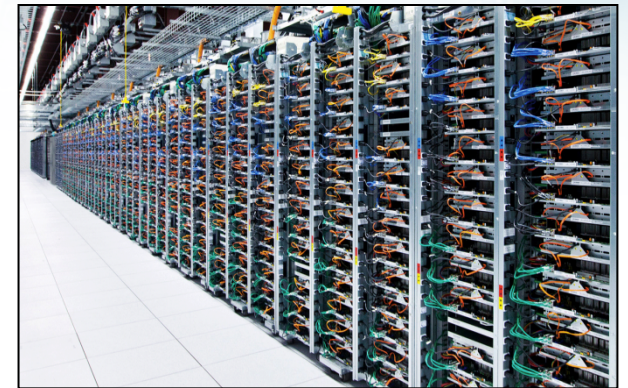


Proposed change to 400GBASE-SR4.2 specification

Jonathan Ingham (FIT) & Carlo Mariotti (Cisco)
25 April 2019



Supporters

- Jose Castro (Panduit)
- Kenneth Jackson (Sumitomo Electric)
- Jeffery Maki (Juniper Networks)
- Ramana Murty (Broadcom)
- Gary Nicholl (Cisco)
- Mark Nowell (Cisco)
- Earl Parsons (CommScope)
- John Petrilla (FIT)
- David Piehler (Dell EMC)
- Rick Pimpinella (Panduit)
- James Young (CommScope)

Background

- 400GBASE-SR4.2 specifications are based on a quad 100G approach
- A large and growing installed base of 100G BiDi exists with very close optical component specifications
- An opportunity exists to make a slight modification to the 400GBASE-SR4.2 specification to ensure maximum component re-use between the two applications
 - Goals are lowered cost due to commonality and lowered cost due to common test criteria and yield
- Comparison of the current 400GBASE-SR4.2 specification (Clause 150 D2.0) and 100G BiDi indicates small changes will drive consistency:
 - To enable re-use of 400GBASE-SR4.2 Tx components in a 100G BiDi Tx, recommend to raise the Tx optical power specifications of 400GBASE-SR4.2 by 0.3 dB. This brings the Tx optical power specifications of 400GBASE-SR4.2 and 100G BiDi into alignment
 - Note that 400GBASE-SR4.2 Rx components are suitable for re-use in a 100G BiDi Rx without any specification change. The reason for this is that the Rx sensitivity specifications of 400GBASE-SR4.2 are slightly more demanding than those of 100G BiDi

Proposal

- A comment has been made on Clause 150 D2.0 to this effect:
 - In Table 150-7, change “Average launch power, each lane (min)” from -6.5 dBm to -6.2 dBm
 - In Table 150-7, change “Outer Optical Modulation Amplitude ($\text{OMA}_{\text{outer}}$), each lane (min)” from -4.5 dBm to -4.2 dBm
 - In Table 150-7, change “ $\text{OMA}_{\text{outer}}$ – TDECQ, each lane (min)” from -5.9 dBm to -5.6 dBm
 - In Table 150-8, change “Average receive power, each lane (min)” from -8.5 dBm to -8.2 dBm
 - In Table 150-9, change “Power budget (for max TDECQ)” from 6.6 dB to 6.9 dB
 - In Table 150-9, add a row “Allocation to allow component re-use in PMDs defined outside 802.3” with a value of 0.3 dB for all cable types

Comments

- The goals of the proposal are to maximize component re-use and to reconcile the component specifications and test methodology
- The proposal is a Tx change only; no change to the Rx sensitivity requirements is required
- If the proposal is adopted, expect lowered cost and negligible impact to yield

Back-up material

40G BiDi and 100G BiDi cumulative volumes

