

# GO inside

## G-Tune Hits the Perfect Note

by [Stephen Lankton](#)

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It's hard to carry your desktop PC with you but G-Tune makes it tempting. G-Tune is the best way to tune a guitar, violin, base, cello, viola, or banjo, that I have seen.

### **The basic premise**

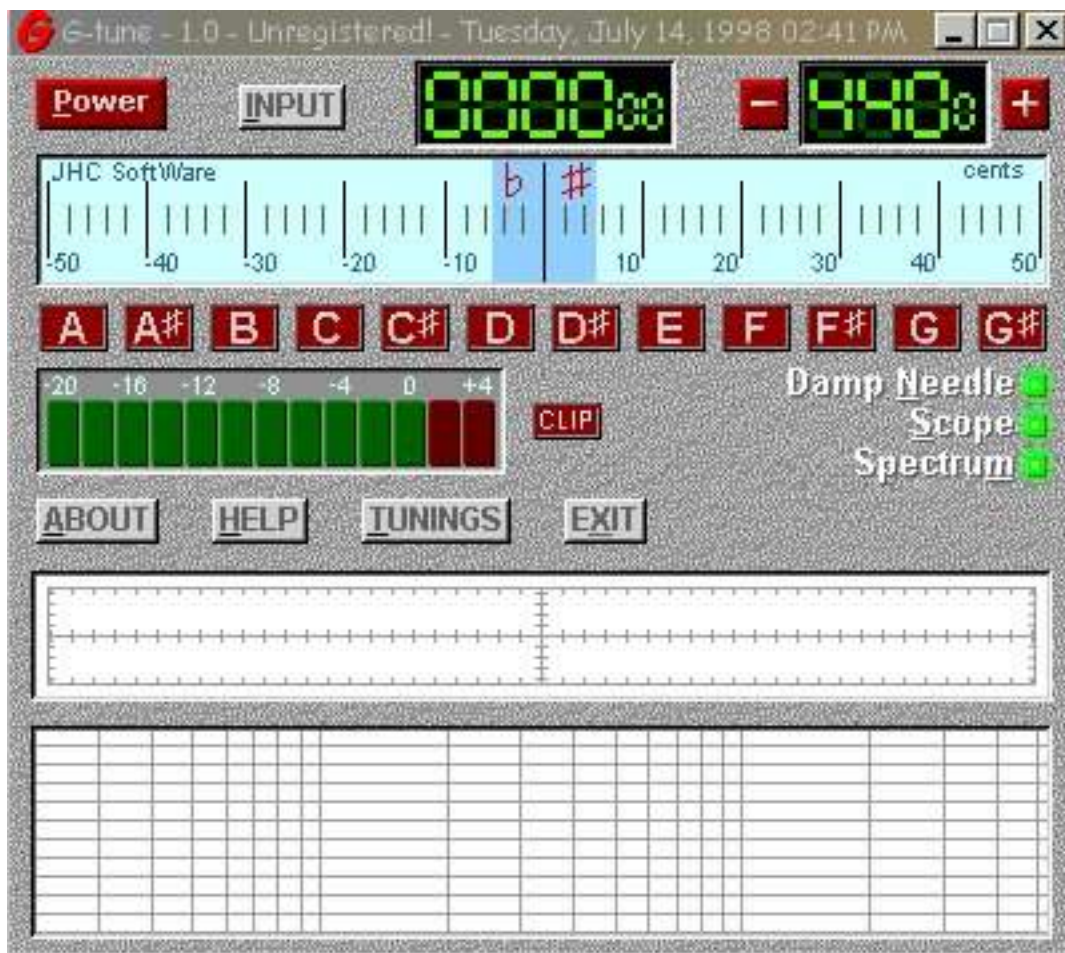
The whole idea of G-Tune is to use your microphone and sound card input, then, apply some fancy algorithms to decode the sound into various display. The overall result is that you can get such sensitive feedback displays for any sound and you can easily tune your instrument. It responds to all frequencies between 30Hz to 5500Hz.

Setup is a matter of downloading the software, double-clicking the executable, and selecting a target directory. G-Tune 1.0 will register with the Add/Remove shield so you can easily remove it from your system if you so choose.



### **Firing it up**

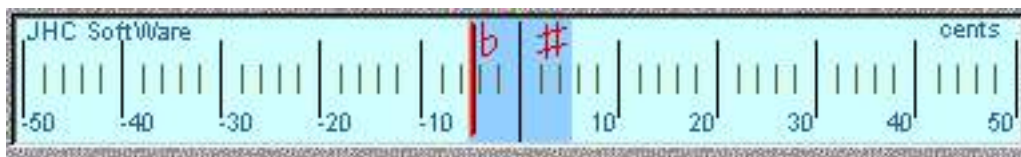
When you run G-Tune for the first time you are prompted for the registration number and user name. Then the following interface loads. Notice that there are seven distinct rows of data or output. The top row included the Power on/off button, Input, and two LED appearing windows. The middle window will provide you with feedback about the exact frequency the program hears after it is turned on. You activate G-Tune from the Power button, of course. But what you might not realize is, G-Tune will release the sound card for the use of other programs when you turn Power off. You don't have to exit the program to accomplish that.



The Input button opens the window seen below and allow you to switch between any of the sound devices installed on your system. As you can see, I have two sound cards on my system. There is a Yamaha Audio card on the mother board and a Videum Wave Recorder added in for my TV/Video capture. I found G-Tune would work fine with either.



The second row is a frequency scale in .01 of a Hertz and has what is called a "Damp Needle." This consists of a graduated light blue scale with a darker blue mid-section. You can see a vertical red line near the left of the middle. This is the moment-to-moment accuracy of the note. Perfect tune for the note will place the red line in the exact middle of the scale.



The third row of the interface displays a series of little square lights. The light corresponding to the note you hit will illuminate when you begin tuning. In the picture below, you can see that the "D" is illuminated.



The fourth row has a meter on the left and some on/off buttons on the right. Seen below, you can see the clip meter. This feedback shows you how close you are to overpowering the sound card with audio strength. If you are too strong you can see the illumination of the clip button. Trimming your input strength with volume controls, moving the microphone, etc., will be necessary. This may reduce the program's functional capability a little, but still allow it to work for you.

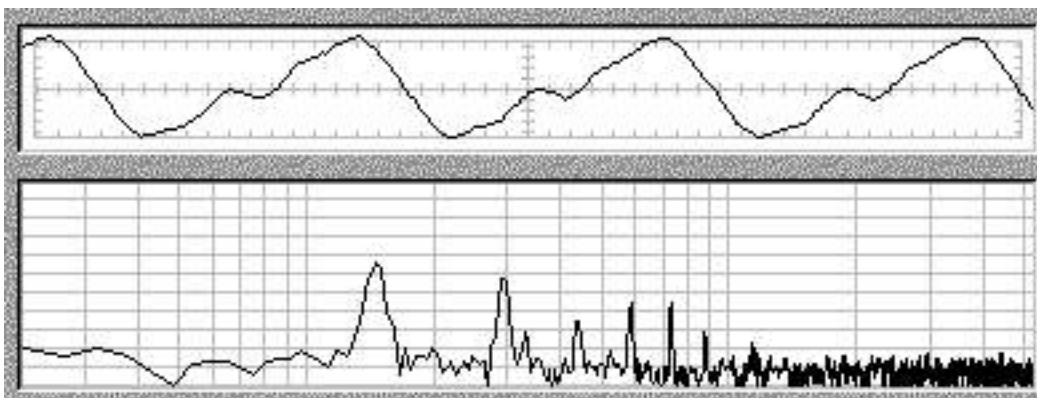


The switches on the right click off and on the three gauges for the Damp Needle, at the top of the interface, the Oscilloscope and Spectrum at the bottom. Turning these off will speed up a slow processor and preserve CPU resources in any event.

The next row of the main interface provides the About, Help, Tuning, and Exit buttons. These are self-explanatory, but I will show the Help and Tuning in more detail shortly.



The last two rows show some very helpful meters. The top gauge illustrates a wave form of your note similar to that seen by an Oscilloscope. With care you can make a pretty clean wave form from your well-tuned string. You can't get a perfect wave form display, of course.



The bottom gauge is a spectrum of all the sound being processed by G-Tune at any given time. This analysis reveals low frequency at the right and high frequency at the left. It's too

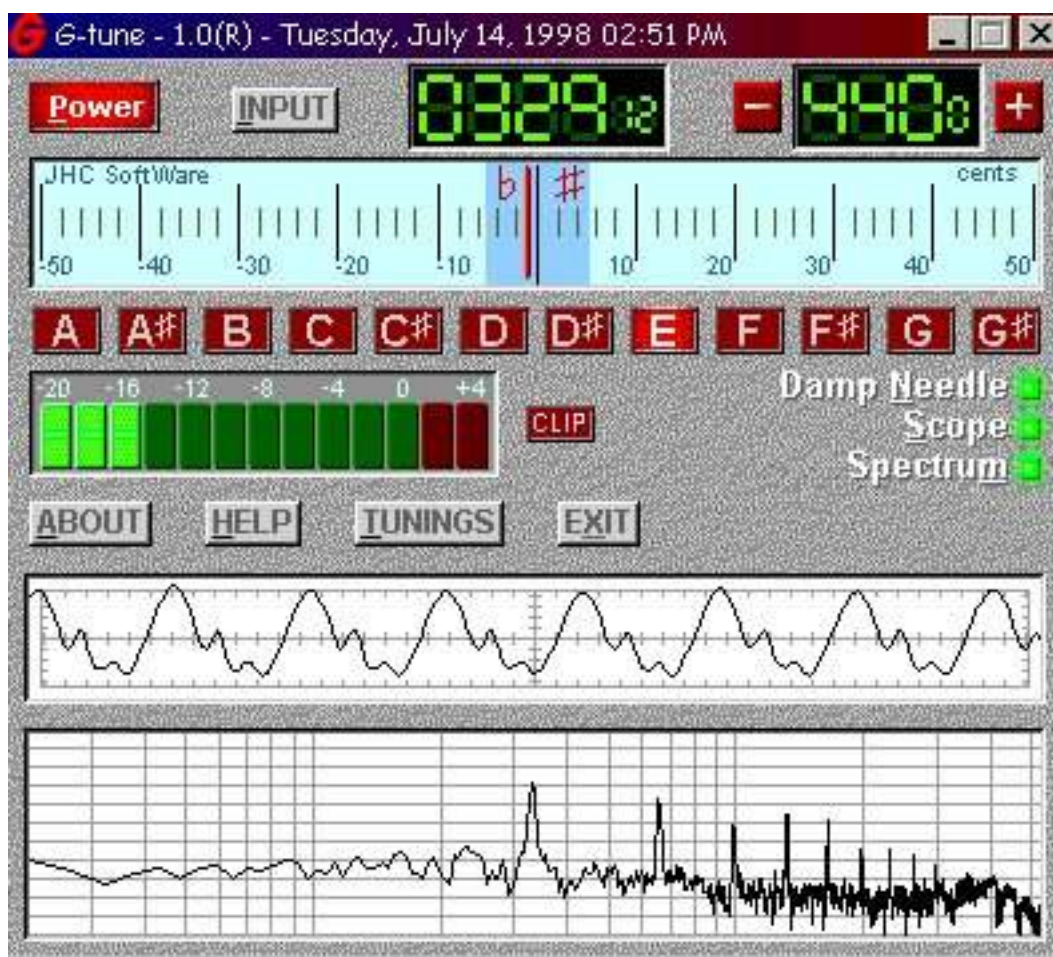
bad there isn't a rough display of these frequencies at the bottom for convenience and relative accuracy. If this is too dirty, and the amplitude of the noise is higher than that of your instrument, you need to get your computer and microphone into a more isolated environment.

### Let's tune something

Whipping out my huge Guild 12-String should test anything claiming to help tune a guitar. After all, the 12-string was invented by a Mexican sadist (well, maybe not -- it's just a guitar player joke). On a bad day it can take many minutes to tune a 12-string.

First and foremost, the G-Tune heard my strings with the cheap \$10 microphone I use. I didn't have to make any adjustment to the location of the microphone that I keep stuck on my monitor.

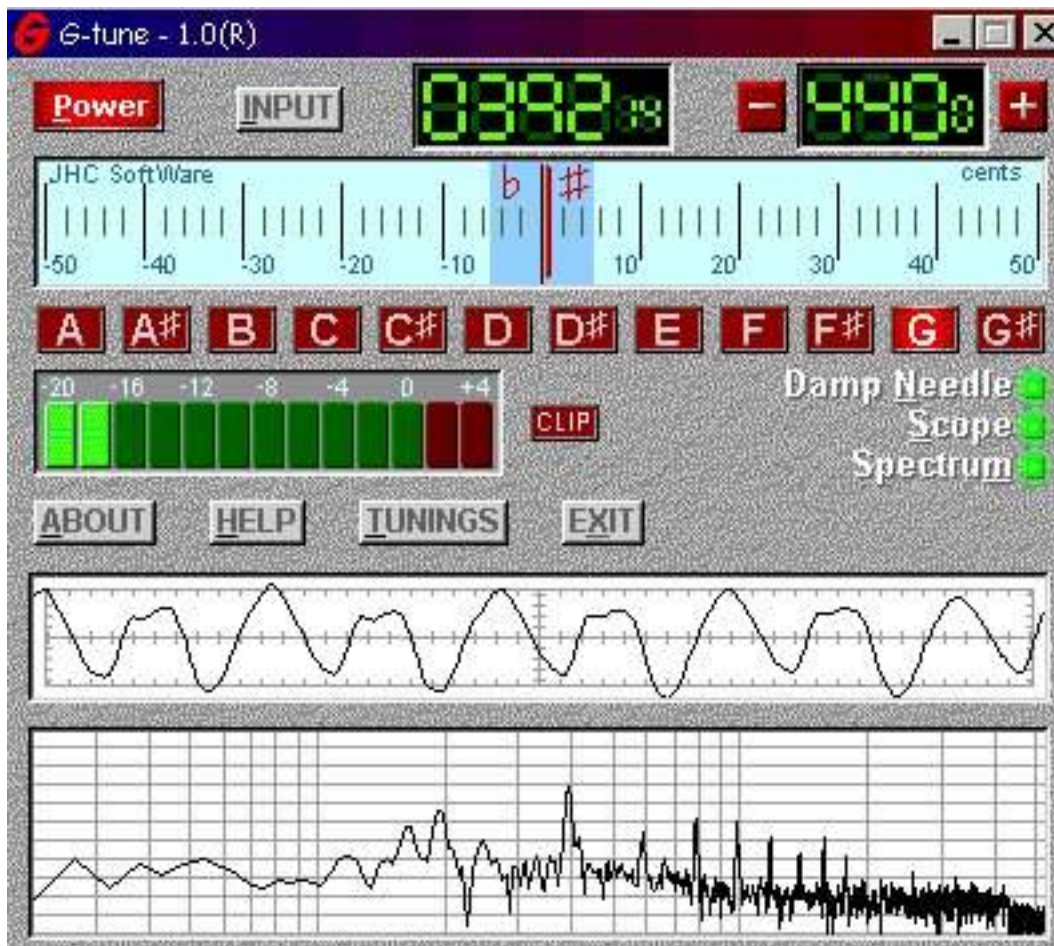
You can see in the image below that my E-string hit a frequency of 329Hz or cycles/second (cps) and was just a hairline flat. These facts are seen in the middle window in the top row and the presence of the vertical red line inside the darker blue area of the Damp Needle display of the second row.



My volume does not need to be clipped. My wave form is fairly symmetrical. Finally, the spectrum analysis shows low enough amplitude of the noise to be confident in my tuning.

The screen shot below is added for comparison. Here we see my G-string being tuned. It currently registers in at 392 CPS. You can see from the Damp Needle display that the note is just a tiny bit sharp - close enough to let it be! Again the clip level, wave form, and spectrum

displays provide deeper information for my use if desired.



The total time needed to tune my 12-string was about 3 minutes! That is an all time world record. With results like that, you will want to use this program frequently.

### Great Help

The Help screens are very, well, helpful! One of the subcategories of the help files is the Tunings section. A button right on the front of G-Tune pops up charts to help you remember standard or alternate guitar tunings as seen below.

**Guitar Tunings:**

	String (low pitch to high pitch)					
<u>Tuning type</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
Standard	E	A <sub>110</sub>	D	G	B	E
Std. drop semitone	D#	G#	C#	F#	A#	D#
Std. raised semitone	F	A#	D#	G#	C	F
Dropped "D"	D	A <sub>110</sub>	D	G	B	E
Hawaiian	E	A <sub>110</sub>	E	A <sub>220</sub>	C#	E
"A" tuning	E	A <sub>110</sub>	D	G	A <sub>220</sub>	E
Open "D"	D	A <sub>110</sub>	D	F#	A <sub>220</sub>	D
Open "G"	D	G	D	G	B	D
Open "G minor"	D	G	D	G	A#	D

But G-Tune will tune anything, really. So, the help files also display standard string tunings for violin, viola, cello, bass, and bass guitar, as shown below. I was surprised that an entry was not present for a 4 and 5 string banjo.

**Other String Instruments:**

	String (low pitch to high pitch)					
<u>Instrument</u>	<u>6</u>	<u>5</u>	<u>4</u>	<u>3</u>	<u>2</u>	<u>1</u>
Violin			G	D	A <sub>440</sub>	E
Viola			C	G	D	A <sub>440</sub>
Cello (4 string)			C	G	D	A <sub>220</sub>
Cello (5 string)		C	G	D	A <sub>220</sub>	E
Double Bass			E	A <sub>55</sub>	D	G
Bass Guitar			E	A <sub>55</sub>	D	G

**System requirements**

G-Tune does not specify very "heavy" components, but it is clear that the greater the processor speed and ram, the better it will perform. Note that it must have a 32-bit operating system.

- **Processor:** 486DX4/100Hz or higher. (Pentium recommended).
- **Sound:** 16-bit mono, windows compatible, a sample rate of 11025Hz, capable of recording, a microphone.

- **Video: 256 colors or higher.**
- **8Mbytes of RAM minimum.**
- **Windows95/98/NT(3.51 or greater).**

## **Conclusion**

I have seen some 9-volt powered units that operate in the same general manner as G-Tune's Damp Needle display. But, G-Tune does more, especially with the aid of the tuning help screens, it's scope, and spectrum analysis view. This is the best way to tune a 12-string I have ever encountered. Besides that the electronic units cost several times more (although, they are portable).

The only problems I saw with it was the presence of graph-like scribbles on my video display. However, I've seen such difficulties on my screen with other programs and I suspect my Number Nine video drivers with the Windows 98 system are at fault (Nine has not updated the drivers yet). In any event it is a minor difficulty at worst. Now, if only it would get ported over to my HPC so I could take it with me as I travel from engagement to engagement.

G-Tune is \$20 shareware and worth every penny of it. You can find the 941,320 byte self-extracting file [here](#).

This is a terrific program and I give G-Tune five out of five *Go Inside* Review Lights!



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