MIDI Specs

Links here should land on the relevant details page. From there, find the link for downloading the actual document. Due to spec documents being revised over time, direct links may change and thus omitted here.

To find a document by its reference code quickly, search within this page; e.g., `M2-104-UM` is the Universal MIDI Packet (UMP) Format spec. For Recommended Practice documents such as `RP-021` Sound Controller Defaults, try searching as "rp21" *also*.

Remember: sign in to the MIDI.org website for download links to become valid.

Text descriptions originated from the MIDI website.

Contents:

MIDI Reference Tables

Reference tables are the quick and easy way to look up the meaning of a particular MIDI message number, find international standards that incorporate MIDI, and more.

- Summary of MIDI 1.0 Messages
    - Table 1: MIDI 1.0 Specification Message Summary
    - The table lists the major MIDI 1.0 messages in numerical (binary) order (adapted from "MIDI by the Numbers" by D. Valenti, Electronic Musician 2/88, and updated by the MIDI Manufacturers Association.).
    - This table is intended as an overview of MIDI, and is by no means complete.
    - Linked from MIDI Reference Tables
    - File Name: `Summary of MIDI Messages.pdf`
- Expanded MIDI 1.0 Messages List (Status Bytes)
    - Table 2: Expanded Status Bytes List

    - The table lists MIDI 1.0 Status Bytes in binary numerical order (adapted from “MIDI by the Numbers” by D. Valenti, Electronic Musician 2/88, and updated by the MIDI Manufacturers Association.)
    - This table is intended as an overview of MIDI, and is by no means complete.
    - Linked from MIDI Reference Tables
    - File name: `Expanded Messages List (Status Bytes).pdf`
- MIDI 1.0 Control Change Messages (Data Bytes)
    - Table 3: Control Changes and Mode Changes (Status Bytes 176-191)
    - The table lists all currently defined MIDI 1.0 Control Change messages and Channel Mode messages, in control number order (adapted from “MIDI by the Numbers” by D. Valenti-Electronic Musician 2/88, and updated by the MIDI Manufacturers Association.)
    - This table is intended as an overview of MIDI, and is by no means complete.
    - Registered Parameter Numbers (RPNs) are an extension to the Control Change message for setting additional parameters. Appended at the bottom is a table of all currently defined RPNs.
    - Linked from MIDI Reference Tables
    - File name: `Control Change Messages (Data Bytes).pdf`
- MIDI 1.0 Universal System Exclusive Messages
    - Table 4: Defined Universal System Exclusive Messages
    - Universal System Exclusive Messages are defined as Real Time or Non-Real Time, and are used for extensions to MIDI that are NOT intended to be manufacturer exclusive (despite the name).
    - Many of these messages are defined in Specifications whose printed documentation is available from the MMA. Others are defined in Recommended Practice documentation that may be found on the web site.
    - Linked from MIDI Reference Tables
    - File name: `Universal System Exclusive Messages.pdf`
- Standards that Incorporate MIDI
    - Linked from MIDI Reference Tables
- DLS Proprietary Chunk IDs
    - The MMA assignment of Proprietary Chunk IDs is intended to prevent conflicts and incompatibilities.
    - Linked from MIDI Reference Tables

MIDI 2.0

MIDI 2.0 is an extension of MIDI 1.0. It does not replace MIDI 1.0 but builds on the core principles, architecture, and semantics of MIDI 1.0.

- MIDI 2.0 Core Specification Collection
    - A zip file which contains the 6 documents which make up the MIDI 2.0 Core

Specifications:

1. MIDI 2.0 Specification Overview Version 1.1 (M2-100-U)
2. MIDI Capability Inquiry (MIDI-CI) Version 1.2 (M2-101-UM)
3. Common Rules for MIDI-CI Profiles Version 1.1 (M2-102-U)
4. Common Rules for MIDI-CI Property Exchange Version 1.2 (M2-103-UM)
5. Universal MIDI Packet (UMP) Format and MIDI 2.0 Protocol Version 1.1.2 (M2-104-UM)
6. MIDI Clip File Specification (Standard MIDI File format for UMP) Version 1.0 (M2-116-U)

    - Linked from MIDI 2.0
    - Download

- Universal MIDI Packet (UMP) and MIDI 2.0 Protocol Specification
    - This Specification defines two major extensions to the MIDI 1.0 Protocol:
        1. Universal MIDI Packet (UMP) Format
        2. MIDI 2.0 Protocol
    - Linked from MIDI 2.0 Protocol which in turn is linked from MIDI 2.0
    - File name: `M2-104-UM_v1-1-2_UMP_and_MIDI_2-0_Protocol_Specification.pdf`
    - Download
- MIDI 2.0 Bit Scaling and Resolution
    - UMP Provides a way to transmit both MIDI 1.0 Protocol and MIDI 2.0 Protocol and translate the data between them.
    - This document defines recommended practices for scaling values and handling of stepped/enumerated values.
    - For information on how to transmit and receive messages over UMP transports please read the Universal MIDI Packet (UMP) Format and MIDI 2.0 Protocol specification.
    - Linked from MIDI 2.0 Protocol which in turn is linked from MIDI 2.0
    - (No file name indicated)
    - Download
- Past Versions of MIDI 2.0 Specifications
    - Found here are past revisions of MIDI 2.0 specifications.
    - Some of these, such as MIDI-CI v1.1, may be useful for checking backward compatibility.

Property Exchange

Property Exchange is part of the MIDI Capability Inquiry (MIDI-CI) specification and MIDI 2.0. Property Exchange is a method for getting and setting various data, called Resources, between two Devices. Resources are exchanged inside two payload fields of System Exclusive Messages defined by MIDI-CI, the Header Data field and Property Data field. This document defines only the contents of the Header Data and Property Data fields. For information on how to transmit and receive these Resource payloads inside MIDI-CI System

Exclusive messages, see the MIDI Capability Inquiry specification and Common Rules for MIDI-CI Property Exchange specification.

- Common Rules for MIDI-CI Property Exchange
  - Property Exchange is a set of MIDI-CI messages used to access a wide range of properties in MIDI devices. The exchange of properties takes place between a MIDI-CI Initiator and a MIDI-CI Responder.
  - This Common Rules for Property Exchange document provides a complement to the MIDI-CI specification by defining details of the Property Exchange mechanism and rules for the data payload in MIDI-CI Property Exchange messages. Further Property Exchange specifications define schemas and various data payloads that use the rules in MIDI-CI and this document to achieve specific tasks.
  - Linked from Property Exchange which in turn is linked from MIDI 2.0
  - File Name: `M2-103-UM_v1-2_Common_Rules_for_MIDI-CI_Property_Exchange.pdf`
- Property Exchange Foundational Resources
  - This specification defines three Foundational Resources: DeviceInfo, ChannelList, and JSONSchema.
  - File Name: `M2-105-UM_v1-1-1_Property_Exchange_Foundational_Resources.pdf`
  - Linked from Property Exchange which in turn is linked from MIDI 2.0
- Property Exchange ProgramList Resource
  - This specification defines the ProgramList Resource. If a Property Exchange Device has Programs selectable by Bank Select and Program Change messages, then it should support the ProgramList Resource.
  - Linked from Property Exchange which in turn is linked from MIDI 2.0
  - File Name: `M2-107-UM_v1-01_Property_Exchange_ProgramList_Resource.pdf`
- MIDI-CI Property Exchange Controller Resources
  - Property Exchange is a method for sending JSON over System Exclusive to exchange data between two devices. This document describes the Property Data for AllCtrlList, ChCtrlList and CtrlMapList Resources.
  - Linked from Property Exchange which in turn is linked from MIDI 2.0
  - File Name: `M2-117-UM_v1-0_Property_Exchange_Controller_Resources.pdf`
- Property Exchange Get and Set Device State
  - The Property Exchange Resources described in this document allow for an Initiator to send or receive Device State, or in other words, to capture a snapshot which might be sent back to the Device at a later time.
  - The primary goal of this application of Property Exchange is to GET the current memory of a MIDI Device. This allows a Digital Audio Workstation (DAW) or other Initiator to store the State of a Responder Device between closing and opening of a project. Before a DAW closes a project, it performs the GET inquiry and the target Device sends a REPLY with all data necessary to restore the current State at a later time. When the DAW reopens a project, the target Device can be restored to its prior State by sending an Inquiry: Set Property Data Message.

    - Linked from Property Exchange which in turn is linked from MIDI 2.0
    - File Name: `M2-111-UM_v1-0_Get_and_Set_Device_State.pdf`
- Property Exchange Mode Resources
    - This specification defines two Resources, ModeList and CurrentMode. If a Property Exchange Device has Modes, then it should support the ModeList Resource and CurrentMode Resource.
    - Linked from Property Exchange which in turn is linked from MIDI 2.0
    - File Name: `M2-106-UM_v1-01_Property_Exchange_Mode_Resources.pdf`
- Property Exchange Channel Resources
    - This document defines three Property Exchange Resources: ChannelMode, BasicChannelRx, and BasicChannelTx. These Resources are used to Get and Set information related to the choice of MIDI Channels which are actively in use by a Device.
    - There is an additional Property Resource defined to address the use of MIDI Channels, ChannelList, which is not defined in this document but is in MIDI-CI Property Exchange Foundational Resources: DeviceInfo, ChannelList, JSONSchema. Devices which have complex usage of MIDI Channels should also implement the ChannelList Resource.
    - Linked from Property Exchange which in turn is linked from MIDI 2.0
    - File Name: `M2-108-UM_v1-01_Channel_Resources.pdf`
- Property Exchange LocalOn Resource
    - This document defines the LocalOn Resource which uses Property Exchange to Get and Set the “Local On/Off” setting of a Property Exchange Device.
    - Linked from Property Exchange which in turn is linked from MIDI 2.0
    - File Name: `M2-109-UM_v1-01_LocalOn_Resource.pdf`
- Property Exchange ExternalSync Resource
    - This document defines the ExternalSync Resource. If a Property Exchange Device has a clock which is able to synchronize to external MIDI sync messages, then the Device should support the ExternalSync Resource.
    - Linked from Property Exchange which in turn is linked from MIDI 2.0
    - File Name: `M2-112-UM_v1-0_ExternalSync_Resource.pdf`

Profiles

A Profile is a defined set of rules for how a MIDI receiver device implementing the Profile shall respond to a chosen set of MIDI messages to achieve a particular purpose or to suit a particular application.

- Common Rules For MIDI-CI Profiles
    - Profiles define specific implementations of a set of MIDI messages chosen to suit a particular instrument, Device type, or to accomplish a particular task.
    - Two Devices that conform to the same Profile will generally have greater

interoperability between them than Devices using MIDI without Profiles. Profiles increase interoperability and ease of use while reducing the amount of manual configuration of Devices by users.
    - The MIDI Capability Inquiry (MIDI-CI) specification defines mechanisms and a set of Universal System Exclusive messages used for Profile Configuration (and much more). However, MIDI-CI does not define the rules for Profile Specifications or devices that implement Profiles. This document, the Common Rules for MIDI-CI Profiles, complements MIDI-CI by defining a set of design rules for all Profile Specifications.
    - Linked from Profiles which in turn is linked from MIDI 2.0
    - File Name: `M2-102-U_v1-1_Common_Rules_for_MIDI-CI_Profiles.pdf`
- MIDI-CI Profile for Default Drum Note Map
    - This specification defines a MIDI-CI Profile for a default mapping of specific drums to specific Note Numbers. The note map used in this Profile was established by many products in the 1980s as a commonly used set of note assignments for drum sounds and that was later standardized in General MIDI.
    - Many drum machines, grooveboxes, keyboard workstations, portable keyboards, digital pianos, and software synthesizers (many of which do NOT support the full GM specification) have drum kits that utilize this drum kit mapping because of the vast quantity of MIDI data available that will play properly with these drum maps.
    - Linked from Profiles which in turn is linked from MIDI 2.0
    - File Name: `M2-125-UM_v1-0_Default-Drum-Note-Map-Profile.pdf`
- MIDI-CI Profile: Default Control Change Mapping
    - Many MIDI devices are very flexible in configuration to allow a wide variety of interaction between devices in various applications. However, when 2 devices are configured differently, there can be a mismatch that reduces interoperability.
    - This Default Control Change Mapping Profile defines how devices can be set to a default state, aligned with core definitions of MIDI 1.0 and MIDI 2.0. In particular, devices with this Profile enabled have the assignment of Control Change message destinations/functions set to common, default definitions.
    - Linked from Profiles which in turn is linked from MIDI 2.0
    - File Name: `M2-113-UM_1-0_Default_Control_Change_Mapping_Profile.pdf`
- MIDI-CI Profile: MIDI Polyphonic Expression
    - The MIDI-CI Profile for MIDI Polyphonic Expression (MPE) specification makes it possible for artists to perform independent gestures for each musical note, with up to three dimensions of expression. With MPE, every note a musician plays can be articulated individually for much greater expressiveness. MPE has broad support from many DAWs, Synthesizers and Controllers.
    - The specification describes a recommended way of using individual MIDI Channels in MIDI 1.0 and/or MIDI 2.0 to achieve per-note control, enabling richer communication between increasingly expressive MIDI hardware and software.

    - Linked from Profiles which in turn is linked from MIDI 2.0
    - File Name: `M2-120-UM_v2-0-3_MIDI_Polyphonic_Expression_Profile.pdf`
- MIDI-CI Profile for Note On Selection of Orchestral Articulation
    - The Profile provides a comprehensive yet concise system of articulation mapping that includes a wide palette of articulation types and supports articulation equivalence across eight instrument categories.
    - The Profile was designed to offer articulation equivalence — a system of articulation mapping that allows a passage articulated for one instrument to be copied to another track and played back with an equivalent or analogous articulation, regardless of the target instrument type.
    - When implemented by sample library developers, the Profile will greatly aid composers in highly significant ways.
    - First, it will simplify the process of substituting or layering sounds from the same or different sample libraries; Second, it will allow composers to quickly audition and orchestrate unison passages by copying an articulated part to other tracks and hear them to play back with equivalent or analogous articulations.
    - Linked from Profiles which in turn is linked from MIDI 2.0
    - File Name: `M2-123-UM_v1-0_Note-On_Orchestral_Articulation_Profile.pdf`
- MIDI-CI Profile: Drawbar Organs (Single Channel)
    - This MIDI-CI Profile specification defines a selected set of MIDI messages which are recommended to be used by all drawbar organs to control the features which are common to most drawbar organs. The typical model is a keyboard with nine drawbars, percussion, and chorus/vibrato controls. The goal of the specification is to encourage implementation of a chosen set of MIDI messages for control for the parameters that are most common to all such Devices.
    - Linked from Profiles which in turn is linked from MIDI 2.0
    - File Name: `M2-121-UM_v1-0-2_Drawbar-Organ-Profile.pdf`
- MIDI-CI Profile: Rotary Speaker
    - Rotary Speaker Profile Specification defines a common set of basic features and MIDI messages to control a rotary speaker. The typical model is a rotating speaker cabinet with a horn and woofer that rotate at different speeds. The Device that implements the specification might be a rotating speaker or an effects unit that emulates the sound of a rotating speaker. The goal of the specification is to encourage implementation of a chosen set of MIDI messages for control for the parameters that are most common to all such Devices.
    - Linked from Profiles which in turn is linked from MIDI 2.0
    - File Name: `M2-122-UM_v1-0-2_Rotary-Speaker-Profile.pdf`
- MIDI-CI Profile: General MIDI 2 (Function Block)
    - The General MIDI specifications were written many years before MIDI 2.0. General MIDI defines sound locations, drum note mapping, octave registration, pitch bend range, and controller usage for synthesizer which claims General MIDI compatibility.

    - This document defines how to use General MIDI 2 as a MIDI-CI Profile.
    - This new definition allows all the capabilities of General MIDI 2 devices to be enabled or disabled using MIDI-CI Profile Configuration messages. The MIDI-CI Profile for General MIDI 2 defines bidirectional mechanisms for devices to discover whether General MIDI 2 functionality is available on a Receiver, enabling a more reliable and predictable result from the connection between two devices.
    - Linked from Profiles which in turn is linked from MIDI 2.0
    - File Name: `M2-118-UM_v1-0-0_General-MIDI-2-Function-Block-Profile.pdf`
- MIDI-CI Profile: General MIDI 2 Single Channel
    - General MIDI System Level 1 and General MIDI 2 specifications were written many years before the concept of MIDI Profiles enabled by MIDI-CI. The original specifications require support on all 16 MIDI channels. This document defines how to use MIDI-CI Profile Configuration Messages to implement the functions of a General MIDI 2 Melody Channel on a single channel.
    - This specification only defines a MIDI-CI Profile for a single Melody Channel. A separate specification, the M2-118-UM MIDI-CI Profile for General MIDI 2, defines a Profile which implements the full set of 16 Channels or on multiple Groups of a Function Block.
    - File Name: `M2-119-UM_v1-0-0_General-MIDI-2-Single-Channel-Profile.pdf`

MPE

- MPE: MIDI Polyphonic Expression
    - This specification is designed for MIDI controllers that allow the performer to vary the pitch and timbre of individual notes while playing polyphonically.
    - `M1-100-UM` MIDI Polyphonic Expression is a version 1.1 update which replaces the previous `rp53` version 1.0.
    - Version 1.1 has significant editorial improvements for clarity but has no technical design changes.
    - Linked from MIDI 1.0
    - File Name: `M1-100-UM_v1-1_MIDI_Polyphonic_Expression_Specification.pdf`

MIDI 1.0 Core Spec

MIDI, the Musical Instrument Digital Interface, was established as a hardware and software specification which would make it possible to exchange information (musical notes, program changes, expression control, etc.) between different musical instruments or other devices such as sequencers, computers, lighting controllers, mixers, etc. This ability to transmit and receive data was originally conceived for live performances, although subsequent developments have had enormous impact in recording studios, audio and video

production, and composition environments.

This latest revision of the basic MIDI 1.0 specification includes the original definition of the core layout of MIDI 1.0 messages, the classic MIDI 1.0 tranport of 5 pin DIN connectors, and several core additions collected together in 1996. Other additions to MIDI 1.0 since 1996 are available as separate downloads.

- MIDI 1.0 Detailed Specification
  - This is the 1996 revision of the MIDI 1.0 specifications.
  - Linked from MIDI 1.0 Core Specifications which in turn is linked from top-level MIDI Specifications
  - File Name: `M1_v4-2-1_MIDI_1-0_Detailed_Specification_96-1-4.pdf`
- MIDI Time Code
  - For device synchronization, MIDI Time Code uses two basic types of messages, described as Quarter Frame and Full. There is also a third, optional message for encoding SMPTE user bits.
  - Linked from MIDI 1.0 Core Specifications which in turn is linked from top-level MIDI Specifications
  - File Name: `RP-004-008_v4-2-1_MIDI_Time_Code_Specification_96-1-4.pdf`
- MIDI Show Control
  - The purpose of MIDI Show Control is to allow MIDI systems to communicate with and to control dedicated intelligent control equipment in theatrical, live performance, multi-media, audio-visual and similar environments.
  - Applications may range from a simple interface through which a single lighting controller can be instructed to GO, STOP or RESUME, to complex communications with large, timed and synchronized systems utilizing many controllers of all types of performance technology.
  - Linked from MIDI 1.0 Core Specifications which in turn is linked from top-level MIDI Specifications
  - File Name: `RP-002-014_v1-1-1_MIDI_Show_Control_Specification_96-1-4.pdf`
- MIDI Machine Control
  - MIDI Machine Control is a general purpose protocol which initially allows MIDI systems to communicate with and to control some of the more traditional audio recording and production systems. Applications may range from a simple interface through which a single tape recorder can be instructed to PLAY, STOP, FAST FORWARD or REWIND, to complex communications with large. time code based and synchronized systems of audio and video recorders. digital recording systems and sequencers. Considerable expansion of the MIDI Machine Control protocol is realizable in the future, and many diverse audio, visual and mixed media devices may thus be brought together under a single general purpose control umbrella.
  - Linked from MIDI 1.0 Core Specifications which in turn is linked from top-level

MIDI Specifications
    - File Name: `RP-013_v1-0_MIDI_Machine_Control_Specification_96-1-4.pdf`

MIDI 1.0

MIDI 1.0 is a ubiquitous protocol that allows different musical instruments and devices to communicate with each other using digital messages. MIDI 1.0 was first published in 1983, the outcome of collaboration between various manufacturers.

The first version of MIDI 1.0 defined a core data format for messages and a serial transport using 5 pin DIN connectors. MIDI 1.0 has been expanded with many features and reached far beyind the dreams of the original designers.

MIDI 1.0 remains a core vital standard, and continues to evolve. MIDI 1.0 specifications available here also continue to be crucial documents as foundational components of MIDI 2.0.

- MIDI Implementation Chart version 2
    - This revised version of the standard MIDI Implementation Chart is designed as a quick reference guide that allows users to identify at a glance which MIDI messages and functions are implemented by the device.
    - In this document, the term ‘device’ is defined as a hardware device or software program that (a) transmits and/or receives MIDI messages, and/or (b) reads and/or writes MMA-defined file formats.
    - Use of the V2 MIDI Implementation Chart is optional.
    - The standardization of this chart enables a user to judge the compatibility between two devices to be connected, simply by comparing the “Transmit/Export” column of one device with the “Recognize/Import” column of the other. […]
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `midi_chart-v2.pdf`
- Renaming of CC91 and CC93
    - Due to the fact that so many manufacturers use Control Change #91 and #93 in the same way, they should be renamed according to their common usage.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `rp23.pdf`
- Sound Controller Defaults (Revised)
    - CC # 70 through 79 are defined as Sound Controllers. Some have default names, and some are left undefined. Control Change (CC) #75-78 (Sound Controllers 6-9) have been given default names.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `rp21.pdf`
- Response to Data Increment/Decrement Controllers

    - This is a recommendation for expected response to Data Increment (MIDI controller #96) and Data Decrement (MIDI controller #97) MIDI messages.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `rp18.pdf`
- Response to Reset All Controllers
    - Defines a consistent response to the Reset All Controllers Channel Mode message (#121).
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `rp15.pdf`
- File Reference SysEx Message
    - This message allows computer based MIDI devices to access files on a shared file system or network using a URL-style file specification. It allows the sounds in these files to be played using simple MIDI messages.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `ca18.pdf`
- Three Dimensional Sound Controllers
    - This specification defines MIDI Registered Parameter Number (RPN) controllers corresponding to the parameters that would be involved in order to allow synthesizers to render MIDI in 3D, and to allow content authors to create compelling 3D MIDI sequences.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `rp49public.pdf`
- High Resolution Velocity Prefix
    - Defines MIDI Continuous Controller 88 (58H) as High Resolution Velocity Prefix to the subsequent Note On / Note Off message.
    - High Resolution Velocity Prefix is intended to improve Note On/Off Velocity resolution while keeping compatibility with older instruments. High Resolution Velocity Prefix is intended to be used when 7-bit Note On / Note Off velocity resolution is not enough. In conjunction with this message, 14-bit resolution can be achieved.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `ca31.pdf`
- Default Pan Formula
    - Over the course of the development of MIDI, different manufacturers have implemented their own responses to CC#10. In addition, various AMEI/MMA Specification (such as GM2 and DLS2) have recommended response curves that are not all the same. The different pan curves produce an equal power distribution between the left and right channels, but in some cases, a true center could not be achieved by following the recommended equation directly.
    - The formula in this RP does achieve a true center and uses an equal power distribution, which is desirable.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0

    - File Name: `rp36.pdf`
- MIDI Bank Index Offset Extension to File Reference SysEx Message
    - This is an extension to the File Reference SysEx message (“CA-018”) providing a means of offsetting the mapping information in a DLS file by a MIDI bank index offset.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `ca28.pdf`
- Redefinition of RPN01 and RPN02 (Channel Fine/Coarse Tuning)
    - With the approval of CA-025 (“Master Fine/Coarse Tuning”) there arises a naming conflict with existing Registered Parameter Numbers (RPNs) in the MIDI 1.0 Detailed Specification called Master Tuning. The original message is by definition Channel- based, which supports renaming those messages “Channel Fine Tuning” and “Channel Coarse Tuning” under the heading of Channel Tuning.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `rp22.pdf`
- Sample Dump Size/Rate/Name Extensions
    - This CA adds an Extended Dump Header, capable of handling sample object sizes up to 32 GB (Gigabytes) with greater precision in calling out the sample rate; a new Extended Loop Point message for longer loops; and a Sample Name Transmission / Request pair, all implemented under the Sample Dump Extensions command tree.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `ca19.pdf`
- MIDI Visual Control
    - This specification defines a way for MIDI to be used for control of visual presentation devices or systems. MIDI has expanded far beyond its original intention of being a control language for musical instruments. The robust nature of MIDI and wide support makes MIDI a suitable control system for visual performance or presentation devices.
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - File Name: `rp50 MIDI Visual Control.pdf`
- MIDI Tuning (Updated Specification)
    - The MIDI Tuning specification allows the sharing of “microtunings” (user-defined scales other than 12-tone equal temperament) among instruments, and the switching of these tunings during real-time performance.
    - Incorporates the following:
        1. MIDI Tuning Bank/Dump Extensions (CA-020)
        2. MIDI Tuning Scale/Octave Extensions (CA-021/RP-020)
        3. Defaults for Scale/Octave Tuning (RP-020)
    - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
    - Also linked from General MIDI 2
    - File Name: `MIDI Tuning Updated Specification.pdf`

- Controller Destination Setting
  - This proposal enables selecting the destination for Control Change messages, plus Channel Pressure and Polyphonic Key Pressure, using Universal Real Time System Exclusive messages. When coupled with specific recommended practices for response to these controllers, these messages will provide common controller response among a variety of playback devices.
  - See General MIDI 2 Recommended Practice for examples of how the response can be standardized.
  - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
  - File Name: `ca22 Controller Destination SysEx Message.pdf`
- Key-Based Instrument Controllers
  - The Key-Based Instrument Controller message is intended to be a standard method of providing individual key-based instruments with the same performance control that is available for Channel-based instruments.
  - Specific responses to this message may be defined in a separate recommended practice, such as General MIDI 2.
  - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
  - Also linked from General MIDI 2
  - File Name: `ca23 Key-based Instrument Controller SysEx Message.pdf`
- Global Parameter Control
  - This proposal allows the editing of global parameters in a device using Universal Real-Time System Exclusive messages. These global parameters may include effects parameters, system control parameters, or other non-channel-specific parameters. Because there may be more than one instance of an object containing global parameters in the same device, and these multiple instances may have similar parameters or even contain additional objects in an object hierarchy, an optional mechanism is provided for uniquely identifying the “slot” within the object hierarchy containing the global parameters.
  - When coupled with specific recommended practices for parameters and values, these messages will provide common parameter editing among a variety of playback devices.
  - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
  - Also linked from General MIDI 2
  - File Name: `ca24 Global Parameter Control SysEx Message.pdf`
- Master Fine/Course Tuning
  - These two new Universal Real Time SysEx messages are additional Device Control messages which control the overall tuning of a device. The “Master Fine Tuning” and “Master Coarse Tuning” messages are intended to produce the same effect as the pitch shift control on a tape recorder.
  - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
  - Also linked from General MIDI 2
  - File Name: `ca25 Master Fine & Coarse Tuning SysEx Message.pdf`

- Modulation Depth Range RPN
  - This proposal defines Registered Parameter Number (RPN) #05 as Modulation Depth Range to be used to scale the effective range of Control Change 1 (Modulation Wheel). The correlation between Modulation Depth Range values and modulation depth is defined by individual manufacturers or MMA/AMEI recommended practices.
  - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
  - File Name: `ca26 RPN05 Modulation Depth Range.pdf`
- 5 Pin DIN Electrical Specs
  - This updates the MIDI 1.0 Electrical Specification to include 3.3-volt signaling. This update also adds optional ferrite bead RF filters to the signal pins, and optional grounding provisions for the grounding shield connectors on the MIDI jacks.
  - Linked from MIDI 1.0 Addenda which in turn is linked from MIDI 1.0
  - File Name: `ca33 5 PIn DIN Electrical Spec.pdf`

General MIDI

General MIDI Specifications (GM 1, GM 2, and GM Lite) define specific features and behaviors for compliant MIDI devices. In particular, files created for GM devices all use the same GM Sound Set which helps provide for more consistant playback among different MIDI devices.

Note: The GM 1 specification was superceded in 1999 by General MIDI 2 which added support for additional features and capabilities which had become commonly available since GM 1 devices first appeared. However, GM 1 remains a popular format and is still commonly used for music distributed in Standard MIDI File (*.mid) format.

(n.b., `.midi2` file extension indicates a SMF2 file, also known as MIDI 2.0 Clip or MIDI 2.0 Container file.)

- General MIDI Level 1
  - This Specification outlines a minimum MIDI configuration of a “General MIDI System” which defines a certain class of MIDI controlled sound generators. The General MIDI (or GM) System provides a high degree of compatibility between MIDI synthesizers, and adds the ability to play songs (in the form of MIDI data) created for any given MIDI synthesizer module that follows this Specification.
  - Linked from General MIDI which in turn is linked from MIDI 1.0
  - File Name: `RP-003_General_MIDI_System_Level_1_Specification_96-1-4_0.1.pdf`

GM2

General MIDI 2 is a group of extensions made to General MIDI (Level 1) allowing for

expanded standardized control of MIDI devices. This increased functionality includes extended sounds sets and additional performance and control parameters.

- General MIDI Level 2
  - General MIDI 2 is a group of extensions made to General MIDI (Level 1) allowing for expanded standardized control of MIDI devices. This increased functionality includes extended sounds sets and additional performance and control parameters.
  - Linked from General MIDI 2 which in turn is linked from MIDI 1.0
  - File Name: `General_MIDI_Level_2_07-2-6_1.2a.pdf`
- MIDI Tuning (Updated Specification)
  - See overview above.
  - Linked from General MIDI 2 which in turn is linked from MIDI 1.0
  - Also linked from MIDI 1.0 Addenda
- Controller Destination Setting
  - See overview above.
  - Linked from General MIDI 2 which in turn is linked from MIDI 1.0
  - Also linked from MIDI 1.0 Addenda
- Key-Based Instrument Controllers
  - See overview above.
  - Linked from General MIDI 2 which in turn is linked from MIDI 1.0
  - Also linked from MIDI 1.0 Addenda
- Global Parameter Control
  - See overview above.
  - Linked from General MIDI 2 which in turn is linked from MIDI 1.0
  - Also linked from MIDI 1.0 Addenda
- Master Fine/Course Tuning
  - See overview above.
  - Linked from General MIDI 2 which in turn is linked from MIDI 1.0
  - Linked from MIDI 1.0 Addenda
  - Also linked from MIDI 1.0 Addenda
- Modulation Depth Range RPN
  - See overview above.
  - Linked from General MIDI 2 which in turn is linked from MIDI 1.0
  - Also linked from MIDI 1.0 Addenda

General MIDI Lite

General MIDI Lite device specification is intended for equipment that does not have the capability to support the full feature set defined in General MIDI 1.0, on the assumption that the reduced performance may be acceptable (and even required) in some mobile applications.

- General MIDI Lite
    - Recommended guidelines for Using GM Lite in Mobile Applications are included in the GM Lite Specification document. Developers are also urged to consult the GM 1 Developer Guidelines.
    - Linked from General MIDI which in turn is linked from MIDI 1.0
    - File Name: `GML-v1.pdf`