Coupling & shielding attenuation

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September 2018

Supporters

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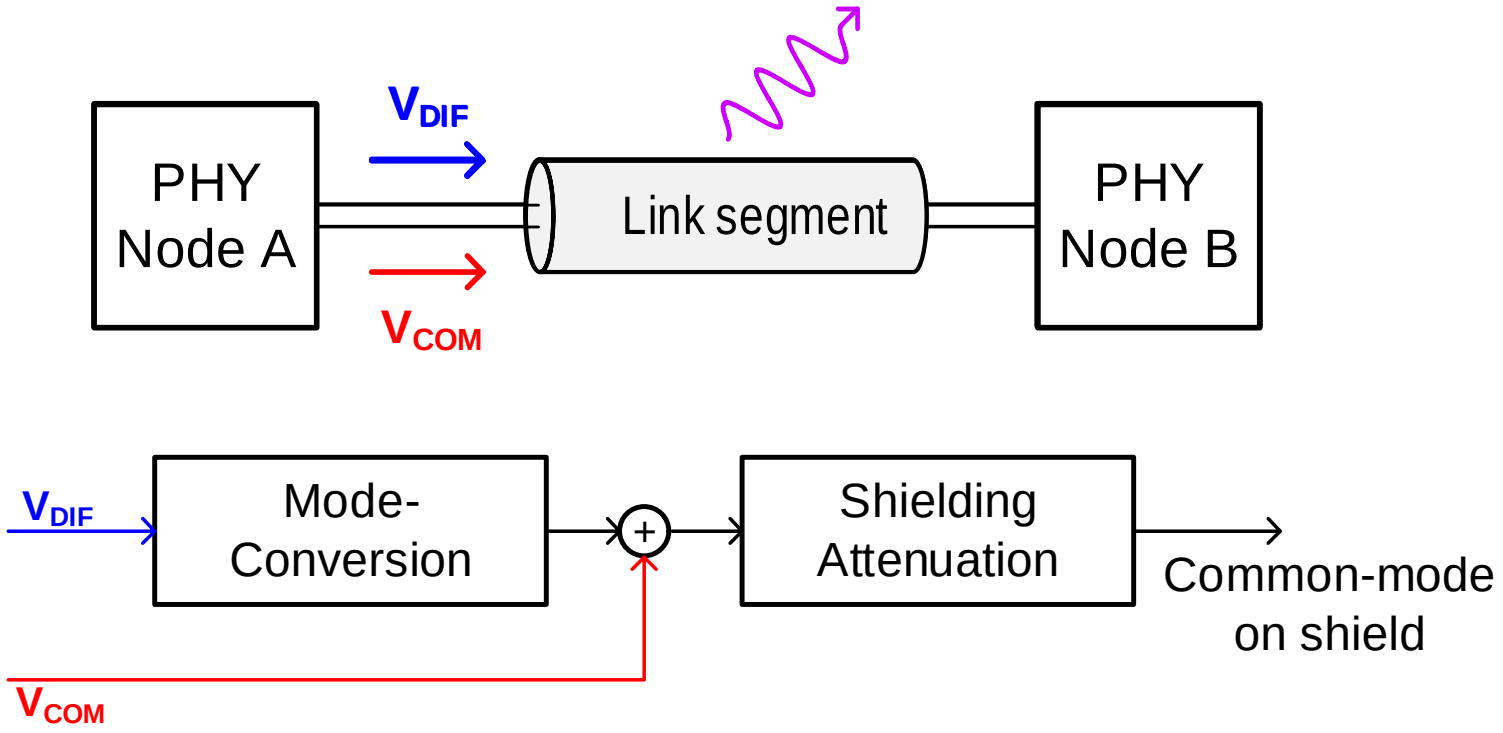
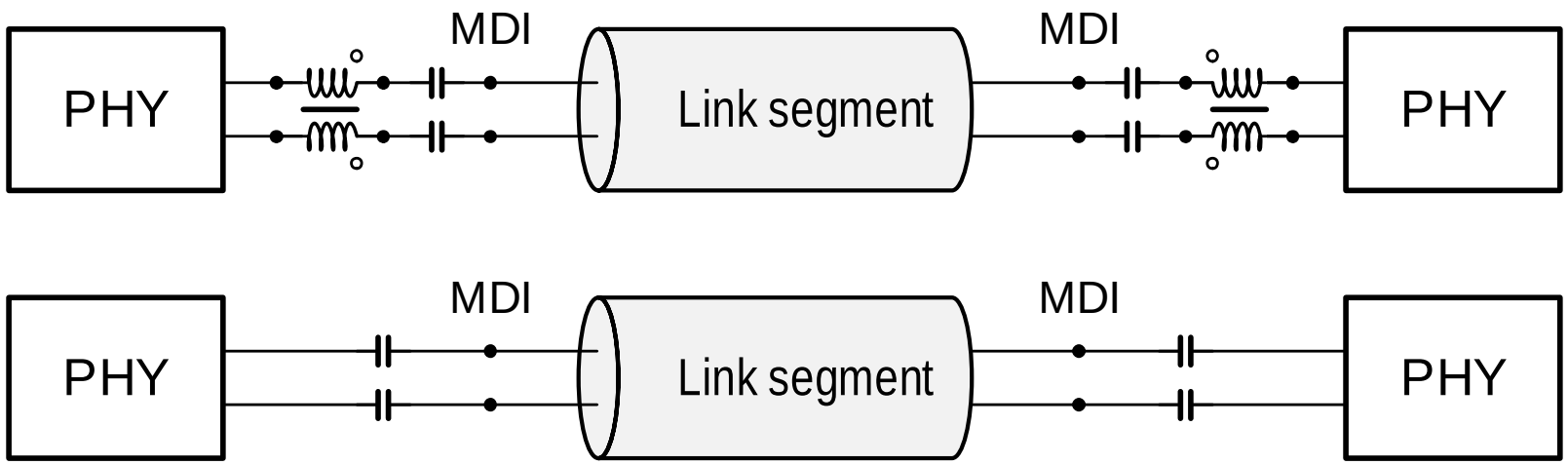
Problem statement



- Coupling-attenuation is about radiation caused by Vdif
- Vcom from transceiver module will not be zero
- We need to specify shielding attenuation separately

Common-mode handling

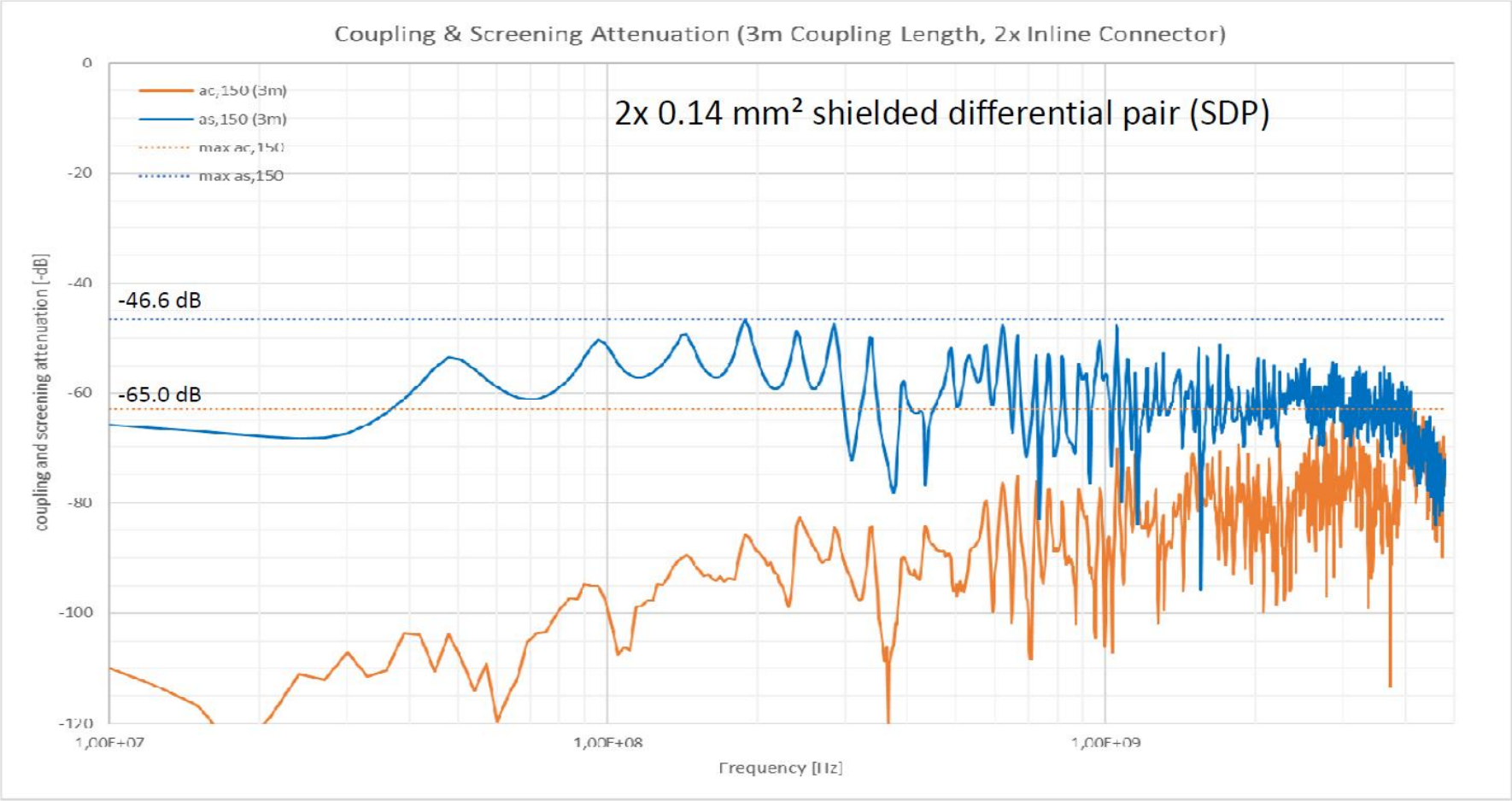


- Higher-speed PHYs produce more common-mode content
- A choke suppresses that, but a good choke might be hard to make for 5.6Gbaud
- Without choke it goes straight to the link segment and gets only suppressed by shielding attenuation

Other choke considerations

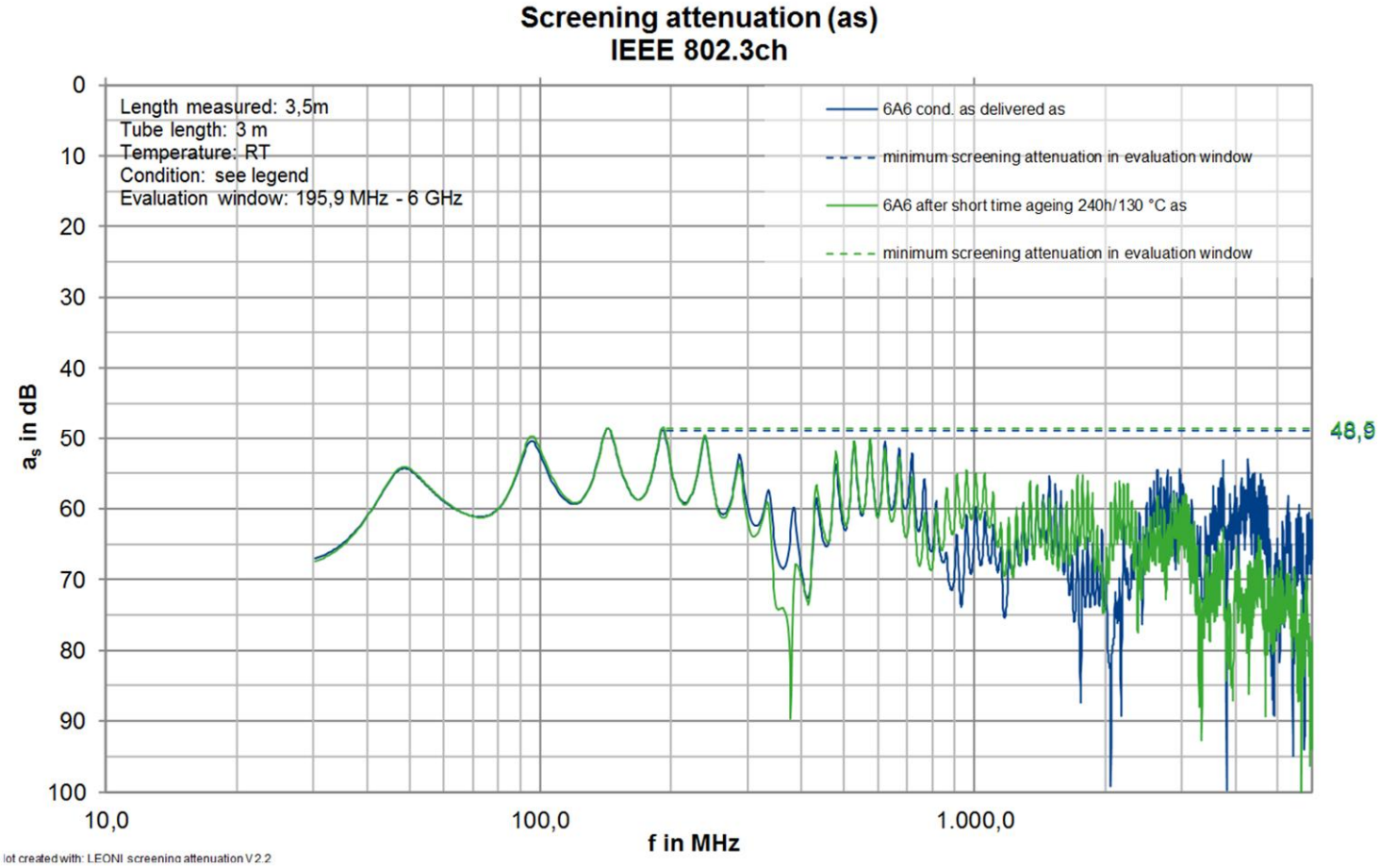
- Given the shielded cable, the choke might not really be necessary from immunity perspective
  - if shielding attenuation can be guaranteed to be sufficient

Previously measured results (I)



- DiBiaso_Bergner_3ch_01_1117.pdf
- Shielding attenuation > 45dB

Recently measured results



- Courtesy to Leoni for providing measurement data
- Shielding attenuation >45dB
  - Before and after aging

Consequences

- Common-mode attenuation of 45dB is very similar to mid-range frequency common-mode suppression of 100BASE-T1 and 1000BASE-T1
- Shielding attenuation does provide attenuation over the whole spectrum
- This level of shielding attenuation may enable 10Gbps without chokes
- 2.5Gbps should be considered separately
  - want to enable reduced cost compared to 10Gbps link segments
- Propose to adopt >45dB shielding attenuation for 5/10Gbps

Motion

Motion

- Move to adopt a shielding attenuation requirement for 5/10Gbps operation of >45dB for f=5-5500MHz
- M:
- S:
- Technical >= 75%)
- Y: N: A:
- Motion …

Motion

- Move to adopt ...
- M:
- S:
- Technical >= 75%)
- Y: N: A:
- Motion …