

802.3da

Call for Data Pair Cable

Measurements

Guidelines for Submissions

Jason Potterf presenting with a lot of help from Michael Paul and Paul Wachtel

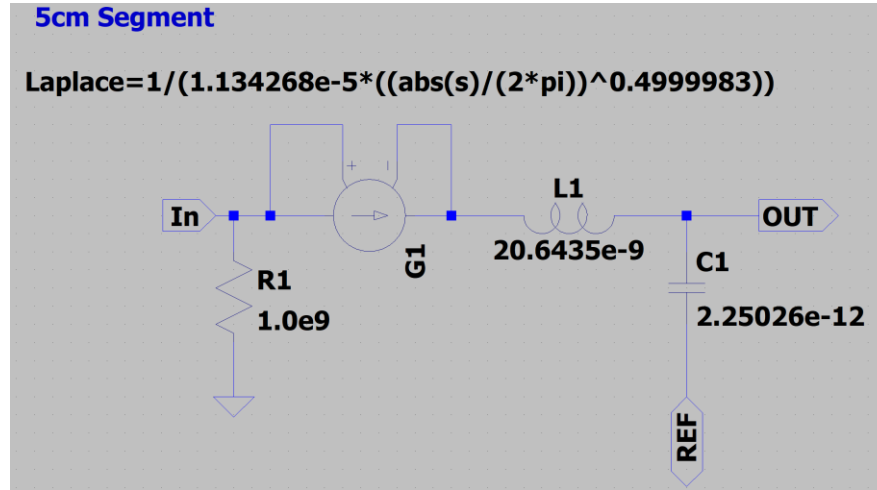
Affiliated with Cisco

2022-09-14

# Topics

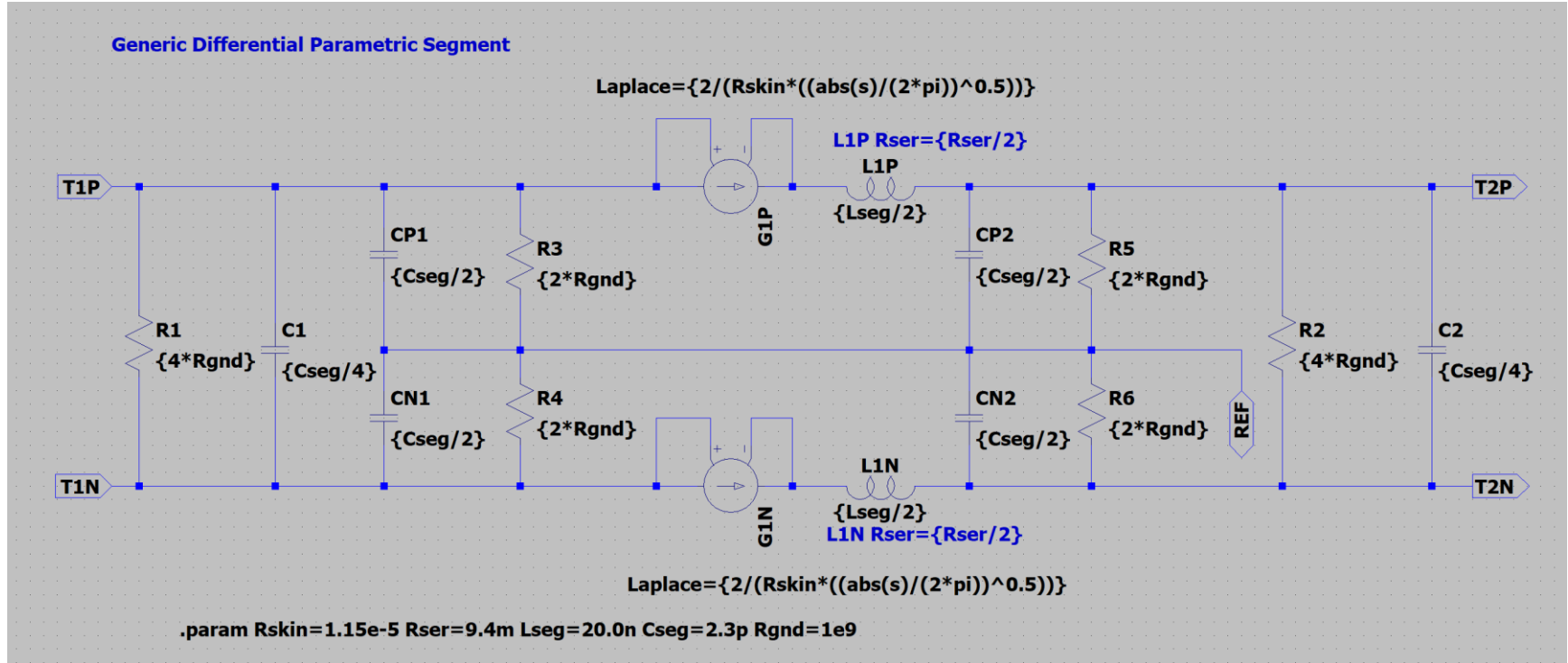
- Cable Model
- Cable Data Formats
- Suggested Cables

# Initial Cable Model



Contributed to Consensus Model by Paul Wachtel

# Differential Cable Model



# Cable Model Extraction Process

- Keysight Physical Layer Test System (PLTS)
  - Can import Touchstone Format (.s4p) s-parameters data sets
  - Supports RLGC Extraction
  - See Keysight.com for gory details:  
[https://rfmw.em.keysight.com/wireless/helpfiles/N1930B/Analyzing/Analyzing\\_Transmission\\_Line\\_Parameters.html](https://rfmw.em.keysight.com/wireless/helpfiles/N1930B/Analyzing/Analyzing_Transmission_Line_Parameters.html)

# Cable Data Submission Guidelines

- Submit in Touchstone Format (.s4p)
  - [https://ibis.org/touchstone\\_ver2.0/touchstone\\_ver2\\_0.pdf](https://ibis.org/touchstone_ver2.0/touchstone_ver2_0.pdf)
  - Start: 0.1 MHz
  - Stop: 100 MHz ← TODO: please increase (300 MHz suggested)
  - Data Points: 1601 (Linear Step Size) ← TODO: adjust step count to match
- Measurements should come from 100 meter cables
  - Helps minimize impact from test fixtures
    - ← TODO: check phase information loss on downscaling
- Consensus model contributors can perform the extractions using submitted data
- Please submit ASAP, but no later than October 31<sup>st</sup>, 2022

# Cable Suggestions so far...

- Variety of Category Cables
- Belden 1502R (Plenum) or 1502R (Riser)
- West Penn D25350 (Plenum) or 77350 (Riser)
- Liberty LLINX-U-P (Plenum) or LLINX-U (Riser)
- TMB PC222T143 – s/tp#22 cable w/ separate #14/3 cable in an overall jacket
- TMB PCCCT – s/tp#22+(2)#14 designed for color changers
- TMB PCLV8+2 – u/4tp#24[CAT6] cable w/ (2)#16 power conductors

Thanks!