

IEEE 802.3 Optical Multi Gig Ethernet for Automotive Study Group

**November 2019
DRAFT Objectives
Version 1.0**

Draft Objectives OMEGA

1. Preserve the IEEE 802.3/Ethernet frame format at the MAC client service interface
2. Preserve minimum and maximum frame size of the current IEEE 802.3 standard
3. Support full duplex operation only
4. Define optional startup procedure which enables the time from power_on=FALSE to a state capable of transmitting and receiving valid data to be less than 100ms
5. Support data rates of 2.5 Gb/s, 5 Gb/s, 10 Gb/s, 25 Gb/s and 50 Gb/s at the MAC/PLS service interface (*Should we add x00 Gb/s in multiple lanes ?*)
6. ~~Support optional Auto-Negotiation~~
7. Support optional Energy Efficient Ethernet optimized for automotive application
8. Support operation in automotive environments (e.g., EMC, temperature)
9. Do not preclude meeting FCC and CISPR EMC requirements

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10. Define the performance characteristics of an automotive link segment and an optical PHY to support 2.5 Gb/s point-to-point operation over this link segment supporting up to 4 inline connectors for at least 40 m on at least one type of automotive optical cabling.
11. Define the performance characteristics of an automotive link segment and an optical PHY to support 5 Gb/s point-to-point operation over this link segment supporting up to 4 inline connectors for at least 40 m on at least one type of automotive optical cabling.
12. Define the performance characteristics of an automotive link segment and an optical PHY to support 10 Gb/s point-to-point operation over this link segment supporting up to 4 inline connectors for at least 40 m on at least one type of automotive optical cabling.
13. Define the performance characteristics of an automotive link segment and an optical PHY to support 25 Gb/s point-to-point operation over this link segment supporting up to 4 inline connectors for at least 40 m on at least one type of automotive optical cabling.
14. Define the performance characteristics of an automotive link segment and an optical PHY to support 50 Gb/s point-to-point operation over this link segment supporting up to XX inline connectors for at least YY m on at least one type of automotive optical cabling.
15. Define the performance characteristics of an automotive link segment and an optical PHY to support 100 Gb/s point-to-point operation over this link segment supporting up to **XX** inline connectors for at least **YY** m on at least one type of automotive optical cabling.
16. Support a Bit Error Ratio better than or equal to 10⁻¹² at the MAC/PLS service interface (or the frame loss ratio equivalent)