

CAUI-4 Ad hoc

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Agenda

- Patent Policy: This meeting is an official IEEE ad hoc. Please review the patent policy at the following site prior to the meeting.
<http://www.ieee802.org/3/patent.html>
- Chip-to-chip comment discussion
 - Comment 52 – 10dB channel support
 - fit in current structure? Add COM and receiver interference tolerance with 10dB insertion loss
 - Comment 36 – Transmit Equalizer Values
 - 93 vs current discrete settings
 - Comment 37 – Receiver characteristics
 - Add jitter tolerance
 - MTTFPA:
 - gustlin_01_010614_CAUI
 - ran_01_010614_CAUI4
 - slavick_01_010614_CAUI

Comment 52

- Commenter: Ghiasi, Ali
- Comment: We are moving toward 20 dB C2C application for CAUI-4 with DFE there is also need for low power on-board ASIC to PIC
- Suggested Remedy: Suggest preserving current chapter D as 10-12 dB C2C with CTLE only then add new chapter F for C2C with 20 dB based on DFE, I will provide more detail remedies in ghiasi_02_0114
- Proposed Response: Adding another chip to chip annex would complicate the standard. Commenter is encouraged to consider means of standardization within a common chip-chip annex

Potential update to 83D

- COM:
 - Add a DFE 0 table so that the CTLE is the only Rx equalization available
 - May require additional text around optional CTLE only COM evaluation

- Add second test
 - See input from Mike Li

Ryan:

Attached is my proposal on the bm c2c Rx interference test

Table 83D-3— Receiver Interference Tolerance Parameters

Parameters	Test 1 values		Test 2 Values		Unit
	Min	Max	Min	Max	
BER		1.00E-15		1.00E-15	
IL at 12.89 GHz		20		10	dB
Coefficients of Fitted IL					
a0	-1	2	-1	1	dB
a1	0	2.937	0	0.817	dB/SQRT (GHZ)
a2	0	1.599	0	0.801	dB/GHz
a4	0	0.03	0	0.01	dB/GHz^2
RSS_DFE4	0.05		0.025		
COM		2		2	dB

Comment 36

- Commenter: Mellitz, Richard
- Comment: Reuse of clause 93 transmitter specification reduces the number of tests for configurable PHYs, etc. as well as providing a smoother meshing with COM.
- Suggested Remedy: Replace 83D.3.1 with 93.8.1 eliminating text about coefficient training 93.8.1.5.3, 93.8.1.5.4, 93.8.1.5.5; keep 93.8.1.5.1. Keep Tx settings in 83D.3.1.6
- Proposed Response: PROPOSED ACCEPT IN PRINCIPLE.
- See comment 23 and latchman_01_121613_CAUI

- Change Output waveform row from Table 83D-1 seen in latchman_01_121613_CAUI from ..."
- Normalized coefficient step size (min.)
- Normalized coefficient step size (max.)
- Pre-cursor full-scale range (min.)
- Post-cursor full-scale range (min.)"

- to
- Pre-cursor equalization [value same table 83D-2 in D2.0]
- Post-cursor equalization [value same table 83D-3 in D2.0]
- Keep section: 83D.3.1.6 Transmitter equalization range
- with the following text
- The CAUI-4 chip-to-chip transmitter includes programmable equalization to compensate for the frequency dependent loss of the channel and to facilitate data recovery at the receiver. The functional model for the transmit equalizer is the three tap transversal filter shown in Figure 83D-8. The transmitter output equalization is characterized using the procedure described in 72.7.1.11 where the state of the CAUI-4 transmit output is manipulated via management. The minimum pre-cursor equalization R_{pre} supported is shown in Table 83D-2 where R_{pre} is defined in Equation (72-8). The minimum post-cursor equalization R_{pst} support is shown in Table 83D-3 where R_{pst} is defined in Equation (72-9).
- The positive and negative voltages shall match such that each of the quantities $(v_1 + v_4)/v_1$, $(v_2 + v_5)/v_2$, and
- $(v_3 + v_6)/v_3$ does not exceed 0.05.

- Change subclause references:
- Steady-state voltage v_f (max.) 93.8.1.5.2
- Steady-state voltage v_f (min.) 93.8.1.5.2
- Linear fit pulse peak (min.) 93.8.1.5.2
- Pre-cursor equalization 83D.3.1.6
- Post-cursor equalization 83D.3.1.6

Comment 37

- Commenter: Mellitz, Richard
- Comment: Reuse of clause 93 transmitter receiver reduces the number of tests for configurable PHYs, etc. as well as providing a smoother meshing with COM
- Suggested Remedy: replace with 93.8.2 with new table for- Receiver interference tolerance parameters
- Proposed Response: PROPOSED ACCEPT IN PRINCIPLE. See comment 23 and latchman_01_121613_CAUI
 - Currently we don't have a jitter tolerance test (only interference tolerance)
 - Include the line item with the same value as 93.8.2