



25G Direct Attach Copper (DAC)

**Do we need any changes
from 100GBASE-CR4?**

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Overview

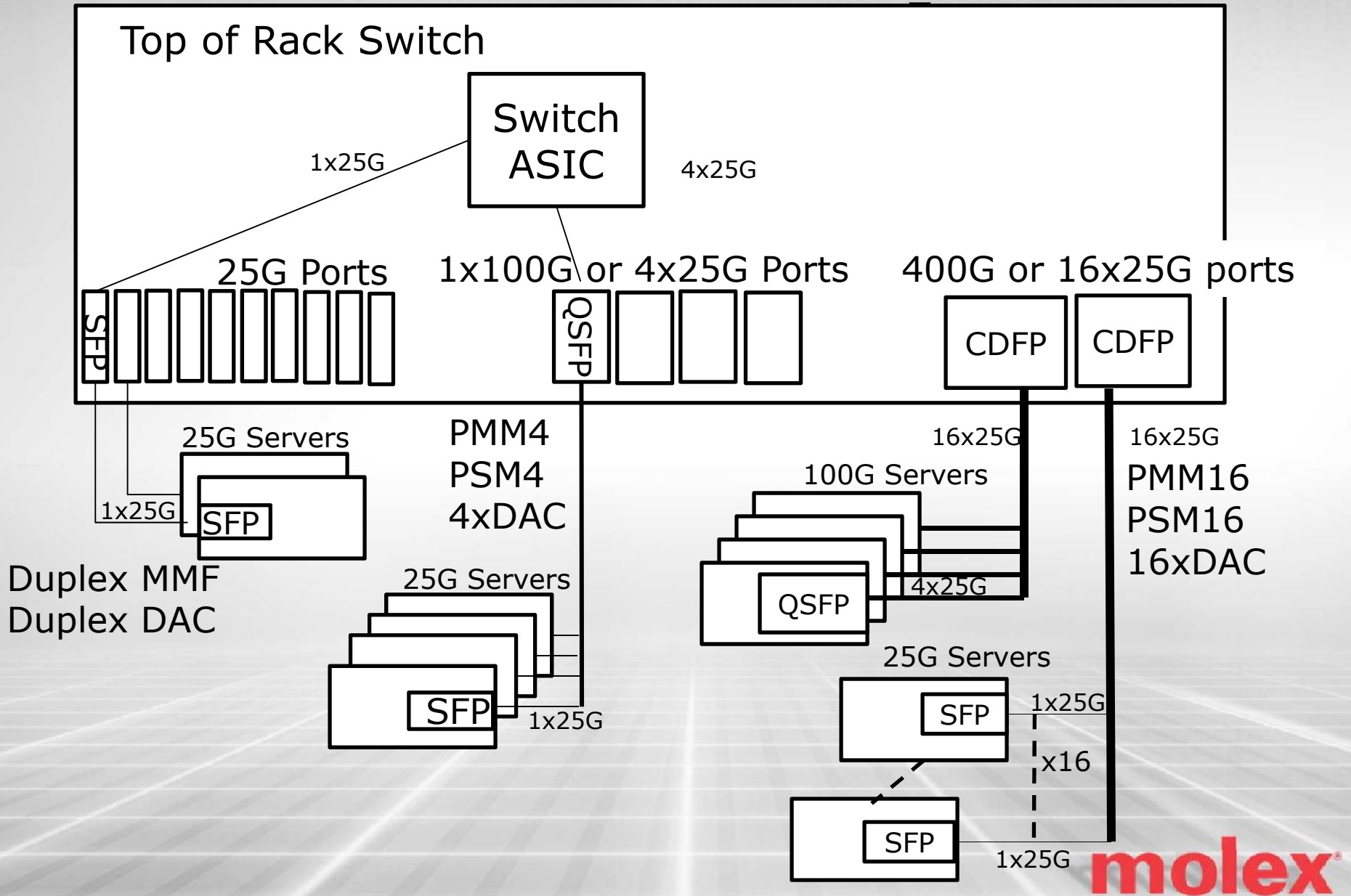
➤ **25G Ethernet media will include new twinax cable types not defined by bj.**

- QSFP to 4xSFP breakout cables
- SFP to SFP duplex cables
- CDFP to 4xQSFP?
- CDFP to 16xSFP?

➤ **Can we use bj specifications or do we need updates?**

- Insertion Loss, Return Loss, ICN, ILD etc

25G DAC Media options



Changes from CR4 to 25G Ethernet

1) Cable distances:

– CR4:

- 5m 24 AWG with FEC

– 25G Ethernet:

- 5m 24 AWG with FEC
- 3m 24 AWG w/o FEC
- 3m 30 AWG with FEC

Changes from CR4 to 25G Ethernet

2) MDI:

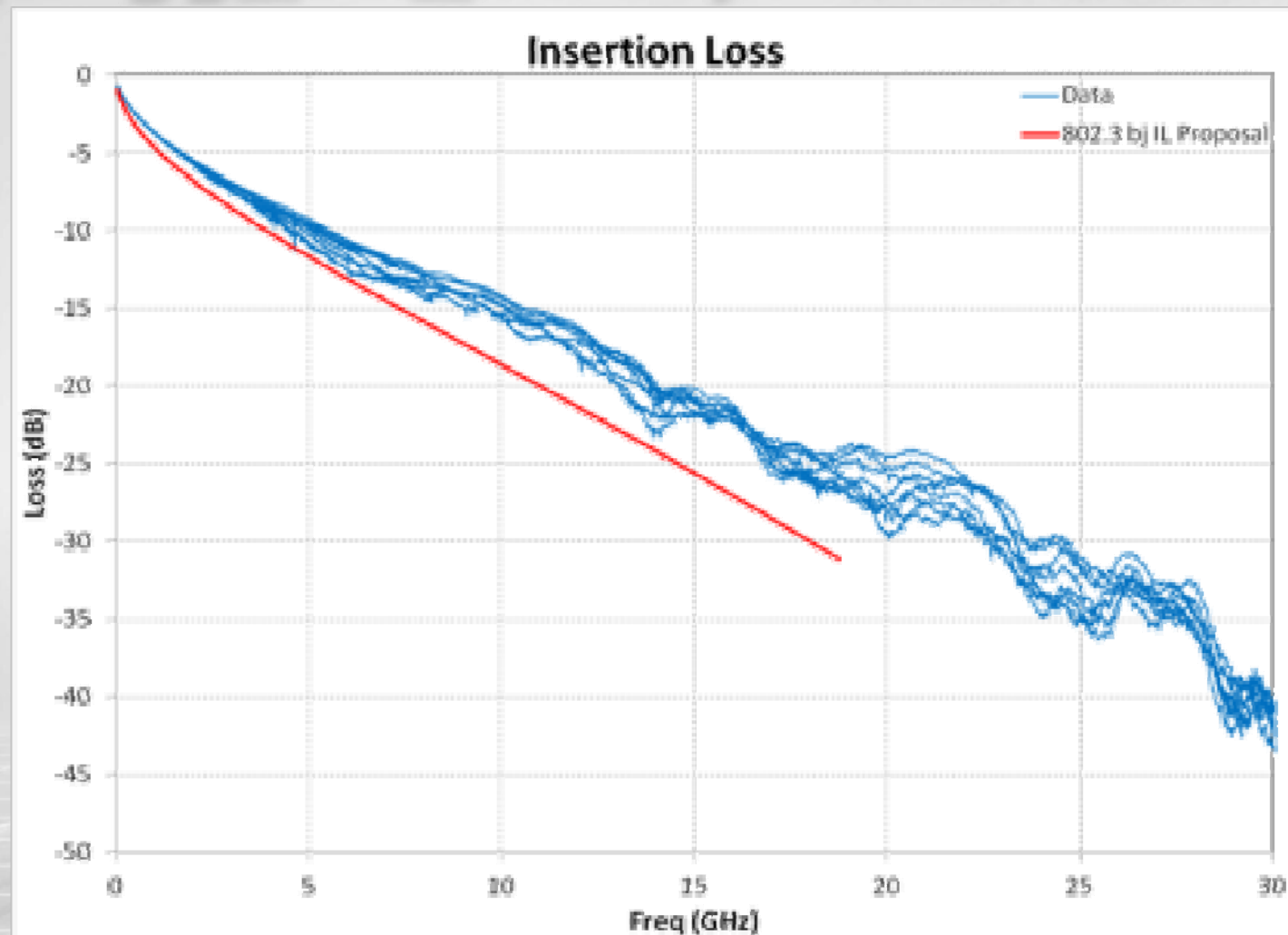
- CR4:
 - QSFP to QSFP
- 25G Ethernet
 - QSFP to 4xSFP
 - SFP to SFP
 - CDFP to 4xQSFP
 - CDFP to 16xSFP

Changes from CR4 to 25G Ethernet

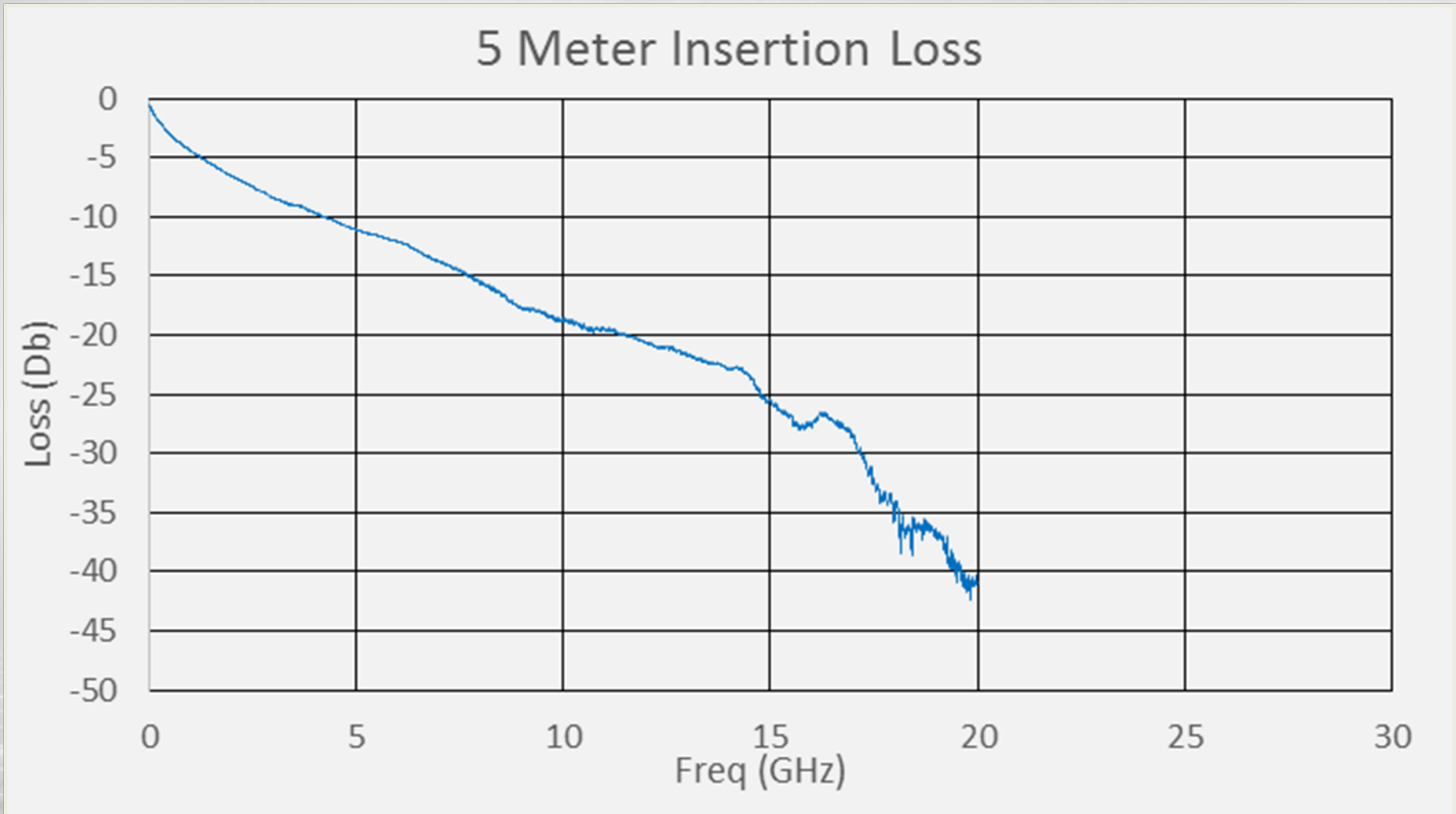
3) Host trace distance

- CR4:
 - 4 in/100mm
- 25G Ethernet
 - 6-8in/150-200mm?
 - Asymmetric?

5m 24 AWG CR4 QSFP cables (bugg_03_0112)



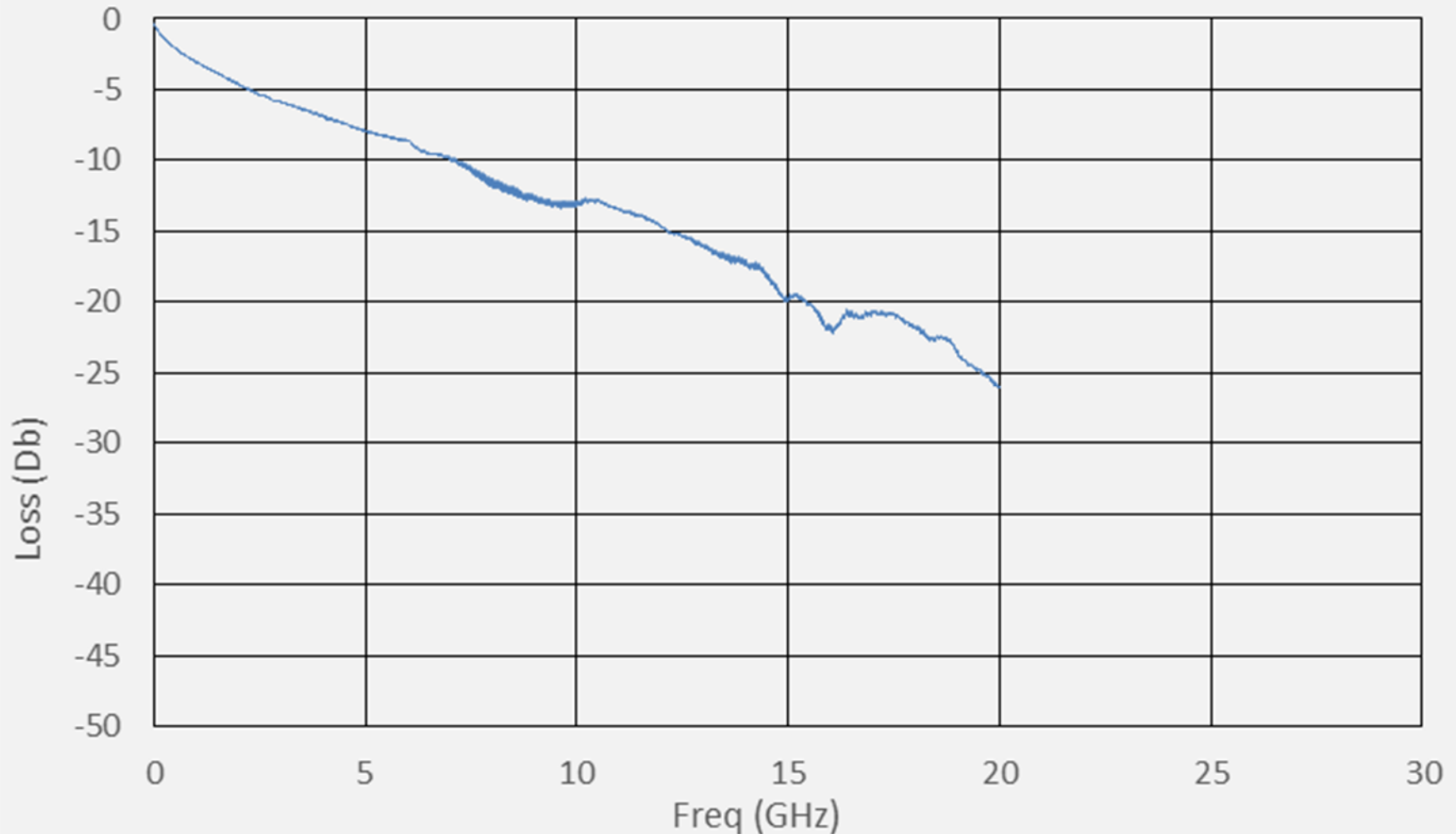
5m 25 AWG SFP to SFP cable



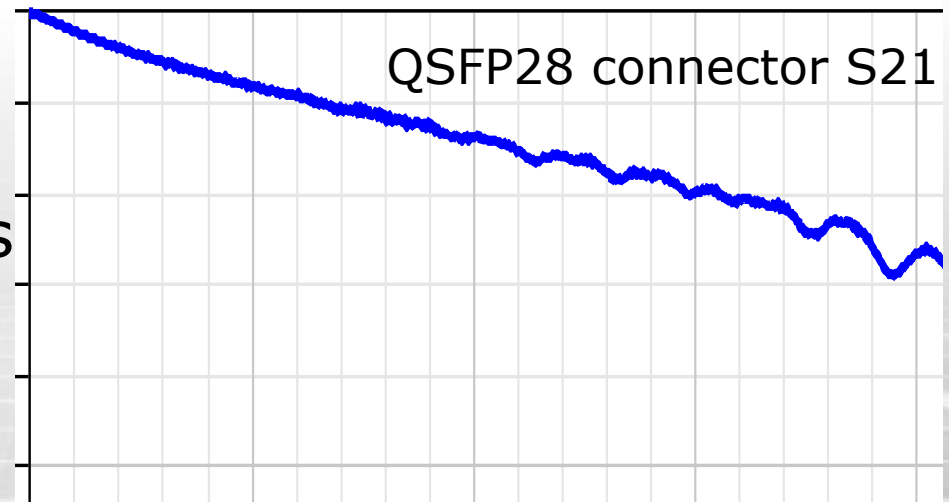
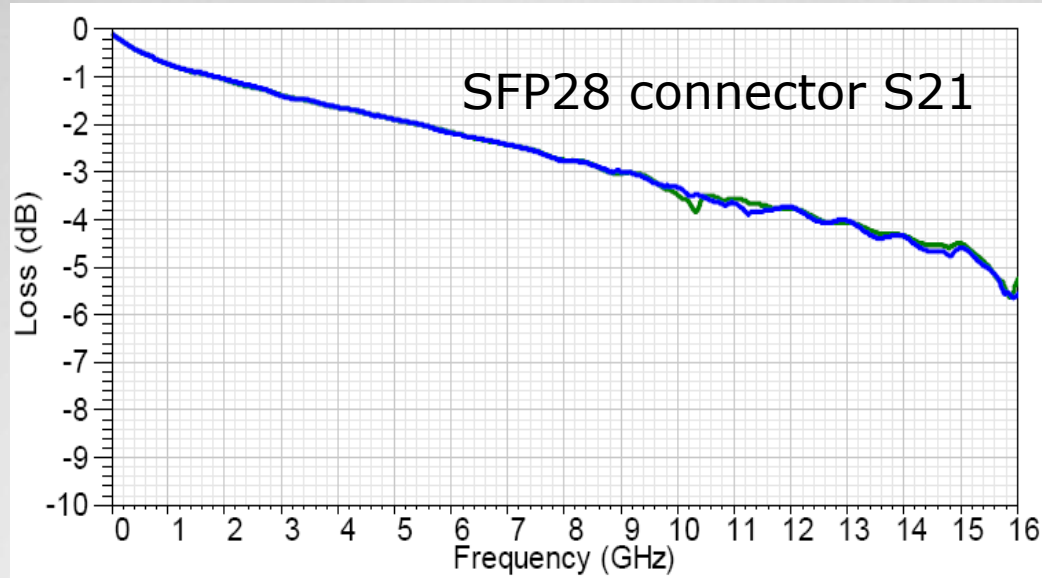
Note: 3m 30 AWG loss looks similar

3m 25 AWG SFP to SFP cable

3 Meter Insertion Loss



S parameter comparison for Single lane (SFP) vs Four lane (QSFP)



SFP and QSFP connectors have the same insertion loss

What about Return Loss/ICN/ILD for new cable types?

- **Preliminary data says we may need minor changes due to SFP/CDFP connectors/cables.**