

USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Title: TMU EnableUniDirectionalMode Behavior
Applied to: USB4 Specification Version 1.0

Brief description of the functional changes:

Adds a requirement to clear the UDM bit in the TMU Adapter Configuration Capability Space when a disconnect is detected by the USB4 Port.

Benefits as a result of the changes:

TMU mode will start in the same manner on the first connection and on the following connections.
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An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
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Need to clear the bit on disconnect

An analysis of the hardware implications:
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Need to clear the bit on disconnect

An analysis of the software implications:
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None

An analysis of the compliance testing implications:
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Need to verify this bit is cleared on disconnect.

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Actual Change

(a). Section 4.4.5.2.1 SBRX Goes Low, Page 182

From Text:

- Load the following fields in the Adapter Configuration Space with their default values:
 - Basic Configuration Registers:
 - *Link Credits Allocated.*
 - *HEC Errors* (optional, recommended).
 - *Invalid HopID Errors* (optional, recommended).
 - *ECC Errors* (optional, recommended).
 - TMU Adapter Configuration Capability:
 - *Inter-Domain Time Initiator.*

To Text:

- Load the following fields in the Adapter Configuration Space with their default values:
 - Basic Configuration Registers:
 - *Link Credits Allocated.*
 - *HEC Errors* (optional, recommended).
 - *Invalid HopID Errors* (optional, recommended).
 - *ECC Errors* (optional, recommended).
 - TMU Adapter Configuration Capability:
 - *Inter-Domain Time Initiator.*
 - *EnableUniDirectionalMode.*

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(b). Section 4.4.5.2.2 LT_LRoff Transaction is Received, Page 183

From Text:

- Load the following fields in the Adapter Configuration Space with their default values:
 - Basic Configuration Registers:
 - *Link Credits Allocated.*
 - *HEC Errors* (optional, recommended).
 - *Invalid HopID Errors* (optional, recommended).
 - *ECC Errors* (optional, recommended).
 - TMU Adapter Configuration Capability:
 - *Inter-Domain Time Initiator.*

To Text:

- Load the following fields in the Adapter Configuration Space with their default values:
 - Basic Configuration Registers:
 - *Link Credits Allocated.*
 - *HEC Errors* (optional, recommended).
 - *Invalid HopID Errors* (optional, recommended).
 - *ECC Errors* (optional, recommended).
 - TMU Adapter Configuration Capability:
 - *Inter-Domain Time Initiator.*
 - *EnableUniDirectionalMode.*

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(c). Table 8-11 TMU Adapter Configuration Capability Fields, Page 314

From Text:

3	TMU_ADP_CS_3	28:0	Reserved	Rsvd	0
		29	EnableUniDirectionalMode (UDM) A Connection Manager uses this bit to enable Uni-Directional Time Sync Handshakes.	R/W	0

To Text:

3	TMU_ADP_CS_3	28:0	Reserved	Rsvd	0
		29	EnableUniDirectionalMode (UDM) A Connection Manager uses this bit to enable Uni-Directional Time Sync Handshakes. <u>The TMU Adapter shall set this bit to 0b when its USB4 Port is disconnected.</u>	R/W <u>S</u>	0