

Retirement of AC MPS v102

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AC and DC MPS

There are two kinds of MPS, AC MPS and DC MPS.

DC MPS: consists of a minimum current drawn by the PD with certain timing parameters. These parameters were significantly altered for Type 3 and 4, to enable devices with low power standby requirements.

AC MPS: consists of an RC impedance at the PD, combined with an AC generating circuit at the PSE side.

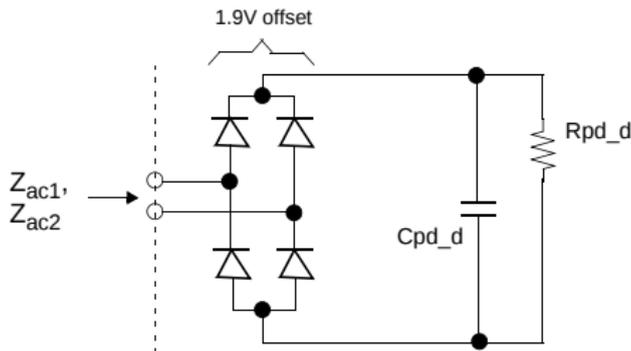
A **PSE** shall monitor shall monitor either the DC MPS component, the AC MPS component, or both.

The **PD** MPS consists of both a minimum input current (DC MPS) and an input impedance with resistive and capacitive components (AC MPS).

AC MPS

Table 33–19—PD Maintain Power Signature

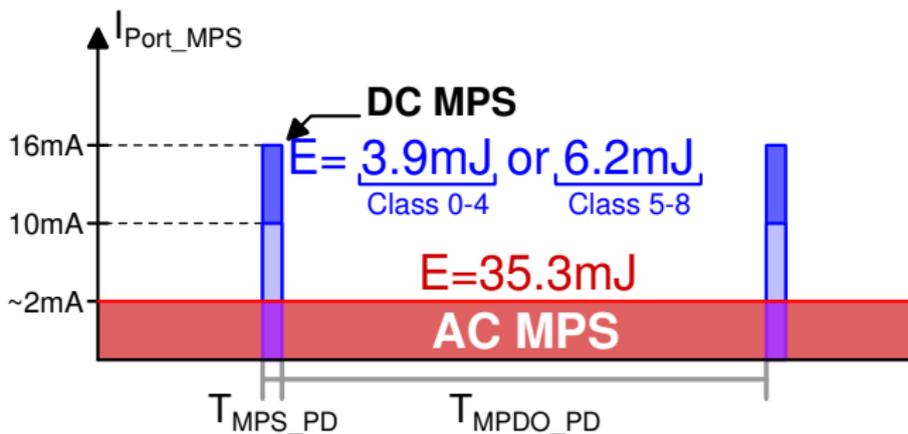
Item	Parameter	Symbol	Unit	Min	Max	Additional information
±	Input current	I_{Port_MPS}	A	0.010		See-
1	Input resistance	R_{pd_d}	k Ω		26.3	
2	Input capacitance	C_{pd_d}	μ F	0.050		See Table 33–12



NOTE— R_{pd_d} and C_{pd_d} are specified in Table 33–19. C_{pd_d} may be located either in parallel with Z_{ac1} or as shown above.

Figure 33–15— Z_{ac1} and Z_{ac2} definition as indicated in Table 33–12

AC MPS Power PD



The resistive component of PD AC MPS requirements causes a typical power dissipation of 35mJ per 300ms MPS cycle. Compared to the DC MPS dissipation of 4mJ or 6mJ per MPS cycle this is significant.

DC MPS only for Type 3 & 4

- ▶ There are historic reasons for having two MPS mechanisms in the 802.3af and 802.3at standard. These no longer apply.
- ▶ DC MPS is by far the more popular PSE MPS method in modern designs

Proposal

- ▶ Type 3 & 4 PSE implement DC MPS only
- ▶ Type 3 & 4 PDs support both DC and AC MPS methods
- ▶ Type 3 & 4 PDs may omit the AC MPS signature when connected to a Type 3 or 4 PSE
- ▶ Side benefit: PD can now easily indicate it no longer wants power by not drawing DC MPS.

Conclusion

- ▶ Proposed to disallow AC MPS and make DC MPS the only disconnect method for Type 3 and Type 4 PSEs
- ▶ PDs ensure backward compatibility by maintaining AC MPS support
- ▶ A power saving of 110mW can be realized by low standby PDs when connected to new PSEs (this will be approximately 300mW of mains power per PD)

