191. Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA) sublayer, and baseband medium for ~~,~~ MultiG+100M/100M+MultiGBASE-T1/V1~~type 100M+2.5GBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1, 100M+10GBASE-T1, 10G+100MBASE-T1, 100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, 10G+100MBASE-V1~~

191.1 Overview

This clause defines a set of twelve distinct PHY types that share the same PCS and PMA specifications. To aid in readability, the following terms are used:

MultiG: one of 2.5G, 5G, 10G.

T1: a single shielded balanced pair of conductors

V1: a single-ended coaxial cable

MultiG+100M/100M+MultiGBASE: the PCS

MultiG+100M/100M+MultiGBASE-T1/V1: the 12 PHYs

MultiG+100M/100M+MultiGBASE-T1:the subset of PHYs that communicate using a shielded, balanced, pair of conductors

MultiG+100M/100M+MultiGBASE-V1: the subset of PHYs that communicate using a coaxial cable

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This clause defines the ~~type~~ MultiG+100M/100M+MultiGBASE ~~100M+2.5GBASE, 2.5G+100MBASE, 100M+5GBASE, 5G+100MBASE, 100M+10GBASE, and 10G+100MBASE~~ Physical Coding Sublayer (PCS) as well as the MultiG+100M/100M+MultiGBASE-T1/V1~~100M+2.5GBASE-T1/V1, 2.5G+100MBASE-T1/V1, 100M+5GBASE-T1/V1, 5G+100MBASE-T1/V1, 100M+10GBASE-T1/V1, and 10G+100MBASE-T1/V1~~ Physical Medium Attachment (PMA) sublayers. Together, the ~~corresponding~~ PCS and corresponding PMA sublayers comprise a MultiG+100M/100M+MultiGBASE-T1/V1~~100M+2.5GBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1, 100M+10GBASE-T1, 10G+100MBASE-T1, 100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, and 10G+100MBASE-V1~~ Physical Layer device (PHY). Provided in this clause are functional and electrical specifications for ~~the type 100M+2.5GBASE-T1/V1 PCS and PMA, 2.5G+100MBASE-T1/V1 PCS and PMA, 100M+5GBASE-T1/V1 PCS and PMA, 5G+100MBASE-T1/V1 PCS and PMA, 100M+10GBASE-T1/V1 PCS and PMA, and 10G+100MBASE-T1/V1 PCS and PMA~~each of the twelve PHYs.

~~The~~ MultiG+100M/100M+MultiGBASE-T1~~100M+2.5GBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1, 100M+10GBASE-T1, and 10G+100MBASE-T1 PHYs~~

PHYs are intended to be operated over a single balanced pair of conductors. The link segment specifications defined in 191.9 were derived from automotive ~~requirements, but~~requirements but may also be used for non-automotive applications. The conductors supporting the operation of these ~~100M+2.5GBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1, 100M+10GBASE-T1, and 10G+100MBASE-T1~~ PHYs are defined in terms of performance requirements between the Medium Dependent Interfaces (MDIs) allowing implementers to provide their own conductors to operate these ~~the 100M+2.5GBASE-T1, 2.5G+100MBASE-T1, 100M+5GBASE-T1, 5G+100MBASE-T1, 100M+10GBASE-T1, and 10G+100MBASE-T1~~ PHYs as long as the normative requirements included in 191.9 are met.

~~The~~ MultiG+100M/100M+MultiGBASE-V1 ~~100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, and 10G+100MBASE-V1~~ PHYs are intended to be operated over a single coaxial cable. The link segment specifications defined in 191.10 were derived from automotive ~~requirements, but~~requirements but may also be used for non-automotive applications. The conductors supporting the operation of ~~the 100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, and 10G+100MBASE-V1~~these PHYs are defined in terms of performance requirements between the Medium Dependent Interfaces (MDIs) allowing implementers to provide ~~provide~~ their own conductors to operate ~~t~~these ~~he 100M+2.5GBASE-V1, 2.5G+100MBASE-V1, 100M+5GBASE-V1, 5G+100MBASE-V1, 100M+10GBASE-V1, and 10G+100MBASE-V1~~ PHYs as long as the normative requirements included in 191.10 are met.

191.1.1 Nomenclature

The PHYs included within MultiG+100M/100M+MultiGBASE-T1/V1(see Table 191–2 for more detail) are :

- ~~The~~ 100M+2.5GBASE-T1
- ~~,~~2.5G+100MBASE-T1
- ~~,~~100M+5GBASE-T1
- ~~,~~5G+100MBASE-T1
- 1~~, 1~~00M+10GBASE-T1
- ~~,~~10G+100MBASE-T1
- ~~,~~100M+2.5GBASE-V1
- ~~,~~2.5G+100MBASE-V1
- ~~,~~100M+5GBASE-V1
- ~~,~~5G+100MBASE-V1

- ~~-~~100M+10GBASE-V1
- ~~-~~10G+100MBASE-V1

~~PHYs described in this clause represent 12 distinct PHY types that share the same PCS and PMA specifications subject to frequency scaling, see Table 191–2 for additional information.~~ In order to efficiently describe the 12 PHYs, the following nomenclature is used. See Figure 191–1 for block diagram.

HS_PATH PHY_S HS_TX to PHY_D HS_RX

HS_RX High speed receiver

HS_TX High speed transmitter

LS_PATH PHY_D LS_TX to PHY_S LS_RX

LS_RX Low speed receiver

LS_TX Low speed transmitter

PHY_D Device containing LS_TX, HS_RX (100M+MultiGBASE-T1/V1)

PHY_S Device containing HS_TX, LS_RX (MultiG+100MBASE-T1/V1)

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~~For all PHYs communicating on a shielded, balanced, pair of conductors, regardless of transmit bit rate, use:~~

~~MultiG+100M/100M+MultiGBASE-T1~~

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~~For all PHYs communicating on a coaxial cable, regardless of transmit bit rate, use:~~

~~MultiG+100M/100M+MultiGBASE-V1~~

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~~For all PHYs, regardless of transmit bit rate or cable type, use:~~

~~MultiG+100M/100M+MultiGBASE-T1/V1~~