Desired Data Comparison to Evaluate Link Segment IL Proposal

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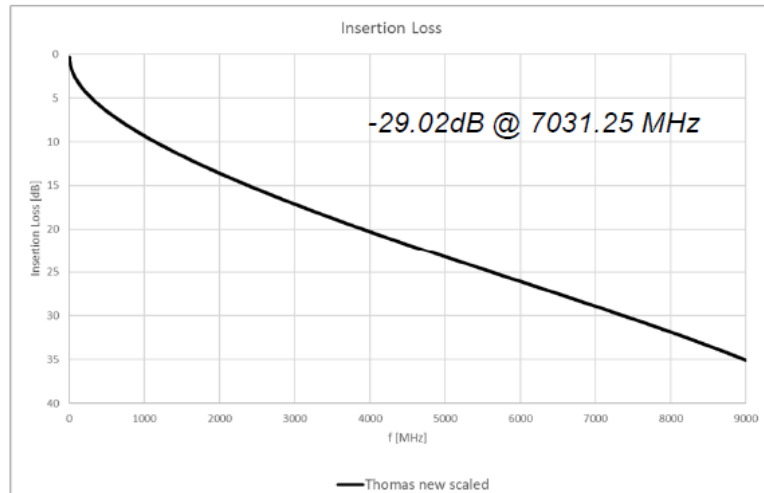## CME Consulting, Inc / Marvell

Purpose

Updated Link Segment Strawman IL

An adjustment to the Link Segment IL proposal was put fourth by Thomas Muller in mueller_3cy_01_05_18_21.pdf

$$IL_{LinkSegment}(dB) \leq 0.00135(f_{MHz}) + 0.3564(f_{MHz})^{0.45} + 0.495\left(\frac{f_{MHz}}{7500}\right)^6$$

where f is the frequency in MHz; $10 \leq f \leq 9000$

Insertion Loss

-29.02dB @ 7031.25 MHz

— Thomas new scaled

IEEE 802.3cy TG

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- To explain desired understanding of cabling margin

- Definition of 'cabling margin' used here is:
  - Min (over f) {expected aged worst case cable IL - limit line IL} (in dB)

Example

Comparison vs. Koeppdoerfer sample 1, aged data.

(only shown for example, analysis is not complete)

Exclude low-value measured points (IL < 1 dB).

Compute difference of measured IL (for 11m) and IL limit line (Limit – measured IL)

Compute MIN over frequency (of non-excluded points)

Compute Average in dB over frequency

Desired – show plots on same graph.

Insertion loss vs. limit line

Measured values < 1 dB excluded from margin (normal practice)
Margin is min over freq (measured - limit) in dB = 1.32dB
Average margin in dB over freq > 1000 MHz is 6.75 dB