CDAUI-8 MODULE-TO-HOST TRANSMITTER SPECIFICATION PROPOSAL

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CDAUI-8 MODULE OUTPUT SPECIFICATION

- **Currently, sub-clause 120E.3.2 specifies the module output**
  - ESMW, Eye width, Eye height, and Max vertical eye closure
- **The current eye spec at TP4 may not allow a pre-cursor component for the module TX**
  - Eye measurement is done at the module compliance board (MCB)
  - MCB loss budget is only ~3dB
  - Pre-cursor component in the TX output is likely sub-optimal at TP4 and may fail eye spec
- **Can a typical host receiver close the C2M budget without a pre-cursor?**

HOST RECEIVER PERFORMANCE ON C2M CHANNELS

Assume a C2C reference receiver in the host (CTLE, LF-CTLE, and 10 tap DFE):

- No precursor in the module TX:

Test Case	1	2	3	4	5	6	7	8	9
COM version D1.1	1.39	1.53	1.24	1.75	1.9	1.23	1.05	0.93	0.67
Our COM proposal (SNR_TX = 29dB, DER0 = 1e-5)	1.62	1.73	1.49	1.93	2.05	1.48	1.3	1.21	1.01

- Module TX set to [-0.1 0.9]:

Test Case	1	2	3	4	5	6	7	8	9
COM version D1.1	3.94	4.24	2.89	3.84	4.11	3.14	3.51	3.64	3.29
Our COM proposal (SNR_TX = 29dB, DER0 = 1e-5)	3.87	4.11	2.96	3.77	4.00	3.17	3.53	3.64	3.34

Without the pre-cursor, the host C2M RX may have to be more complex than a C2C RX!

PROPOSAL

- **Enable a ‘C2C capable’ receiver to be employed in the host for C2M with current TP4 based eye margin methodology**
- **Include a pre-cursor ISI generating component before the host reference receiver**
  - Could be UI spaced filter with coefficients like [a 1-a]
    - For example, the parameter ‘a’ can be set to 0.1
  - Continuous time options are also possible
  - Include this filter along with the CTLE for eye margin limits at TP4
- **Does not explicitly require the module TX to support an FIR**
  - Supports any mechanism in TX to compensate for precursor ISI at the RX