

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.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:

Need to clear the bit on disconnect

An analysis of the hardware implications:

Need to clear the bit on disconnect

An analysis of the software implications:

None

An analysis of the compliance testing implications:

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