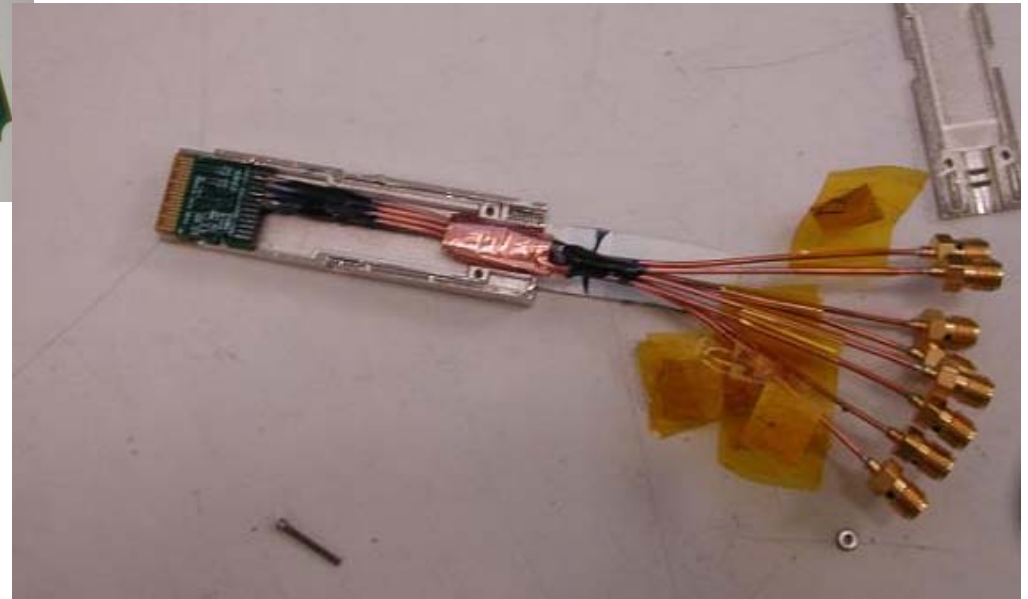
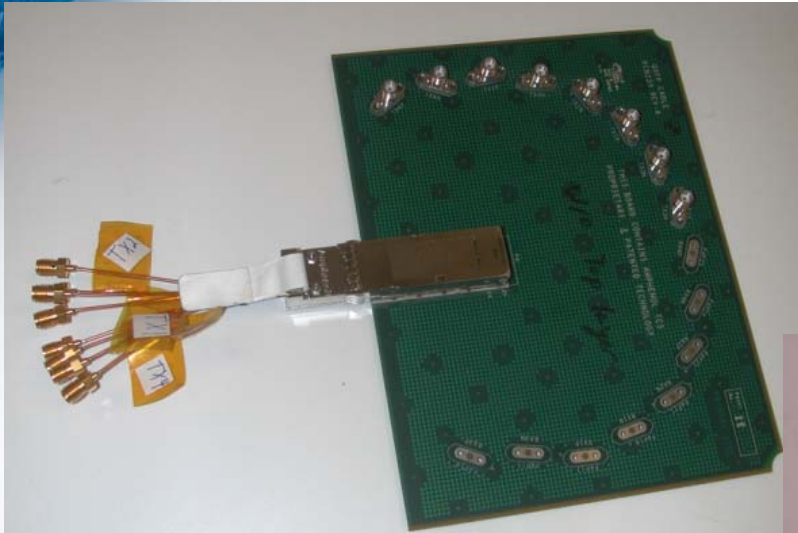


Improved QSFP and SFP+ Connectors

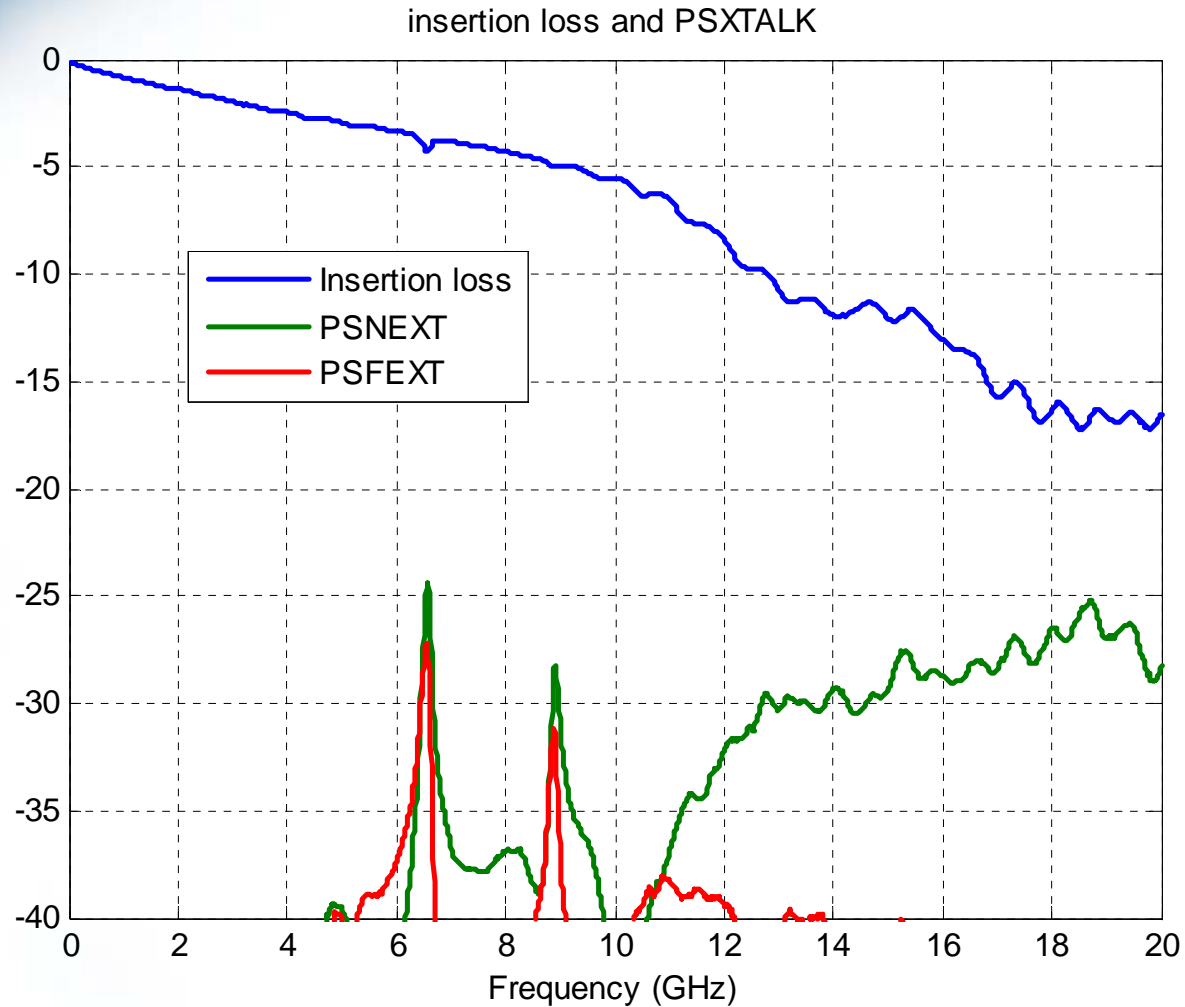
Brian Kirk, Greg McSorley
Amphenol Corp
January 26, 2010

Current QSFP

QSFP Receptacle Measurement Fixture



Measurement: Insertion Loss (TX3) and TX3 to TX1 Crosstalk (includes fixture)

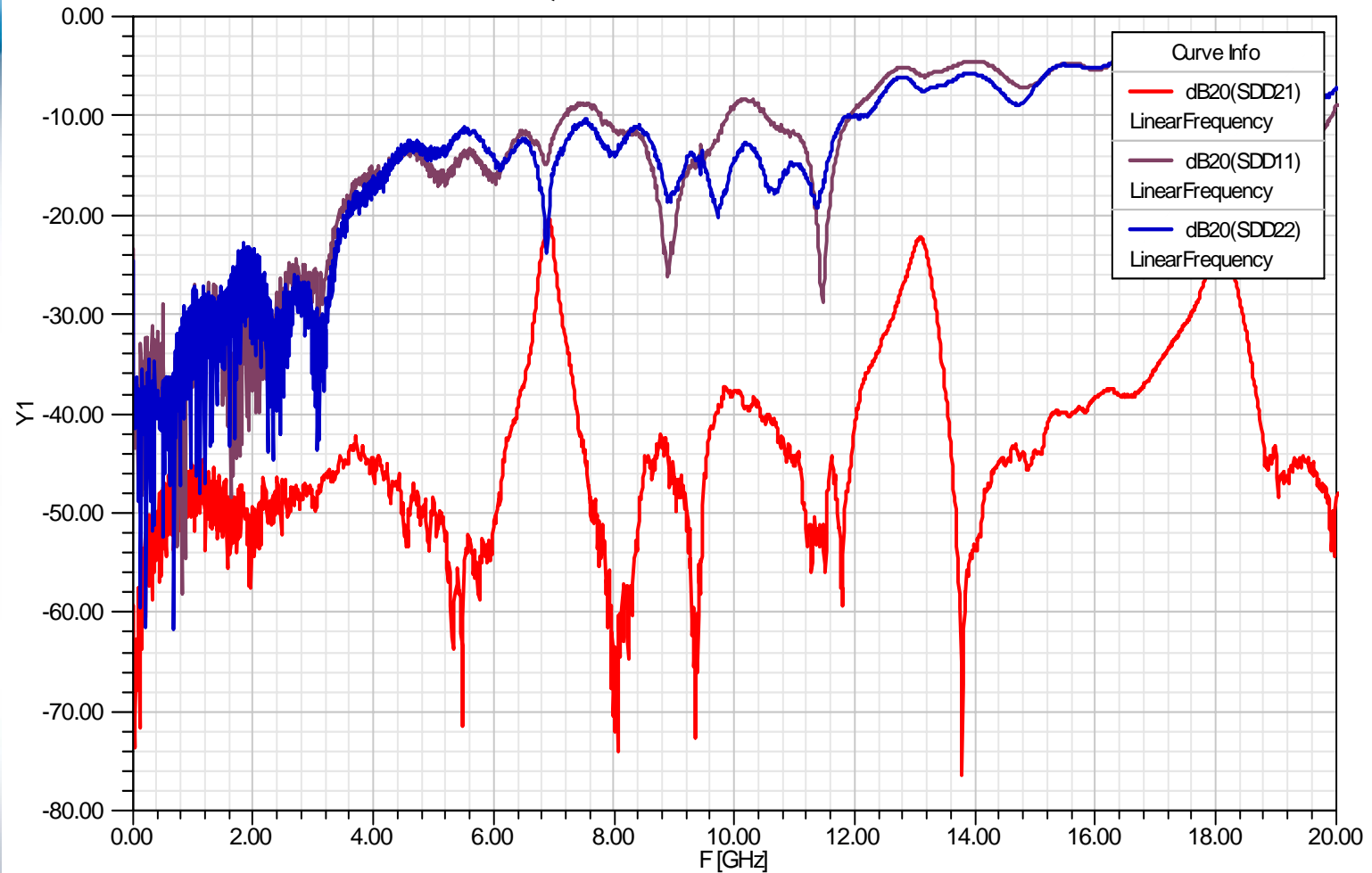


QSFP NEXT Full Cable Assembly

Ansoft Corporation

QSFP NEXT Tx1Tx3

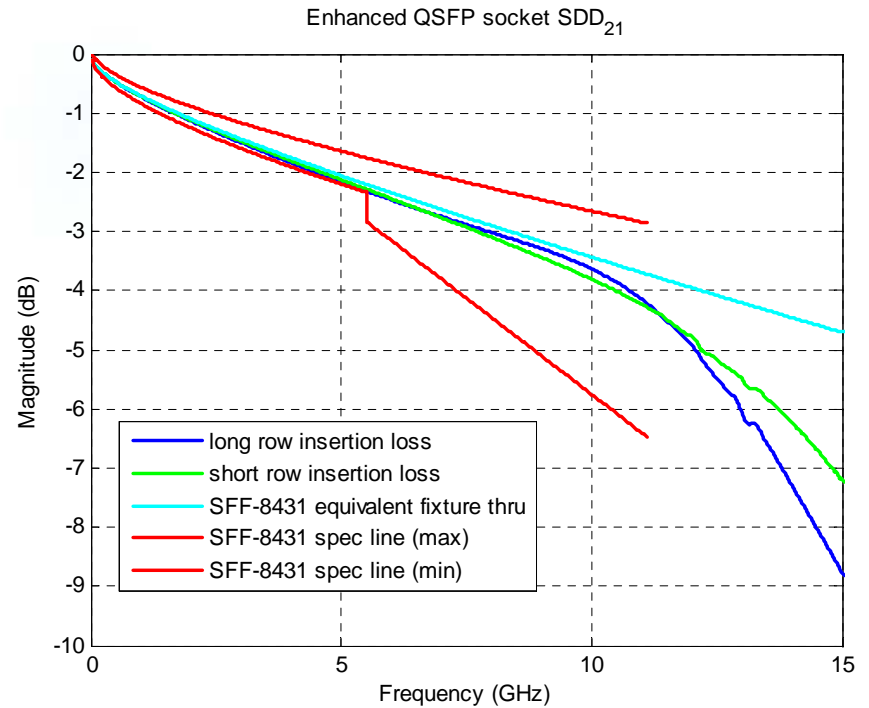
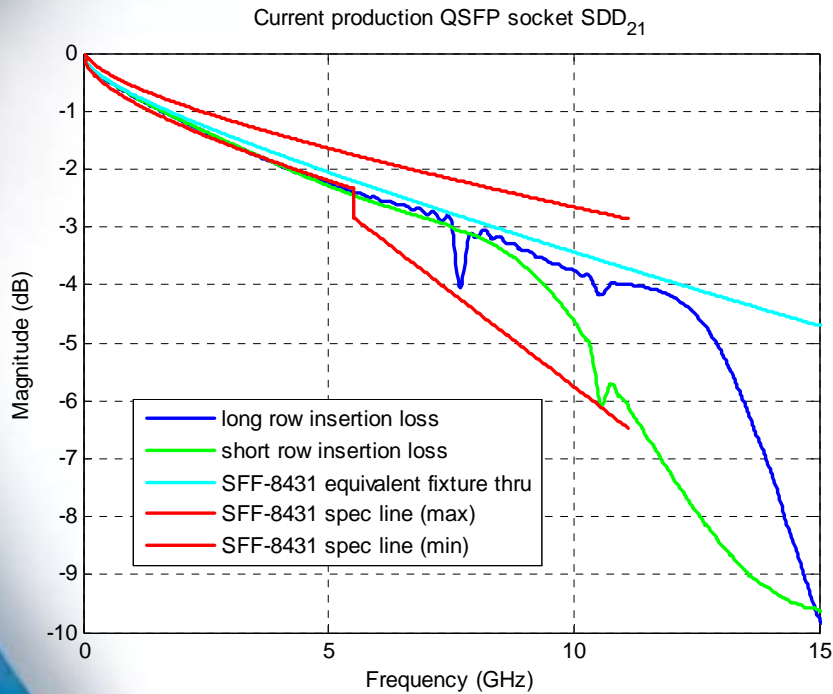
Nexxim1



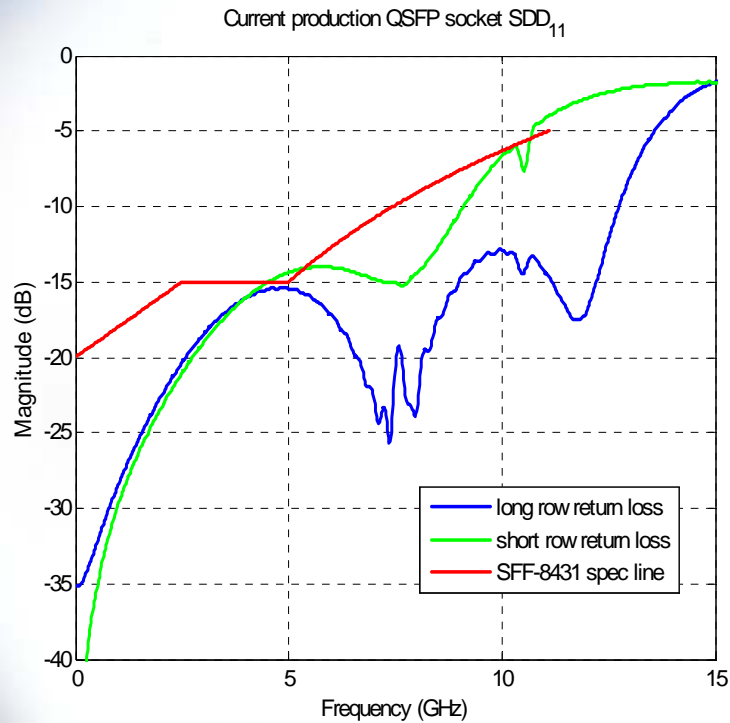
Current vs. Enhanced QSFP against SFF-8431 (SFP) spec lines

Differential Insertion Loss

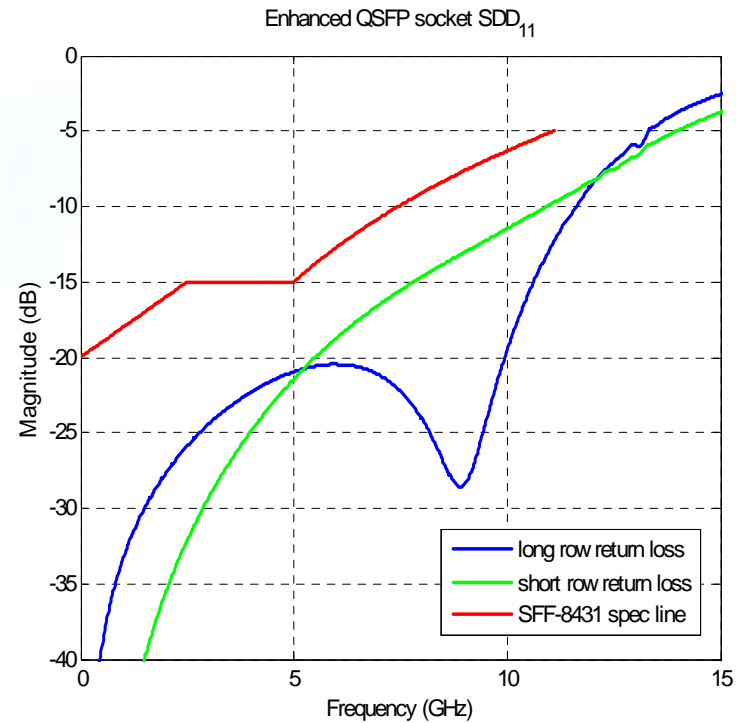
*(amplitude fixture corrected – SFF-8431 C.1.1 & C.1.2)



Differential Return Loss



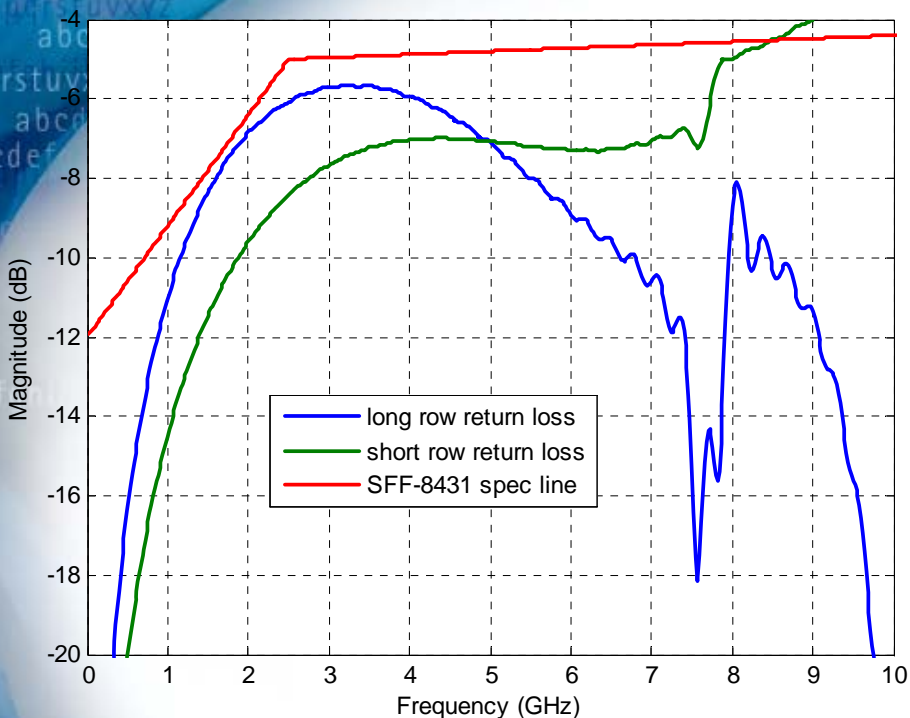
Current



Enhanced

Common mode return loss

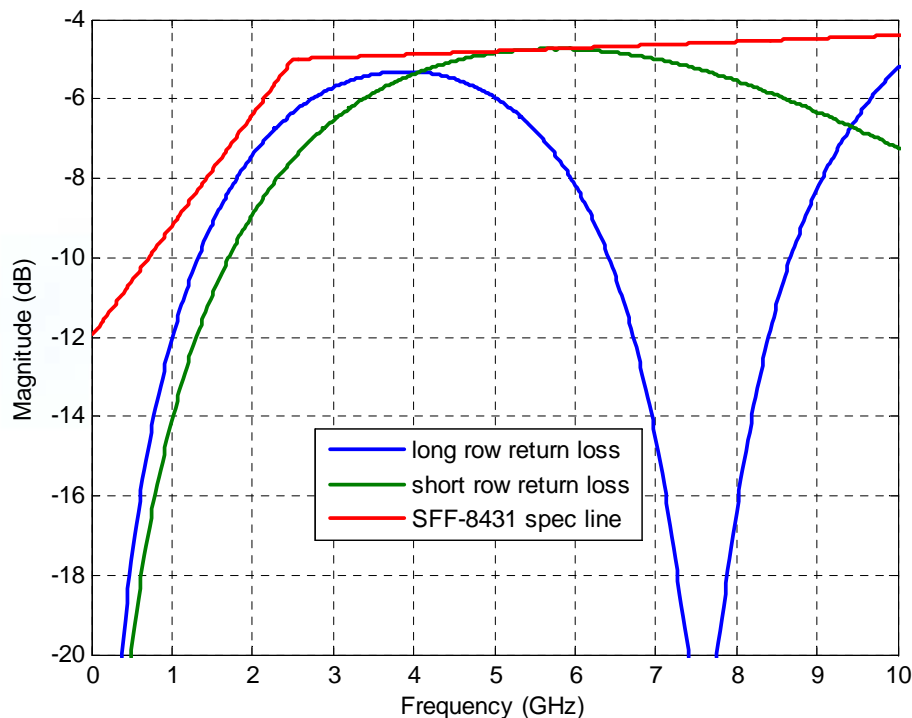
Current production QSFP socket SCC₁₁



Current

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Enhanced QSFP socket SCC₁₁



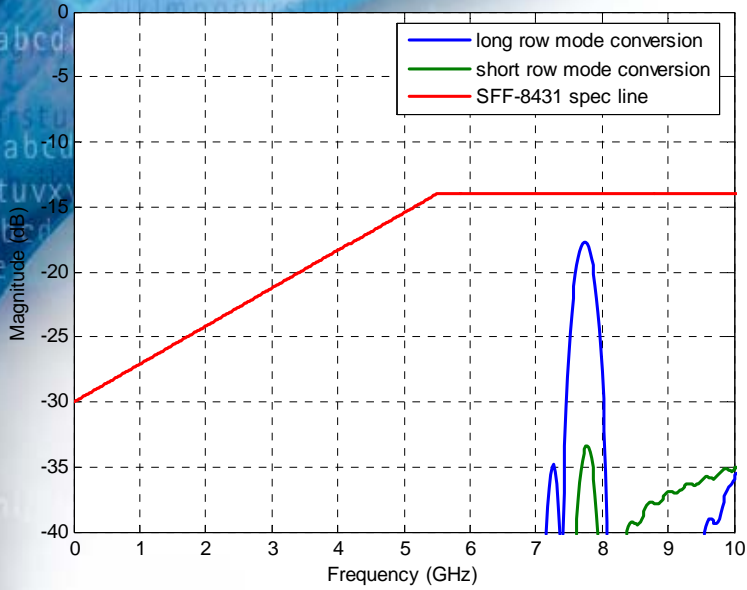
Enhanced

8

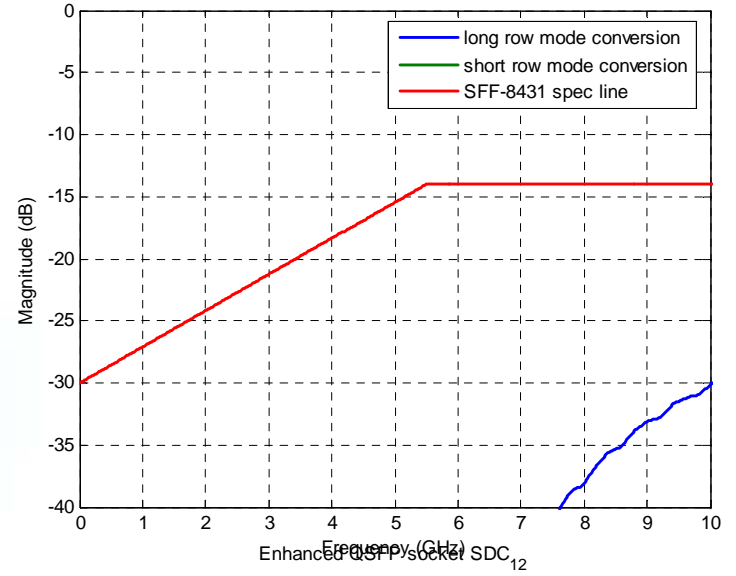
Amphenol

Current Mode conversion Enhanced

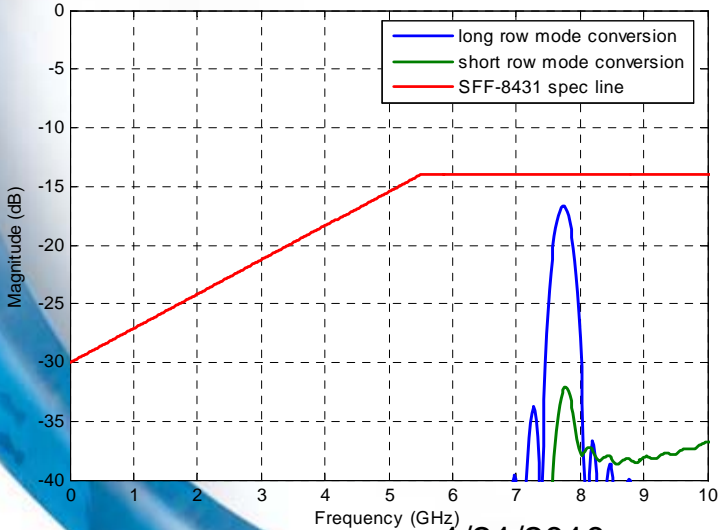
Current production QSFP socket SCD₁₂



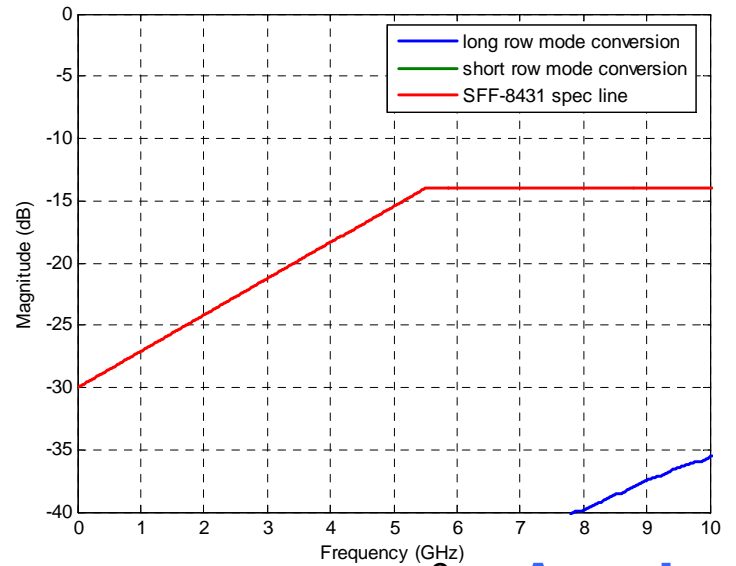
Enhanced QSFP socket SCD₁₂



Current production QSFP socket SDC₁₂



Enhanced QSFP socket SDC₁₂



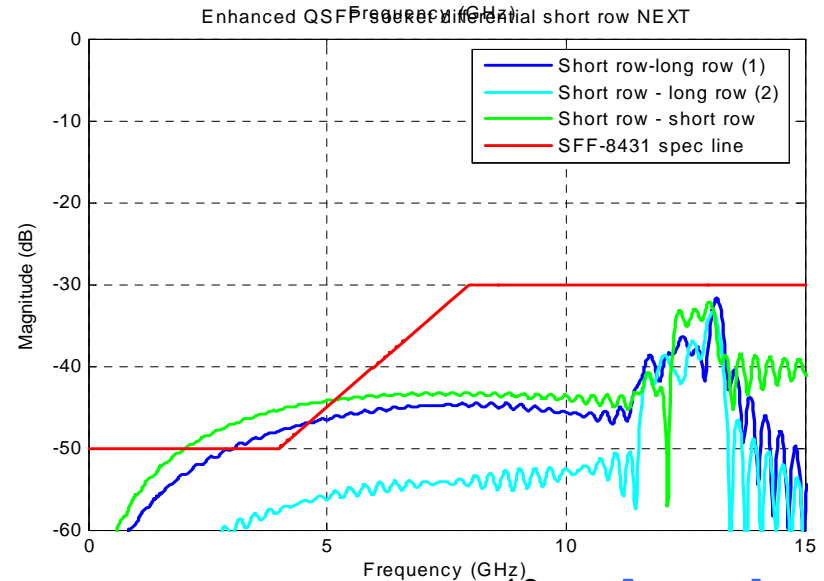
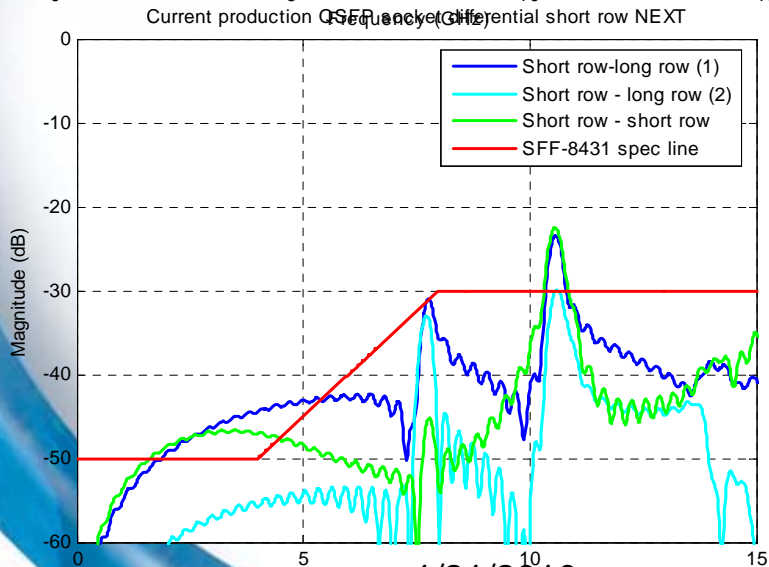
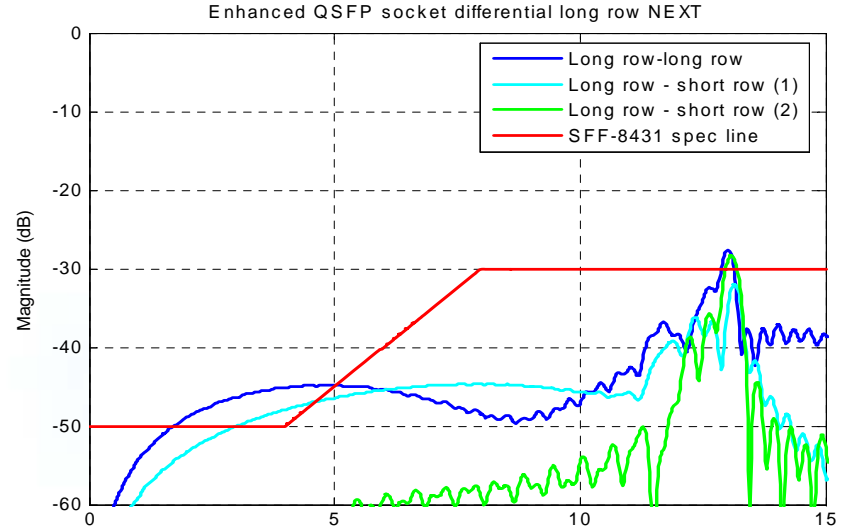
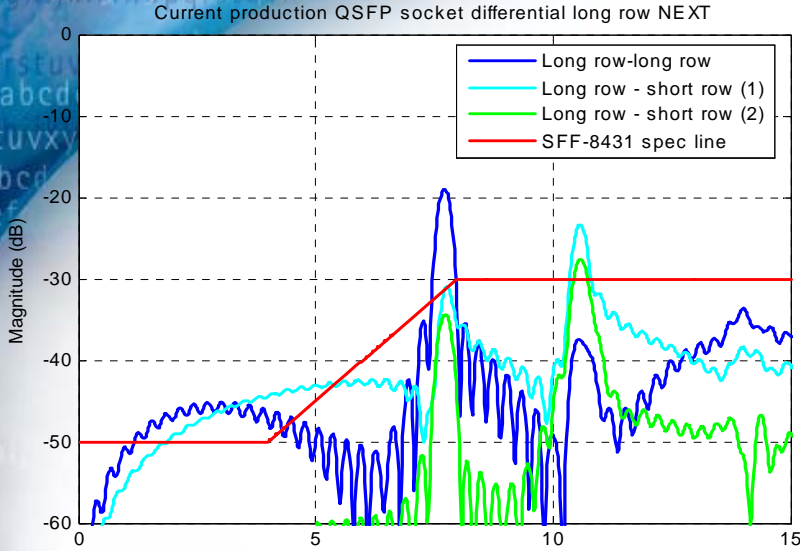
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Individual near-end crosstalk sources

Current

Enhanced

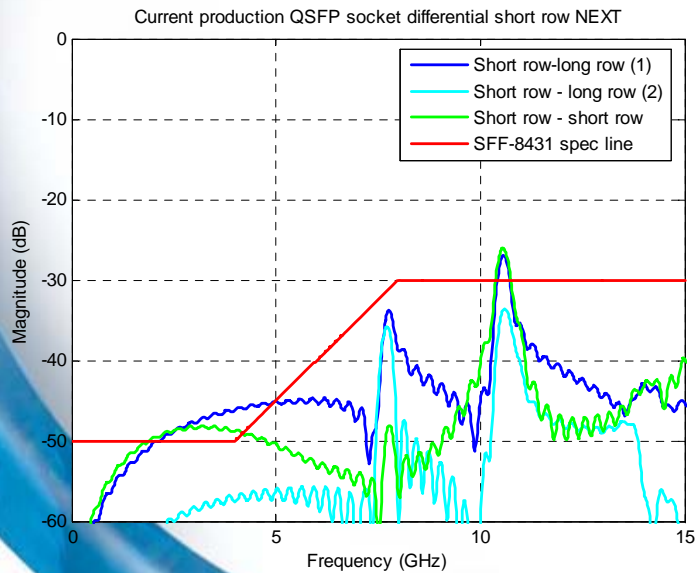
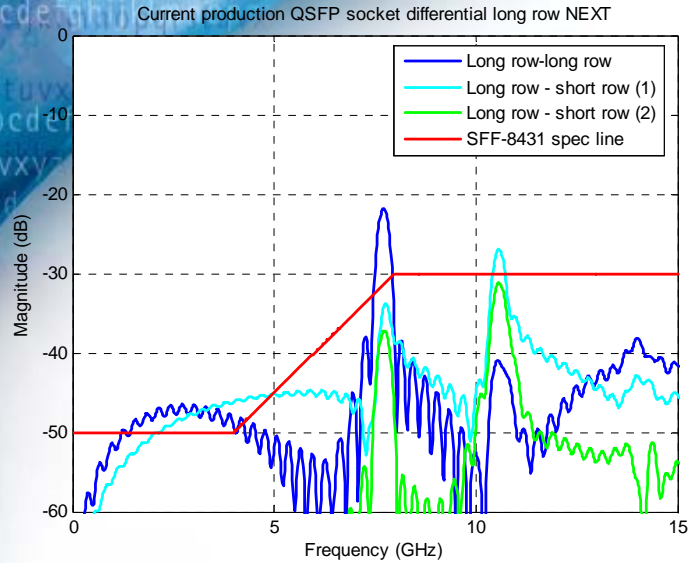


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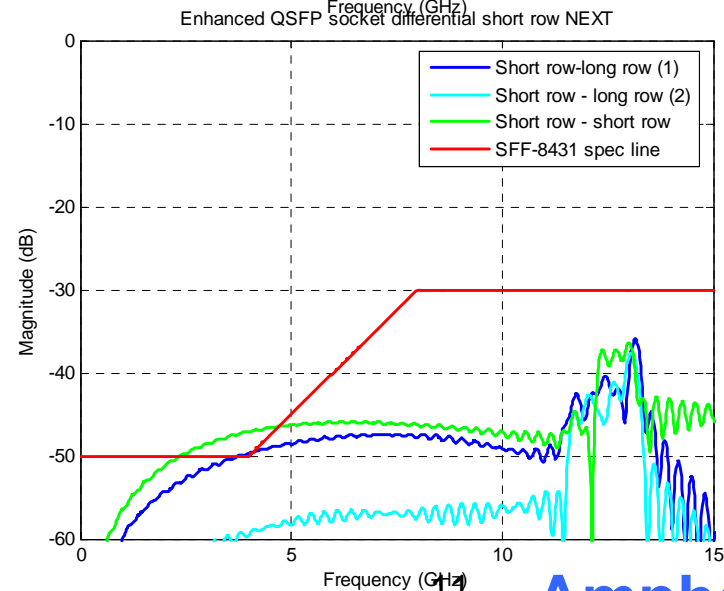
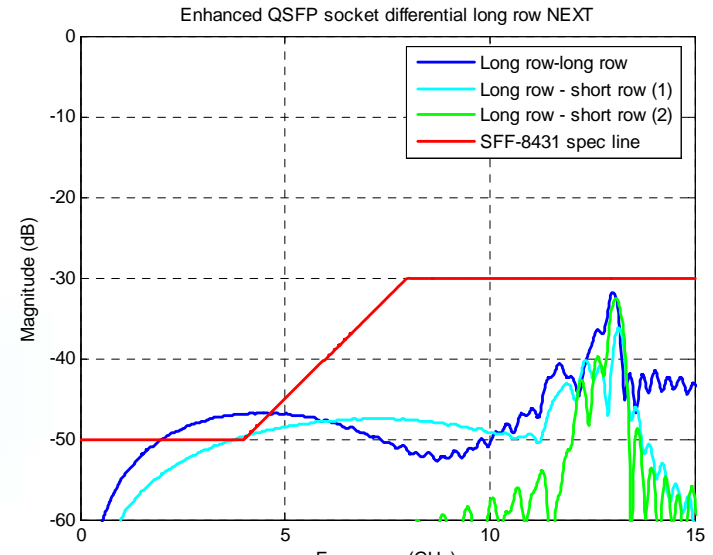
Individual near-end crosstalk sources

Current



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Enhanced



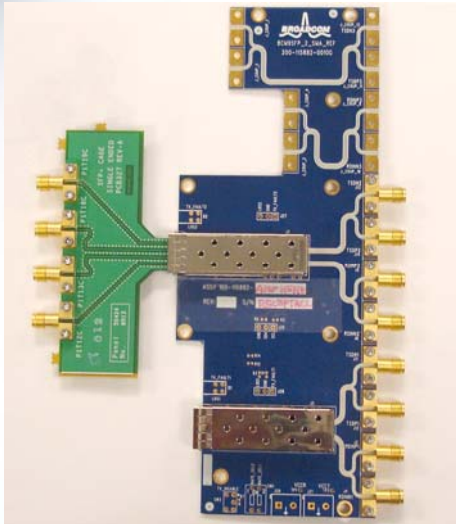
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Amphenol

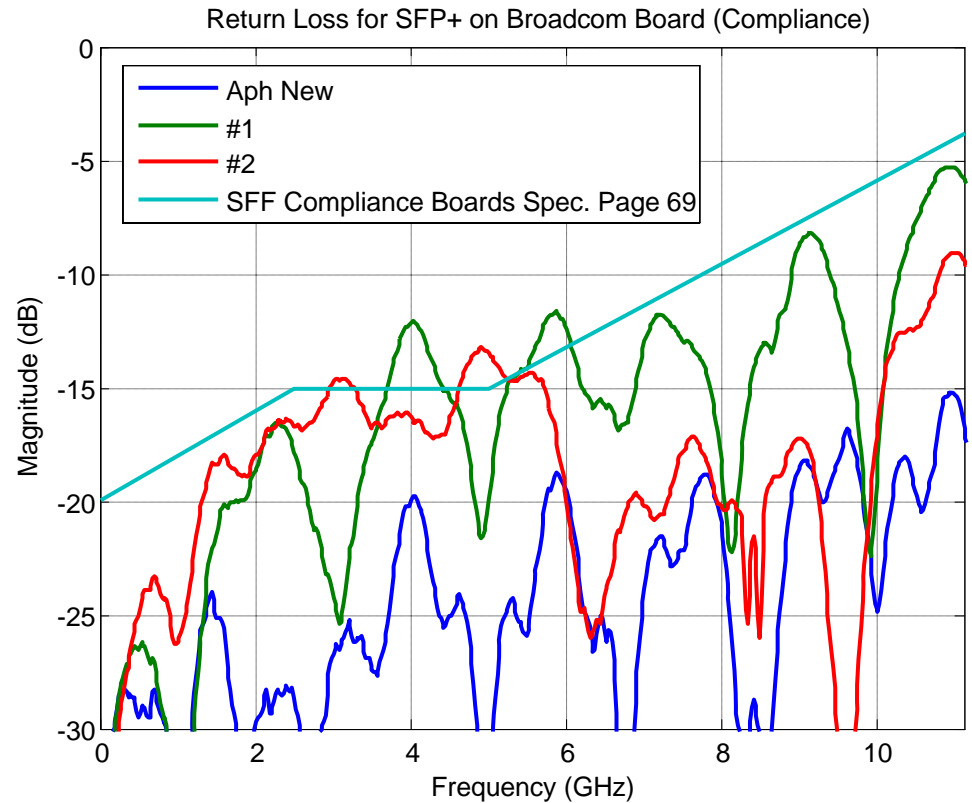
SFP+ Stacked

Compliance Board measurements

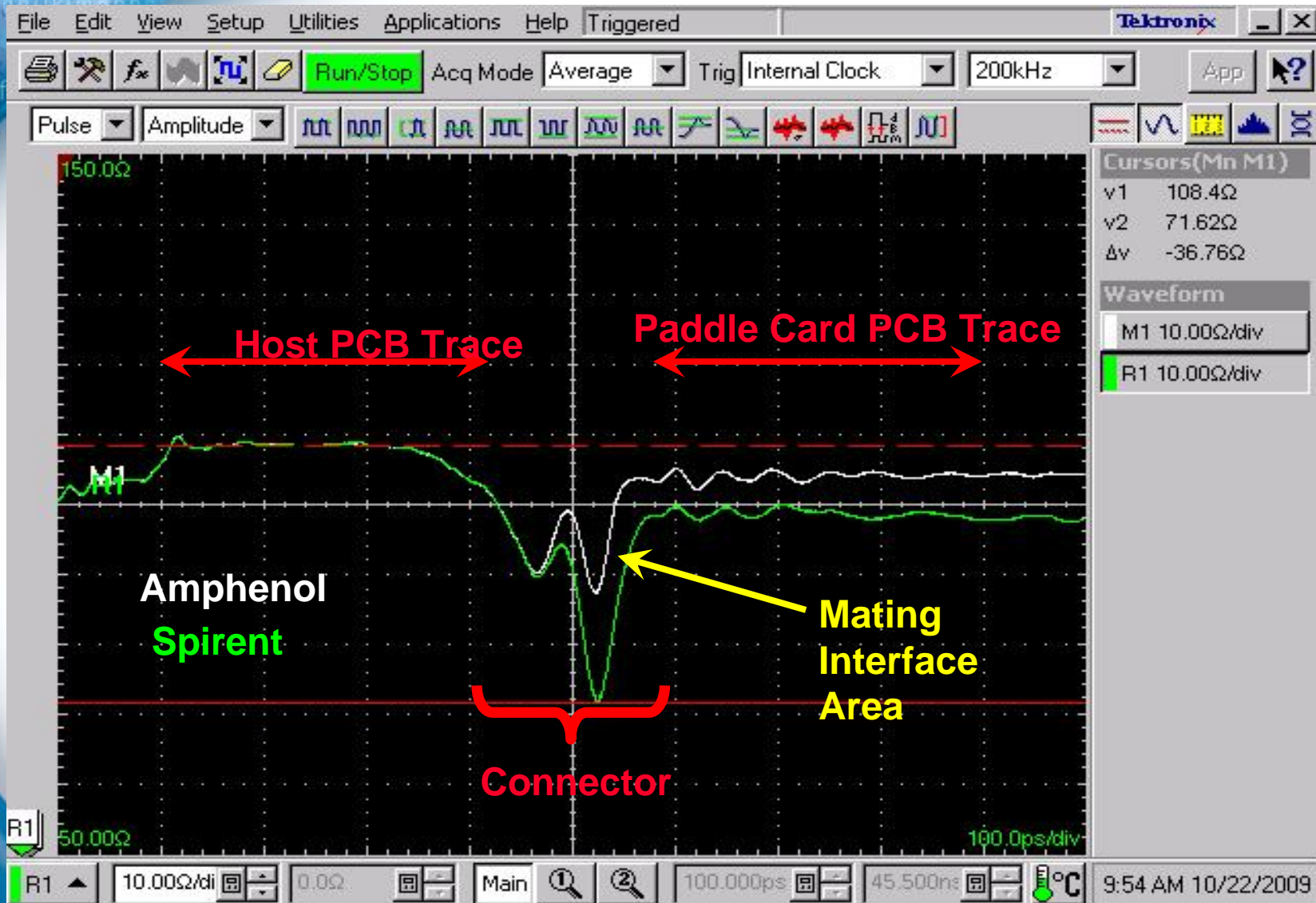
Compliance Board Measurements



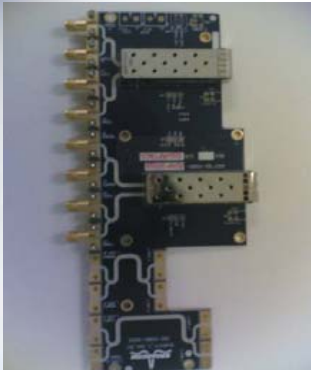
End of the cable SOLT



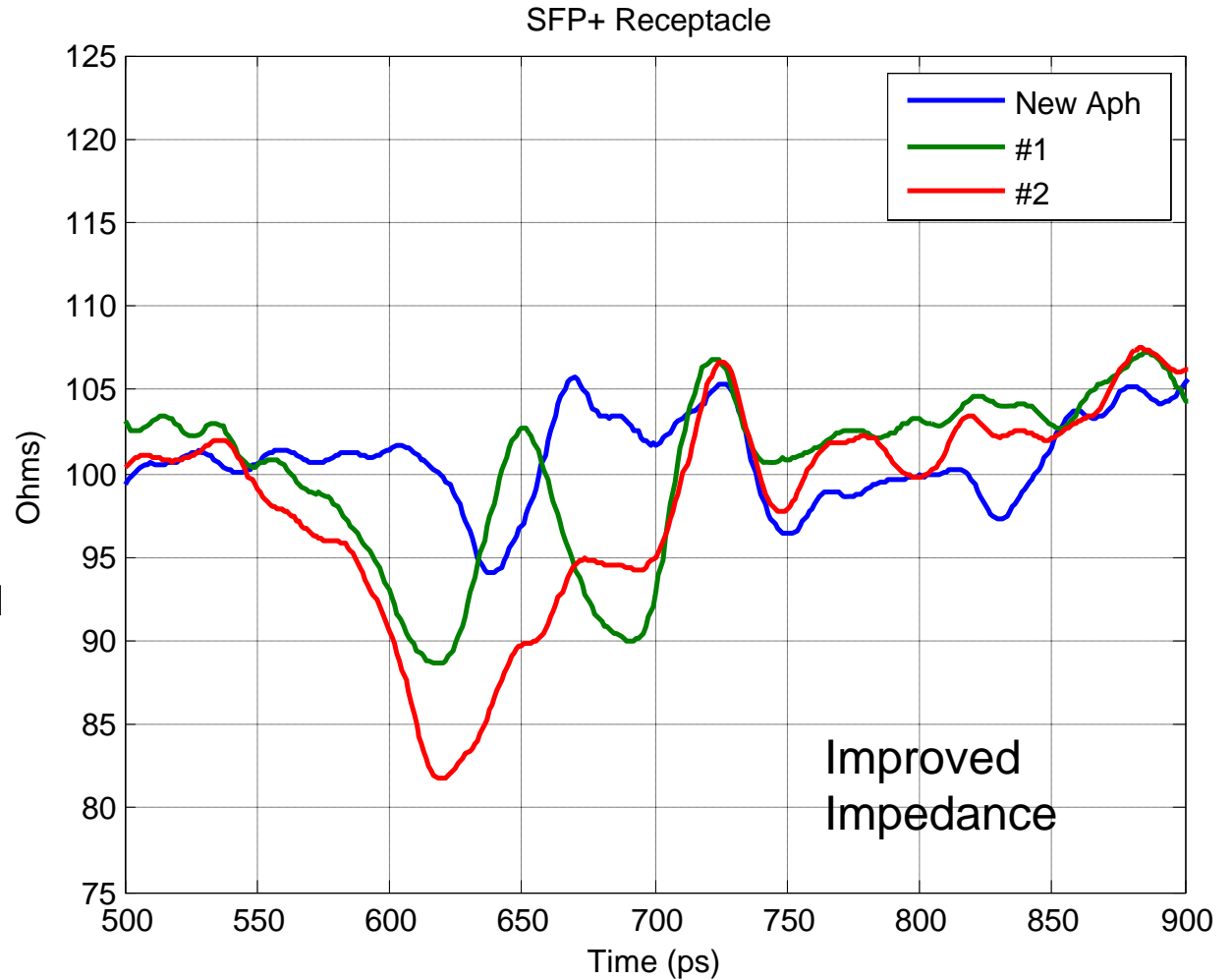
Effect of Spirent Host Compliance Card



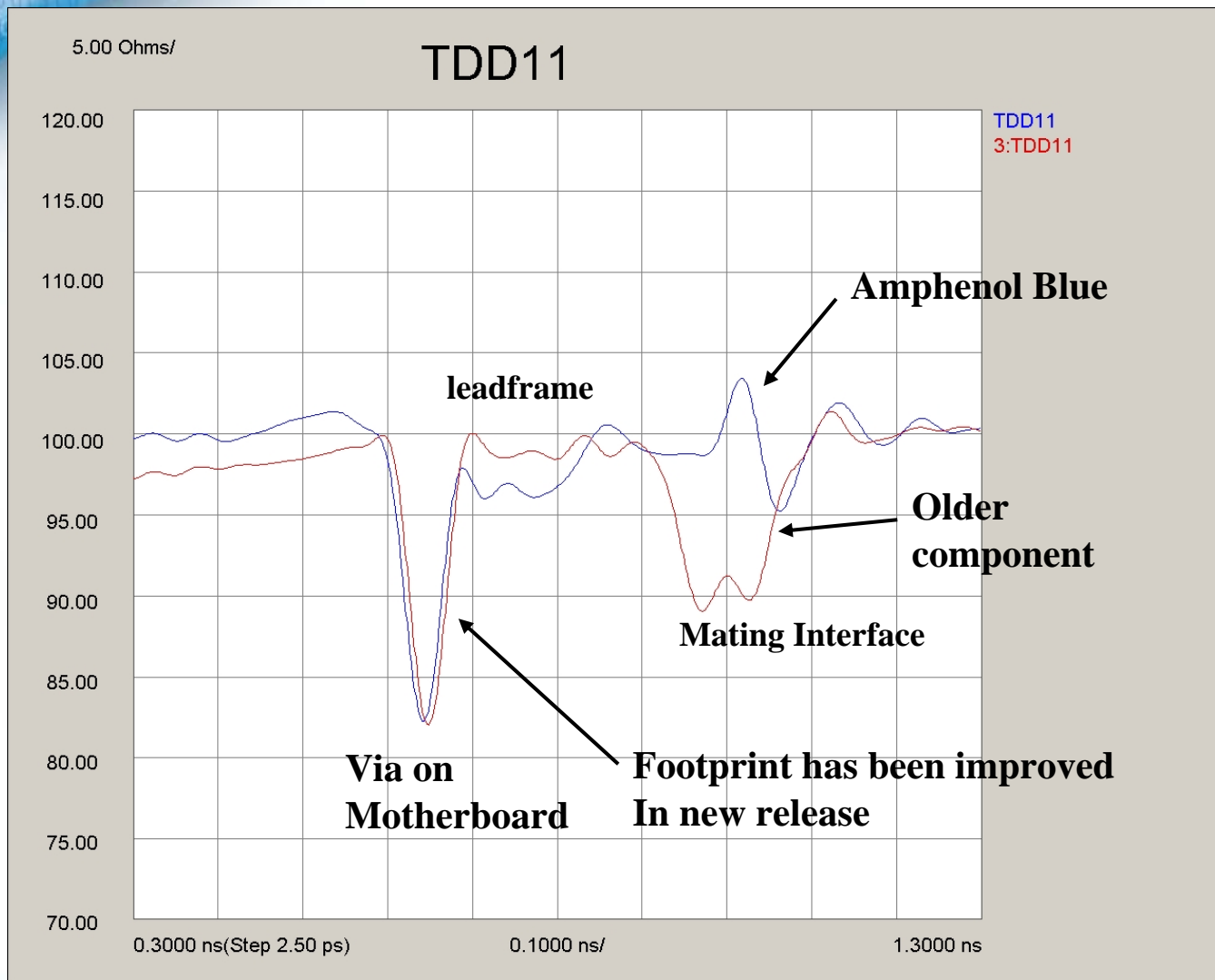
Receptacle Comparison (12ps)



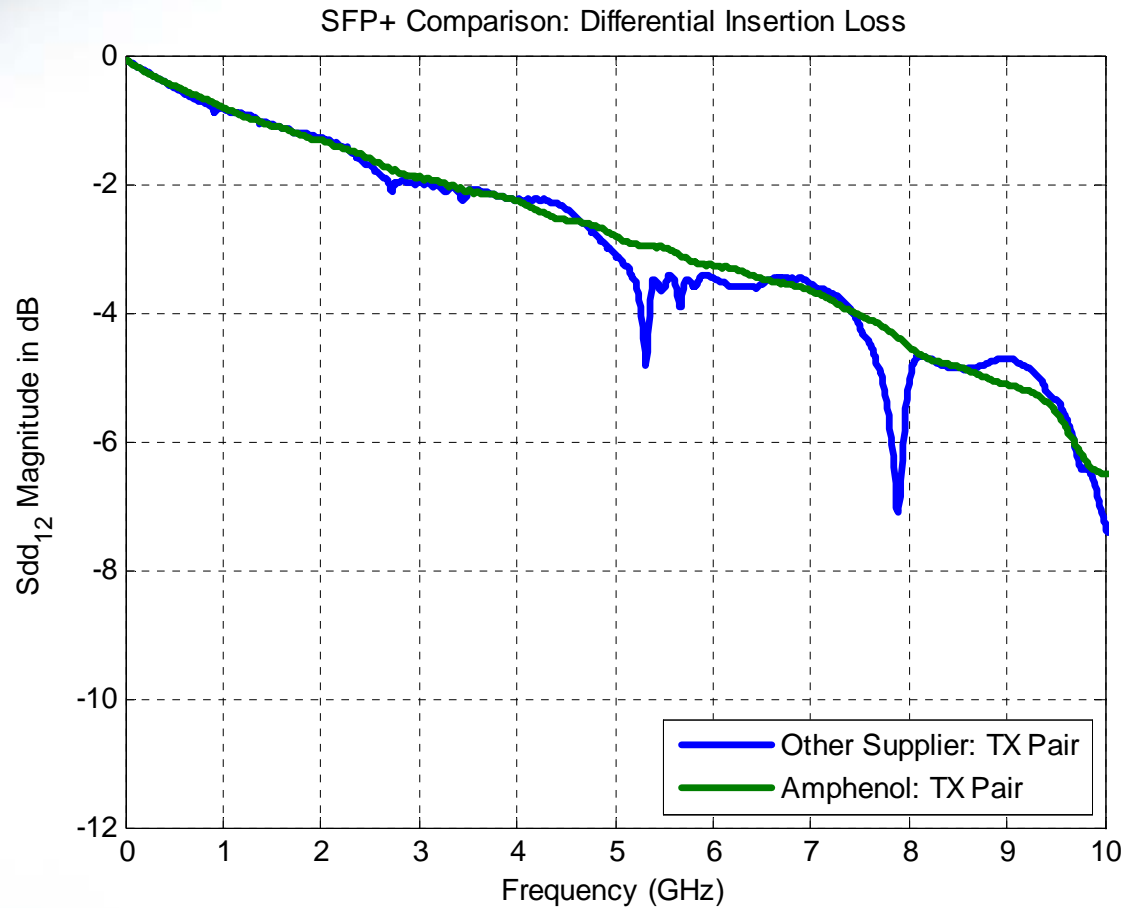
Standard SFP+ Testcard



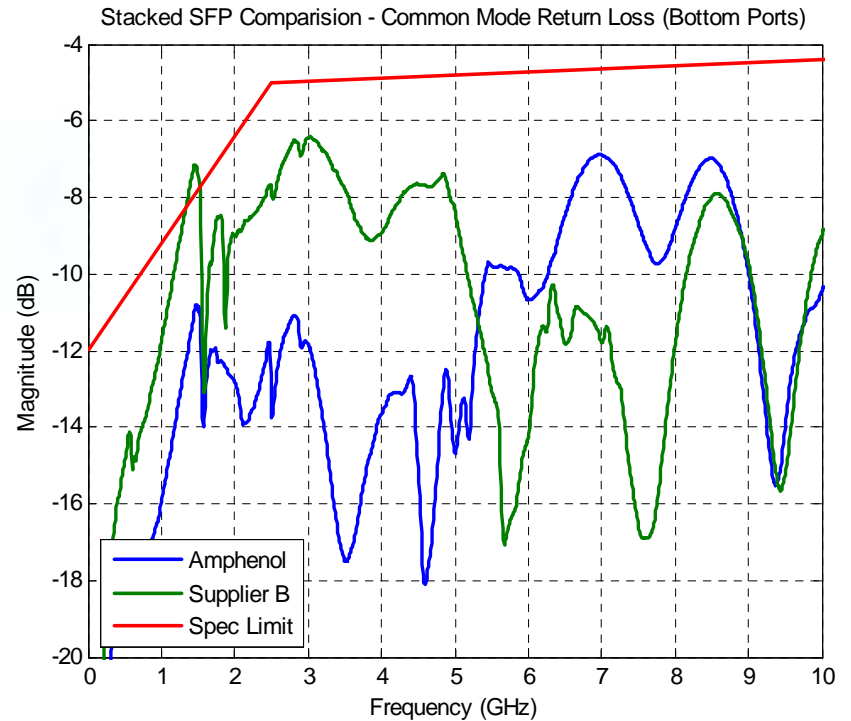
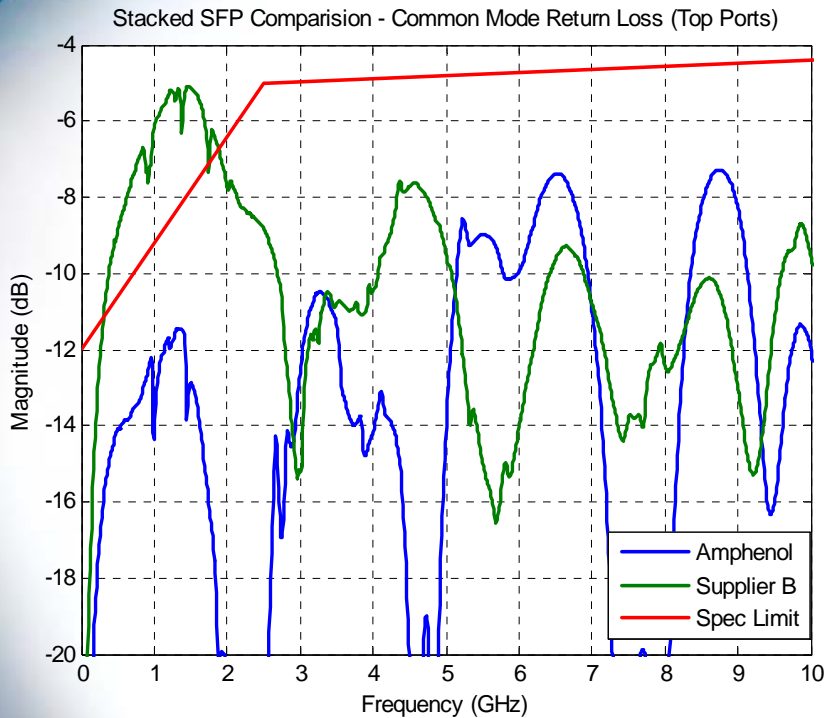
Stacked SFP Comparison Measurements



Top port Stacked Sfp+

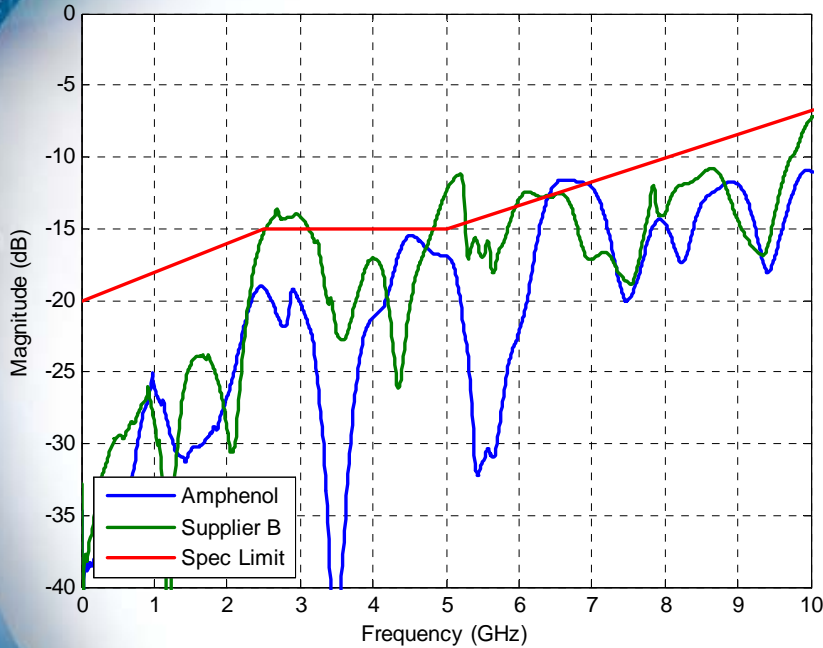


Common Mode Return Loss

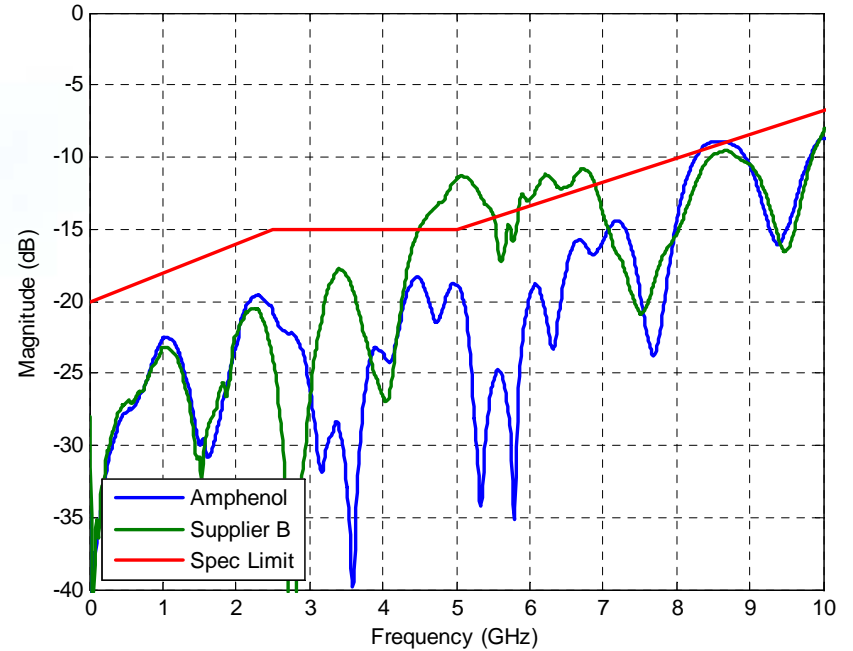


Differential Return Loss

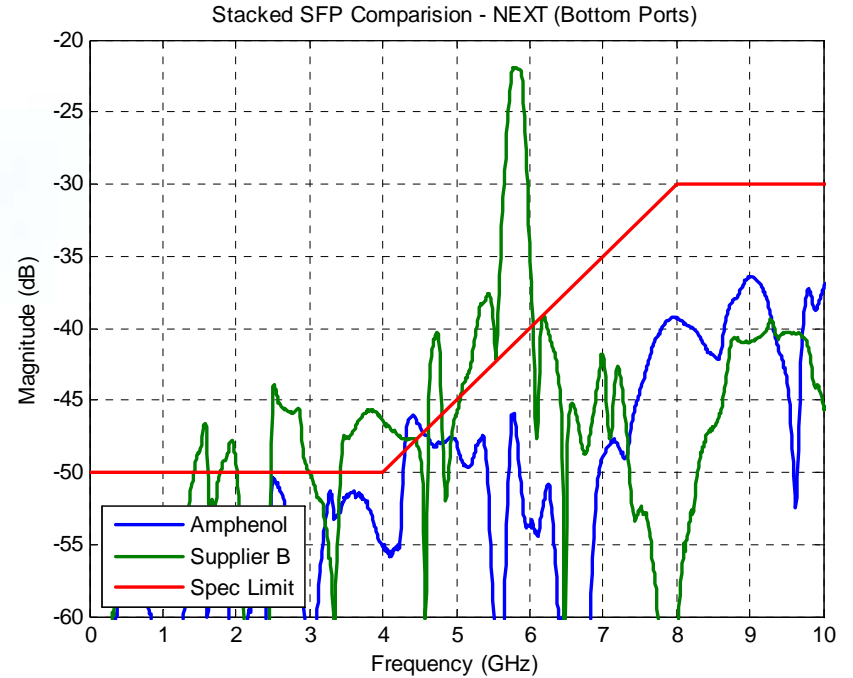
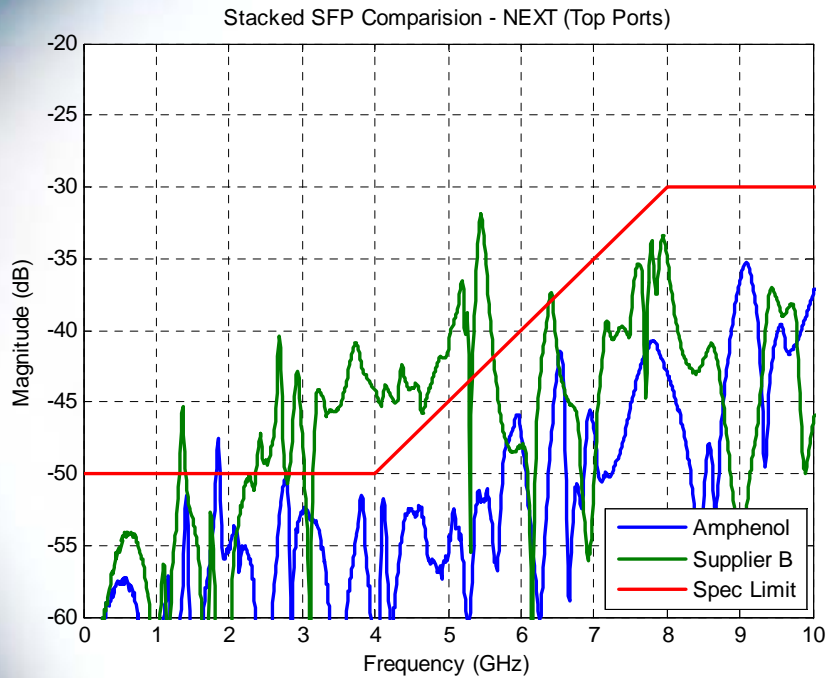
Stacked SFP Comparison - Differential Return Loss (Top Ports)



Stacked SFP Comparison - Differential Return Loss (Bottom Ports)

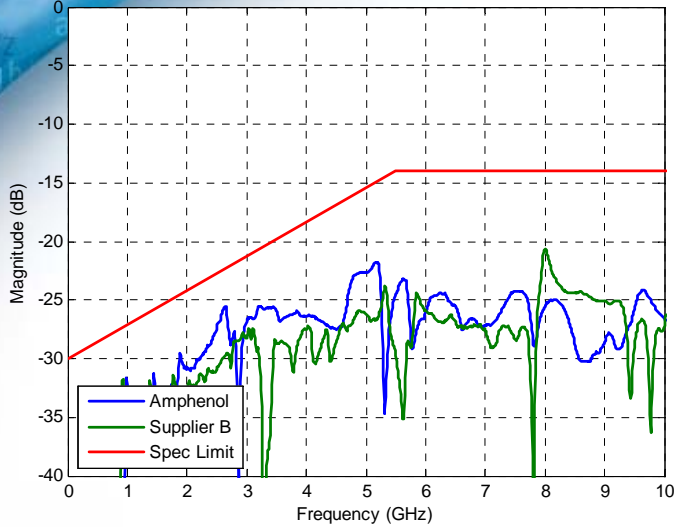


NEXT Crosstalk

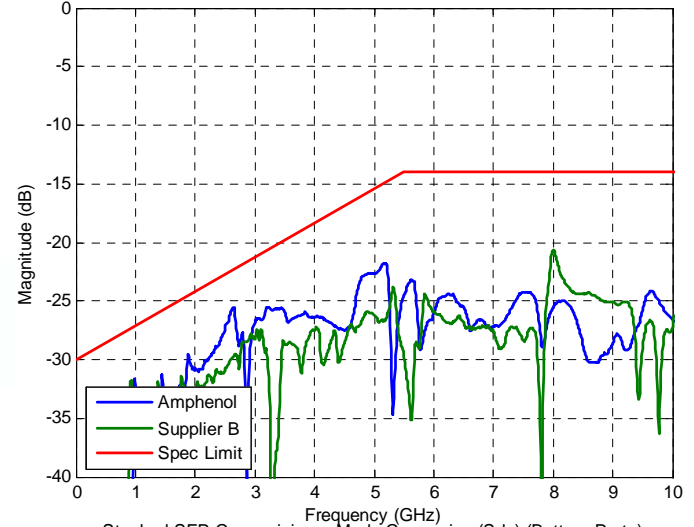


Mode Conversion

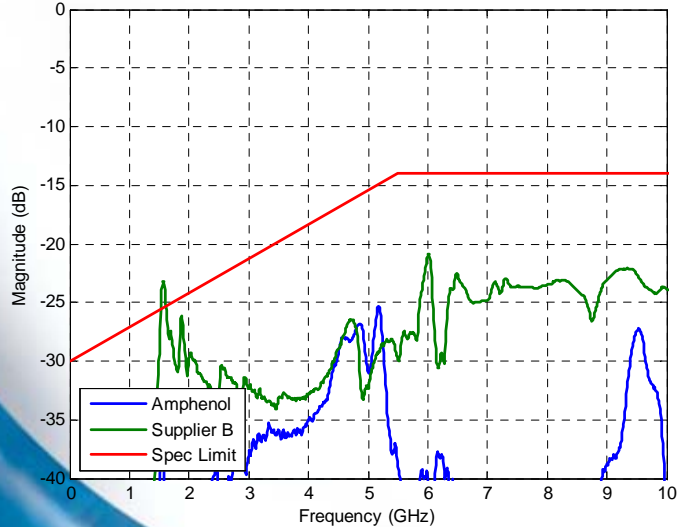
Stacked SFP Comparison - Mode Conversion (Sdc) (Top Ports)



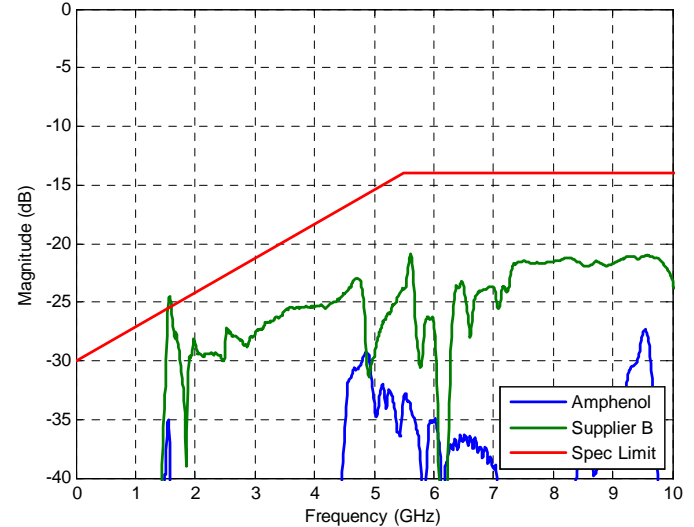
Stacked SFP Comparison - Mode Conversion (Scd) (Top Ports)



Stacked SFP Comparison - Mode Conversion (Sdc) (Bottom Ports)



Stacked SFP Comparison - Mode Conversion (Scd) (Bottom Ports)



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Insertion loss

