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General Sound Card Terminology for Backpack Sound Card

(Source Note: These definitions were originally found on Ziff-Davis' Webopedia at: www.zdwebopedia.com)

Sound Card

An expansion board that enables a computer to manipulate and output sounds. Sound cards are necessary for nearly all CD-ROMs and have become commonplace on modern personal computers. Sound cards enable the computer to output sound through speakers connected to the board, to record sound input from a microphone connected to the computer, and manipulate sound stored on a disk.

Nearly all sound cards support MIDI, a standard for representing music electronically. In addition, most "internal" sound cards are Sound Blaster-compatible, which means that they can process commands written for a Sound Blaster card. *Backpack Sound Card is not Sound Blaster-compatible due to its parallel port interface and required device driver. This only affects DOS-based sound applications. All Windows and Windows 95 sound applications are still fully compatible with Backpack Sound Card.*

Sound cards use two basic methods to translate digital data into analog sounds:

FM Synthesis mimics different musical instruments according to built-in formulas.

Wave Table Synthesis relies on recordings of actual instruments to produce sound. Wavetable synthesis produces more accurate sound, but is also more expensive.

MIDI

Pronounced "middy," an acronym for musical instrument digital interface, a standard adopted by the electronic music industry for controlling devices, such as synthesizers and sound cards, that emit music. At minimum, a MIDI representation of a sound includes values for the note's pitch, length, and volume. It can also include additional characteristics, such as attack and delay time.

The MIDI standard is supported by most synthesizers, so sounds created on one synthesizer can be played and manipulated on another synthesizer. Computers that have a MIDI interface can record sounds created by a synthesizer and then manipulate the data to produce new sounds. For example, you can change the key of a composition with a single keystroke. A number of software programs are available for composing and editing music that conforms to

the MIDI standard. They offer a variety of functions: for instance, when you play a tune on a keyboard connected to a computer, a music program can translate what you play into a written score.

Wave Table Synthesis

A technique for generating sounds from digital signals. Wave table synthesis stores digital samples of sound from various instruments, which can then be, edited, and enhanced to reproduce sound defined by a digital input signal. Wave table synthesis reproduces the sound of musical instruments better than Frequency Modulation (FM) synthesis. The MIDI standard supports a wave table format. Not all sound cards, however, support wave table synthesis.

*Important Note: Backpack's 16-bit Sound Card uses **FM Synthesis** (Referred to as ESFM, due to the [ESS 1688 Sound Chip](#) that we incorporate in each unit) and **does not** use built-in hardware-controlled **Wave Table Synthesis**. There are, however, third-party software applications (typically shareware available on internet) that emulate Wave Table Synthesis without requiring additional hardware within the actual sound card and appear to work with the Backpack Sound Card; dramatically improving MIDI playback sounds. One such shareware program which has been tested and appears to work with the Backpack Sound Card under Windows 95 is: "**Wingroove Version .9E-Beta3**" written by Hiroki Nakayama and downloadable from the author's home site (<http://www.cc.rim.or.jp/~hiroki/english/>) or various other internet sites under the filename: WG09E_E.ZIP dated 12.1.96. Future updates of that software are expected to work as well. Micro Solutions does not support or guarantee the use or compatibility of that third-party shareware software, or similar software applications, but is providing the program details for informational purposes only.*

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