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Introduction to dsTune

dsTune is a program, designed to assist in tuning a guitar.

Through a microphone, or directly with an electrical guitar, and a soundcard the sound is led into the computer, where dsTune analyses it and calculates the main frequency. This frequency is shown by a pointer on a scale, comparing it to the proper frequency. Tuning a string now simply means centering the pointer.

If you use an electrical guitar, turn the volume knob on your guitar to a very low level. Connect the guitar to the Microphone In connection of the sound card when the computer is turned off. (Before you do this, read the [warning!](#)).

With dsTune it is possible to tune to the normal E A D G B E tuning, but you can also tune to an open G or D tuning or any other tuning.

System requirements

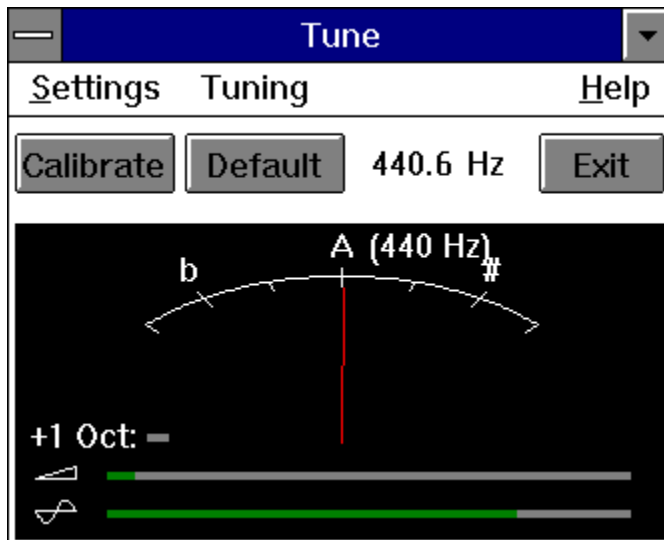
To run dsTune you need:

- A computer with a 386 processor or higher.
- Windows 3.1 or higher.
- A soundcard, capable at least of recording 8-bits mono sound at a sample rate of 11025 Hz.
- If you dont use an electrical guitar: a microphone.

Calibrating

If your soundcard is of an inexpensive type you may need to calibrate to compensate for inaccuracies in samples rates. The values found will be stored in the tune.ini file in the same directory as tune.exe, so you need to do this only once.

If you have a tuning fork you can calibrate with the Calibrate with tuning fork option in the Settings menu. The following window will appear:



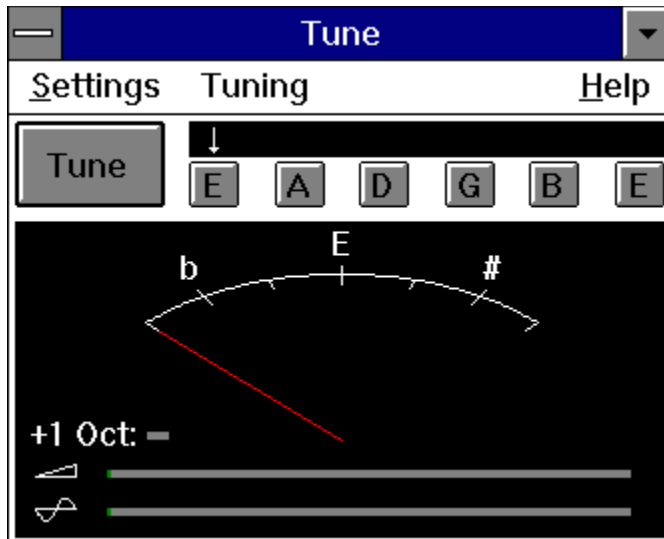
You need a 440 Hz sound to calibrate, for instance from a tuning fork. Initially the Calibrate button will be grayed. When a constant frequency is detected, not too far from 440 Hz, it will become enabled. Using the Calibrate button now will adjust the settings, and the indicated frequency should become 440 Hz. Using the Default button resets the settings to their nominal values, assuming a sample rate of for instance exactly 11025 Hz.

By pressing the Exit button the program will return to the initial window. If the settings are changed you will be asked to confirm to save these. They will be saved in the TUNE.INI file in the same directory as TUNE.EXE. These settings will be used the next time dsTune will be run.

If you don't have a tuning fork, you can use the Calibrate Automatically menu option. Although this is not as accurate as using a tuning fork, it will be less than half a percent off, close enough for most uses.

Tuning

To start tuning, position the microphone close to the guitar strings. Press the Tune button:



The small white arrow on top of the E A D G B E buttons indicates which string is selected. If the Automatic String Selection option in the Settings menu is checked, the program will switch to the string that is closest to the audible frequency. If the guitar is way out of tune it can be advisable to disable this option to prevent unwanted string switching.

If the current string is audible, the red pointer will indicate its frequency. If it points to the left the frequency is lower than it should be, and the string should be tightened. (Before you do this, read the [warning!](#)). Only if the pointer gives a steady reading the indicated frequency is valid. When you sound a string the pointer should jump and then quickly stabilize in one position.

To select a different string push the right button in the row of E A D G B E buttons or use the , and . keys. If Automatic String Selection in the Settings menu is checked, you can simply sound the next string.

If you dont get a good reading this can often be solved by these actions:

- Make sure the strings you are not tuning are silent.
- Disable the [Automatic String Selection](#) option in the Settings menu. This gives a more steady reading.
- Aim the microphone at the hole of the guitar and play the strings there.
- Check that the volume indicator (the horizontal bar to the right of the triangular icon) reacts to tapping on the microphone. If it does not there is something wrong with the microphone, the sound card or the sound cards drivers. Check the switch on the microphone.

Tuning to alternative tunings

With dsTune you can also tune a guitar to half a note lower than standard E A D G B E tuning, to an open G or an open D tuning and to any custom tuning. Open G and open D are tunings, where you play a G major or D major chord without pressing any of the strings.

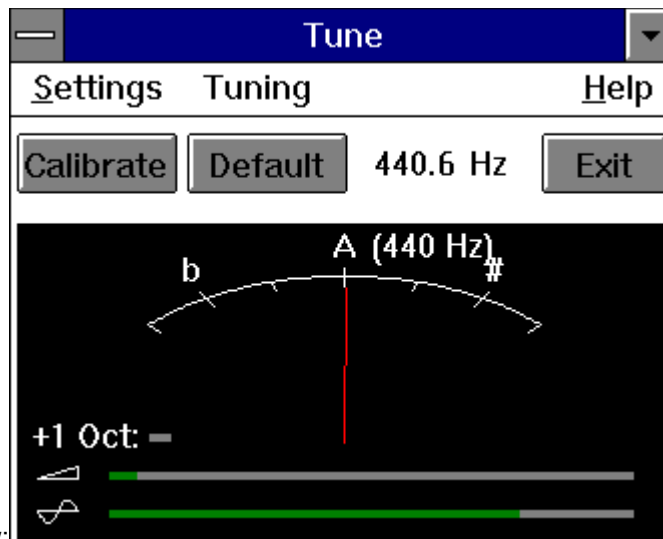
To change the tuning to a different tuning, select that tuning option in the Tuning menu. With Custom tuning you can enter a tuning yourself by moving the scroll bars. The notes the strings should now be tuned to will appear in the string selection buttons (The buttons that initially read E A D G B E). Deselect the Automatic string selection option in the Settings menu to get the best result.

To change the tuning of your guitar from standard tuning to one of the other non-custom tunings, you need only to loosen strings, so there is no danger of damaging your guitar.

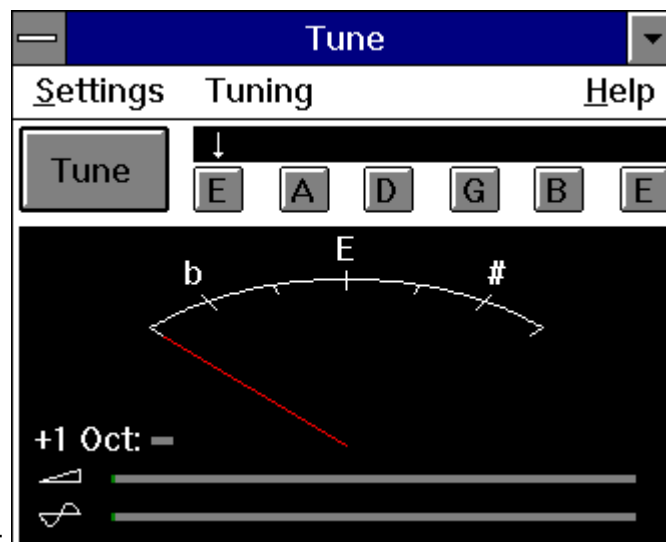
The smartest way to do the tuning is to first do a rough tuning on all the strings, and then tune them precisely. This because changing the tension in one string will change the bending of the neck of the guitar slightly, and will thus change the frequency of the other strings.

Parts of the display

Click on the part of the display, the button or the menu you want information about.



Calibration window:



Tuning window:

Tune Button:

This button starts or stops tuning. When the program is tuning, the button text changes to Stop.

String Selection Display:

This display shows the active string.

String Selection Buttons:

With these buttons you can select the active string. You can also use the , and . keys.

+1 Octave indicator:

Sometimes the signal from the second harmonic can be stronger than the fundamental frequency, in other words, when for instance a string with a frequency of 100 Hz is played, dsTune will sometimes detect a frequency of 200 Hz. If this happens, dsTune will automatically divide the detected frequency by two, so it does not effect tuning. To be able to notice that the measured frequency is actually twice as high as (one octave higher than) indicated by the needle, the +1Oct. indicator will turn green.

Frequency Display:

The red pointer indicates the audible frequency. The character in the center of the display marks the correct frequency. The b and # characters indicate half a note less and more than the correct frequency. When there is no frequency detected within the frequency range, the pointer will return to the leftmost position.

Calibrate Button:

Using the Calibrate button will set the calibration settings to make the audible frequency exactly 440 Hz. This button will only be enabled when a steady frequency reading close to 440 Hz is indicated.

Default Button:

Using the Default button resets the calibration settings to their nominal values, assuming a sample rate of for instance exactly 11025 Hz.

Exit Button:

By pressing the Exit button the program will return to the initial window. If the settings are changed you will be asked to confirm to save these. They will be saved in the TUNE.INI file in the same directory as TUNE.EXE. These settings will be used the next time dsTune will be run.

Frequency Indication:

This gives a numerical value of the frequency reading.

Automatic gstring selection

East Tune (less steady)

Calibrate with tuning fork

Calibrate Automatically

Calibrate menu option

Selecting this menu option changes the program window to the calibration window. For more information about calibration see: [Calibration](#).

Automatic String Selection menu option

If this option is checked the program will automatically switch to the audible string. To get a more steady reading or to prevent unwanted string switching it can be advisable to disable this option.

Fast Tune menu option

If this option is enabled the program will do its calculations on a shorter sample. This will make dsTune react faster to frequency changes but will also make the indication less steady.

Standard

½ Note lower than Standard

Open G

Open D

Custom...

Standard menu option

This is one of the ways to tune a guitar that are supported by dsTune.
This is the default option and enables you to tune to a normal E A D G B E tuning.

½ Note Lower than Standard menu option

This is one of the ways to tune a guitar that are supported by dsTune.
This option enables you to tune your a guitar half a note lower than a normal E A D G B E tuning.

Open G menu option

This is one of the ways to tune a guitar that are supported by dsTune.

This option enables you to tune your guitar to an open G chord. With this tuning you can play a G major chord without pressing any of the strings.

Open D menu option

This is one of the ways to tune a guitar that are supported by dsTune.

This option enables you to tune your guitar to an open D chord. With this tuning you can play a D major chord without pressing any of the strings.

Help

About Tune

Help menu option

Shows this help file

About menu option

Shows information about the dsTune program

Calibrate Automatically menu option

With this menu option the program will start the Calibrate program. For more information about calibration see: [Calibration](#).

Volume indicator

Indicates the volume of the sound coming into the sound card. With this you can see if the soundcard works properly. dsTune doesnt need much volume to work properly.

Signal indicator

Indicates the amplitude of the signal indicated by the red needle. While the angle of the red needle indicates the measured frequency, this indicator shows the volume of this harmonic signal.

Custom Tuning menu option

With this option you can enter any tuning you want to tune to. A window will pop up, in which you can set the notes for the different strings.

Warning!

Do not tighten the strings more than they are made for. If you do you will damage your guitar or the strings will snap.

When you tighten a string, be aware of the risk of it snapping. Be especially careful with your face and eyes.

If you connect an electrical guitar to your sound card, you do it on your own risk. Turn the volume knob on the guitar very low and only connect it to the sound card when the computer is turned off.

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