
162B.1 Mated Test Fixtures Specifications

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Purpose

- **162B.1 Mated Test Fixtures Specifications**
- **Fill-in TBD's**

Mated test fixtures

162B.1 Test fixtures

Transmitter and receiver measurements at TP2 or TP3 for the 100GBASE-CR1, 200GBASE-CR2, and 400GBASE-CR4 host form factors (see Annex 162D) and at TP1a or TP4a for the 100GAUI-1, 200GAUI-2, and 400GAUI-4 C2M hosts (see Annex 120G), are made utilizing the test fixture specified in 162B.1.3. Cable assembly measurements for the cable assembly form factors (see Annex 162D) are made between TP1 and TP4 with test fixtures as specified in 162B.1.3 on both ends. The test fixtures are specified in a mated state to enable connections to measurement equipment. The reference insertion loss of the mated test fixtures is 6.6 dB at 26.56 GHz using Equation (162B-5). The requirements in the referenced subclauses are not the MDI connector specifications for an implemented design.

Table 162C-1—Number of PMDs supportable for each connector type

MDI types	100GBASE-CR1	200GBASE-CR2	400GBASE-CR4	Reference
SFP112	1	—	—	162C.2.1
QSFP112	1, 2, 4	1, 2	1	162C.2.2
QSFP112-DD	1, 2, 4, 8	1, 2, 4	1, 2	162C.2.3
OSFP	1, 2, 4, 8	1, 2, 4	1, 2	162C.2.4
SFP112-DD	1,2	1	—	162C.2.5
DSFP	1, 2	1	—	162C.2.6

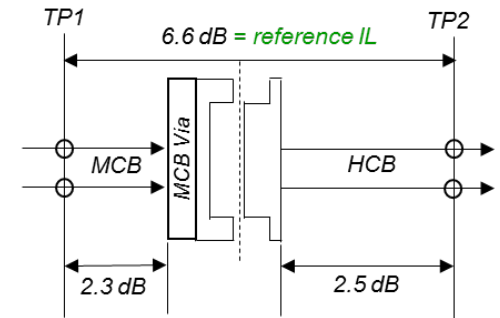
162B.1.1 Mated test fixtures

- Test Fixture specifications – Adopted– referenced parameters 26.56 GHz
 $f=0.01 \leq f \leq 40$ (signaling rate 53.125 GBd).

Mated test fixtures parameters

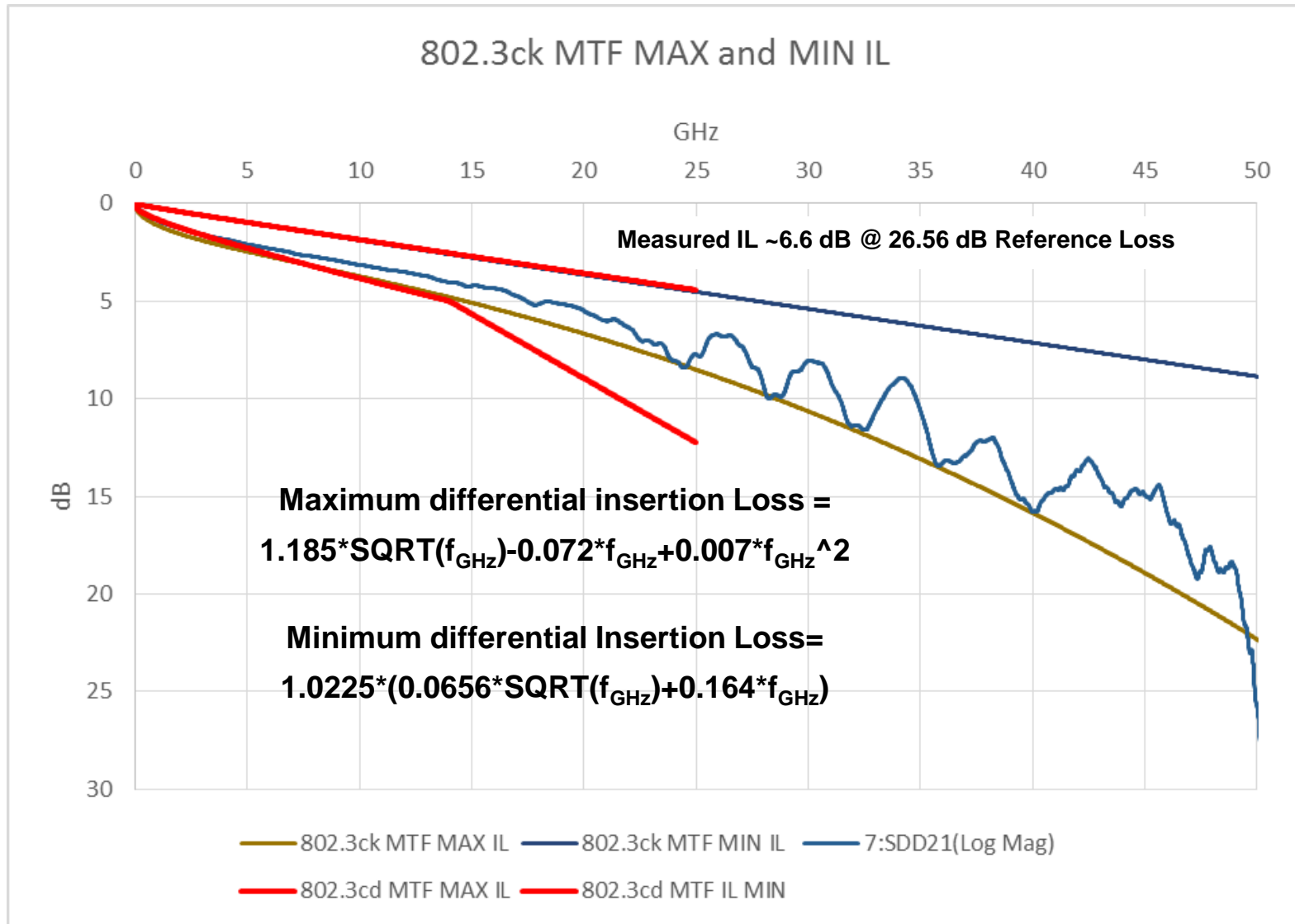
Parameter description	Value	Unit
Maximum differential insertion Loss	Equation(TBD)	dB
Minimum differential Insertion Loss	Equation(TBD)	dB
Reference differential insertion loss	Adopted	dB
Figure of Merit(FOM) ILD	Equation(TBD)	dB
Minimum Differential Return Loss	Equation(TBD)	dB
Common-mode conversion insertion loss	Equation(TBD)	dB
Common-mode return loss	Equation(TBD)	dB
Common-mode to differential –mode return loss	Equation(TBD)	dB
Integrated crosstalk noise	(TBD)	mV

Mated Test Fixture Adopted in Baseline



Note: 2.3 dB MCB PCB includes test point IL and MCB Via allowance is 0.2 dB

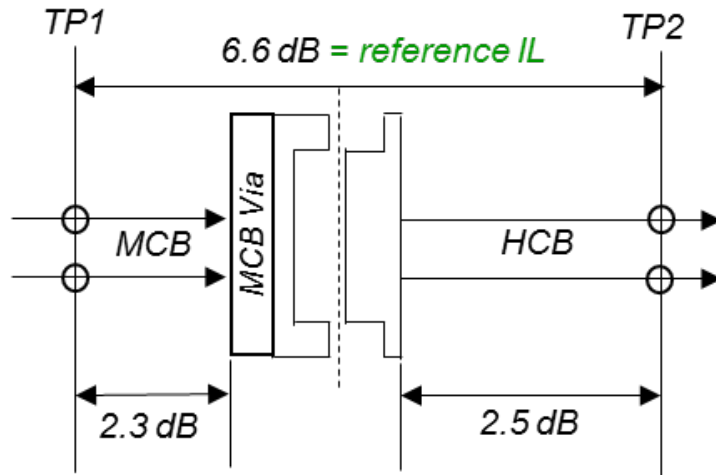
Mated test fixture Max and Min IL



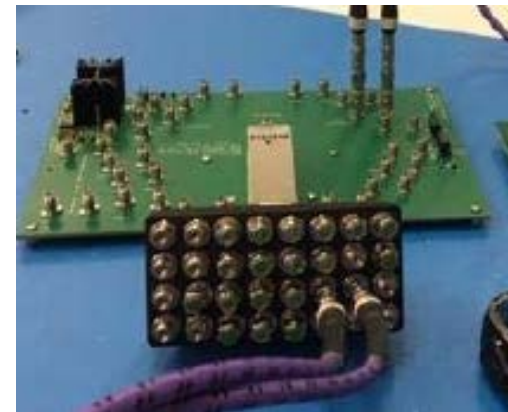
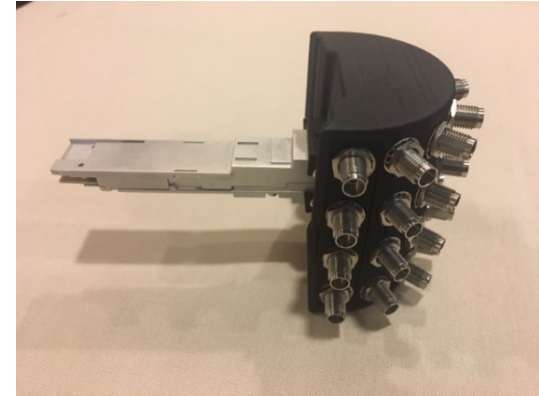
Mated Test Fixtures

Measurements with compliant PCB IL - HCB and MCB

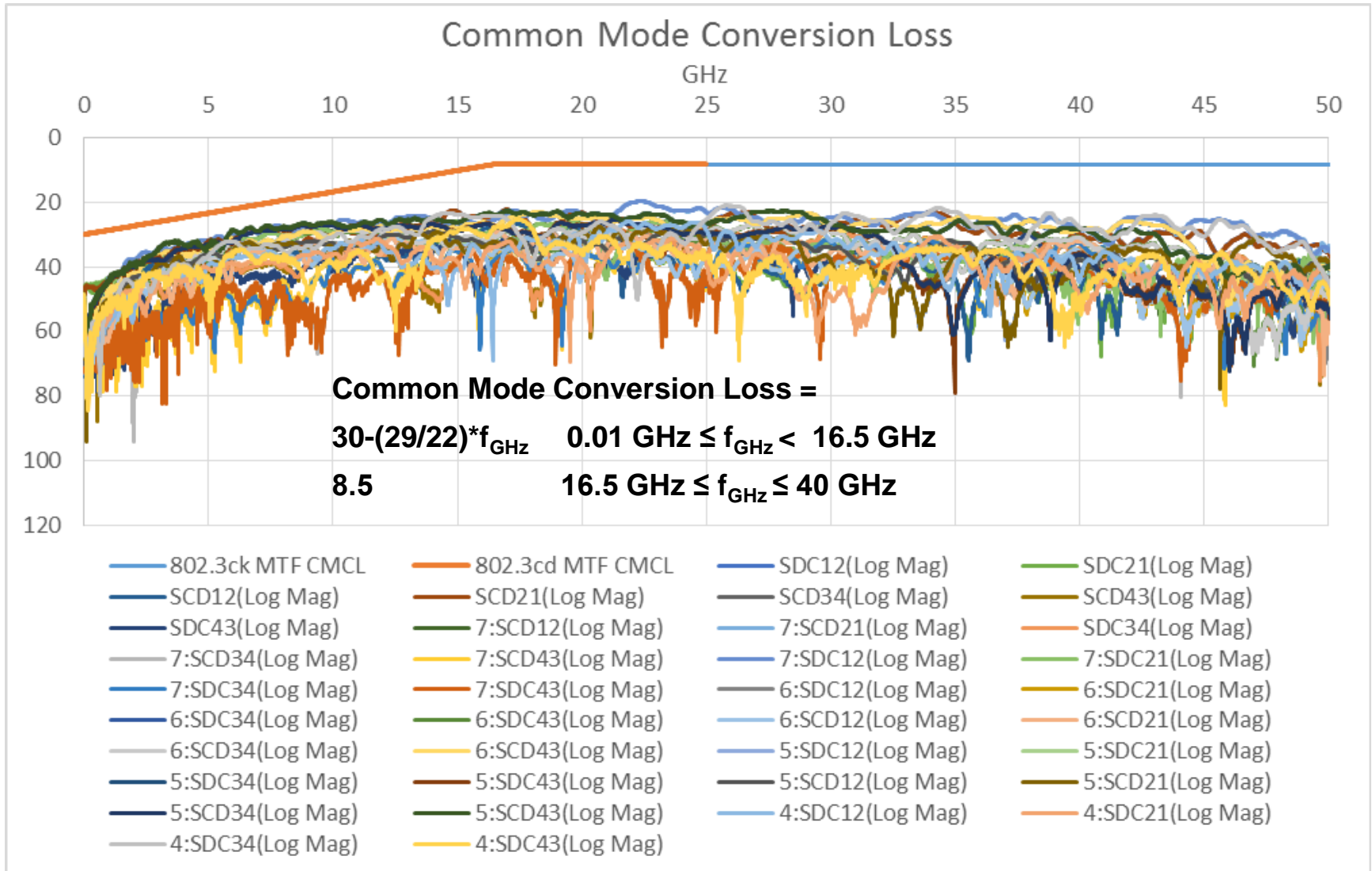
Mated Test Fixture
Adopted in Baseline



Note: 2.3 dB MCB PCB includes test point IL
and MCB Via allowance is 0.2 dB

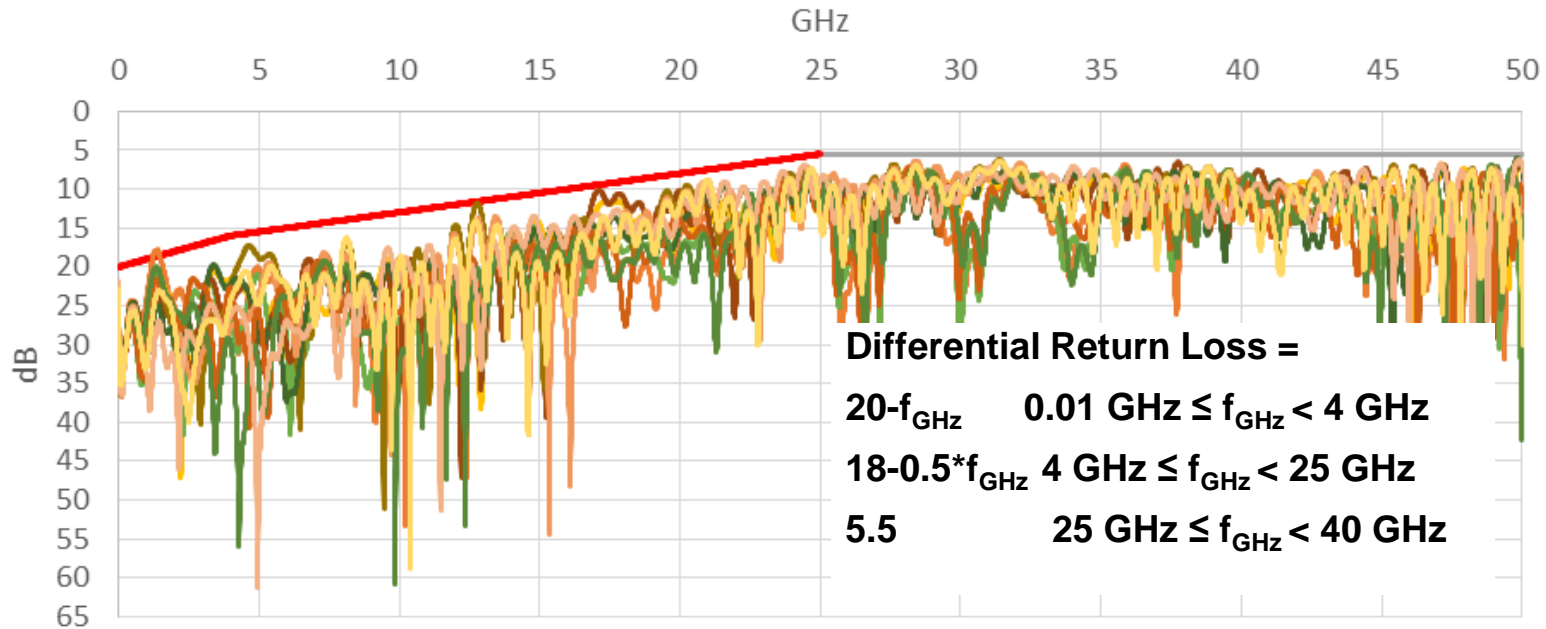


MTF Common Mode Conversion Loss



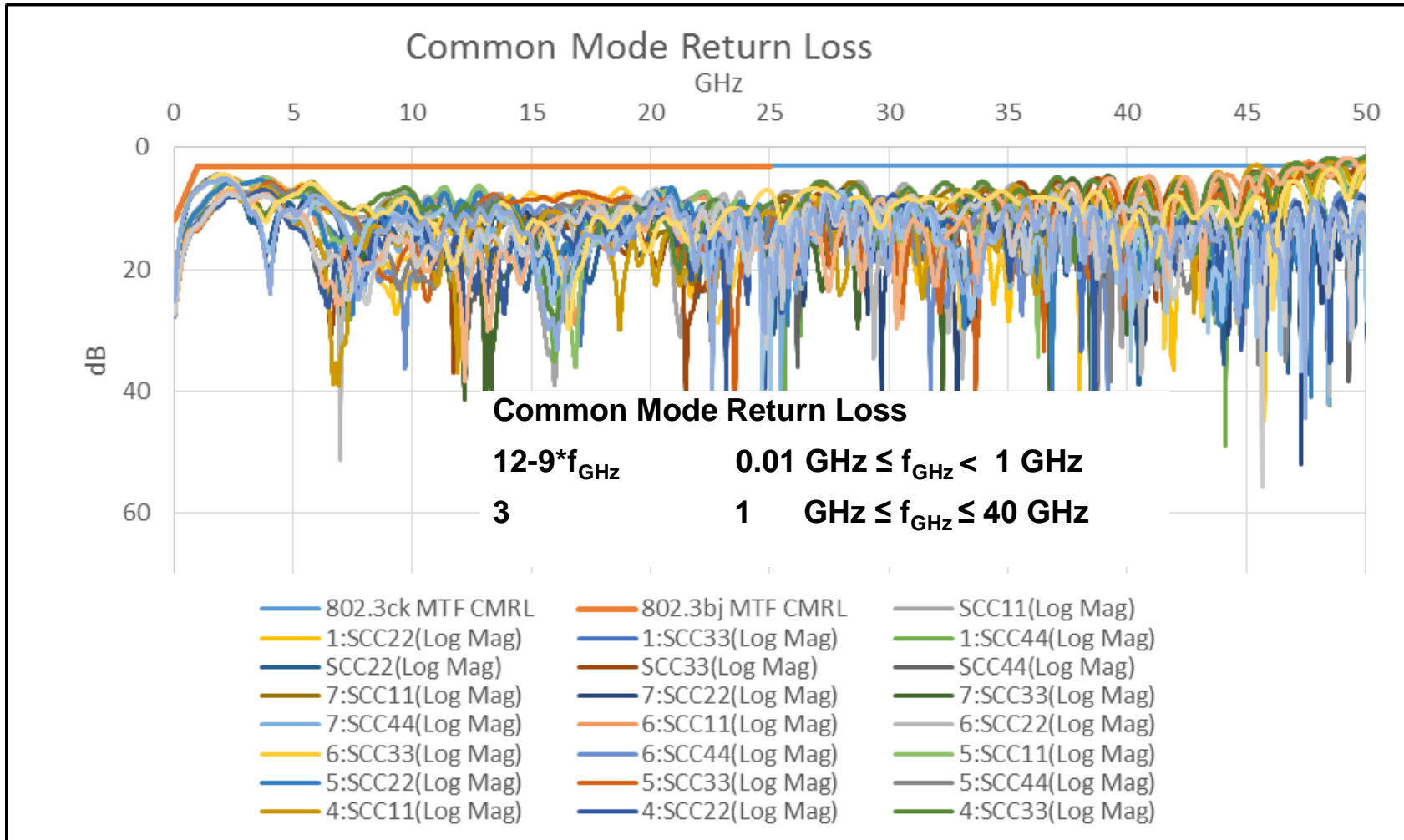
MTF Differential Return Loss

MTF Differential Return Loss

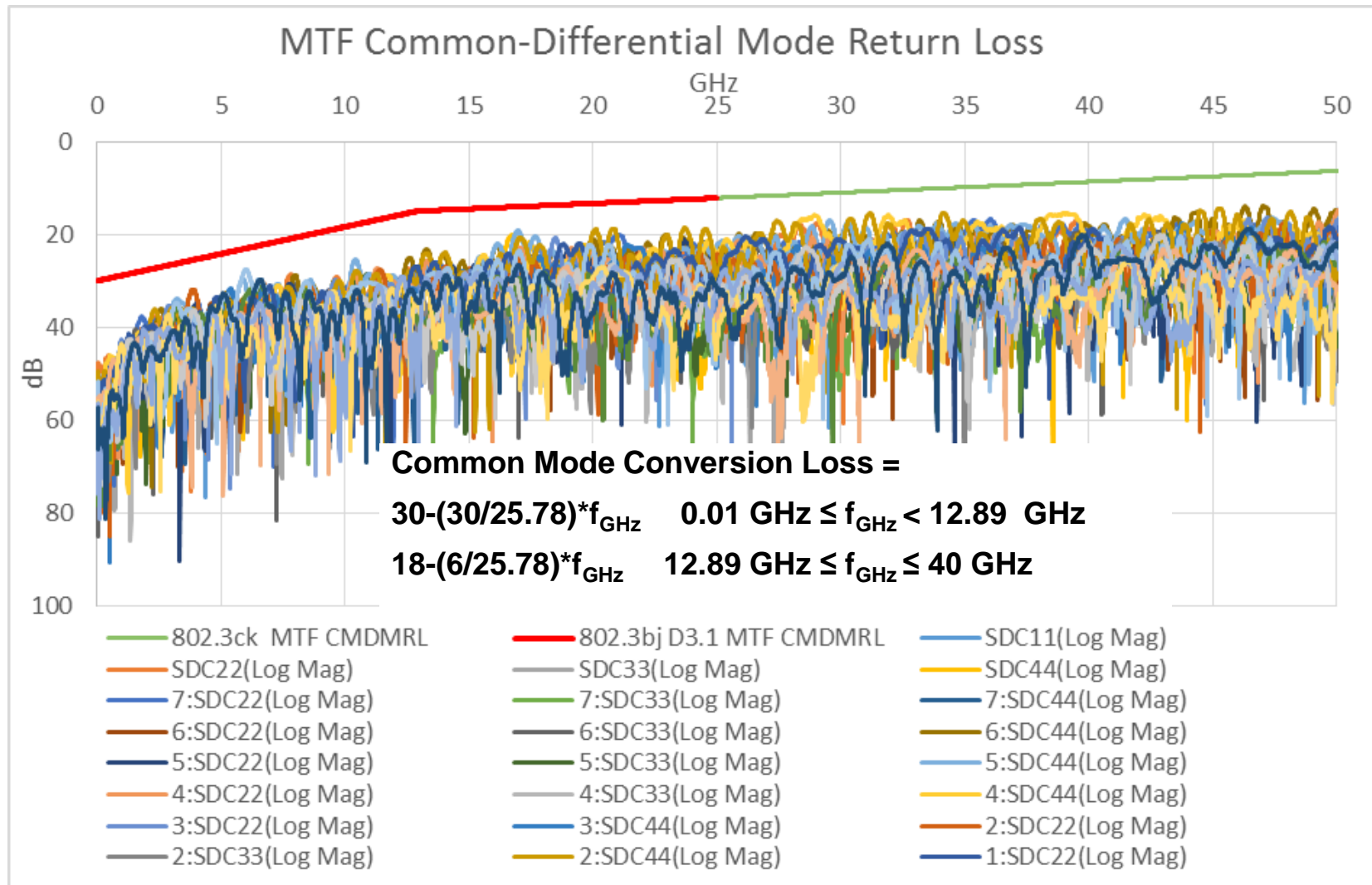


- 802.3ck MTF RL — 802.3bj MTF RL — SDD22(Log Mag) — SDD44(Log Mag)
- 7:SDD22(Log Mag) — 7:SDD44(Log Mag) — 6:SDD22(Log Mag) — 6:SDD44(Log Mag)
- 5:SDD22(Log Mag) — 4:SDD44(Log Mag) — 3:SDD44(Log Mag) — 2:SDD22(Log Mag)
- 2:SDD44(Log Mag)

MTF Common Mode Return Loss



MTF Common to Differential Mode Return Loss



162B.1.1.6 Mated test fixtures (ICN) Tables

Description	Symbol	Value	Units
Symbol rate	f_b	53.125	GBd
3dB reference receiver bandwidth	f_r	39.84	GHz
Near-end disturber peak differential output amplitude	A_{nt}	600	mV
Far-end disturber peak differential output amplitude	A_{ft}	600	mV
Near-end disturber 20% to 80% rise and fall times	T_{nt}	TBD	ps
Far-end disturber 20% to 80% rise and fall times	T_{ft}	TBD	ps

Baud and specification frequency ranges

	GBd	.5 GbD	CA (GHz)	MTF (GHz)	ICN Rise Time (ps)	ICN RX 3 dB BW GHz	COM RX 3 dB BW .75*fbaud	ILD computation MHz
802.3cd	26.5625	13.28125	19	25	9.27	19.92	19.92	25
802.3ck	53.125	26.5625	38	50	4.635/6.5	39.84	39.84	50

- **Specification frequency ranges**
 - Tx/RX
 - Cable assembly (CA)
 - Mated test fixtures
- **Transmission characteristics (e.g., IL) and computations (ILD, ICN,COM)**
- **Measurements**
 - Laboratory and manufacturing
 - + Up to 32 ports -
 - + Time – frequency sweep and points
 - + VNA cost scales – frequency range, port count