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Classification signature of Type 2 PD design

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Motivation

- **For Type 2 PD design, investigate the classification signature of dual PD implementation.**

Requirements of Type 2 PD in existing spec

Section 33.3.3 PD classifications

Type 2 PDs implement both 2-Event class signature (see 33.3.5.2) and Data Link Layer classification (see 33.6).

In addition to a valid detection signature, PDs shall provide the characteristics of a classification signature as specified in Table 33–16. A PD shall present one, and only one, classification signature during classification.

33.3.5.2 PD 2-Event class signature

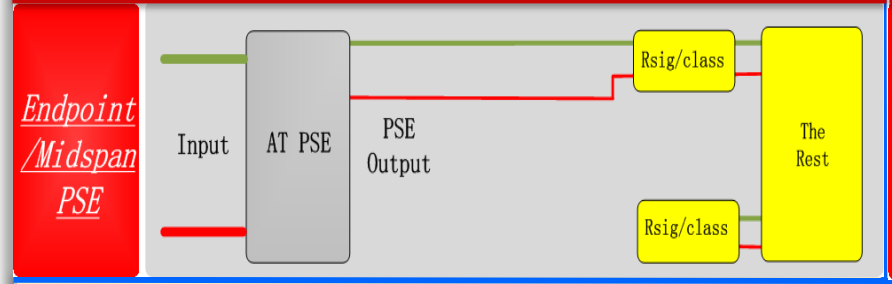
PDs implementing a 2-Event class signature shall return a Class 4 classification signature in accordance with the maximum power draw, P_{Class_PD}, as specified by Table 33–18. The PD's classification behavior shall conform to the electrical specifications defined by Table 33–17.

Hence, we have Type 2 PD shall:

- *implement 2-event class signature;*
- *return a Class 4 classification signature;*

Type 2 PD with Dual signatures

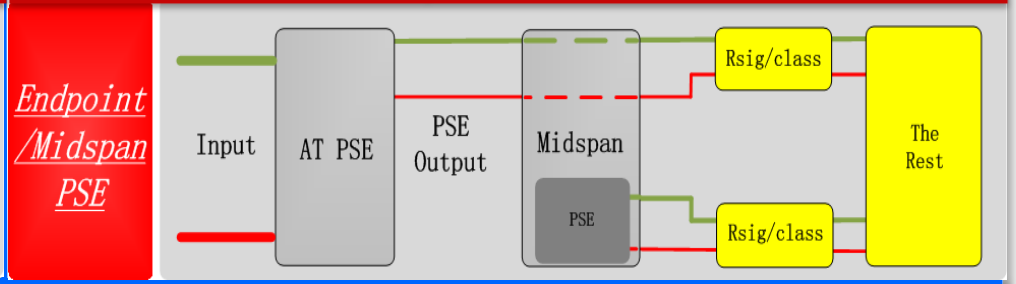
Normal Connection



As per requirements in AT spec, we shall have:

- Rsig/class are defined to be the same on Mode A or Mode B;
- Each Rclass returns a Class 4 signature;

Midspan in the cable



Endspan and Midspan may both have successful detection. Then:

- Each Rclass provides a class 4 signature;
- Each PSE gets a class 4, then the powered device can draw power over Type 2 level without notifying or changing PSE side. **A PD PI may receive either 25.5W from one PSE or 51W from two PSEs without engaging in mutual identification.**

- ***Is a PD which requests 51W, 25.5W from each PSE, a valid Type 2 PD?***

Thank you!