

# How to Proceed on 100G C2C-S and C2C-L

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# List of Supporters

- Ted Sprague – Infinera**
- Pirooz Tooyserkani – Cisco**
- Rob Stone - Broadcom**

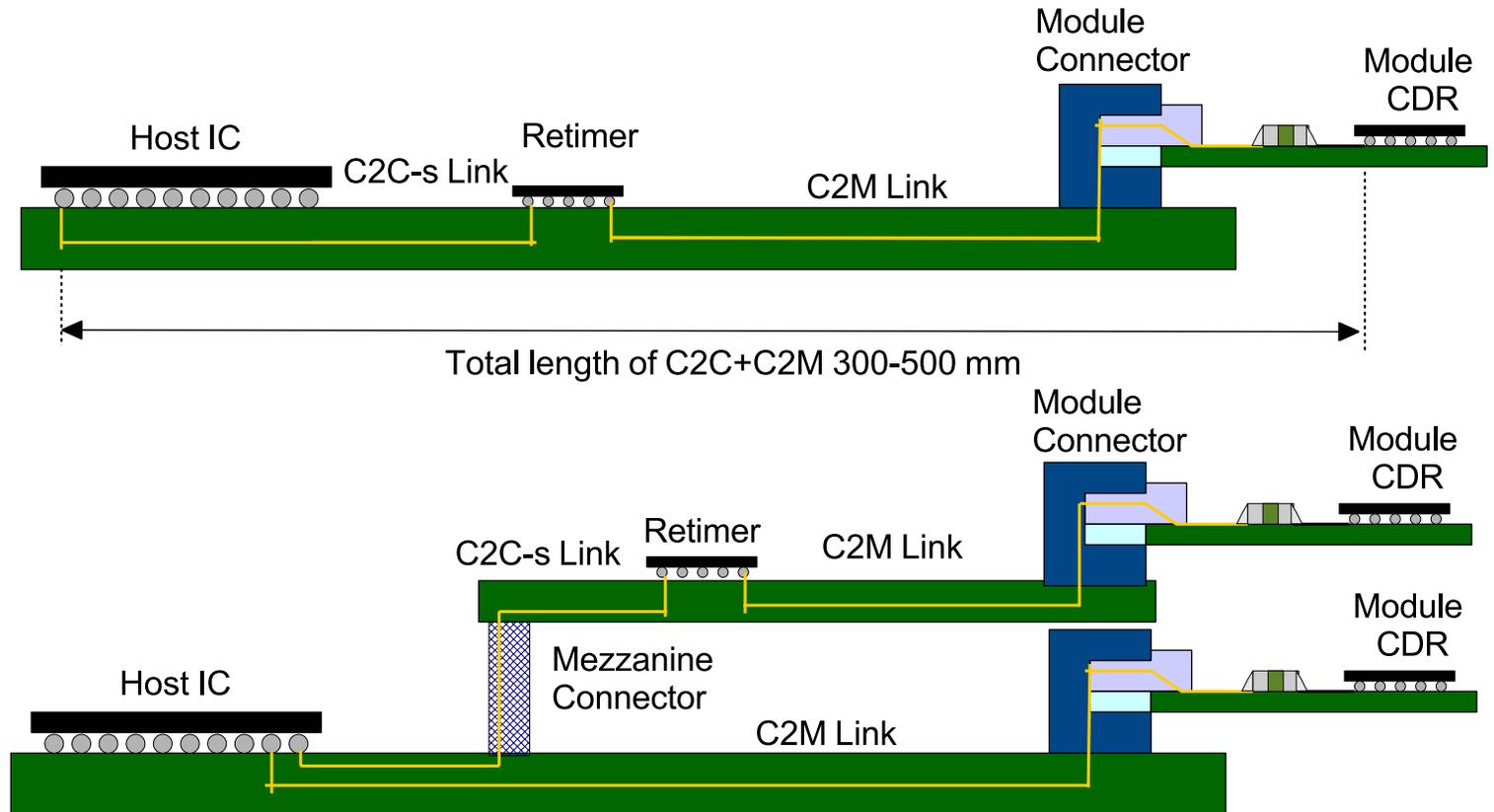
# Background

- ❑ **Use case and benefit of C2C-S interface in support of pluggable modules were presented in Bangkok**
  - [http://www.ieee802.org/3/ck/public/18\\_11/ghiasi\\_3ck\\_01\\_1118.pdf](http://www.ieee802.org/3/ck/public/18_11/ghiasi_3ck_01_1118.pdf)
- ❑ **The advantage of C2C-S are**
  - Operating with single end-end FEC over 2 C2C-S links, 2 AUI interfaces, and optical link
  - Avoid having 3 segmented FEC with 3x the latency
  - C2C-S link with <16 dB loss or ~300 mm will extend pluggable module range and support mezzanine card
  - C2C-S by not utilizing DFE or just light DFE can operate over end-end link transparently
  - C2C-S transparently will support 100 GbE non-interleaved FEC in support of optical PMDs
  - C2C-S transparently will support 200GbE/400GbE interleaved FEC in support of optical PMDs.

# Two Common C2C-S Applications

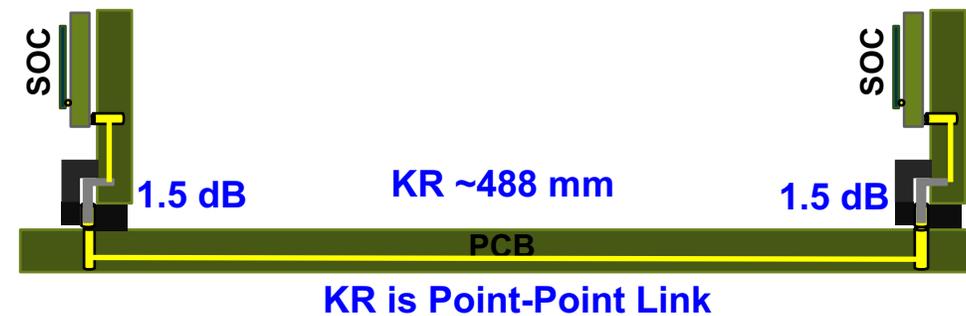
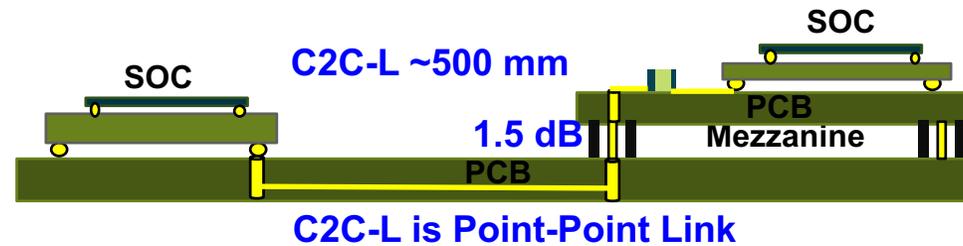
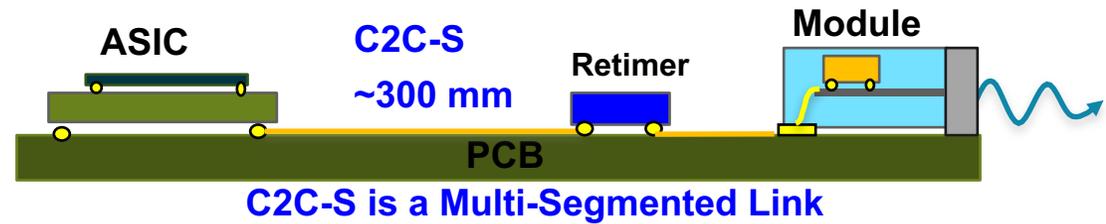
□ These two common C2C-S applications can be satisfied with ~300 mm trace and by repurposing 16 dB C2M budget

- Connecting to far-side of the ASIC IO may require retimer
- Modules mounted on mezzanine card.



# Key Differences Between C2C-S/L and KR

- ❑ C2C-S based on 16 dB C2M budget can support following reaches assuming Megtron 7 (1.3 dB/in) ~300 mm on PCB or ~280 mm on PCB with one connector
- ❑ C2C-L assuming ~500 mm reach on Megtron 7 (1.3 dB/in) with 1 connector (1.5 dB) results in 27.1 dB ball-ball budget
- ❑ KR supports 28 dB ball-ball with two connectors (3 dB) the reach on Megtron 7 (1.3 dB/in) is ~488 mm.



# Summary

- ❑ **Given that C2C-S will leverage C2M and C2C-L will leverage KR specifications we should wait for C2M and KR specification to evolve further before defining C2C-S/L**
- ❑ **If DFEs are required for C2M then need to make sure there is no error flaring for the following cascaded links**
  - C2C-S --- C2M --- Optical PMD --- C2M ---- C2C-S
- ❑ **How to proceed**
  - C2C-S with 300 mm reach or 16 dB loss should be based on C2M equalization scheme
  - C2C-L with 500 mm reach or 26-28 dB loss should be based on KR equalization scheme
  - May find that C2C-L is so similar to KR specification then we should define C2C-L application as a subset under KR clause
  - If C2C-L ends up to be an application subset of KR clause then C2C-S can be referred to as C2C
- ❑ **Currently there are no C2C-S channels on the website with exception of C2M channels.**