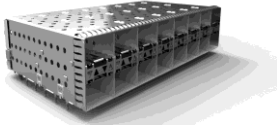


ONE METER MEASURED BACKPLANE CHANNEL DATA

Nathan Tracy

07/19/2016



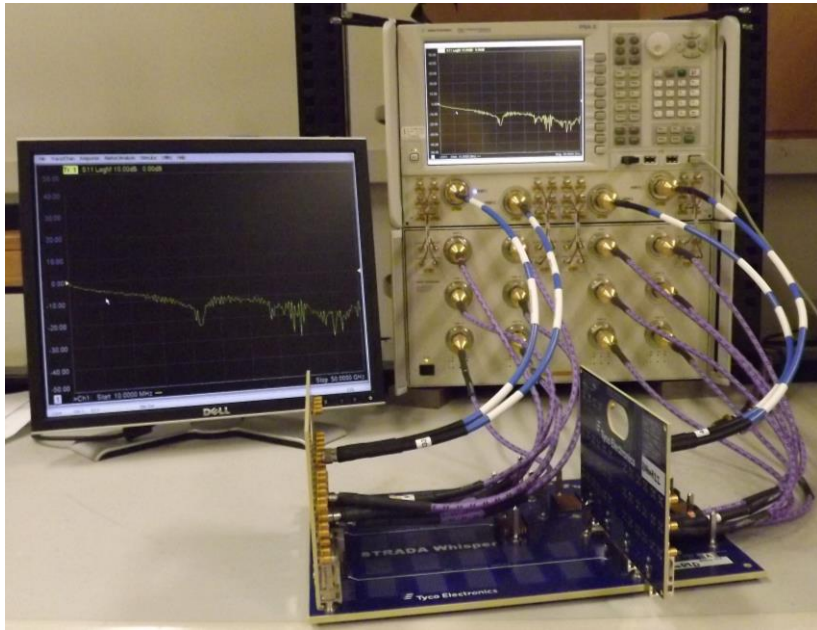
Updated on 07/28/16 to include data for
11.75 inch, 27 inch, and 40 inch backplane channels

SUMMARY

- This contribution provides measured data for TE Connectivity STRADA Whisper™ backplane connectors/channels.
 - This design incorporates improved ILD, RL & noise response.
- The STRADA Whisper™ connector used in the tested channel reflects the current tooled product.
- Data will be uploaded to the 802.3cd public channel data web site by July 29th.
- Please use the data for your simulations and provide feedback.

STRADA Whisper™ Backplane Channel

Test Set-up – G14G15 centric



H17-H18

H14-H15

H11-H12

G17-G18

G14-G15

G11-G12

F17-F18

F14-F15

F11-F12

- All data is measured and includes 2.92mm test points
- 8 Near-End and 8 Far-End measurements
- Data is from 0-40GHz in 10MHz steps

DAUGHTER CARD

- Board Material = Megtron6 HVLP
- Trace length = 5"
- Trace geometry = Stripline
- Trace width = 6 mils
- Differential trace spacing = 9 mils
- PCB thickness = 110mils, 14 layers
- Counterbored vias, 1 – 6mil stub
- Test Points = 2.92mm
(included in data)

BACKPLANE

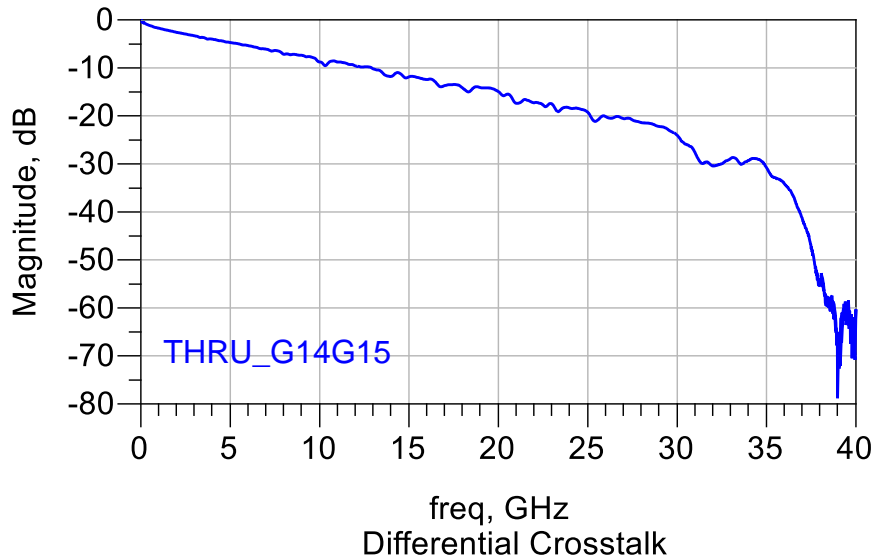
- Board Material = Megtron6 HVLP
- Trace length = 1.75", 17" and 30"
- Trace geometry = Stripline
- Trace width = 5.75 mils
- Differential trace spacing = 6.25 mils
- PCB thickness = 190 mils, 20 layers
- Counterbored vias, 1 – 6mil stub

CONNECTORS

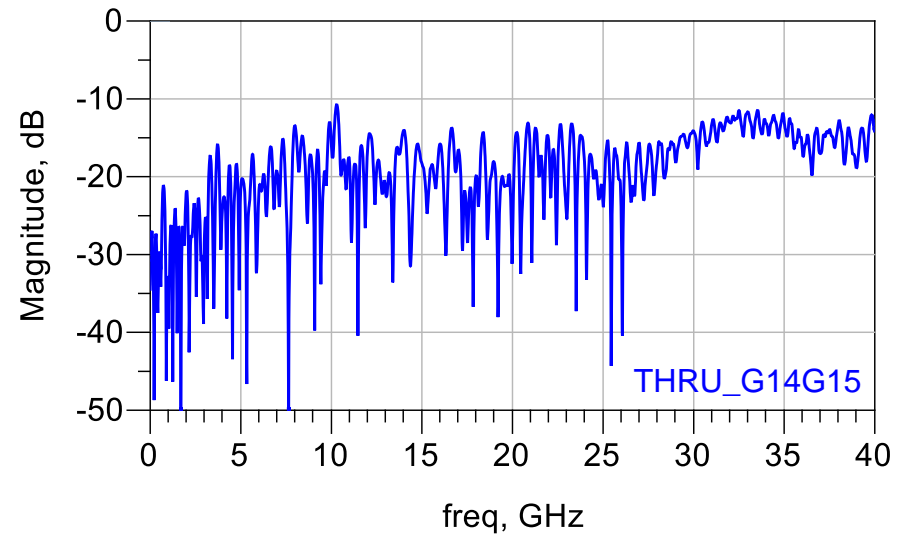
- Mated standard STRADA Whisper connector at each end

STRADA Whisper™ 3.9mm 11.75" System

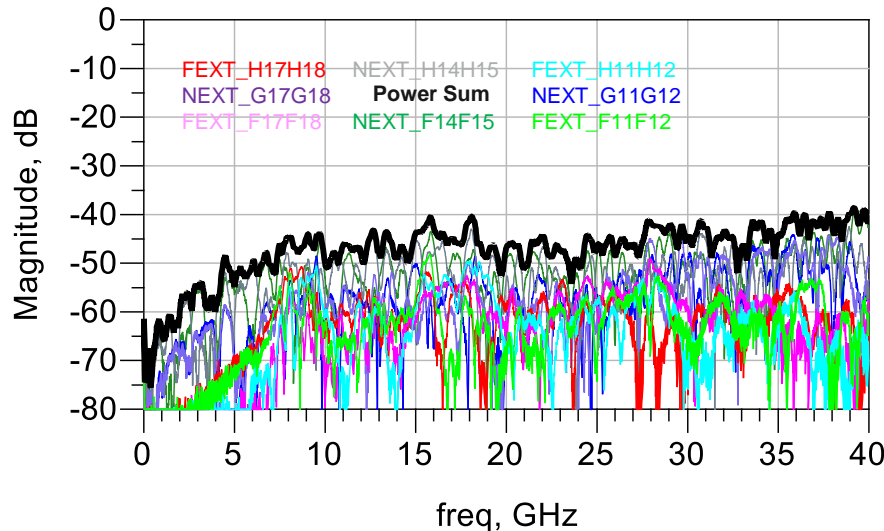
Differential Insertion Loss



Differential Return Loss



Differential Crosstalk



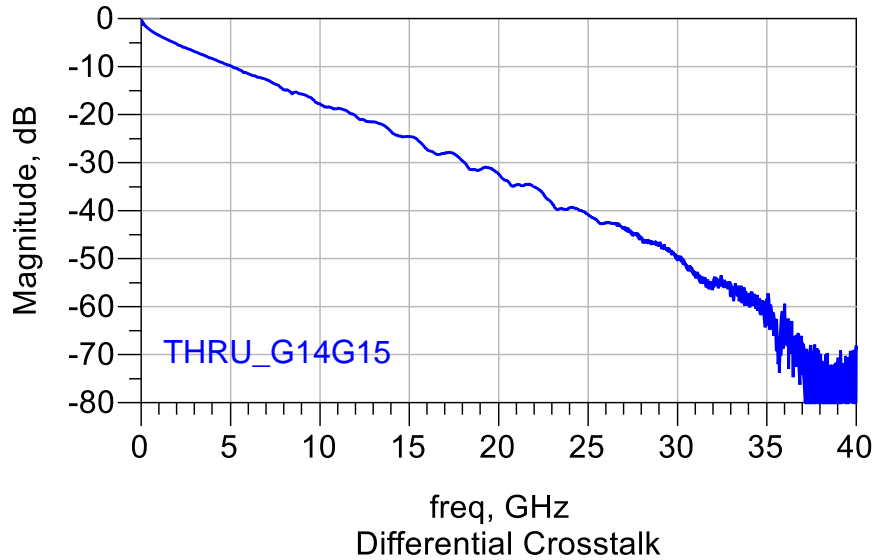
802.3bj COM (for reference only)
 8 Crosstalk Aggressors – 4 NEXT AND 4 FEXT
 Maximum Frequency = 40 GHz

	NRZ [100GBASE-KR4]	
	Case 1	Case 2
COM*	8.80	8.51

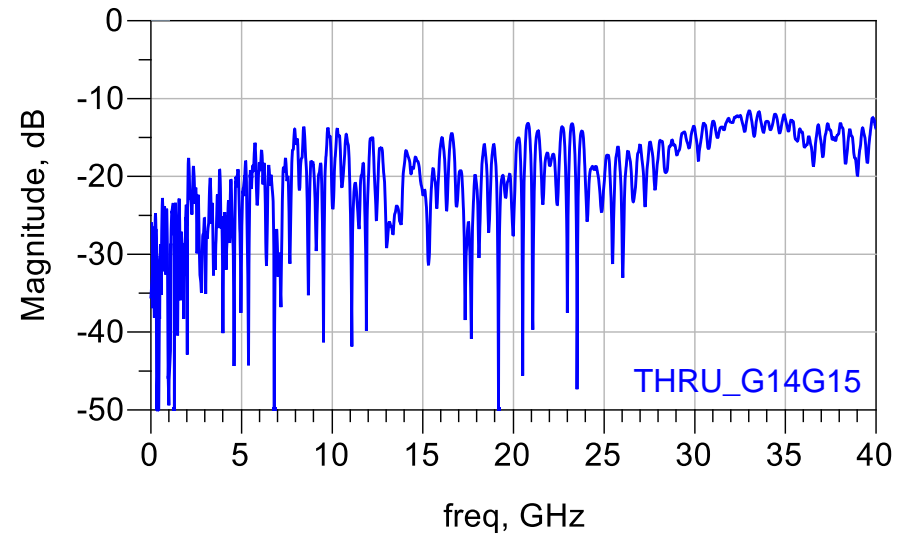
- COM Version 3.2 Release Date 11/2014 (software version 1.54)
- COM > 3dB PASSES
- COM Test Case 1 and Test Case 2 differ in the value of the device package transmission line length z_p - 12mm and 30mm respectively, per Table 93-8 of IEEE Std 802.3bj™-2014

STRADA Whisper™ 3.9mm 27" System

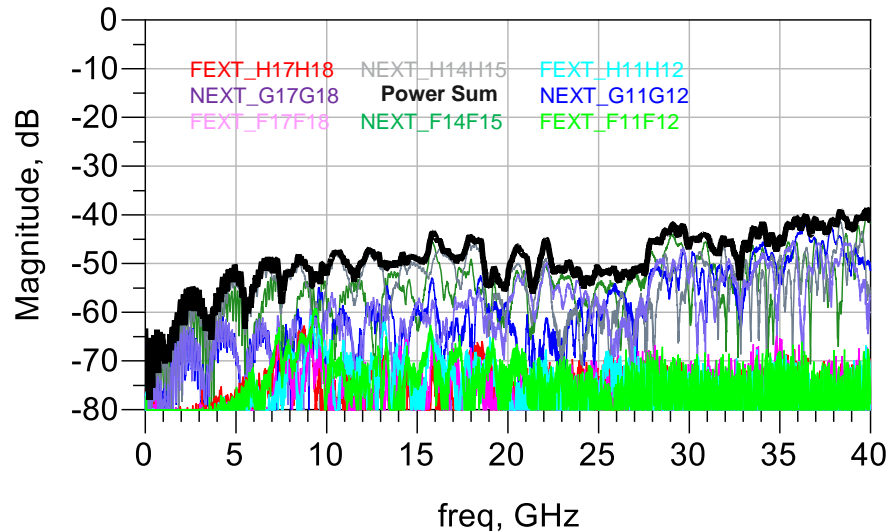
Differential Insertion Loss



Differential Return Loss



Differential Crosstalk



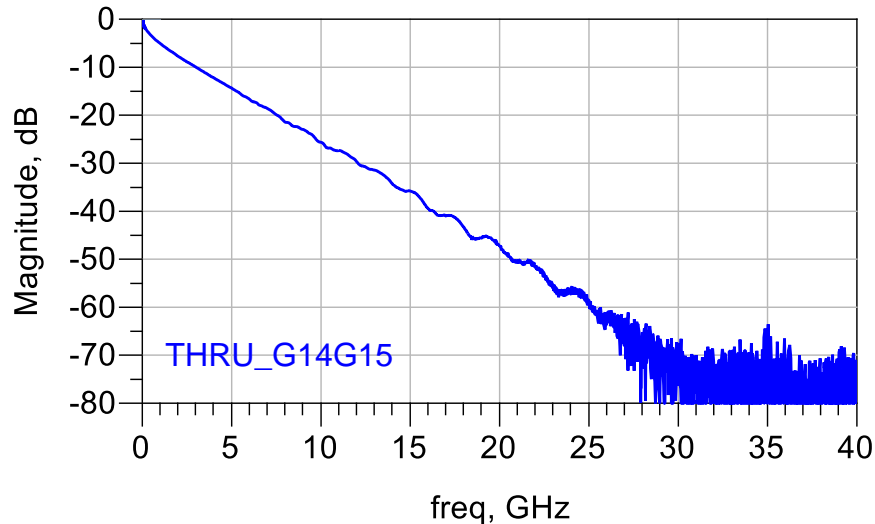
802.3bj COM (for reference only)
 8 Crosstalk Aggressors – 4 NEXT AND 4 FEXT
 Maximum Frequency = 40 GHz

	NRZ [100GBASE-KR4]	
	Case 1	Case 2
COM*	7.39	6.85

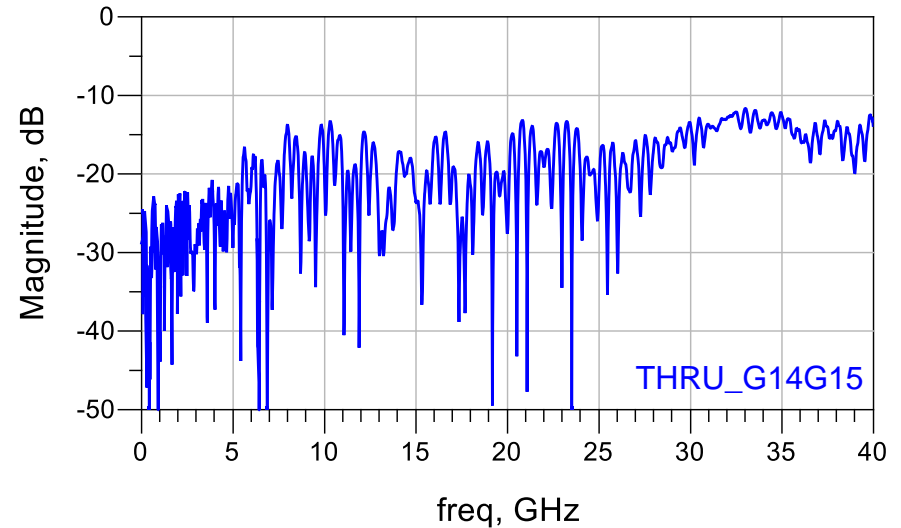
- COM Version 3.2 Release Date 11/2014 (software version 1.54)
- COM > 3dB PASSES
- COM Test Case 1 and Test Case 2 differ in the value of the device package transmission line length z_p - 12mm and 30mm respectively, per Table 93-8 of IEEE Std 802.3bj™-2014

STRADA Whisper™ 3.9mm 40" System

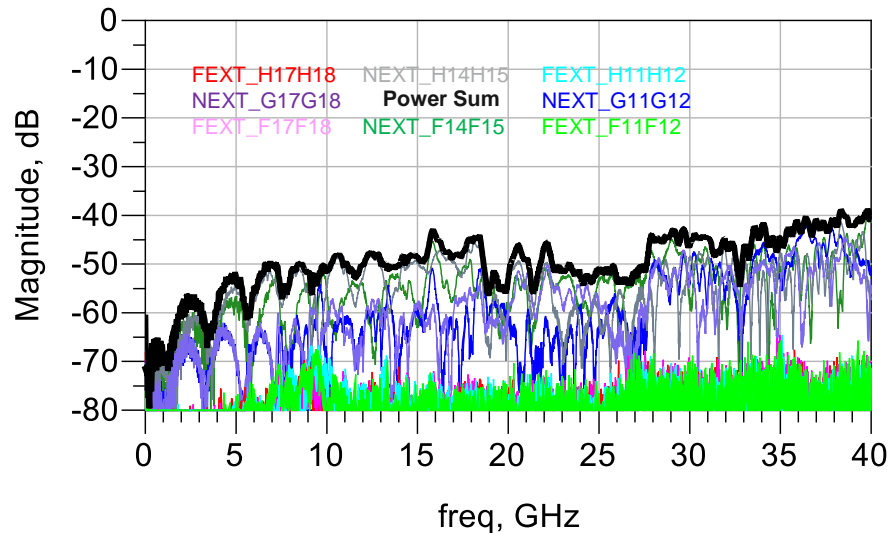
Differential Insertion Loss



Differential Return Loss



Differential Crosstalk



802.3bj COM (for reference only)
 8 Crosstalk Aggressors – 4 NEXT AND 4 FEXT
 Maximum Frequency = 40 GHz

	NRZ [100GBASE-KR4]	
	Case 1	Case 2
COM*	4.93	4.03

- COM Version 3.2 Release Date 11/2014 (software version 1.54)
- COM > 3dB PASSES
- COM Test Case 1 and Test Case 2 differ in the value of the device package transmission line length z_p - 12mm and 30mm respectively, per Table 93-8 of IEEE Std 802.3bj™-2014