STRADA WHISPER™ BACKPLANE CHANNELS

Megha Shanbhag

April 29, 2011

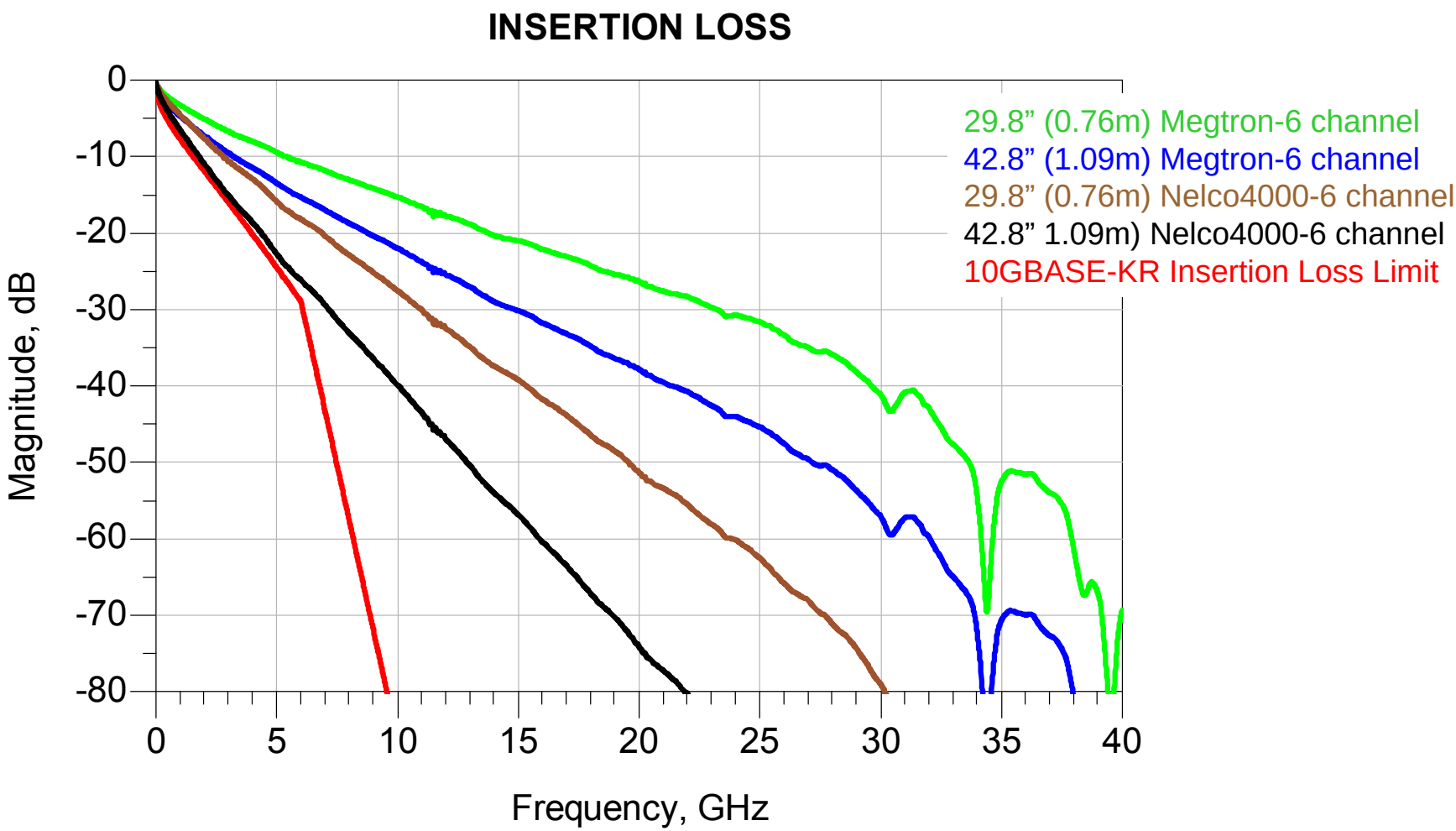
OBJECTIVE

- To aid the discussion on the REACH objective the following backplane channels are being provided,
  1) 29.8” (0.76m) STRADA Whisper* Channel with Megtron-6 board material
  2) 42.8” (1.09m) STRADA Whisper* Channel with Megtron-6 board material
  3) 29.8” (0.76m) STRADA Whisper* Channel with Nelco4000-6 board material
  4) 42.8” (1.09m) STRADA Whisper* Channel with Nelco4000-6 board material

- The goal is to provide the Study Group with a variety of channels for analysis, ranging from a longer 10GBASE-KR loss channel to a shorter lower loss channel

- These channels should provide reasonable cases to allow for a consensus on REACH

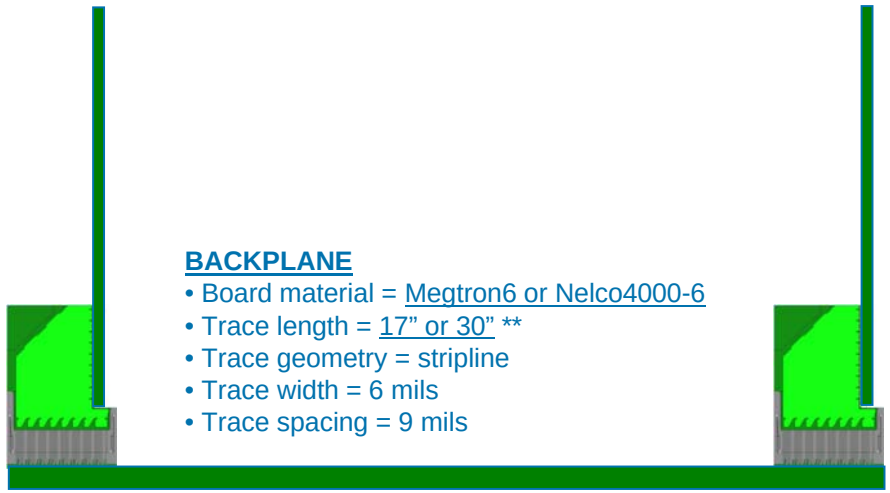
CHANNEL LOSS COMPARISON



SIMULATION SET-UP

DAUGHTER CARD x 2
- Board material = Megtron6 or Nelco4000-6
- Trace length = 5”
- Trace geometry = stripline
- Trace width = 6 mils
- Trace spacing = 9 mils

CONNECTOR x 2
- STRADA Whisper*
- Vertical Header
- Right Angled Receptacle



BACKPLANE
- Board material = Megtron6 or Nelco4000-6
- Trace length = 17” or 30” **
- Trace geometry = stripline
- Trace width = 6 mils
- Trace spacing = 9 mils

DAUGHTER CARD FOOTPRINT x 2
- PCB Thickness = 150 mils
- 16 layers
- Bottom Layer route, THRU via
- No Counterbore or stub

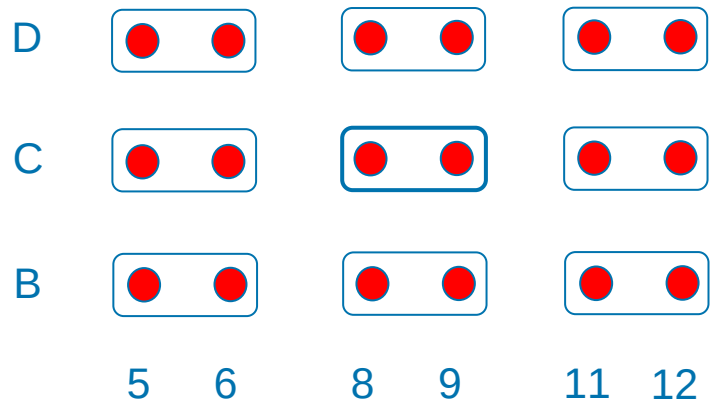
BACKPLANE FOOTPRINT x 2
- PCB Thickness = 250 mils
- 26 layers
- Bottom Layer route, THRU via
- No Counterbore or stub

0.76meters = 29.8” = 2*(5” daughtercard traces) + 2*(0.15” daughtercard footprint) + 2*(1” connector) + 2*(0.25” backplane footprint) + 17” backplane traces
1.09meters = 42.8” = 2*(5” daughtercard traces) + 2*(0.15” daughtercard footprint) + 2*(1” connector) + 2*(0.25” backplane footprint) + 30” backplane traces

** For the two different lengths only the length of backplane traces varies

STRADA WHISPER™ CHANNEL

Pin Configuration and File Format



- Each channel package includes separate .s4p files for THRU/crosstalk
- Data is pair C8-C9 centric
- Near End and Far End crosstalk for 8 adjacent aggressors
- 0-40GHz in 10MHz steps
- All data is simulated using frequency dependent material properties
  - Megtron-6: Er=3.48, TanD=0.0062@15GHz
  - Nelco4000-6: Er=4.10, TanD=0.0150@15GHz