KR ERL_{min} Proposal

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ToC

- ❑ Device Test fixture
- ❑ ERL for device Clause 163.9
- ❑ ERL for channels Clause 163.10
- ❑ Recommendation

Recommendation: Device test fixture TBD

- There is no published data to show the feasibility of reasonable 100G device test fixtures at TP0a or TP5a.
- Recommend ERL, modal return loess, and parameters using a pulse fit to be specific at TP0 and TP5 as normative for draft 1.0
  - If a test fixture is specified the data at tp0 and tp5 may be backed out to TP0a and TP5a at a later time.
- This implies de-embedding
  - In most cases device vendors will own the test fixture which is different from the CR situation
  - The replace trace has little impact on Receive interference tolerance testing.

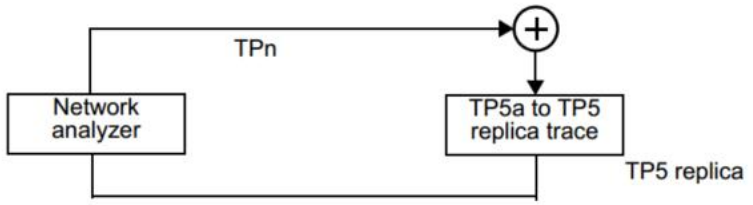


Figure 93C–5—Interference tolerance channel noise path test setup

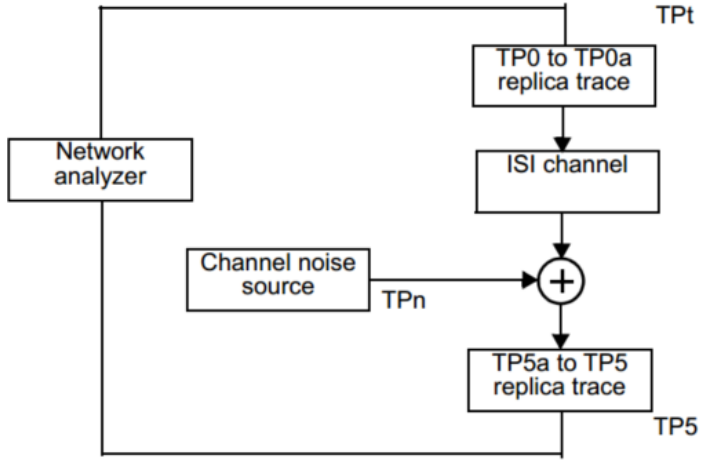
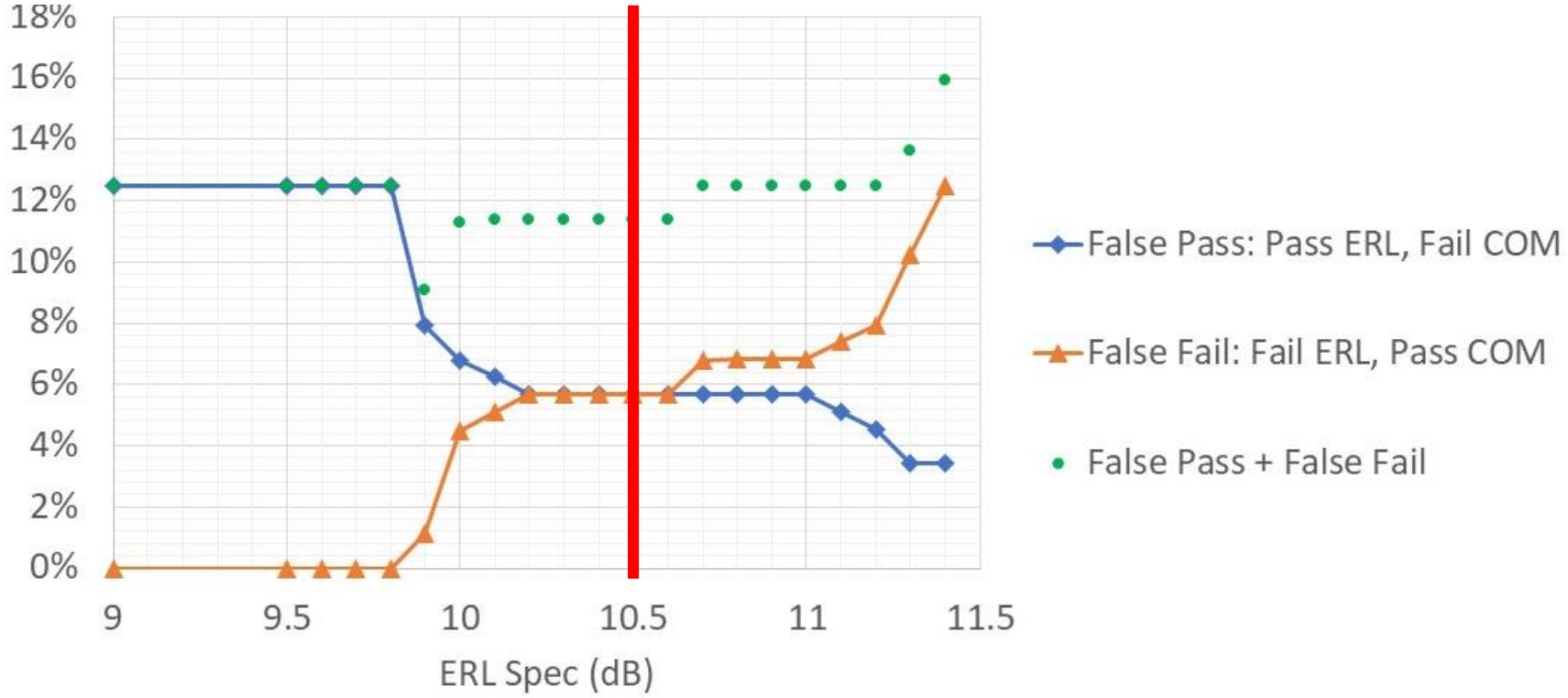


Figure 93C–4—Interference tolerance channel s-parameter test setup

Recall ERL pass/fail from mellitz_3ck_03a_0919



ERL_{min} for channels (163.10.2)

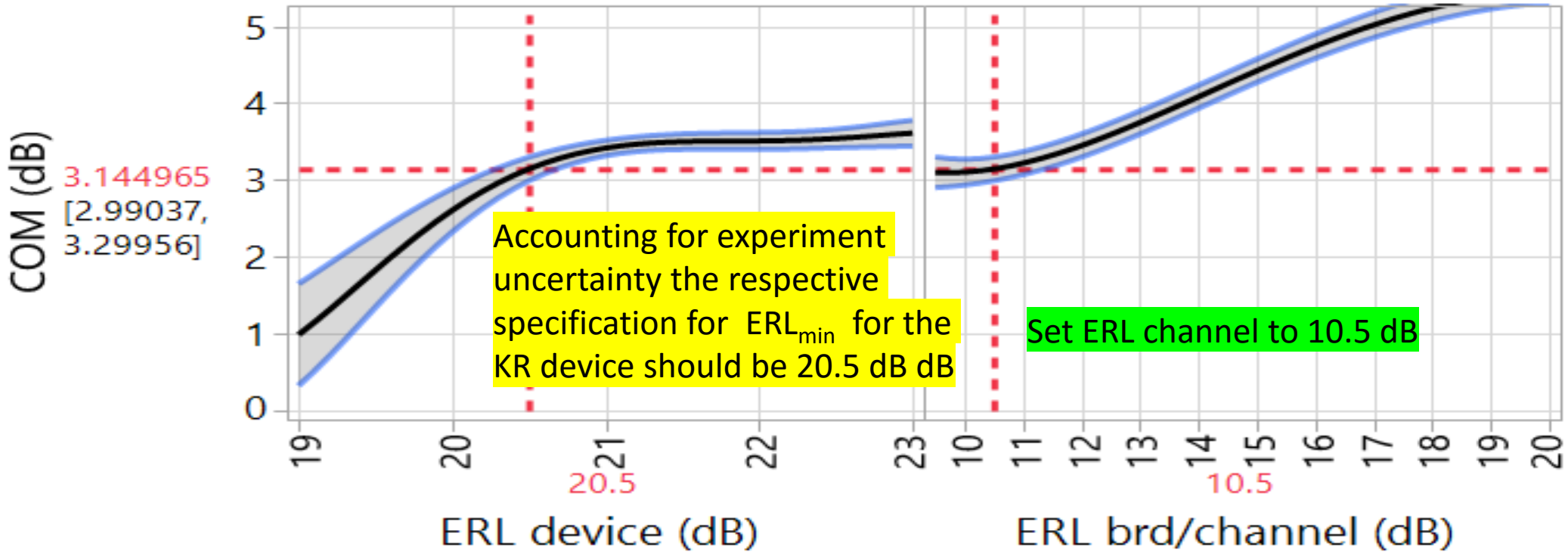
parameter	Reference	Value	Units
Transition time associated with a pulse	T_r	0.01	Ns
Incremental available signal loss factor	β_x	2.4	Ghz
Permitted reflection from a transmission line external to the device under test	ρ_x	0.19	
Length of the reflection signal	N	3000	UI
Equalizer length associated with reflection signal	N_{bx}	12	UI

ERL of the channel at TP0 and at TP5 are computed using the procedure in 93A.5 with the values in the table above

Channel ERL at TP0 and at TP5 shall be greater than or equal to 10.5 dB.

Setting ERL for the channel help suggest ERL for the device as shown in mellitz_3ck_adhoc_02_100219

Data from 2596 channel/package length cases



N_{bx} chosen to be 24 in also suggested in mellitz_3ck_adhoc_02_100219

ERL for devices (163.9.3.1 and 169.9.4.1)

parameter	Reference	Value	Units
Transition time associated with a pulse	T_r	0.01	Ns
Incremental available signal loss factor	β_x	2.4	Ghz
Permitted reflection from a transmission line external to the device under test	ρ_x	0.3	
Length of the reflection signal	N	3000	UI
Equalizer length associated with reflection signal	N_{bx}	24	UI

ERL of the channel into a device at TP0 and at TP5 are computed using the procedure in 93A.5 with the values in the table above

Channel ERL at TP0 and at TP5 shall be greater than or equal to 20.5 dB.

Recommendation

Until better data for actual products is available

- ❑ Use slide 5 and 7 for the KR ERL baseline

Thank You!