PSE Measurement Baseline

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Purpose

- According to L2 ad hoc discussion, propose baseline text for PSE measurement for IEEE 802.3bt
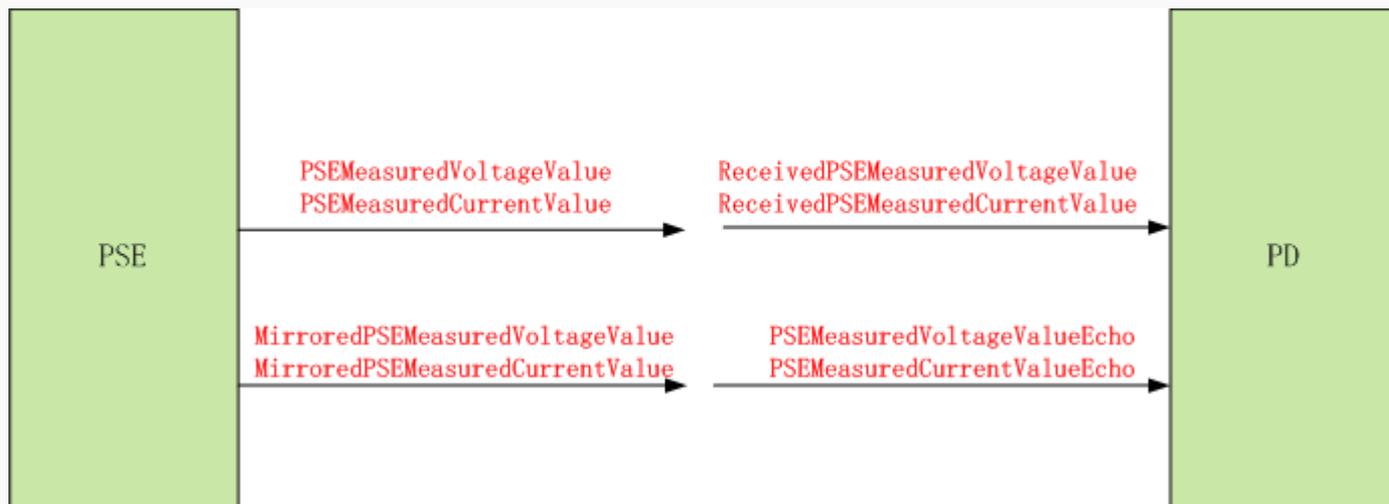
New TLVs for PSE measurement

V_{PSE} and $I_{port-PSE}$ TLV

Enable a PD to request the measured V_{PSE} and $I_{port-PSE}$ from the PSE. This can be used to calculate extended power on the cable.

Bit	Function	Value/meaning
15:0	V_{PSE}	$V_{PSE} = 0.1 \times$ (decimal value of bits) V Valid values for these bits are decimal 1 through 570

Bit	Function	Value/meaning
15:0	$I_{PORT-PSE}$	$I_{PORT-PSE} = 0.1 \times$ (decimal value of bits) mA Valid values for these bits are decimal 1 through 9000

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New variables

Note: The measured current from PSE can be treated as a way for synchronization, since the current over the link segment is the same for PD as well.

Changes in 30.12.2 LLDP Local System Group managed object class

30.12.2.1.x aLldpXdot3LocPSEMeasuredVoltageValue

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PSE measured voltage value. For a PSE, it is the measured voltage value that the PSE has currently measured from the remote system. PSE measured voltage value is the voltage measured at its PI. For a PD, it is the PSE measured voltage value that the PD mirrors back to the remote system. The PSE measured voltage value is encoded according to Equation (79–x), where X is the decimal value of aLldpXdot3LocPSEMeasuredVoltageValue.

30.12.2.1.x aLldpXdot3LocPSEMeasuredCurrentValue

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PSE measured current value. For a PSE, it is the measured current value that the PSE has currently measured from the remote system. PSE measured current value is the voltage measured at its PI. For a PD, it is the PSE measured current value that the PD mirrors back to the remote system. The PSE measured current value is encoded according to Equation (79–x), where X is the decimal value of aLldpXdot3LocPSEMeasuredCurrentValue.

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30.12.3.1.x aLldpXdot3RemPSEMeasuredVoltageValue

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PSE measured voltage value that was used by the remote. For a PD, it is the PSE measured voltage value received from the remote system. The definition and encoding of PSE measured voltage value is the same as described in aLldpXdot3LocPSEMeasuredVoltageValue (30.12.2.1.x).;

30.12.3.1.x aLldpXdot3RemPSEMeasuredCurrentValue

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PSE measured current value that was used by the remote. For a PD, it is the PSE measured current value received from the remote system. The definition and encoding of PSE measured current value is the same as described in aLldpXdot3LocPSEMeasuredCurrentValue (30.12.2.1.x).;

Changes in 33.6.3.3 Variables (1)

PSEMeasuredVoltageValue

Integer that indicates the actual PSE voltage value. This value is encoded according to Equation (79-x), where X is the decimal value of PSEMeasuredVoltageValue. This variable is mapped from the aLldpXdot3LocPSEMeasuredVoltageValue attribute (30.12.2.1.x)

MirroredPSEMeasuredVoltageValue

The copy of PSEMeasuredVoltageValue that the PD receives from the remote system. This variable is mapped from the aLldpXdot3RemPSEMeasuredVoltageValue attribute (30.12.3.1.x). Actual numbers are represented using an integer value that is encoded according to Equation (79-x), where X is the decimal value of MirroredPSEMeasuredVoltageValue.

PSEMeasuredVoltageValueEcho

This value is updated by the PD state diagram. This variable maps into the aLldpXdot3LocPSEMeasuredVoltageValue attribute (30.12.2.1.x).

Values: 0 through 255

MirroredPSEMeasuredVoltageValueEcho

The copy of PSEMeasuredVoltageValueEcho that the PSE receives from the remote system. This variable is mapped from the aLldpXdot3RemPSEMeasuredVoltageValue attribute (30.12.3.1.x).

33.6.3.3 Variables

PSEMeasuredCurrentValue

> Integer that indicates the actual PSE current value. This value is encoded according to Equation (79-x), where X is the decimal value of PSEMeasuredCurrentValue. This variable is mapped from the aLldpXdot3LocPSEMeasuredCurrentValue attribute (30.12.2.1.x)

MirroredPSEMeasuredCurrentValue

> The copy of PSEMeasuredCurrentValue that the PD receives from the remote system. This variable is mapped from the aLldpXdot3RemPSEMeasuredCurrentValue attribute (30.12.3.1.x). Actual numbers are represented using an integer value that is encoded according to Equation (79-x), where X is the decimal value of MirroredPSEMeasuredCurrentValue.

PSEMeasuredCurrentValueEcho

> This value can be updated by the PD state diagram. This variable maps into the aLldpXdot3LocPSEMeasuredCurrentValue attribute (30.12.2.1.x).

> Values: 0 through 255

MirroredPSEMeasuredCurrentValueEcho

> The copy of PSEMeasuredCurrentValueEcho that the PSE receives from the remote system. This variable is mapped from the aLldpXdot3RemPSEMeasuredCurrentValue attribute (30.12.3.1.x).

Changes in 79.3.2.x Power Via MDI TLV

Bit	Function	Value/meaning
15:0	V_{PSE}	$V_{PSE} = 0.1 \times$ (decimal value of bits) V Valid values for these bits are decimal 1 through 570

Bit	Function	Value/meaning
15:0	$I_{PORT-PSE}$	$I_{PORT-PSE} = 0.1 \times$ (decimal value of bits) mA Valid values for these bits are decimal 1 through 9000

79.3.2.x PSE Measurements

The PSE measured voltage value field may be included to carry the PSE's measured voltage value at the port defined in Table 79–x.

The PSE measured current value field may be included to carry the PSE's measured current value at the port defined in Table 79–x.

Thank you!

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