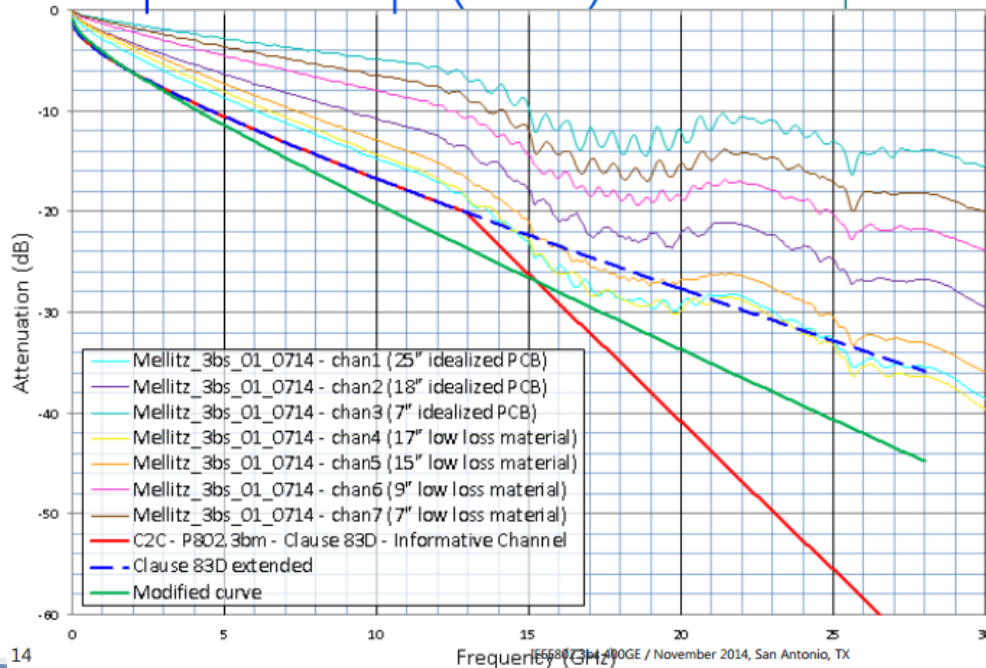


**Improved mellitz_3bs_01_0714
C2C Channels Which Exceed the
goergen_3bs_01a_1114 Loss Line**

**Richard Mellitz
March, 2015**

Chan5 and Chan2 are below recommended C2C IL in goergen_3bs_01a_1114

Chip-to-Chip (C2C) – Let's compare to channel data.



Notes:

← Channels are public on the .3bs webpage... all channels include connector and an 8% impedance variation from motherboard to daughtercard.

← Are these channels right to use for modulation discussion?

← Is ILD pessimistic for educated 50G channel design?

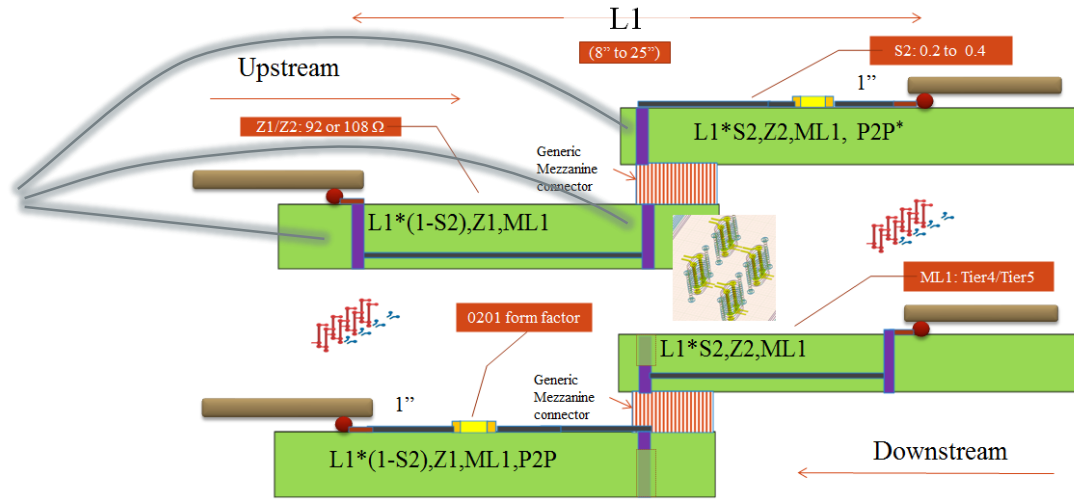
Vias improved for case_000001 and case_000005*

mellitz_3bs_01_0714
Slide 7

Chip to Chip One Connector (Mezzanine Topology)

108 MIL THICK 20 LAYER BOARDS WITH
MAX OF 18 MIL VIA STUBS

Improved Via
Construction



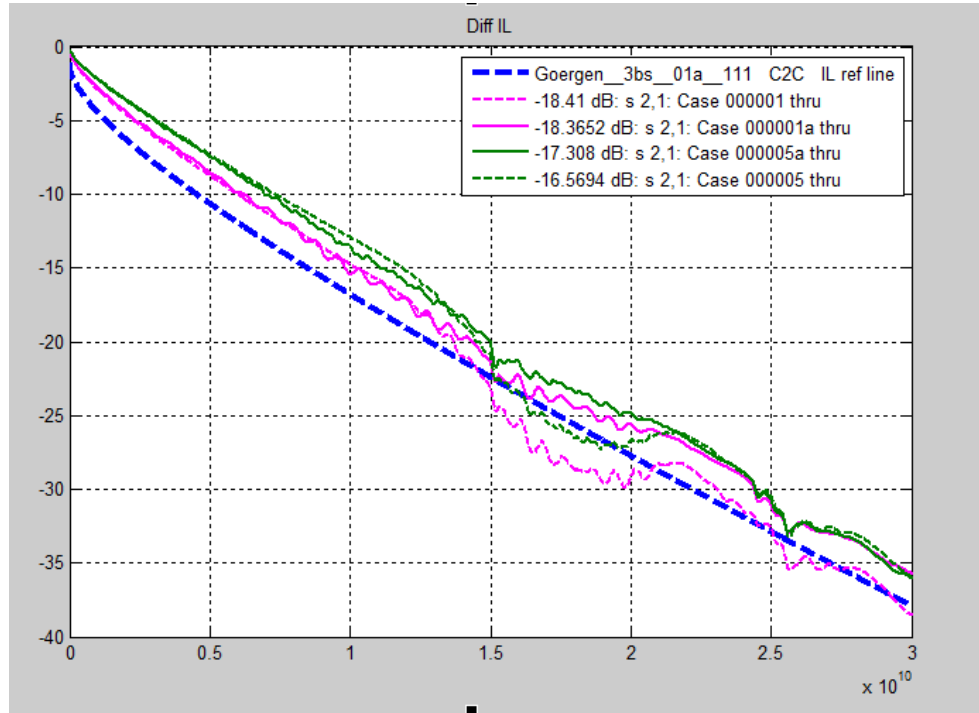
7

IEEE P802.3bs 400GbE Task Force

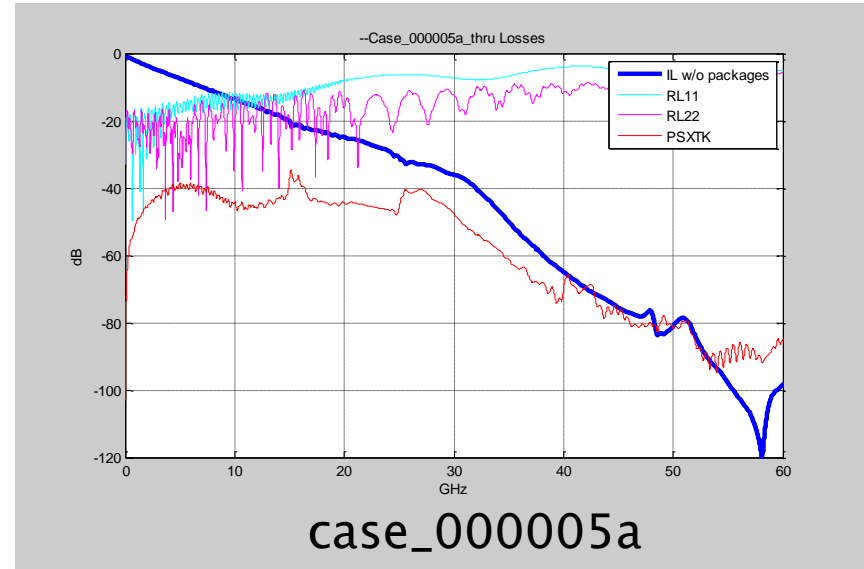
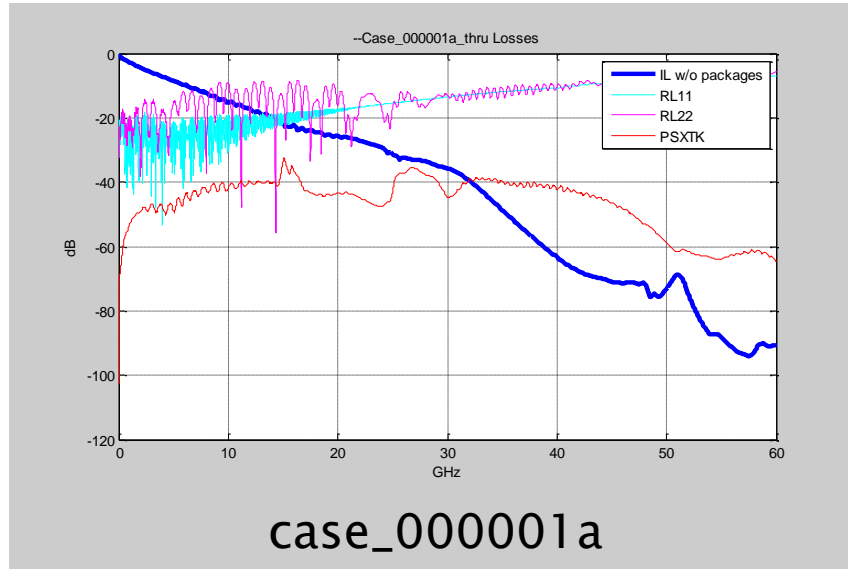
*LENGTH, IMPEDANCE, MATERIAL LOSS, PAIR TO PAIR SPACING IN
RELATION TO DIELECTRIC HEIGHT)

*Noted as mellitz_3bs_01_0714 chan1 and mellitz_3bs_01_0714 chan5 in goergen_3bs_01a_1114

mellitz_3bs_01_0714 with tuned vias is above the Goergen IL C2C line



case_000001a and case_000005a Frequency Domain Responses



..._xtalk1 to ..._xtalk3 ~ FEXT
..._xtalk4 to ..._xtalk7 ~ NEXT