Return Loss

IEEE 802.3dm

AdHoc

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Overview

- Return Loss curves for different parts
- Return Loss consideration in the system
- Comparison

In-depth Presentations in 802.3dm

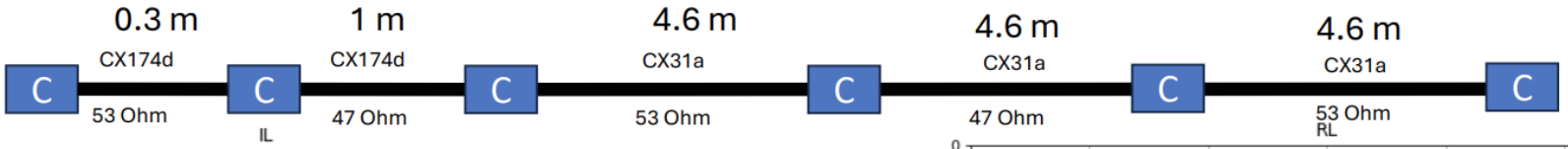
- Detailed analyses of Return Loss of cable harness
  - https://ieee802.org/3/dm/public/0924/bergner_3dm_01a_18_09_24.pdf
  - https://ieee802.org/3/dm/public/0724/Zerna_802.3dm_01b_240717_IL_RL_Limits.pdf
  - https://ieee802.org/3/dm/public/0724/mueller_3dm_01a_07_01_24.pdf
  - https://ieee802.org/3/dm/public/1124/Zerna_802.3dm_01a_241110_CableHarness.pdf

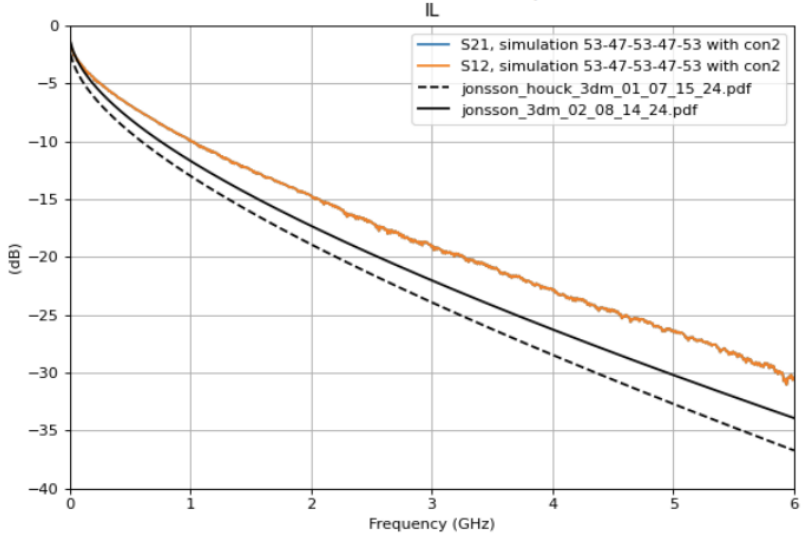
In-depth Presentations in 802.3dm

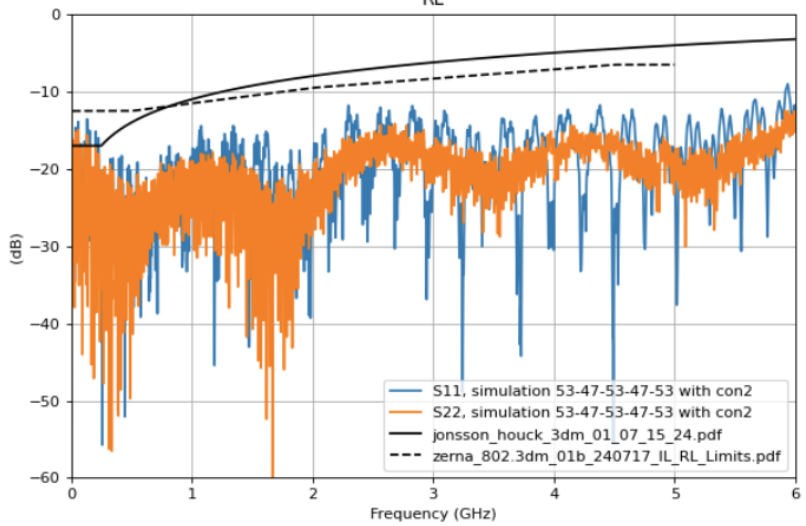
- https://ieee802.org/3/dm/public/0924/bergner_3dm_01a_18_09_24.pdf
- Connector parameters drive high frequency behavior
- Cable parameters drive low frequency behavior

Link Segment Simulation, w/ Connectors

Connector Model Con2 (model better than USCAR49 limit)

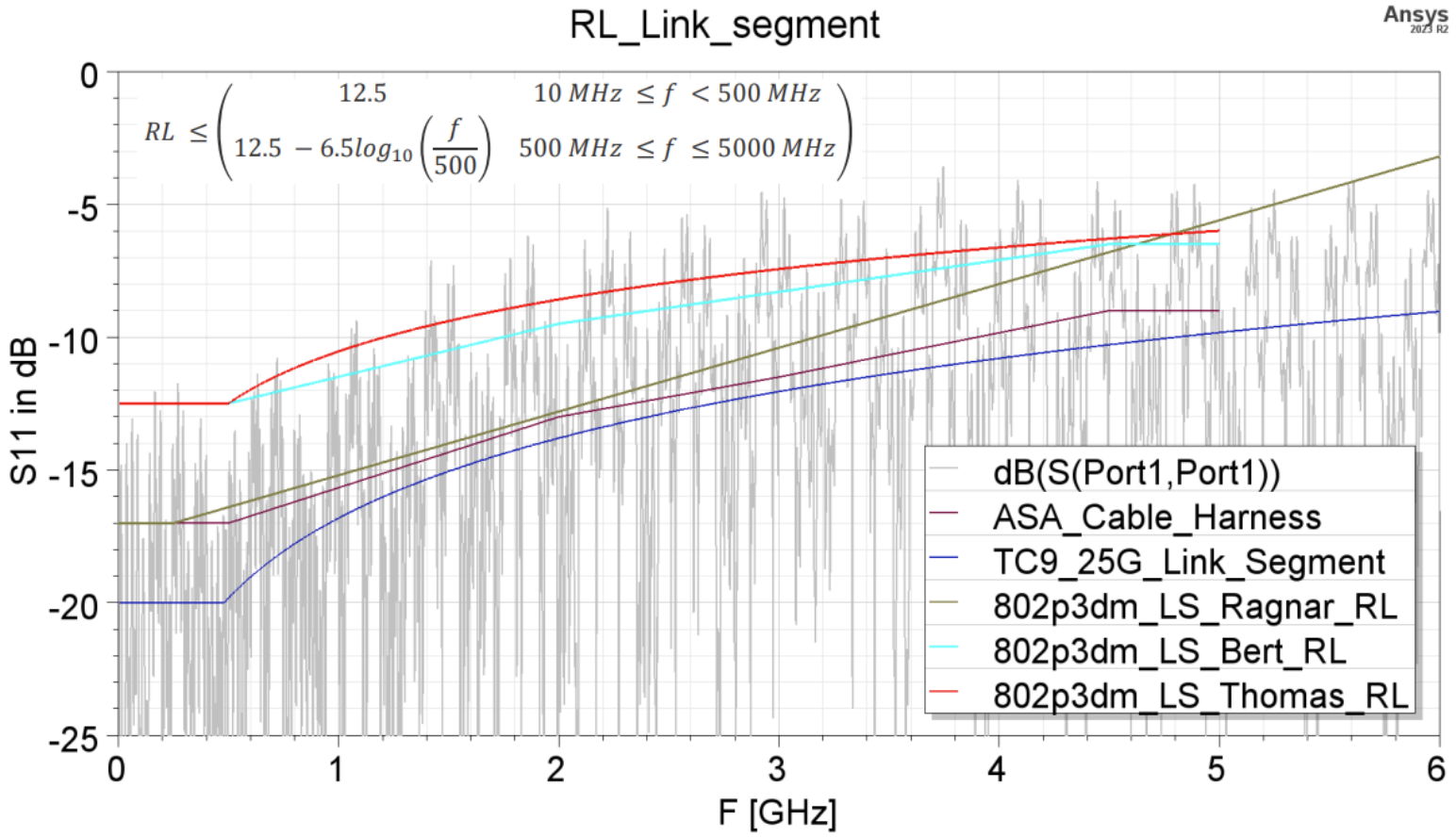






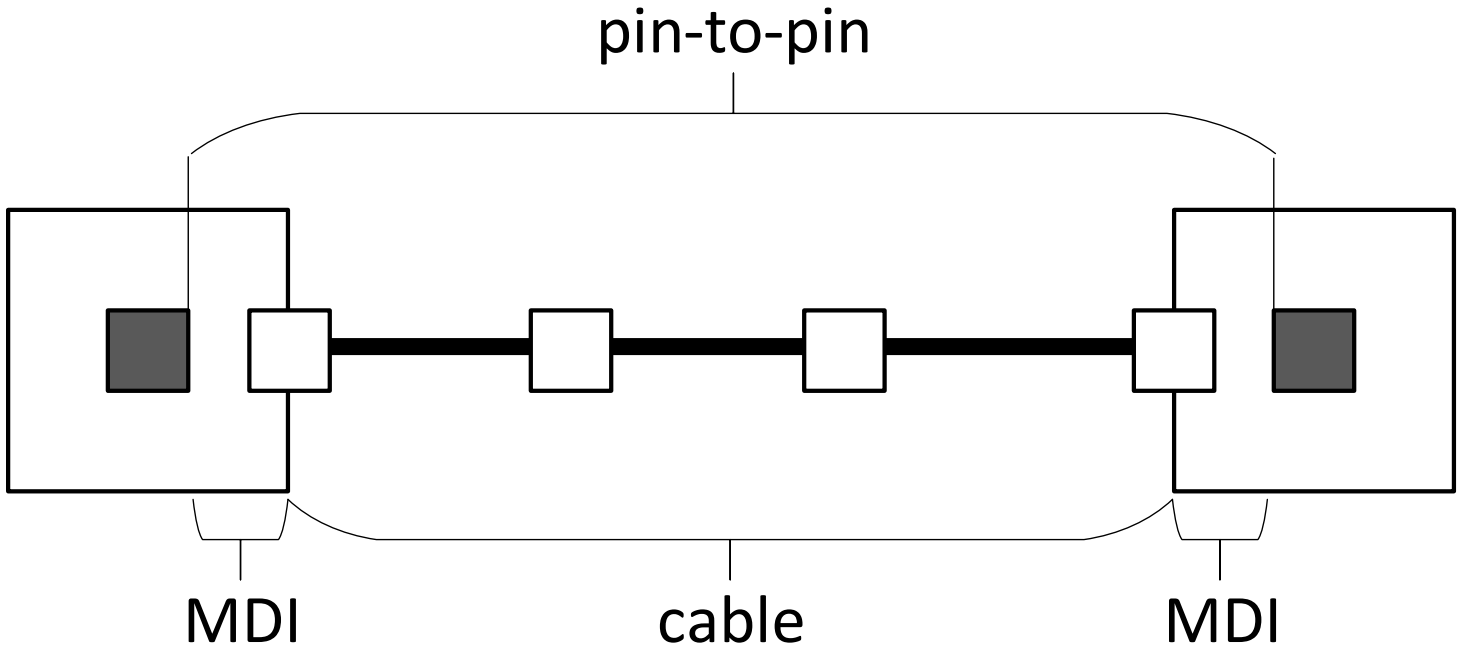
In-depth Presentations in 802.3dm

- https://ieee802.org/3/dm/public/0724/mueller_3dm_01a_07_01_24.pdf
- Connector / assembly experts are in agreement



Return Loss in the System

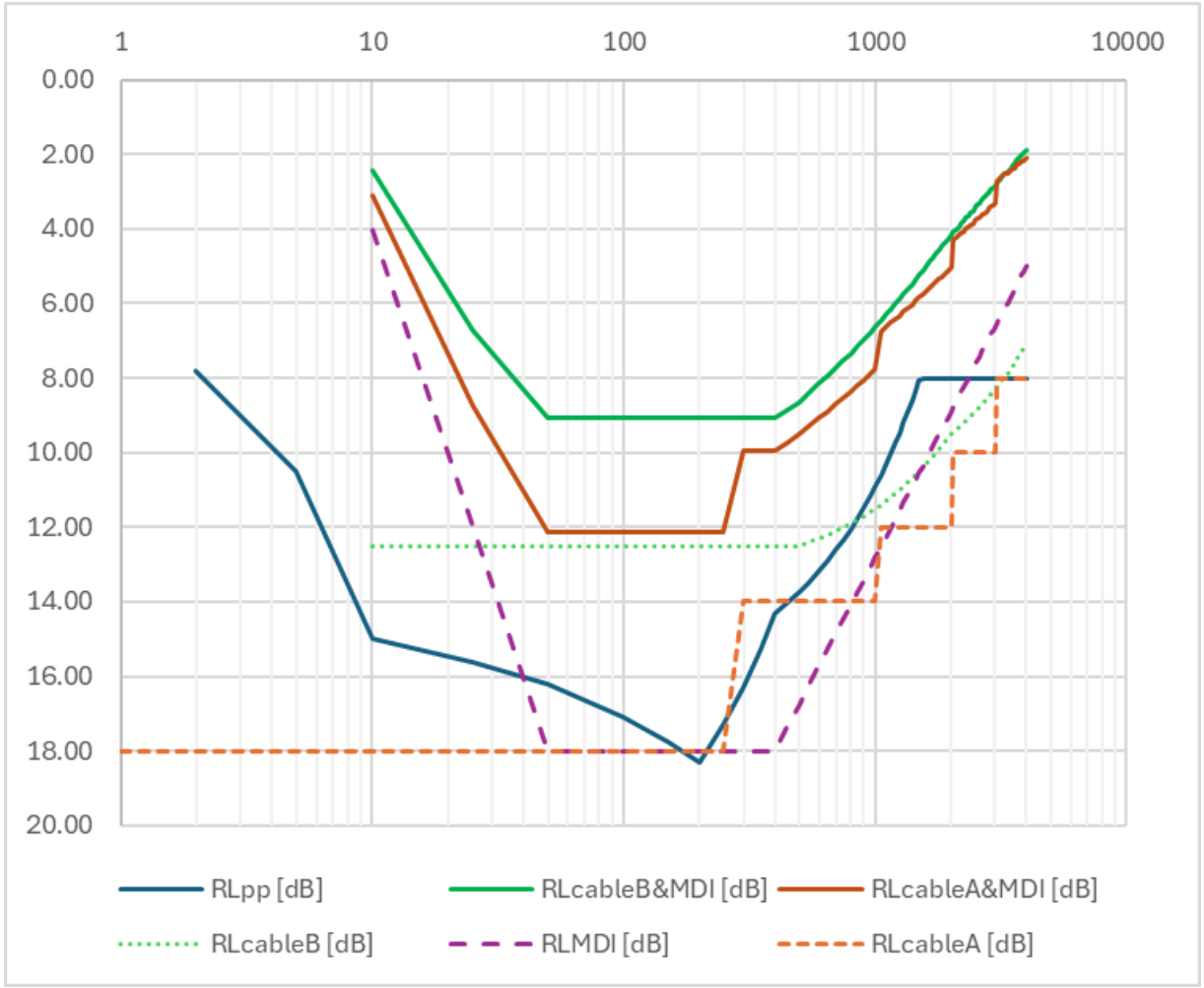
- MDI return loss baseline adopted
- Several cable RL proposed
- System level consideration has to be given for total link



Return Loss in the System

- MDI return loss baseline adopted
- Several cable RL proposed
- System level consideration has to be given for total link (point-to-point)

- Simplified interfacing calculation, cable&MDI curves are worst case upper limits
- Deployed system limit



Return Loss in the System

- MDI return loss must be combined with cable return loss to evaluate system impact
- Achieving very low reflected power means high/costly requirements on system parts

	Deployed System	**CableA proposal**	**CableB proposal**
Technical feasibility of channel	yes	yes	yes
System cost	Highest	High	Lowest
Comment	Very easy channel in low- to mid-frequency range	Non-trivial channel in low- to mid-frequency range	Tougher channel in low- to mid-frequency range

Thank You!