PSE AC Disconnection

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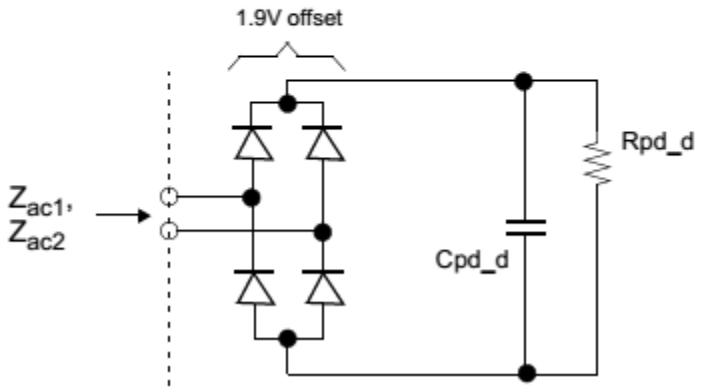
MPS components

- The MPS consists of two components, an AC MPS component (impedance) and a DC MPS (current draw)
- The PSE may choose to monitor one or both components
- In order to maintain power, the PD shall provide a valid MPS on both components.
- In order to have the power removed, the PD shall remove both the current draw and impedance components

AC MPS (impedance)

- The AC MPS rejection criteria for the PSE is an impedance higher than 2Mohm (i.e. an open circuit)
- So the only way for a PD to make sure to be disconnected is to draw less than 25uA (50V/1980 kOhm)

	AC Maintain Power Signature					
4a	Valid impedance	$\lvert Z_{ac1} \rvert$	kΩ		27.0	F_p = 5 Hz, Testing voltage >2.5 V. See Figure 33–15.
4b	Invalid impedance	$\lvert Z_{ac2} \rvert$	kΩ	1980		See Figure 33–15.



PD disconnection advantages

- A PD may encounter a situation where it is frozen and unable to operate.
- In this case LLDP can not be used because the PD is not responding
- A convenient way to overcome this situation is to ask the PSE to reboot, removing the MPS
- If the PSE monitors only DC MPS, the complexity of removing MPS is much lower for the PD.
- It just needs to reduce the current consumption below 2mA (e.g. shutting down the DC/DC)

Proposed solution

- DC MPS is a proven and robust technique for the PSE to monitor the PD
- Type 3 and 4 shall use DC MPS only as the component to monitor a PD MPS
- Type 1,2 PD will have no compatibility issue because they implement both AC and DC MPS
- Type 3,4 PD connected to Type 3,4 PSE, that want to be disconnected, just need to remove the DC MPS component
- Type 1,2 PSE behavior won’t change. Type 3,4 PD connected to them cannot use the DC disconnection feature.

Thanks