

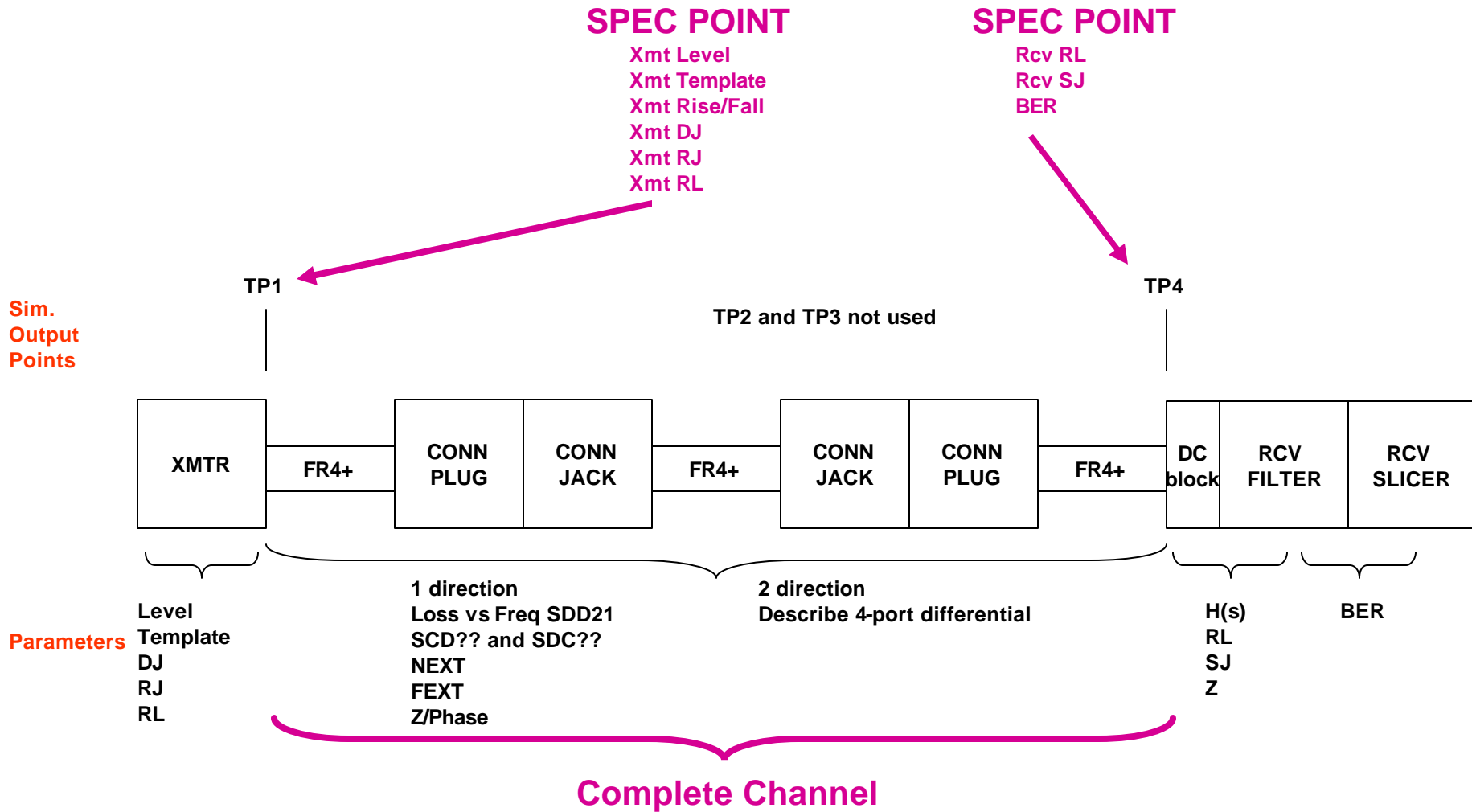
Outline – 22April04 Conference Call

- Test Point
- Basic Electrical Specifications
- SDD21
- NEXT/FEXT
- Group Delay
- S-Parameters

Outline

- *Test Point*
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- S21
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Proposed Model for Simulation



Outline

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Proposed Specifications @ TP1

Parameter	Value	Justification
Baud Rate	12.5Gps	Worst case number for simulation.
Xmt Level Vdiff		Use 800mvpp if needed for simulation.
Vcm		
VcmAC		
Diff Impedance	Assume 100ohms for fab	
Diff Impedance Tolerance	+/- 10% for fab	
Xmt Template		
Xmt Rise and Fall		
Xmt DJ		
Xmt RJ		
Xmt RL		Felt it wasn't needed at this point in the channel development.

Proposed Specifications @ TP4

Parameter	Value	Justification
Baud Rate	12.5Gps	Worst case number for simulation.
Diff Input Level		
Vcm		
VcmAC		
Diff Impedance	Assume 100ohms for fab	
Diff Impedance Tolerance	+/- 10% for fab	
Rcv RL		Felt it wasn't needed at this point in the channel development.
Receiver Coupling	AC	
BER		

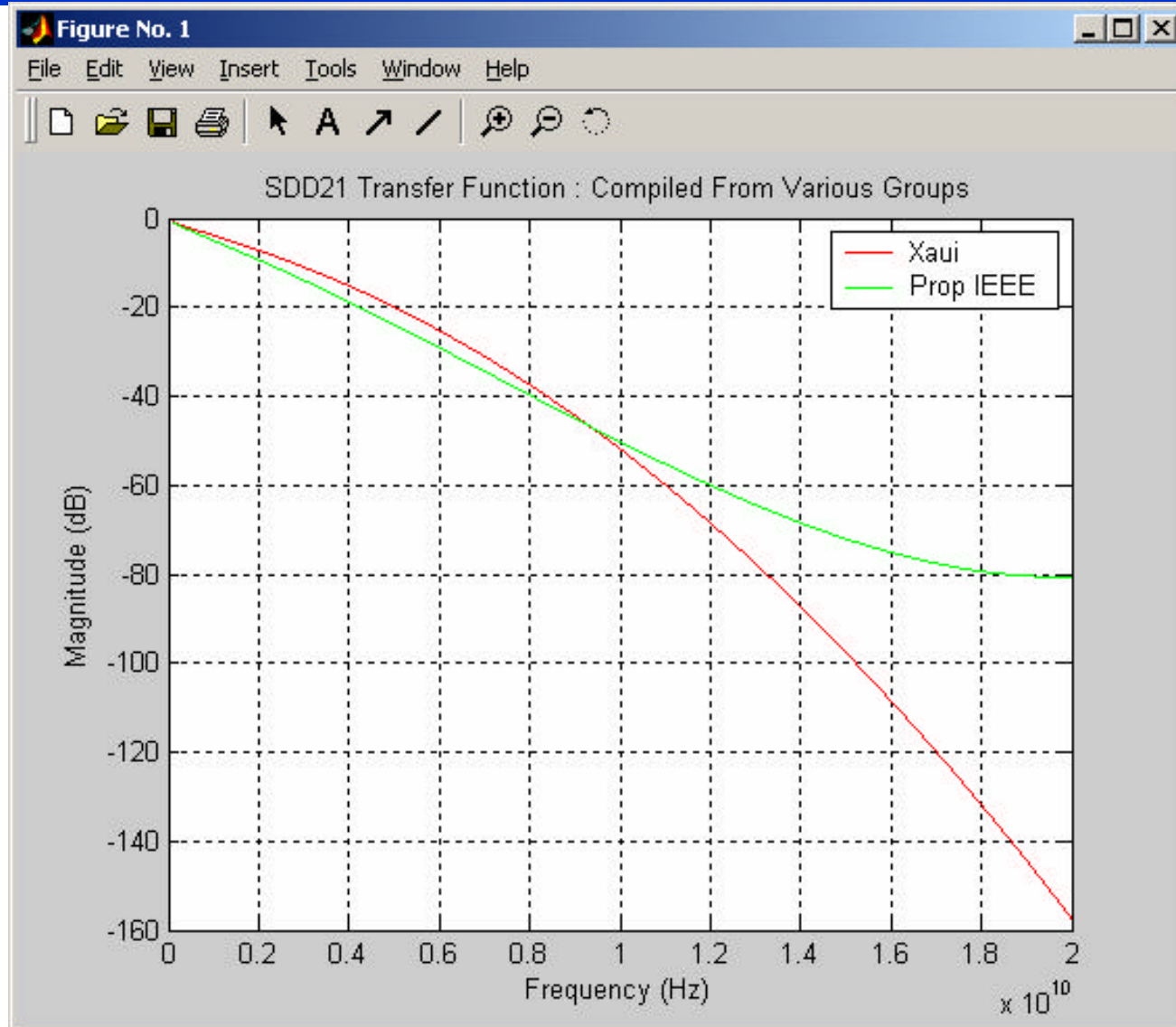
Outline

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Proposed SDD21 Channel Equation

Parameter	Value	Justification
S21 Range	100Mhz to 20,000Mhz	
Source Power	Max and Min TX dBm	
IF BW	100Hz	
NEXT/FEXT Range	100Mhz to 20,000Mhz	Discuss terminations on source and victim.
Source Power	Max and Min TX dBm	
IF BW	100Hz	
Group Delay	100Mhz to 20,000Mhz	
Source Power	Max and Min TX dBm	
IF BW	100Hz	

Proposed SDD21 Channel Equation



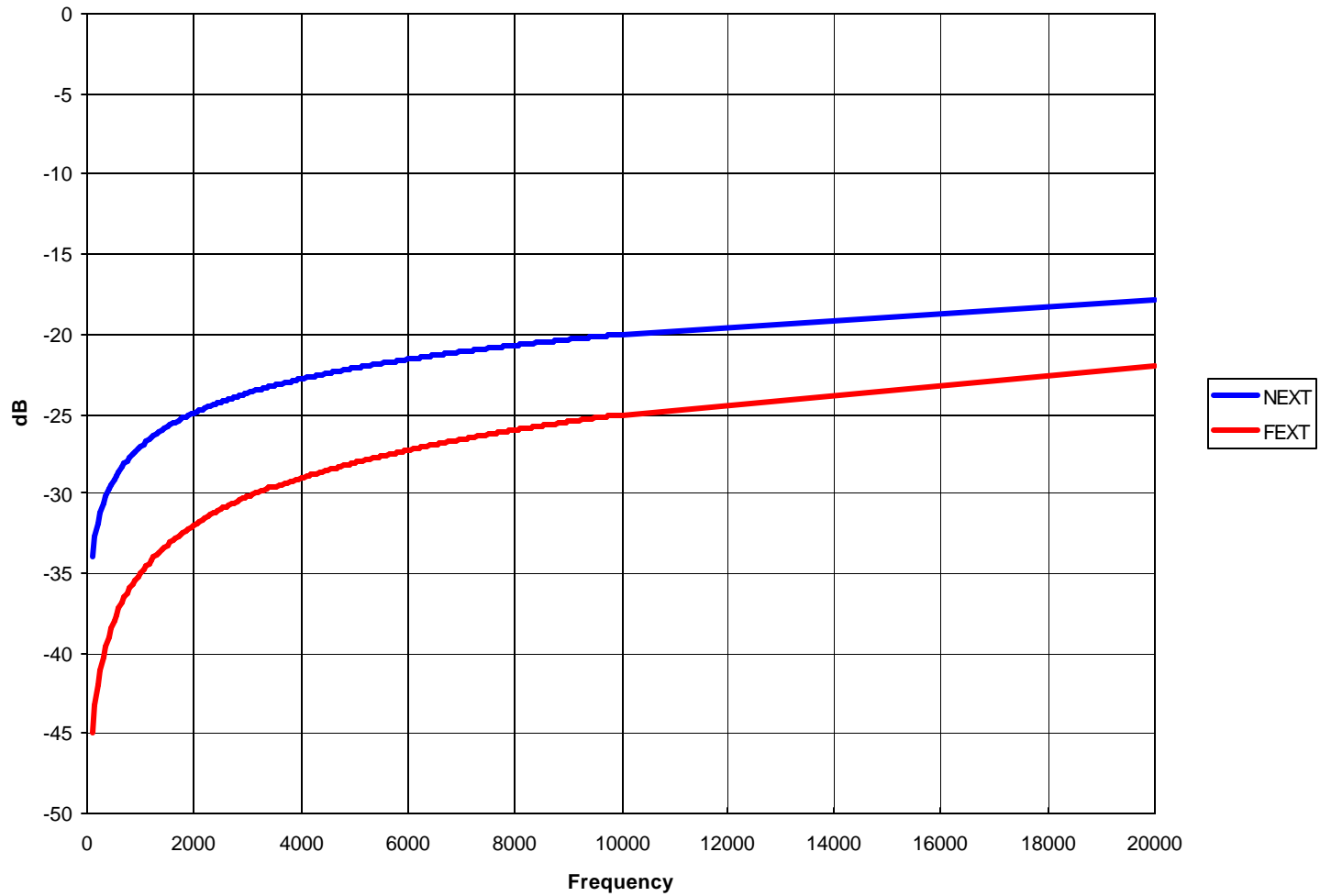
Proposed SDD21 Channel Equation

- % original Xaui model numbers per released 802.3 standard
- a1 = 6.5E-06; %
- a2 = 2.0E-10; %
- a3 = 3.3E-20; %
- % Anameconstants = 'Xaui 50cm';
- %
- % Proposed Constants per Joel
- b1 = 6.5E-06; %
- b2 = 3.3E-10; %
- b3 = 3.2E-20; %
- b4 = 1.38E-30; %
- % Bnameconstants = 'Proposed';
- %
- %
- % *****
- %
- f = startfreq:stepsize:stopfreq;
- s21a = -20*log10(exp(1))*(a1*sqrt(f) + a2*f + a3*f.^2);
- s21b = -20*log10(exp(1))*(b1*sqrt(f) + b2*f + b3*f.^2 - b4*f.^3);

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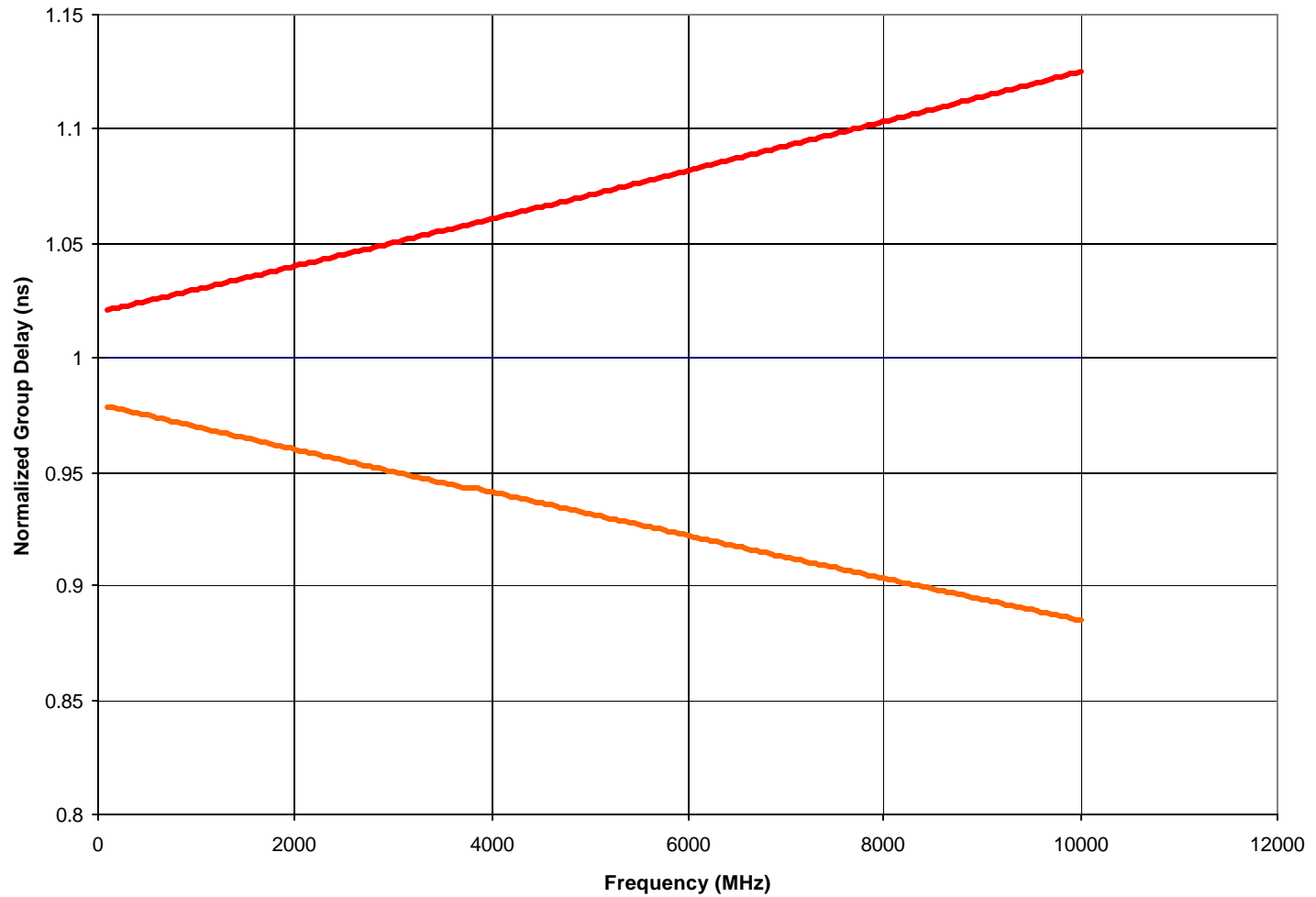
Proposed NEXT/FEXT



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Proposed Group Delay



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- *S-Parameters*

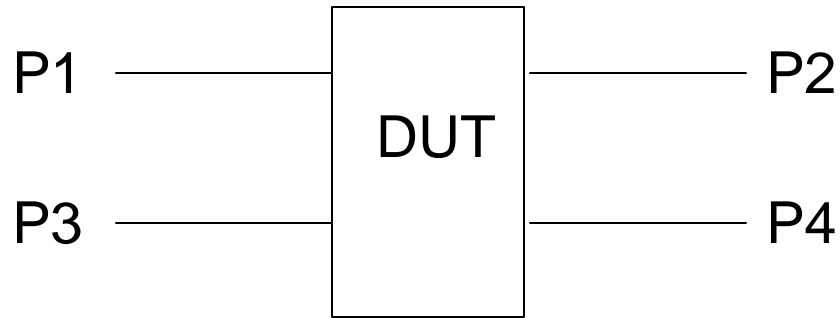
S-Parameters

S _{xy} =	S11	S12	S13	S14	Stimulus
	S21	S22	S23	S24	
	S31	S32	S33	S34	
	S41	S42	S43	S44	

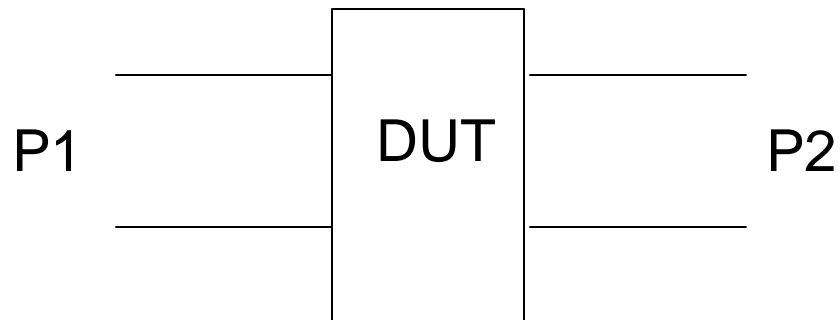
S _{Diff} =	SDD11	SDD12	SDC11	SDC12
	SDD21	SDD22	SDC21	SDC22
	SCD11	SCD12	SCC11	SCC12
	SCD21	SCD22	SCC21	SCC22

S _{Diff} = 1/2	S11-S31-S13+S33	S12-S32-S14+S34	S11-S31+S13-S33	S12-S32+S14-s34
	S21-S41-S23+S43	S22-S42-S24+S44	S21-S41+S23-S43	S22-S43+S24-S44
	S11+S31-S13-S33	S12+S32-S14-S34	S11+S31+S13+S33	S12+S32+S14+S34
	S21+S41-S23-S43	S22+S42-S24-S44	S21+S41+S23+S43	S22+S42+S24+S44

S-Parameters



Single Ended 4 Port DUT



Differential 2 Port DUT