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6 **(MCTP) IDs and Codes**

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## Foreword

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

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

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## Introduction

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

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

- 85 • Management controllers and other management controllers
- 86 • Management controllers and management devices

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

89 The *MCTP Base Protocol Specification* ([DSP0236](#)) describes the protocol and commands used for  
90 communication within and initialization of an MCTP network. Associated with the *Base Protocol*  
91 *Specification* are transport binding specifications that define how the MCTP base protocol and MCTP  
92 control commands are implemented on a particular physical transport type and medium, such as  
93 SMBus/I<sup>2</sup>C, PCI Express™ (PCIe) Vendor Defined Messaging (VDM), and so on.  
94



# 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 specifications are available at [http://www.dmtf.org/standards/published\\_documents](http://www.dmtf.org/standards/published_documents). Unless otherwise specified, values defined in this document apply to all published DMTF Standard versions of the particular referenced DMTF specification.

DMTF DSP0222, *Network Controller Sideband Interface (NC-SI) Specification*

DMTF DSP0235, *NVMe (NVM Express) Management Messages over MCTP Binding Specification*

DMTF DSP0236, *Management Component Transport Protocol (MCTP) Base Specification*

DMTF DSP0237, *Management Component Transport Protocol (MCTP) SMBus<sup>2</sup>C Transporting Binding Specification*

DMTF DSP0238, *Management Component Transport Protocol (MCTP) PCIe VDM Transport Binding Specification*

DMTF DSP0241, *PLDM Over MCTP Binding Specification*

DMTF DSP0253, *MCTP Serial Transport Binding Specification*

DMTF DSP0254, *MCTP KCS Transport Binding Specification*

DMTF DSP0261, *NC-SI Over MCTP Binding Specification*

- 130 IPMI Consortium, *Intelligent Platform Management Interface Specification 1.5* Revision 1.1, February 20,  
131 2002, [http://download.intel.com/design/servers/ipmi/IPMIv1\\_5rev1\\_1.pdf](http://download.intel.com/design/servers/ipmi/IPMIv1_5rev1_1.pdf)
- 132 ISO/IEC Directives, Part 2, *Rules for the structure and drafting of International Standards*,  
133 <http://isotc.iso.org/livelink/livelink?func=ll&objId=4230456&objAction=browse&sort=subtype>
- 134 PCI-SIG, *PCI Express Base Specification 1.1*, PCIeV1.1, March 28, 2005,  
135 [http://www.pcisig.com/members/downloads/specifications/pciexpress/PCI\\_Express\\_Base\\_11.pdf](http://www.pcisig.com/members/downloads/specifications/pciexpress/PCI_Express_Base_11.pdf)
- 136 PCI-SIG, *PCI Express Base Specification 2.0*, PCIeV2.1, March 4, 2009,  
137 [http://www.pcisig.com/members/downloads/specifications/pciexpress/PCI\\_Express\\_Base\\_r2\\_1\\_04Mar09.pdf](http://www.pcisig.com/members/downloads/specifications/pciexpress/PCI_Express_Base_r2_1_04Mar09.pdf)  
138 [pdf](http://www.pcisig.com/members/downloads/specifications/pciexpress/PCI_Express_Base_r2_1_04Mar09.pdf)
- 139 PCI-SIG, *PCI Express Base Specification 3.0*, PCIeV3.0, November 10, 2010,  
140 [http://www.pcisig.com/members/downloads/specifications/pciexpress/PCI\\_Express\\_Base\\_r3.0\\_10Nov10.pdf](http://www.pcisig.com/members/downloads/specifications/pciexpress/PCI_Express_Base_r3.0_10Nov10.pdf)  
141 [pdf](http://www.pcisig.com/members/downloads/specifications/pciexpress/PCI_Express_Base_r3.0_10Nov10.pdf)
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143 [http://www.nxp.com/acrobat\\_download/literature/9398/39340011\\_20.pdf](http://www.nxp.com/acrobat_download/literature/9398/39340011_20.pdf)
- 144 RMII Consortium, *Reduced Media Independent Interface (RMII) Specification v1.2*, RMII, 1997,  
145 [http://www.national.com/assets/en/other/rmii\\_1\\_2.pdf](http://www.national.com/assets/en/other/rmii_1_2.pdf)
- 146 SMBus, *System Management Bus (SMBus) Specification v2.0*, SMBus, 2000,  
147 <http://www.smbus.org/specs/smbus20.pdf>

### 148 **3 Terms and definitions**

149 Refer to [DSP0236](#) for terms and definitions that are used in the MCTP specifications.

### 150 **4 Symbols and abbreviated terms**

151 Refer to [DSP0236](#) for symbols and abbreviated terms that are used in the MCTP specifications.

### 152 **5 Conventions**

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

#### 154 **5.1 Reserved and unassigned values**

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

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

#### 159 **5.2 Byte ordering**

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



## 162 6 MCTP Message Type codes

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

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

167 **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 <a href="#">DSP0236</a>
Platform Level Data Model (PLDM)	0x01	Messages used to convey Platform Level Data Model (PLDM) traffic over MCTP, as specified in <a href="#">DSP0241</a> .
NC-SI over MCTP	0x02	Messages used to convey NC-SI Control traffic over MCTP, as specified in <a href="#">DSP0261</a> .
Ethernet over MCTP	0x03	Messages used to convey Ethernet traffic over MCTP. See <a href="#">DSP0261</a> . This message type can also be used separately by other specifications.
NVM Express Management Messages over MCTP	0x04	Messages used to convey NVMe (NVM Express) Management Messages over MCTP, as specified in <a href="#">DSP0235</a> .
Vendor Defined – PCI	0x7E	Message type used to support VDMs where the vendor is identified 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 <a href="#">DSP0236</a> . 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 identified using an IANA-based vendor ID. This format uses an "Enterprise Number" that is assigned and maintained by the Internet Assigned Numbers Authority (IANA), <a href="http://www.iana.org">www.iana.org</a> , as the means of identifying a particular vendor, company, or organization. The specification of the format of this message is given in <a href="#">DSP0236</a> . Otherwise, the message body content is specified by the vendor, company, or organization identified by the given vendor ID.
Reserved	all other	Reserved

168 **7 MCTP physical medium identifiers**

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

172 **Table 2 – MCTP physical medium identifiers**

Physical Media Identifier	Description
0x00	Unspecified
0x01	SMBus 2.0 100 kHz compatible
0x02	SMBus 2.0 + I <sup>2</sup> C 100 kHz compatible
0x03	I <sup>2</sup> C 100 kHz compatible (Standard-mode)
0x04	I <sup>2</sup> C 400 kHz compatible (Fast-mode)
0x05	I <sup>2</sup> C 1 MHz compatible (Fast-mode Plus)
0x06	I <sup>2</sup> C 3.4 MHz compatible (High-speed mode)
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	NC-SI over RBT (A physical interface based on RMII as defined in <a href="#">DSP0222</a> )
0x20	KCS <sup>1</sup> / Legacy (Fixed Address Decoding)
0x21	KCS <sup>1</sup> / PCI (Base Class 0xC0 Subclass 0x01)
0x22	Serial Host <sup>2</sup> / Legacy (Fixed Address Decoding)
0x23	Serial Host <sup>2</sup> / PCI (Base Class 0x07 Subclass 0x00)
0x24	Asynchronous Serial <sup>3</sup> (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).

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175 **8 MCTP physical transport binding identifiers**

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

178 **Table 3 – MCTP physical transport binding identifiers**

MCTP Physical Transport Binding Identifier	Description
0x00	Reserved
0x01	MCTP over SMBus ( <a href="#">DSP0237</a> )
0x02	MCTP over PCIe VDM ( <a href="#">DSP0238</a> )
0x03	Reserved for MCTP over USB
0x04	MCTP over KCS ( <a href="#">DSP0254</a> )
0x05	MCTP over Serial ( <a href="#">DSP0253</a> )
0xFF	Vendor defined  NOTE A vendor-defined transport binding must meet the requirements in <a href="#">DSP0236</a> (in particular, when being bridged to or from standard MCTP transport binding and media combinations).
All other	Reserved

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## 180 9 MCTP host interface type identifiers

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

184 **Table 4 – MCTP host interface type identifiers**

MCTP Host Interface Type Identifier	Description
0x00	Reserved
0x01	Reserved
0x02	KCS: Keyboard Controller Style – refer to <a href="#">Intelligent Platform Management Interface Specification Section 9 Keyboard Controller Style (KCS) Interface</a>
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

## 185 10 Host interface protocol identifiers

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

189 **Table 5 – Host interface protocol identifiers**

Protocol Identifier	Description
0x00	Reserved
0x01	Reserved
0x02	IPMI : Intelligent Platform Management Interface – refer to <a href="#">Intelligent Platform Management Interface Specification Appendix C1</a>
0x03	MCTP : Management Component Transport Protocol – refer to <a href="#">DSP0236</a>
0xF0	OEM
all other	Reserved

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## ANNEX A (informative) Notation and conventions

### 194 Notations

195 Examples of notations used in this document are as follows:

- 196 • 2:N In field descriptions, this will typically be used to represent a range of byte offsets  
197 starting from byte two and continuing to and including byte N. The lowest offset is on  
198 the left, the highest is on the right.
- 199 • (6) Parentheses around a single number can be used in message field descriptions to  
200 indicate a byte field that may be present or absent.
- 201 • (3:6) Parentheses around a field consisting of a range of bytes indicates the entire range  
202 may be present or absent. The lowest offset is on the left, the highest is on the right.
- 203 • [PCle](#) Underlined, blue text is typically used to indicate a reference to a document or  
204 specification called out in the “Normative References” section or to items hyperlinked  
205 within the document.
- 206 • rsvd Abbreviation for “reserved.” Case insensitive.
- 207 • [4] Square brackets around a number are typically used to indicate a bit offset. Bit offsets  
208 are given as zero-based values (that is, the least significant bit [LSb] offset = 0).
- 209 • [7:5] A range of bit offsets. The most significant bit is on the left, the least significant bit is  
210 on the right.
- 211 • 1b The lower case “b” following a number consisting of 0s and 1s is used to indicate the  
212 number is being given in binary format.
- 213 • 0x12A A leading “0x” is used to indicate a number given in hexadecimal format.

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## ANNEX B (informative) Change log

Version	Date	Description
1.0.0	2009-07-28	
1.1.0	2009-11-03	Added Host Interface Type Identifiers. Added Host Interface Protocol Identifiers. Added reference to NC-SI and added clarification on physical medium identifiers.
1.2.0	2012-06-04	Added Ethernet over MCTP message type. Clarified the description of NC-SI over MCTP and PLDM over MCTP. Added I2C fast plus and high-speed physical medium identifiers. Clarified RMI/NC-SI physical medium identifier description. Fixed references.
1.3.0	2015-03-06	Added message type NVMe (NVM Express) Management Messages over MCTP. Updated references.

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