

Clause 100 (PMD): Proposed Outline

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Purpose of this Presentation

- Socialize the organization of the PMD clause
- Identify gaps or overreach
- Prepare for a motion in July to accept this outline as a starting point for the PMD clause

High Level Organization

- 100.1 Overview
- 100.2 PMD Functional Specification
- 100.3 Definitions of Parameters and Measurement Methods
- 100.4 Environmental, Safety, and Labeling
- 100.5 Channel Characteristics
- 100.6 EEE Capability
- 100.7 Time Synch Capability
- 100.8 Protocol implementation conformance statement (PICS) proforma for Clause 100, Physical Medium Dependent (PMD) sublayer and medium for coaxial distribution networks, type EPoc_PMD_Name

100.1 Overview

100.1.1 Terminology and Conventions

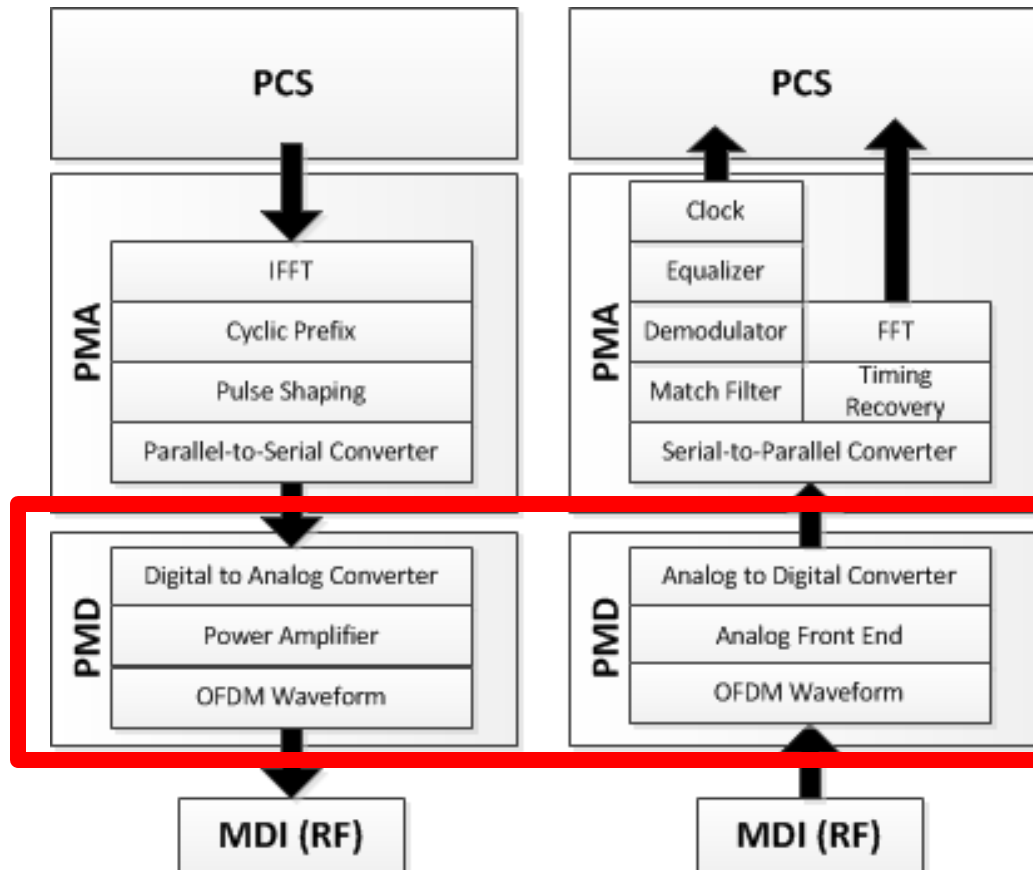
100.1.2 Goals and Objectives

100.1.3 Positioning of the PMD Sublayer within the IEEE 802.3 Architecture

100.1.4 PMD Block Diagram

100.2 PMD Functional Specification

This section covers the functions shown in the PMD diagram below.



100.2 PMD Functional Specification

100.2.1 PMD Service Interface

100.2.1.1 Delay Constraints

100.2.1.1.1 Relative Processing Delays

100.2.1.2 P MD_UNITDATA.request

100.2.1.3 PMD_UNITDATA.indication

100.2.1.4 PMD_SIGNAL.request

100.2.1.5 PMD_SIGNAL.indication

100.2.1.6 PMD Transmit Enable Function

100.2.1.7 PMD Signal Detect

100.2 PMD Functional Specification

100.2.2 PMD Transmit Function

100.2.2.1 CLT and CNU Modulation Formats

100.2.2.1.1 Total Information Data Rate for Downstream
OFDM Channels

100.2.2.1.2 Total Information Data Rate for Upstream OFDMA
Channels

100.2.2.2 Frequency Plan

100.2.2.2.1 FDD/TDD Downstream Frequency Plan

100.2.2.2.2 FDD Upstream Frequency Plan

100.2.2.3 Carrier Muting

100.2 PMD Functional Specification

100.2.3 CLT Transmitter Requirements

100.2.3.1 CLT Transmit Power Requirements

100.2.3.1.1 PAPR

100.2.3.1.2 OFDM Transmit Power Calculations

100.2.3.1.3 Transmit Power Step Size

100.2.3.2 CLT Transmit Fidelity Requirements

100.2.3.2.1 Spectral Nulling

100.2.3.2.2 Adjacent Channel Spurious Emissions

100.2.3.2.3 Spurious Emissions in the Frequency Range

100.2.3.2.4 Spurious Emissions During Burst On/Off Transients

100.2.3.2.5 Modulation Error Ratio

100.2.3.2.6 Filter Distortion

100.2.3.2.7 Carrier Phase Noise

100.2.3.2.8 Channel Frequency Accuracy

100.2.3.2.9 Modulation Rate Accuracy

100.2.3.2.10 Modulation Timing Jitter

100.2 PMD Functional Specification

100.2.4 CNU Transmitter Requirements

100.2.4.1 CNU Transmitter Pre-Equalizer

100.2.4.2 CNU Transmit Power Requirements

100.2.4.2.1 PAPR

100.2.4.2.2 OFDMA Transmit Power Calculations

100.2.4.2.3 Transmit Power Step Size

100.2.4.2.4 Transmit Power Requirements with Multiple Transmitters

100.2.4.3 CNU Transmitter Burst Timing Ramp Up/Down

100.2.4.4 CNU Transmitter Frequency Agility and Range

100.2.4.5 CNU Transmitter Fidelity Requirements

100.2.4.5.1 Adjacent Channel Spurious Emissions

100.2.4.5.2 Spurious Emissions in the Upstream Frequency Range

100.2.4.5.3 Spurious Emissions During Burst On/Off Transients

100.2.4.5.4 Modulation Error Ratio

100.2.4.5.5 Carrier Phase Noise

100.2.4.5.6 Channel Frequency Accuracy

100.2.4.5.7 Modulation Rate Accuracy

100.2.4.5.8 Modulation Timing Jitter

100.2.4.5.9 Clock Recovery

100.2.4.6 CNU Transmitter Capabilities

100.2 PMD Functional Specification

100.2.5 PMD Receive Function

100.2.5.1 PMD Auto-Negotiation Function

100.2.6 CNU Receive Requirements

100.2.6.1 Input Signal Characteristics at CNU Receiver

100.2.6.2 Frame Error Rate

100.2.6.3 Input Return Loss

100.2.6.4 Input Impedance

100.2.6.5 Image Rejection Performance

100.2.6.6 Multi-Channel Receiver Operation

100.2.6.7 Reconfiguration of CNU Receiver

100.2 PMD Functional Specification

100.2.7 CLT Receive Requirements

100.2.7.1 Input Signal Characteristics at CLT Receiver

100.2.7.2 Frame Error Rate

100.2.7.3 Input Return Loss

100.2.7.4 Input Impedance

100.2.7.5 Image Rejection Performance

100.2.7.6 Multi-Channel Receiver Operation

100.3 Definitions of Parameters and Measurement Methods

100.3.1 Insertion Loss

100.3.2 Test Patterns

100.3.3 Frequency and Frequency Range Measurement

100.3.4 RF Power Measurements

100.3.5 Transmit Waveform and MER

100.3.6 Transmit Penalty

100.3.7 Receive Sensitivity

100.3.8 Stressed Receiver Conformance Test

100.3.9 Jitter Measurements

100.3.10 Transmitter On/Off Timing Measurements

100.3.11 Receiver Settling Timing Measurement

100.4 Through 100.8

100.4 Environmental, Safety, and Labeling

100.4.1 General Safety

100.4.2 RF Safety

100.4.3 Installation

100.4.4 Environment

100.4.5 PMD Labeling

100.5 Channel Characteristics

100.5.1 Coaxial Cabling Model

100.5.2 Coaxial Cable

100.5.3 Coaxial Connectors

100.5.4 Medium Dependent Interface (MDI)

100.6 EEE Capability

100.7 TimeSync Capability

100.8 Protocol implementation conformance statement (PICS) proforma for Clause 100, Physical Medium Dependent (PMD) sublayer and medium for coaxial distribution networks, type EPoc_PMD_Name

Straw Poll

- Should the outline presented here be accepted as a starting point for the PMD clause of the standard?

Yes

No

Abstain

Proposed Motion for Geneva

Adopt the PMD outline presented in <Geneva presentation> as a starting point for the PMD clause (100) of the standard?

Moved:

Seconded:

For:

Against:

Abstain: