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# Management Component Transport Protocol (MCTP) IDs and Codes

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## Foreword

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

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

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86

## Introduction

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

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

- 90 • Management controllers and other management controllers
- 91 • Management controllers and management devices

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

94 The *MCTP Base Protocol Specification* ([DSP0236](#)) describes the protocol and commands used for  
95 communication within and initialization of an MCTP network. Associated with the *Base Protocol*  
96 *Specification* are transport binding specifications that define how the MCTP base protocol and MCTP  
97 control commands are implemented on a particular physical transport type and medium.  
98



# 100 Management Component Transport Protocol (MCTP) IDs and 101 Codes

## 102 1 Scope

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

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

- 110 • **MCTP message type codes**  
111 Collection of the message type codes used for MCTP messages
- 112 • **MCTP physical medium identifiers**  
113 Collection of identifiers for the different types of physical media that have been defined
- 114 • **MCTP physical transport binding identifiers**  
115 Collection of identifiers for the specifications that define the operation, formatting, addressing,  
116 and encapsulation of MCTP packets over different physical media
- 117 • **MCTP host interface type identifiers**  
118 Collection of identifiers for the different physical interfaces used to transfer MCTP packets  
119 between the host and the management controller

## 120 2 Normative references

121 The following referenced documents are indispensable for the application of this document. For dated or  
122 versioned references, only the edition cited (including any corrigenda or DMTF update versions) applies.  
123 For references without a date or version, the latest published edition of the referenced document  
124 (including any corrigenda or DMTF update versions) applies.

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

128 DMTF DSP0134, *SMBIOS Reference Specification*

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

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

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

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

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

136 DMTF DSP0241, *PLDM Over MCTP Binding Specification*

- 137 DMTF DSP0253, *MCTP Serial Transport Binding Specification*
- 138 DMTF DSP0254, *MCTP KCS Transport Binding Specification*
- 139 DMTF DSP0261, *NC-SI Over MCTP Binding Specification*
- 140 DMTF DSP0275, *Security Protocol and Data Model (SPDM) over MCTP Binding Specification*
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157
- 158 *MIPI Alliance Specification for I3C BasicSM (Improved Inter Integrated Circuit – Basic)*, version 1.0, MIPI  
159 Alliance, Inc., 19 July 2018 (Adopted 8 October 2018), <http://resources.mipi.org/mipi-i3c-basic-v1-download>.  
160

### 161 **3 Terms and definitions**

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

### 163 **4 Symbols and abbreviated terms**

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

### 165 **5 Conventions**

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

#### 167 **5.1 Reserved and unassigned values**

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



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

172 **5.2 Byte ordering**

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

175 **6 MCTP Message Type codes**

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

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

180 **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 NVM Express (NVMe) Management Messages over MCTP, as specified in <a href="#">DSP0235</a> .  |
| SPDM over MCTP                            | 0x05              | Messages used to convey Security Protocol and Data Model Specification (SPDM) traffic over MCTP, as specified in <a href="#">DSP0275</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   |

## 181 **7 MCTP physical medium identifiers**

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

185 NOTE PCIe revision numbers are intended to indicate specification compatibility, not bit transfer rate or  
186 throughput.  
187

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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  | SMBus 3.0 or I <sup>2</sup> C 400 kHz compatible (Fast-mode)                              |
| 0x05  | SMBus 3.0 or 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 revision 1.1 compatible  |
| 0x09  | PCIe revision 2.0 compatible  |
| 0x0A  | PCIe revision 2.1 compatible  |
| 0x0B  | PCIe revision 3.0 compatible  |
| 0x0C  | PCIe revision 4.0 compatible  |
| 0x0D  | PCIe revision 5.0 compatible  |
| 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 RMI 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)                                   |
| 0x30  | I3C Basic compatible  |
| all other   | Reserved  |
| <p>1. Keyboard Controller Style Interface – refer to <a href="#">DSP0236</a>.</p> <p>2. Serial Host refers to a register based UART interface.</p> <p>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).</p> |   |

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192 **8 MCTP physical transport binding identifiers**

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

195 **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<br>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   |

196

## 197 9 MCTP host interface type identifiers

198 The SMBIOS specification ([DSP0134](#)) reserves a range of host interface type identifiers 0x00 through  
 199 0x3F for use by this specification. Table 4 defines a set of numbers that correspond to different MCTP  
 200 host interface types that can be used with MCTP. The identifier indicates which physical interface to  
 201 transfer MCTP packets between the host and the management controller.

202 **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</a> 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   |
| 0x09 : 0x3F                         | Reserved  |
| all other                           | Assigned by the SMBIOS specification ( <a href="#">DSP0134</a> )  |

## 203 10 Host interface protocol identifiers

204 In earlier versions of this specification, this section contained a table of host interface protocol identifiers.  
 205 That table has been moved to the description of the Type 42 record of the SMBIOS specification  
 206 ([DSP0134](#)) with a version greater than 3.1.0.

207  
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## ANNEX A (informative) Notation and conventions

### 210 Notations

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

- 212 • 2:N In field descriptions, this will typically be used to represent a range of byte offsets  
213 starting from byte two and continuing to and including byte N. The lowest offset is on  
214 the left, the highest is on the right.
- 215 • (6) Parentheses around a single number can be used in message field descriptions to  
216 indicate a byte field that may be present or absent.
- 217 • (3:6) Parentheses around a field consisting of a range of bytes indicates the entire range  
218 may be present or absent. The lowest offset is on the left, the highest is on the right.
- 219 • [PCle](#) Underlined, blue text is typically used to indicate a reference to a document or  
220 specification called out in the “Normative References” section or to items hyperlinked  
221 within the document.
- 222 • rsvd Abbreviation for “reserved.” Case insensitive.
- 223 • [4] Square brackets around a number are typically used to indicate a bit offset. Bit offsets  
224 are given as zero-based values (that is, the least significant bit [LSb] offset = 0).
- 225 • [7:5] A range of bit offsets. The most significant bit is on the left, the least significant bit is  
226 on the right.
- 227 • 1b The lower case “b” following a number consisting of 0s and 1s is used to indicate the  
228 number is being given in binary format.
- 229 • 0x12A A leading “0x” is used to indicate a number given in hexadecimal format.

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231  
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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.<br>Added Host Interface Protocol Identifiers.<br>Added reference to NC-SI and added clarification on physical medium identifiers.   |
| 1.2.0   | 2012-06-04 | Added Ethernet over MCTP message type.<br>Clarified the description of NC-SI over MCTP and PLDM over MCTP.<br>Added I2C fast plus and high-speed physical medium identifiers.<br>Clarified RMII/NC-SI physical medium identifier description.<br>Fixed references. |
| 1.3.0   | 2015-03-06 | Added message type NVMe (NVM Express) Management Messages over MCTP. Updated references.   |
| 1.4.0   | 2017-01-11 | Limited host interface type identifiers to the range 0x00:0x3F.<br>Moved the host interface protocol identifier table to the SMBIOS specification. Updated references.   |
| 1.5.0   | 2017-11-16 | Updated contributors and references. Added support for SMBus 3.0 and PCIe Gen 4.   |
| 1.6.0   | 2019-06-04 | Added an MCTP Message Type for SPD. Added an MCTP physical medium identifiers for PCIe revision 5.0, and I3C.  |
| 1.6.1   | 2021-01-19 | Update contributor list.<br>Correct the I3C entries in the MCTP physical medium identifiers table.   |

234

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