
802.3by 25 Gb/s Task Group Considerations for Test Fixture Specifications

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Purpose

- Considerations for 802.3by 25 Gb/s test fixture specifications.
- Update to diminico_25GE_01_1114.pdf achievability of SFP28 mated test fixtures HFSS models.
- Measurements of SFP28 mated test fixtures compared to IEEE 802.3bj, Fibre Channel MSQS-2 mated test fixture specifications and OIF_CEI_3.1
- Make progress on test fixture specifications pending other PMD/PHY decisions.

25 Gb/s Ethernet – Test Fixtures

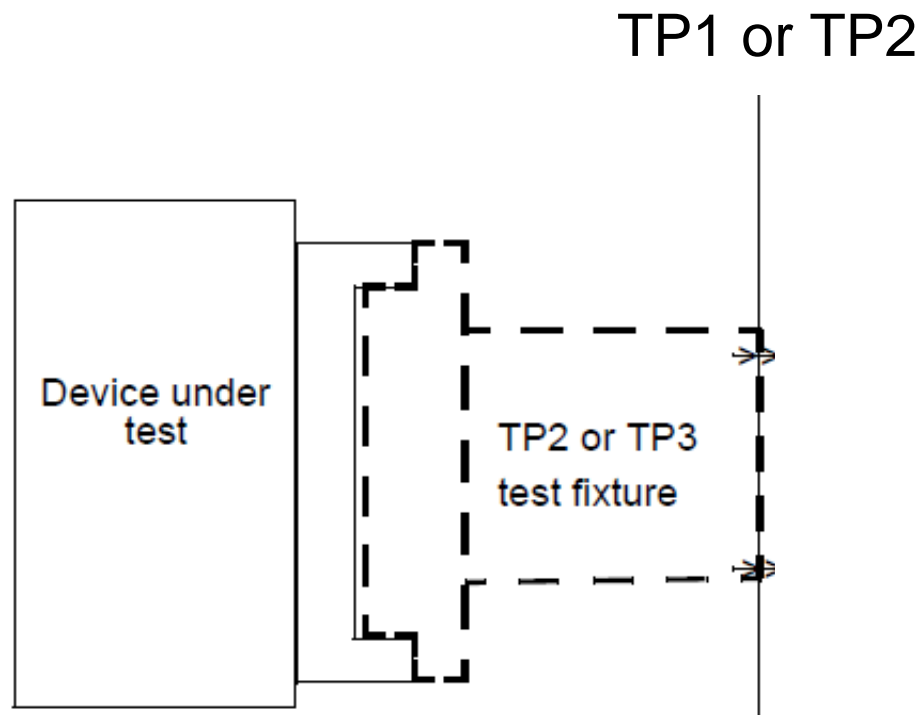
- 802.3bj clause 92

- 92.11 Test Fixtures

- 92.11.1 TP2 or TP3 test fixtures (Host Compliance Boards)

- 92.11.1.1 Test fixture return loss (Mated)

- 92.11.1.2 Test fixture insertion loss (PCB reference insertion loss)



25 Gb/s Ethernet – Test Fixtures

- 802.3bj clause 92

- 92.11.2 Cable assembly test fixture (Module Compliance Board)

- >>>PCB reference insertion loss

- 92.11.3 Mated test fixtures

- 92.11.3.1 Mated test fixtures insertion loss

- >>>Figure of merit insertion loss deviation FOMILD

- 92.11.3.2 Mated test fixtures return loss

- 92.11.3.3 Mated test fixtures common-mode conversion loss

- 92.11.3.4 Mated test fixtures common-mode return loss

- 92.11.3.5 Mated test fixtures common-mode to differential-mode return loss

- 92.11.3.6 Mated test fixtures integrated crosstalk noise

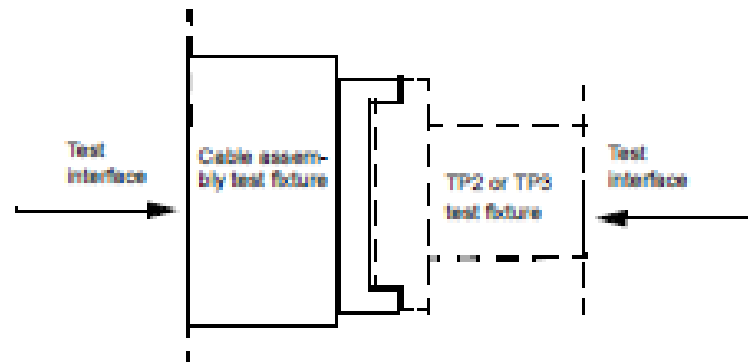
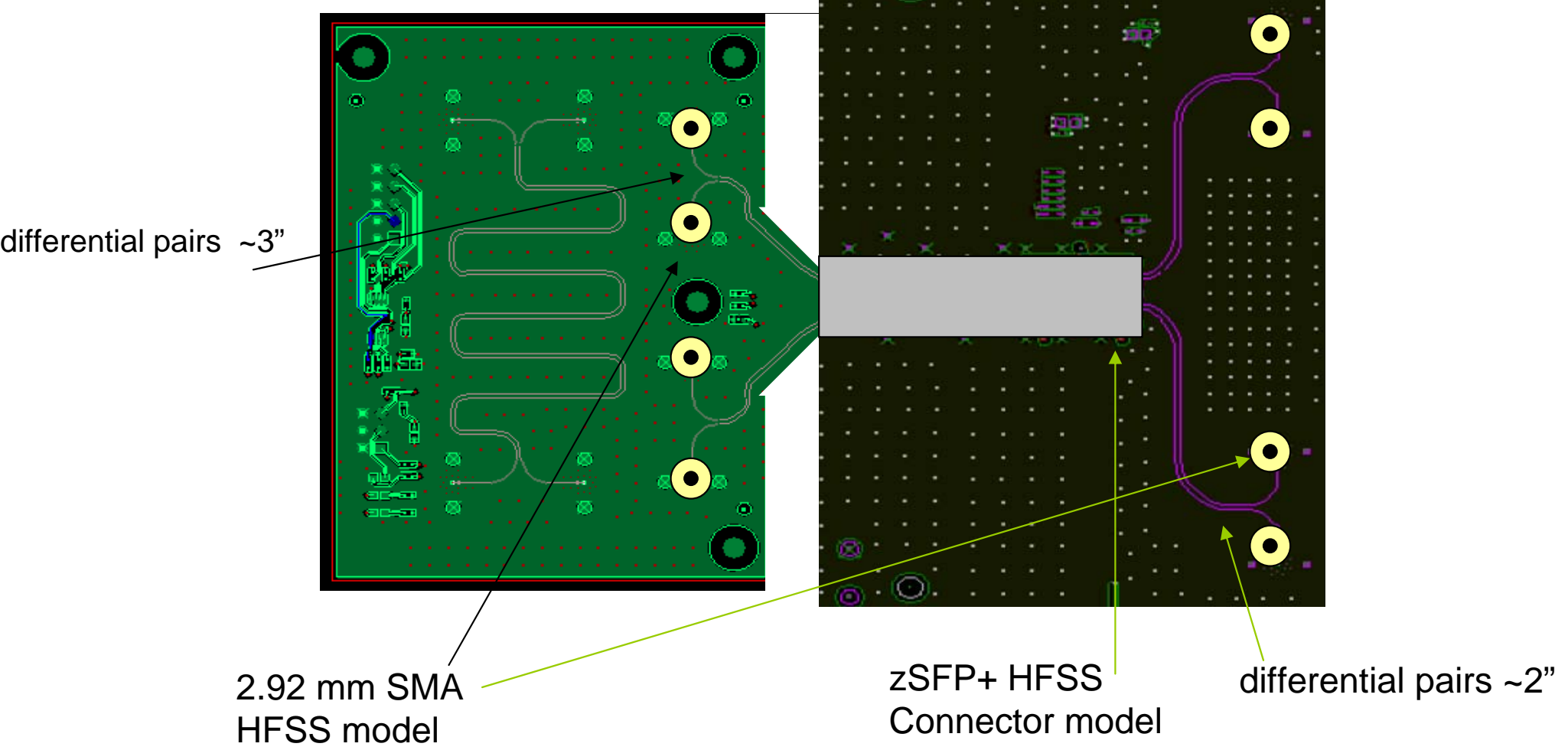


Figure 92-18—Mated test fixtures

zSFP+ mated test fixture HFSS model

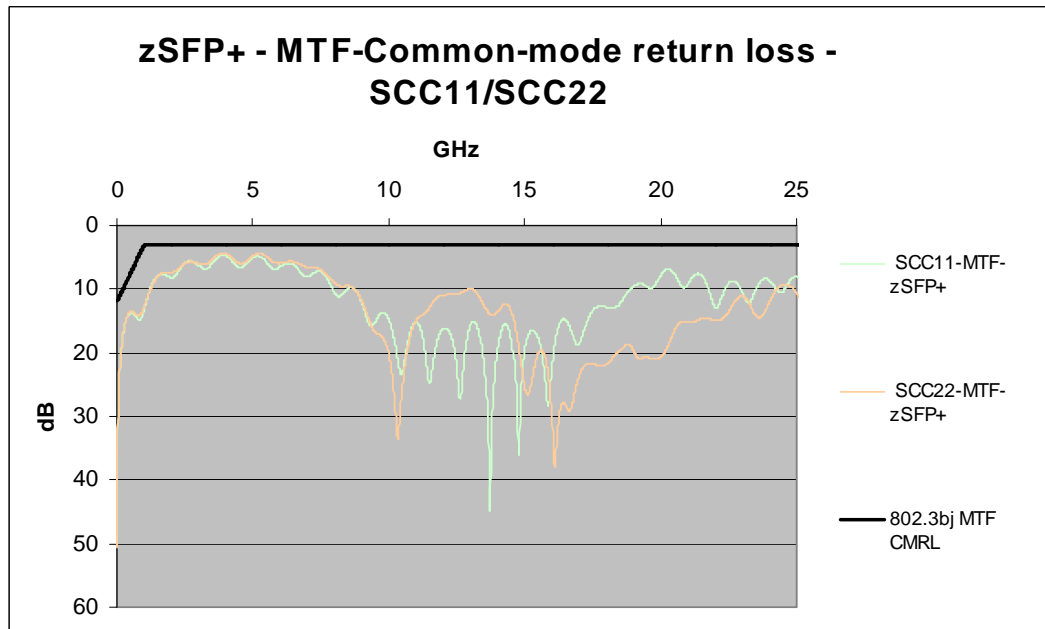
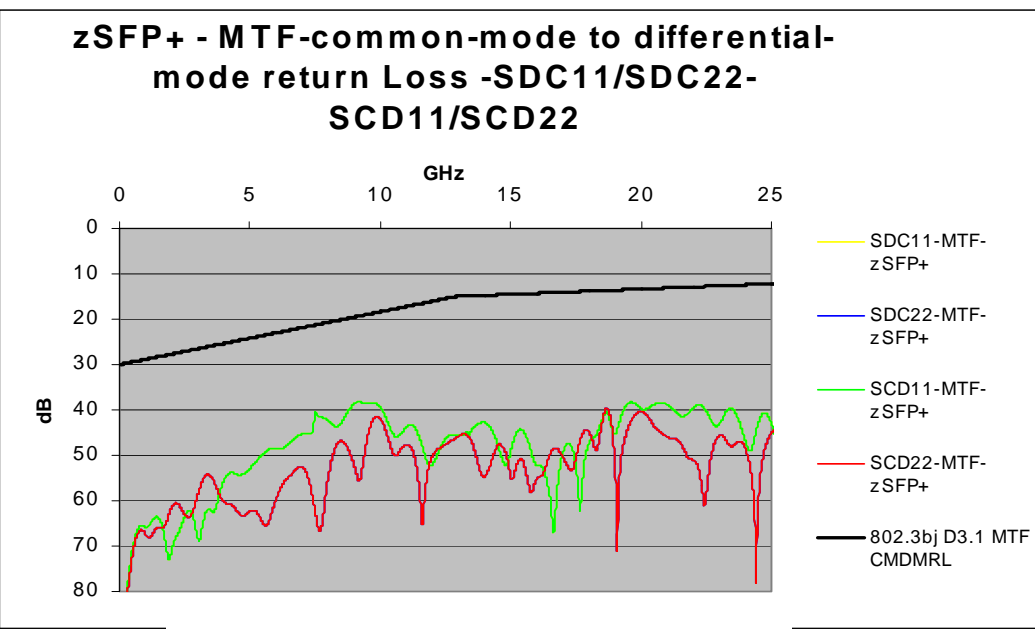
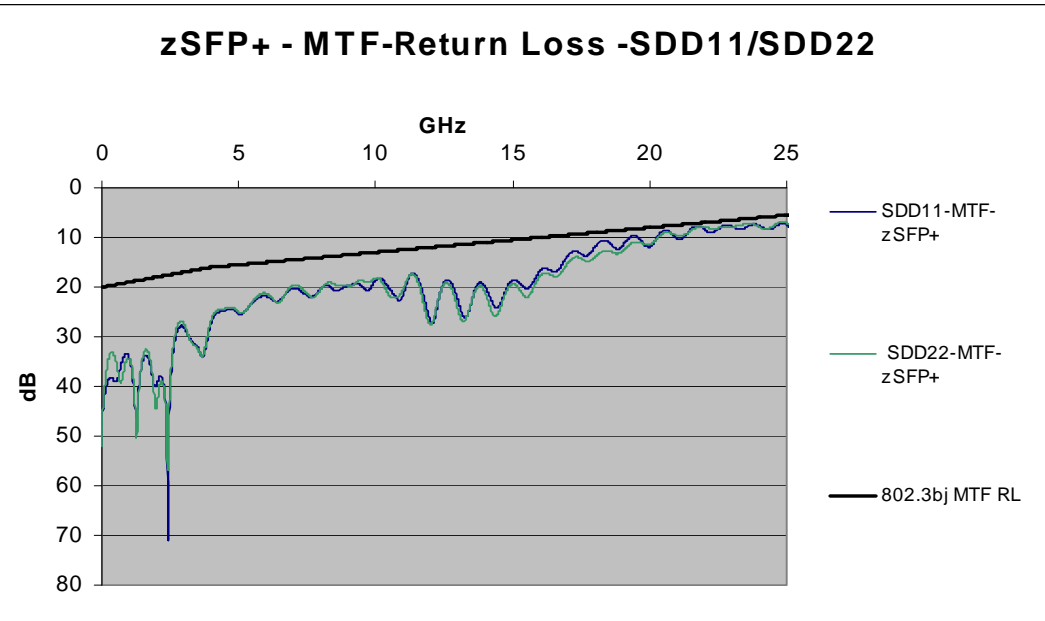
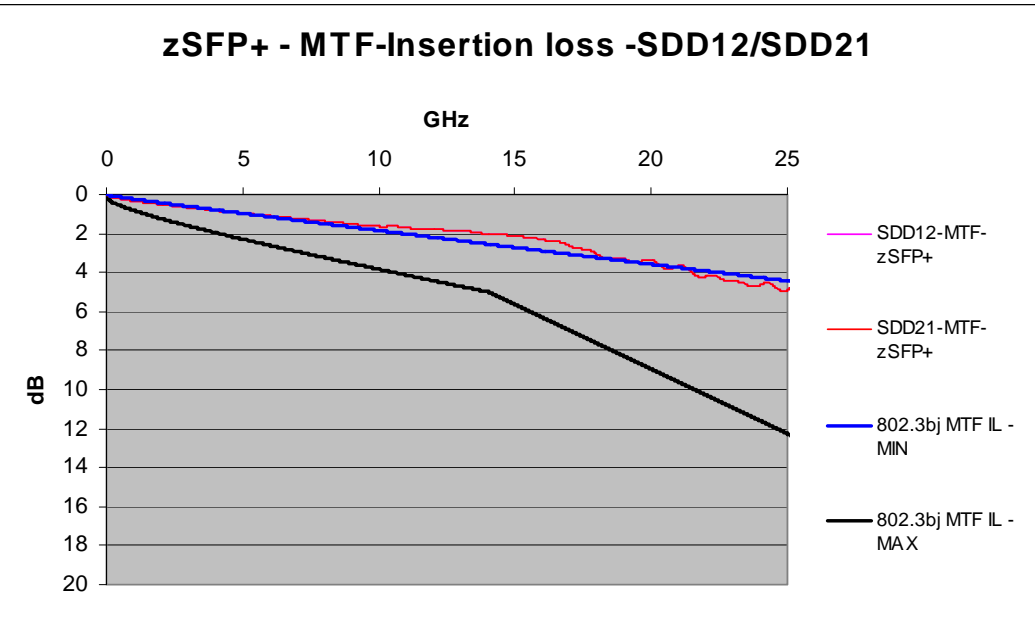
HCB HFSS model from board files

MCB HFSS model from board files



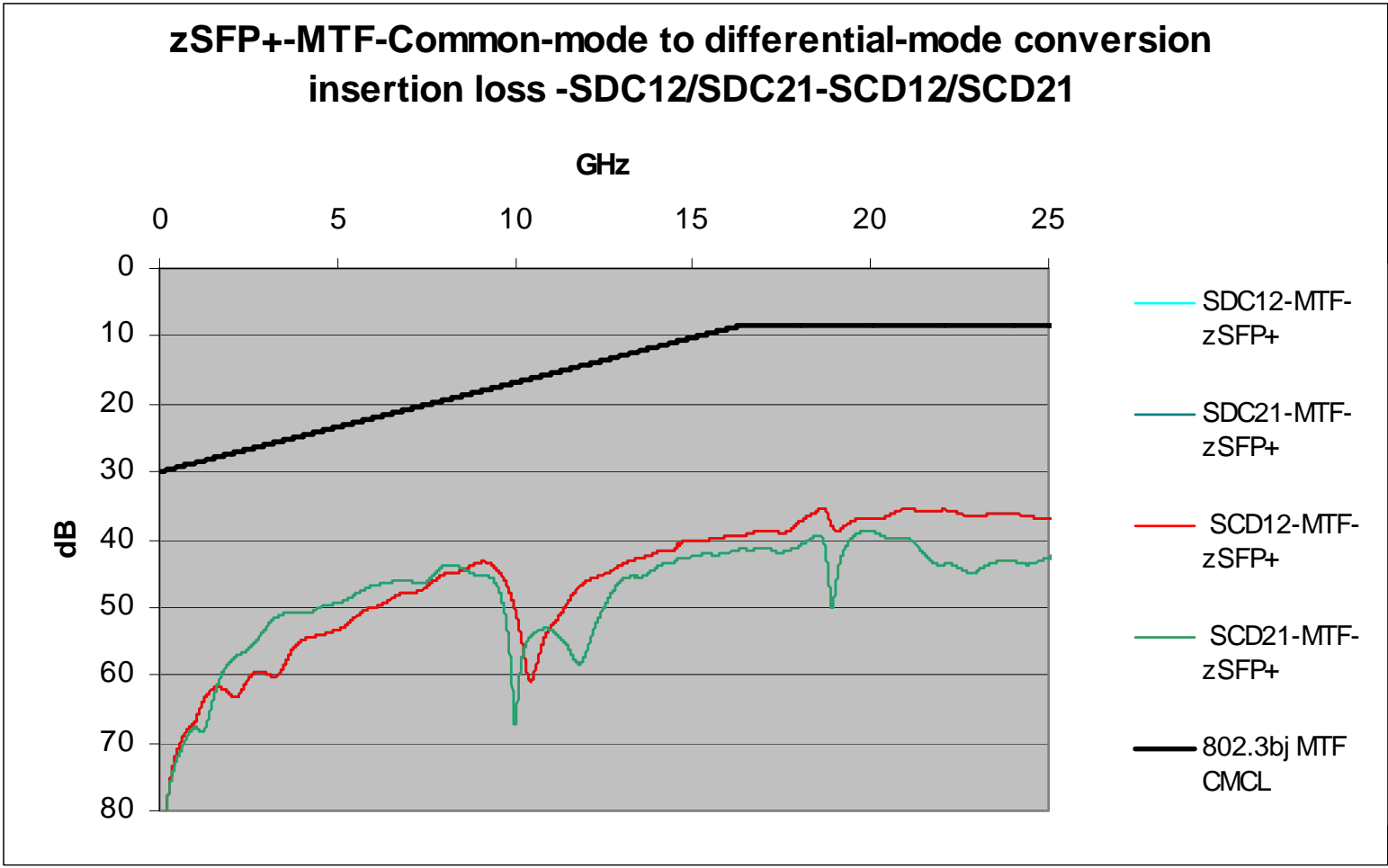
Source: *diminico_25GE_01_1114.pdf*

25 Gb/s Ethernet – HFSS zSFP+ Mated Test Fixtures



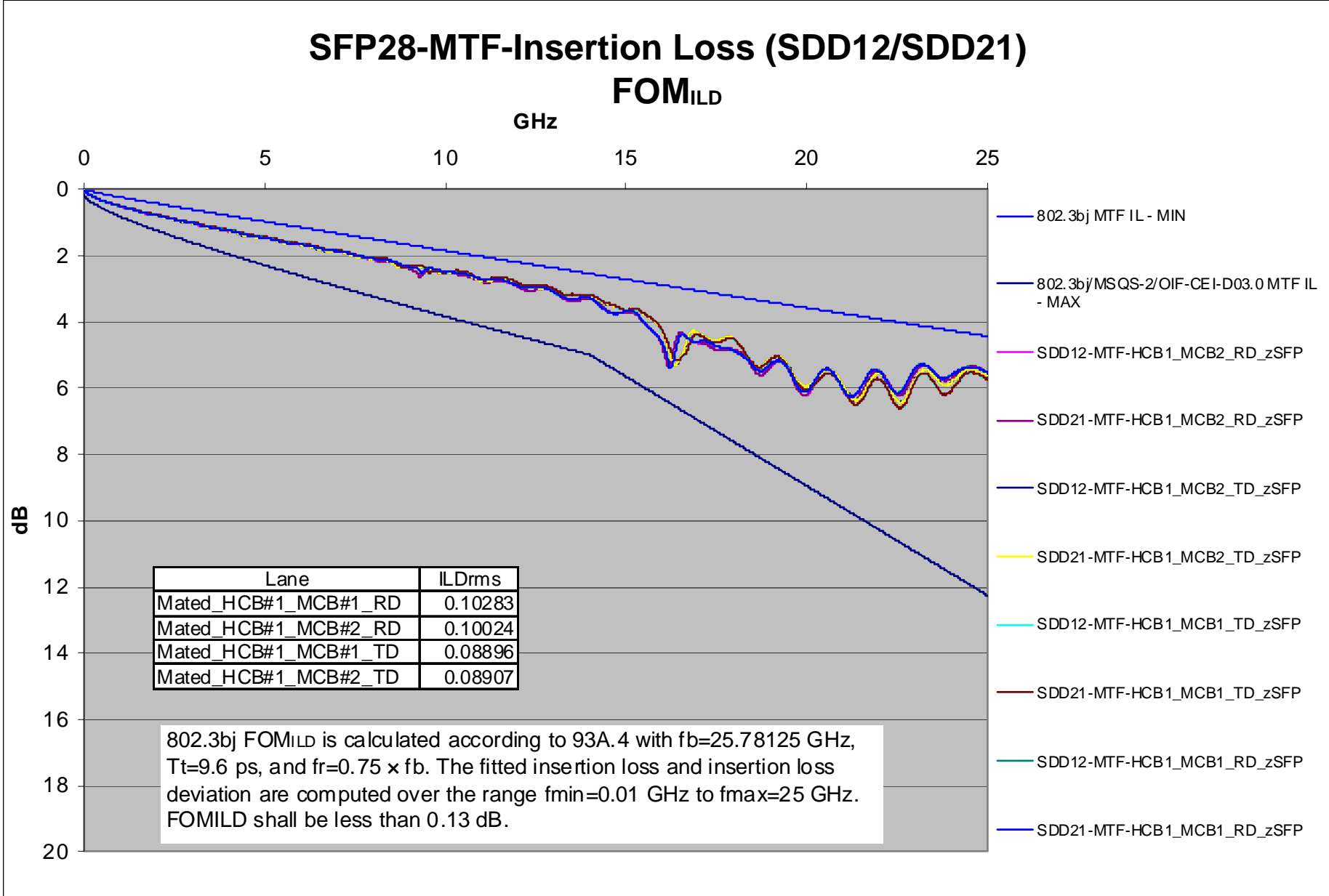
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25 Gb/s Ethernet – HFSS zSFP+ Mated Test Fixtures

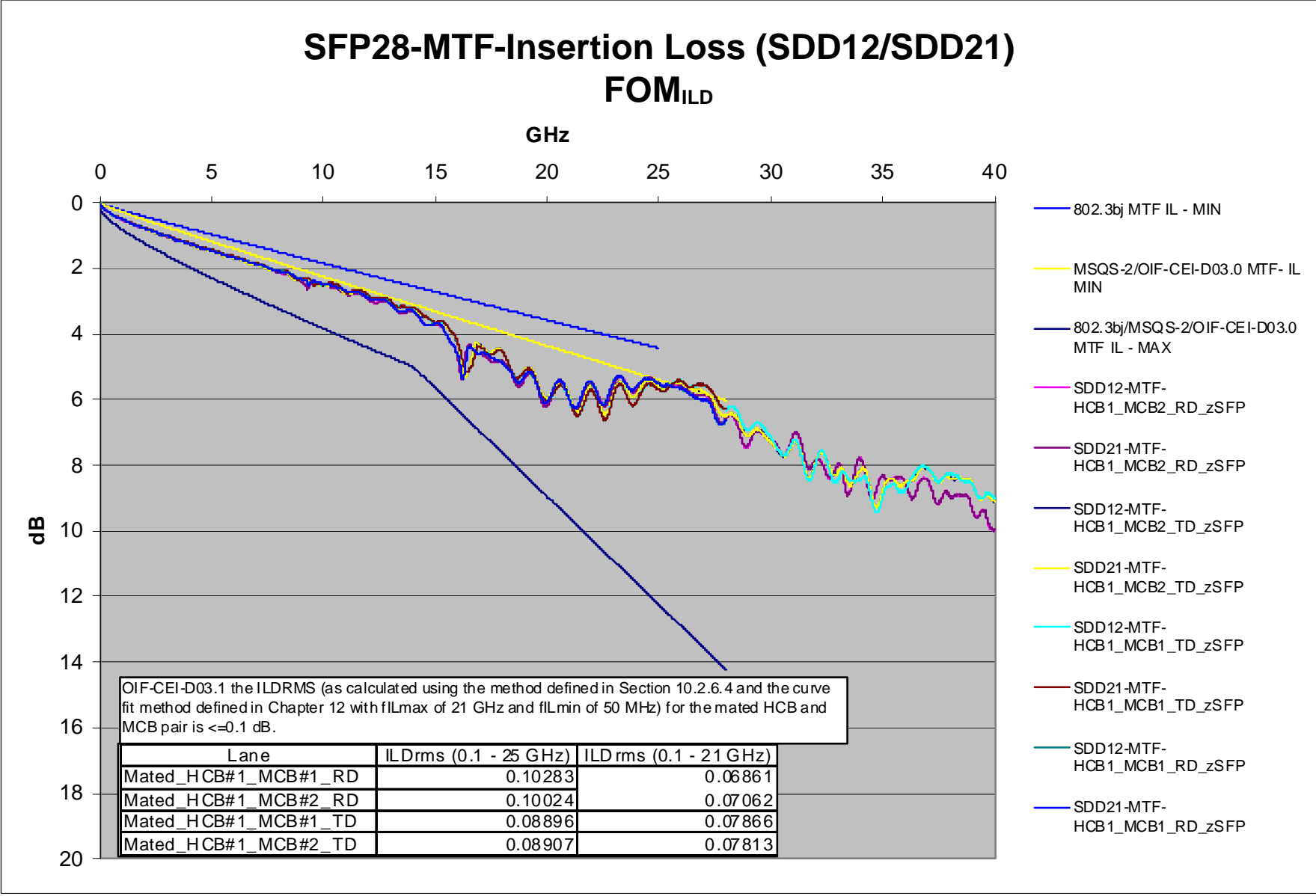


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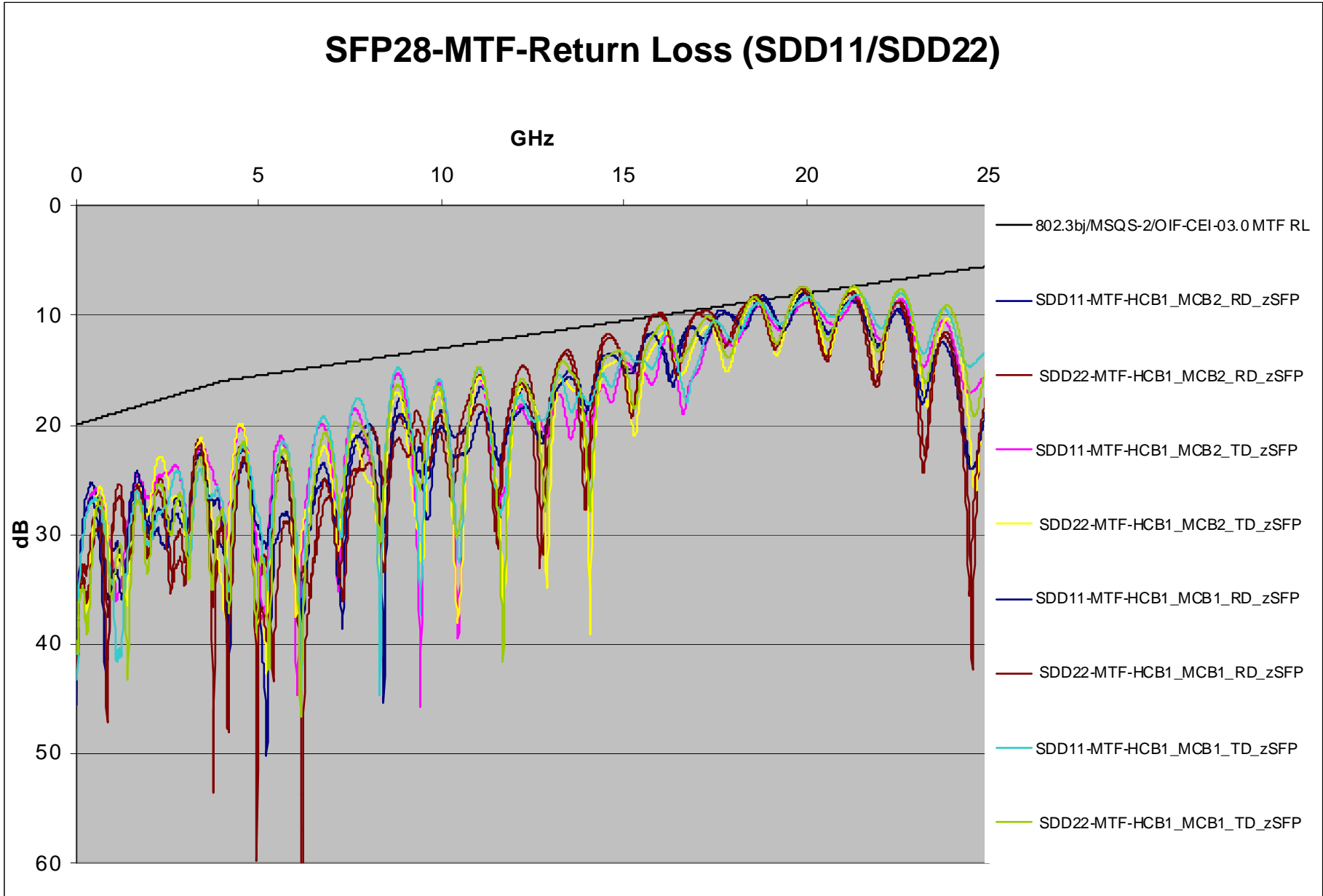
SFP28 - Mated Test Fixtures – Insertion loss



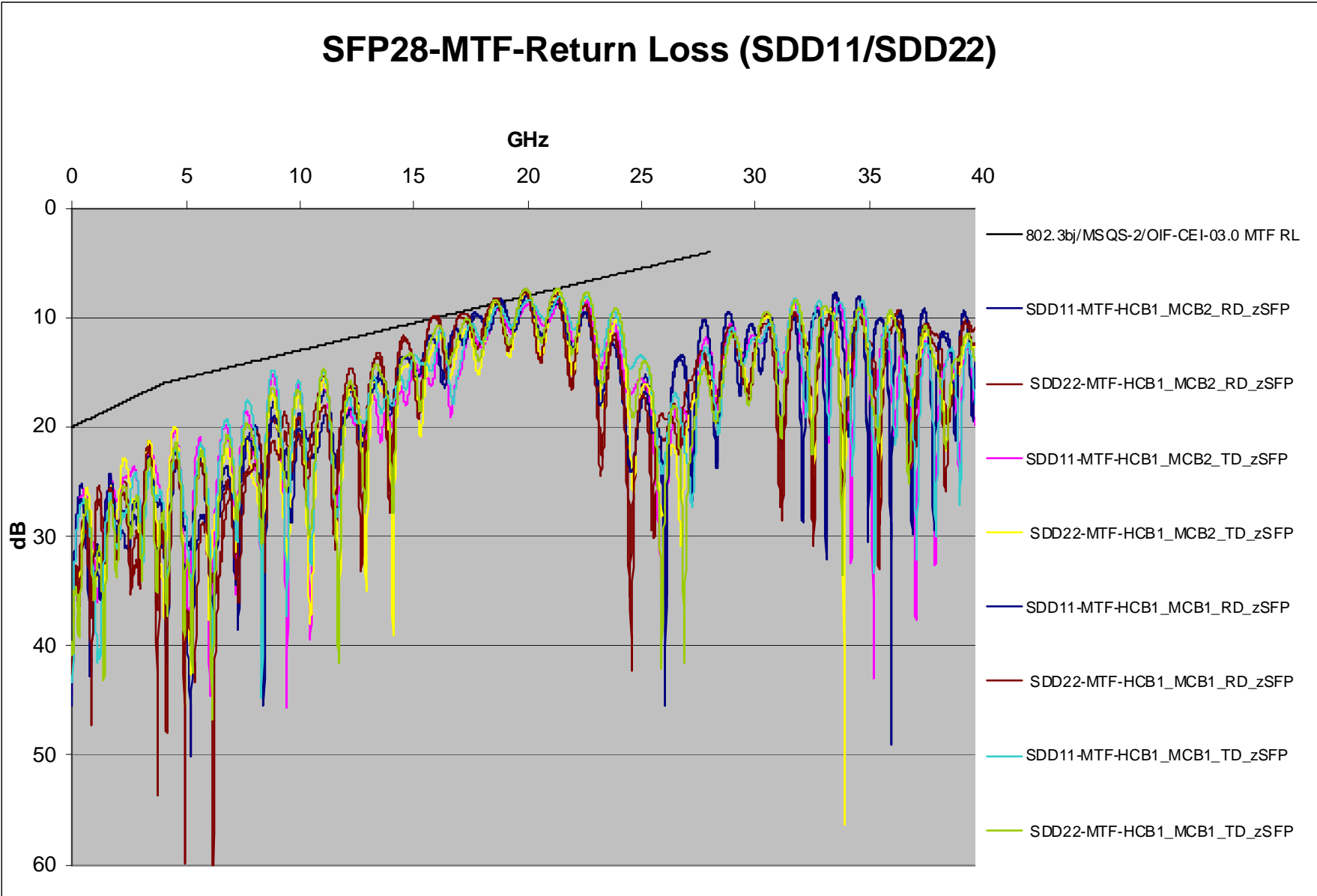
SFP28 - Mated Test Fixtures – Insertion loss



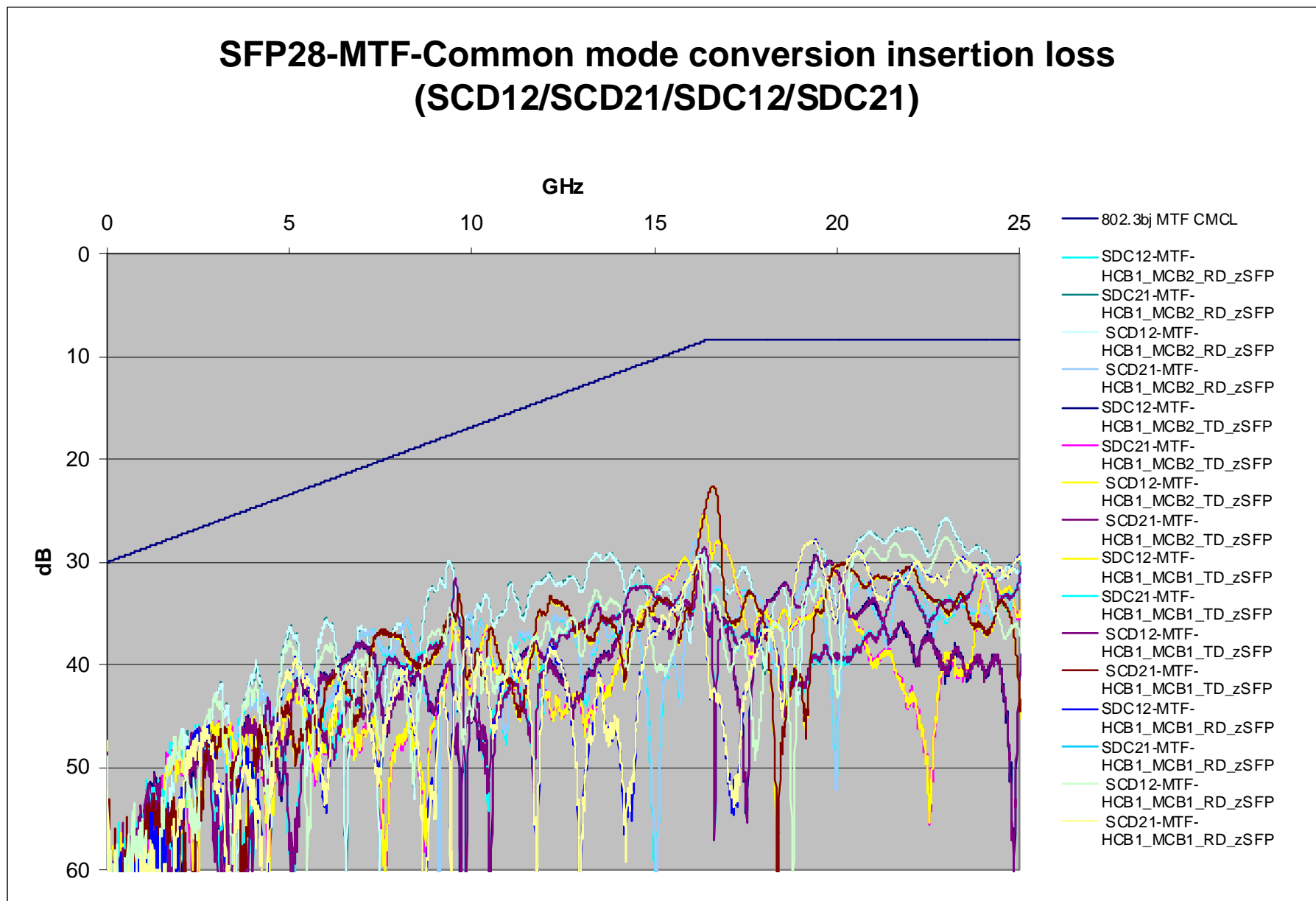
SFP28 - Mated Test Fixtures – Return loss



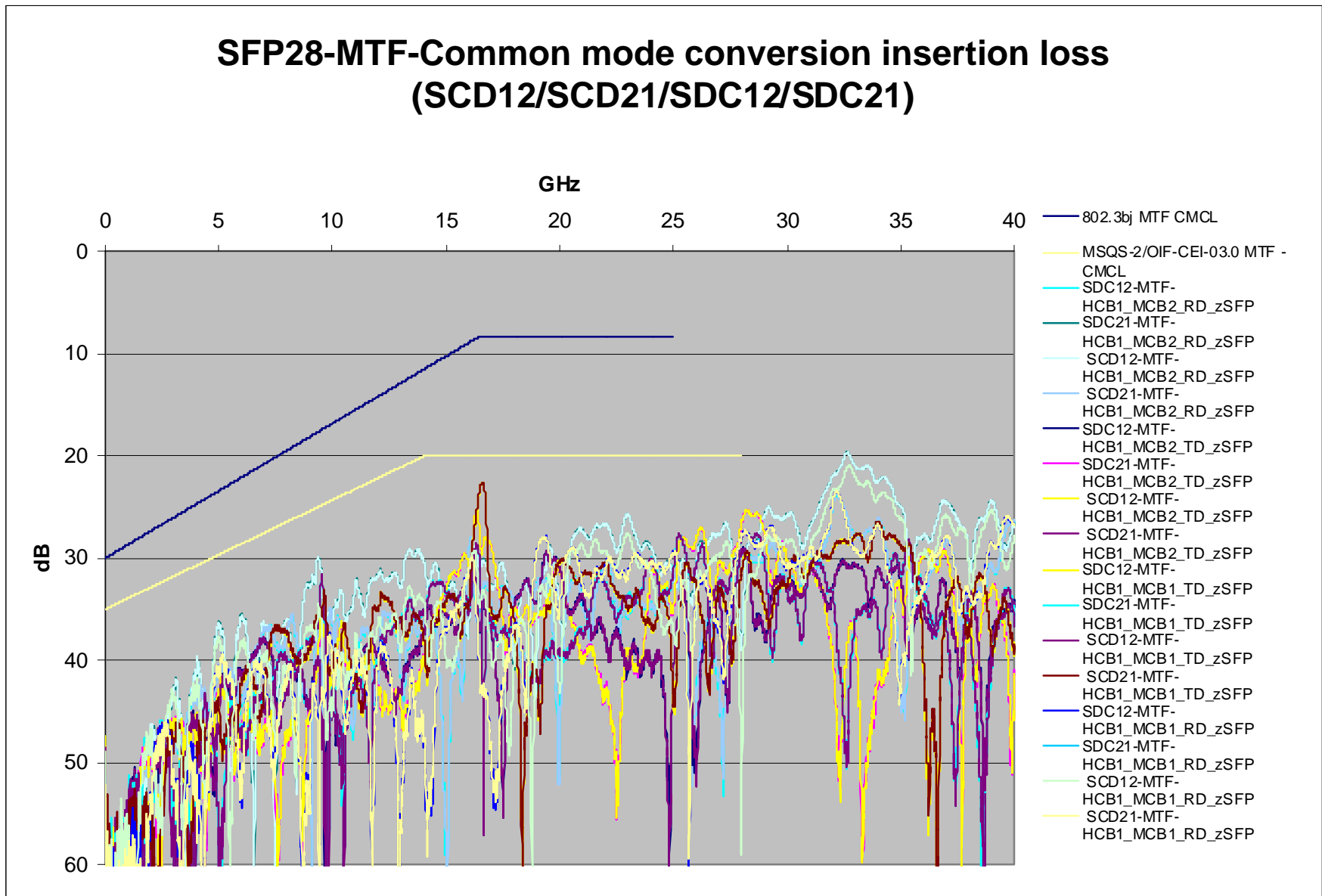
SFP28 - Mated Test Fixtures – Return loss



SFP28-MTF- Common mode conversion insertion loss

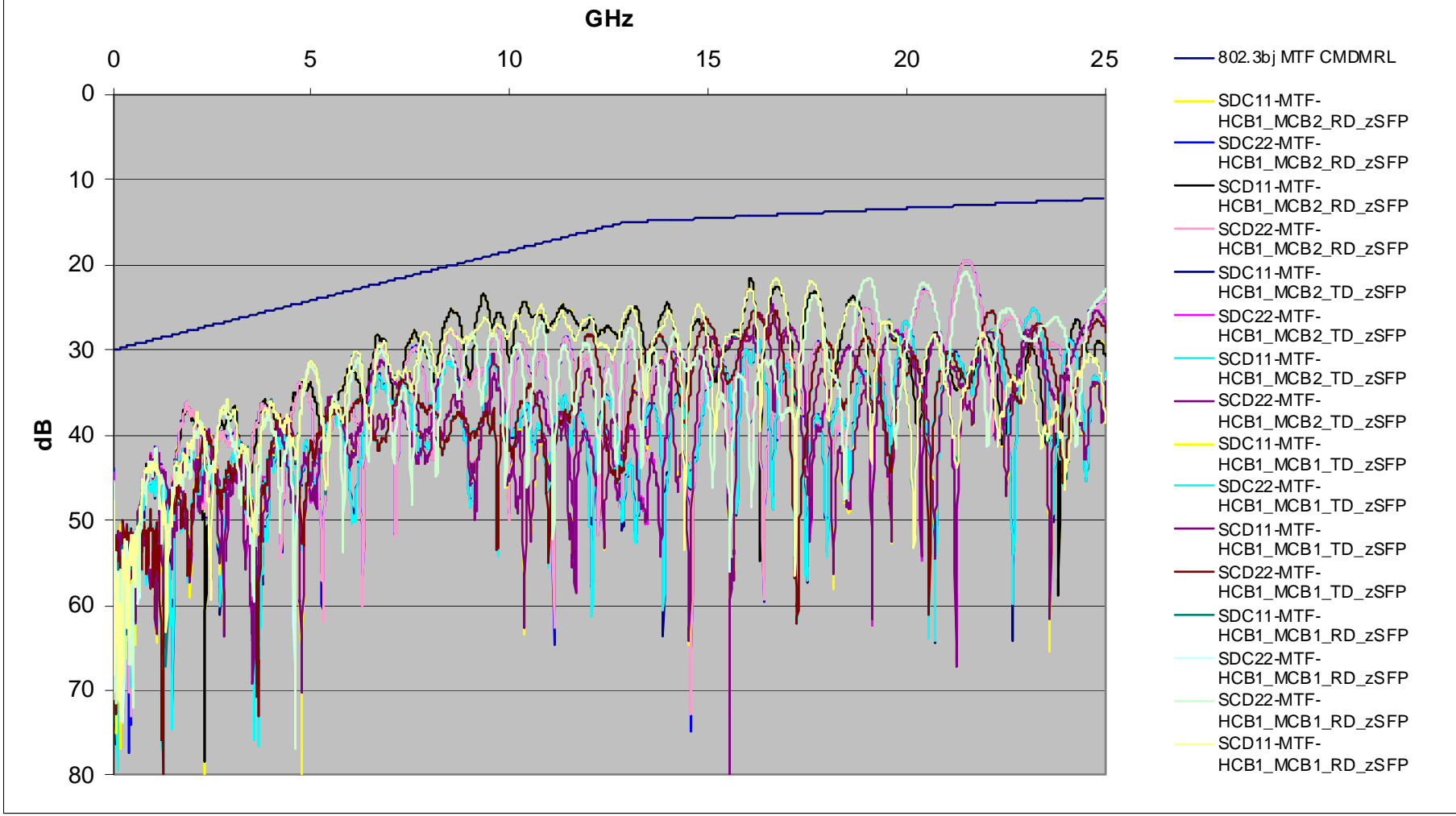


SFP28-MTF- Common mode conversion insertion loss

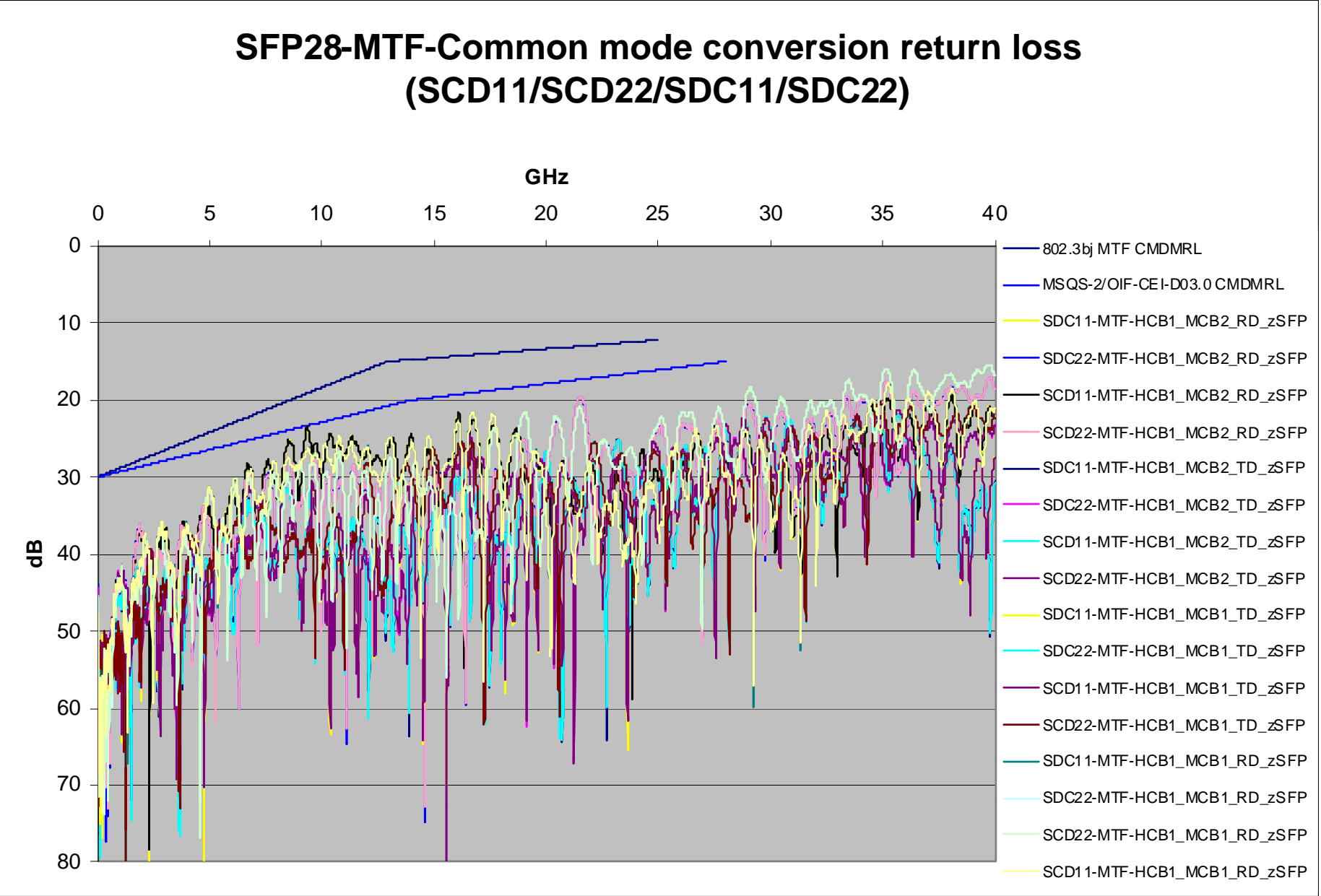


SFP28 - MTF-Common mode conversion return loss

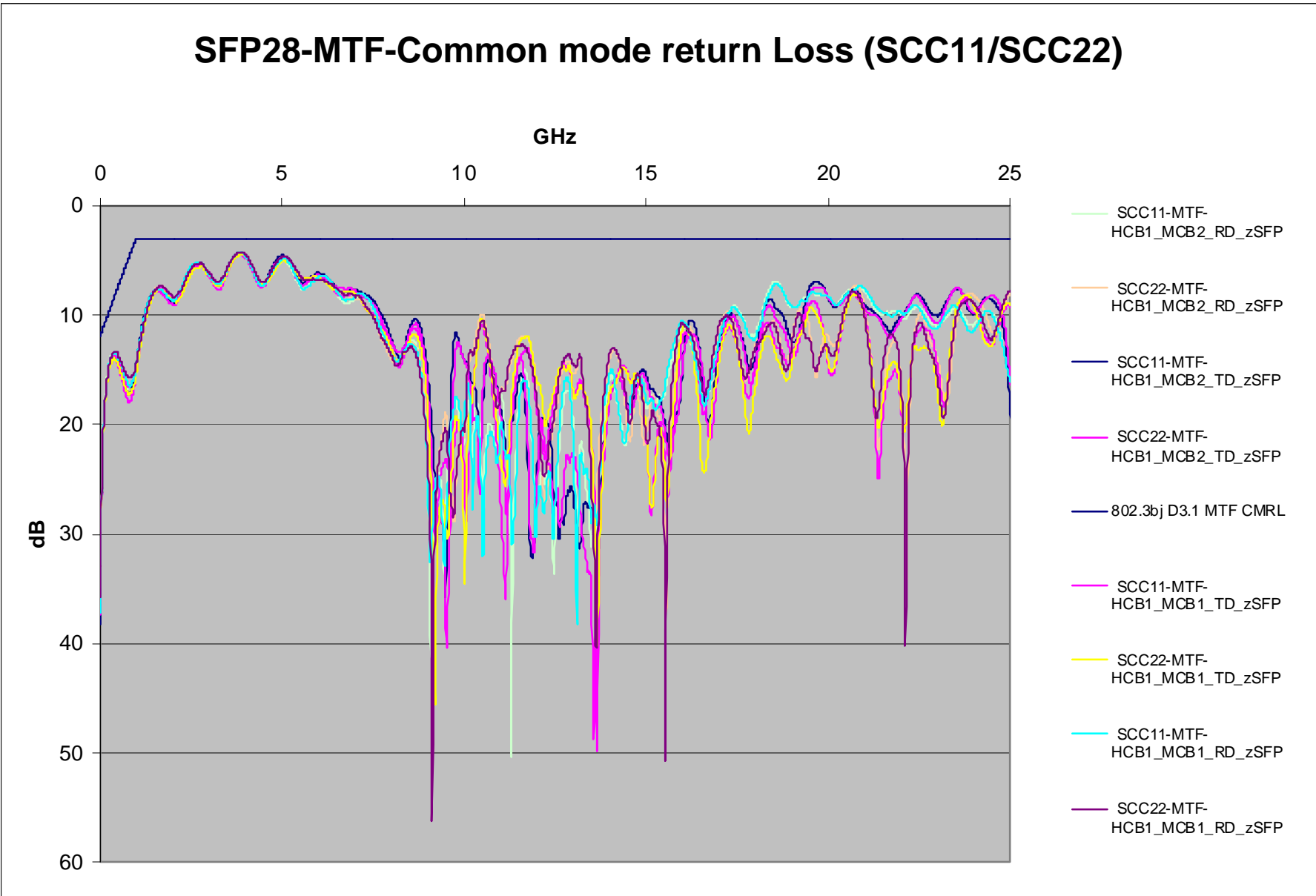
SFP28-MTF-Common mode conversion return loss (SCD11/SCD22/SDC11/SDC22)



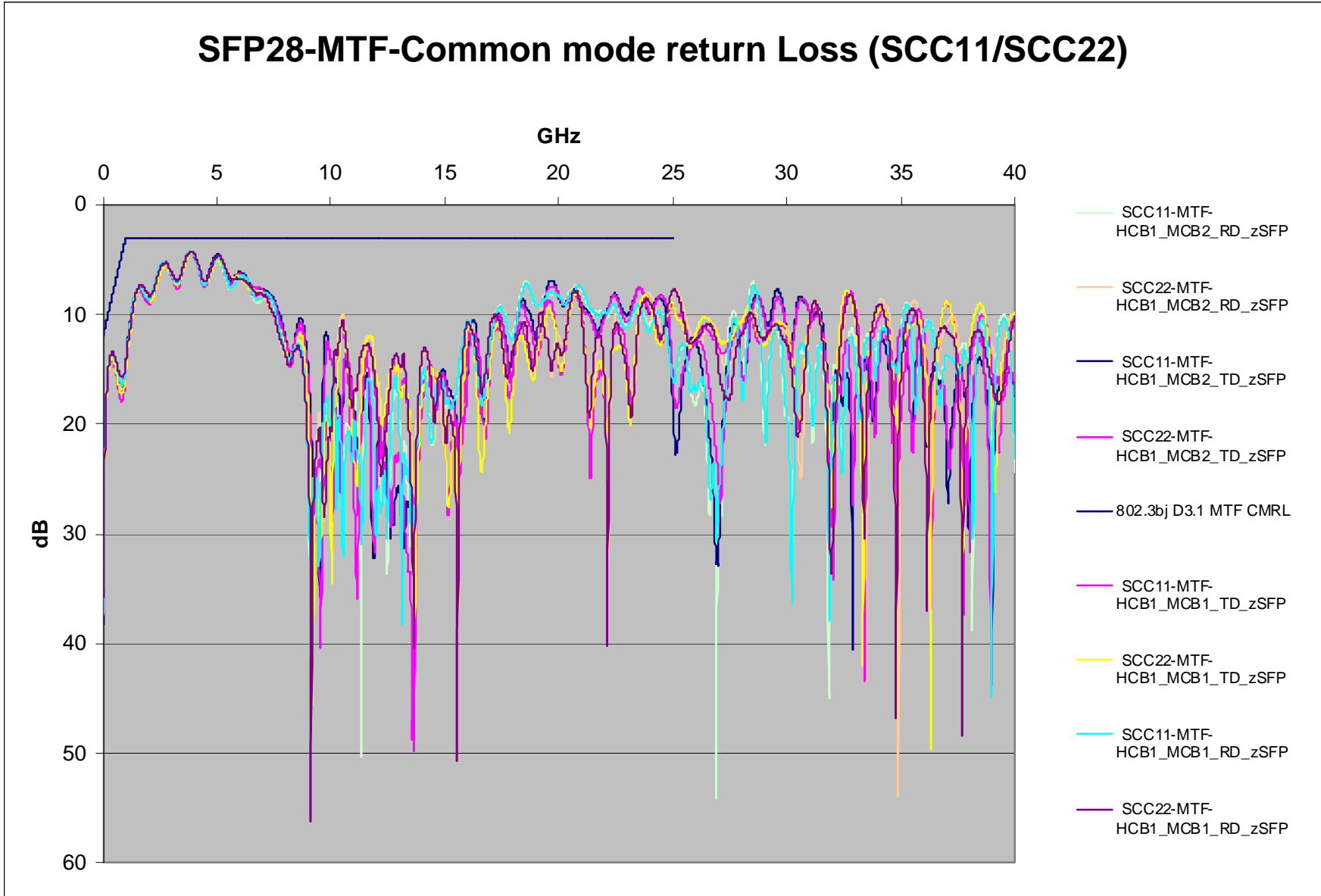
SFP28 - MTF-Common mode conversion return loss



SFP28 - MTF – Common mode return loss



SFP28 - MTF – Common mode return loss



Summary

- Demonstration of achievability of compliance to 802.3bj mated test fixture specifications utilizing SFP28.
- Measurements of SFP28 mated test fixtures compared to IEEE 802.3bj, Fibre Channel MSQS-2 mated test fixture specifications and OIF_CEI_3.1
- Make progress on test fixture specifications pending other PMD/PHY decisions.
- Future work: Review of mated test fixture return loss specifications based on measurement results.