

P802.3dj COM Parameter Values for CR/KR -- Starting Point

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Supporters

Preface

- The Task Force is going into D1.1 review with many TBDs in the CR and KR clauses
- The CR and KR COM parameter values have been under study for a long time

Reference EQ Focus Points

- Setting reference EQ parameter values is important to determine many aspects of the specification
- A wide range of COM parameter values were used for analysis
- Propose to focus on several key COM parameters first:
 - Eta_0
 - # of pre/post RXFFE taps and type (fixed vs. floating)
- Other COM parameters and values can be determined later

Parameter Values in Recent Contributions

| Contribution | RXFFE (pre/pst) | Eta_0 | COM version |
|----------------------------------|---|-------|-------------|
| Kareti_3dj_01_2407 (Config 5) | Pre: 6 Pst: 8 fixed + 3x4 floating (100 UI), MLSD = enabled (penalty TBD) | 1E-8 | 4.6b2 |
| lit_3dj_01_2407 | Pre: 6 Pst: 8 fixed + 2x4 floating (80 UI), MLSD = enabled (penalty TBD) | 1E-8 | 4.6b4 |
| lim_3dj_02_2407 | Pre: 6 Pst: 16 fixed + 2x5 floating (80 UI), MLSD = enabled (penalty TBD) | 1E-8 | 4.6b4 |

Proposal – CR and KR (1/2)

- For 200G/lane CR and KR, set the COM parameter values as follows:
 - $\text{Eta}_0 = 1\text{E-}8$
 - # pre-cursor RXFFE taps (d_w) = 6
 - # RXFFE taps
 - Number of fixed-position taps (N_{fix}) = 15 ($d_w + 1 + 8$ fixed-position post-cursor taps)
 - Number of floating tap groups (N_g) = TBD
 - Number of taps per floating tap group (N_f) = TBD
 - Highest allowed tap index (N_{max}) = TBD
- Use MLSD per Annex 178A.1.11
 - Specified MLSD implementation allowance (Q) = TBD
- Set COM = 3dB

Note: In 178A.1.8.1, “The total number of taps in the feed-forward filter, N_w , is $N_{\text{fix}} + N_g * N_f$ ” (D1.0 P656 L11) and this seems to include the precursor taps d_w (e.g., based on Figure 178A–8).

Proposal – Note (2/2)

- Add editor's note:
 - “The parameters values in this table are to be confirmed and may change based on further analysis. Contributions in this area are encouraged.”

Next Steps

- More analysis to confirm the values on slide 5
 - Check the channel space for pass vs. fail
 - Get agreement on “must pass” channels
- Fill in the remaining COM parameter values

Thanks!

Parameter Values in Older Contributions

| Contribution | RXFFE (pre/pst) | Eta_0 | COM |
|------------------|--|-------|-------|
| Lit_3dj_01a_2405 | Pre: 6 Pst: (A) 60 fixed, MLSD = 0 (B) 24 fixed + 2x4 floating, MLSD = 0 (C) 16 fixed, MLSD = enabled (penalty TBD) | 6E-9 | 4.5b3 |
| Lim_3dj_01_2405 | Pre: 6 Pst: 24 fixed + 4x5 floating, MLSD = enabled (penalty TBD) | 5E-9 | 4.5b3 |