

SerDesDesign.com Typical-Combine-SParameters-Characteristics-and-Displays

Subject: Typical Combine S-Parameters Characteristics and Displays

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This section discusses typical Combine S-Parameters Tool characteristics and displays. Let us know if you would like the Combine S-Parameters Tool enhanced with additional capability.

A typical SerDes channel, with about 18 nsec time delay, defined for use with serial data at a bit rate of 25 Gbps has its hardware 4-Port S-parameters measured from 10 MHz to 40 GHz in steps of 3.125 MHz. These S-parameters are passive.

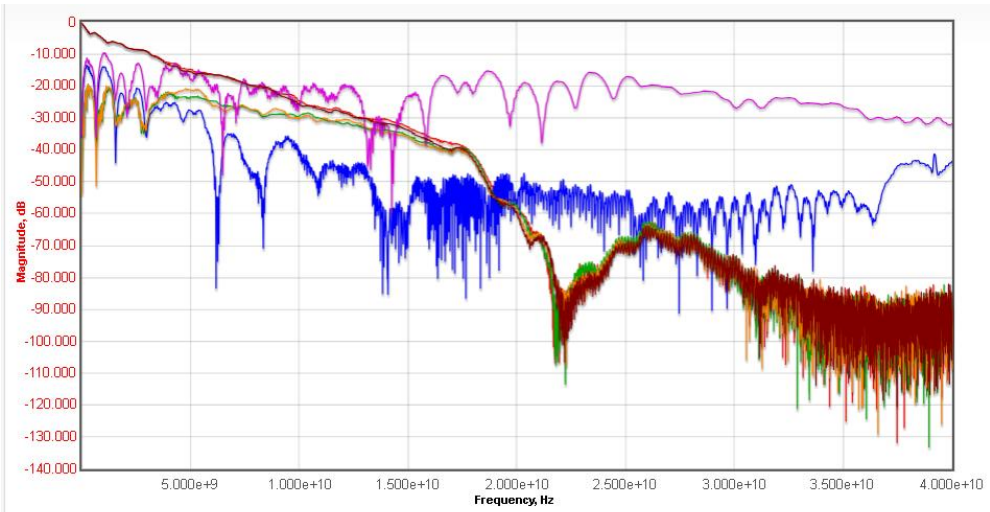
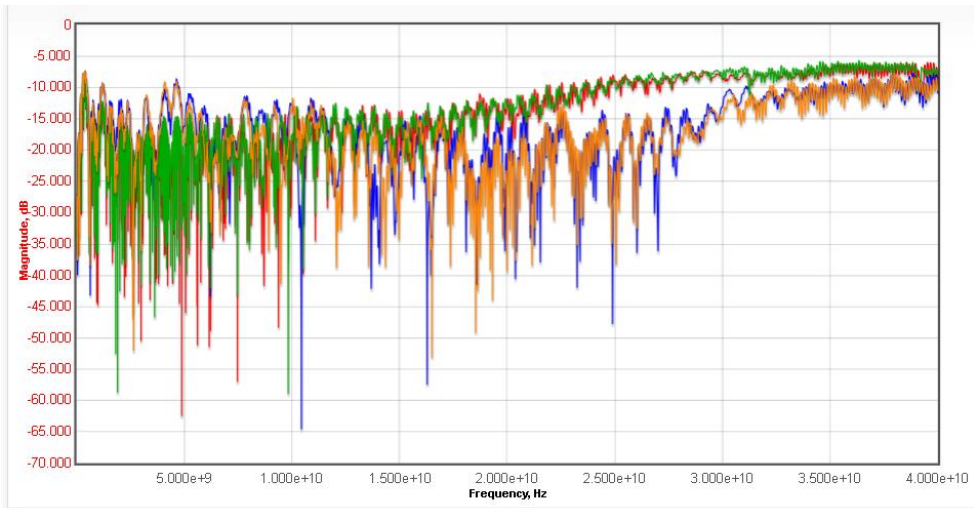
For this example, the S-Parameter file is named Channel_25Gbps.s4p as shown here for SParamFileA:

SParamFileA	S-parameter file	Channel_25Gbps.s4p Choose File No file chosen		File		Upload a file (Touchstone 1.0 format) or list previously uploaded file.
NumSPortsA	Number of ports	4		Integer	>= 4	For S-parameter file
InPortPositiveA	Input port + (positive side)	1		Integer	[1, NumSPortsA]	Must be different from the other in and out ports
InPortMinusA	Input port - (minus side)	3		Integer	[1, NumSPortsA]	Must be different from the other in and out ports
OutPortPositiveA	Output port + (positive side)	2		Integer	[1, NumSPortsA]	Must be different from the other in and out ports
OutPortMinusA	Output port - (minus side)	4		Integer	[1, NumSPortsA]	Must be different from the other in and out ports

SParamFileB will be the same.

This file has this reflection and transmission characteristic (as seen in the View S-Parameters Tool):

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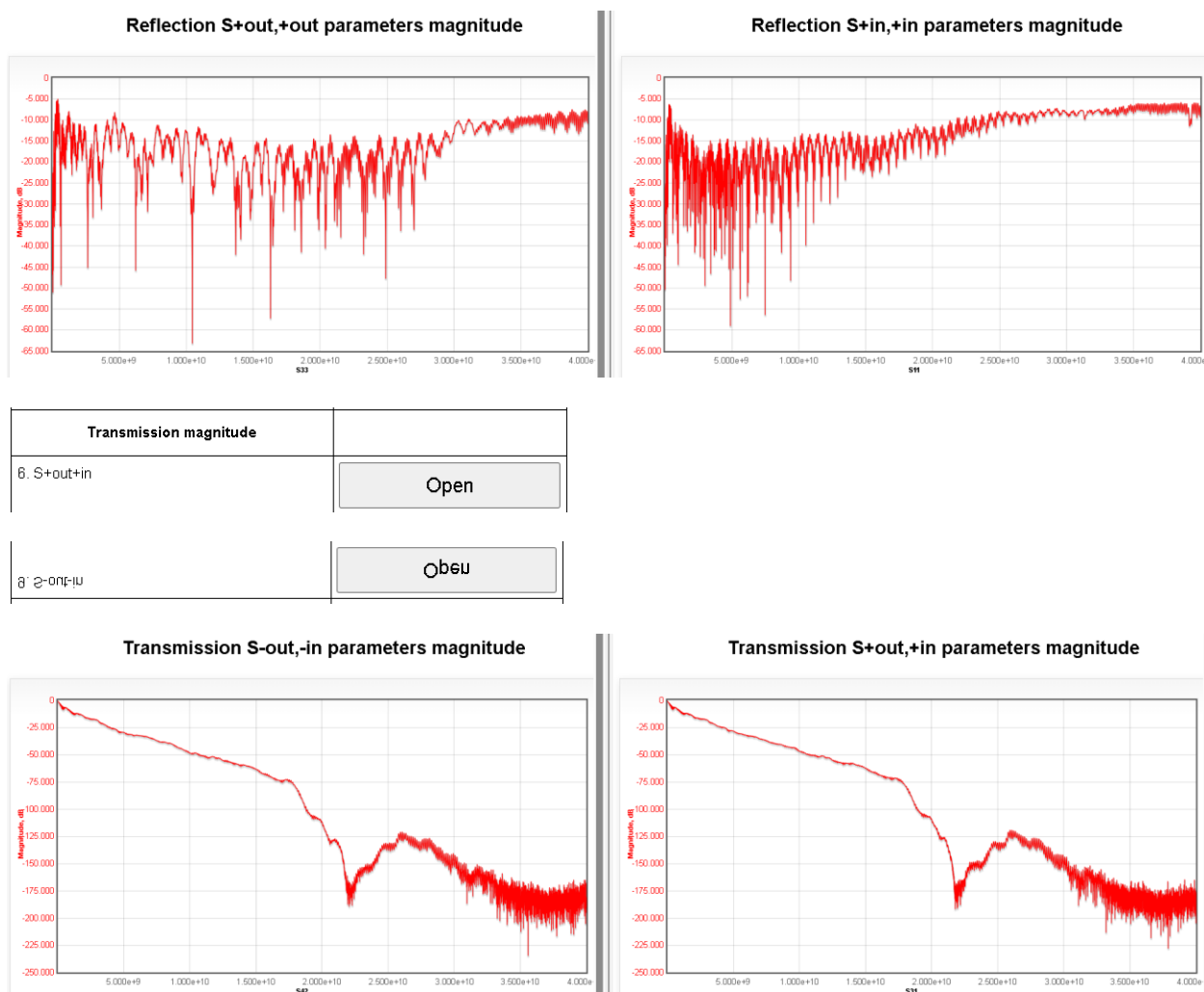


When these two S-Parameter files are cascaded, the resultant file is named: Combined_SParameters.s4p.

This file has this reflection and transmission characteristic as seen in this tool:

Reflection magnitude	
2. S+in+in	Open
3. S+out+out	Open

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