Aligning Test 3 And Test 4 Fitted Insertion Loss Coefficients To Posted Channels (Comment # 146)

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Supporters

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Test Channel

- Goal: Utilize channels published which just pass COM for the respective FEC choice
- Insertion loss for test channel is determined by cascading specified Tx host loss.
- Test 3 is Rx testing for BASE-R FEC (CL 74) host
  - Two 3 meter cables very close to the COM limit(w standard loss host and crosstalk)
  - Amphenol 3m 26AWG QSFP-4SFP APN43140033HXJ
    - P1TX3_P2RX3
    - P2TX4_P1RX4
- Test 4 is a Rx testing a no FEC host
  - One 2 meter 26AWG channel is very close to the COM limit(w standard loss host and crosstalk)
  - TE_QSFP_4SFP_2m_26AWG\TE 1_Victim-P1_TX1_QSFPend
    - TE_2m26AWG_QSFP_4SFP_P1_TX1_P2_RX1

3 Meter Cable Data (arrows are near COM limit)

Worst coefficients chosen

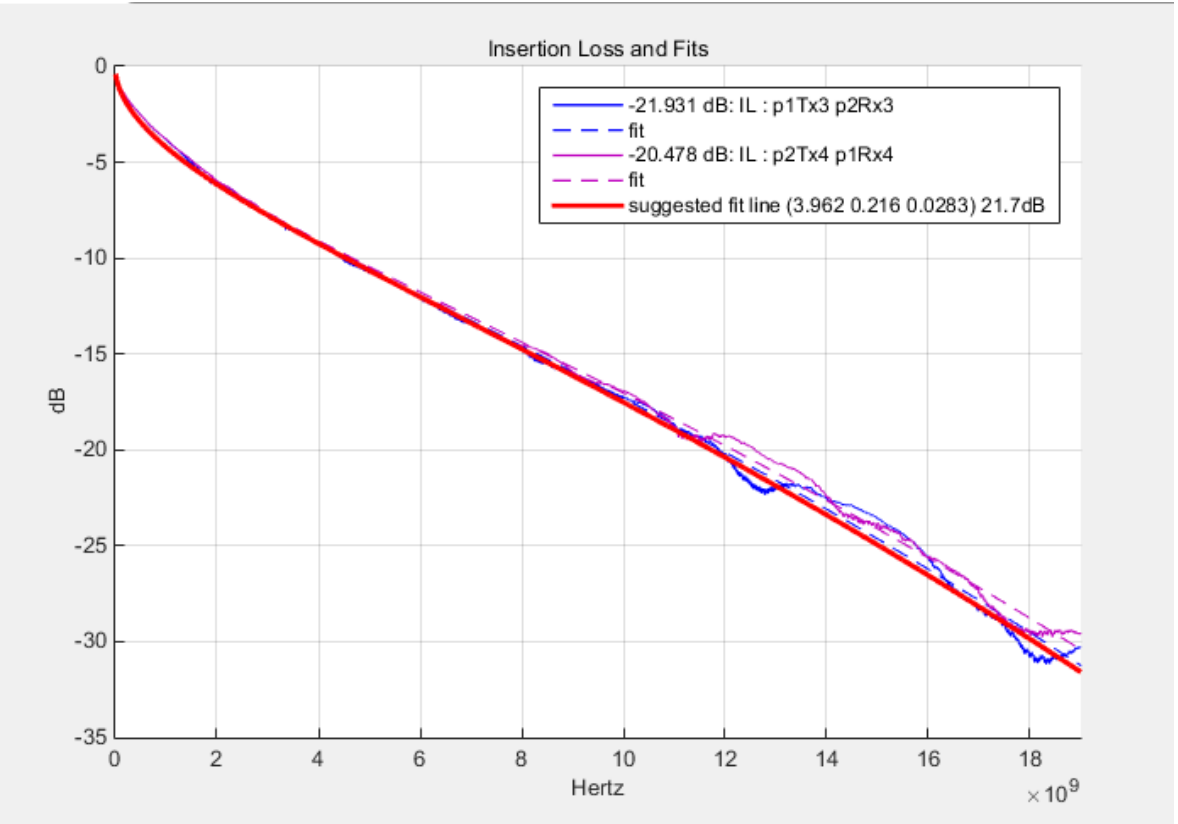
	Amphenol 3m								Tyco 3m							
	p1Tx1 p2Rx1	p1Tx2 p2Rx2	p1Tx3 p2Rx3	p1Tx4 p2Rx4	p2Tx1 p1Rx1	p2Tx2 p1Rx2	p2Tx3 p1Rx3	p2Tx4 p1Rx4	1_victim_P1/P2	2_victim_P1/P2	3_victim_P1/P2	4_victim_P1/P2	5_victim_P2/P1	6_victim_P2/P1	7_victim_P2/P1	8_victim_P2/P1
a1	4.07	4.09	3.92	3.36	3.46	3.69	3.53	3.96	3.40	3.93	3.43	3.85	4.02	3.81	4.02	3.78
a2	0.17	0.14	0.22	0.57	0.47	0.39	0.39	0.18	0.52	0.24	0.50	0.24	0.15	0.25	0.15	0.28
a4	0.03	0.03	0.03	0.01	0.02	0.02	0.02	0.03	0.01	0.02	0.01	0.02	0.03	0.02	0.03	0.02
IL as Rx Test Cable	21.89	21.43	21.56	21.88	21.20	21.41	21.05	21.04	20.54	20.98	20.45	20.93	20.51	20.16	20.66	20.39
IL cable assembly	15.32	15.77	15.02	16.21	14.93	14.63	13.96	14.16	14.62	14.35	14.34	14.14	13.80	13.94	13.90	13.90
COM	2.90	3.38	3.10	2.67	2.89	3.21	2.93	3.09	3.68	3.52	3.58	3.68	3.28	3.33	3.19	3.40

2 Meter Cable data (arrow is near COM limit)

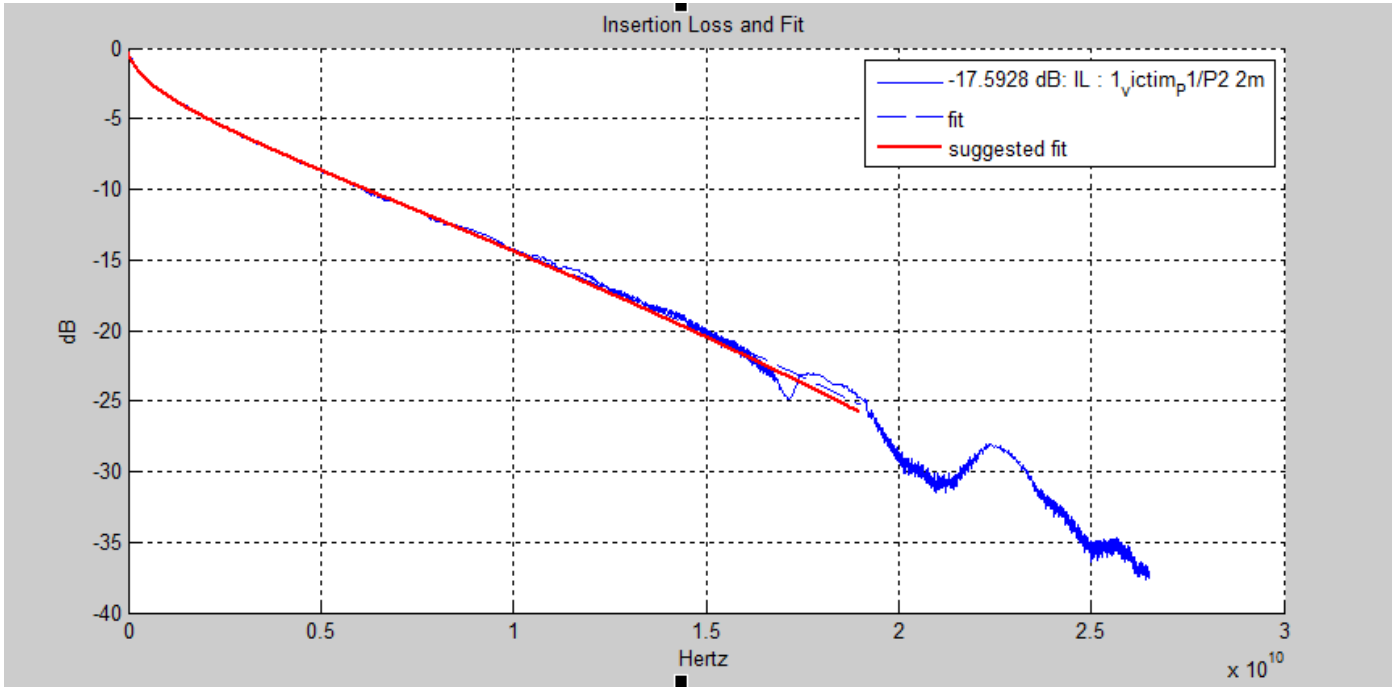
Coefficients chosen

	Tyco 2m							
	1_victim_ P1/P2	2_victim_ P1/P2	3_victim_ P1/P2	4_victim_ P1/P2	5_victim_ P2/P1	6_victim_ P2/P1	7_victim_ P2/P1	8_victim_ P2/P1
a1	3.00	3.19	2.70	3.00	3.29	3.29	3.36	3.00
a2	0.29	0.22	0.48	0.30	0.11	0.12	0.09	0.30
a4	0.02	0.02	0.01	0.02	0.03	0.03	0.03	0.02
IL as Rx Test Cable	17.57	18.08	17.53	18.09	17.59	17.61	17.58	17.74
IL cable assembly	11.46	11.36	11.41	11.56	11.00	11.18	10.78	10.78
COM	2.97	2.81	2.82	2.79	2.67	2.63	2.71	2.67

3 meter FEC Test Fit Line Graphs



2 meter CL74 no FEC Test Fit Line Graphs



Proposal

Table 110–5—25GBASE-CR interference tolerance parameters

Parameter	Test 1 values	Test 2 values	Test 3 values	Test 4 values	Units
Test pattern	Scrambled idle encoded by RS-FEC	Scrambled idle encoded by RS-FEC	Scrambled idle encoded by BASE-R FEC	Scrambled idle	
Error requirements	RS-FEC symbol error ratio[a] < 10^{-4}	RS-FEC symbol error ratio[a] < 10^{-4}	BASE-R FEC block error ratio[b] < TBD	Bit error ratio[c] < 10^{-12}	
Fitted insertion loss coefficients	$a_1 = 1.7$ $a_2 = 0.546$ $a_4 = 0.01$	$a_1 = 4.3$ $a_2 = 0.571$ $a_4 = 0.04$	$a_1 = 3.43$ $a_2 = 0.456$ $a_4 = 0.032$	$a_1 = 2.573$ $a_2 = 0.342$ $a_4 = 0.024$	dB/√GHz dB/GHz dB/GHz^2
Applied SJ[d] (peak-to-peak)	0.1	0.1	0.1	0.1	UI
Applied RJ (RMS)	0.01	0.01	0.01	0.01	UI
Even-odd jitter	0.035	0.035	0.035	0.035	UI
COM (max)	3	3	3	3	dB

approximate fit loss at 12.89GHz	14.80	29.44	21.04	17.57	dB

a1= 3.96	a1= 3.00
a2= 0.18	a2= 0.29
a4= 0.03	a4= 0.02

also add informative reference loss – Discuss merits?