# MICROTONAL MIDI TERMINAL
By Denny Genovese

FEATURES:

- PERFORMANCE MODE: Lets you play Equal Tempered synthesizers in Just Intonation with up to 16 voice Polyphony!

- MICROTUNING EDITOR/LIBRARIAN: Create and edit tunings quickly and easily, in Ratio format. Readouts given for all intervals simultaniously in Ratios, Note Names, Scale Steps, Cents, Frequencies and Yamaha Tuning Units.

- TUNING CALCULATOR: Add and Subtract intervals by simply entering the ratios. Automaticaly calculates all the above parameters (Ratios, Cents, etc.) and lets you insert them directly into the current tuning.

- MIDI MONITOR: Shows on screen (in English!) what is happening in the MIDI streams, both coming into your computer and going out.

- Holds 16 tunings in memory at one time for quick selection.

- Tunings may be named, copied, organized into banks, saved and recalled on disk files.

- The Key center of any tuning may be changed during performance from your MIDI controller. Or from the computer, while editing.

- May be used for real-time performance or for altering external sequencer files.

- Polyphonic Performance Mode requires multiple or multitimbral MIDI instruments. Monophonic Performance Mode works with multi-timbral or single (MIDI) channel instruments.

- Efficient design works with any type monitor and requires a minimum amount of memory. Runs well, even on slow old XT's.

- SYSTEM REQUIREMENTS: IBM PC/XT/AT or compatible, 128K, MPU-401 or compatible MIDI interface.

- PRICED ECONOMICALY at $50.00

- NOT COPY PROTECTED

EDIT LOCAL: ON FUNDAMENTAL:264.000 TUNING: 5 Limit TONIC: 0 = C

| NOTE: | C | C# | D | D# | E | F | F# | G | G# | A | A# | B |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RATIO: | 1/1 | 16/15 | 9/8 | 6/5 | 5/4 | 4/3 | 45/32 | 3/2 | 8/5 | 5/3 | 16/9 | 15/8 |
| STEP: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| SIZE: | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| BEND: | 64 | 72 | 67 | 74 | 55 | 63 | 58 | 65 | 73 | 54 | 61 | 56 |
| CENTS | 0 | 112 | 204 | 316 | 386 | 498 | 590 | 702 | 814 | 884 | 996 | 1088 |
| FREQ: | 264 | 282 | 297 | 317 | 330 | 352 | 371 | 396 | 422 | 440 | 469 | 495 |

A=Add S=Subtract C=Change F=Fund T=Tonic M=Mode P=Performance

N=New R=Rename Z=Save G=Get Tuning Y=Yamaha H=Help Q=Quit

Fig.1 MMT's Editing Screen

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Ever since I began to work with tuning as a compositional parameter, I have been hearing a particular complaint from others in the field with whome i correspond: " If only manufacturers would make quality instruments that are microtuneable... ".

The lack of appropriate instruments has been the motivation for a number of composers to become carpenters, including Partch, Darreg, Wilsen, Harrison/Colvig and many others, including myself.

With the rise of electronic instruments, in the 1970's there was much hope among Microtonalists that acoustical limitations would be left behind, as the seemingly unlimited programming and configurational possibilities of synthesizers and computers were joined. It seemed as though the New Age was upon us (That was before the original meaning of that term was commercialy corrupted).

But alas, manufacturers ignored our hopes and hardwired 12 tone E.T. into their products, and laughed at our frustration!

Only after diligent campaigning by tuning enthusiasts, and a heroic effort to take things into their own hands by Grey Matter Response, with the development of their E! board, did Yamaha decide to impliment microtuning into some of their instruments.

But even with the appearance of the DX7II and TX81Z, there were glaring inadaquacies, that have not been fixed, in spite of the complaints and suggestions of Microtonalists. Not least among these, is the near impossibility of Tonal modulation.

When 3rd party developers came up with alternative Operating Systems for the Ensoniq Mirage, that company likewise realized what they were missing, and added Microtuning to their latest instrument, the EPS.

But what if you don't like the sound of Yamaha instruments, or can't afford an EPS? Suppose that you would really like to use your CZ101 or your D-50 or whatever your favorite sounding MIDI instrument might be? Or suppose you want to modulate quickly during performance?

Well, if you have an IBM compatible computer with an MPU-401 or compatible MIDI interface, it is now possible to play virtually ANY MIDI instrument in Just Intonation, and change the key center during performance, too!

What's more, you can easily create and edit tunings on screen and save them to disk, for recall at any time! You can quickly calculate and print all the modes of any tuning, with only a few keystrokes and see your work in Ratios, Cents, Frequencies and Yamaha Tuning Units.

Best of all, You can play your favorite synthesizer(s) in Just Intonation, with up to 16 voice Polyphony, in real time!

How can this be? These wonders (and a few more) are possible by means of my inexpensive program: MICROTONAL MIDI TERMINAL.

In order to play an Equal tempered instrument in Just Intonation, it is neccesary to "trick" the instrument, by sending a specific amount of Pitch Bend with each note.

Since Pitch Bend affects all notes on a given MIDI channel at the same time, instruments that only recieve on one MIDI channel at a time are limited to monophonic passages with MMT.

But the real power of MMT comes through when it is used to control Multi-Timbral instruments (instruments capable of recieving and playing on more than one MIDI channel at a time).

Examples of multi-timbral instruments are certain members of the Casio CZ line, most of the newer Yamaha DX/TX instruments and many products by Roland, Korg and others.

MICROTONAL MIDI TERMINAL makes these instruments play in Polyphonic Just Intonation, by sending each successive note to a different MIDI channel, along with a precise amount of PITCH BEND. This allows perfectly tuned Chords to be played, as well as Melodies. It doesn't matter what channel(s) the MIDI controller (keyboard, guitar, wind, sequencer, etc.) sends it's information on, MMT automaticaly manages the output channel selection for each note.

Twelve different tunings may be held in memory at any time and be quickly selected from the MIDI controller during performance, or from the computer while editing.

The key center of any tuning may also be changed either from the computer, while editing or during performance, from the MIDI controller.

Can MMT be used with instruments that already support microtuning? Yes, in two different ways! You can turn off the instruments Microtuning feature and use it as an exellent multi-timbral synthesiser, allowing MMT to do the tuning, or you can leave the instruments microtuning feature on and use MMT as a powerful tuning editor and librarian for your machine specific needs.

The latter option has the advantage of letting you keep certain control features such as dynamic Pitch Bend and and other Channel parameters that must be sacrificed otherwise.

Since my first purpose in developing MMT was to provide myself with a tool, desperately needed in my own composition and performance work, you can expect to see it grow in the future. Not only will the original program get better, but new applications are planned that will use MMT's various functions as a foundation.

As a registered owner, you will recieve free updates and will get 100% credit of the price you paid for MMT on derivative programs.

MICROTONAL MIDI TERMINAL is not copy protected, and only costs $50.00.

Get it now, and start creating the sophisticated Microtonal music that you've been dreaming of!