Document Number: DSP0239

Date: 2009-11-03

Version: 1.1.0

Management Component Transport Protocol (MCTP) IDs and Codes

Document Type: Specification

Document Status: DMTF Standard

Document Language: E

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Tables

Foreword

The *Management Component Transport Protocol (MCTP) IDs and Codes* (DSP0239) was prepared by the PMCI Working Group.

DMTF is a not-for-profit association of industry members dedicated to promoting enterprise and systems management and interoperability.

Introduction

This document presents a collection of IDs and codes that are used across the Management Component Transport Protocol (MCTP) and transport binding specifications.

The MCTP defines a communication model intended to facilitate communication between:

- Management controllers and other management controllers
- Management controllers and management devices

The communication model includes a message format, transport description, message exchange patterns, and configuration and initialization messages.

The *MCTP Base Protocol Specification* (DSP0236) describes the protocol and commands used for communication within and initialization of an MCTP network. Associated with the *Base Protocol Specification* are transport binding specifications that define how the MCTP base protocol and MCTP control commands are implemented on a particular physical transport type and medium, such as SMBus/I^2C, PCI Express™ (PCIe) Vendor Defined Messaging (VDM), and so on.

Management Component Transport Protocol (MCTP) IDs and Codes

1 Scope

The *Management Component Transport Protocol (MCTP) IDs and Codes* document provides a consolidated list of major IDs and codes used across the MCTP protocol and transport binding specifications. Only IDs and codes that are required by a particular specification should be included in that specification. IDs and codes values for other specifications should not be repeated for reference. Instead, a reference to this specification should be provided.

The following is an overview of the different sets of codes and identifiers (enumeration values) that are specified in this document:

- **MCTP message type codes**

  Collection of the message type codes used for MCTP messages

- **MCTP physical medium identifiers**

  Collection of identifiers for the different types of physical media that have been defined

- **MCTP physical transport binding identifiers**

  Collection of identifiers for the specifications that define the operation, formatting, addressing, and encapsulation of MCTP packets over different physical media

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

DMTF DSP0222, *Network Controller Sideband Interface (NC-SI) Specification 1.0,* http://www.dmtf.org/standards/published_documents/DSP0222_1.0.pdf

DMTF DSP0236, *Management Component Transport Protocol (MCTP) Base Specification 1.0*, MCTP, http://www.dmtf.org/standards/published_documents/DSP0236_1.0.pdf

DMTF DSP0237, *Management Component Transport Protocol (MCTP) SMBus/I^2C Transporting Binding Specification 1.0*, MCTP SMBus-I^2C, http://www.dmtf.org/standards/published_documents/DSP0237_1.0.pdf

DMTF DSP0238, *Management Component Transport Protocol (MCTP) PCIe VDM Transport Binding Specification 1.0*, MCTP PCIe-V, http://www.dmtf.org/standards/published_documents/DSP0238_1.0.pdf

IPMI Consortium*, Intelligent Platform Management Interface Specification* 1.5 Revision 1.1, February 20, 2002, http://download.intel.com/design/servers/ipmi/IPMIv1_5rev1_1.pdf

ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards,* http://isotc.iso.org/livelink/livelink?func=ll&objId=4230456&objAction=browse&sort=subtype

PCI-SIG, *PCI Express Base Specification 1.1*, PCIeV1.1, March 28, 2005, http://www.pcisig.com/members/downloads/specifications/pciexpress/PCI_Express_Base_11.pdf

PCI-SIG, *PCI Express Base Specification 2.0*, PCIeV2.0, December 20, 2006, http://www.pcisig.com/members/downloads/specifications/pciexpress/PCI_Express_Base_2.pdf

Philips Semiconductors, *The I²C-Bus Specification v2.0*, I2C, December 1998 http://www.nxp.com/acrobat_download/literature/9398/39340011_20.pdf

RMII Consortium, *Reduced Media Independent Interface (RMII) Specification v1.2*, RMII, 1997, http://www.national.com/appinfo/networks/files/rmii_1_2.pdf

SMBus, *System Management Bus (SMBus) Specification v2.0*, SMBus, 2000, http://www.smbus.org/specs/smbus20.pdf

3 Terms and Definitions

Refer to DSP0236 for terms and definitions that are used in the MCTP specifications.

4 Symbols and Abbreviated Terms

Refer to DSP0236 for symbols and abbreviated terms that are used in the MCTP specifications.

5 Conventions

The conventions described in the following clauses apply to this specification.

5.1 Reserved and Unassigned Values

Unless otherwise specified, any reserved, unspecified, or unassigned values in enumerations or other numeric ranges are reserved for future definition by the DMTF.

Unless otherwise specified, numeric or bit fields that are designated as reserved shall be written as 0 (zero) and ignored when read.

5.2 Byte Ordering

Unless otherwise specified, byte ordering of multi-byte numeric fields or bit fields is "Big Endian" (that is, the lower byte offset holds the most significant byte, and higher offsets hold lesser significant bytes).

6 MCTP Message Type Codes

Table 1 defines the values for the Message Type field for different message types transported through MCTP.

NOTE: A device that supports a given message type may not support that message type equally across all busses that connect to the device.

Table 1 – MCTP Message Types

Message Type	Message Type Code	Description
MCTP Control	0x00	Messages used to support initialization and configuration of MCTP communication within an MCTP network, as specified in DSP0236
Platform Level Data Model	0x01	Reserved for future Platform Level Data Model (PLDM) Message Type
NC-SI over MCTP	0x02	Reserved for NC-SI over MCTP Message Type
Vendor Defined – PCI	0x7E	Message type used to support VDMs where the vendor is identifed using a PCI-based vendor ID. The specification of the initial Message Header bytes for this message type is provided within this specification. The specification of the format of this message is given in DSP0236. Otherwise, the message body content is specified by the vendor, company, or organization identified by the given vendor ID.
Vendor Defined – IANA	0x7F	Message type used to support VDMs where the vendor is identifed using an IANA-based vendor ID. This format uses an "Enterprise Number" that is assigned and maintained by the Internet Assigned Numbers Authority (IANA), www.iana.org, as the means of identifying a particular vendor, company, or organization. The specification of the format of this message is given in DSP0236. Otherwise, the message body content is specified by the vendor, company, or organization identified by the given vendor ID.
Reserved	all other	Reserved

7 MCTP Physical Medium Identifiers

Table 2 defines a set of numbers that correspond to different media types that can be used with MCTP. The identifier is primarily used to identify which physical addressing format is used for MCTP packets on the bus.

Table 2 – MCTP Physical Medium Identifiers

Physical Media Identifier	Description
0x00	Unspecified
0x01	SMBus 2.0 100 kHz compatible
0x02	SMBus 2.0 + I^2C 100 kHz compatible
0x03	I^2C 100 kHz compatible
0x04	I^2C 400 kHz compatible
0x05:0x07	Reserved
0x08	PCIe 1.1 compatible
0x09	PCIe 2.0 compatible
0x0A	PCIe 2.1 compatible
0x0B	PCIe 3.0 compatible
0x0C:0x0E	Reserved
0x0F	PCI compatible (PCI 1.0,2.0,2.1,2.2,2.3,3.0,PCI-X 1.0, PCI-X 2.0)
0x10	USB 1.1 compatible
0x11	USB 2.0 compatible
0x12	USB 3.0 compatible
0x13:0x17	Reserved
0x18	RMII / NC-SI (refer to DSP0222)
0x20	KCS[1] / Legacy (Fixed Address Decoding)
0x21	KCS[1] / PCI (Base Class 0xC0 Subclass 0x01)
0x22	Serial Host[2] / Legacy (Fixed Address Decoding)
0x23	Serial Host[2] / PCI (Base Class 0x07 Subclass 0x00)
0x24	Asynchronous Serial[3] (Between MCs and IMDs)
all other	Reserved

1. Keyboard Controller Style Interface – refer to DSP0236.

2. Serial Host refers to a register based UART interface.

3. Asynchronous Serial refers to an 8-bit asynchronous bi-directional serial transmission media where characters are transmitted independently (i.e., each frame carries 8-bits of data).

8 MCTP Physical Transport Binding Identifiers

Table 3 defines as set of numbers that correspond to different media types that can be used with MCTP. The identifier indicates which physical addressing format is used for MCTP packets on the bus.

Table 3 – MCTP Physical Transport Binding Identifiers

MCTP Physical Transport Binding Identifier	Description
0x00	Reserved
0x01	MCTP over SMBus (DSP0237)
0x02	MCTP over PCIe VDM (DSP0238)
0x03	Reserved for MCTP over USB
0x04	MCTP over KCS
0x05	MCTP over Serial
0xFF	Vendor defined NOTE: A vendor-defined transport binding must meet the requirements in DSP0236 (in particular, when being bridged to or from standard MCTP transport binding and media combinations).
all other	Reserved

9 MCTP Host Interface Type Identifiers

Table 3 defines a set of numbers that correspond to different MCTP host interface types that can be used with MCTP. The identifier indicates which physical interface to transfer MCTP packets between the host and the management controller.

Table 4 – MCTP Host Interface Type Identifiers

MCTP Host Interface Type Identifier	Description
0x00	Reserved
0x01	Reserved
0x02	KCS: Keyboard Controller Style – refer to *Intelligent Platform Management Interface Specification* *Section 9 Keyboard Controller Style (KCS) Interface*
0x03	8250 UART Register Compatible
0x04	16450 UART Register Compatible
0x05	16550/16550A UART Register Compatible
0x06	16650/16650A UART Register Compatible
0x07	16750/16750A UART Register Compatible
0x08	16850/16850A UART Register Compatible
0xF0	OEM
all other	Reserved

10 Host Interface Protocol Identifiers

Table 3 defines a set of numbers that correspond to different protocols that can be used on a physical host interface. These protocol identifiers are used in SMBIOS Management Controller Host Interface Type 42 record as well as the ACPI MCHI description record.

Table 5 – Host Interface Protocol Identifiers

Protocol Identifier	Description
0x00	Reserved
0x01	Reserved
0x02	IPMI : Intelligent Platform Management Interface – refer to *Intelligent Platform Management Interface Specification* *Appendix C1*
0x03	MCTP : Management Component Transport Protocol – refer to DSP0236
0xF0	OEM
all other	Reserved

Annex A
(informative)
Notation and Conventions

A.1 Notations

Examples of notations used in this document are as follows:

- 2:N — In field descriptions, this will typically be used to represent a range of byte offsets starting from byte two and continuing to and including byte N. The lowest offset is on the left, the highest is on the right.
- (6) — Parentheses around a single number can be used in message field descriptions to indicate a byte field that may be present or absent.
- (3:6) — Parentheses around a field consisting of a range of bytes indicates the entire range may be present or absent. The lowest offset is on the left, the highest is on the right.
- PCIe — Underlined, blue text is typically used to indicate a reference to a document or specification called out in the "Normative References" section or to items hyperlinked within the document.
- rsvd — Abbreviation for “reserved.” Case insensitive.
- [4] — Square brackets around a number are typically used to indicate a bit offset. Bit offsets are given as zero-based values (that is, the least significant bit [LSb] offset = 0).
- [7:5] — A range of bit offsets. The most significant bit is on the left, the least significant bit is on the right.
- `1b` — The lower case "b" following a number consisting of `0`s and `1`s is used to indicate the number is being given in binary format.
- `0x12A` — A leading "`0x`" is used to indicate a number given in hexadecimal format.

Annex B
(informative)
Change Log

Version	Date	Description
1.0.0	07/28/2009	DMTF Standard Release
1.1.0	11/03/2009	Added Host Interface Type Identifiers Added Host Interface Protocol Identifiers Added reference to NC-SI and added clarification on physical medium identifiers