

rfer_timer

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Mike Tu tum@broadcom.com

Introduction

- In 165.3.7.2.2:
 - hi_rfer
 - Boolean variable that is asserted TRUE when the rfer_cnt reaches 16 errors in one rfer_timer interval.
- In 802.3ch, rfer_timer = 312500 bit times = 31.25/S us for 10G/5G/2.5G
- This translates to 97.65625 RS FEC frames
- In summary, hi_rfer = TRUE if 16 out of 97.65625 RS FEC frames are in errors

802.3cy Considerations

- A comment was submitted against D1.3 165.3.7.2.3:
 - rfer_timer
 - Timer that is triggered every ~~125/(4 × S)~~ 12.5 μs ~~+±1%, -25%~~. When the timer reaches its terminal count, rfer_timer_done = TRUE
- Upon further evaluation, the proposed 12.5 us only translates to 37.56 RS FEC frames for 802.3cy. This is obviously not a good choice.
- A better option is to keep the same RS FEC counter ratio as in 802.3ch:
 - hi_rfer = TRUE if 16 out of 97.65625 RS FEC frames are in errors
 - $31.25 \text{ us} * (332.8 \text{ ns/FEC frame}) / (320 \text{ ns/FEC frame}) = 32.5 \text{ us}$
- It is proposed to set rfer_timer = 32.5 us for 25GBASE-T1

Proposed Changes

- On page 78, line 8, change "12.5 us" to "32.5 us".
- On page 27, line 44, add a new paragraph:
- 45.2.3.xx.2 PCS high RFER (3.2324.9)
- When read as a one, bit 3.2324.9 indicates that the MultiGBASE-T1 PCS receiver is detecting 16 or more RS-FEC errored blocks **within one rfer_timer interval**. When read as a zero, bit 3.2324.9 indicates that the MultiGBASE-T1 PCS is detecting fewer than 16 RS-FEC errored blocks **within one rfer_timer interval**. Bit 3.2324.9 is a reflection of the state of the hi_rfer variable defined in 149.3.8.1 and 165.3.8.1.
- Note: this is 45.2.3.87.2 in IEEE Draft P802.3/D3.2.