IL and ERL Specs at TP0a

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Outlines

- Background
- Proposals

Backgrounds & Motivation

- Provide supporting materials for Comment #204
- Based on straw poll in minutes_092320_3ck_adhoc.pdf
  - The majority supports either
    - Removing TP0a
    - Using TP0v and keeping TP0a with relaxed IL and ILD
- Since 1.2 ~ 1.6 dB IL limit of TP0a is difficult to meet, it's no points of requiring this IL spec for example test fixture, TP0a
  - One example TP0v test fixture shown in wu_3ck_adhoc_01_093020.pdf
  - Propose to relax IL spec limit of TP0a as 2.0 to 2.8 dB IL at 26.56 GHz
  - ERL of TP0a = 15.5 dB

Comment #204 – Relax IL & ILD Specs of TP0a

- If we keep TP0a, propose to relax IL and ILD specs to make it feasible
  - One example TP0v was shown in wu_3ck_adhoc_01a_092320.pdf
- What's ERL of TP0a?
  - Refer to TP0v test fixture in slide 9 of wu_3ck_adhoc_01a_092320.pdf (IL = 2.12 dB)
  - Calculate reference ERL based on COM parameters → 18.42 dB
  - By dERL = -3 dB, the measured ERL ~= 15.5 dB

TX ERL reference values – Sweeping Rd

- An example TP0 to TP0v test fixture
  - IL = 2.12 dB @ 26.56 GHz
- Sweep Rd to check ERL sensitivity
  - Shall at least consider Rd = 50 +/- 10%
  - 1.1 ~ 1.5 dB ERL difference for Rd = 50 vs. Rd = 55
- COM spread sheet
  - In appendix

Clause	C137 (50G-KR)	
	TX ERL	RX ERL
ERL (dB)	15	15

- ERL (min) for 50G-KR is 15 dB
  - Expect 100G-KR to be similar to that
- Straw poll (#2)
  - Calculate ERL reference value by Rd = 55, while keep Rd = 50 for channel COM calculation

Parameters	Conditions	Values					
Rd (Ohm)		30	35	40	45	50	55
TX ERL ref. values (dB)	KR (N_{bx} = 21)	14.76	17.84	19.67	19.20	18.42	17.35
	C2C (N_{bx} = 6)	13.89	16.87	18.51	18.11	17.50	15.97

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Ref: slide 9 of wu_3ck_adhoc_01a_092320.pdf

Comment #204 – Relax IL & ILD Specs of TP0a

- Propose to adopt IL and ILD spec of TP0a (example TX test fixture) as
  - IL: 2.0 ~ 2.8 dB at 26.56 GHz
  - ILD: <= 0.2 dB from 0.05 to 26.56 GHz
- ERL of TP0a = 15.5 dB in Table 163-7

Thank You