



IEEE P802.3dg 100 Mb/s Long-Reach Single Pair Ethernet Task Force

18AWG Cable S-parameters (500 m.)

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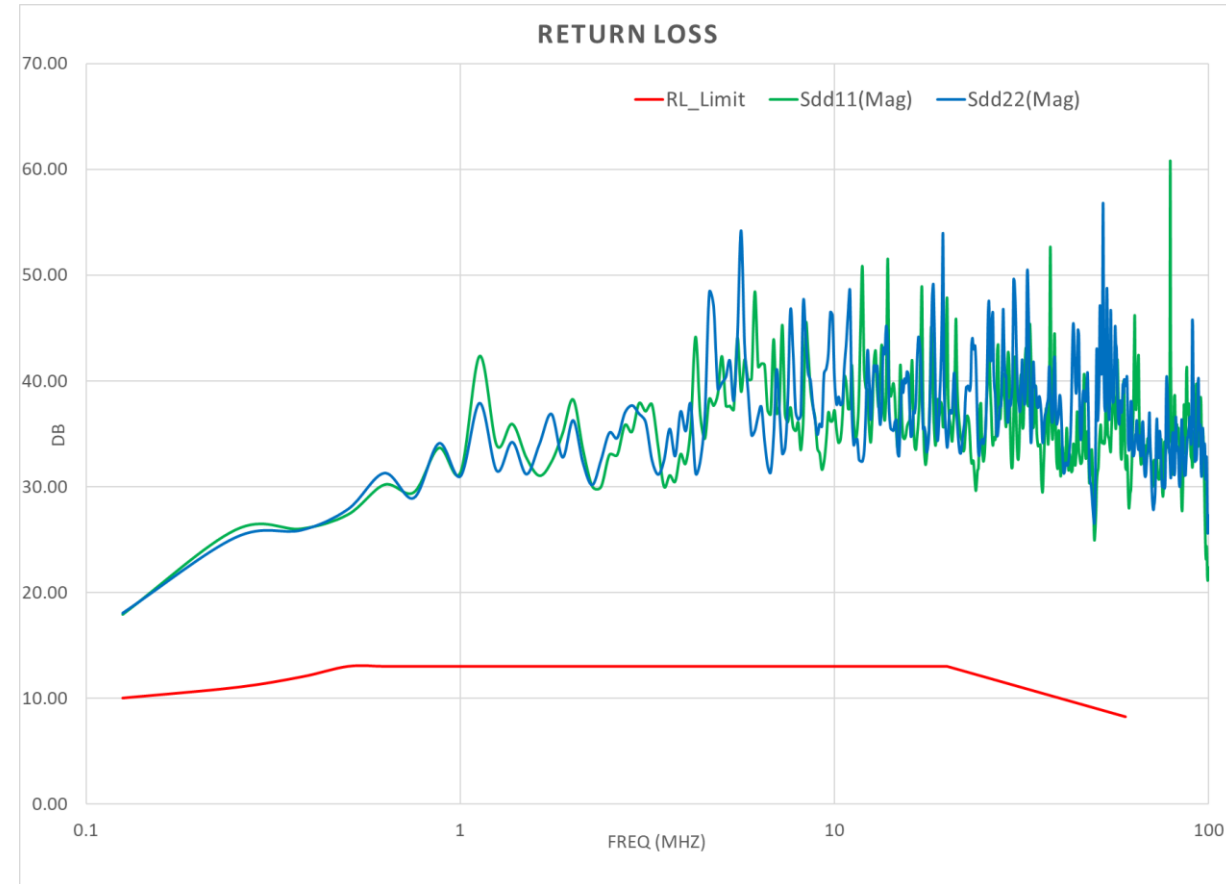
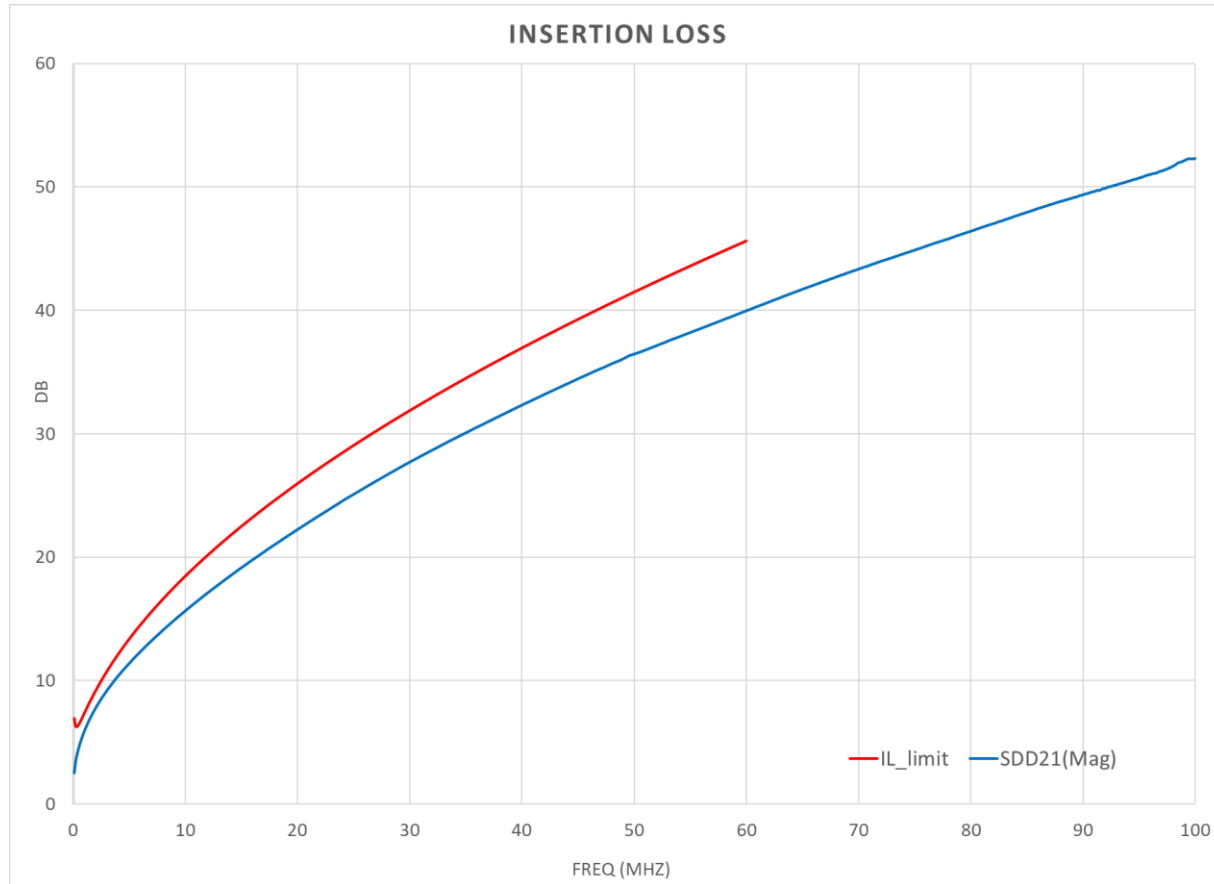
IEEE802.3dg Ad Hoc, February 7th, 2024

Test and Cable characteristics

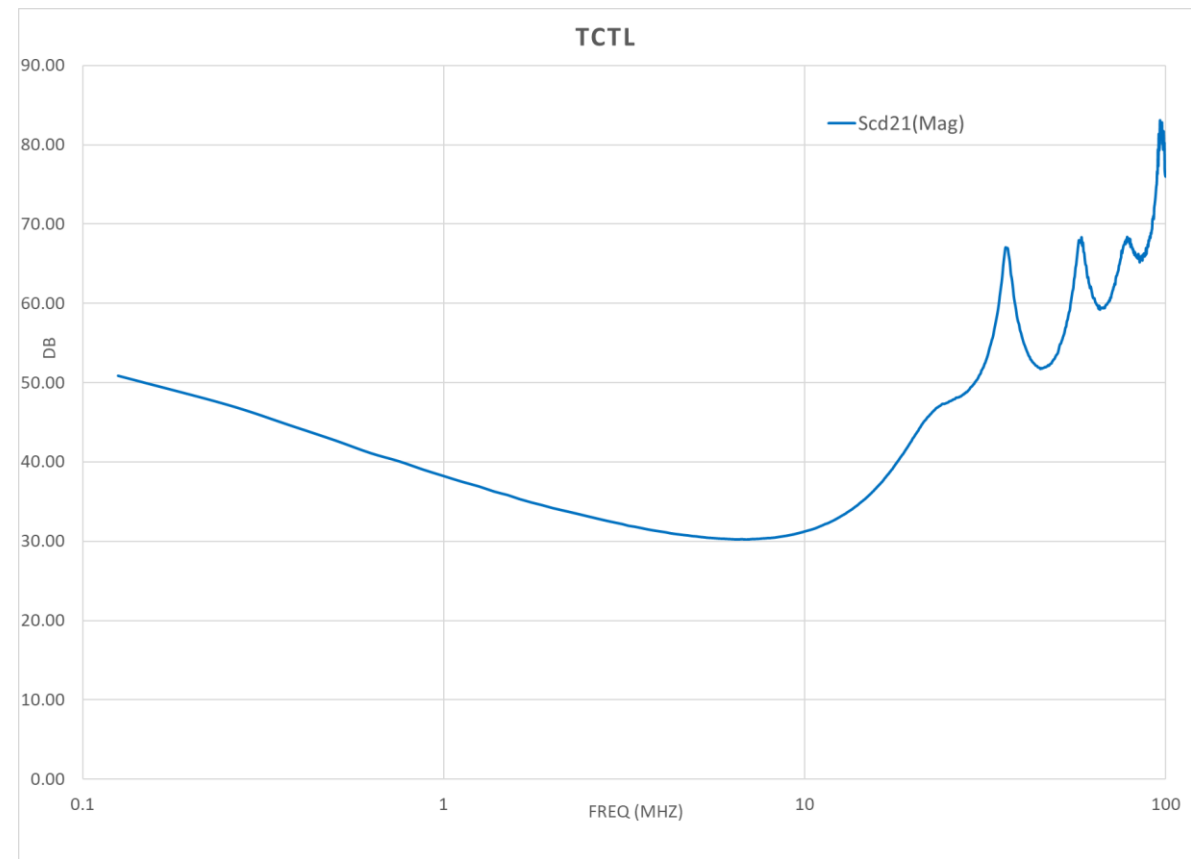
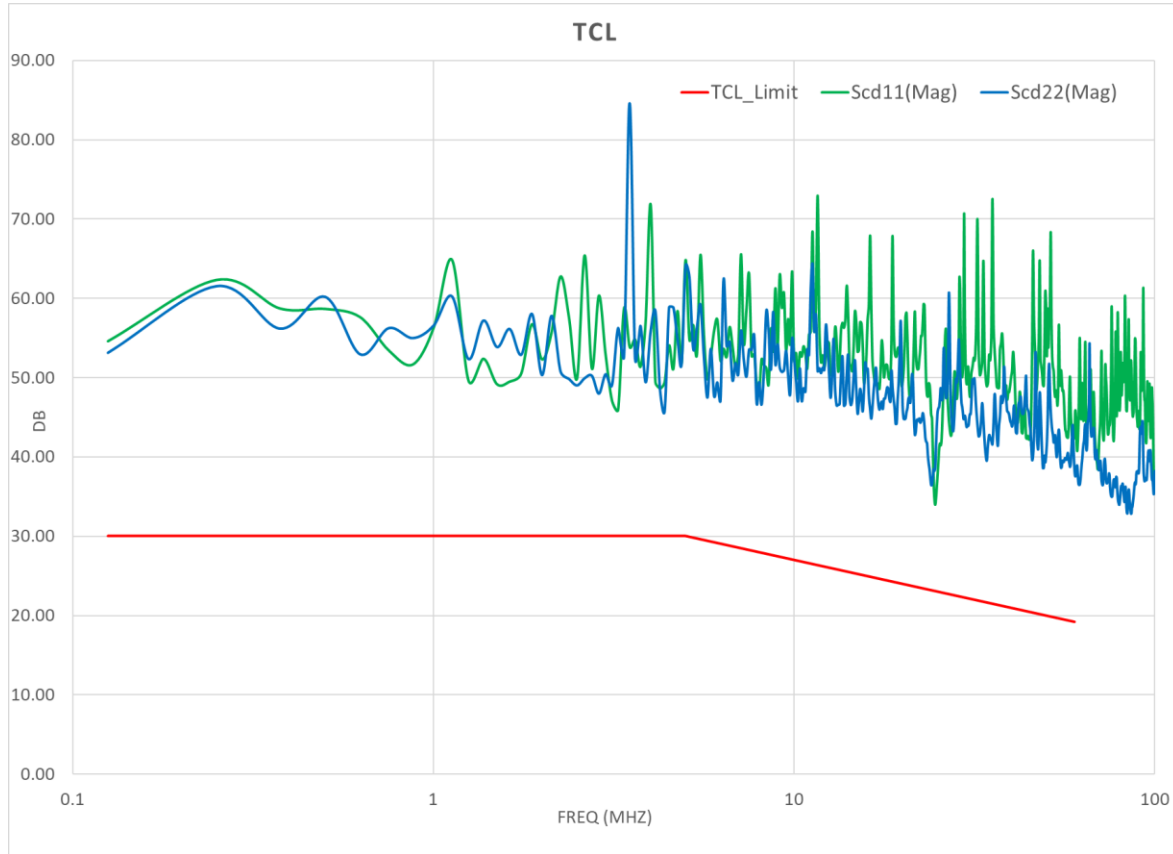


- Cable Physical :
 - 100Mbps 18AWG SF/UTP PVC
- Cable Electrical:
 - Min. frequency > 100 MHz
- Measurements :
 - Sdd11, Sdd22, Sdd21, Scd11, Scd22, Scd21 (Re, Im)
 - Test frequencies : 125kHz to 100MHz, step 125kHz
 - Test equipment : AEM MMVNA-200

Insertion Loss, Return Loss



TCL (Scd11), TCTL (Scd21)



Excel file data format



Frequency	Sdd11(Re)	Sdd11(Im)	Sdd22(Re)	Sdd22(Im)	Frequency	SDD21(Re)	SDD21(Im)	Frequency	Scd11(Re)	Scd11(Im)	Scd22(Re)	Scd22(Im)	Frequency	Scd21(Re)	Scd21(Im)
0.125	0.063846	-0.10993	0.064809	-0.10648	0.125	-0.26205	-0.70301	0.125	0.001611	-0.00094	0.00217	-0.00036	0.125	0.002559	-0.00126
0.25	0.037639	-0.03395	0.041872	-0.03538	0.25	-0.57741	0.34594	0.25	-0.00064	0.000414	0.000794	-0.00027	0.25	-0.00262	-0.00345
0.375	0.007951	-0.04939	0.007927	-0.04999	0.375	0.409301	0.479075	0.375	0.001149	0.000158	0.001318	-0.00081	0.375	-0.00433	0.003959
0.5	0.025647	-0.03436	0.024594	-0.03192	0.5	0.385481	-0.45628	0.5	0.000517	0.001046	0.000763	0.000609	0.5	0.005606	0.004669
0.625	-0.00051	-0.031	0.005	-0.02674	0.625	-0.48914	-0.29463	0.625	0.001062	-0.00077	0.002038	-0.00094	0.625	0.004709	-0.00738
0.75	0.012259	-0.03138	0.015219	-0.03224	0.75	-0.2067	0.50802	0.75	-3.12E-05	0.002123	0.001257	-0.00089	0.75	-0.00898	-0.00407
0.875	0.000203	-0.02077	0.005157	-0.019	0.875	0.514373	0.121391	0.875	0.002596	0.000323	-0.00059	-0.00168	0.875	-0.00339	0.0106
1	0.000363	-0.0271	0.004301	-0.02781	1	0.041048	-0.50916	1	0.001528	0.000207	0.000525	0.001389	1	0.012043	0.002137
1.125	0.00179	-0.00743	0.008864	-0.0091	1.125	-0.49323	0.034177	1.125	0.000573	1.05E-05	0.000945	-0.00022	1.125	0.000536	-0.01329

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98.5	-0.05807	-0.03847	0.021165	0.01784	98.5	0.000557	0.002465	98.5	0.003178	-0.00261	-0.00037	-0.01398	98.5	-8.96E-05	-5.91E-05
98.75	-0.05421	-0.02699	0.019709	-0.01132	98.75	-0.00112	-0.00225	98.75	0.004262	-0.00238	-0.00032	-0.01396	98.75	8.04E-05	1.74E-05
99	-0.05578	-0.03369	-0.00533	-0.02691	99	0.0016	0.001896	99	0.006264	-0.00191	-0.0002	-0.01497	99	-9.40E-05	-3.69E-05
99.25	-0.07637	-0.03205	-0.03566	-0.02114	99.25	-0.00198	-0.00145	99.25	0.009379	-0.00311	-0.00114	-0.01638	99.25	9.68E-05	-1.06E-05
99.5	-0.08752	-0.00808	-0.05123	0.009804	99.5	0.002242	0.000947	99.5	0.011271	-0.00678	-0.00371	-0.01663	99.5	-0.00013	6.79E-05
99.75	-0.0812	0.010508	-0.0365	0.034655	99.75	-0.00241	-0.0004	99.75	0.010386	-0.01086	-0.00541	-0.01401	99.75	0.000128	-8.83E-05
100	-0.07275	0.02249	-0.01782	0.039188	100	0.002424	-0.00019	100	0.007537	-0.01289	-0.004	-0.01156	100	-0.00013	8.62E-05



Thank you