



LINK SEGMENT ALIEN CROSSTALK MEASUREMENT RESULTS

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molex

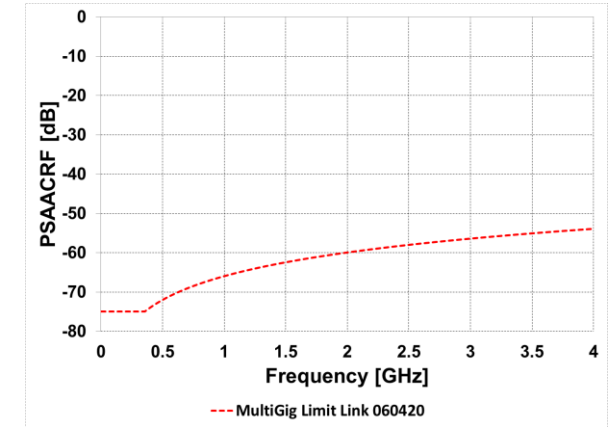
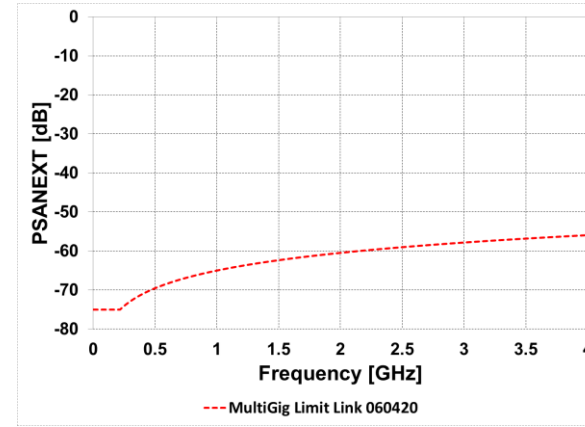
SCOPE

- **To consider crosstalk parameters for the IEEE 802.3CY standard to limit the communication between the pairs.**
- **It is assumed in the presentation as a starting point that crosstalk spec of IEEE802.3CY will be an extension of the IEEE802.3CH to 10GHz.**

CROSSTALK LIMIT ASSUMPTION

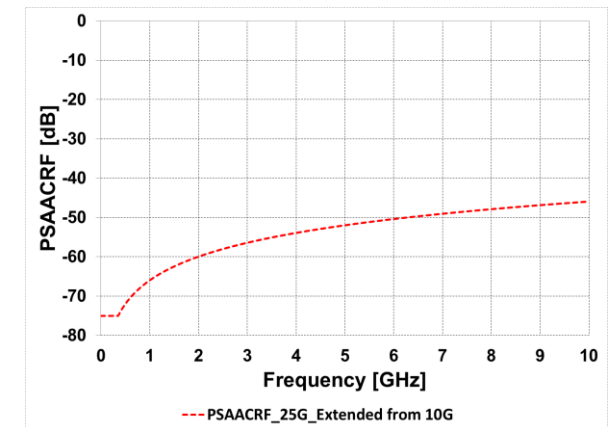
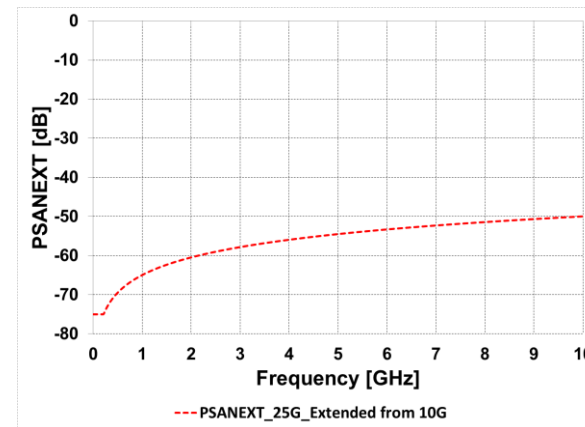
- **IEEE802.3CH**

- PSANEXT: $\text{Min}(75, 80-20\log_{10}f/100)\text{dB}$,
frequency: 1MHz to 4000MHz
- PSAACRF: $\text{Min}(75, 86-20\log_{10}f/100)\text{dB}$,
frequency: 1MHz to 4000MHz



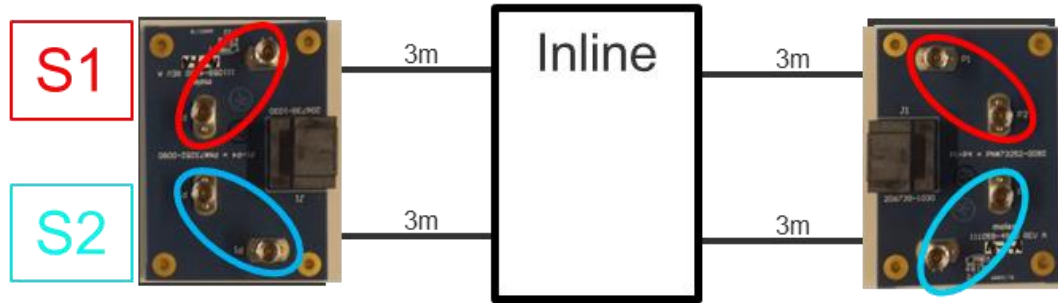
- **IEEE802.3CY (extended from IEEE802.3CH)**

- PSANEXT: $\text{Min}(75, 80-20\log_{10}f/100)\text{dB}$,
frequency: 1MHz to 10000MHz
- PSAACRF: $\text{Min}(75, 86-20\log_{10}f/100)\text{dB}$,
frequency: 1MHz to 10000MHz

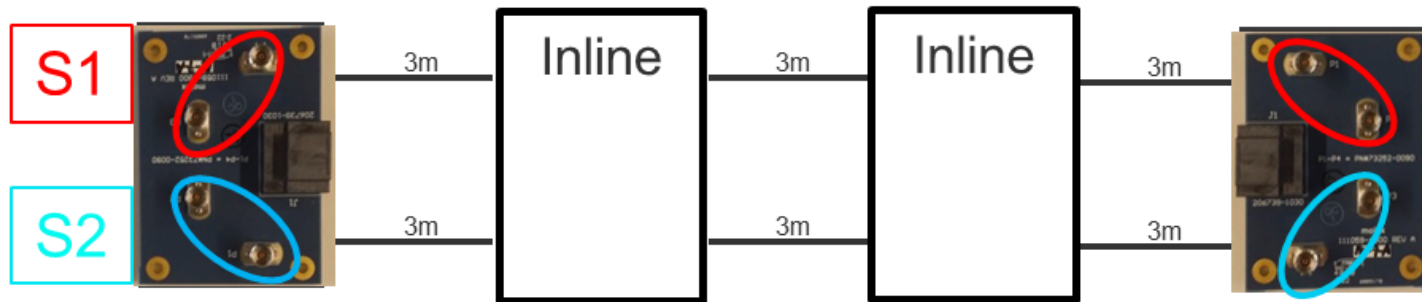


TESTED SAMPLE CONFIGURATION

- 6m 1x2 Connector with 1 Inline



- 9m 1x2 Connector with 2 Inlines

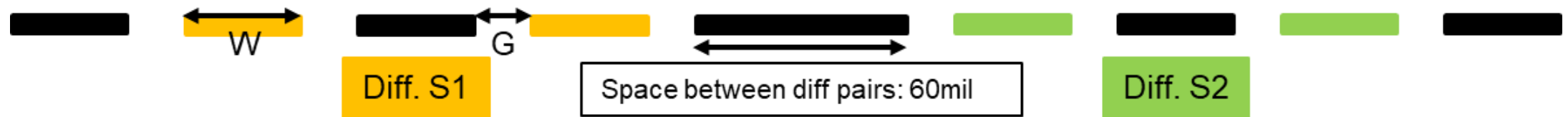


PCB DETAILS

- **PCB: 4 Layers**

- **Trace:**

- Single-ended stripline in 3rd Layer
- Width (W): 10.5mil, GAP (G): 63 mil
- Length: 984.25mil
- Space between diff. pairs: 60mil

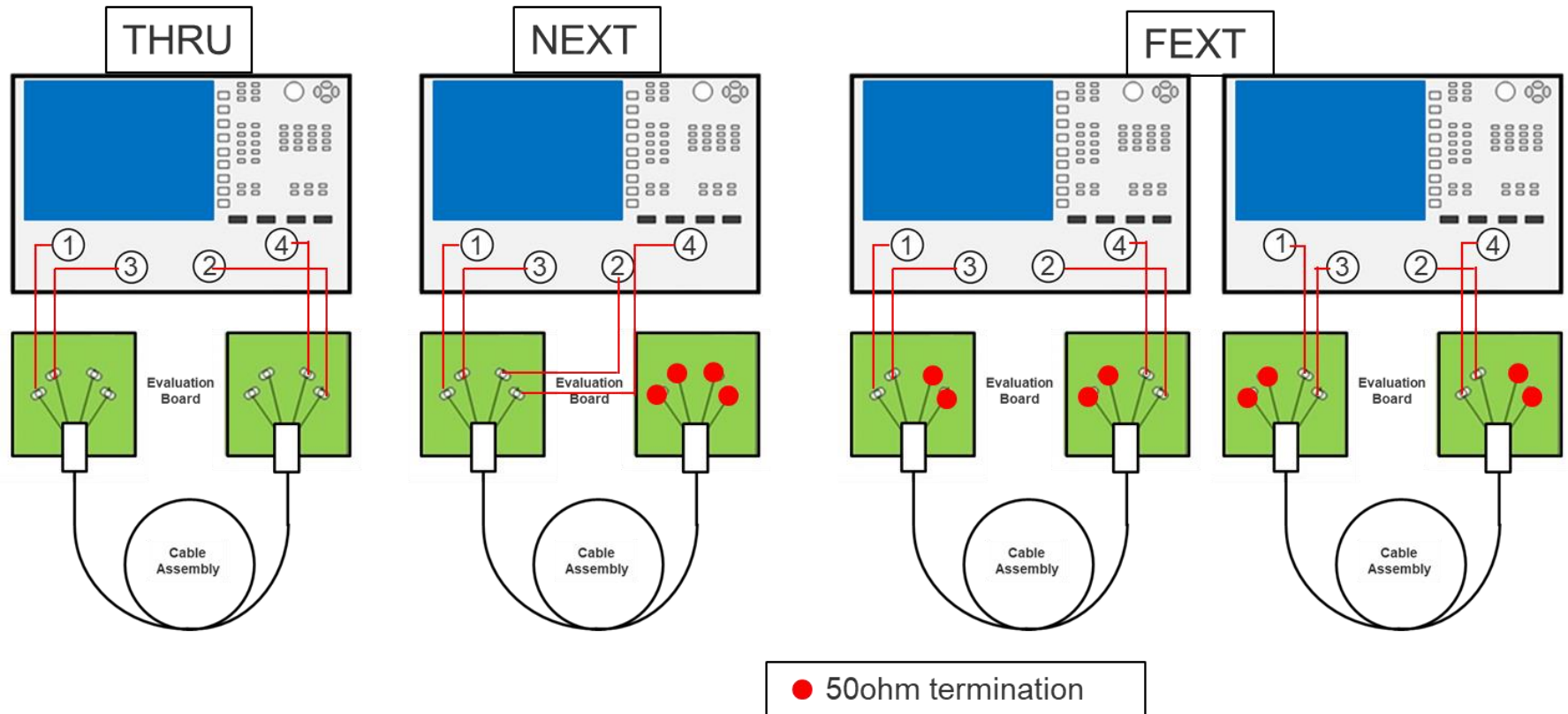


VNA TEST SETUP

- Vector Network Analyzer: Agilent N5230C 10MHz – 20GHz PNA-L

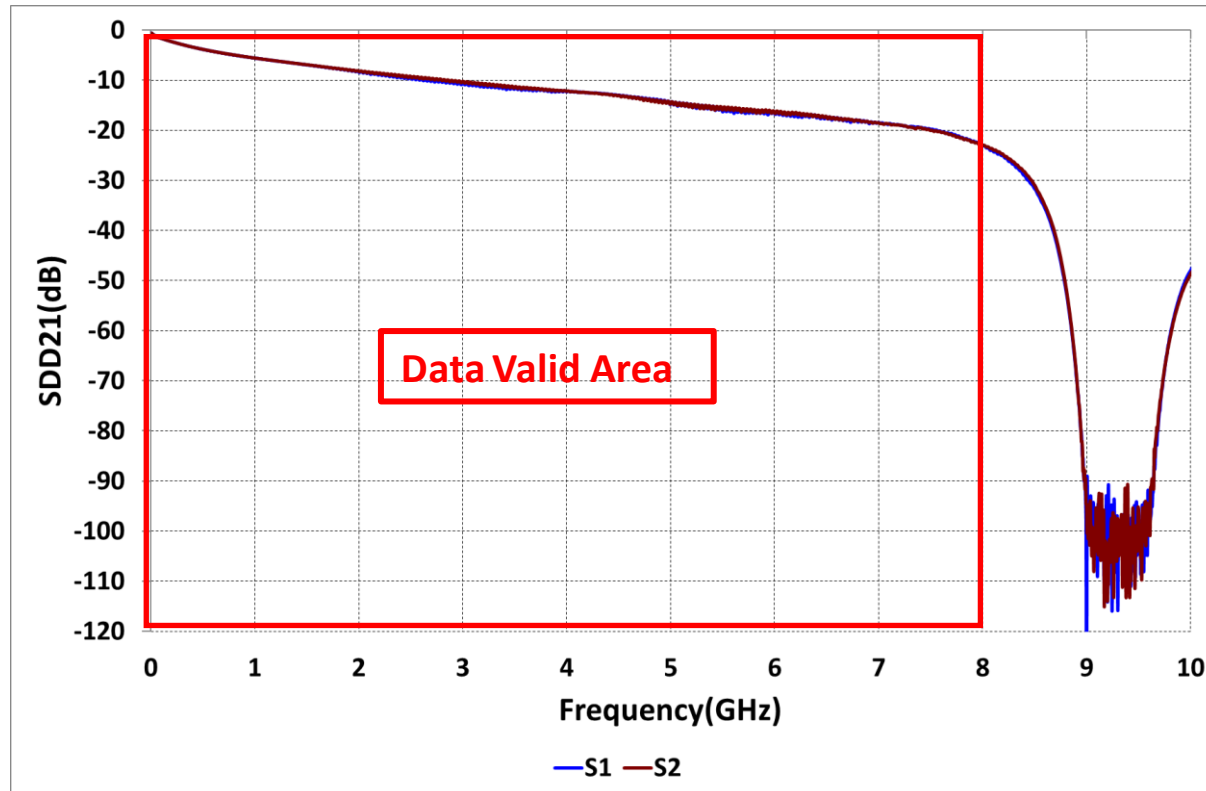
- SI Testing Setup:

- Start Freq: 10MHz
- Stop Freq: 20GHz
- IFBW: 100Hz
- Points: 3999
- Scale: Linear



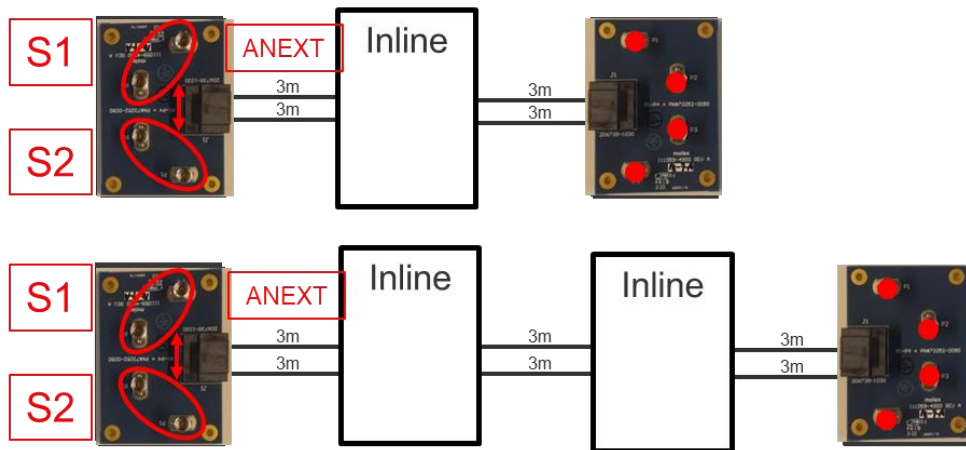
CABLE INSERTION LOSS NOTE

- The 26AWG STP cable is rated up to 8GHz and the sample shown in the picture is 6m in length with one inline.
- There is resonance between 9GHz and 10GHz region, which will be resolved in future revisions of the cable.



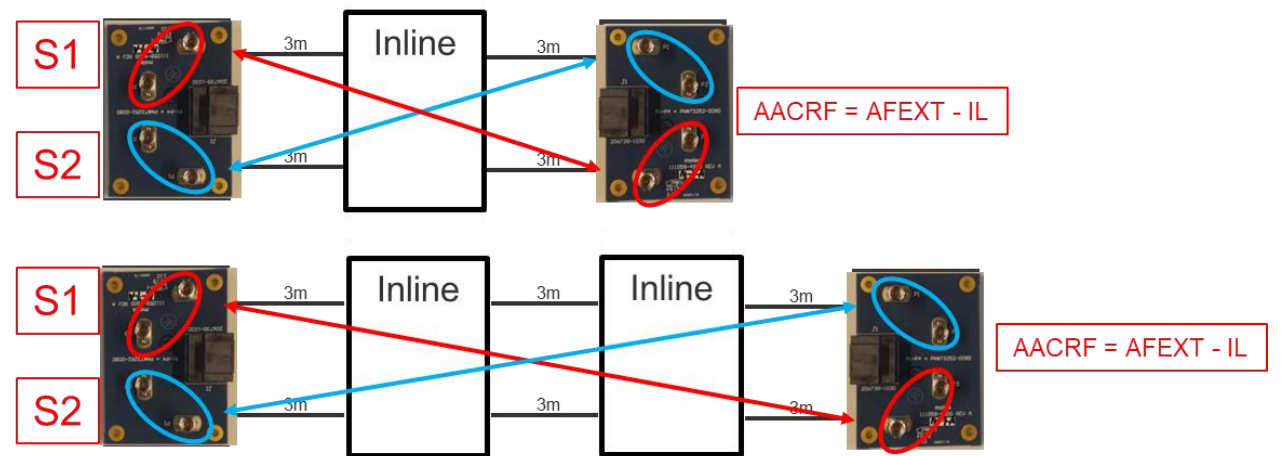
ANEXT AND AACRF SETUP

ANEXT SETUP



● 50ohm termination

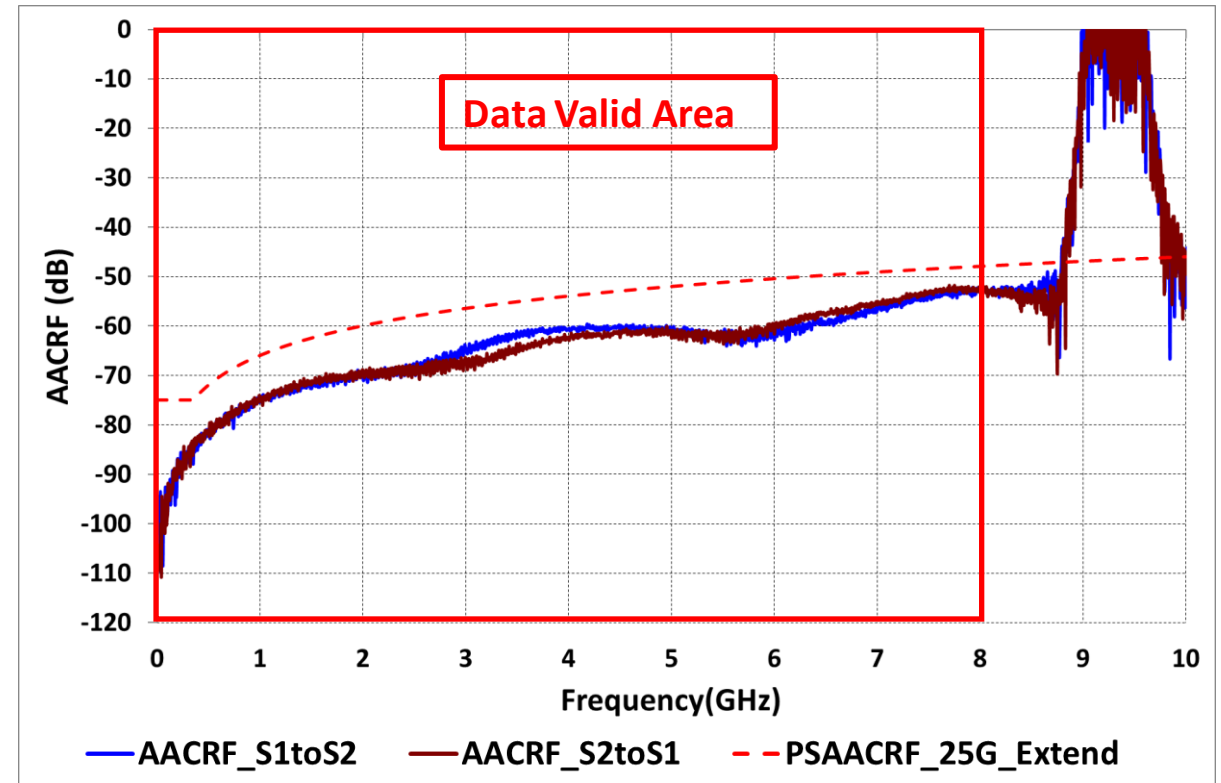
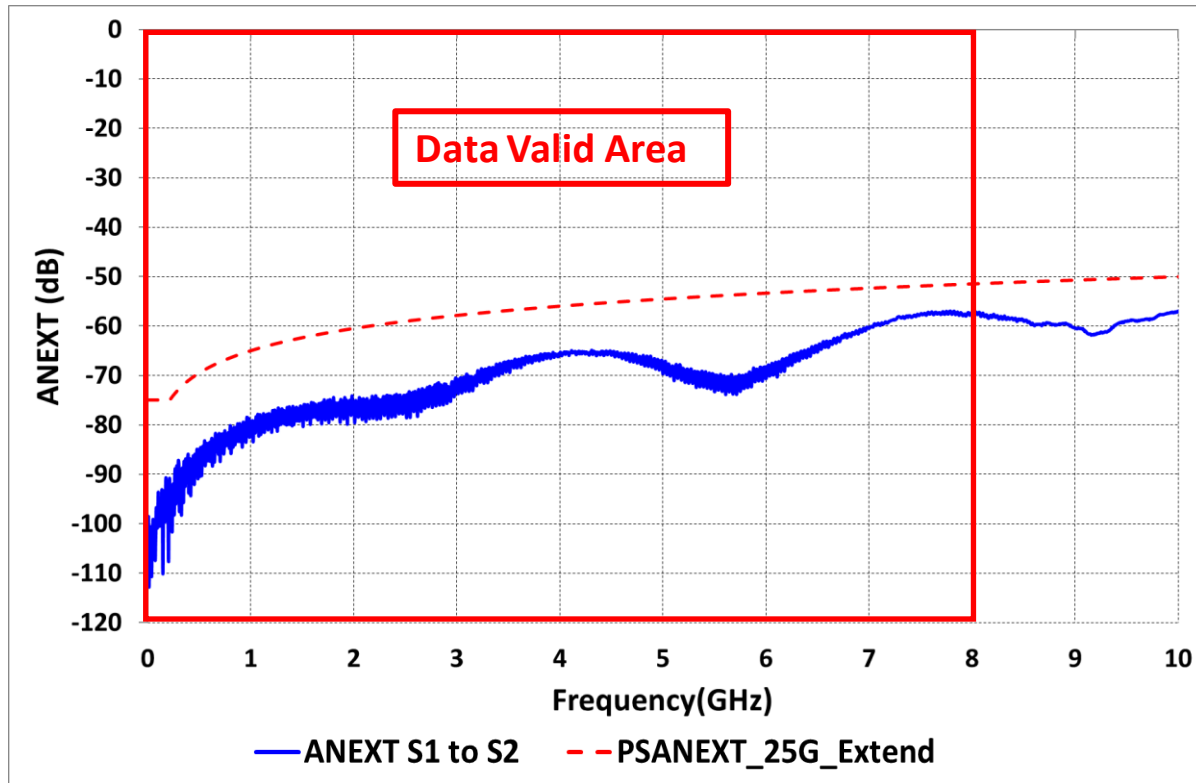
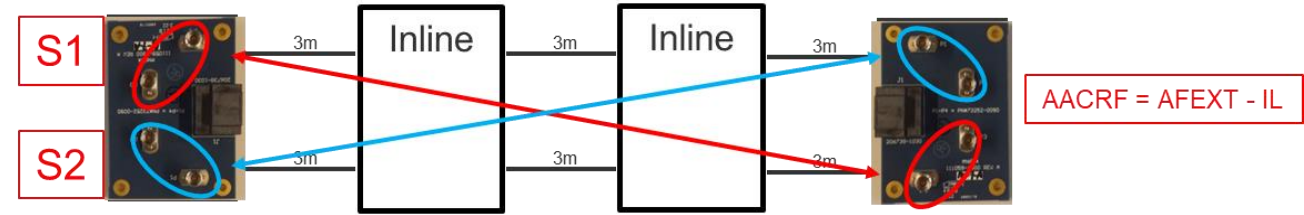
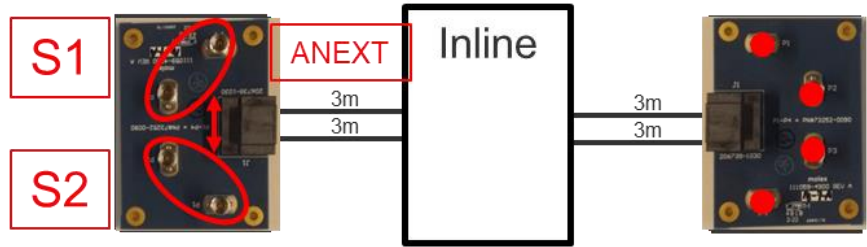
AACRF SETUP



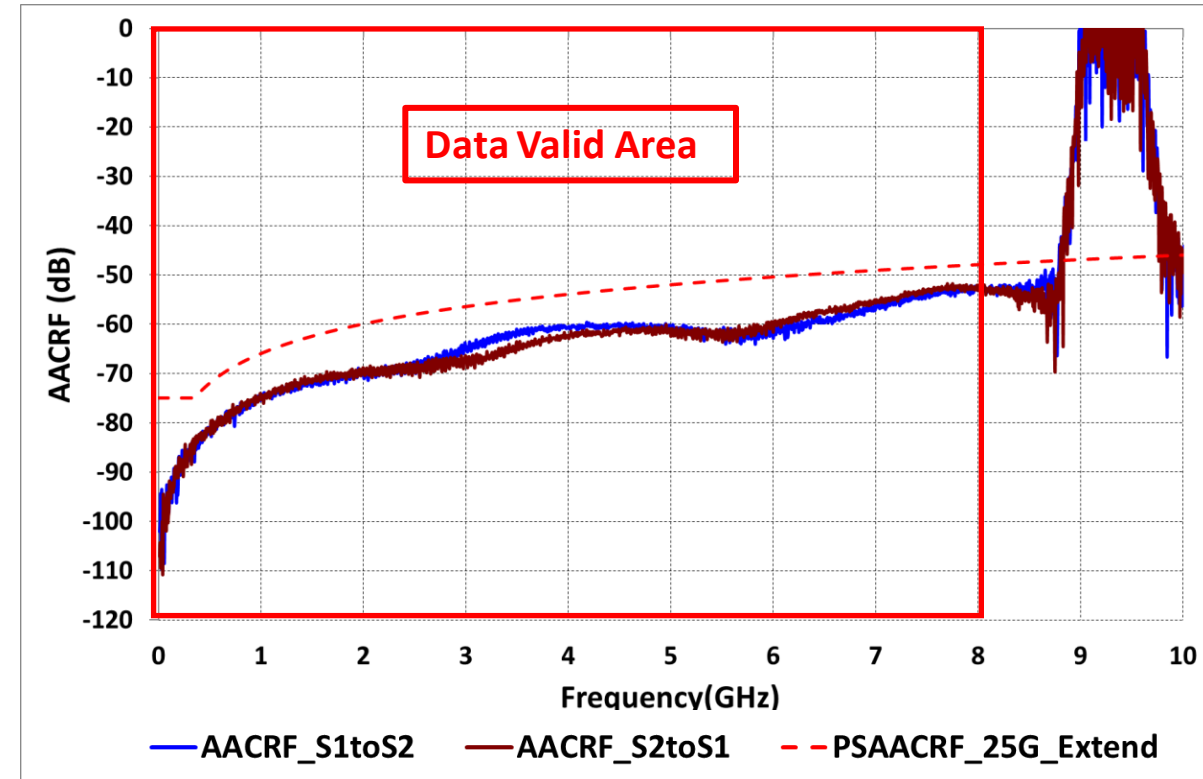
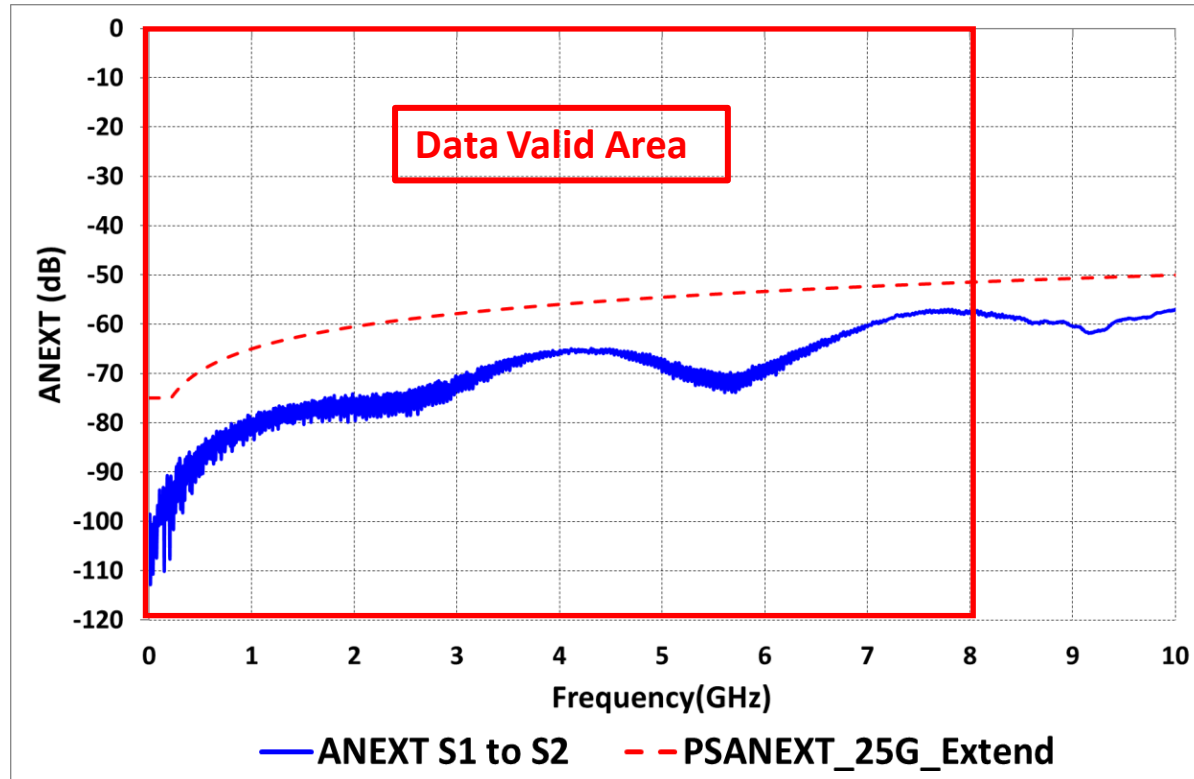
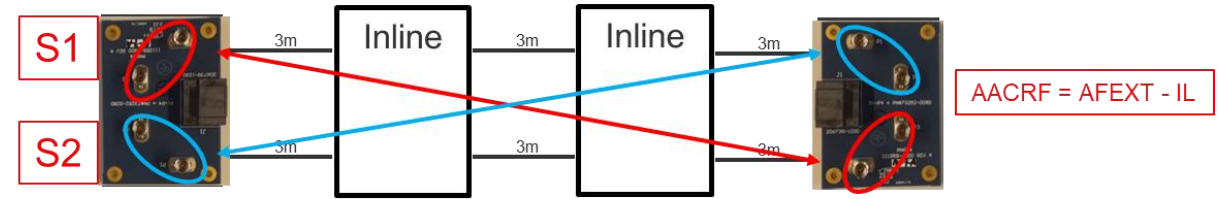
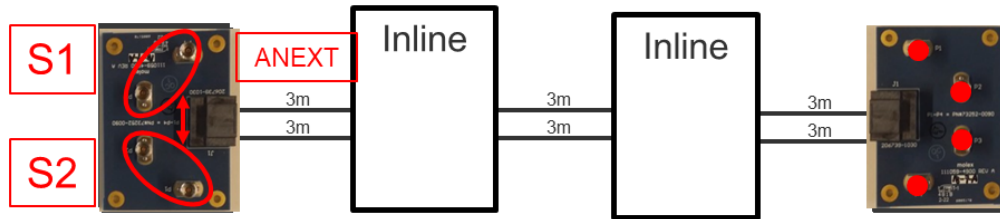
● AACRF_S1: AACRF from S1 to S2
 ● AACRF_S2: AACRF from S2 to S1

Note: When AACRF_S1 is measured, AACRF_S2 is terminated with 50 ohm load. When AACRF_S2 is measured, AACRF_S1 is terminated with 50 ohm load.

ANEXT AND AACRF: 6M WITH 1 INLINE



ANEXT AND AACRF: 9M WITH 2 INLINES



SUMMARY

- **Crosstalk measurement results of 6m 1x2 Connector with 1 Inline & 9m 1x2 Connector with 2 Inlines were presented.**
- **802.3CY working group can consider extending limits of 802.3ch for ANEXT & AACRF.**
 - This will have to be done with careful consideration of things like PCB trace routing at these speeds amongst other things such as no suck-out IL performance at higher frequency for the raw cable.

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