



IEEE 802.3ch NGAUTO Measurement
results of Single Balanced Twisted-Pair
Shielded cables up to 7.3 GHz

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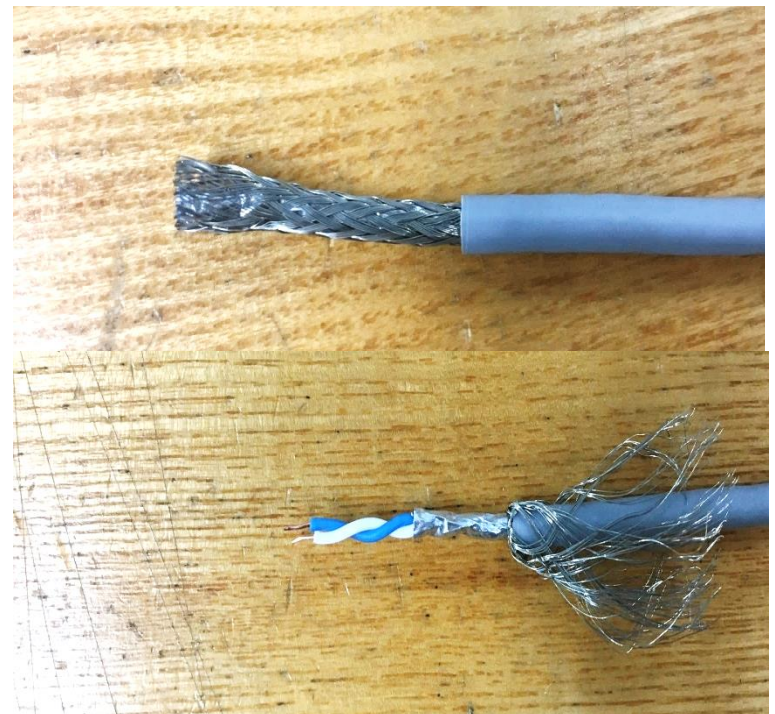
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IEEE 802.3ch NGAUTO Media Proposal

1-pair STP cable proposal up to 2 GHz presented May 2017 in New Orleans and summarized below :

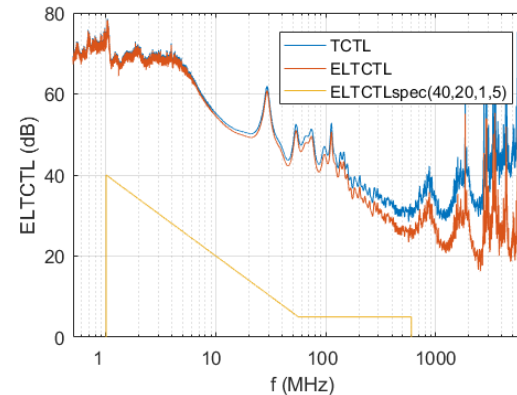
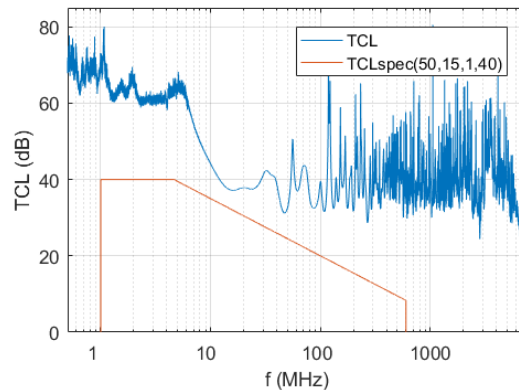
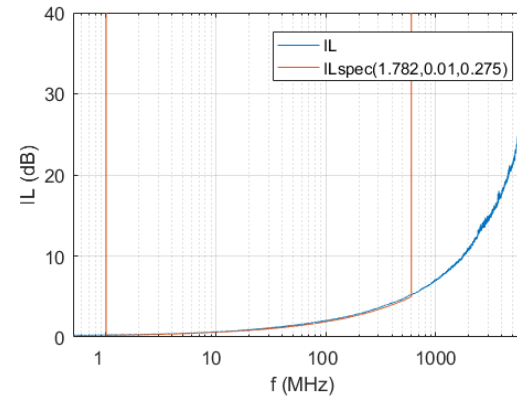
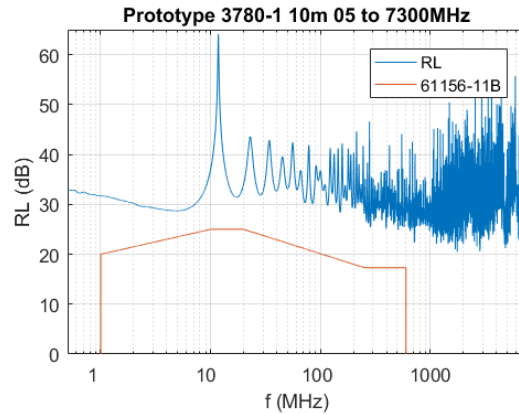
http://www.ieee802.org/3/ch/public/may17/hayes_moffitt_shariff_3NGAUTO%2001_0517.pdf

- 15 mm nominal twist length
- Foil shield with overall braid
- Outside diameter ~ 4.5 mm
- Weight 26 kg/km
- Flame test SAE J1128
- IEEE 802.3bp environmental specs
- Temperature range of – 40 C - 125 C
- Tested to draft IEC 61156-11 type B



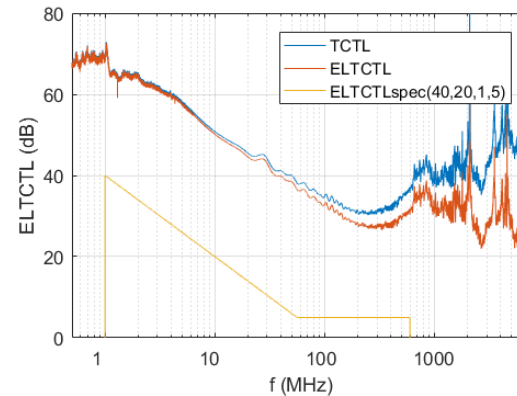
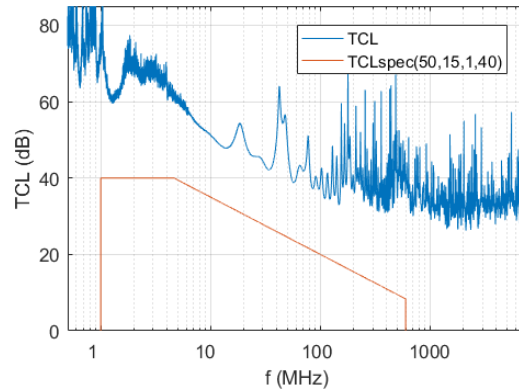
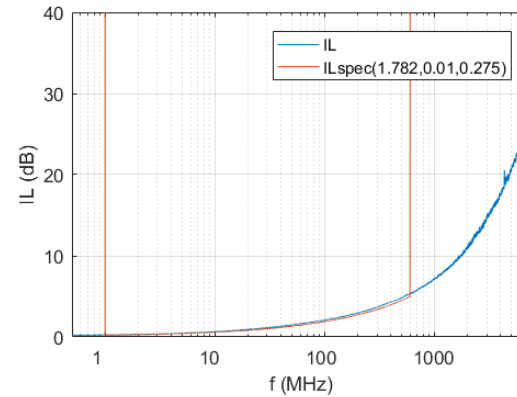
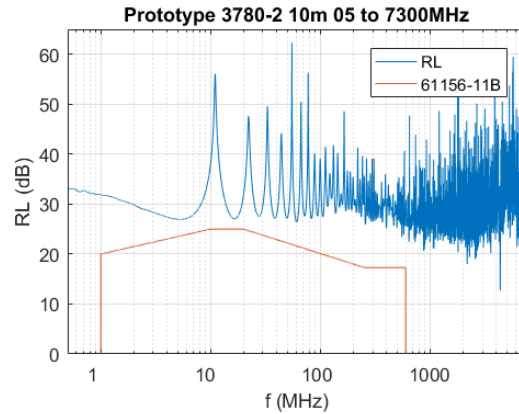
Transmission Specifications up to 7.3 GHz

(Prototype Sample 3780-1)



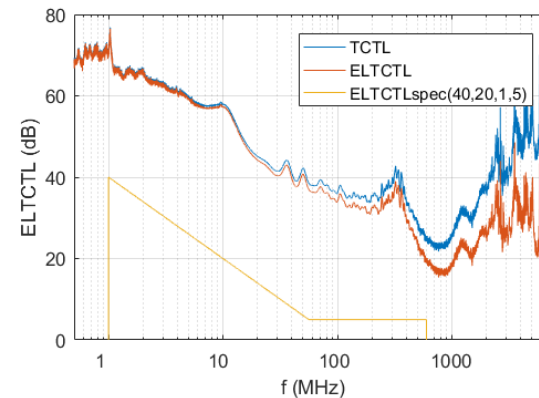
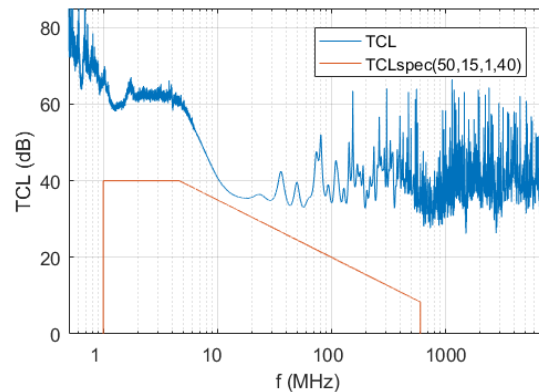
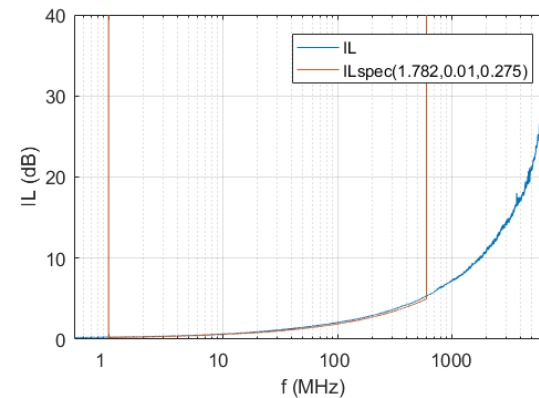
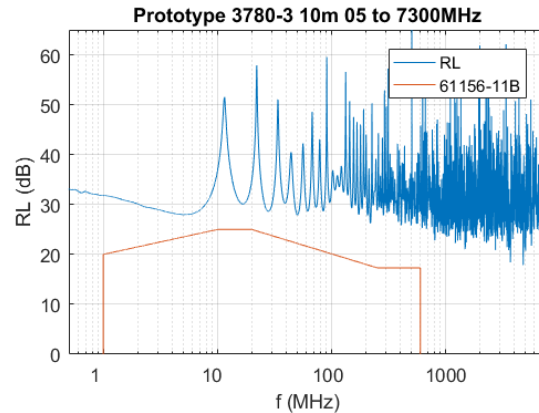
Transmission Specifications up to 7.3 GHz

(Prototype Sample 3780-2)



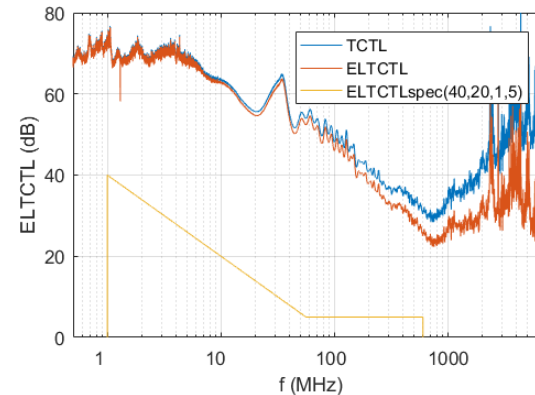
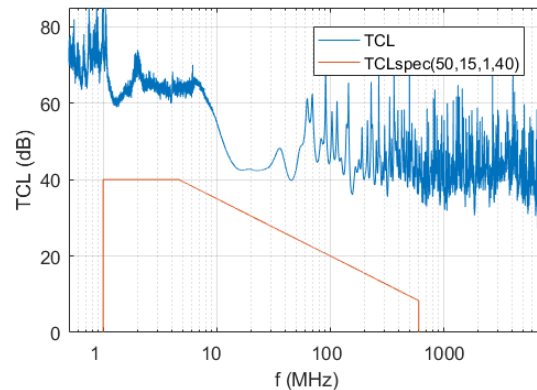
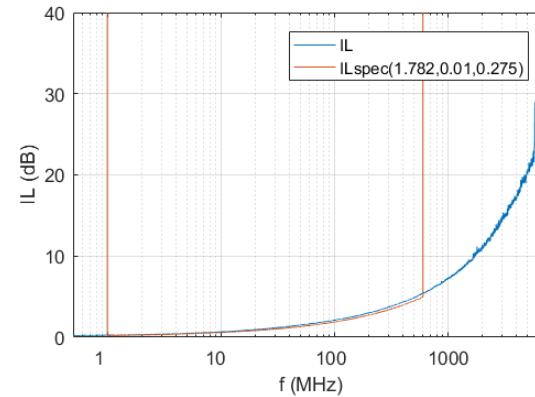
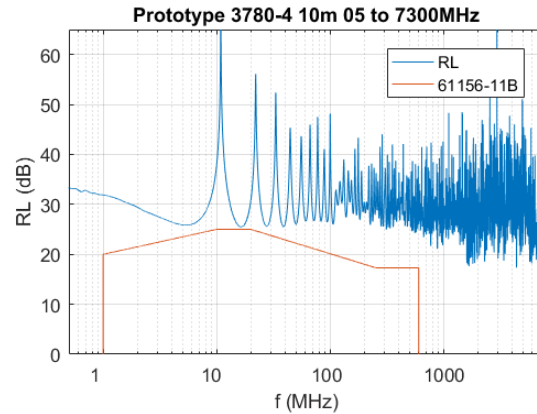
Transmission Specifications up to 7.3 GHz

(Prototype Sample 3780-3)



Transmission Specifications up to 7.3 GHz

(Prototype Sample 3780-4)



Other Parameters

- Other parameters are shown in http://www.ieee802.org/3/ch/public/may17/hayes_moffitt_shariff_3NGAUTO%2001_0517.pdf
- Shielding in the new prototypes has not changed so noise immunity parameters are expected to remain the same
- Delay and Impedance were also not measured for similar reasons

Observations and Next Steps

- 4 prototype 1-pair STP samples show reasonable transmission performance up to 7.3 GHz
- IL performance is expected to be further improved by a small increase in gauge size
- RL at low frequencies is also expected to improve further with improved impedance centering
- Need to partner with connector manufacturers to terminate this cable with automotive connectors and test the assembly for transmission performance as well as noise immunity



Thank You

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