



1PoDL Standard TBD

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PoE Review

- PSE: Power Sourcing Equipment
- PD: Powered Device
- Detection: is there a PD connected?
 - Looks for Detection Signature
 - PoE: 25k resistance with 2V-10V applied
- Classification: what kind of PD is it?
 - Looks for Classification Signature
 - PoE: predefined current draw with 15V-20V applied
- Disconnect: is PD still there?
 - Looks for MPS: Maintain Power Signature
 - PoE: 10mA minimum current draw
 - If PD is gone, turn off power and restart detection



Clause 33 Structure

33. Data Terminal Equipment (DTE) Power via Media Dependent Interface (MDI)

33.1 Overview

- 33.1.1 Objectives
- 33.1.2 Compatibility considerations
- 33.1.3 Relationship of DTE Power via MDI to the IEEE 802.3 Architecture
- 33.1.4 Type 1 and Type 2 system parameters

33.2 Power sourcing equipment (PSE)

- 33.2.1 PSE location
- 33.2.2 Midspan PSE types
- 33.2.3 PI pin assignments
- 33.2.4 PSE state diagrams
- 33.2.5 PSE detection of PDs
- 33.2.6 PSE classification of PDs and mutual identification
- 33.2.7 Power supply output
- 33.2.8 Power supply allocation
- 33.2.9 PSE power removal

33.3 Powered devices (PDs)

33.3.1 PD PI

33.3.2 PD type descriptions

33.3.3 PD state diagram

33.3.4 PD valid and non-valid detection signatures

33.3.5 PD classifications

33.3.6 PSE Type identification

33.3.7 PD power

33.3.8 PD Maintain Power Signature

33.4 Additional electrical specifications

33.4.1 Isolation

33.4.2 Fault tolerance

33.4.3 Impedance balance

33.4.4 Common-mode output voltage

33.4.5 Pair-to-pair output noise voltage

33.4.6 Differential noise voltage

33.4.7 Return loss

33.4.8 100BASE-TX transformer droop

33.4.9 Midspan PSE device additional requirements

33.5 Management function requirements

33.5.1 PSE registers

33.6 Data Link Layer classification

33.6.1 TLV frame definition

33.6.2 Data Link Layer classification timing requirements

33.6.3 Power control state diagrams

33.6.4 State change procedure across a link

33.7 Environmental

33.7.1 General safety

33.7.2 Network safety

33.7.3 Installation and maintenance guidelines

33.7.4 Patch panel considerations

33.7.5 Telephony voltages

33.7.6 Electromagnetic emissions

33.7.7 Temperature and humidity

33.7.8 Labeling

33.8 Protocol implementation conformance statement (PICS) proforma for Clause 33, DTE Power via MDI

33.8.1 Introduction

33.8.2 Identification

33.8.3 PICS proforma tables for DTE Power via MDI



Mandatory Sections

- Overview (also Clause 1)
- PSE, PD power supply specs
 - inrush behavior, overload behavior, timing, etc.
- Additional Electrical
 - noise, impedance, stability, etc.
- Management (also Clause 30)
- Environmental
- PICs



Further Discussion Needed

- Detection
- Classification
- Mutual Identification
- PSE, PD Operating Voltage(s)
- Power Levels
- Isolation requirements
- Disconnect



Points to Consider

- Classification vs. Fast Startup (in Objectives)
- Current limits with various channels
- Behavioral spec, not equipment spec
- Future automotive uses (beyond cameras)
- Usage beyond automotive space
 - Industrial
 - Factory Automation
 - IoT



PoDL Presentations from RTPGE

- http://grouper.ieee.org/groups/802/3/RTPGE/public/july12/buntz_01_0712.pdf
- http://grouper.ieee.org/groups/802/3/RTPGE/public/july12/hoganmuller_02a_0712.pdf
- http://www.ieee802.org/3/bp/public/jan13/darshan_3bp_01_0113.pdf
- http://www.ieee802.org/3/bp/public/may13/darshan_3bp_01_0513.pdf



Proposed Draft 0.1

- Will be posted before January Interim
- Structure and text will be copied from Clause 33 (PoE)
 - Irrelevant portions removed (center tap schematics, etc.)
- Next meeting: proposals required to delete text or insert new text