

DC Disconnect – Part I

Baseline Text

Jean Picard, Texas Instruments

IEEE 802.3bt Task Force

January 2015

Supporters

- Kousalya Balasubramanian / Cisco
- Lennart Yseboodt, Philips
- Matthias Wendt, Philips
- Dave Tremblay, HP

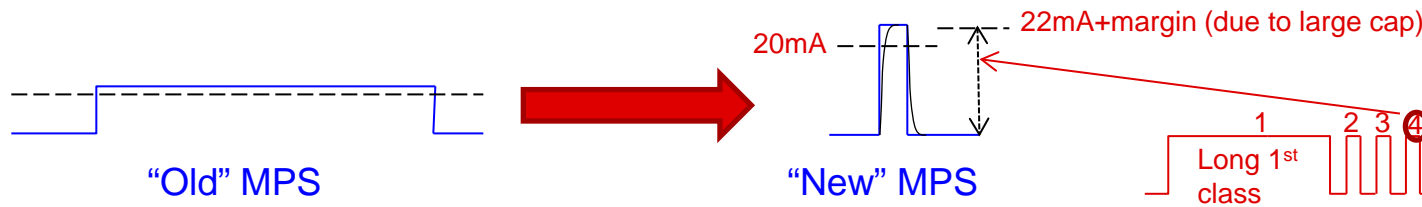
Goal of this Presentation

Suggest changes to relevant sections defining the “PD Maintain Power Signature”.

- Total (4P) current, with single PD interface.

Summary from Previous Presentation

- Picard, “DC Disconnect”, San Antonio, November 2014.
- If class 5, 6 or 7, the total (4P) PD required current draw to maintain power ($I_{\text{port_MPS}}$) should be $\sim 2x$ for single interface PD.
 - $I_{\text{port_MPS}}$ changes from 10 mA to 22 mA.
 - Once it receives a 4th class event, the PD “knows” the threshold is $\sim 2x$.



- If class 0-4 PD, the DC disconnect threshold is same for type 1, 2 and 3 PSEs.
 - Same as AT \Rightarrow 5 – 10 mA.



PD Maintain Power Signature – Current Section 33.3.8

In order to maintain power, the PD shall provide a valid Maintain Power Signature (MPS) at the PI. The MPS for Type 1 and Type 2 PDs shall draw current equal to or above 10mA for a minimum duration of 75 ms measured at the PD PI followed by an optional MPS dropout for no longer than 250ms. The MPS for Type 3 PDs shall be:

- a) Current draw equal to or above 10 mA for a minimum duration of 75 ms, measured at the PD PI, followed by an optional MPS dropout for no longer than 250 ms when connected to a Type 1 or 2 PSE, and
- b) Current draw equal to or above TBD mA for a minimum duration of 7 ms, measured with a series resistance representing the worst case cable impedance between the measurement point and the PD PI, followed by an optional MPS dropout for no longer than 318 ms when connected to a Type 3 PSE. See Annex TBD for PD design guidelines for MPS behavior.

PD Maintain Power Signature – Section 33.3.8 Changes

In order to maintain power, the PD shall provide a valid Maintain Power Signature (MPS) at the PI. The MPS is made up of current draw equal to or above $I_{\text{Port_MPS}}$ for a minimum duration of $T_{\text{MPS_PD}}$ measured at the PD PI followed by an optional MPS dropout for no longer than $T_{\text{MPDO_PD}}$. The values of $I_{\text{Port_MPS}}$, $T_{\text{MPS_PD}}$, and $T_{\text{MPDO_PD}}$ are dependent upon the type of PD and the class events received by the PD before power up.

A Type 3 or 4 PD shall have $T_{\text{MPS_PD}}$ measured with a series resistance representing the worst case cable impedance between the measurement point and the PD PI.

See Annex TBD for PD design guidelines for MPS behavior.

Table 33–TBD—PD DC Maintain Power Signature

Item	Parameter	Symbol	Units	Min	Max	PD Type	Conditions
1	Input current	$I_{\text{Port_MPS}}$	A	0.01		1-4	
				0.022		3, 4	If 4 class events or more
2	PD maintain power signature time	$T_{\text{MPS_PD}}$	ms	75		1, 2	
						3, 4	If no long first class event
				7		3, 4	If long first class event (T_{LCF})
3	PD dropout period	$T_{\text{MPDO_PD}}$	ms		250	1, 2	
						3, 4	If no long first class event
					318	3, 4	If long first class event (T_{LCF})