Consensus Building for ERL Limits

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IEEE 802.3 50 Gb/s, 100 Gb/s, and 200 Gb/s Ethernet Task Force
Electrical Ad Hoc
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Toc

- ❑ ERL proposal
- ❑ Option Review
- ❑ Action: Request for data
- ❑ Background Review: Making ERL Measurements (time permitting)

Overview of ERL proposal

Clause	ERL Min (dB) D3.2	ρ_x D3.2	β_x D3.2	N D3.2	ERL Min (dB) D3.2 comment	ρ_x D3.2 comment	β_x D3.2 comment	N D3.2 comment
136 Tx Host	$8 - 40\log_{10}\left(\frac{P_{max}}{V_f}\right)$	0.44	10.7	300	***see options***	**.3**	**1.7**	**300**
136 Rx Host	14.5	0.44	10.7	300	**12**	**.3**	**1.7**	**300**
136 Cable Assembly	11	0.44	10.7	1000	**10.5**	**.25**	**1.7**	**1000**
137 Tx Device	16.1	0.44	10.7	100	**15**	**.32**	**1.7**	**100**
137 Rx Device	16.1	0.44	10.7	100	**15**	**0.32**	**1.7**	**100**
137 Channel	10	0.44	10.7	300	**10**	**0.18**	**1.7**	**1000**

Review: CL 136 Tx Host Reflection Control from mellitz_3cd_01_042518_elect_adhoc

- Recommend changes for and Grr, β_x, ρ_x and N in slide 3[1,2] but consider the following options:
- Option 1:
  - $SNR_{isi} > 31.5$ dB
- Option 2:
  - $ERL_{Tx} > x - 40*\log10(P_{max}/V_f)$ dB
- Option 3: Keep ERL for Tx and Rx the same
  - ERL > 12 dB ⟵ My Present Choice

Can we cross any more out today?

[1]http://www.ieee802.org/3/cd/public/adhoc/archive/mellitz_041818_3cd_adhoc.pdf
[2]http://www.ieee802.org/3/cd/public/adhoc/archive/mellitz_040418_3cd_adhoc-v2.pdf

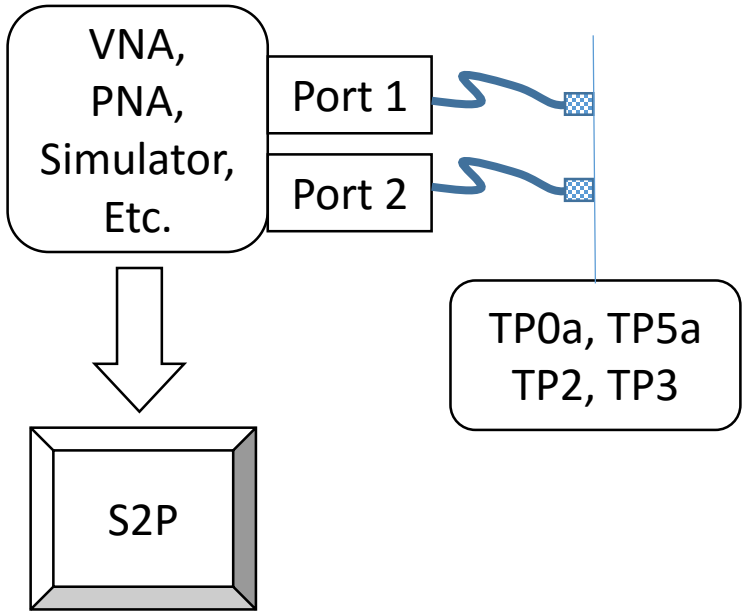
Action: Interested parties provide data for the following minimum ERL limits (Some have provided already)

Clause	Configuration spread sheet	
136 Tx Host	config_com_ieee8023_93a=50GBASE-CR_host_cdD3p2cmt_ERL_ONLY_S2P.xls	
136 Rx Host	config_com_ieee8023_93a=50GBASE-CR_host_cdD3p2cmt_ERL_ONLY_S2P.xls	
136 Cable Assembly	config_com_ieee8023_93a=50GBASE-CR_cdD3p2cmt.xls	
137 Tx Device	config_com_ieee8023_93a=50GBASE-KR_DEVICE_cdD3p2cmt_ERL_ONLY_S2P.xls	
137 Rx Device	config_com_ieee8023_93a=50GBASE-KR_DEVICE_cdD3p2cmt_ERL_ONLY_S2P.xls	
137 Channel	config_com_ieee8023_93a=50GBASE-KR_cdD3p2cmt.xls	

Background Review: Making ERL Measurements

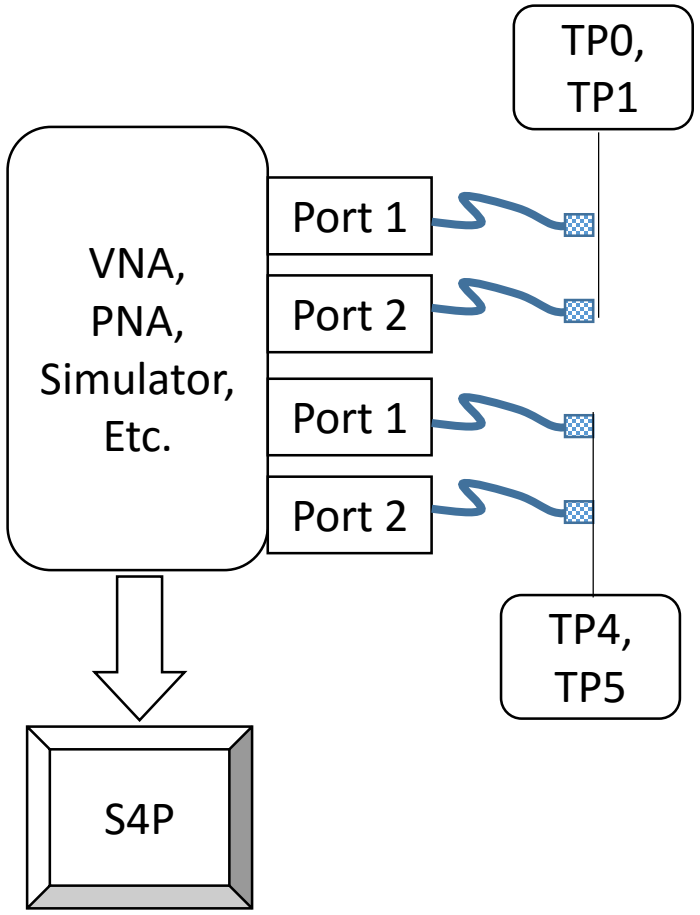
Two port S-Parameters (like for return loss)

Clause	Configuration spread sheet
136 Tx Host	config_com_ieee8023_93a=50GBASE-CR_host_cdD3p2cmt_ERL_ONLY_S2P.xls
136 Rx Host	config_com_ieee8023_93a=50GBASE-CR_host_cdD3p2cmt_ERL_ONLY_S2P.xls
136 Cable Assembly	config_com_ieee8023_93a=50GBASE-CR_cdD3p2cmt.xls
137 Tx Device	config_com_ieee8023_93a=50GBASE-KR_DEVICE_cdD3p2cmt_ERL_ONLY_S2P.xls
137 Rx Device	config_com_ieee8023_93a=50GBASE-KR_DEVICE_cdD3p2cmt_ERL_ONLY_S2P.xls
137 Channel	config_com_ieee8023_93a=50GBASE-KR_cdD3p2cmt.xls



Four port S-Parameters (like for return loss)

Clause	Configuration spread sheet
136 Tx Host	config_com_ieee8023_93a=50GBASE-CR_host_cdD3p2cmt_ERL_ONLY_S2P.xls
136 Rx Host	config_com_ieee8023_93a=50GBASE-CR_host_cdD3p2cmt_ERL_ONLY_S2P.xls
136 Cable Assembly	**config_com_ieee8023_93a=50GBASE-CR_cdD3p2cmt.xls**
137 Tx Device	config_com_ieee8023_93a=50GBASE-KR_DEVICE_cdD3p2cmt_ERL_ONLY_S2P.xls
137 Rx Device	config_com_ieee8023_93a=50GBASE-KR_DEVICE_cdD3p2cmt_ERL_ONLY_S2P.xls
137 Channel	**config_com_ieee8023_93a=50GBASE-KR_cdD3p2cmt.xls**



Thank You!

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