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

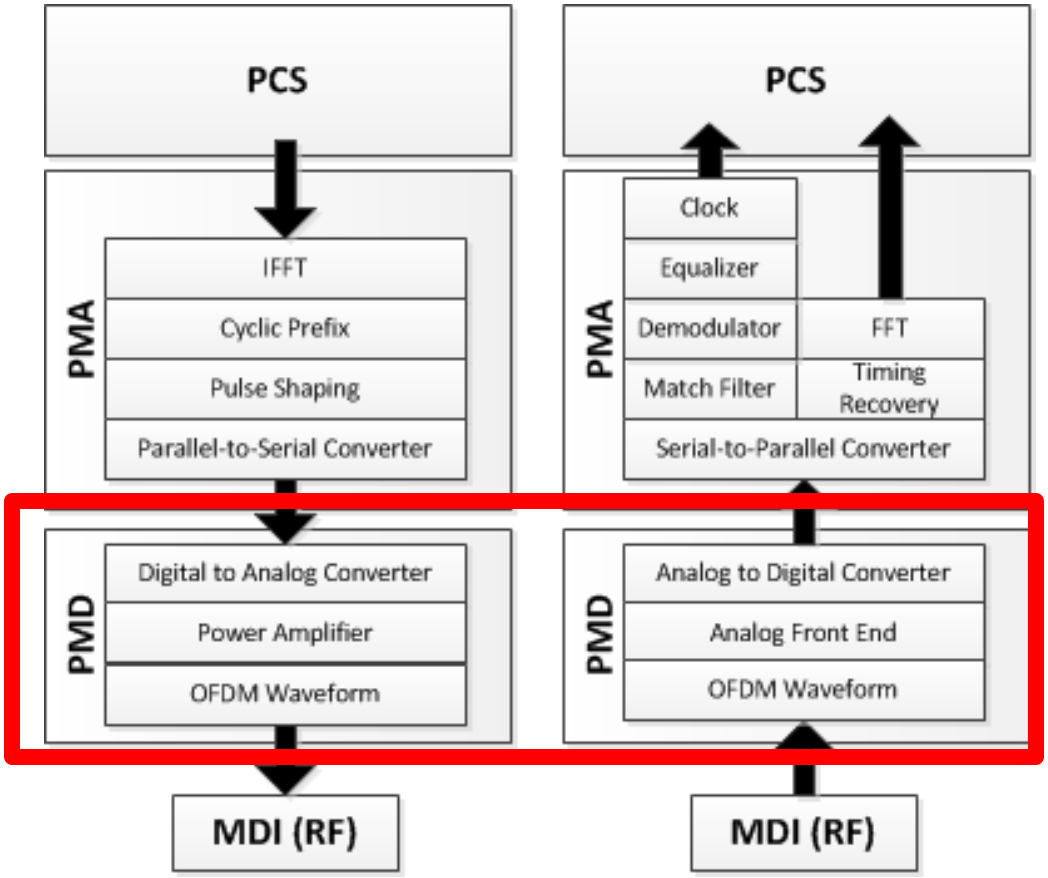
100.1.2 Goals and Objectives

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 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 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
  - 100.2.3.3 CLT TDD Transmitter Burst Timing Ramp Up/Down

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 Transmit Power Step Size
    - 100.2.4.2.3 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: