



# IEEE 802.3bp Sample Channel Characteristics

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# Agenda

- ❖ What data is the IOL collecting
- ❖ Test setup
- ❖ Collected data
- ❖ Next steps
- ❖ How to submit assembly samples

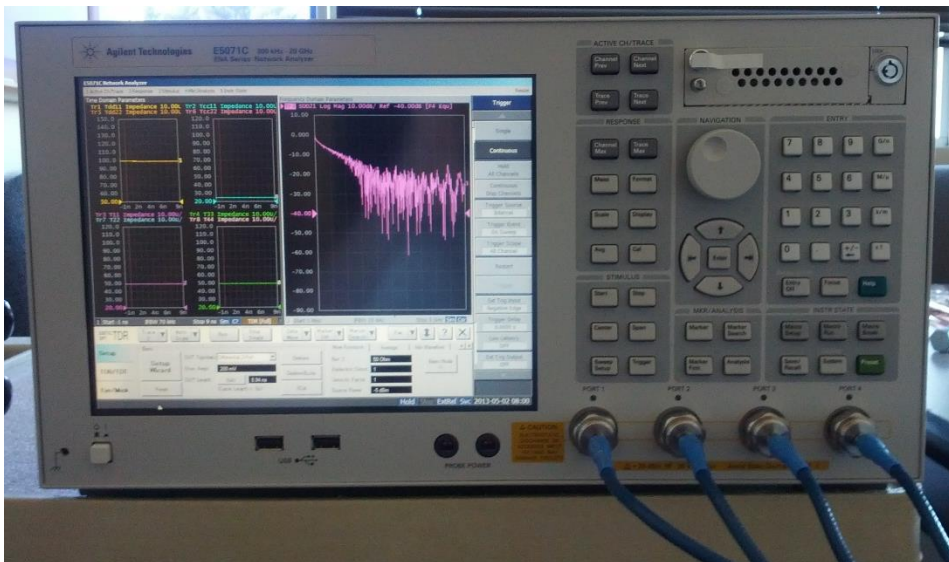
# What data is the IOL collecting

1. Assemblies remain anonymous except for the following
  - Length
  - Gauge
  - Conductor (solid or stranded)
  - Topology (inline connectors)
  - Number of pairs
  
2. S-Parameters
  - Differential
  - Balance
  - Crosstalk

# Test setup Test Equipment

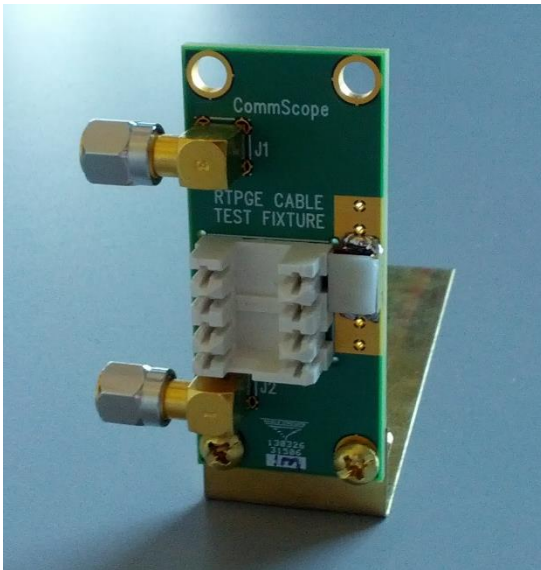
## Agilent E5071C VNA

- 300KHz-20GHz
- 4-port
- Ecal calibration unit
- Huber + Suhner Sucoflex 104PE cabling

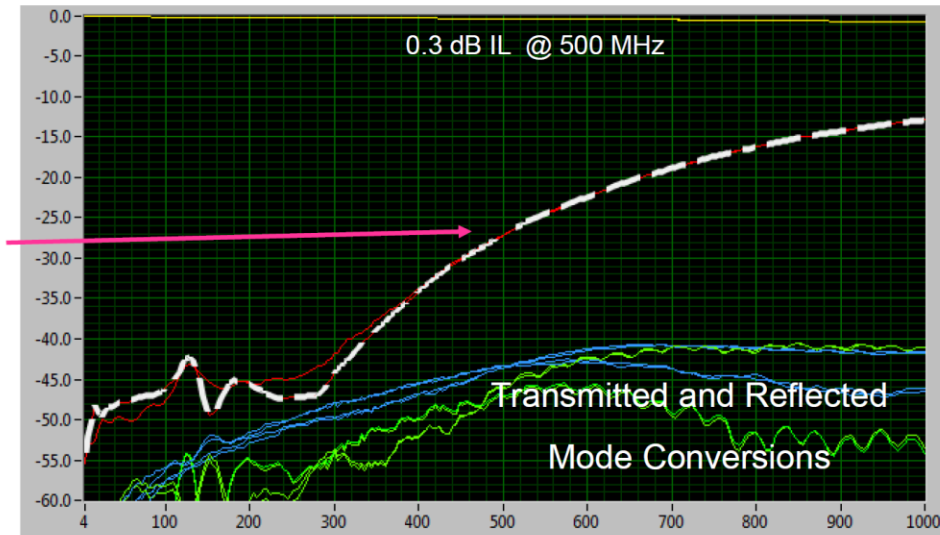


# Test setup Test Fixture

## Commscope IDC style Test Head



27 dB RL  
@ 500 MHz



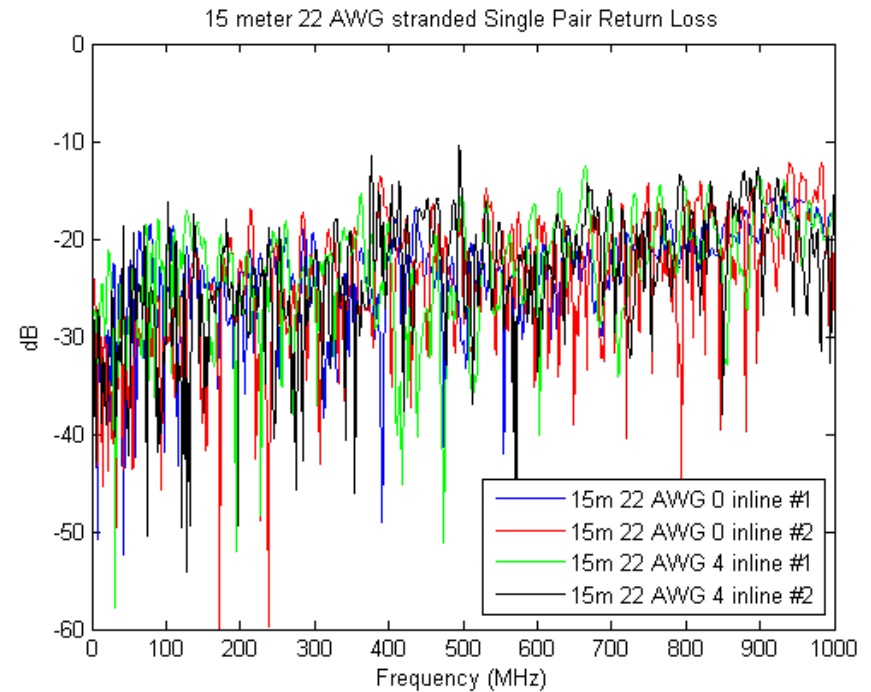
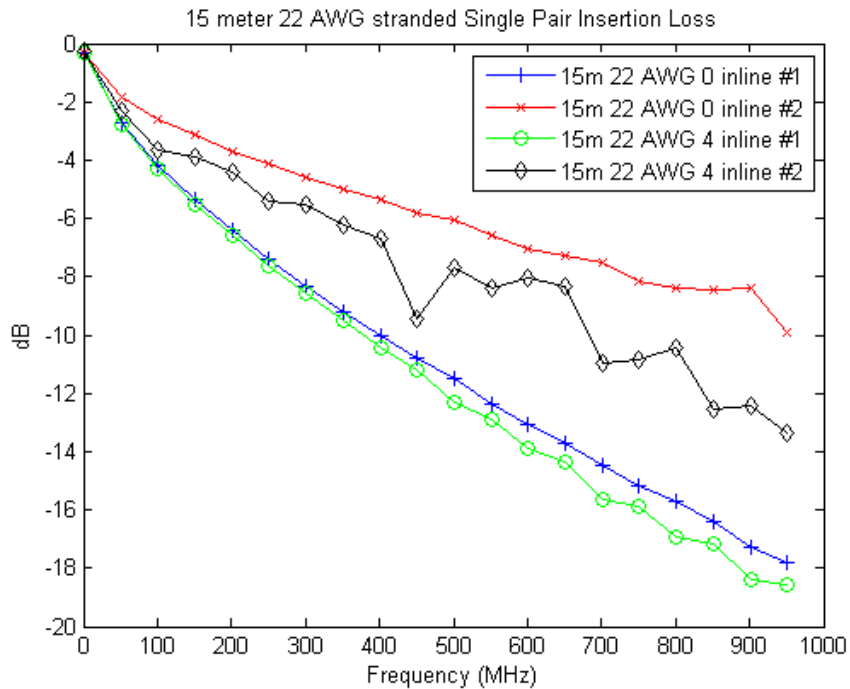
From mei\_3bp\_02a\_0313.pdf

# Collected Data

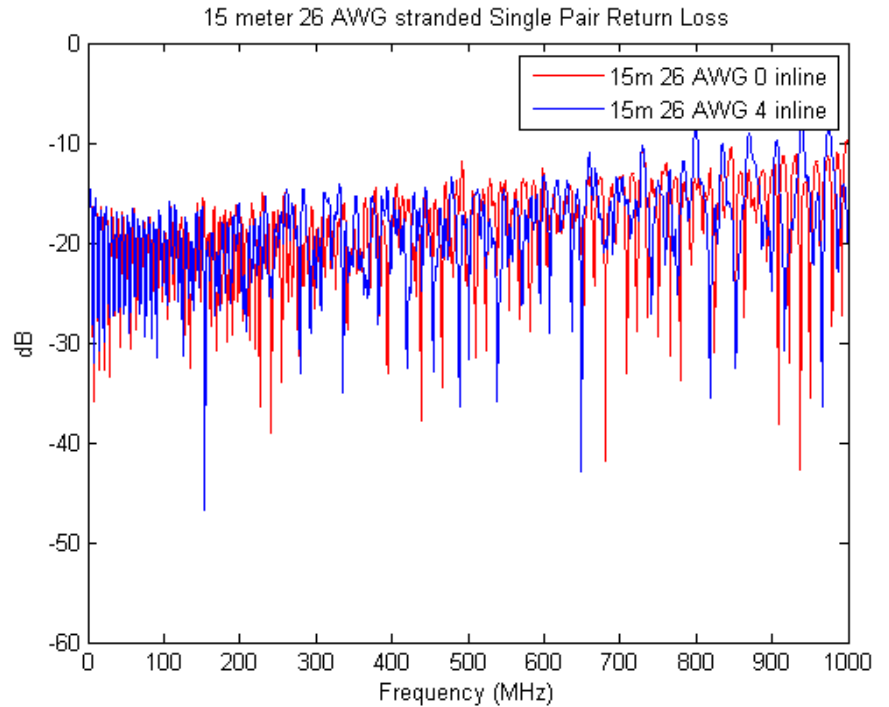
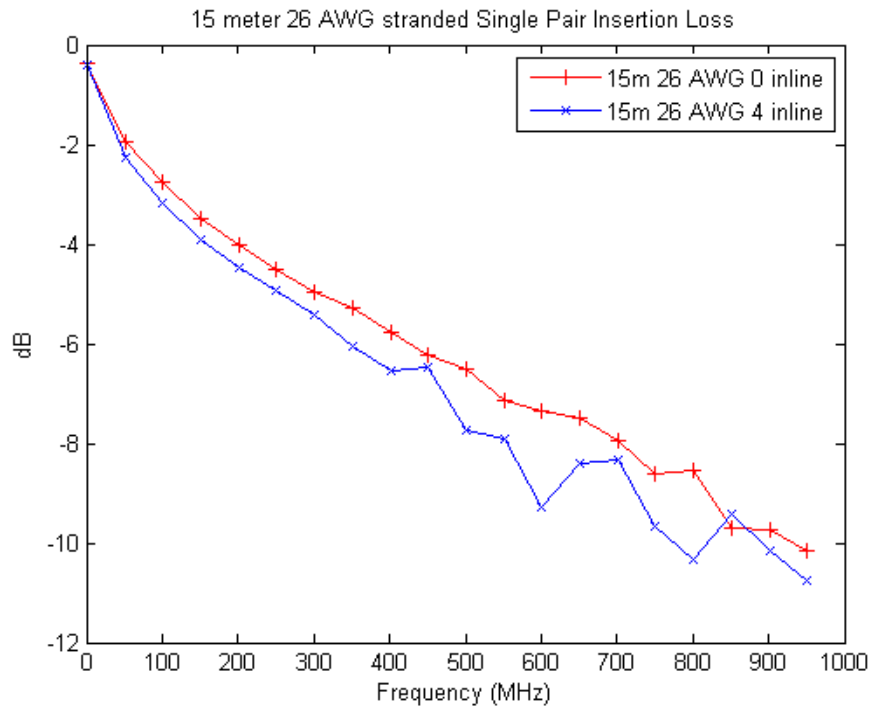
All tested assemblies have the following in common:

- Performed at room temperature
- Tested with common test fixture
  - Commscope IDC test head
  - Test head is **not** de-embedded from results
- Measured from 1MHz to 1GHz with step size of 1MHz
- 15 meters in length
- 1-pair UTP

# Collected Data Set 1: 22 AWG samples



# Collected Data Set 2: Believed to be 26 AWG

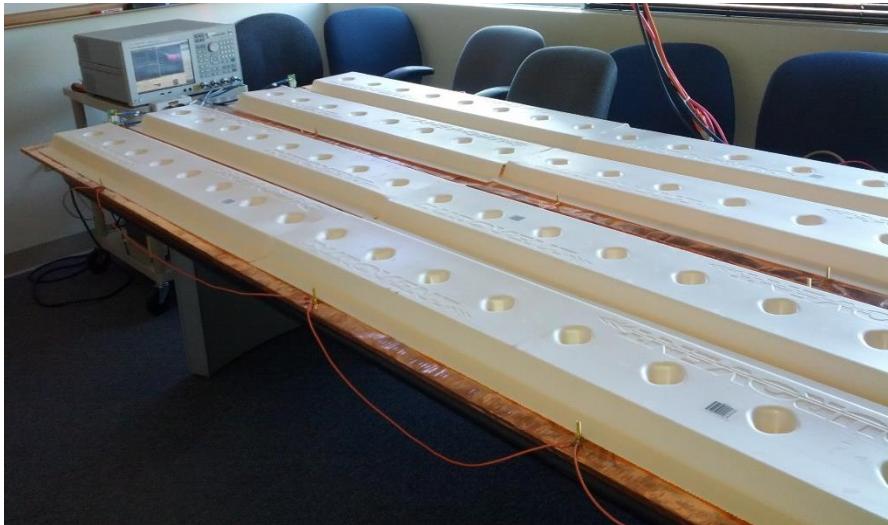




# Next steps

Balance / crosstalk parameters

Similar to setup described in mei\_3bp\_02a\_0313.pdf



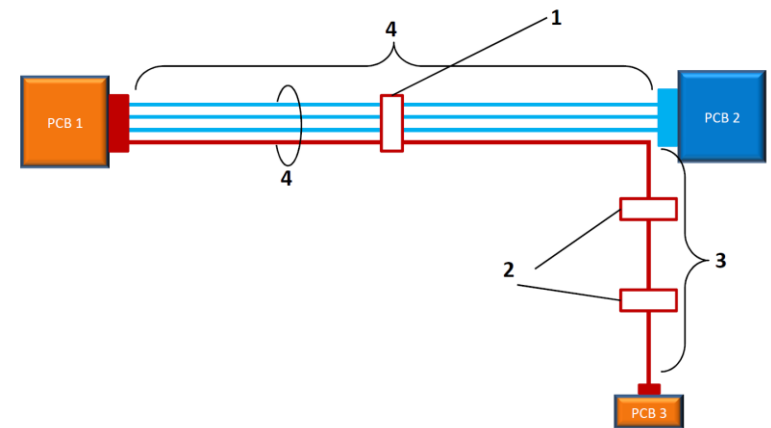
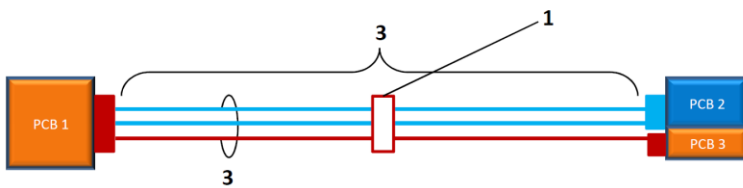
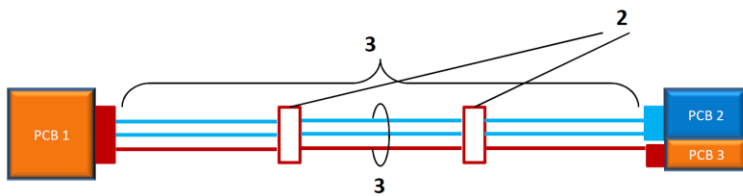
- 4' x 8' ground reference plane
- 4cm Styrofoam spacers
- Clamps/weights used to fasten test head to reference plane for good electrical contact

Appropriate for: mode conversion, cross conversion, alien crosstalk testing

# Next steps

Worst case alien crosstalk validation

Several common topology scenarios as described in matheus\_3bp\_02\_0113.pdf



# How to submit assembly samples

Contact us:

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- Assemblies with MDI should be delivered with respective test fixtures
- Provide identifying qualities (length, gauge, etc.)
- NDAs can be signed if requested

# Thanks to

Chris DiMinico, MC Communications

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Richard Mei, Commscope

Todd Herman, Commscope

Bryan Moffitt, Commscope

And everyone that provided sample assemblies