

HUAWEI ENTERPRISE **A BETTER WAY**

PD Measurement Baseline

Yan Zhuang, Huawei Technologies

Shiyong Fu, Huawei Technologies

enterprise.huawei.com

HUAWEI TECHNOLOGIES CO., LTD.



Purpose

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

New TLVs for PD measurement

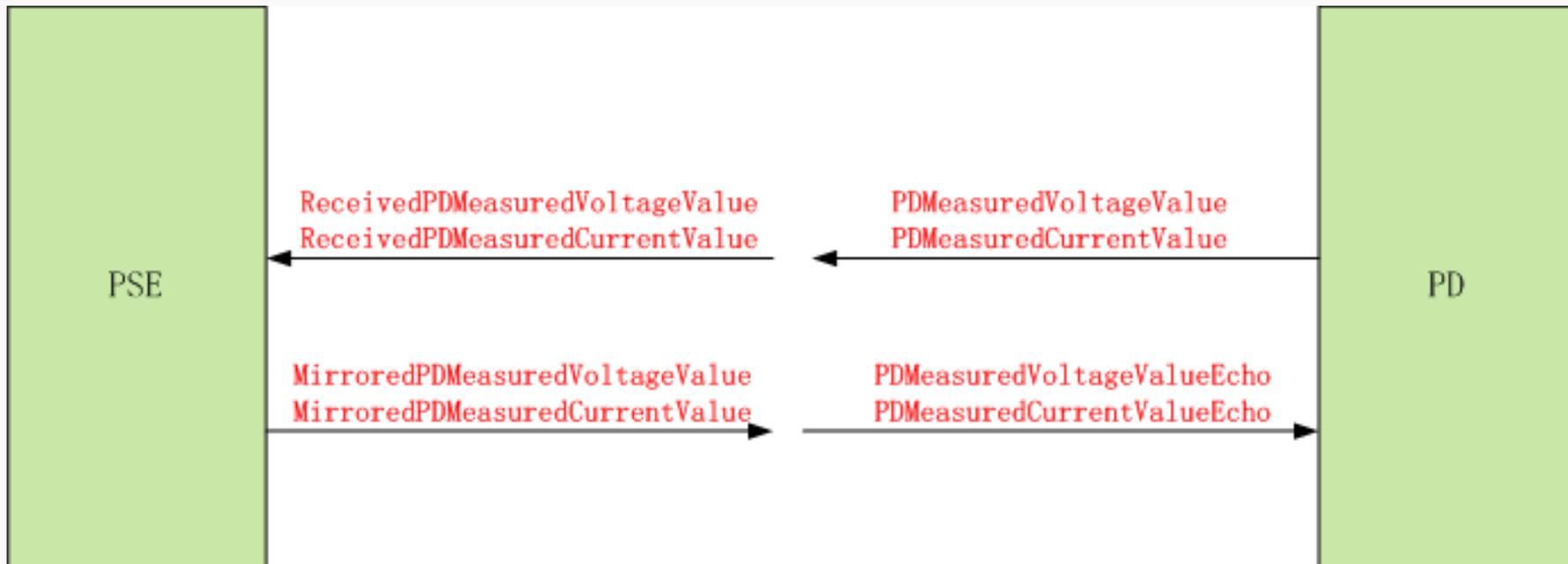
V_{PD} and $I_{port-PD}$ TLV

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

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

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

New variables



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

Changes in 30.12.2 LLDP Local System Group managed object class

30.12.2.1.x aLldpXdot3LocPDMeasuredVoltageValue

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PD measured voltage value. For a PD, it is the measured voltage value that the PD has currently measured from the remote system. PD measured voltage value is the voltage measured at its PI. For a PSE, it is the PD measured voltage value that the PSE mirrors back to the remote system. The PD measured voltage value is encoded according to Equation (79–x), where X is the decimal value of aLldpXdot3LocPDMeasuredVoltageValue.

30.12.2.1.x aLldpXdot3LocPDMeasuredCurrentValue

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PD measured current value. For a PD, it is the measured current value that the PD has currently measured from the remote system. PD measured current value is the voltage measured at its PI. For a PSE, it is the PD measured current value that the PSE mirrors back to the remote system. The PD measured current value is encoded according to Equation (79–x), where X is the decimal value of aLldpXdot3LocPDMeasuredCurrentValue.

Changes in 30.12.3 LLDP Remote System Group managed object class

30.12.3.1.x aLldpXdot3RemPDMeasuredVoltageValue

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PD measured voltage value that was used by the remote. For a PSE, it is the PD measured voltage value received from the remote system. The definition and encoding of PD measured voltage value is the same as described in aLldpXdot3LocPDMeasuredVoltageValue (30.12.2.1.x).;

30.12.3.1.x aLldpXdot3RemPDMeasuredCurrentValue

ATTRIBUTE

APPROPRIATE SYNTAX:

INTEGER

BEHAVIOUR DEFINED AS:

A GET attribute that returns the PD measured current value that was used by the remote. For a PSE, it is the PD measured current value received from the remote system. The definition and encoding of PD measured current value is the same as described in aLldpXdot3LocPDMeasuredCurrentValue (30.12.2.1.x).;

Changes in 33.6.3.3 Variables (1)

PDMeasuredVoltageValue

Integer that indicates the actual PD voltage value. This value is encoded according to Equation (79-x), where X is the decimal value of PDMeasuredVoltageValue. This variable is mapped from the aLldpXdot3LocPDMeasuredVoltageValue attribute (30.12.2.1.x)

MirroredPDMeasuredVoltageValue

The copy of PDMeasuredVoltageValue that the PSE receives from the remote system. This variable is mapped from the aLldpXdot3RemPDMeasuredVoltageValue 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 MirroredPDMeasuredVoltageValue.

PDMeasuredVoltageValueEcho

This value is updated by the PSE state diagram. This variable maps into the aLldpXdot3LocPDMeasuredVoltageValue attribute (30.12.2.1.x).

Values: 0 through 255

MirroredPDMeasuredVoltageValueEcho

The copy of PDMeasuredVoltageValueEcho that the PD receives from the remote system. This variable is mapped from the aLldpXdot3RemPDMeasuredVoltageValue attribute (30.12.3.1.x).

Changes in 33.6.3.3 Variables (2)

33.6.3.3 Variables

PDMeasuredCurrentValue

Integer that indicates the actual PD current value. This value is encoded according to Equation (79-x), where X is the decimal value of PDMeasuredCurrentValue. This variable is mapped from the aLldpXdot3LocPDMeasuredCurrentValue attribute (30.12.2.1.x)

MirroredPDMeasuredCurrentValue

The copy of PDMeasuredCurrentValue that the PSE receives from the remote system. This variable is mapped from the aLldpXdot3RemPDMeasuredCurrentValue 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 MirroredPDMeasuredCurrentValue.

PDMeasuredCurrentValueEcho

This value is updated by the PSE state diagram. This variable maps into the aLldpXdot3LocPDMeasuredCurrentValue attribute (30.12.2.1.x).

Values: 0 through 255

MirroredPDMeasuredCurrentValueEcho

The copy of PDMeasuredCurrentValueEcho that the PD receives from the remote system. This variable is mapped from the aLldpXdot3RemPDMeasuredCurrentValue attribute (30.12.3.1.x).

Changes in 79.3.2.x Power Via MDI TLV

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

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

79.3.2.x PD Measurements

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

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

Thank you!