Welcome on board the MIDInight Express (TM)

Copyright © Tommy Anderberg 96-00

Version 2.4

At a glance

The MIDInight Express is a free, programmable, wavetable-based MIDI player and MIDI to WAV renderer created by Tommy Anderberg and brought to you by Polyhedric Software.

A wavetable card is NOT required to run the MIDInight Express. Any entry-level 16 bit sound card, or even the simple sound circuits found in most laptops, will do just fine. All wavetable synthesis is done in software.

Also, unlike most wavetable cards, the MIDInight Express uses your PC's disk and memory for sample storage, allowing it to use larger, higher quality instrument sounds.

You can use the MIDInight Express...

- As a standalone MIDI player
- As a fast MIDI to WAV renderer
- As a better WAV player

And it's easy, too! If you have ever used a CD player, you will feel right at home with the MIDInight Express II's user interface.

IMPORTANT

The freely distributable MIDInight Express Package contains a few demo patches, all savagely butchered to keep the download size within reasonable bounds, not a full, 130+ MB General MIDI and GS instrument library!

If you want a ready-made General MIDI and GS patch library, we recommend getting the GSound 22 CD-ROM. Alternatively, you may want to consider WAVmaker and its GSound 44 library.

If you want to create your own MIDInight Express instruments (or edit those in the GSound 22 library), check out the Mellosoftron (for patch creation and editing) and Acid WAV (for sound recording, synthesis and editing).

Acid WAV is also the perfect tool for compressing WAVs created with the MIDInight Express, e.g. for publication in MPEG Audio format on the web.

See the <u>license information</u> page for legal details concerning the use and distribution of the MIDInight Express.

If you are tired of listening to your MIDI files as rendered by the toy FM synth chips found on Sound Blaster-compatible sound cards and in most laptops, this program is for you! Pop the GSound 22 CD-ROM into your PC, set the MIDinight Express playing, and enjoy!

If you also want to create your own MIDinight Express instruments (or edit those in the GSound 22 library), check out the Mellosoftron (for patch creation and editing) and Acid WAV (for sound recording, synthesis and editing).

Acid WAV is also the perfect tool for compressing WAVs created with the MIDInight Express, e.g. for publication in MPEG format on the web.

Sometimes you need to create a song on WAV format for a web page, a program, or a multimedia application.

The MIDInight Express offers the fastest route - just click the record button and play your MIDI file(s) as usual! In most cases, the result will sound much better than recording off your sound card while playing.

This function is also useful for listening to MIDI files which are too complicated for real time rendering on your current hardware (too little free RAM to hold all samples, causing the disk swapper to kick in, or too slow a CPU). Note that the MIDInight Express can play WAVs, too.

A tip for all webmasters: Acid WAV is not only the perfect tool for recording, synthesizing and editing sound; it's also great for compressing WAVs created with the MIDInight Express before posting them on the web, e.g. in MPEG format.

If you need CD+ quality MIDI to WAV rendering with advanced features like programmable effects and tune tables, check out WAVmaker!

An auxiliary function of the MIDInight Express is the ability to play WAV files using the standard Media Control Interface (MCI). On most systems, it will do a better job than the Windows 95 media player (which tries to load the whole WAV before playing it, bringing the whole system to a virtual standstill when there isn't enough free memory).

Tommy Anderberg is the creator of several popular audio tools for MS Windows (Acid WAV, Mellosoftron, Virtual Sampler SDK, WAVmaker). A physicist by training and a computer geek by vocation, he is also a consultant and a prolific freelance writer on personal computing and the Internet.

Tommy can be reached at

Tommy.Anderberg@polyhedric.com

Other titles from Polyhedric Software

For the latest information on titles published by Polyhedric Software, please visit our web site at
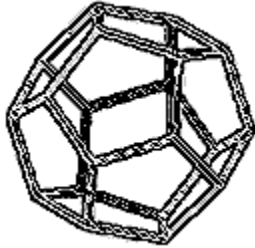
www.polyhedric.com/software

Current titles of interest to users of the MIDInight Express include:

- The GSound 22 CD-ROM: a complete General MIDI and GS sound library for the MIDInight Express.

- The WAVmaker CD+ quality MIDI to WAV renderer featuring programmable effect lines, tune tables, the GSound 44 instrument library and much more!

- The Mellosoftron live virtual sampler. This is the recommended tool for creating and editing MIDInight Express and WAVmaker instrument patches.

- The Acid WAV sound editor and synthesizer. The best tool for recording, synthesizing, editing and compressing WAVs.

- The Virtual Sampler SDK. A Software Developer's Kit which lets programmers use the Mellosoftron's low latency wavetable engine in their own projects.

We also undertake custom software design and development on a contract basis. You are always welcome to contact us at consulting@polyhedric.com to discuss your custom development needs.

GSound 22 ™

GS Sound
Library

Multimedia
Edition

3+ MB PRGs
130+ MB WAVs

Full GM & GS
instrument set.

Polyhedric
Software

polyhedric.com

Copyright © Tommy Anderberg
1995-1998

The GSound 22 CD-ROM is only $29...
...or $20 if ordered together with the Mellosoftron!

The GSound 22 library is burnt on CD-R when we receive your order. Keeping no stock allows us to minimize costs and guarantees that you always get the most recent version of all files.

Ordering the GSound 22 CD-ROM is easy!

Polyhedric Software is letting two specialized order processing firms handle order taking for the GSound 22 CD-ROM.

RegSoft is located in Duluth, Georgia. Orders can be submitted to RegSoft through an online form, by phone (toll-free in the US), by fax or by postal mail. The online form is the fastest route, postal mail the slowest. RegSoft accepts checks and money orders (payable in US dollars) as well as credit cards (VISA, MasterCard, American Express, Discover).

Order the GSound 22 CD-ROM through Regsoft

ShareIt! is located in Koeln (Germany) and has a US branch in Greensburg, PA. Orders can be submitted to ShareIt! through an online form, by e-mail, by fax, by phone (toll-free in the US) or by postal mail. The online form is the fastest route, postal mail the slowest. ShareIt!

accepts cash (US dollars), US checks, DM-denominated EuroCheques, wire transfers and credit cards (Visa, Eurocard / Mastercard, American Express and Diners Club).

IMPORTANT

Currently, unbundled GSound 22 CD-ROMs (i.e. without Mellosoftron keys) can only be ordered from RegSoft.

Order the GSound 22 CD-ROM + Mellosoftron key through ShareIt!

Please direct any questions about ordering our products to sales@polyhedric.com.

Regsoft.com, Inc.

PMB 291

10820 Abbotts Bridge Rd

Suite 220

Duluth, GA 30097

USA

Phone: +1 770 319 2718

Fax: +1 770 497 9234

http://www.regsoft.com

info@regsoft.com

element 5 AG
Sachsenring 69
D-50677 Koeln
Germany

Phone: +49-221-2407279
Fax: +49-221-2407278

ShareIt! Inc.
P.O. Box 844
Greensburg, PA 15601-0844
USA

Phone: 724-850-8186
Fax: 724-850-8187

http://www.shareit.com
info@shareit.com

Ordering GSound 22 through RegSoft

Ordering online

To order online, you need a credit card (VISA, MasterCard, American Express or Discover). Secure forms are available for browsers with SSL support (e.g. recent versions of Netscape Navigator and Internet Explorer). All data submitted through a secure form is encrypted before it's sent over the Internet.

<u>SSL form for GSound 22 CD-ROM</u>
<u>SSL form for GSound 22 CD-ROM + Mellosoftron key</u>

<u>Non-SSL form for GSound 22 CD-ROM</u>
<u>Non-SSL form for GSound 22 CD-ROM + Mellosoftron key</u>

Ordering by phone

To submit your order by phone, please make sure to have your credit card data and the product ID number ready:

Product ID number for GSound 22 CD-ROM: 30851
Product ID number for GSound 22 CD-ROM + Mellosoftron key: 30852

If you are in the US, you can call 1-877-REGSOFT (1-877-734-7638) toll-free.
The international order number is +1-770-319-2718.

Ordering by fax

To order by fax, fill in the appropriate form and fax it to RegSoft (the number is listed in the form):

<u>Fax form for GSound 22 CD-ROM</u>
<u>Fax form for GSound 22 CD-ROM + Mellosoftron key</u>

Ordering by postal mail

To order by postal mail, fill in the appropriate form and mail it to RegSoft (the address is listed in the form):

<u>Mail form for GSound 22 CD-ROM</u>
<u>Mail form for GSound 22 CD-ROM + Mellosoftron key</u>

Ordering GSound 22 + Mellosoftron key through ShareIt!

Please use <u>RegSoft</u> if you wish to order "plain vanilla" GSound 22 CD-ROMs (i.e. without bundled Mellosoftron keys).

Ordering online

To submit your order online, you need a browser with support for secure transactions (e.g. a recent version of Netscape Navigator or Internet Explorer). All data you enter is encrypted before it's sent over the Internet.

<u>Order form for GSound 22 CD-ROM + Mellosoftron key</u>

Ordering by phone

To submit your order by phone, please make sure to have your credit card data and one of the following program ID numbers ready:

Program ID number for GSound 22 CD-ROM + Mellosoftron key: 102680

If you are in the US, you can call 1-800-903-4152 toll-free (weekdays 9 AM to 5 PM). The international order number is +49-221-2407279.

Ordering by e-mail, postal mail or fax

To submit your order by mail, postal mail or fax, fill out the appropriate form,

<u>Order form for GSound 22 CD-ROM + Mellosoftron key</u>

and send it to one of the following addresses:

- <u>register@shareit.com</u>

- ShareIt! Inc.
  P.O. Box 844
  Greensburg, PA 15601-0844
  USA
  Fax: 724-850-8187

- element 5 AG
  Sachsenring 69
  D-50677 Koeln
  Germany
  Fax: +49-221-2407278

WAVmaker is the undisputed leader in MIDI to WAV rendering. Unlike sound cards and soft synths like the MIDInight Express, which are constrained by the requirements of real time operation within a limited memory and CPU footprint, WAVmaker turns MIDI files of virtually unlimited polyphony and complexity into CD-quality WAVs with perfect timing precision, using fully editable instrument patches and samples of virtually unlimited size, without the noise and distortion introduced by conventional recording.

The WAVs produced are ready to be burnt on CD, uploaded to a website or processed further (e.g. mixed with recorded vocals).

Version III is a quantum leap in WAVmaker's development. The program has been completely rewritten to take full advantage of current state of the art PC multimedia technology. New features include:

- New, higher precision rendering kernel
- Programmable, MIDI-controlled effect chains
- User-definable tune tables
- Automatic volume optimization
- Batch rendering
- Wider target sampling rat range
- Improved MIDI reporting and editing
- Integration with the Acid WAV sound editor and synthesizer
- Integration with the Mellosoftron live sampler and patch editor
- New, Explorer-style user interface

Last but not least, WAVmaker now comes with the **GSound 44** General MIDI and GS instrument library: a CD-ROM with full, ready-to-use, MIDInight Express- and Mellosoftron-compatible GM and GS sets consisting of 3+ MB PRG patches and 261+ MB 44.1 kHz, 16 bit WAV samples!

Advances in CPU performance have finally made the use of floating point arithmetic for the entire rendering process a practical proposition. All internal operations are now performed in 32 bit precision or higher, for a signal to noise ratio of no less than 192.6 dB. The results are reduced to (and optimized for) standard 16 bit (CD / DAT) sample size in a second pass, after the final mixdown has been created.

Each MIDI track and channel can be assigned its own MIDI-controlled effect chain with the following architecture:

Dry sound

MIDI resonance level and cutoff → Resonant filter

MIDI chorus level → Chorus / Flange

Echo

MIDI reverb level → Reverb

Mix
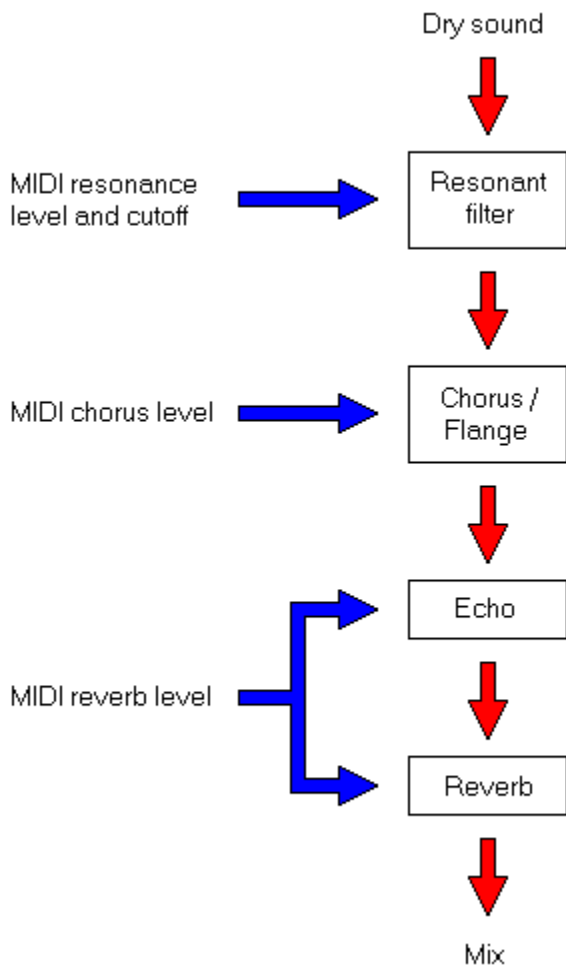
The chorus / flange, echo and reverb units are all programmable.

This means that you can have a different effect chain for each track and channel. Hardware sound modules typically give you a single, shared effect chain and only let you vary the wet mix level individually for each channel.

Chorus / flange, echo and reverb patches are easily created, edited and tested using the dedicated Acid WAV editor and synthesizer (included!). Import / export of Acid WAV effect patches is done at the click of a button.

All effects can be turned off if you prefer a dry mix (e.g. when rendering individual tracks for manual processing).

Tired of that old Western-style tuning? Feel like experimenting with microtonal composition? No problem: each MIDI track and channel can be assigned its own individual tune table. WAVmaker comes with several predefined ones and gives you full liberty to create your own tunings.

The two-pass approach used by the new rendering kernel means that overall volume no longer needs to be adjusted manually: the resulting WAVs are automatically optimized for the target 16 bit dynamic range.

Using WAVmaker has never been easier: all you have to do is collect the MIDs and RMIs to render in a list, click the magic button and watch WAVmaker launch a separate rendering process. You are then free to terminate the main program. This minimizes WAVmaker's footprint while rendering. You can also collect a new bunch of MIDI files to render with different settings and launch another job while the first one is still running. There is no limit to the number of jobs you can have running in parallel (other than available memory etc.). This feature is particularly useful if you have multiple CPUs.

Supported target sampling rates range semi-continuosly (i.e. in increments of 1 Hz) from 8000 Hz (phone quality, used e.g. in Unix AU files) to 48 kHz (DAT quality).

WAVmaker now comes with a dedicated MIDI reporting and editing "wizard". The new tool analyzes the contents of a MIDI file and lets you edit its individual tracks and channels. You can delete selected kinds of events; map GS banks, programs and controllers to each other; scale and offset continuous values; and transpose note ranges. The result can be saved to any of the supported MIDI formats: Standard MIDI Level 0, Standard MIDI Level 1, RIFF MIDI Level 0 and RIFF MIDI Level 1.

Acid WAV doesn't only serve as WAVmaker's effect patch editor: it also replaces the auxiliary sound editing functions found in WAVmaker 1.x and 2.x.

That's right, you now get Acid WAV with WAVmaker!

To make a good story even better, you can choose the level of bundling that suits you best. WAVmaker's Standard license covers Acid WAV's recording, encoding, decoding and basic editing functions. Advanced users can take advantage of the Studio license to get all of Acid WAV's features.

Since WAVmaker now fully supports <u>Mellosoftron</u> patches, there is no longer any need for a built-in patch editor. Using the Mellosoftron makes life a lot easier by allowing patches to be modified and tried out immediately, live at your keyboard. Again, you can choose the level of bundling that suits you best: if you are not interested in creating your own instruments, it's enough to get a Standard license; otherwise, you can choose between the WAVmaker Plus license (which includes the Mellosoftron) and the WAVmaker Studio license (which adds <u>Acid WAV</u>'s advanced sound editing and synthesis functions).

WAVmaker's user interface has been completely redesigned to present you with a greatly simplified, familiar environment. Windows integration has also been improved with the addition of drag & drop (both internally and from the Windows Explorer) and of Open / Play buttons which rely on your system settings to launch the appropriate viewer / player (e.g. a MIDI sequencer or the Windows Media Player).
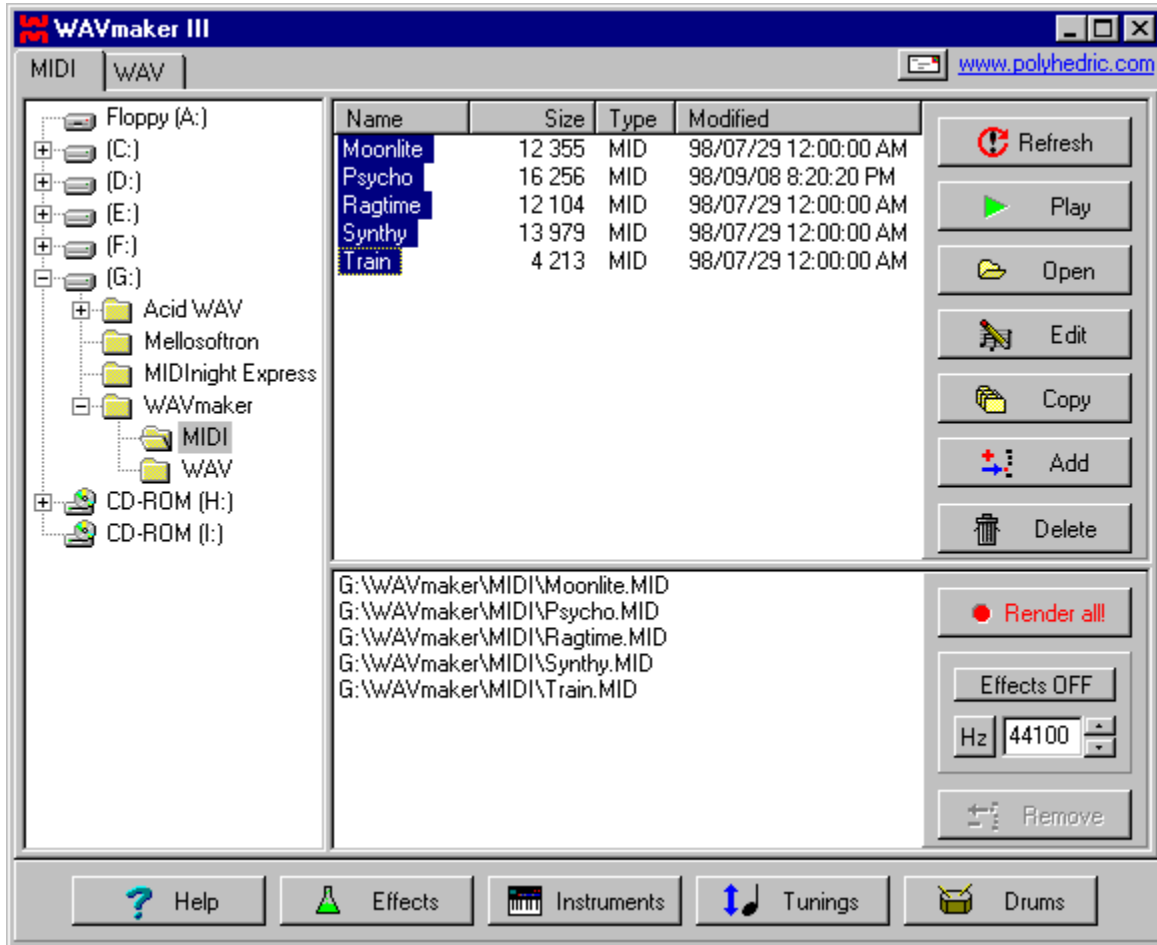
The Mellosoftron is a low latency, fully programmable virtual sampler.

In short, it turns your PC into a sampler which you can play live with a MIDI keyboard, with a sequencer or with any MIDI file player. Any sound card with a DirectSound 3 (or later) driver will do - you don't need a particular brand or model. You can edit all instrument patches and create new ones from scratch using your own WAVs as sound sources.

Since it comes with an integrated patch editor and uses the same file formats (PRGs and WAVs) as the MIDInight Express and WAVmaker, the Mellosoftron is the ideal tool for the creation of your own instruments. Add the Acid WAV synthesizer and sound editor and you have a virtual recording studio inside your PC!

Here is a screen shot of the Mellosoftron's main window and one of its patch editor.

You can always download the latest version of the Mellosoftron Evaluation Package from our site

www.polyhedric.com/software

The Mellosoftron is only $20 when ordered with the GSound 22 CD-ROM or with WAVmaker!

Other titles from Polyhedric Software...

Editing PRG "Drums and layered bass"

Apply   Reload   Save   Help   The actual sample file, residing in the WAV folder. The WAV extension is ...

Key range	WAV file	Base key	Base volume	Base pan	Bits	Channels	Sampling ra
b2	KICK2	b2	384	64	16	1	22050
a#2	SLAP	a#2	511	72	16	1	22050
e2-a2	TOM	g2	511	0	16	1	44100
c0-d#2	HIGHQ	d#2	1023	72	16	1	22050

2933 : -8436

WAVs

WAV files (*.WAV)

Clap.wav
Gm102c5.wav
Gm36f3.wav
Gm38d#3.wav
Gm96c5.wav
Gm97d6.wav
Highq.wav

| 16 bit | Mono | 22050 Hz |
| 14296 samples | | 648.34 ms |

▶   ✓ Select

1.00

1.00

ACID WAV ™ 2.1

Copyright © Tommy Anderberg, 98-00
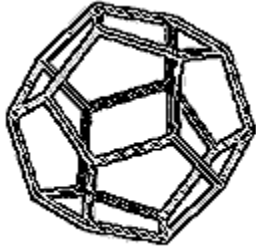
Polyhedric Software

Acid WAV is an advanced sound editor and synthesizer. Unlike older (and more expensive) sound editors, it has been designed from the ground up to take full advantage of Microsoft's 32 bit Windows architecture.

An unparalleled set of powerful synthesis and editing functions combined with an intuitive, friendly user interface make Acid WAV a must-try (and a must have!) - words just won't make it justice! Grab the free Acid WAV Evaluation Package at our site

www.polyhedric.com/software

and see for yourself!

The screen shots below show just a few of Acid WAV's windows. Download the Evaluation Package to explore them all!

Main window
Convolution filter
Virtual room
Frequency envelope
FM synth
Analog synth
Equalizer
Spectrum
Script editor
OpenDSP IDE
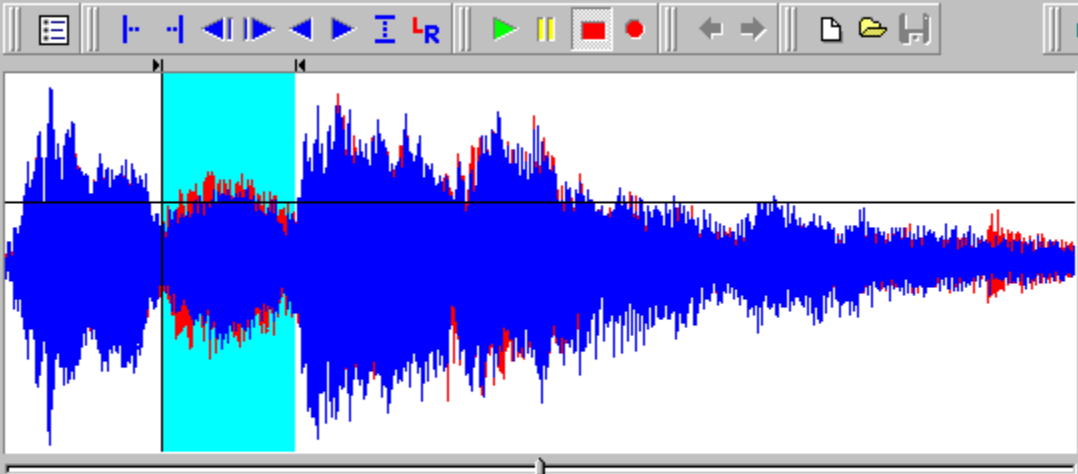
Acid WAV is only $30 when ordered with WAVmaker!

Other titles from Polyhedric Software...

Amplification factor (Y) over frequency (X)

Patches

New
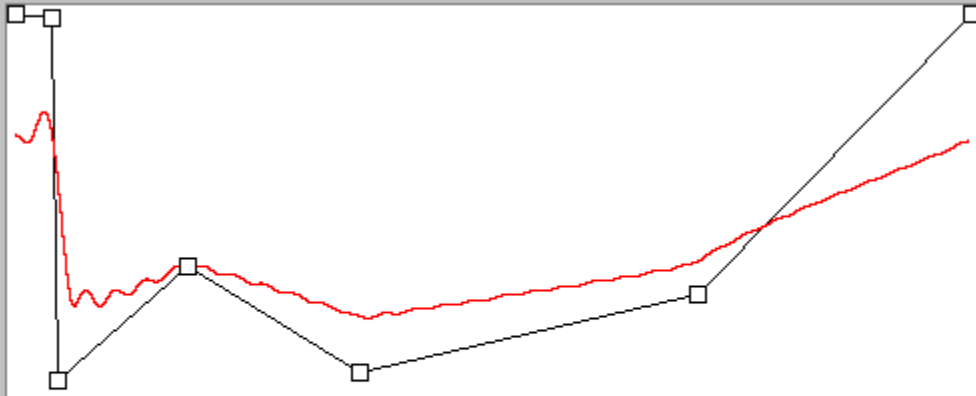
Add   Remove   Update

Window type

22235 : 0.22 (-13.1 dB)

Points

64

Target channel

Square   Bartlett   Hanning   Hamming   Blackman

Left   Right   Both

Flip X   Flip Y   Symmetrize   Antisymm.   Diagonalize   Clear

✓ OK   ? Help

Editing WAV Rhythm [44100 Hz, 16 bits, Stereo, 11206091 samples, 254106.37 ms]

Basic | Time

Virtual room

Ech

Hall rev

Chapel r

Chamber

Custom r

Virtual r

Rever

Stretc

Tremc

Vibra

Chor

Flang

Ring moc

Room size (m)

Height (Z) `5.00`

Length (Y) `9.00`

Width (X) `6.00`

Air absorption (dB/m)

`0.1000`   `0.1`

Reflectivity

North	(0°)	◄		►	70%
East	(90°)	◄		►	70%
South	(180°)	◄		►	70%
West	(270°)	◄		►	70%
Ceiling	(+90°)	◄		►	55%
Floor	(-90°)	◄		►	25%

Patches

New

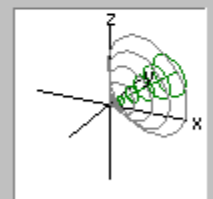**(S)peaker and (M)icrophone positions**

Left speaker | Right speaker | Left microphone | Right microphone

Z (m) `1.00`   Elevation (°) `35.0`

Y (m) `8.00`   Direction (°) `95.0`

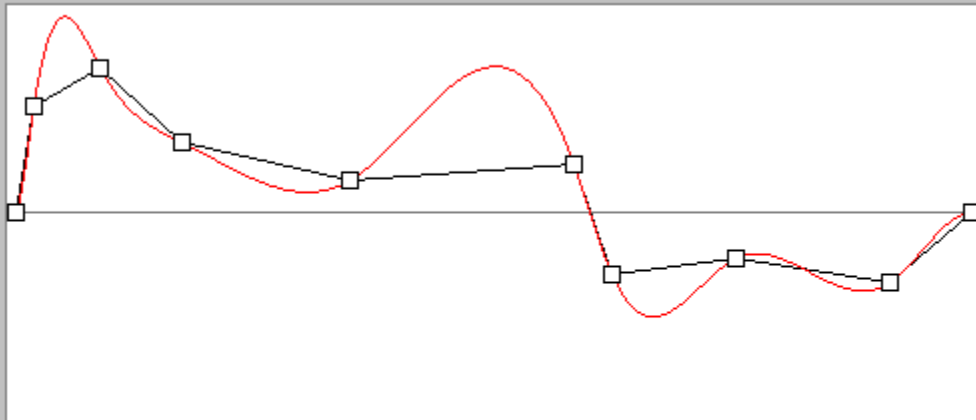X (m) `1.00`   Inner cone (°) `30.0`

Size (m) `1.00`   Outer cone (°) `90.0`

Close room display

M

T

0
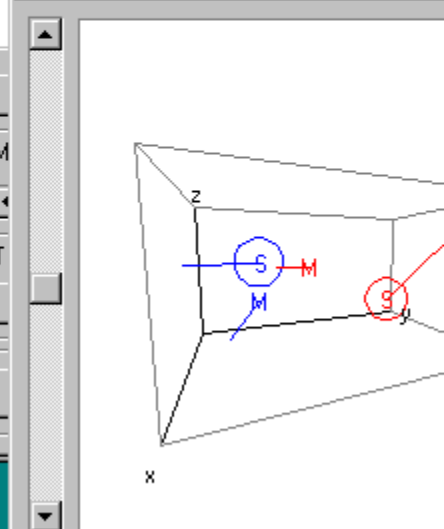
Frequency factor (Y) over normalized position (X)

Patches

New

Add | Remove | Update

Interpolation

0.36 : 0.68

Spline #1 | Spline #2 | Spline #3 | Spline #4 | Polynomial

Y scale

2.00

Target channel

Left | Right | Both

Flip X | Flip Y | Symmetrize | Antisymm. | Diagonalize | Clear

✓ OK | ? Help

Editing WAV Rhythm [44100 Hz, 16 bits, Stereo, 11206091 samples, 254106.37 ms]

FM synth

| OP 1 | OP 2 | OP 3 | OP 4 | OP 5 | OP 6 |

➡ OP 2 ▾

Generator

Index

Amplitude envelope
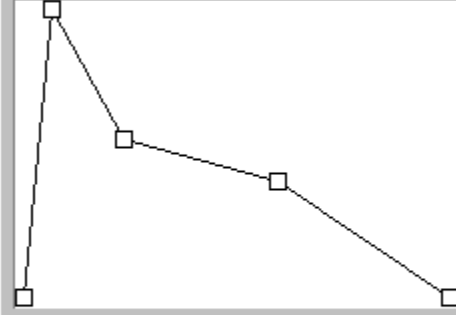
0.76 : 0.53

Time flip

Amplitude flip

Symmetrize

Antisymmetrize

Reset

71%

Frequency (Hz)

587.33

x 2

/ 2

Patches

New

Add   Remove   Update

Algorithm

Algorithm #09 ▾

Feedback: 157%

```
        ┌6┐
 ┌2┐ ┌4┐│5│
 │1│ │3│└─┘
```
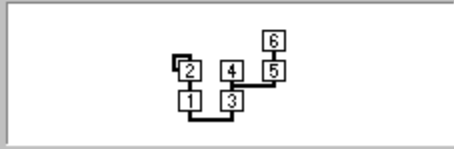
Gain

1.00

Duration

1000.0

Target channel

Left   Right   Both

✓ OK   ? Help

Analog synth

OSC 1 | OSC 2

Sync lock OSC 2 to OSC 1 ☐

Generator

Filter

Center (Hz) 5000
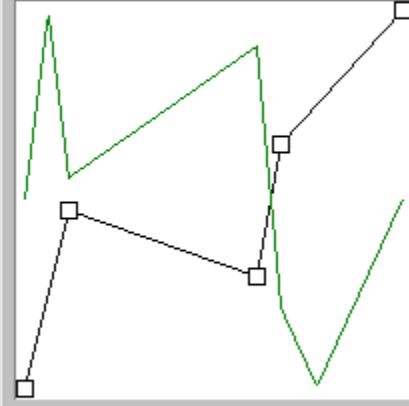
Resonance (%) 35

Frequency (Hz)

587.33

f4

x 2 | / 2

Normalized phase over time (one cycle)

0.83 : 0.93

Time flip
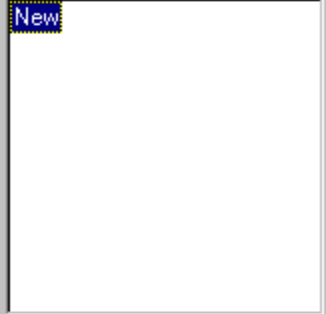
Phase flip

Symmetrize

Antisymmetrize

Reset

Patches

New

Add | Remove | Update

Target channel

Left | Right | Both

Copy OSC

1 → 2

Mix

78%   22%

OSC 1 | ◄ | ► | OSC 2

Gain

1.00

Duration

1500.0

✓ OK | ? Help

Editing WAV Rhythm [44100 Hz, 16 bits, Stereo, 11206091 samples, 254106.37 ms]

Equalize

Left

+ 30 dB

± 0

- 30 dB

| - 1 | - 2 | - 4 | - 8 | - 12 | - 16 | - 20 | - 30 | - 40 | - 50 | kHz |
| 0 - | 1 - | 2 - | 4 - | 8 - | 12 - | 16 - | 20 - | 30 - | 40 - | |

Right

+ 30 dB

± 0

- 30 dB

| - 1 | - 2 | - 4 | - 8 | - 12 | - 16 | - 20 | - 30 | - 40 | - 50 | kHz |
| 0 - | 1 - | 2 - | 4 - | 8 - | 12 - | 16 - | 20 - | 30 - | 40 - | |

Patches

New
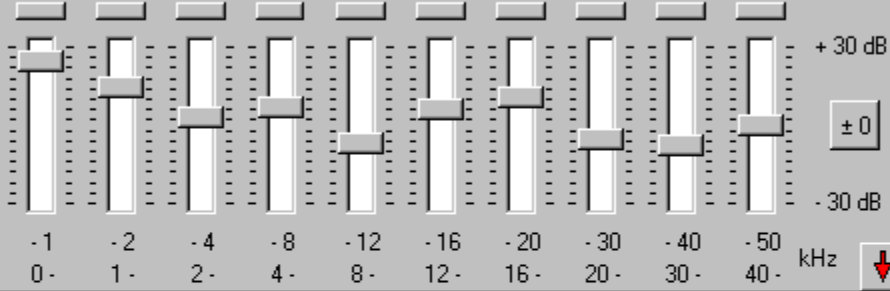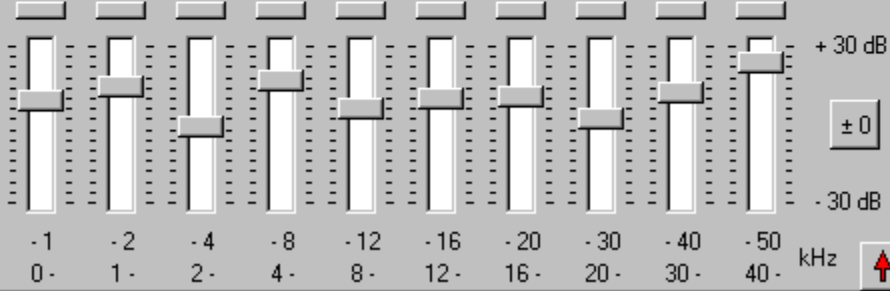
Add   Remove   Update

Target channel

Left   Right   Both

FFT   ✓ OK   ? Help
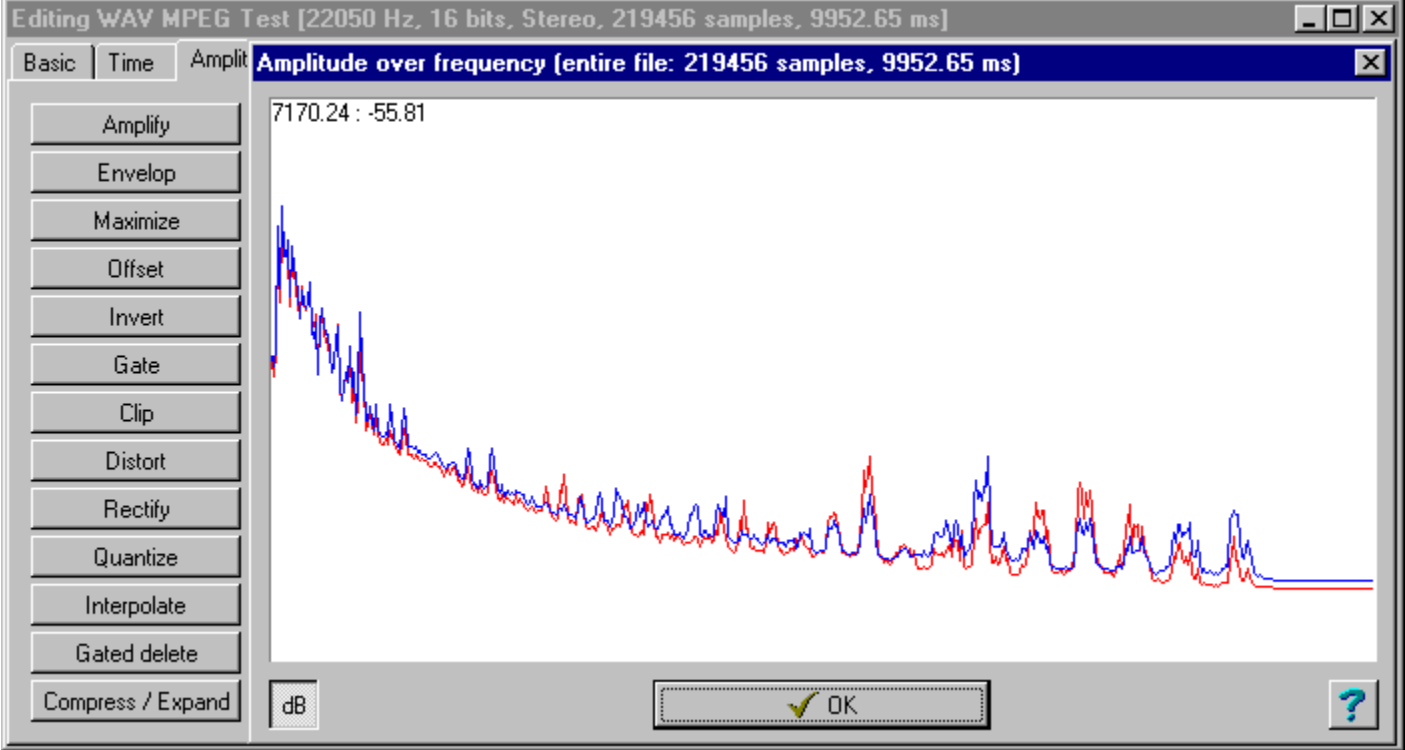
Editing script New*

New
Load
Save
Erase
Comment

A
C
I
D

www.polyhedric.com

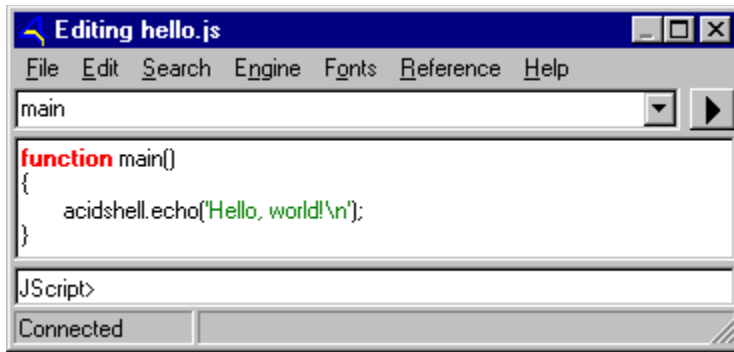| Comment | To add an operation, select it in the leftmost button column and click Add! |
Comment	A simple example: copy the edit buffer to the clipboard...
Copy	|·· 0.0000 %	·| 100.0000 %
Comment	...ring modulate the edit buffer from the 150th millisecond onward...
Ring modulate	|·· 150.00 ms	·| 100.0000 %
Comment	...and mix the clipboard back in!
Paste mix	|·· 0.0000 %	·| 100.0000 %

Add   Insert   Remove   ✓ OK   ? Help

Virtual Sampler SDK

Copyright © Tommy Anderberg, 1997-98
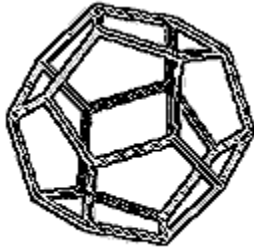
Polyhedric Software

The core of the Virtual Sampler SDK is the Virtual Sampler Library, the low latency sound engine running behind the Mellosoftron's user interface.

As a developer using the Virtual Sampler Library, you deal with a simple API emulating a real sampler. You control it using standard MIDI messages, with one difference - there are 65536 channels to choose from, not 16! The difference between MIDI and digital audio ceases to exist, and you can use the same tool for everything from music   - with predictable results, independent of the end user's MIDI hardware - to sound effects. The Virtual Sampler Library coexists happily with straight DirectSound code, too (but chances are that you will not see any reason to deal with the latter).

The full Virtual Sampler Library API counts only 27 functions, most of them used to (optionally) set parameters such as the latency and the current WAV directory. Only a third of them are required to build a full application. This simplicity, the use of the well-known MIDI standard, and the availability of powerful PRG and WAV tools like the Mellosoftron and Acid WAV all make using the Virtual Sampler Library a breeze.

The Virtual Sampler SDK contains the documentation and code needed to use the Virtual Sampler Library in your own programs. It also includes the Mellosoftron for quick sound patch creation and editing.

The following 32 bit development environments are currently supported by the Virtual Sampler SDK: Watcom C/C++, MS Visual C/C++, Borland C++ Builder, Borland Delphi, MS Visual Basic.

A fully functional demo is available for download from our site,

www.polyhedric.com/software

Other titles from Polyhedric Software...

Using the MIDInight Express

If you are not familiar with PRG files and their relation to WAVs, please start here:

- Selecting patch and sample directories
- Getting the GSound 22 General MIDI and GS instrument library

Once you've read the above topics, you are ready to learn all about...

- Setting MIDI drum tracks and channels
- The Options window
- Creating playlists
- Playing MIDI files
- Rendering MIDI files to WAV files
- Playing WAV files
- Keystroke commands
- Associating MIDI and WAV files with the MIDInight Express

If you can't find your answers here, ask support@polyhedric.com.

Before sending us a question, please make sure that it isn't answered in this document. Don't forget to use the Find button - it's much faster than an e-mail query. Our own response time depends mainly on the number of redundant questions we have to handle.
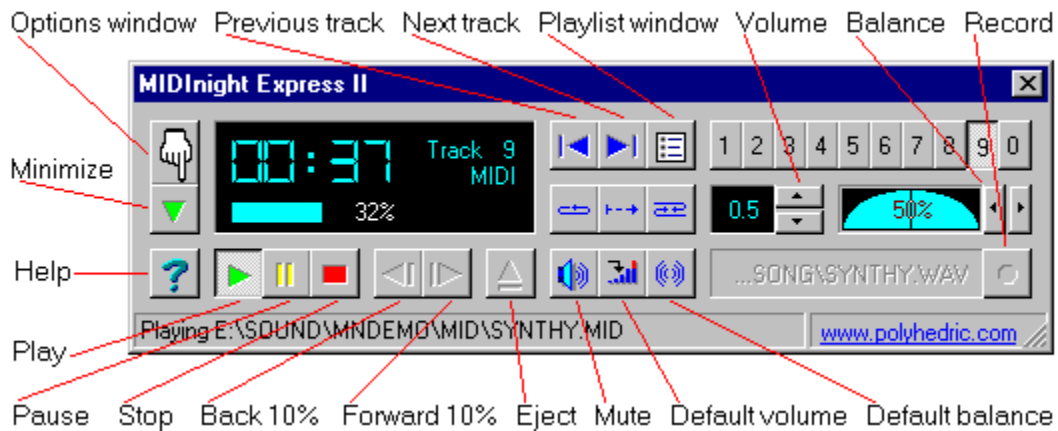
Selecting patch and sample directories

Apart from MIDI files, the MIDInight Express needs two other kinds of files to do its job: PRGs and WAVs.

- PRG files contain instrument definitions ("patches").

  Each PRG file corresponds to a MIDI program (instrument). The information needed to handle MIDI program 0 is in 0.PRG; MIDI program 6 is described by 6.PRG; and so on.

  The MIDInight Express also supports GS banks (variations). A filename on the form 78b16.PRG denotes instrument number 78, bank number 16. When a MIDI file requires a GS variation, the MIDInight Express tries to find the corresponding PRG file; if that fails, the corresponding default (bank 0) PRG is loaded. For instance, failing to find 78b16.PRG would cause 78.PRG to be loaded instead.

  Drum sets have their program number preceded by a "D", as in D0.PRG.

  PRGs do not contain any sound data; the actual samples are kept in WAV files. PRGs assign sample files to keys (notes) and impose performance parameters (base volume and pan position, controller sensitivities, envelope shape, loop points...). Each key on the virtual 128-note "keyboard" described by the PRG file can be assigned its own individual sample file(s) and performance parameters.

  How does the MIDInight Express know where to look for the PRGs it needs? You tell it in the **PRG and WAV directories** dialog described below.

- WAV files contain the actual sound data (samples) referred to by PRG instrument definitions.

  Well-behaved PRG files do not specify full WAV file paths (directories + filenames). This ensures portability between computers with different directory structures. When the MIDInight Express encounters such a well-behaved PRG, it goes looking for the required WAV files in the WAV directory which you specified in the **PRG and WAV directories** dialog (see below).

IMPORTANT

The freely distributable MIDInight Express Package contains a few demo patches, all savagely butchered to keep the download size within reasonable bounds, not a full, 130+ MB General MIDI and GS instrument library!

If you want a ready-made General MIDI and GS patch library, we recommend getting the GSound 22 CD-ROM. Alternatively, you may want to consider WAVmaker and its GSound 44 library.

If you want to create your own MIDInight Express instruments (or edit those in the GSound 22 library), check out the Mellosoftron (for patch creation and editing) and Acid WAV (for sound recording, synthesis and editing).

Acid WAV is also the perfect tool for compressing WAVs created with the MIDInight Express, e.g. for publication in MPEG Audio format on the web.
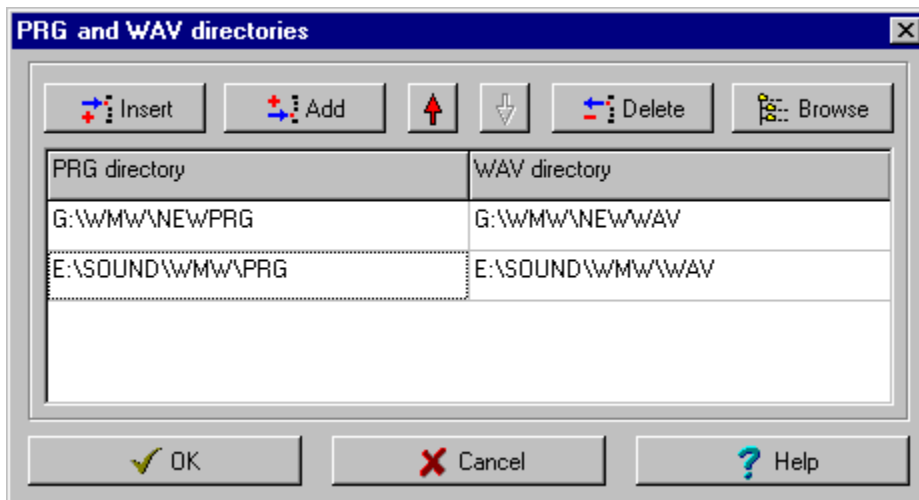
In order to specify PRG and WAV directories,   click the "hand" button in the upper left corner of the main window

This brings up the **Options** window
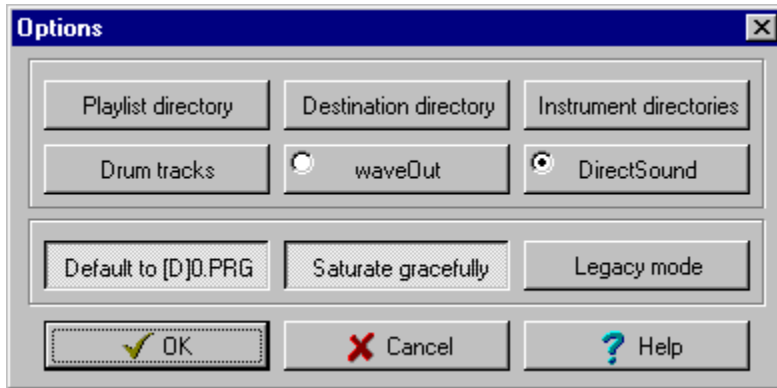
In the **Options** window, click the **Instrument directories** button. This brings up the **PRG and WAV directories** window

When looking for a PRG, the MIDInight Express searches through each PRG directory listed in the left column, starting from the top and stopping as soon as a match is found. Note that this allows you to replace patches without actually deleting any PRG files: just put the replacement directory closer to the top of the list than the directory containing the patches to be replaced.

PRG and WAV directories are specified in pairs. Suppose for instance that the PRG is found in the first PRG directory (G:\WMW\NEWPRG in the picture above). Assuming that it is a well-behaved PRG referencing WAVs by filename only (no directory paths) the corresponding WAVs must then reside in the first WAV directory (G:\WMW\NEWWAV in the picture above). If the PRG is in the second PRG directory, the WAVs it references must be in the second WAV directory, and so on.

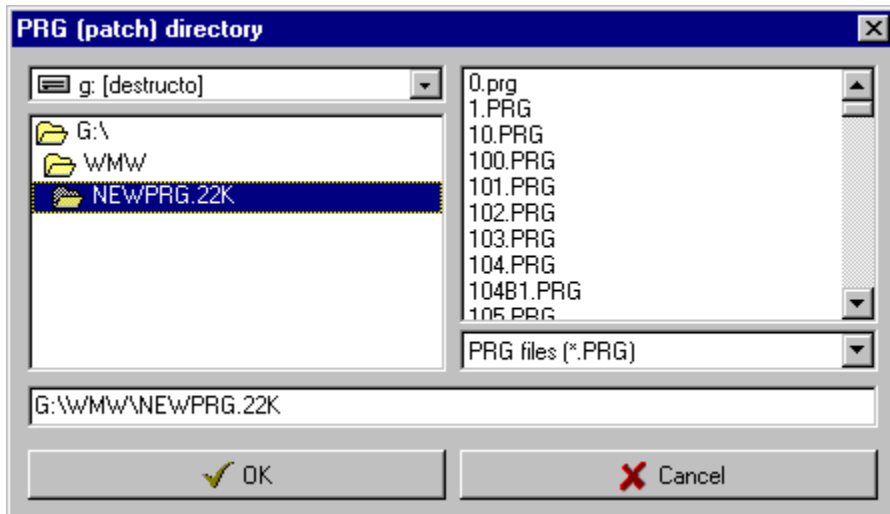Adding, inserting, removing and moving directory pairs is just a matter of clicking the

appropriate button. There must always be at least one directory pair in the list, so you are not allowed to delete all pairs.

New pairs are created by copying exisiting ones. To edit an entry, select it and click the **Browse** button
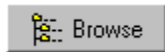
This brings up the directory selection window

Navigate to the desired directory and click **OK**. Done!

Setting MIDI drum tracks and channels

A MIDI file can contain up to 65 535 tracks. Each track can contain up to 16 separate MIDI channels. Each channel can control either a chromatic instrument (like a piano or a violin) or a drum set. The GM (General   MIDI) standard reserves channel 10 on all tracks for drums, and this is also the default choice made by the MIDInight Express.   You can change this choice in the **Drum track(s) and channel(s)** window.

In order to bring it up, click the "hand" button in the upper left corner of the main window

so as to open the **Options** window
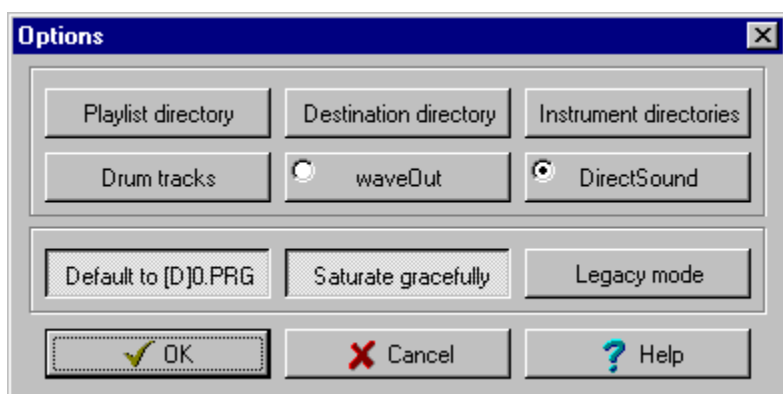
and click the **Drum tracks** button. This opens the **Drum track(s) and channel(s)** window
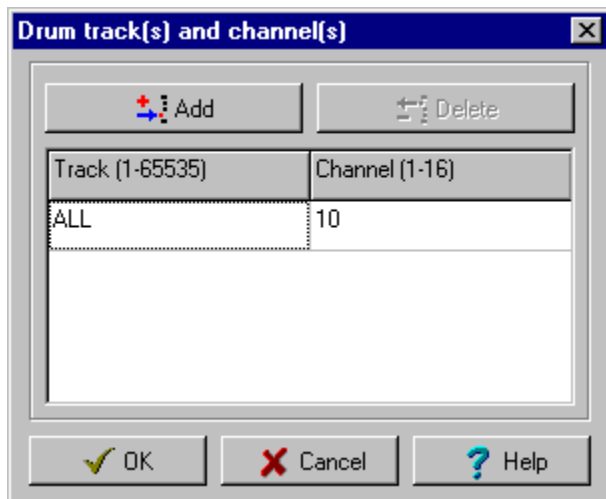
Add new entries with the **Add** button, delete them with the **Delete** button.

An empty list is not allowed. There must always be at least one entry. If you don't want any drum track, set this entry to an unused and/or out-of-range track/channel combination, such as 0:0.

The keyword ALL is accepted for both tracks and channels (internally, it's represented by the
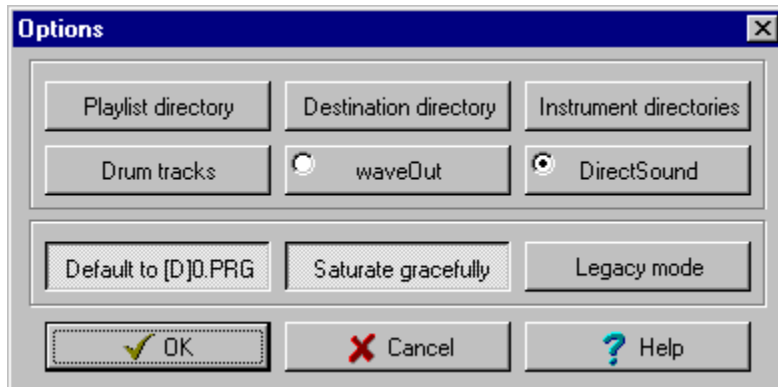
value -1, which you can also enter directly).

The Options window

Clicking the "hand" button in the upper left corner of the main window

brings up the **Options** window

which allows you to set...

- the **Playlist directory** used to store (you guessed!) your playlists
- the **Destination directory** for song WAVs crated by rendering MIDs and RMIs to WAVs
- the Instrument directories containing the PRGs and WAVs used to play MIDI files
- the MIDI drum tracks and channels, and
- the device to use for audio output when playing MIDI files.

The last point may require some explaining. You can choose between two kinds of audio devices, **waveOut** and **DirectSound**.

- waveOut is a legacy from 16 bit windows. It's not shareable: each waveOut device can only be used by one program at a time. If you only have one sound card, this can be a problem. On the other hand, waveOut is available on all Windows 9x systems.

- DirectSound (a part of the 32 bit DirectX API) is shareable: you can run the MIDInight Express and other DirectSound-enabled programs like the Mellosoftron concurrently and route their output to the same sound card. Not all Windows systems have DirectX installed on them, but the latest version (you need version 3 or later) can always be downloaded free of charge from Microsoft's web site, www.microsoft.com.

In order to select which kind of audio device to use, you need only check the appropriate radio button. If you have more than one sound card, you may also need to click the **waveOut** or **DirectSound** button to bring up a selection list of available devices.

<p align="center">**IMPORTANT**</p>

<p align="center">**If you are running Windows NT, you must use DirectSound!**</p>

The **Options** window also sports three "push buttons" which can be On (pushed in) or Off:

- When **Default to D[0].PRG** is On, the MIDInight Express will try to load 0.PRG (for

chromatic instruments) or D0.PRG (for drum sets) whenever it can't find a PRG required to handle a MIDI Program Change event (if you don't understand what this means, you need to read up on PRGs). The alternative is to unselect this option and have the MIDInight Express yell at you whenever it can't find a PRG - which is good if you want to be sure that you are really hearing the instruments intended by the composer.

- When **Saturate gracefully** is On, all samples created by the sound engine are screened for overflows before being sent to the sound device. This prevents the worst kind of very loud, sharp crack to occur when the volume is set too high. The price to pay for this screening is a heavier CPU load. If you are running the MIDInight Express on a 486, you may want to unselect this option. Doing so is not an excessive loss; setting the volume too high will result in bad sound no matter what.

- When **Legacy mode** is On, sound levels will be calculated according to the old formulas used in the MIDInight Express 1.x and WAVmaker 2.x. The new (and recommended) formulas are the same used in the Mellosoftron and in WAVmaker 3.x. You should use the old formulas only if you want to enforce the highest possible level of compatibility with WAVmaker 2.x.

As a rule, any changes made in the **Options** window will not take effect until the next MIDI file (or playlist, for **Playlist directory**) is loaded. For instance, changing the **Instrument directories** or unselecting **Default to [D]0.PRG** will not affect how Program Change events are resolved in the currently loaded MID (but it will affect how the next MIDI file is going to be treated).

The inevitable exception to the rule is **Saturate gracefully**. Changes to this setting are sent to the sound engine as soon as you click **OK**. (That doesn't mean that you will hear them taking effect immediately. The sound data already in the pipeline - typically some ten seconds of it - has to get out of the way first.)

Creating playlists

In order to play MIDI and WAV files, you must first add them to the current playlist. There are several ways to do so.

When the MIDInight Express is not already running...

- If you have <u>associated MID, RMI and/or WAV files with the MIDInight Express</u>, you can open such a file e.g. from the Windows Explorer. Windows will start the MIDInight Express with the file inserted at the top of the current playlist and set it playing.

- You can start the MIDInight Express from within a DOS window or the Start | Run dialog, with one or more MID, RMI and/or WAV files as its command line parameters. The MID, RMI or WAV extensions must be included; full paths need only be specified if the files don't reside in the default MIDI or WAV directories. Windows will start the MIDInight Express with the files inserted at the top of the current playlist and set the first file playing.

When the MIDInight Express is already running...

- You can drag the files from another Windows application supporting drag and drop (e.g. Windows Explorer) and drop them on the main MIDInight Express window. If you have less than ten tracks in your current playlist you will see the first unused fast selector button(s) being enabled.
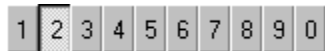
  If you have more than ten tracks in the playlist already, you can use the skip backward/forward buttons to reach the new track(s).

- You can use the **Playlist** window. In order to bring it up, click the button next to the skip backward/forward buttons:

  In the **Playlist** window, use the **Files** box
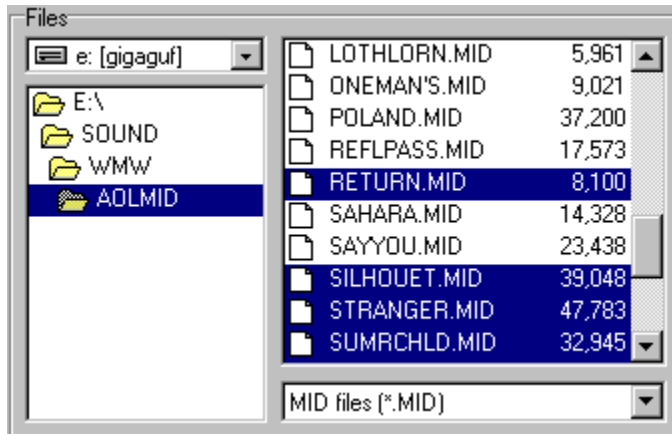
to navigate to and select the file(s) which you want to add to the playlist
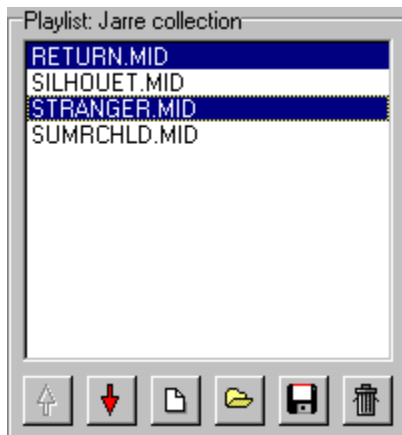
then use the **Add** button. The **Add all** button imports all files in the selected directory. Use **Remove** to drop the selected entries from the playlist, **Remove all** to get a clean slate.

The buttons in the **Playlist** box allow you to move the selected entries around in the list, create a new list, and load, save and delete playlist files.

You can also drag and drop MID, RMI and WAV files on the **Playlist** window.

MIDInight Express playlist files have the extension MxL and are kept in the playlist directory, which you can set in the Options window.

Playing MIDI files

Once you have put the files which you want to play in the current <u>playlist</u>, you can select any of them with the skip backward/forward buttons (the corresponding keystrokes are shown between square brackets):

Skip bac[k]   Selects previous file in playlist.

Skip for[w]ard Selects next file in playlist.
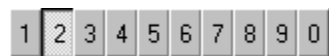
For the first ten files, you can also use the fast selector buttons:

[1][2][3] ... [0]   Selects file in playlist.

To start playback, click the play button:

[P]lay Starts playback.

The MIDInight Express will start playing the selected file, unless shuffle mode is On (i.e. the shuffle button is pushed in):

In shuffle mode, the MIDInight Express will select a file randomly from the current playlist and start playing it.

If intro mode is On,

only the first ten seconds (or so) of the file will be played.

When playback terminates, the MIDInight Express will go on to the next file in the playlist or, if shuffle mode is On, to another randomly selected file in the playlist. In shuffle mode, this will go on until the MIDInight Express is stopped manually (by clicking the stop button or by closing it).

When shuffle mode is Off, the MIDInight Express stops after playing the last file in the playlist, unless repeat mode is On:

Repeat mode causes the MIDInight Express to skip back to the first file in the playlist after playback of the last one terminates. Like shuffle mode, it has to be stopped manually, by either clicking the stop button or by closing the MIDInight Express.

Note that you can combine intro mode with either shuffle or repeat mode.

The following controls are enabled during MIDI file playback:

P[a]use   Pauses and resumes playback.

[S]top Stops playback.

[M]ute Mutes sound output.

Default [v]olume   Resets wavetable amplification.

Default bala[n]ce   Centers wavetable output.

Volume control   Steps wavetable amplification.
[Up & Down arrows]
[+, -]

Balance control   Steps wavetable pan position.
[Left & Right arrows]

The volume and balance controls do not take effect immediately. The sound data already pipelined for playback - typically some ten seconds of it - has to get out of the way first.

When a MIDI file is loaded but playback is stopped, you can use the following controls:

[P]lay Restarts playback.

[B]ack Rewinds the file in 10% steps.

[F]orward   Fast forwards in 10% steps.

You can also unload the file, either explicitly with the eject button

[E]ject Unloads file.

or by selecting another file in the playlist.

Rendering MIDI files to WAV files

In order to start recording, click the button in the lower right corner of the main window, then set the MIDInight Express playing as usual. A MIDI file must be selected in the playlist (but not loaded) for the record button to be enabled.

That's all there is to it. A WAV file will be created for (and named after) each MID or RMI played while recording is on. The name of the WAV being created is shown to the left of the record button. The destination directory can be set (prior to recording) in the Options window.

Toggling sound output on/off by clicking the mute button will not affect the WAV file being created, so you can have silent rendering if you wish.

Don't worry if loudspeaker output comes in chunks separated by silence. This simply reflects the time taken to write the sound data to disk. The destination WAV file will not have those silent spots in it.

The WAV files created by the MIDInight Express are 16 bit stereo. The sampling rate is 22050 Hz. This translates to a disk usage of 5 MB per minute. You can reduce file sizes substantially, e.g. for posting on the web in MPEG Audio format, with Acid WAV.

If you need CD+ quality MIDI to WAV rendering with advanced features like programmable effects and tune tables, check out WAVmaker!

Playing WAV files

The MIDInight Express can not only play MIDs and RMIs; it does WAVs, too. This is an auxiliary function provided mainly due to the inefficiency of the original Windows 95 media player, which apparently tries to load the entire WAV in memory before playing it. When the WAV file is too large to fit in the available RAM, this will bring the system to a virtual standstill.

WAV files can be added to playlists just like MIDs and RMIs. Note that the filetype for the selected track is reported in the "LCD" display:

On the other hand, the playback mechanisms used internally for the two kinds of files are quite different. While MIDI files are rendered by MIDInight's emulated wavetable engine and output through the low-level waveOut or DirectSound devices, WAV files are streamed to the sound card using high level MCI (Media Control Interface) commands. The volume and balance controls in the MIDInight Express window are wired to the emulated wavetable engine, not the sound card, so they are not available when playing back WAV files with the MCI.

If you have more than one sound card (and MCI driver), Windows will use the default device for MCI playback. You can use the Windows Media Player to set the default WAV playback device.

Keystroke commands

Most controls on the main window can be activated either with the mouse or from the keyboard. If a control has a corresponding key stroke, it's reported between square brackets in its hint field. For instance, positioning the mouse cursor over the play button rings up the following hint: "[P]lay", meaning "press P to play".

Here is a complete list of controls with a corresponding keystroke (shown between square brackets):

[O]ptions   Brings up the Options window.

[H]elp Brings up this Help file.

[P]lay Starts playback.

P[a]use   Pauses and resumes playback.

[S]top Stops playback.

[B]ack Rewinds the file in 10% steps.

[F]orward   Fast forwards in 10% steps.

[E]ject Unloads file.

Skip bac[k]   Selects previous file in playlist.

Skip for[w]ard Selects next file in playlist.

Play[l]ist   Brings up the playlist window.

[1][2][3] ... [0]   Selects file in playlist.

[M]ute Mutes sound output.

Default [v]olume   Resets wavetable amplification.
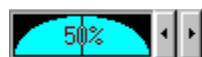
Default bala[n]ce   Centers wavetable output.

[R]ecord to WAV   Enables recording of MIDI to WAV.

Volume control   Steps wavetable amplification.
[Up & Down arrows]
[+, -]

Balance control   Steps wavetable pan position.
[Left & Right arrows]

## Associating MIDI and WAV files with the MIDInight Express

If you associate MIDI and/or WAV files with the MIDInight Express, opening such a file (e.g. in Windows Explorer) will cause Windows to (1) start the MIDInight Express with the file inserted at the top of the current playlist and (2) set it playing.

In order to associate a filetype (MID, RMI or WAV) with the MIDInight Express, follow the steps below:

1   In **My Computer** or **Windows Explorer**, click the **View** menu entry, then click **Options**.

2   Click the **File Types** tab.
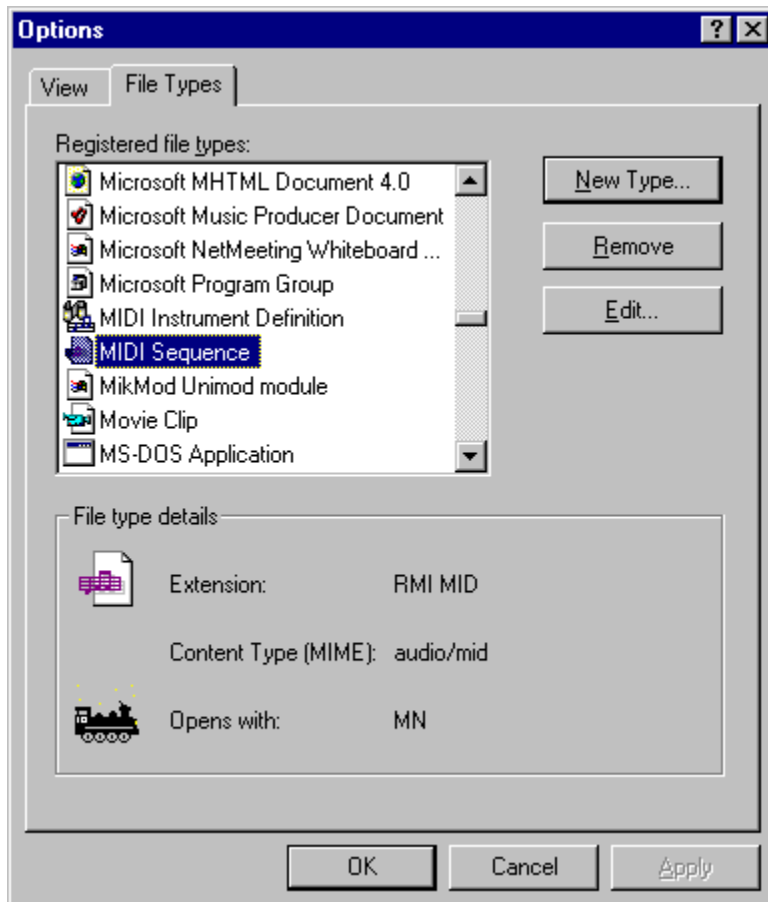
3   In the **Registered file types** list, click the file type you want to change (MID, RMI or WAV, usually described as "MIDI Sequence" and "Wave Sound", respectively). The current settings for the selected file type are shown in the **File Type Details** box.

4   Click **Edit**.
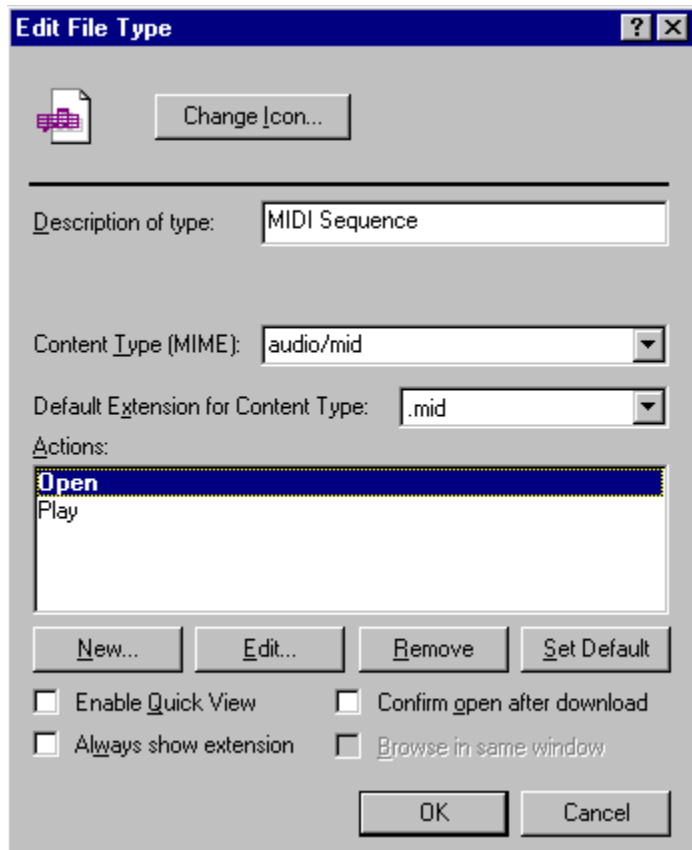
5   In the **Actions** box, click **Open**.

6   Click **Edit**.

7   Use **Browse** to locate the MIDInight Express executable (mn.exe).

8   Make sure that the **Use DDE** box is unchecked.
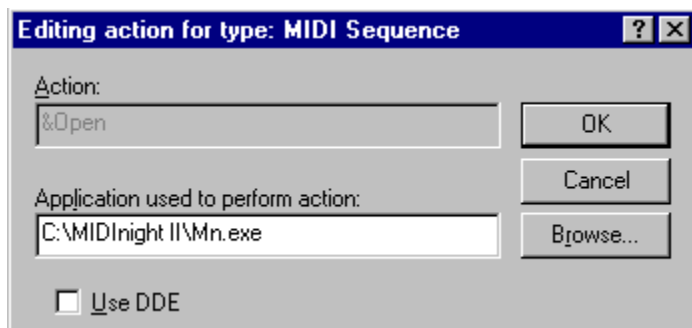
9   Click **OK**.

10   In the **Actions** box, click **Play**.

11   Repeat steps 6-9.

License information

This file contains important license information regarding the distribution and use of the MIDInight Express.

The MIDInight Express is NOT in the public domain. It is Copyright (C) Tommy Anderberg, 1996-1998. All rights reserved worldwide. This software and all the accompanying data and documentation files are protected by national and European laws and by International Treaty provisions. You must treat the MIDInight Express like any other copyrighted material, except that you may copy it and give to others (subject to the limitations outlined below). Any use or distribution of this software, data and documentation in violation of Copyright law or of the terms outlined in this document will be prosecuted to the best of our ability.

The conditions under which you may copy and distribute the MIDInight Express are described below under Limited Distribution License Agreement.

The conditions under which you may use the MIDInight Express are described below under Limited User License Agreement.

All rights not expressly granted here are reserved to Tommy Anderberg.

Limited Distribution License Agreement

This Limited Distribution License Agreement (throughout this section, the "Agreement") is a legal agreement between you, the distributor, and Tommy   Anderberg. By copying any part of the MIDInight Express, you are agreeing to be bound by   the terms of this Agreement.

As the copyright and trademark holder for the MIDInight Express, Tommy Anderberg authorizes individuals and organizations to copy the files contained in the MIDInight Express distribution package for their own use or for giving to others, ONLY when the following conditions are met:

- The MIDInight Express distribution package - including all related program, data and documentation files - may not be modified in any way and must be distributed together, as a complete package, without exception. You may not distribute corrupted or otherwise damaged files.

- No price or other compensation may be charged for the MIDInight Express. A reasonable distribution cost may be charged for the distribution media, shipping and handling. BBS systems may not charge beyond their normal rates for downloads of the MIDInight Express.

- The MIDInight Express is designed to be easily extended by the addition of instrument patches and samples. You may not, however, distribute an extended version of the MIDInight Express without prior written permission from Tommy Anderberg.

- Neither this Agreement nor any part or portion hereof shall be assigned or sublicensed, except as described herein. Should any provision of this Agreement be held to be void, invalid, unenforceable or illegal by a court, the validity and enforceability of the other provisions shall not be affected thereby. If any provision is determined to be

unenforceable, you agree to a modification of such provision to provide for enforcement of the provision's intent, to the extent permitted by applicable law. Failure of a party to enforce any provision of this Agreement shall not constitute or be construed as a waiver of such provision or of the right to enforce such provision. If you fail to comply with any terms of this Agreement, your license is automatically terminated, and you may be prosecuted at any time under national and European laws and under International Treaty provisions.

- You acknowledge that you have read this Agreement, you understand this agreement, and understand that by copying any part of the MIDInight Express, you agree to be bound by this Agreement's terms and conditions. You further agree that, except for written separate agreements between Tommy Anderberg and you, this Agreement is a complete and exclusive statement of your distribution rights. This agreement supersedes all prior oral agreements, proposals or understandings, and any other communications between Tommy Anderberg and you relating to the subject matter of this Agreement.

Limited User License Agreement

This Limited User License Agreement (throughout this section, the "Agreement") is a legal agreement between you, the user, and Tommy Anderberg. By installing the MIDInight Express, by loading or running any part of it, or by placing or copying any part of it onto your computer hard drive, you are agreeing to be bound by the terms of this Agreement.

For the purposes of this section, "use" means loading the software into RAM, as well as installation on a hard disk or other storage device.

As the copyright and trademark holder for the MIDInight Express, Tommy Anderberg authorizes individuals or organizations to use the MIDInight Express, ONLY when the following conditions are met:

- You shall not: modify, translate, disassemble, decompile or reverse engineer the compiled executables contained in the MIDInight Express.

- You may not exploit running copies of the MIDInight Express commercially, e.g. by renting, leasing or selling access to a computer running the MIDInight Express.

- The user accepts sole and full responsibility for any damage or loss arising from the use or the inability to use the MIDInight Express. While this software has been extensively tested and is believed to be safe, Tommy Anderberg and Polyhedric Software disclaim any warranties, either expressed or implied, including but not limited to warranties of fitness for ANY particular purpose and of uninterrupted, error free operation. Under no circumstances shall Tommy Anderberg or Polyhedric Software be liable for loss of data, loss of profits, lost savings, special, incidental, consequential, indirect or other similar damages arising from the use or the inability to use the MIDInight Express.

- Neither this Agreement nor any part or portion hereof shall be assigned or sublicensed, except as described herein. Should any provision of this Agreement be held to be void, invalid, unenforceable or illegal by a court, the validity and enforceability of the other provisions shall not be affected thereby. If any provision is determined to be unenforceable, you agree to a modification of such provision to provide for enforcement of the provision's intent, to the extent permitted by applicable law. Failure of a party to enforce any provision of this Agreement shall not constitute or be construed as a waiver of such provision or of the right to enforce such provision. If you fail to comply with any terms of this Agreement, your license is automatically terminated, and you may be

prosecuted at any time under national and European laws and under International Treaty provisions.

- You acknowledge that you have read this Agreement, you understand this Agreement, and understand that by installing any part of the MIDInight Express, by loading or running any part of the MIDInight Express, or by placing or copying any part of the MIDInight Express onto your computer hard drive, you agree to be bound by this Agreement's terms and conditions. You further agree that, except for written separate agreements between Tommy Anderberg and you, this Agreement is a complete and exclusive statement of the rights and liabilities of the parties involved in the use of the MIDInight Express. This agreement supersedes all prior oral agreements, proposals or understandings, and any other communications between Tommy Anderberg and you relating to the subject matter of this Agreement.