

USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Title: Change Behavior of Router when Post Time is 0
Applied to: USB4 Specification Version 1.0

Brief description of the functional changes:

Adding an exception, Post Time equal 0 shall not update the LocalTime Register
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Benefits as a result of the changes:

Fixing wrong description in the spec

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

An analysis of the hardware implications:
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Should ignore value 0

An analysis of the software implications:
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None

An analysis of the compliance testing implications:
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None

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Actual Change

(a). Section 7.6.3, Page 266

From Text:

The Post Time Mechanism is used to update the local time of a Router. A Router shall update its local time when the Post Time is less than or equal to the *Nanoseconds* field in the Grandmaster Time Register. The Router updates its local time by writing the Post Local Time to the *Nanoseconds* field of its LocalTime register.

To Text:

The Post Time Mechanism is used to update the local time of a Router. A Router shall update its local time when the Post Time **is greater than zero and is** less than or equal to the *Nanoseconds* field in the Grandmaster Time Register. **Time Posting shall only be activated when the Post Time High register is written.** The Router updates its local time by writing the Post Local Time to the *Nanoseconds* field of its LocalTime register.

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(b). Section 13.6.1.2, Table 13-15 Page 523

From Text:

6	VSEC_CS_6	31:0	<p>Post Time Low</p> <p>This field contains the least significant 32 bits of the <i>Nanoseconds</i> field of the Grandmaster Time register at which the software updates to the LocalTime register are applied. The update occurs when the Post Time is less or equal to the Grandmaster Time.</p> <p>When the Local Time is updated, this register is nullified.</p>	R/W	0
7	VSEC_CS_7	31:0	<p>Post Time High</p> <p>This field contains the most significant 32 bits of the <i>Nanoseconds</i> field of the Grandmaster Time register at which the software updates to the LocalTime register are applied. The update occurs when the Post Time is less or equal to the Grandmaster Time.</p> <p>To activate Time Posting, this register should be the last to be written.</p> <p>When the Local Time is updated, this register is nullified.</p>	R/W	0

To Text:

6	VSEC_CS_6	31:0	<p>Post Time Low</p> <p>This field contains the least significant 32 bits of the <i>Nanoseconds</i> field of the Grandmaster Time register at which the software updates to the LocalTime register are applied. The update occurs when the Post Time is greater than zero and is less or equal to the Grandmaster Time.</p> <p>When the Local Time is updated, this register is nullified.</p>	R/W	0
7	VSEC_CS_7	31:0	<p>Post Time High</p> <p>This field contains the most significant 32 bits of the <i>Nanoseconds</i> field of the Grandmaster Time register at which the software updates to the LocalTime register are applied. The update occurs when the Post Time is greater than zero and is less or equal to the Grandmaster Time.</p> <p>To activate Time Posting, this register should be the last to be written.</p> <p>When the Local Time is updated, this register is nullified.</p> <p>The Post Time Mechanism is only activated if this register is written.</p>	R/W	0

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(C). Table 8-4

From Text:

24	TMU_RTR_CS_2 4	31:0	Post Time Low This field contains the least significant 32 bits of the Post Time. The Post Time is when a Router updates its local time as part of the Post Time Mechanism. See Section 7.6.3. A Router shall set this field to 0 after updating its local time.	R/W	0
25	TMU_RTR_CS_2 5	31:0	Post Time High This field contains the most significant 32 bits of the Post Time. The Post Time is when a Router updates its local time as part of the Post Time Mechanism. See Section 7.6.3. A Router shall set this field to 0 after updating its local time.	R/W	0

To Text:

24	TMU_RTR_CS_2 4	31:0	Post Time Low This field contains the least significant 32 bits of the Post Time. The Post Time is when a Router updates its local time as part of the Post Time Mechanism. See Section 7.6.3. A Router shall set this field to 0 after updating its local time.	R/W	0
25	TMU_RTR_CS_2 5	31:0	Post Time High This field contains the most significant 32 bits of the Post Time. The Post Time is when a Router updates its local time as part of the Post Time Mechanism. See Section 7.6.3. A Router shall set this field to 0 after updating its local time. The Post Time Mechanism is only activated if this register is written.	R/W	0