# USB4 1.0 ENGINEERING CHANGE NOTICE FORM

## Title: PTM ResponseD over USB4
## Applied to: USB4 Specification Version 1.0

| **Brief description of the functional changes:** |
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| Clarify that when sending PTM ResponseD over the Tunnel, TMU_to_PTM_A[7:0] is sent first. |

| **Benefits as a result of the changes:** |
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| Remove the ambiguity around the byte order of TMU_to_PTM_A and accurately describe the ecosystem. |

| **An assessment of the impact to the existing revision and systems that currently conform to the USB specification:** |
|---|
| None. |

| **An analysis of the hardware implications:** |
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| PTM implementation over USB4 must implement to this change. |

| **An analysis of the software implications:** |
|---|
| None. |

| **An analysis of the compliance testing implications:** |
|---|
| None. |

# Actual Change

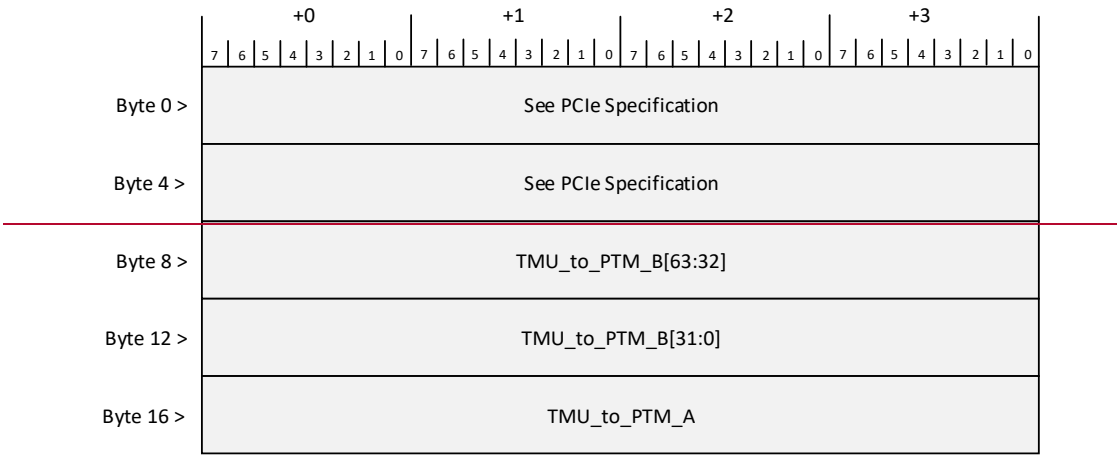
## (a). 11.2.4.1 Parameter Generator

The following Routers shall act as a Parameter Generator:

- A Host Router with its PTM function enabled.
- A Device Router with its PTM function enabled and the *Root Select* bit in its PTM Control Register set to 1b.

Instead of the *PTM Master Time* and *Propagation Delay* fields defined in the PCIe Specification, a Parameter Generator shall include the most recent TMU_to_PTM Parameters in the PTM ResponseD Message. The format and example of a PTM ResponseD over the PCIe Tunnel is ~~as~~ depicted in Figure 11-8.

**Figure 11-8: PTM ResponseD Tunneled Packet Format~~Message~~**



31 0

| PDF = 3 | * | HOP ID | Length = 1Ch | HEC |
|---|---|---|---|---|
| {TYPE,LEN[10:7]} = F0h | | {LEN[6:0],CHK[4]} = 05h | {CHK[3:0],TLP Seq[11:8]} = 70h | TLP Seq[7:0] = 1Bh |
| Header 0 = 74h | | Header 1 = 00h | Header 2 = 00h | Header 3 = 01h |
| Header 4 = 56h | | Header 5 = 20h | Header 6 = 00h | Header 7 = 53h |
| TMU_to_PTM_B [63:56] = F2h | | TMU_to_PTM_B [55:48] = 44h | TMU_to_PTM_B [47:40] = E9h | TMU_to_PTM_B [39:32] = 09h |
| TMU_to_PTM_B [31:24] = FDh | | TMU_to_PTM_B [23:16] = 97h | TMU_to_PTM_B [15:8] = 7Eh | TMU_to_PTM_B [7:0] = 03h |
| TMU_to_PTM_A [7:0] = 5Dh | | TMU_to_PTM_A [15:8] = F5h | TMU_to_PTM_A [23:16] = 1Ah | TMU_to_PTM_A [31:24] = 80h |
| LCRC[31:24] = EBh | | LCRC[23:16] = 5Dh | LCRC[15:8] = E2h | LCRC[7:0] = 5Ah |

* SuppID

*Note: TMU_to_PTM_A[7:0] is sent first.*