

Documentation for the DIGPAK & MIDPAK Developers Kit v1.0

by

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DIGPAK & MIDPAK DEVELOPERS KIT  
EXISTS IN THE MAIN LIBRARY AS:

DMKIT.ZIP

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The Audio Solution  
747 Napa Lane  
St. Charles, MO 63304

DIGPAK : DOS based digital sound drivers.  
Written by John W. Ratcliff (CIS:70253,3237)  
Copyright (c) 1994, The Audio Solution.  
\$500 per/product distribution license fee.

MIDPAK: DOS based MIDI music player.  
Written by John W. Ratcliff and John Miles  
Copyright (c) 1994, The Audio Solution.  
\$500 per/product distribution license fee.

=====  
What is DIGPAK and MIDPAK?  
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DIGPAK and MIDPAK are a set of drivers which provide a device independent API layer under DOS real-mode and protected mode that supports virtually all sound cards. DIGPAK allows playback of digital sound and MIDPAK allows the playback of General MIDI music on ALL sound cards (including Adlib, SoundBlaster, and other non-MIDI devices through the best MIDI emulation package available.) DIGPAK and MIDPAK operate either as DOS TSR's or can be demand loaded and dynamically linked by your application. (The preferred method).

Unzip this file, with sub-directories, into a directory called THEAUDIO and point your PATH statement to the directory. Once you have done this you can go to any directory on your machine containing MIDI files or sound files and type MENU to use MIDPAK and DIGPAK to peruse them.

DIGPAK & MIDPAK are for use by professional DOS developers who need to incorporate sound and music in their products across a wide range of hardware devices. These tools are not for the layperson, or beginning programmer. All programming examples and interface specifications are

presented in the C and 8086/80386 assembly languages. If you are not familiar with digital sound, MIDI music, and C and assembly language programming then this programmers kit is probably not for you.

This kit supports both DOS real-mode as well as DOS protected mode interface layers. All assembly language source code must be assembled with Borland Assembler (in IDEAL mode) and the C code may be compiled with any C compiler. The real-mode C code presented here was developed with Borland C 3.1 DOS IDE and the flat-model C code was generated under Watcom C386 v9.0.

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Who developed DIGPAK & MIDPAK?  
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DIGPAK and MIDPAK were developed by John W. Ratcliff, a game developer for Electronic Arts. These drivers were created to allow me to incorporate sound and music in my game Seawolf for Electronic Arts. MIDPAK uses the MIDI drivers developed by John Miles of Miles Design.

=====  
What's the quickest way to look at the software?  
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Run SETUP to configure both DIGPAK and MIDPAK for your sound card. Then type MENU to play some music and sound. After running SETUP you can also run TEST, TEST16, or SEGUE, to run the demo programs.

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Who uses DIGPAK & MIDPAK?  
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The list which follows are just some of the companies which use the DIGPAK and MIDPAK drivers in their DOS based entertainment products.

|                                 |                              |
|---------------------------------|------------------------------|
| Electronic Arts                 | Epyx                         |
| Activision                      | Fun Univ Netwk               |
| Spectrum Holobyte               | Home Brew Software           |
| The Software Toolworks          | Humongous Entertainment      |
| SSI, Strategic Simulations Inc. | ICOM Simulations             |
| Milliken Publishing Company     | Interplay                    |
| Commodore Computer              | IntraCorp                    |
| Virgin Games                    | Kram                         |
| Compu-Teach                     | Legacy Software              |
| Knowledge Adventure             | Macmillan/McGraw Hill        |
| Gametek                         | Magnetic Images              |
| Access Software                 | MECC                         |
| Alive Software                  | Merit Software               |
| Azeroth Publishing              | Microleague Sports Assoc.    |
| Bethesda Softworks              | Ninga                        |
| C.R.A.P.O., Inc.                | Norsehelm Productions        |
| Concepteva                      | Objects, Inc                 |
| Cooper, R.J. & Assoc.           | Optimum Resource             |
| DC True                         | Presage Software Co. Inc.    |
| Dennis Cunningham               | Quantum Quality Productions  |
| Three-Sixty Pacific             | Redwood Games                |
| Destiny Software                | Saddleback Graphics          |
| Edmark Corpoartion              | Safari Software              |
| Simutronics                     | White Wolf Productions, Inc. |
| Stragem                         | XOR Corporation              |
| T&t Research                    | Trilobyte                    |
| Waterford Institute             | Masque Publishing            |
| Wesson International            | Iterated Systems             |

and many more...

=====  
What products use DIGPAK & MIDPAK?  
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Below is just a very PARTIAL list of the product that use DIGPAK & MIDPAK drivers.

|                           |                           |               |
|---------------------------|---------------------------|---------------|
| Guardians of Eden         | Access Software           | MidPak        |
| Return to Zork            | Activision                | DigPak        |
| Mechwarrior II            | Activision                | DigPak        |
| Animal Quest              | Alive Software            | DigPak+MidPak |
| Magic Crayon              | Alive Software            | DigPak+MidPak |
| VGA Jigsaw                | Alive Software            | DigPak+MidPak |
| Inspector Gadget:         | Azeroth Publishing        | DigPak+MidPak |
| Terminator 2029           | Bethesda Softworks        | DigPak        |
| Le Ponctueur              | C.R.A.P.O., Inc.          | DigPak        |
| Bilou                     | Concepteva                | DigPak        |
| Switch Progressions       | Cooper, R.J. & Assoc.     | DigPak+MidPak |
| Switch Quik               | Cooper, R.J. & Assoc.     | DigPak+MidPak |
| Stepping Stones Bonus     | Compu-Teach, Inc.         | DigPak+MidPak |
| Shadow President          | DC True                   | DigPak        |
| T-Zero                    | Dennis Cunningham         | DigPak+MidPak |
| Battle Cruiser 3000AD     | Three-Sixty Pacific       | DigPak        |
| Creepers                  | Destiny Software          | DigPak+MidPak |
| Millie's Math House       | Edmark Corpoartion        | DigPak        |
| KidDesk                   | Edmark Corporation        | DigPak        |
| Fun Univ Ntwk Intfc       | Fun Univ Netwk            | DigPak+MidPak |
| Wheel of Fortune          | Gametek                   | DigPak+MidPak |
| Gateworld Trilogy         | Home Brew Software        | MidPak        |
| PuttPutt's FunPack        | Humongous Entertainment   | DigPak+MidPak |
| PuttPutt Joins Parade     | Humongous Entertainment   | DigPak+MidPak |
| Fatty Bear                | Humongous Entertainment   | DigPak+MidPak |
| PuttPutt Goes to the Moon | Humongous Entertainment   | DigPak+MidPak |
| Beyond Shadowgate         | ICOM Simulations          | DigPak+MidPak |
| Battle Chess 4000         | Interplay                 | DigPak        |
| Grandmaster Chess         | IntraCorp                 | DigPak+MidPak |
| Space Adventure           | Knowledge Adventure       | DigPak        |
| Dinosaur Adventure        | Knowledge Adventure       | DigPak        |
| Realms of Avarton         | Kram                      | DigPak        |
| Mutanoid Math Challenge   | Legacy Software           | DigPak+MidPak |
| Mutanoid Word Challenge   | Legacy Software           | DigPak+MidPak |
| Sights & Sounds           | Macmillan/McGraw Hill     | DigPak        |
| Places to Play            | Magnetic Images           | DigPak        |
| Oregon Trail Deluxe       | MECC                      | DigPak+MidPak |
| Tom Landry Football       | Merit Software            | DigPak+MidPak |
| MicroLeague Baseball IV   | Microleague Sports Assoc. | DigPak+MidPak |
| MicroLeague Football II   | Microleauge Sports Assoc. | DigPak+MidPak |
| Microleage Cards          | Microleage Sports Assoc.  | DigPak        |
| Math Zone                 | Milliken Publishing       | DigPak        |
| Marvin The Moose          | Milliken Publishing       | DigPak        |
| Milliken Storyteller      | Milliken Publishing       | DigPak        |
| Math Sequences            | Milliken Publishing       | DigPak        |
| Cribbage Master           | Ninga                     | DigPak        |
| Ragarok (Valhalla)        | Norsehelm Productions     | DigPak        |
| Layout for DOS            | Objects, Inc              | DigPak+MidPak |
| Stickybear Townbuilder    | Optimum Resource          | DigPak        |
| Contraption ZAck          | Presage Software Co. Inc. | DigPak+MidPak |

|                        |                              |               |
|------------------------|------------------------------|---------------|
| Spaceward Ho PC        | Presage Software Co. Inc.    | DigPak+MidPak |
| Solitaire's Journey    | Quantum Quality Productions  | DigPak+MidPak |
| Pickle Wars            | Redwood Games                | DigPak+MidPak |
| Guzzle Puzzles         | Redwood Games                | DigPak        |
| My Paint               | Saddleback Graphics          | DigPak        |
| Space Chase 1,2,3      | Safari Software              | MidPak        |
| GemStone III           | Simutronics                  | DigPak+MidPak |
| Cyberstrike            | Simutronics                  | DigPak+MidPak |
| WorldAtlas             | The Software Toolworks       | DigPak+MidPak |
| Chessmaster 3000       | The Software Toolworks       | DigPak        |
| BodyLink               | Stragem                      | DigPak        |
| Pools of Darkness      | Strategic Simulations Inc.   | DigPak        |
| Gateway to the Savage  | Strategic Simulations Inc.   | DigPak        |
| DNA Parrot             | T&t Research                 | DigPak        |
| Monopoly Deluxe        | Virgin Games                 | DigPak        |
| Waterford Mental Math  | Waterford Institute          | DigPak+MidPak |
| ATC/Tracon             | Wesson International         | DigPak        |
| Empire Deluxe          | White Wolf Productions, Inc. | DigPak+MidPak |
| NFL Challenge          | XOR Corporation              | DigPak        |
| Chess Maniac 5,000,001 | Spectrum Holobyte            | DigPak+AIL    |
| The 7th Guest          | Virgin/Trilobyte             | DigPak+AIL    |
| Seawolf                | Electronic Arts              | DigPak+MidPak |
| KaleidoSonics          | Masque Publishing            | DigPak+MidPak |
| Gambit                 | Electronic Arts              | DigPak+MidPak |
| Warlords II            | SSG                          | DigPak+MidPak |

=====  
 What type of 'commercial products' does the license fee apply to?  
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Any piece of software which uses the DIGPAK & MIDPAK drivers for which the developer collects a fee REQUIRES a license. Yes, this INCLUDES shareware products as well as those that sit on the shelf at a computer store. This also includes distributable multimedia demos, for which the multimedia authors were paid a fee to create. If you are bidding on a multimedia project and intend to use MIDPAK and DIGPAK, then be sure to include the \$1,000 license fee in your budget!

If you are making money because of the value that these drivers add to your product, then we deserve a license. There are several man-YEARS of engineering work in these drivers, as well as continued expenses to maintain them. The license fee serves as little more than a 'maintenance' fee for us to keep the drivers up to date, as well as run the BBS for people to get continued improvements and updates.

Do NOT use DIGPAK and MIDPAK if you are not prepared to pay the license fee. Every single one of the products and companies listed above have paid this same license fee for the right to distribute the DIGPAK and MIDPAK drivers.

=====  
 Can I get a DIGPAK and MIDPAK license for a development tool?  
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NO!! The license for DIGPAK and MIDPAK is for multimedia, entertainment, and educational products which need support for interactive sound and music. Development tools based on the DIGPAK and MIDPAK drivers are NOT allowed!! If you want to create a development package that utilizes the DIGPAK and MIDPAK drivers then you must contact me directly to discuss such an arrangement. You are NOT allowed to resell, DIGPAK and MIDPAK drivers under any conditions as a developers toolkit. This includes any sort of multimedia authoring

toolkit. The reason for this should be obvious. You would be in effect re-distributing DIGPAK and MIDPAK drivers license free, to other developers, and this is not allowed. That's not to say we can't come to an agreement, but you cannot obtain a license for any type of developement or authoring system using DIGPAK and MIDPAK drivers.

=====  
What do I do if I want to add sound and music support by don't want to pay a license?  
=====

Call Mystic Software at 1-510-865-9189. The Worx toolkit from Mystic software does not require any license fee and is a very nice development package. Though it does not support as many sound cards as DIGPAK & MIDPAK, it is a very servicable development tool.

=====  
What if my shareware product has a free portion, and then a registered portion?  
=====

Then no license fee applies for the FREE version. If you are developing public domain tools and utilities that support DIGPAK & MIDPAK, and they are truely FREE, then no license fee applies. If that public domain tool is a development aid, tool, or authoring system, then the DIGPAK and MIDPAK portion of that tool MUST contain this COMPLETE document and make it extremely clear that the distribution license fee still applies to anyone using that authoring tool.

=====  
If I use both DIGPAK and MIDPAK in a product how much is the total license then?  
=====

\$500 for DIGPAK and \$500 for MIDPAK, for a total of \$1,000. Even if you sell 100,000 copies of the product, the license is still only \$1,000. Unfortunatly even if you sell just 100 copies, the fee applies as well.

=====  
How do I pay my license?  
=====

Write a check payable to The Audio Solution, and include with it a copy or your product. Mail the check to:

The Audio Solution  
John W. Ratcliff  
747 Napa Lane  
St. Charles, MO 63304

Shortly thereafter you will receive a signed copy of the license agreement. Once you have paid the license fee, the agreement is considered in effect and you may distribute your product with the drivers. You must, however, pay the license fee PRIOR to your product being shipped.

DIGPAK & MIDPAK are copyrighted software components. If you distribute The Audio Solution drivers without having a signed license agreement you will be in violation of our copyright. Your product could be required to be immediatly removed from retail distribution. I don't think this is going to be a problem.

If you don't think DIGPAK & MIDPAK add \$1,000 of value to your product, then do not use them, period. Use the Worx Toolkit from Mystic, or write your own sound code. But DO NOT use these drivers unless you intend to pay the

license fee.

All DIGPAK drivers combined equal almost 20,000 lines of assembly code. And the same is true for all of the MIDPAK drivers. John Miles and myself have invested over 4 years creating and maintaining these drivers. We are making this developers kit widely available to the developer community as a service to the industry. It is our goal to make these excellent development tools available to everyone. But we have bills to pay like anyone else. As a self-employed entrepreneur I do not get a paycheck, health insurance, paid vacations, or any of the other amenities that salaried employees have. If people use these tools to enhance their product and generate revenue, then I feel strongly that I should be paid a license fee for these drivers.

=====  
I'm a shareware author and I can't afford \$1,000 until I get enough registrations. What do I do?  
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Send me a copy of your shareware product on my BBS along with a piece of e-mail explaining your situation. In most cases I will issue a SHAREWARE LICENSE AGREEMENT that will require payment of the FULL license fee once you have received 500 paid registrations for your product. If you don't receive 500 registrations, then you will not have to pay the license fee. But once you have received 500 registrations you MUST pay the license fee. As a shareware author I'm certain you understand not wanting to be ripped off, and likewise I would expect you to pay your license for the DIGPAK and MIDPAK drivers in good faith. You must come to an agreement with me prior to the release of your shareware package.

=====  
I'm doing software development for the disabled. Even though I have to charge a fee for the software to cover expenses, we are a non-profit organization. Could I be exempted from the license fee?  
=====

In general yes. I would like to provide exemptions to anyone using DIGPAK and MIDPAK to create software to help the disabled. However, you will still need to receive a signed license agreement with that exemption. Please contact me ahead of time (via Compuserve or my BBS), and let me know about what you are doing. When your project is complete you will receive a signed distribution license agreement, with the exemption. Simply send me a copy of your product and a check for \$1 to cover the license fee. This DOES NOT include EDUCATIONAL SOFTWARE created by any FOR PROFIT organization.

=====  
What kind of digitized sound format does DIGPAK support?  
=====

None. DIGPAK is a low-level API layer. It simply insulates the programmer from having to talk DIRECTLY to the hardware. The data you pass to DIGPAK is the same data you would have been passing to the sound card itself. DIGPAK requires raw 8 bit unsigned PCM data in the first 1mb of address space in under 64k lengths. Stereo 8 bit support is provided with interleaved left channel/right channel 8 bit samples. Support for 16 bit digital sound in DIGPAK is provided through raw 16 bit SIGNED data. Why signed? Because every single 16 bit PC sound card I have encountered supports 8 bit unsigned PCM and 16 bit signed PCM. The DIGPAK drivers, in almost every case, simply passes that chunk of audio data out to the DMA controller.

Interpreting .WAV files, .VOC files, or .ANYTHING files is a higher application

level problem, one that you will have to provide support for yourself. Since I always use audio data in RAW format by bringing it over from the Macintosh I have no use or need for various sound file formats.

If you don't know what 8 bit unsigned PCM, 8 bit interleaved sound, and 16 bit signed sound means, then you will have to ask around on the networks or read some books. Though I have insulated the user from the ugly details of the hardware layer, I can't insulate you from knowing about sound programming. That you will still have to do on your own.

=====  
How do I play many sounds at once?  
=====

DIGPAK supports only a single channel of sound at once, which reflects the nature of almost every single PC sound card on the market. To play multiple sounds at one time requires that you 'mix' digital sound samples in real-time. Under protected mode DIGPAK I have a digital mixer that keeps a constantly running stream of audio data, up to 16 channels in 16 bit 11khz stereo in real-time taking almost none of the machine's CPU.

I also consider this mixer highly proprietary. I am not prepared to tell you how I did it, or how you can do it. I simply mention it here to let you know that it can be done. With my system I create an immersive environmental sound system. Unlike a MOD player which must be able to react to percussive changes in as little as a 100ths of a second, my environmental sound system allows the application to que any sound going on inside a 3d environment in real time. If someone is shooting off to your left, then you hear the shots going by. If an airplane is flying overhead, you hear not only the plane's engine noise but also doppler shift and depth cueing via volume changes.

Just look a little at how sounds work in DOOM and you will get an ideal about the importance of immersive virtual sound. I'm not interested in selling my environmental sound system because I consider it part of my competitive edge in the game industry. I simply mention it here to make it very clear that the DIGPAK interface does not by any means limit you in terms of what you can do on the various sound cards. It is only the smallest of layers between your application and the physical DMA transfer that a sound card has to do anyway.

The DIGPAK API is no more limiting than the sound card itself. You can make it do as much or as little as your programming skills will take you.

=====  
How do I get technical support?  
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You ask around. Look at the list of products above. DIGPAK and MIDPAK work. Many other programmers as well as myself have been able to do tremendous things with the DIGPAK and MIDPAK programming interface. Just look at any of the PuttPutt products from Humongous Entertainment, or the music and sound in The 7th Guest (which doesn't directly use MIDPAK but uses the same MIDI driver and patch bank). Programming a computer is extremely difficult. That's why I have provided and will continue to provide lots of sample source code for DIGPAK and MIDPAK.

But I cannot provide one-on-one technical support. I have to write my games too, and I have found out that just answering hundreds of people's programming questions is a full-time job I'm not capable of keeping up with. First

of all DIGPAK and MIDPAK licenses barely cover the cost of keeping the BBS up and running. Nobody wants me to charge even MORE for the drivers.

I haven't sold the DIGPAK and MIDPAK programmers kit for over a year. By making the DIGPAK and MIDPAK programmers kit widely available electronically I hope to make lots of people educated in the use of the DIGPAK and MIDPAK programmers interface. Thus help will be available on the Internet, CompuServe, and other places in the electronic community.

=====  
What about VESA?  
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The multimedia sound card industry is highly political. I am fully supporting the VESA standard for sound and music. But it's not going to happen overnight. It will take at least the next 18 months before you will be able to get the kind of sound driver support under VESA that is currently available with DIGPAK and MIDPAK. Additionally DIGPAK and MIDPAK act as a value added API layer on top of VESA. Especially MIDPAK which provides extensive support for midi parsing, and interrupt service control.

=====  
How do I use DIGPAK drivers?  
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The DIGPAK drivers all have the filename extension of .COM. Starting at byte offset 3 from the beginning of the file is the ascii string 'DIGPAK'. The default DIGPAK driver should always be copied to the filename SOUND.RV.COM. DIGPAK drivers hook user interrupt vector 66h, which is documented briefly in the book 'PC Interrupts: A Programmer's Reference To BIOS, DOS, and Third-Party Calls' by Ralf Brown and Jim Kyle, published by Addison Wesley.

You configure a DIGPAK driver by running the program SETD.EXE.

The complete API documentation for DIGPAK is in the file DIGPKAPI.DOC. The C link layer for DIGPAK is through the C prototype header file DIGPLAY.H and by linking to the object module DIGPLAY.OBJ produced from DIGPLAY.ASM.

A DIGPAK driver can be loaded as a TSR simply by typing it's name. You can load the default sound driver, as a TSR, by typing 'SOUND.RV' and hitting enter. You can unload that driver by typing 'SOUND.RV U'. The preferred method of using a DIGPAK driver is to demand load it in your program. This is done by including the header file LOADER.H in your program and linking to LOADER.C.

Simply look at the sample program TEST.C which fully demonstrates loading both DIGPAK and MIDPAK and plays both music and sound effects.

=====  
How do I use MIDPAK drivers?  
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The SETM program will configure MIDPAK appropriately for your sound card configuration. SETM creates the three file components for MIDPAK. They are MIDPAK.COM, MIDPAK.ADV, and MIDPAK.AD. MIDPAK.COM is the MIDPAK driver itself, which provides the API functionality through user interrupt vector 66h. MIDPAK loads into INT 66h as a layer ON TOP OF DIGPAK. Meaning if you want to use both DIGPAK and MIDPAK at the same



time, you first load DIGPAK, and then load MIDPAK. The file MIDPAK.ADV is the AIL MIDI driver from Miles Design Inc. MIDPAK represents a subset of the full AIL specification. The complete AIL (Audio Interface Library) supports vastly greater interactive control over music. If you are interested in purchasing the complete AIL system you can call Miles Design at 1-512-345-2642. The AIL license includes full-source code disclosure, real-mode, protected mode, and Windows DLL versions, and a \$7,500 one-time license fee (not for all three versions, but for each). Please don't call if you aren't prepared to pay the full license amount.

The last file is MIDPAK.AD. This is the instrument definition file for OPL2 and OPL3 base sound cards (adlib, soundblaster, etc.). This file is ignored on hardware MIDI implementation sound cards like the Sound Canvas, but is still must exist in the directory at load time.

This instrument file conforms to the general MIDI specification and was created by The Fat Man. There is a distribution license fee associated with the use of this MIDPAK.AD file! You must mail a copy of your product, a check for \$1, and include the following credit:

"General MIDI patches (c) 1994 The Fat Man and K. Weston Phelan"

The Fat Man  
7611 Shoal Creek Blvd.  
Austin, TX 78757  
1-512-454-5775  
BBS: 1-512-454-9990

Call the Fat Farm BBS to obtain more detailed information regarding the General MIDI license agreement.

Like DIGPAK, MIDPAK can be loaded and unloaded as a TSR. Simply type 'MIDPAK' and it will load and stay resident. Typing 'MIDPAK U' will unload the MDIPAK driver.

=====  
What is 'eXtended MIDI'?  
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MIDPAK, because it uses the AIL drivers from Miles Design, does not play MIDI files DIRECTLY. Your MIDI file must be converted into eXtended MIDI format. This is a pre-parsed MIDI file format created by Miles Design. The eXtended MIDI file format supports multiple MIDI sequences in a single file, that MIDPAK will let you switch to almost instantly using the PlaySequence command. You add multiple MIDI files to a single eXtended MIDI file (XMI) as follows: Say you have three song files call SONGA.MID SONGB.MID and SONGC.MID and wanted to put them all in one XMI file. You would do the following:

MIDIFORM SONG.XMI SONGA.MID SONGB.MID SONGC.MID

This places the three MIDI sequences into the single eXtended MIDI file SONG.XMI. They would be accessed in MIDPAK as PlaySequence(0) PlaySequence(1) and PlaySequence(2).

=====  
What format should the MIDI data be in?  
=====

On a true MIDI device like an MPU401 MT-32 or SoundCanvas, exactly what is found in the MIDI stream is passed to the device. So however that MIDI device responds to MIDI is what gets passed down. (Excluding SysEx messages).

But on an Adlib or SoundBlaster MIDPAK EMULATES a MIDI device. And that EMULATION has certain restrictions.

Channels 2-9 are the melodic tracks.  
Channel 10 percussions.

The patch set is in the general MIDI format.

I know very little about MIDI, and rely heavily on professional MIDI composers to provide my music. To get your MIDI music into MIDPAK compatible format so that it sounds GREAT, you can contact the following composers:

Wallace Music & Sound  
Rob Wallace, Executive Producer  
6210 West Pershing Avenue  
Glendale, Arizona 85304-1141  
1-602-979-6201

Computer Music Consulting  
Donald S. Griffin  
239 Richland Avenue  
San Francisco, CA 94110  
415-285-3852

The Fat Man  
7611 Shoal Creek Blvd.  
Austin, TX 78757  
1-512-454-5775

These guys have all done numerous projects composing with AIL and MIDPAK. They know how to make an Adlib, SoundBlaster, and SoundCanvas sound AWESOME. But they are also professionals. Please DO NOT CALL any of these guys unless you are prepared to accept a bid for a project.

If you think the license fee for MIDPAK at \$500 is high, then wait until you find out how much a professional music score costs. Even for a small project you are talking several thousand dollars. So unless you have a legitimate music budget please do not call these guys.

I would recommend that you call Rob Wallace and get a bid on having all of your musical scores tweaked for the various sound cards.

=====  
When I play my MIDI music with MIDPAK some of the music seems to be missing?  
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Check your channel assignments. MIDI emulation on SoundBlaster etc, occurs on channels 2-9 for melodic tracks, and channel 10 for percussions. A lot of sequencing software saves MIDI out starting with channel 1. Channel 1 is ignored under MIDPAK's MIDI emulation. MIDPAK channel assignments were designed to emulate those of a Roland MT-32. Even though we have provided a set of General MIDI patch assignments, the channel assignments

are still limited to 2-9 and 10 as indicated here.

=====  
The music on MIDPAK sounds differently than inside my sequencer?  
=====

Your sequencer is using a different set of patches than MIDPAK uses. Contact any of the composers mentioned above to get your MIDI tweaked to sound good with the MIDPAK patches. BE PREPARED TO PAY A REASONABLE FEE FOR THIS SERVICE!! I strongly recommend getting your music done professionally. The composers listed above have great experience at making music sound good with MIDPAK.

=====  
When I specify a volume change with MIDPAK nothing happens?  
=====

MIDPAK's volume changes are relative to the base volume for that channel. If you didn't specify a base volume for each channel in your MIDI file then MIDPAK can't change the volume. You specify the base volume for a MIDI channel with a controller 7.

=====  
Can I use the same MIDI file for all sound cards?  
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No. But you can come close. Start by scoring for general MIDI, but it's best to tweak for SoundCanvas, General MIDI, OPL2/OPL3, and re-patch for MT-32. Base volumes are quite a bit different on each device, and different patches sound better/worse across these devices. The source code to the SETM (MIDPAK configuration program) is provided within (SETUP.ZIP) and depending on which sound driver the user selects you can copy different versions of your music.

=====  
Why does MIDPAK hang under Windows?  
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Because of a bug in Microsoft Windows it doesn't support all of the hardware interrupts on the machine. Specifically the CMOS real-time clock which MIDPAK uses. If you use the TMIDPAK.COM version of MIDPAK this will work under Windows but it might cause other conflicts with your application. One option is to use PMIDPAK.COM (polled MIDPAK) and to service the MIDI interrupt (at 120hz) yourself.

=====  
What are all of these files?  
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|              |   |
|--------------|---|
| ADLIB.ADV    | Adlib AIL MIDI driver.                                    |
| ADLIB.ADD    | Description file for ADLIB.ADV                            |
| ADLIB.COM    | DIGPAK Adlib digital sound driver.                        |
| ADLIBG.COM   | Adlib Gold DIGPAK sound driver.                           |
| ADLIBG.ADV   | Adlib Gold AIL MIDI driver.                               |
| ADLIBG.ADD   | Description file for ADLIBG.ADV                           |
| AGU16.XMI    | Demonstration MIDI file by The Fat Man                    |
| AGU16.DES    | MENU Description file for AGU16.XMI                       |
| ARIA.COM     | DIGPAK sound driver for Sierra Semiconductors Aria cards. |
| ARIAXMID.ADV | Aria AIL MIDI driver.                                     |
| ARIAXMID.ADD | Description file for ARIAXMID.ADV                         |

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| GM2.BNK      | General MIDI instrument file for ARIA (REQUIRED!)                     |
| BIGMOUTH.COM | DIGPAK driver for Talking Technologies BigMouth card.                 |
| CMIDPAK.COM  | CMOS real-time clock version of MIDPAK>                               |
| COOL!.SND    | Demonstration sound effect from Wallace Music & Sound                 |
| COOL!.DES    | MENU Description file for COOL!.SND                                   |
| CREDITS.XMI  | Demonstration MIDI file from Wallace Music & Sound                    |
| CREDITS.DES  | MENU Description file for CREDITS.XMI                                 |
| CVXSND.COM   | DIGPAK sound driver for Covox Speech Thing.                           |
| DESERT.XMI   | Demonstration MIDI file from Wallace Music & Sound                    |
| DESERT.DES   | MENU Description file for DESERT.XMI                                  |
| DIGISP.COM   | DIGPAK driver for Digispeech DS201.                                   |
| DIGPKAPI.DOC | API Specification Documentation for DIGPAK.                           |
| DIGVESA.COM  | DIGPAK sound driver for VESA compliant Wave interface.                |
| DOS4GW.EXE   | DOS 4GW DOS Extender used for Flat-Model DEMO programs.               |
| EARTH.XMI    | Demonstration MIDI file from Wallace Music & Sound                    |
| EARTH.DES    | MENU Description file for EARTH.XMI                                   |
| ECHOII.COM   | DIGPAK sound driver for Street Electronics Echo II                    |
| FAT.OPL      | MIDPAK General MIDI patch set by the Fat Man.                         |
| FLAT <DIR>   | Contains full source to protected mode interface for DIGPAK & MIDPAK. |
| GENMID.ADV   | AIL MPU401 General MIDI driver.                                       |
| GENMID.ADD   | Description file for GENMID.ADV                                       |
| GF166.COM    | DIGPAK driver for Gravis Ultrasound                                   |
| GF1MIDI.ADV  | AIL MIDI driver for Gravis Ultrasound                                 |
| GF1MIDI.ADD  | Description file for GF1MIDI.ADV                                      |
| GU23.XMI     | Demonstration MIDI file by The Fat Man                                |
| GU23.DES     | MENU Description file for GU23.XMI                                    |
| IBM1BIT.COM  | DIGPAK PC Speaker driver 1 bit sound.                                 |
| IBMPAK.COM   | DIGPAK PC Speaker driver, foreground only.                            |
| IBMSND.COM   | DIGPAK PC Speaker driver, limited background audio.                   |
| LANTSND.COM  | DIGPAK driver for Lantastic Audio Adaptor from Artistoft.             |
| LSIZE.COM    | DIGPAK driver for the Life Size Sound Enhancer.                       |
| MAJESTY.XMI  | Demonstration MIDI file from Wallace Music & Sound                    |
| MAJESTY.DES  | MENU Description file for MAJESTY.XMI                                 |
| MARIO.XMI    | Demonstration MIDI file from Wallace Music & Sound                    |
| MARIO.DES    | MENU Description file for MARIO.XMI                                   |
| MENU.EXE     | MIDPAK & DIGPAK Music & Sound browser.                                |

MIDIFORM.EXE Convert MIDI files into eXtended MIDI file format (XMI)

MIDPAK.ADV Currently configured AIL MIDI driver.  
MIDPAK.COM Currently configured MIDPAK driver.  
MIDPAK.AD Currently configured MIDPAK patch bank file.

MIDPKAPI.DOC API Specification Documentation for MIDPAK.

MT32MPU.ADV AIL MIDI driver for MT-32/LAPC  
MT32MPU.ADD Description file for MT32MPU.ADV

MULTISND.ADV Turtle Beach Multisound AIL MIDI driver.  
MULTISND.ADD Description file for MULTISND.ADV  
MULTISND.COM DIGPAK Turtle Beach Multisound driver.  
(BETA, requires PRESETS utility to have been run,  
see TURTLE.ZIP)

NEWS.XMI Demonstration MIDI file from Wallace Music & Sound  
NEWS.DES MENU Description file for NEWS.XMI

NOSOUND.COM Functional DIGPAK driver that plays no sound. Responds  
to all DIGPAK functions, for timing considerations but  
takes little CPU. Sometimes preferable over the lame  
PC Speaker drivers.

PAS16.COM DIGPAK sound driver for MediaVision ProAudio Spectrum 16  
and Logitech Soundman 16. Full 16 bit sound support.

PASFM.ADV AIL MIDI driver for ProAudio Spectrum  
PASFM.ADD Description file for PASFM.ADV

PASOPL.ADV AIL MIDI driver for ProAudio Spectrum 16, etc.  
PASOPL.ADD Description file for PASOPL.ADD

PAUDIO.COM ProAudio Spectrum DIGPAK sound driver.

PCSPKR.ADV AIL PC Speaker driver (only responds to channel 2 of MIDI)  
PCSPKR.ADD Description file for PCSPKR.ADV

PEND.EXE Flat model demo program, uses PostAudioPending calls  
and auto-init DMA. To use type PEND PEND.SND after  
you have configured a DIGPAK sound driver.

PEND.SND Demo sound effect for PEND.EXE

PMIDPAK.COM Polled version of MIDPAK. Application required to  
provide timer services.

REAL<DIR> Demonstration source code in normal DOS real-mode.

REMOVE.BAT Batch file to remove configured MIDPAK and DIGPAK  
sound drivers.

SB16.COM BETA DIGPAK sound driver for SoundBlaster 16.  
Supports 16 bit stereo sound.

SBCLONE.COM DIGPAK sound driver for SoundBlaster Clones.

SBFM.ADV AIL SoundBlaster MIDI driver.

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|--------------|--|
| SBFM.ADD     | Description file for SBFM.ADV                            |
| SBLASTER.COM | Creative Labs SoundBlaster DIGPAK sound driver.          |
| SBP1FM.ADV   | AIL SoundBlaster Pro original MIDI driver.               |
| SBP1FM.ADD   | Description file for SBP1FM.ADV                          |
| SBP2FM.ADV   | AIL SoundBlaster Pro current MIDI driver (OPL3).         |
| SBP2FM.ADD   | Description file for SBP2FM.ADV                          |
| SBPRO.COM    | Creative Labs SoundBlaster Pro DIGPAK sound driver.      |
| SC32MPU.ADV  | AIL MIDI driver for Roland Sound Canvas                  |
| SC32MPU.ADD  | Description file for SC32MPU.ADV                         |
| SEA.XMI      | Demonstration MIDI file from Wallace Music & Sound       |
| SEA.DES      | MENU Description file for SEA.XMI                        |
| SEGUE.EXE    | Demonstration flat model program using SegueSequence.    |
| SENSAT.ADV   | AIL MIDI driver for Tandy Sensation.                     |
| SENSAT.ADD   | Description file for SENSAT.ADV                          |
| SETD.SND     | Demonstration sound effect for DIGPAK setup program SETD |
| SETD.EXE     | DIGPAK setup/config program. Source in SETUP.ZIP         |
| SETD.DES     | MENU Description file for SETD.SND                       |
| SETM.XMI     | Demonstration MIDI file for MIDPAK setup program SETM    |
| SETM.EXE     | MIDPAK setup program. Source code in SETUP.ZIP           |
| SETM.DES     | Description file for SETM.XMI                            |
| SETUP.ZIP    | Source code to SETM and SETD. Borland C 3.1 format.      |
| SETUP.BAT    | Batch file to configure both DIGPAK and MIDPAK drivers.  |
| SHYA!.SND    | Demonstration sound effect from Wallace Music & Sound    |
| SHYA!.DES    | MENU Description file for SHYA!.SND                      |
| SKY.XMI      | Demonstration MIDI file from Wallace Music & Sound       |
| SKY.DES      | MENU Description file for SKY.XMI                        |
| SMSND.COM    | Covox Voice Master II, SoundMaster I, DIGPAK driver.     |
| SNDSYS.COM   | Microsoft Windows Sound System DIGPAK driver.            |
| SOUNDRV.COM  | Default configured DIGPAK sound driver.                  |
| SOURCE.COM   | Walt Disney Sound Source DIGPAK sound driver.            |
| STFX.COM     | ATI Stereo FX DIGPAK sound driver.                       |
| TANEXTX.COM  | Tandy EX/TX/SX/HX PC jr, DIGPAK sound driver.            |
| TANSLTL.COM  | Tandy Sensation DIGPAK sound driver.                     |
| TEST.EXE     | Flat Model DIGPAK/MIDPAK demonstration program.          |
| TEST.SND     | Demonstration sound effect.                              |
| TEST.XMI     | Demonstration MIDI file.                                 |
| TEST1.SND    | Another test sound effect.                               |
| TEST16.EXE   | Flat model DIGPAK demo program of all DIGPAK play modes. |

TEST2.SND            Another test sound effect.

TITLE.XMI            Demonstration MIDI file from Wallace Music & Sound  
TITLE.DES            Description file for TITLE.XMI

TMIDPAK.COM         8253 Timer Based MIDPAK.

VECTOR.COM          Interrupt vector handler used by flat-model demo programs.

VMSND.COM           Covox Voice Master I DIGPAK sound driver.

WSS.ADV             AIL MIDI driver for Microsoft Windows Sound System.  
WSS.ADD             Description file for WSS.ADV