

# **Module TX eye measurement method proposal**

**(in support of comment #43)**

**Raj Hegde & Magesh Valliappan**

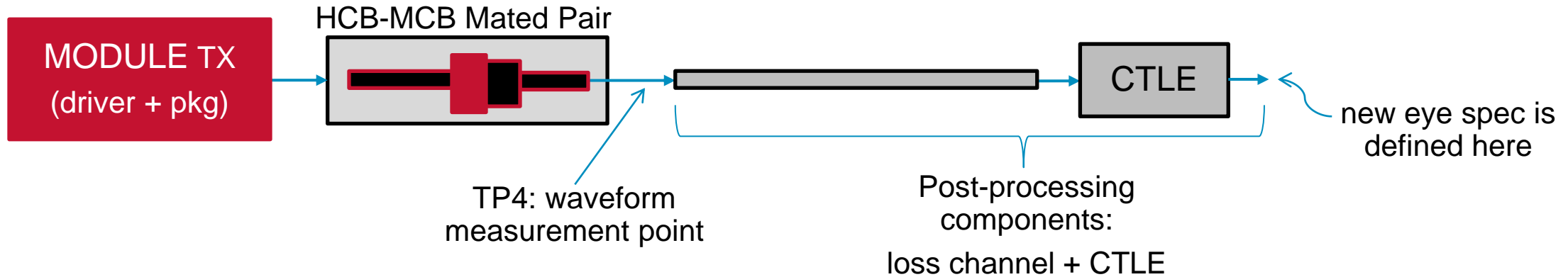
IEEE 802.3bs 400 Gb/s Task Force

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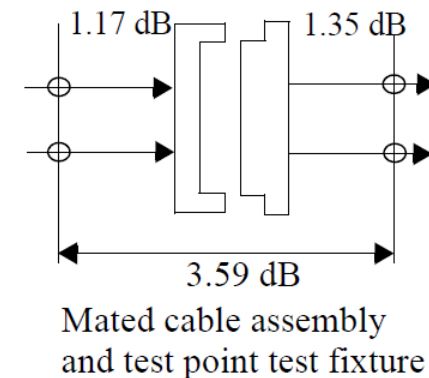
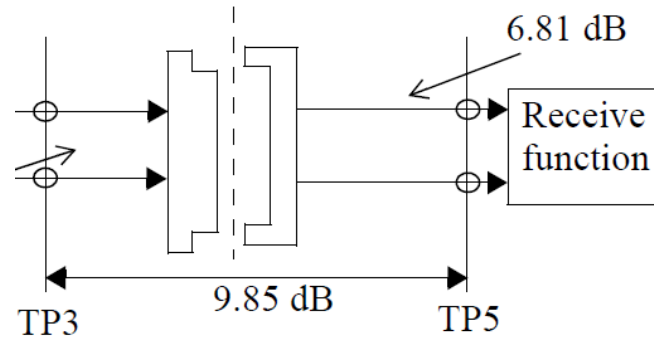
# CDAUI-8 C2M Module output specification

- Spec updated to include the module TX pre-cursor component
  - Keep the measurement point same as before at the MCB output
    - Approx. 3.5-4dB loss
  - Define a ‘near-end’ eye and a ‘far-end’ eye
- Near-end eye
  - Represents the short length case
  - Measured and post processed as before
- Far-end eye
  - In the post processing phase, include a ‘loss channel’ to represent the remainder of the loss budget
  - Update the eye-spec such that the TX would have to provide the desired pre-cursor component

# Far-end eye: o/p measurement + post processing setup

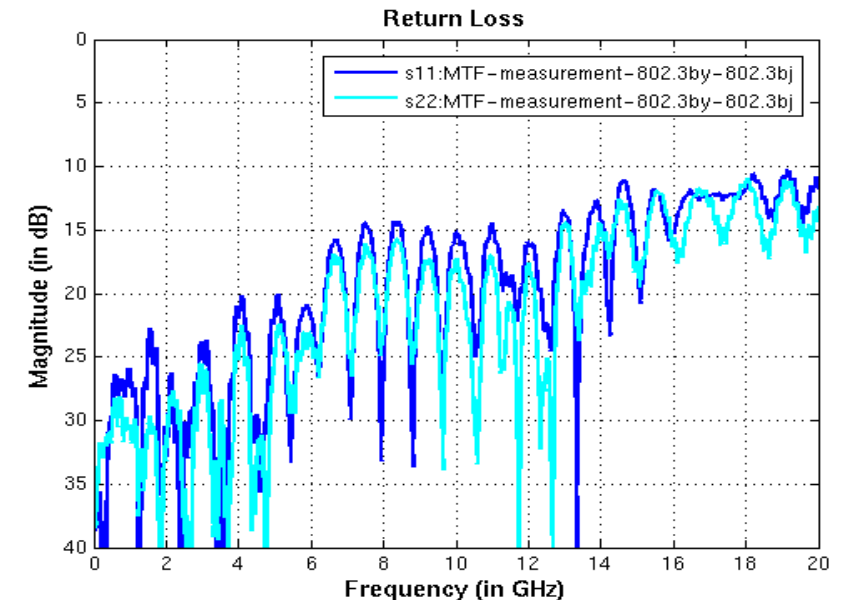
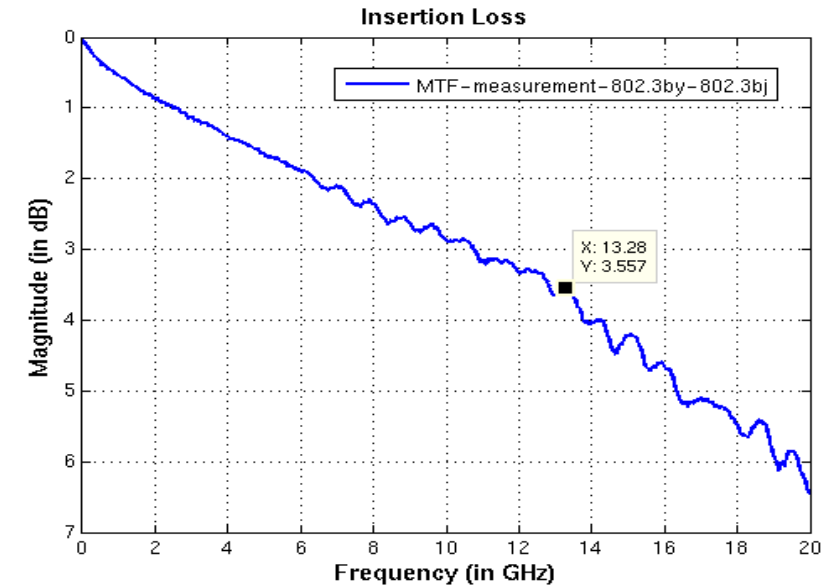


- Component models adopted from Clause 92 & Annex 92A
- Total Loss:
  - 9.85dB @ 12.89GHz
- HCB-MCB Mated Pair:
  - TP3 to TP4
  - 3.59dB loss @ 12.8906 GHz
- Loss Channel (150mm long T-line):
  - 6.26dB loss at 12.8906GHz



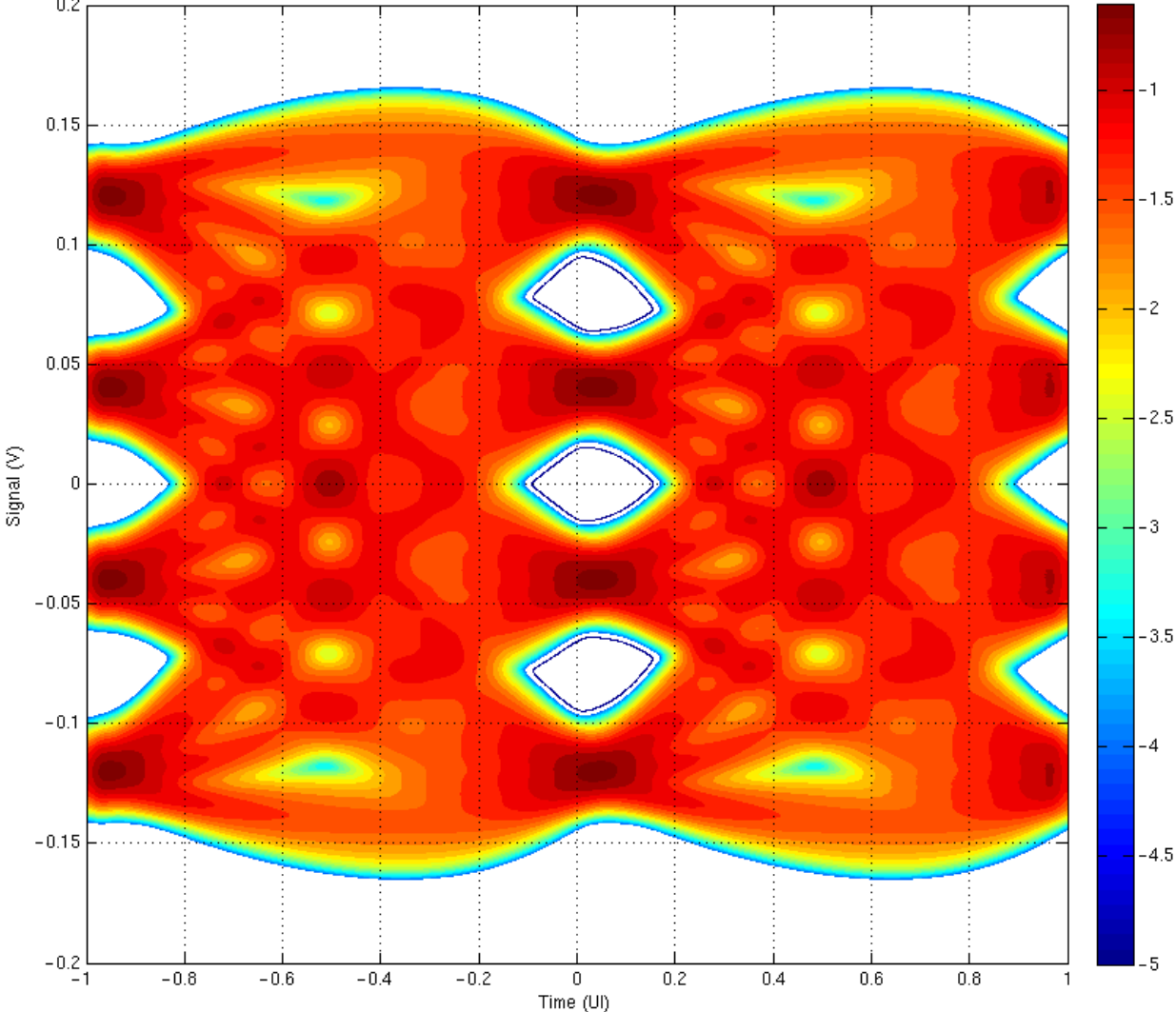
# Component Models Continued...

- HCB-MCB Mated Pair characteristics:
  - S-parameter model obtained from Chris Diminico - PHY-SI
  - Insertion loss is ~3.6dB @13.2812GHz
- Loss Channel:
  - Representative receiver PCB path (TP4 to TP5)
  - Model provided in 92.10.7.1.1
  - ~6.43dB loss at 13.2812GHz for 151mm
  - **Total worst-case loss modeled: ~10.0dB**
- Adjust the loss channel length to compensate for actual HCB-MCB loss variation



# Far-end eye parameters

Parameter	Value
ESMW	200mUI
Eye Width	200mUI
Eye Height	30mV



# Near-end eye parameters

Parameter	Value
ESMW	265mUI
Eye Width	280mUI
Eye Height	88mV

