Demonstration of the First Real-Time End-to-End 40-Gb/s PAM-4 for Next-Generation Access Applications using 10-Gb/s Transmitter - DTU Orbit (08/11/2017)

Demonstration of the First Real-Time End-to-End 40-Gb/s PAM-4 for Next-Generation Access Applications using 10-Gb/s Transmitter

We demonstrate the first known experiment of a real-time end-to-end 40-Gb/s PAM-4 system for next-generation access applications using 10-Gb/s class transmitters only. Based on the measurement of a real-time 40-Gb/s PAM system, low-cost upstream and downstream link power budgets are estimated. Up to 27 dB and 25 dB power budgets for 10 km and 20 km standard single-mode fiber (SSMF) upstream links using EDFA preamplifiers are achieved. For downstream links using booster EDFAs and APD receivers, power budgets of 26.5 dB and 24.5 dB are feasible for 10 km and 20 km SMFs, respectively. In addition, we show that colorless 40 Gb/s PAM-4 transmission over 20 km SMF in the C-band is achievable

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Authors: Wei, J. L. (Ekstern), Eiselt, N. (Intern), Griesser, H. (Ekstern), Grobe, K. (Ekstern), Eiselt, M. (Ekstern), Vegas Olmos, J. J. (Intern), Tafur Monroy, I. (Intern)
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