SPE Multidrop Enhancements
Mixing Segment Considerations
Trunk Connection

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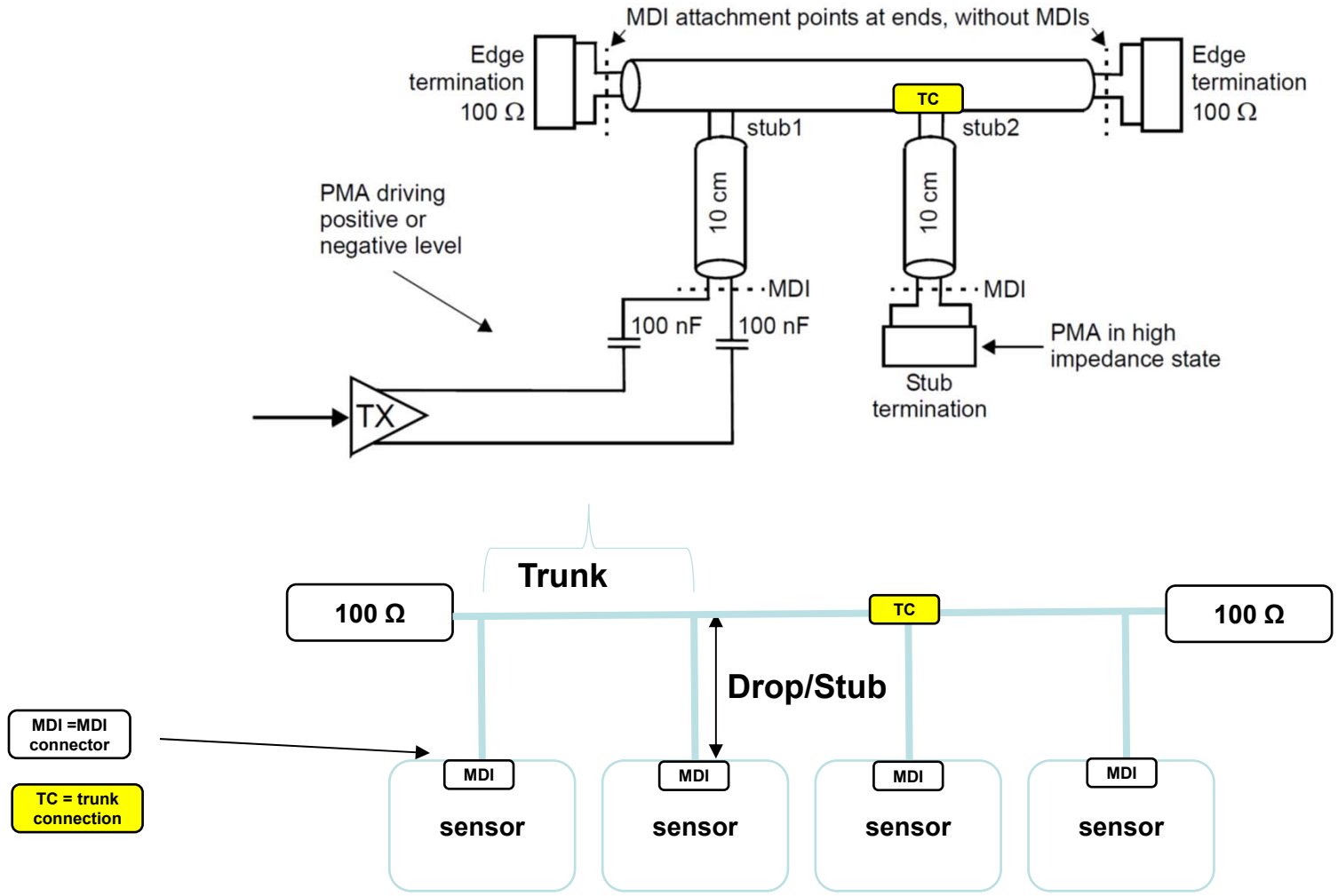
Purpose

- Trunk connection LTspice model
- Utilize 802.3cg component measurements for LTspice model
  - 2 wire terminal

Trunk Connection

- 802.3cg does not specify trunk connection



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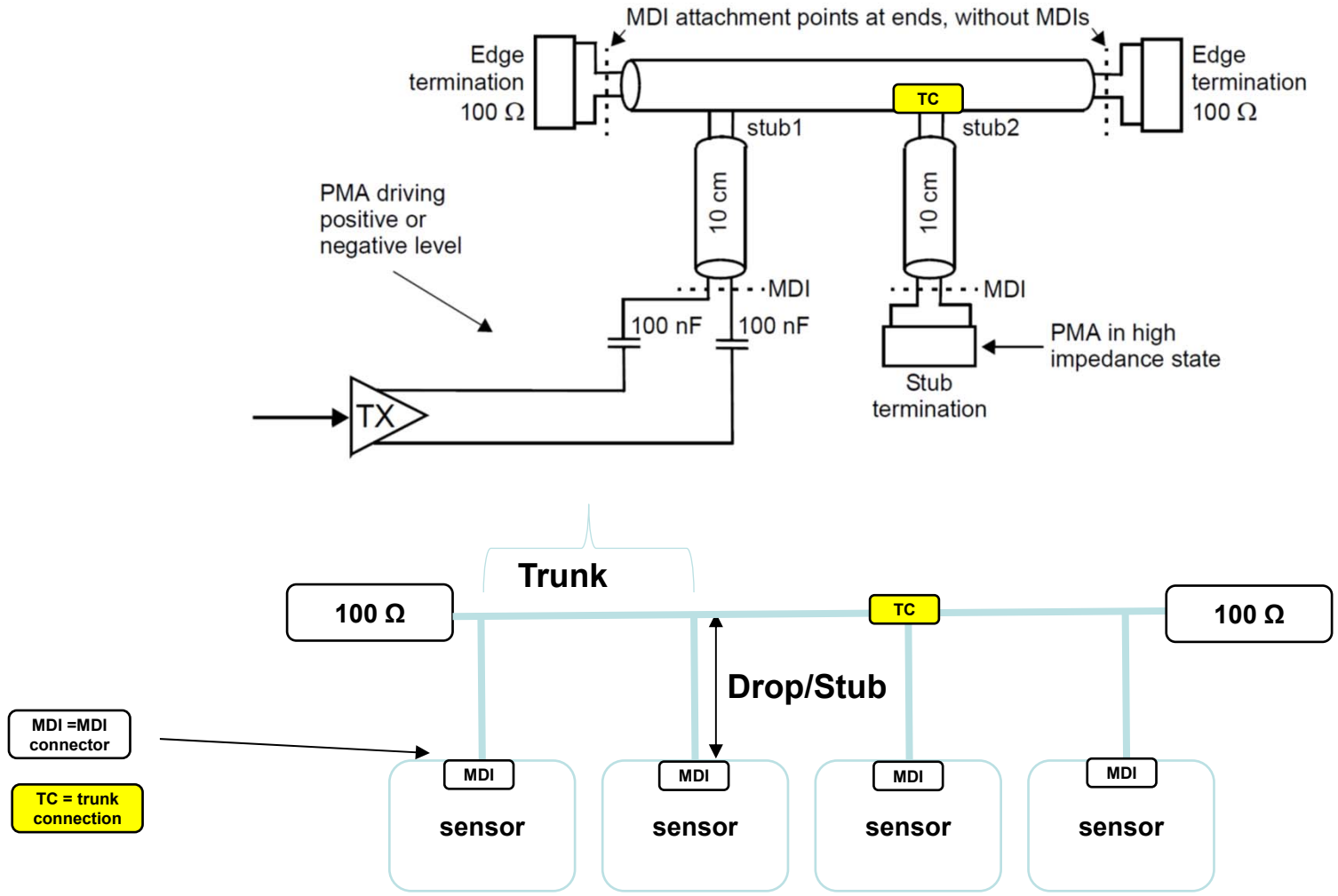
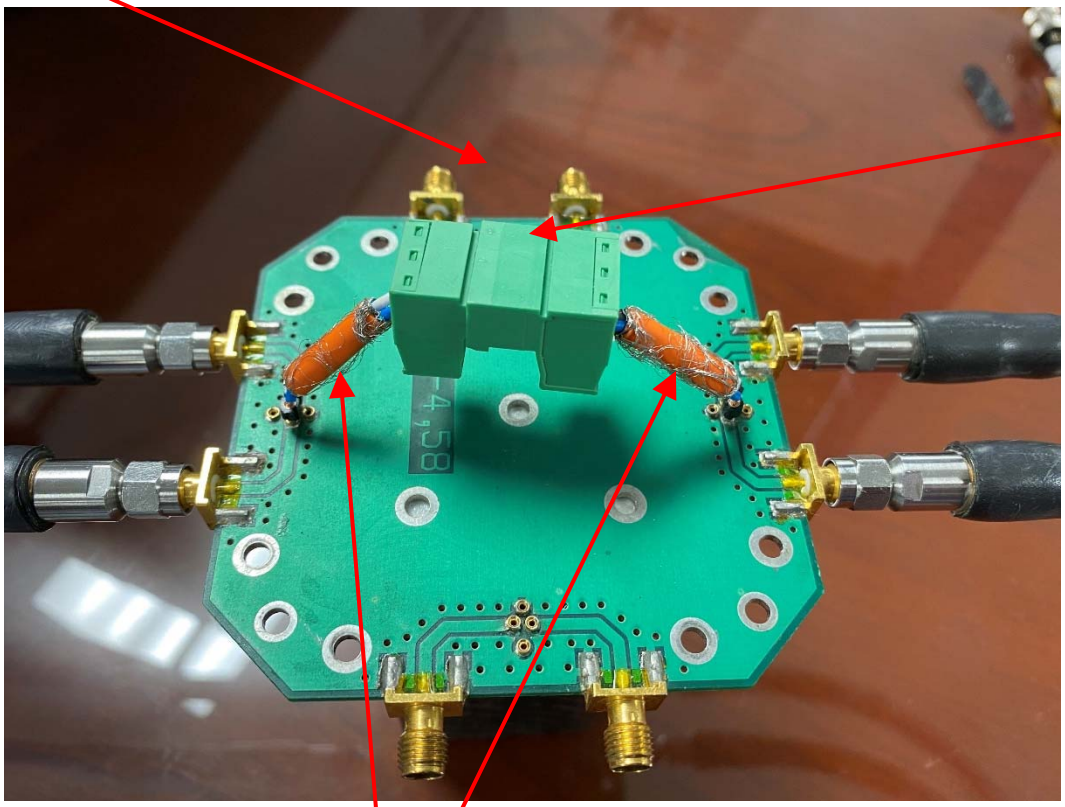


Trunk Connection - 2 wire terminal

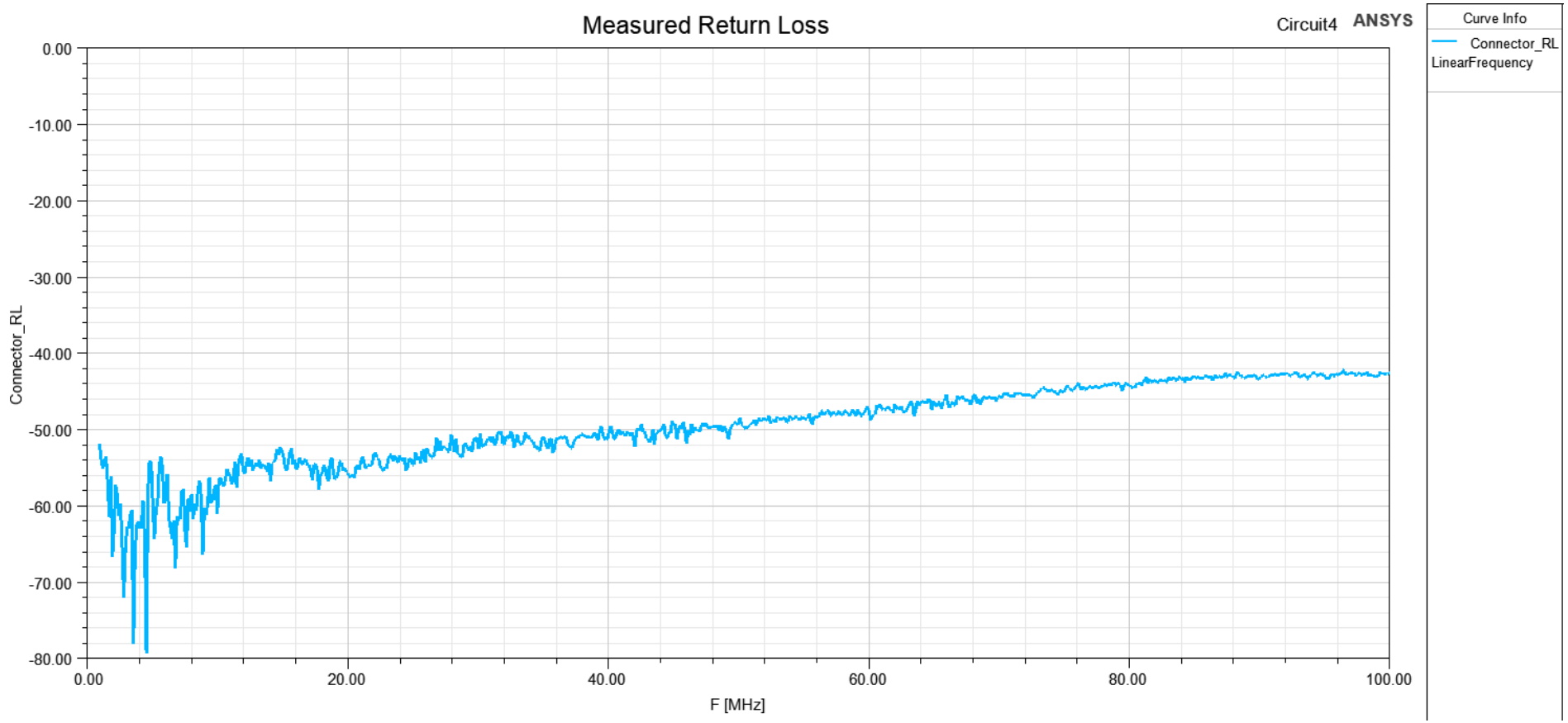
Trunk Connection Stub/Drop Cable



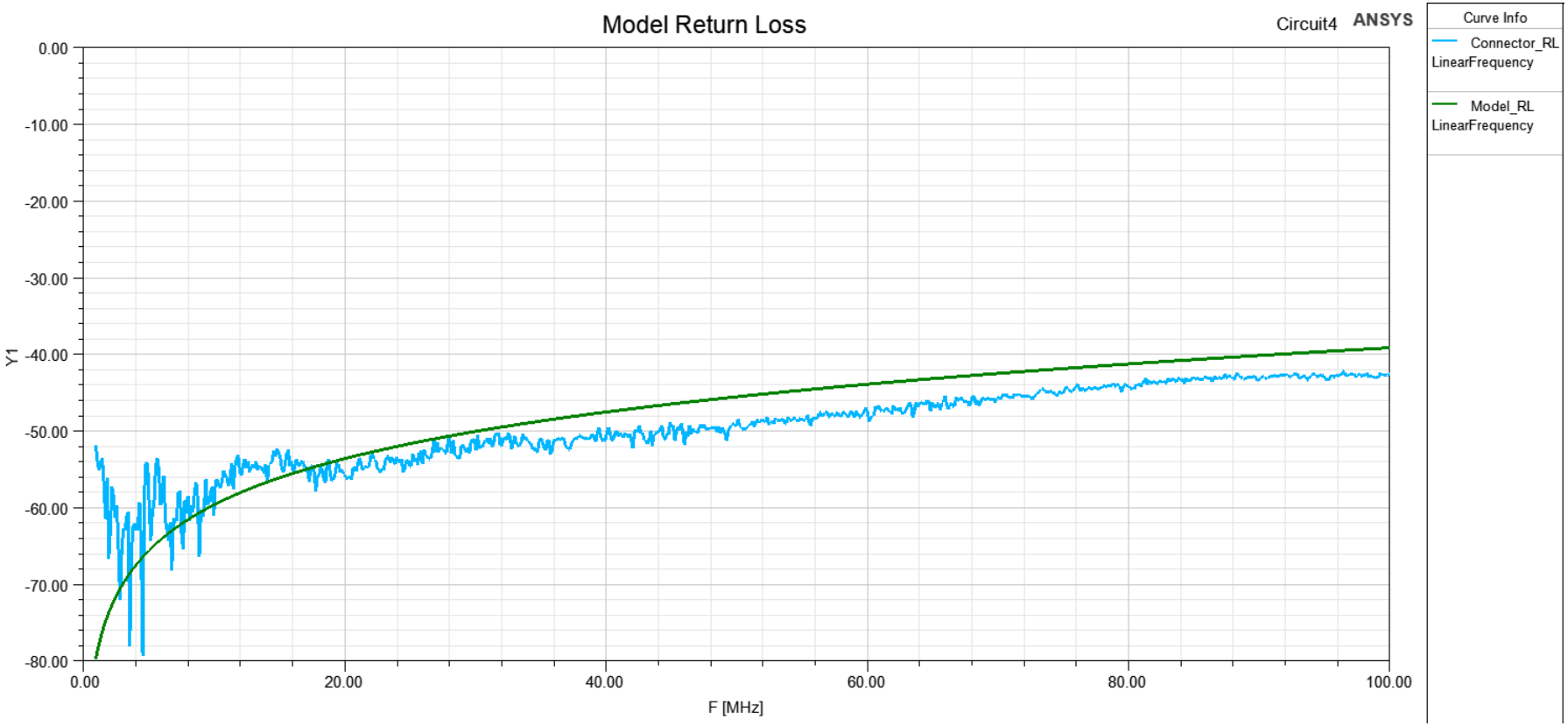
2 wire terminal

Trunk Cable

Trunk Connection - 2 wire terminal - RL

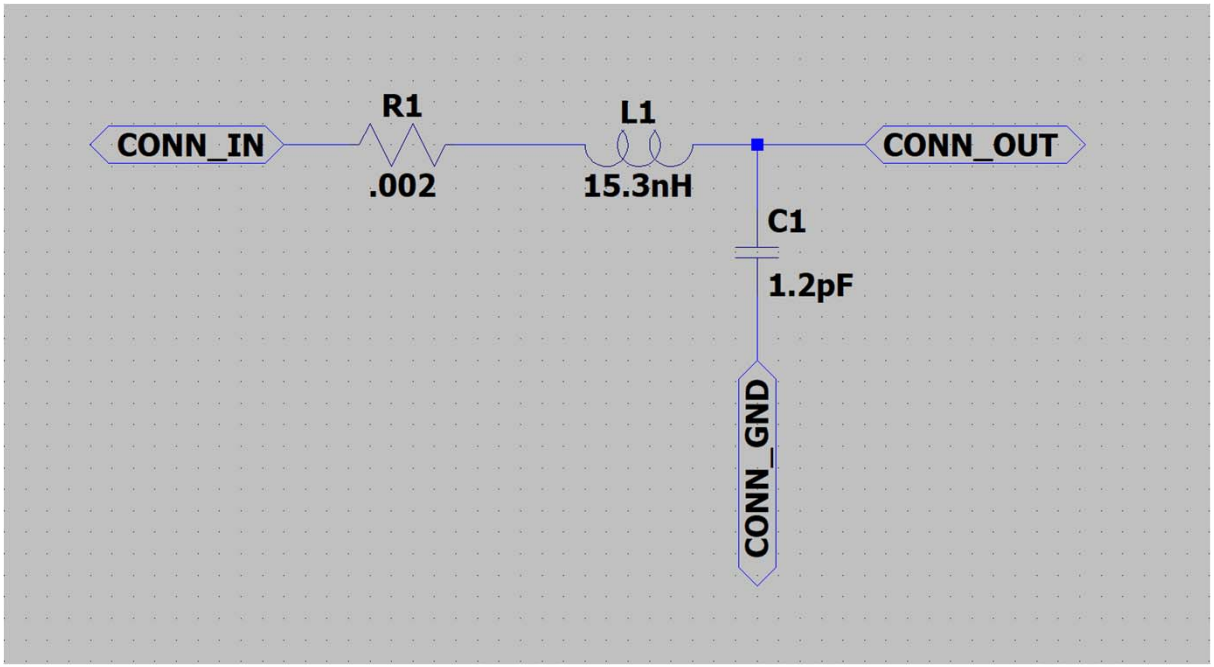


Trunk Connection - 2 wire terminal - RL



NOTE: *Comparing IL magnitude measurements between 1) and 2) was not useful due to the very low loss of the Connector. Connector IL is on the same order as the accuracy of measurement setup and calibration*

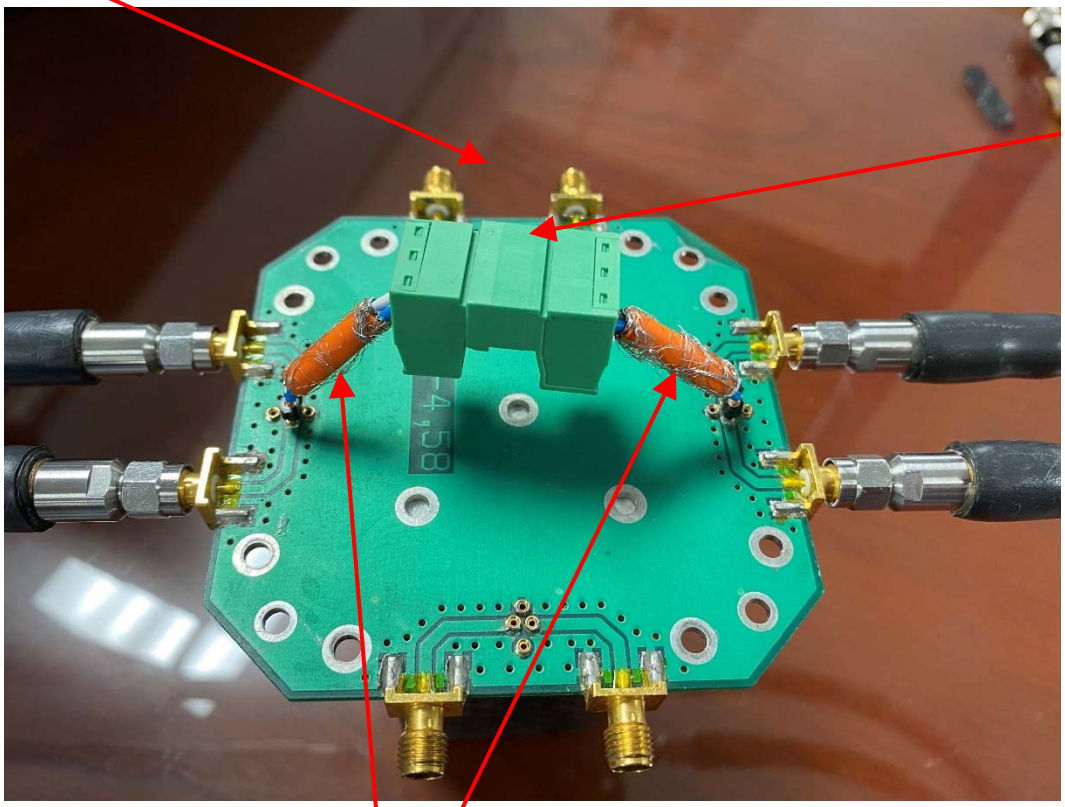
Trunk Connection - 2 wire terminal – Model



- ***Very short T-Line with Z ~ 113 Ohms***
- ***Approximately 1 inch @ Vp ~ 67%***

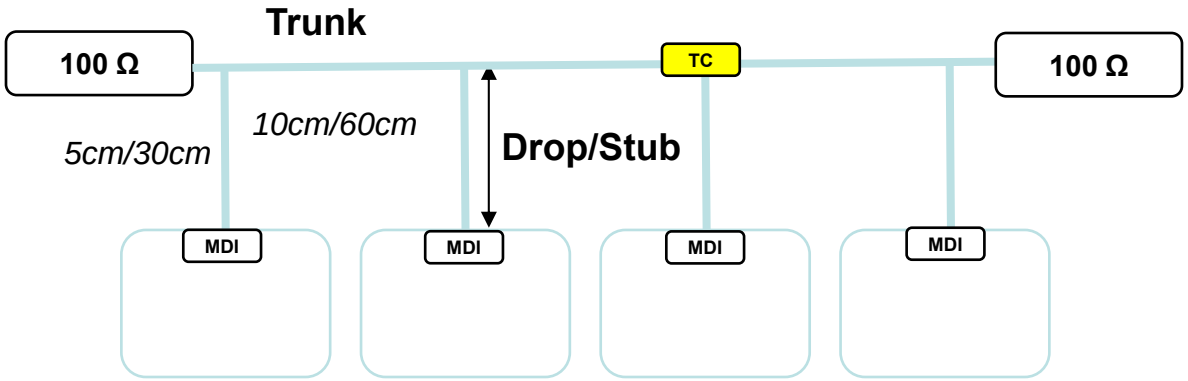
Trunk Connection and drop cable

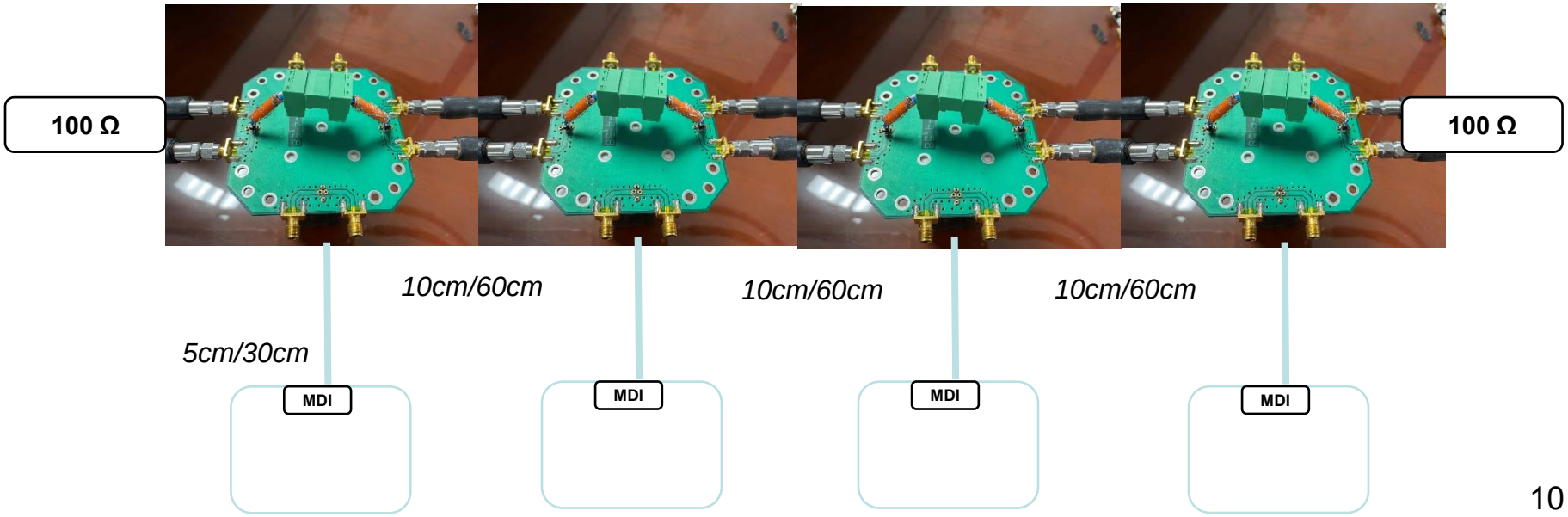
- Next steps; Add drop cable and parasitic's for model validation



Trunk Connection - 2 wire terminal

- Trunk Connection Stub/Drop Cable

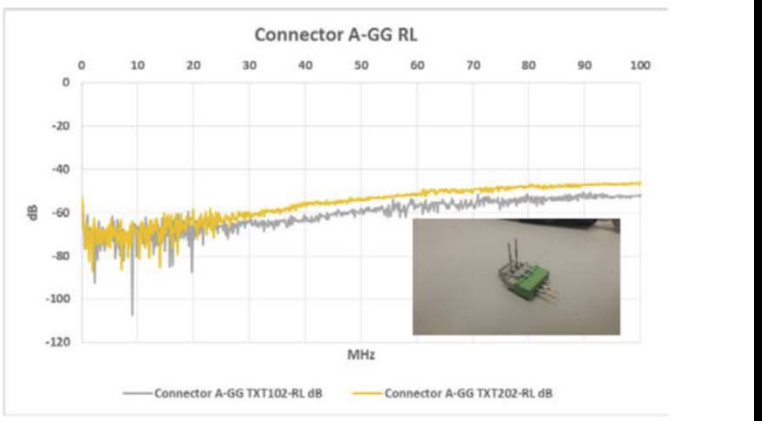




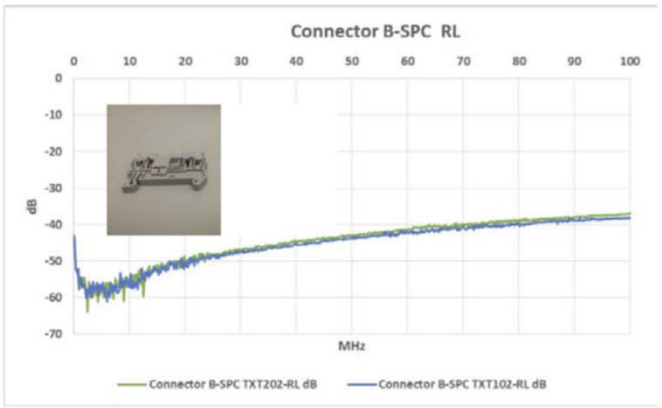
Supplemental

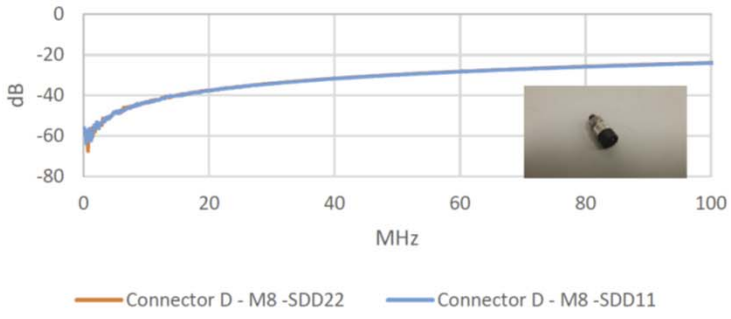
Component Measurements

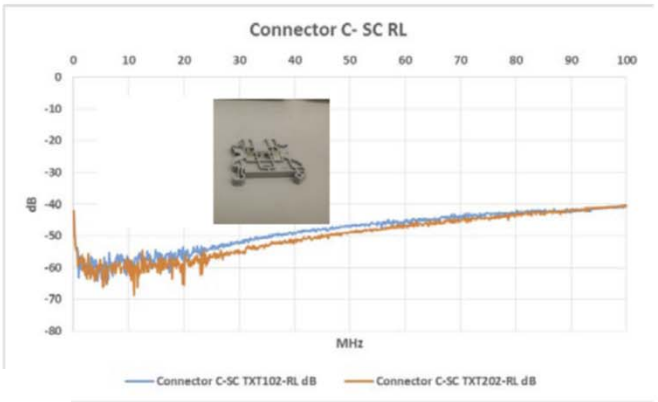
Connector Return Loss Measurements



2 wire terminal







Source:
https://www.ieee802.org/3/cg/public/Jan2017/diminico_01a_0117.pdf

IL < 0.02 dB
100 KHz ≤ f ≤ 20 MHz