

C2M Cabled Host Channel Contribution with Skew Considerations

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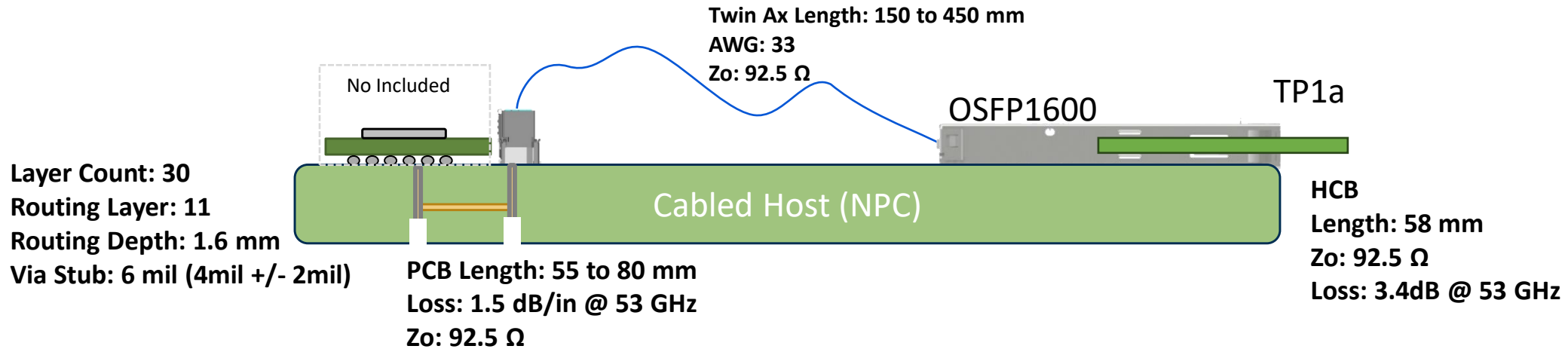
Electrical Ad-Hoc, October 26 2023

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C2M Cabled Host TP0 to TP1a

Interconnect length variations provide a range of losses



Skew Considerations

Induced by the cable assembly only

Skew cable models calibrated to measured lab data for timing delay within a twinax

Skew target in channel files

Low: Minimum

Med: Next generation max

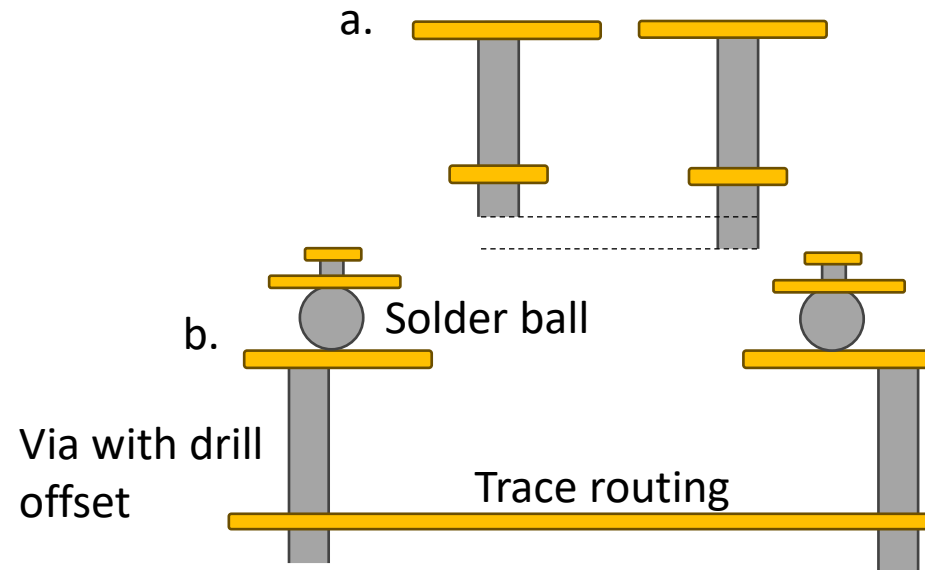
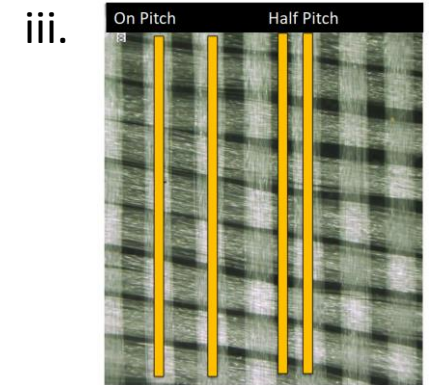
High: Current generation max

Skew management is host design specific. Examples of skew not considered in this contribution:

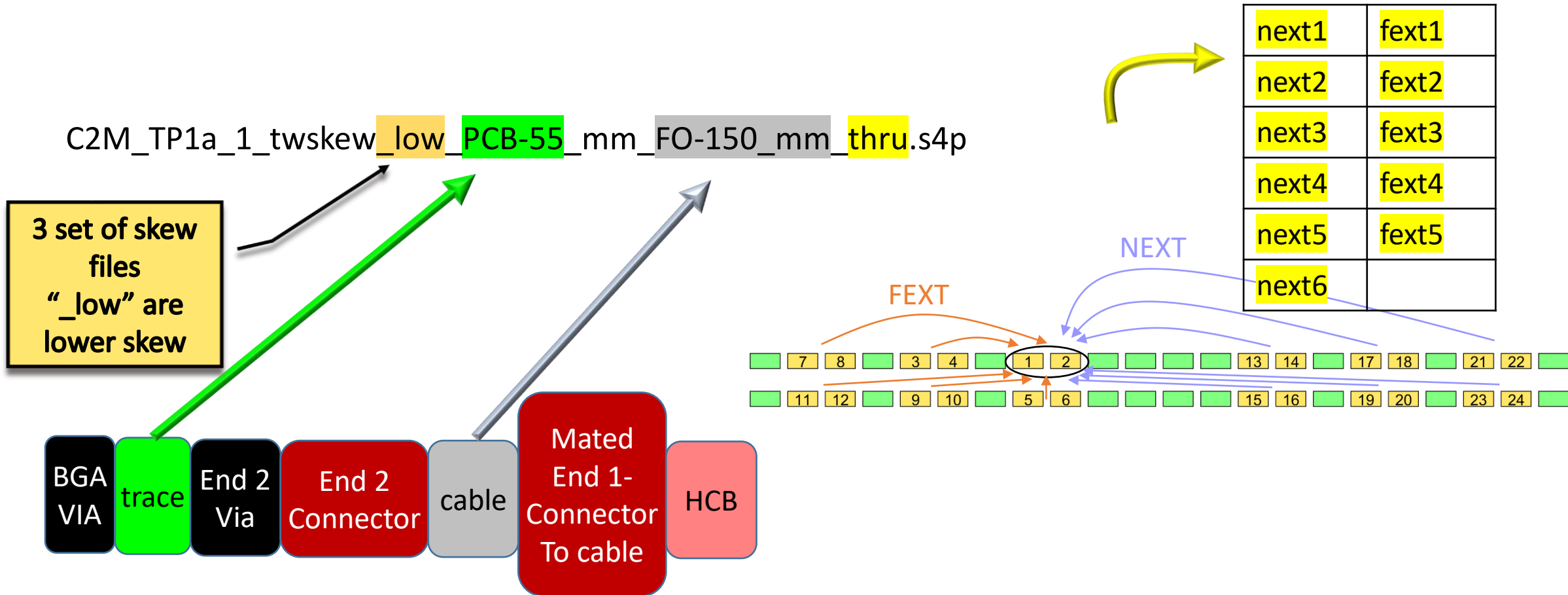
- i. Limits of physical length matching
- ii. Self coupling within physical length matching techniques
- iii. Electrical length mismatch due to fiber weave effects
Delay mismatch of 1.7 to 5 ps/in if not mitigated *
- iv. Physical asymmetry in conductor pair, examples:
 - a. Back drilling asymmetry
 - b. Drill location and laminate registration

An open question: How much asymmetry can be tolerated?

Is this skew? TBD



C2M Channel List Key for Tp0-Tp1a



C2M loss vs channel (TP0 – TP1a)

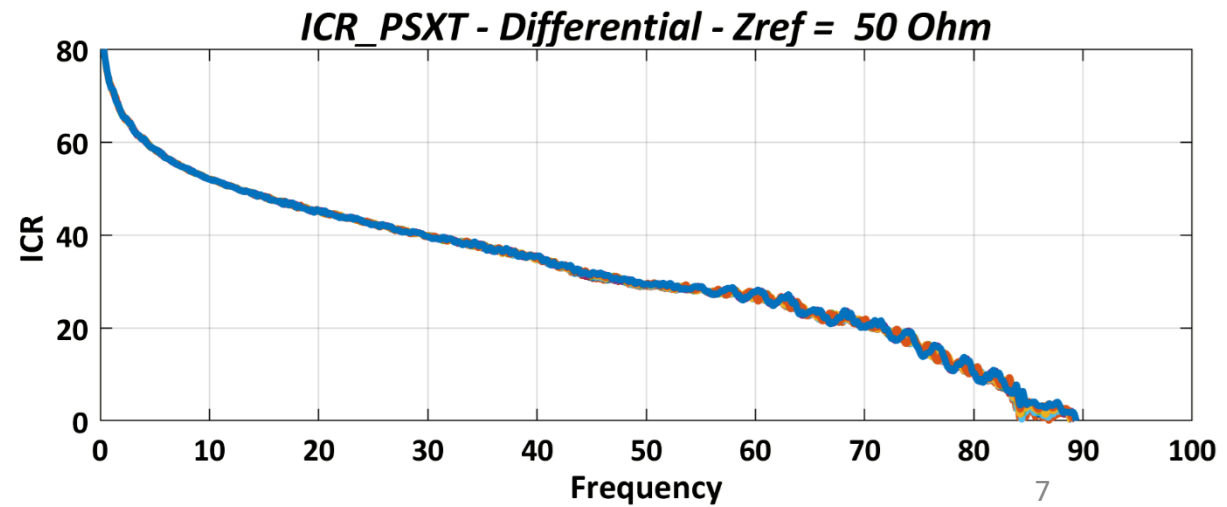
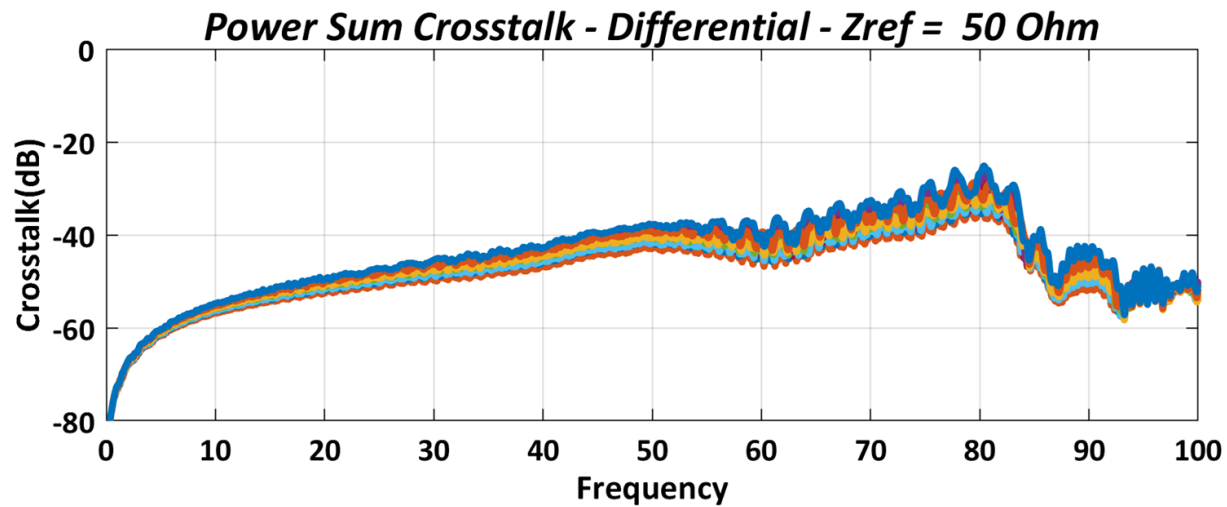
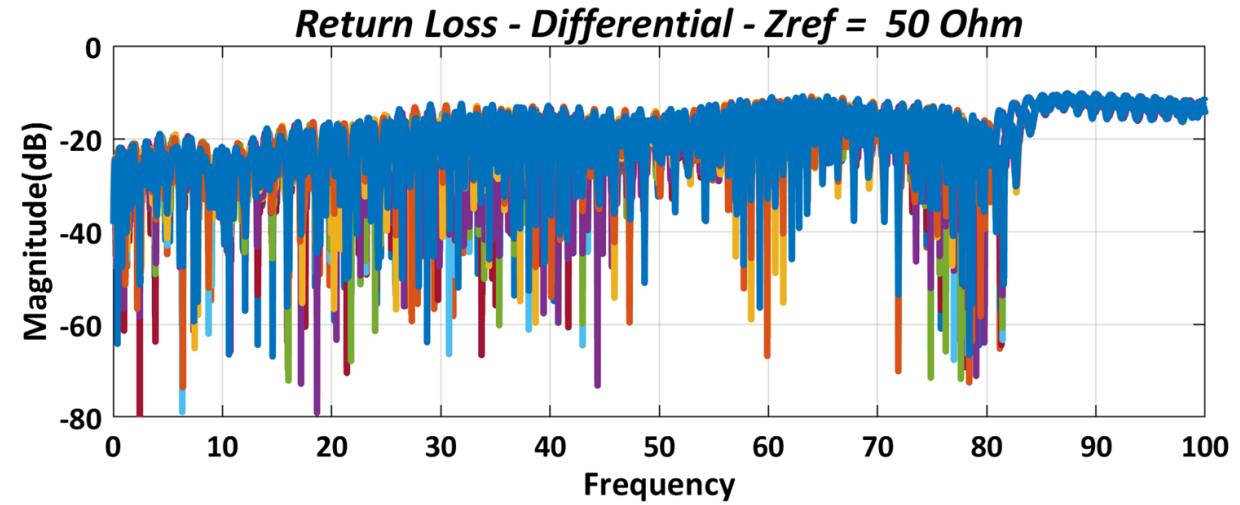
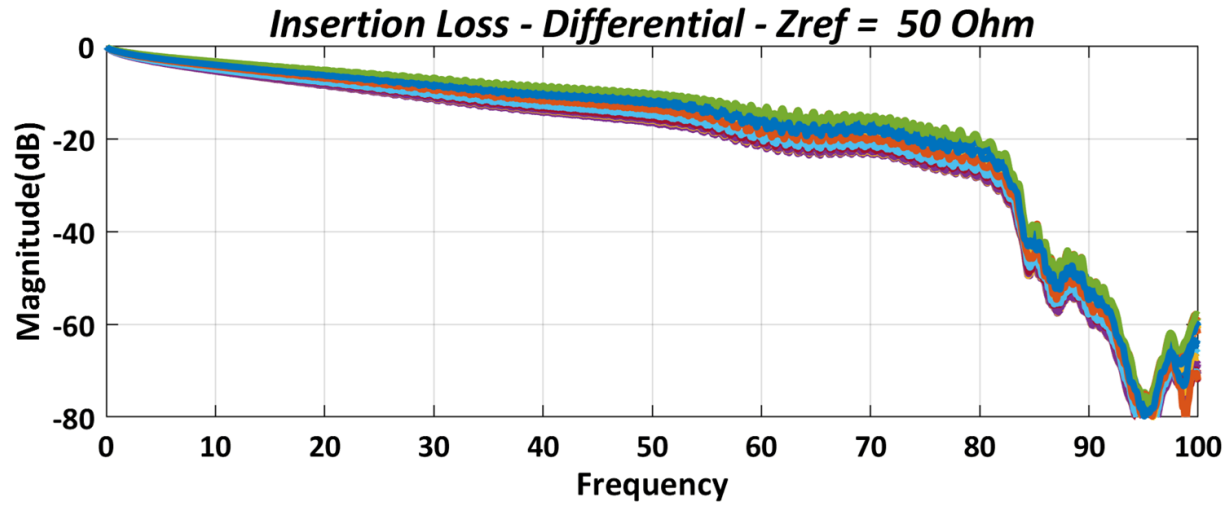
IL Range: 11.41 dB to 17.36 dB

Channel Name	TP0_TP1a Loss @ 53.125 GHz (dB)
C2M_TP1a_1_twskew_low_PCB-55_mm_FO-150_mm_thru	11.41
C2M_TP1a_2_twskew_med_PCB-55_mm_FO-150_mm_thru	11.37
C2M_TP1a_3_twskew_high_PCB-55_mm_FO-150_mm_thru	11.39
C2M_TP1a_4_twskew_low_PCB-60_mm_FO-200_mm_thru	12.16
C2M_TP1a_5_twskew_med_PCB-60_mm_FO-200_mm_thru	12.23
C2M_TP1a_6_twskew_high_PCB-60_mm_FO-200_mm_thru	12.40
C2M_TP1a_7_twskew_low_PCB-65_mm_FO-250_mm_thru	12.92
C2M_TP1a_8_twskew_med_PCB-65_mm_FO-250_mm_thru	13.05
C2M_TP1a_9_twskew_high_PCB-65_mm_FO-250_mm_thru	13.42
C2M_TP1a_10_twskew_low_PCB-70_mm_FO-300_mm_thru	14.34
C2M_TP1a_11_twskew_med_PCB-70_mm_FO-300_mm_thru	14.36
C2M_TP1a_12_twskew_high_PCB-70_mm_FO-300_mm_thru	14.60
C2M_TP1a_13_twskew_low_PCB-75_mm_FO-400_mm_thru	15.99
C2M_TP1a_14_twskew_med_PCB-75_mm_FO-400_mm_thru	16.24
C2M_TP1a_15_twskew_high_PCB-75_mm_FO-400_mm_thru	16.75
C2M_TP1a_16_twskew_low_PCB-80_mm_FO-450_mm_thru	16.76
C2M_TP1a_17_twskew_med_PCB-80_mm_FO-450_mm_thru	16.93
C2M_TP1a_18_twskew_high_PCB-80_mm_FO-450_mm_thru	17.36

C2M Cabled Host

IL, RL, PST, ICR

(C2M_TP1a_#_twskew_<low,med,high>_PCB-##_mm_FO-##_mm)

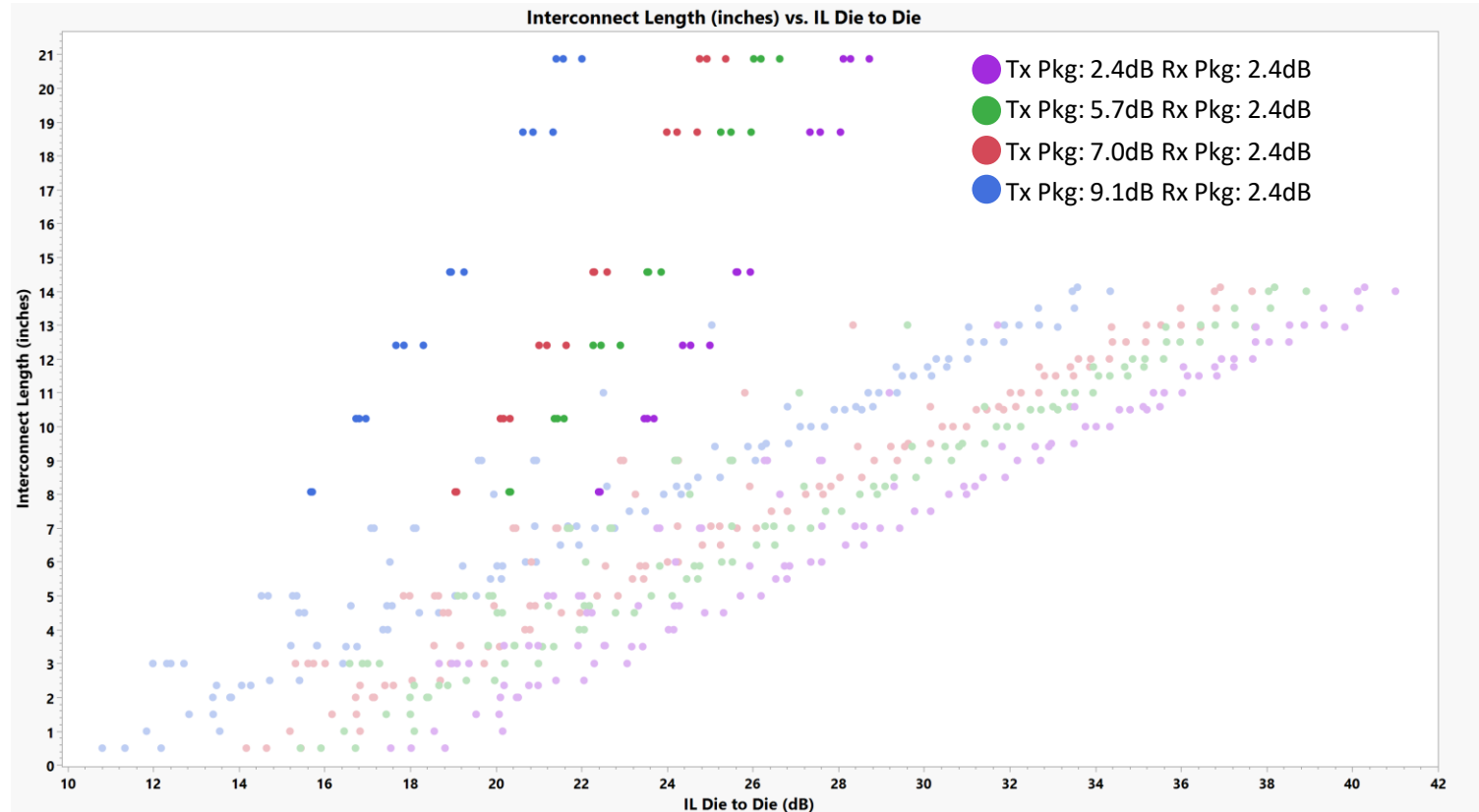


This Contribution's Interconnect Length

Covers 21 inches of PCB length + Cable length

- Die 2 die loss adds expected loss from benartsi_3df_01a_2211 at lengths of 8mm, 24mm, 30mm, and 40mm
- Interconnect length does not equal reach
- Do not see a need for > 14 inches of cable length
- Cabled host die to die loss can be < 26 dB

** length information from C2M channel contribution's presentation. Channels without stated interconnect length were omitted



Thank You!