



1PoDL Standard TBD

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Dallas TX November 2013



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 the 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

- Behavioral spec, not equipment spec
- Current/Power limits with various channels
- Classification vs. Fast Startup (in Objectives)
- 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



Draft 0.1

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