

GM'S MULTI-GIG ETHERNET OBJECTIVES

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December 21, 2016



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SPEED

10 Gbps

- Cameras
- Displays
- Data Sharing

Expect to have few, if any, needs for speeds greater than 1 Gbps but less than 10 Gbps

TIMING

Delay

- Maximum delay is 1 ms across 7 hops

Startup

- Start up must be achieved within 100 ms

LINK SEGMENT

Dimensions

- Up to 10 m in length
- Up to 2 in-line connectors

Cable type

- STP (Shielded Twisted Pair) is preferred, with one or two pairs
- Coax is generally harder to process/build
 - Dielectric insulator difficult to process
 - Braided shield is expensive and difficult to process
- Optical is generally harder to process/build
 - Cutting angle is very important
 - Ends need to be polished
 - Can't use PoE, PoDL, etc.

AUTOMOTIVE ENVIRONMENT

Voltage Requirements

- http://www.ieee802.org/3/bw/public/Wienchowski_3bw_02_0914.pdf

Environmental Requirements

- See 802.3 Clause 96.9
- Max ambient temperature of 105°C

EMC Considerations

- Not all frequencies have strict Radiated Emissions limits
- Consider using frequencies whose multiples fall into these “Open” bands
- Even a 59th harmonic can be an issue if the limit line is low