Potential way forward for 100GBASE-BR20 and BR40

Frank Effenberger

Futurewei Technologies

May 2024

What is the best APD sensitivity?

- The BR40 discussion group has worked out a power budget assuming an APD OMA sensitivity of -12.8 dBm
  - The rationale is that this is the most feasible sensitivity level
  - Assuming a III-V based APD
  - Considering the additional losses for the bidirectional filter element
- Some commenters have suggesting following the -13.8 dBm sensitivity from the 100G MSA
  - That MSA came to a slightly more aggressive sensitivity level, although it is based on a two fiber (not bidi) optical link
  - The commenters are looking forward to the improved sensitivity of SiGe APDs

Power budgets in G.9806 Amd. 3

- G.9806 loss budgets
  - S_{lower} class (0 to 10 dB link loss) is -12.8 dBm
  - S_{upper} class (5 to 15 dB link loss) is -12.8 dBm
  - B_{lower} class (10 to 20 dB) is -13.5 dBm
- Blower class is most similar to BR40, while S_{lower} class is most similar to BR20
- Thus, a possible compromise would be to use the -12.8 dBm APD sensitivity for BR20, and -13.5 dBm APD sensitivity for BR40

Proposal

- Base BR20 on the APD sensitivity of -12.8 dBm, and BR40 on the APD sensitivity of -13.5 dBm

Thank you

Any questions?