

MUSICAL INSTRUMENT DIGITAL INTERFACE (MIDI)

“MIDI data is simply a series of number values, from 0 to 255, that allow control events to be universally understood by different hardware and software.”

– Peter Kirn, *Real World Digital Audio*

Terms & Concepts

<p>Note Messages Note-on/Note-off pair - Note-on command - Note-off command Note number (0-127) Key velocity (0 & 1-127) Channel number (1-16)</p> <p>Channel Messages Aftersustain - Polyphonic - Channel Control change - Continuous (0-127) - Switch (0 or 127) Pitch bend - Course - Fine Program change - Bank - Program number</p> <p>Adding Expressivity Modulation wheel Pitch-bend wheel Sustain pedal Expression pedal</p> <p>System Messages System common System real-time System-exclusive (SYSEX)</p>	<p>Devices Synthesizer - Polyphony Controller keyboard Alternative controller Broadcast channel Polyphony Modes: Global/System, Instrument, Multitimbral, Song, Sequencing, etc.</p> <p>Data Bit Baud rate (bits per second) Byte (8 bits) - Data byte (0-127) - Status byte Numeric notation - Binary - Decimal - Hexadecimal MIDI bus MIDI data format MIDI data rate (31.25 kilobaud) MIDI event MSB/LSB Pulse per quarter (PPQ)</p> <p>Standard MIDI File (SMF) - Type 0 - Type 1</p>	<p>Control Change (CC) #1 - Modulation wheel #7 - Volume #10 - Pan #64 - Sustain pedal #120 - All sound off #123 - All notes off</p> <p>Interconnection MIDI Ports: IN/OUT/THRU 5-pin DIN connector MIDI interface (2x2, 4x4, etc.) Master controller/slave Daisy chain Apple OS X AudioMIDI Setup</p> <p>Synchronization MIDI Clock, MMC, MTC, SMPTE, etc.</p> <p>Standards MIDI Manufacturers Association (MMA) General MIDI (GM) - GM Instrument Library - GM Perc. Key Map - GM1, GM2 & GML OpenSound Control (OSC)</p>
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Links

MMA, An Introduction to MIDI – <http://www.midi.org/aboutmidi/tutorials.php>

MMA, General MIDI 1, 2 and Lite Specifications – <http://www.midi.org/techspecs/gm.php>

Bibliography

Dodge, Charles and Thomas Jerse. 1997. *Computer Music: Synthesis, Composition, and Performance*. New York: Schirmer.

Huber, David Miles. 2007. *The MIDI Manual: A Practical Guide to MIDI in the Project Studio*, 3rd ed. New York: Focal Press.

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Roads, Curtis. 1996. *The Computer Music Tutorial*. Cambridge, MA: MIT Press.