESP

The MTS-ESP system has optional support for multi-channel mapping, whereby a note can play a different frequency depending on its assigned MIDI channel. To put it another way, each MIDI channel may optionally have its own tuning table. For this to work a client plug-in must supply a MIDI channel as well as a note number when querying tuning from the MTS-ESP system. In some client plug-ins this may not be possible, which is why multi-channel support is an optional feature.

There are technically 17 tuning tables in the MTS-ESP system, one for each of the 16 MIDI channels, which may be optionally defined, plus a further 'general' table, which must always be defined. The general table is used if a client doesn't provide a MIDI channel, or for MIDI channels where no table has been defined.

Both the Anamark TUN and Scala kbm specifications allow for multi-channel mapping, as well as the MIDI Tuning Standard Scale/Octave Extensions formats, all of which MTS-ESP Mini supports as detailed below.

If using a multi-channel mapping with MTS-ESP Mini, the 'Channel' value in the [Scale Info box](#) will turn light blue and can be used to select which channel's settings are currently displayed.

Multi-Channel Kbm

A .kbm file can be applied to a specific MIDI channel by appending an underscore followed by the MIDI channel number (1-16) to it's name, for example 'mapping_2.kbm' will apply only to channel 2, 'mapping_3.kbm' only to channel 3. All .kbm files comprising a multi-channel mapping must be named the same (excluding channel specification) and stored in the same folder.

To load a multi-channel .kbm mapping into MTS-ESP Mini, simply load any one of the .kbm files comprising a multi-channel mapping. MTS-ESP Mini will automatically search for any others in the same folder and load them.

It is not essential to provide a .kbm for all MIDI channels. Any missing channels will use the default mapping described in the [Sci/Kbm](#) section. Alternatively, a mapping can be provided for the missing channels by including a .kbm file with the same name but no channel specification, e.g. 'mapping.kbm'.

Multi-Channel MSF

The Anamark Multiple Scale File (.msf) format contains multiple TUN v2.00 tuning file definitions in a single file, one after the other. It is possible to assign each tuning to one or more MIDI channels using the [Assignments] section. Full details can be found in the TUN v2.00 specification: www.mark-henning.de/files/am/Tuning_File_V2_Doc.pdf.

When loading a .msf file into MTS-ESP Mini, the [Assignments] section for each tuning is checked and determines which channel it is applied to. If a MIDI channel is assigned to more than one tuning in the file, the first assignment will be used. If a tuning has no MIDI channel assignments, it is assumed to apply to all channels and any further tunings in the file will be ignored.

When creating a .msf file to use with MTS-ESP Mini it is not necessary to assign a tuning to all 16 MIDI channels, however it is advised to always include a tuning definition with no assignments at the end of the file. This will define the tuning for any unassigned channels. If this definition is missing, the first tuning definition in the file will be used in its place.

MTS SysEx

All formats of MIDI Tuning Standard system exclusive (MTS SysEx) message are supported by MTS-ESP Mini. If using the Scale/Octave Extensions formats, the channel field bytes are respected and applied to the selected MIDI channels. If all channel field bytes are set to 0 the tuning will apply to all channels.

As well as loading files manually, MTS SysEx messages can be sent directly into MTS-ESP Mini via any DAW that supports SysEx, enabling any device or software that can send MTS SysEx messages to retune synths via the MTS-ESP system. Ensure 'SysEx Rcv' is set to ON to enable this feature.