

61. Physical Coding Sublayer (PCS), Physical Medium Attachment (PMA) sublayer and base-band medium, type 10PASS-T

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None.

Definitions (to be added to 1.4):

Abbreviations (to be added to 1.5):

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61.1 Overview

10PASS-T is a Physical Layer signaling system for Ethernet in the first mile. The medium specifications are aimed at users who want to deliver minimum of 10 Mb/s over single copper pair for at least the distance of 750 meters. The copper category is based on what is used in the access network according to ANSI, ETSI and ITU-T standards. This system is intended to be used in the public as well as private networks, however and therefore must be compliant with all the regulatory, governmental and regional requirements for transmission of such signals over public loop plants.

Unlike 100BASE-T and 1000BASE-T, the copper networks have channel characteristics that are very diverse and therefore it is only possible to discuss the channel behavior only in terms of averages, standard deviations and small percentage worst case.

61.1.1 Scope

This clause defines the type 10PASS-T Physical Coding Sublayer (PCS) which is has similarities to other 802.3 standards such as 100BASE-T4 but also differs since new sublayers are added within the PCS sublayer to accommodate the operation of Ethernet over copper channel.

This clause also defines type 10PASS-T Physical Medium Attachment (PMA) sublayer and type 10PASS-T Medium Dependent Interface (MDI). Within PMA and MDI new sublayers are defined that will corresponds to ITU-T, VDSL definition.

61.1.2 Objectives

The following are the objectives for 10PASS-T:

- a) To provide 10 Mb/s data rate at the MII.
- b) To provide full duplex operation.
- c) To provide for operating over unshielded voice grade twisted pair TP-2, cable, TBD specified, at distances up to 750 m.
- d) To provide a communication channel with a mean ternary symbol error rate, at the PMA service interface, of less than one part in 10^7 with 6 dB noise margin.
- e) To provide optional support for operation on multiple pairs

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