# ONE METER MEASURED BACKPLANE CHANNEL DATA
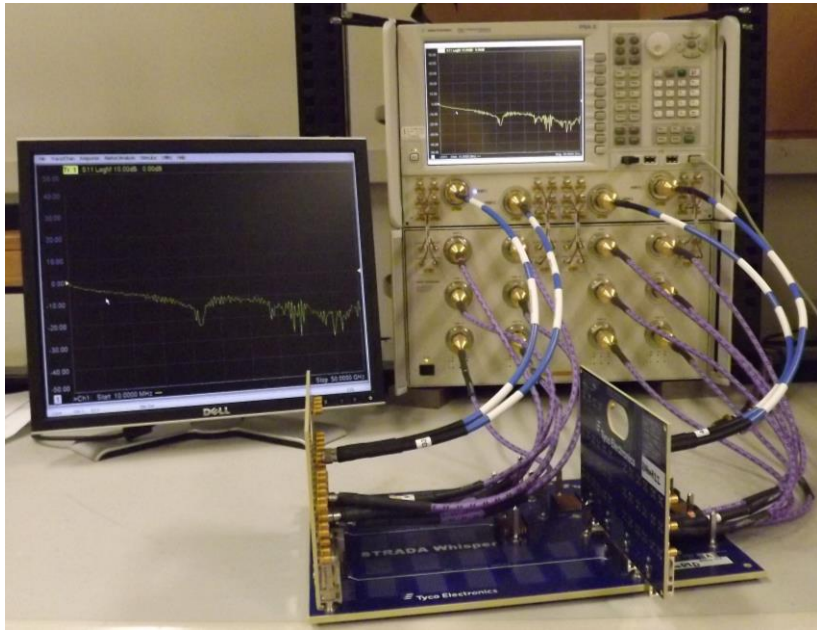
**Nathan Tracy          07/19/2016**

# 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<sup>TM</sup> 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
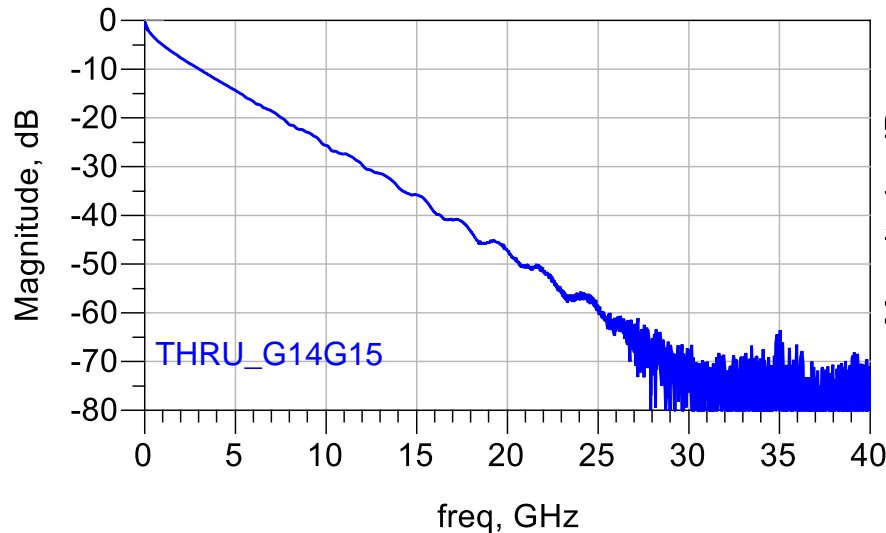- Test Points = 2.92mm
  (included in data)

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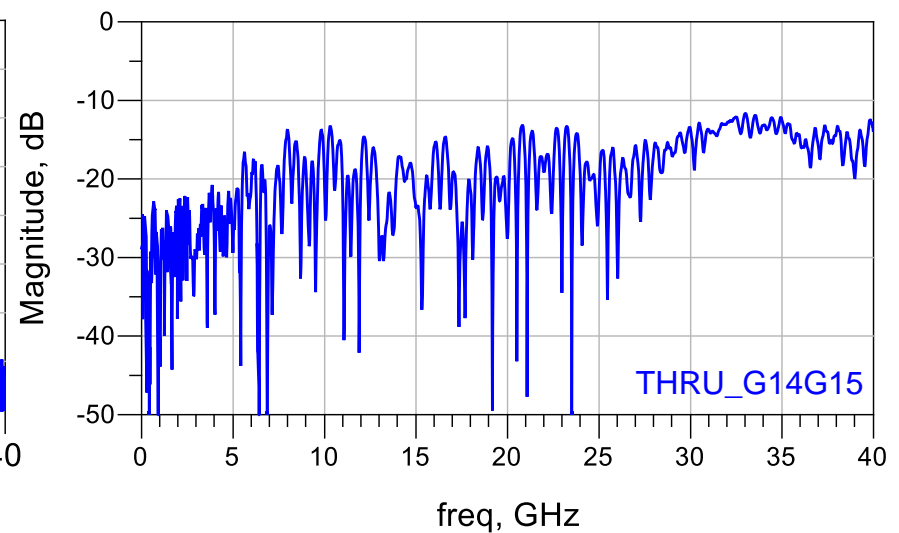- Counterbored vias, 1 – 6mil stub

### CONNECTORS
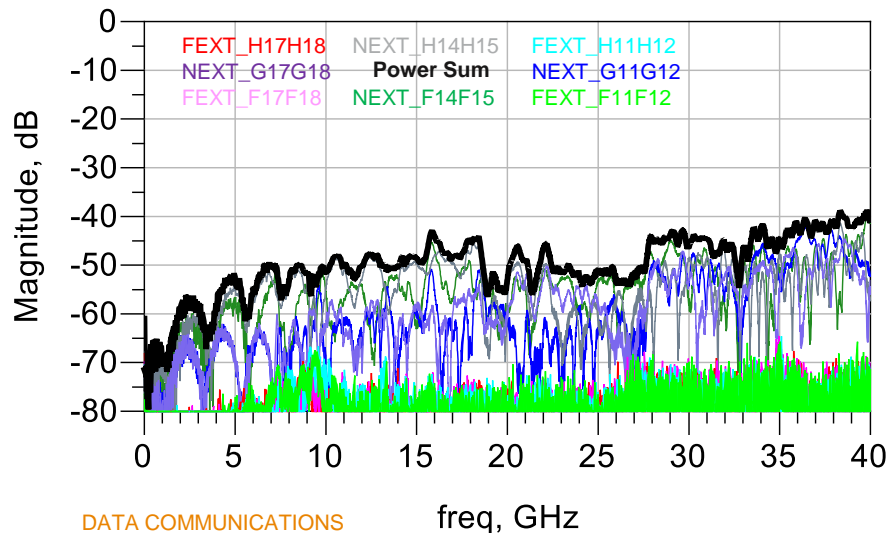- Mated standard STRADA Whisper connector at each end

DATA COMMUNICATIONS

**TE** connectivity

# STRADA Whisper 3.9mm 40" System

### Differential Insertion Loss



### Differential Return Loss



### Differential Crosstalk



Legend: FEXT_H17H18, NEXT_H14H15, FEXT_H11H12, NEXT_G17G18, **Power Sum**, NEXT_G11G12, FEXT_F17F18, NEXT_F14F15, FEXT_F11F12

### 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

DATA COMMUNICATIONS

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