IEEE 802.3cd
50 Gb/s Ethernet over a Single Lane and Next Generation 100 Gb/s and 200 Gb/s Ethernet Task Force

Objectives
(Updated)
Approved at Sept 2016 meeting
Objectives 1 of 2

• Support full-duplex operation only
• Preserve the Ethernet frame format utilizing the Ethernet MAC
• Preserve minimum and maximum FrameSize of current IEEE 802.3 standard
• Support optional Energy-Efficient Ethernet operation
• Provide appropriate support for OTN
• Support a MAC data rate of 50 Gb/s and 100 Gb/s
• Support a BER of better than or equal to 10^{-12} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 50 Gb/s and 100 Gb/s operation
• Support a MAC data rate of 200 Gb/s
• Support a BER of better than or equal to 10^{-13} at the MAC/PLS service interface (or the frame loss ratio equivalent) for 200 Gb/s operation
Objectives 2 of 2

50 Gb/s Ethernet PHYs

• Define single-lane 50 Gb/s PHYs for operation over
  • copper twin-axial cables with lengths up to at least 3m.
  • printed circuit board backplane with a total channel insertion loss of <= 30dB at 13.28125 GHz.
  • MMF with lengths up to at least 100m
  • SMF with lengths up to at least 2km
  • SMF with lengths up to at least 10km

100 Gb/s Ethernet PHYs

• Define a two-lane 100 Gb/s PHY for operation over
  • copper twin-axial cables with lengths up to at least 3m.
  • printed circuit board backplane with a total channel insertion loss of <= 30dB at 13.28125 GHz.
  • MMF with lengths up to at least 100m

• Define a single lane 100 Gb/s PHY for operation over duplex SMF with lengths up to at least 500 m, consistent with IEEE P802.3bs Clause 124

200 Gb/s Ethernet PHYs

• Define four-lane 200 Gb/s PHYs for operation over
  • copper twin-axial cables with lengths up to at least 3m.
  • printed circuit board backplane with a total channel insertion loss of <= 30dB at 13.28125 GHz.

• Define 200 Gb/s PHYs for operation over MMF with lengths up to at least 100m