Comment (#321 AND #164, #88, #396):

In the text "PClass_PD and PClass_PD-2P in Table 145–28 are determined per the assigned Class. PClass_PD values for each Class are shown in Table 145–24, PClass_PD-2P values for each Class are shown in Table 145–25."

PClass_PD and PClass_PD-2P are not defined in Table 145-28.

    (1) Ken in #88 suggest to restore them back to Table 145-28
    (2) Lennart in **#396** suggest to restore them back to Table 145-28
    (3) In addition some information regarding the conditions that PClass_PD and PClass_PD-2P should be met are missing and are in 145.3.8.10.

In the text: "Under all operating states, dual-signature PDs shall not exceed I Con-2P as defined in Equation (145-8) for longer than T CUT-2P min as defined in Table 145-16 on any pair when PD PI pairs of the same polarity are connected to all possible common source voltage in the range of V Port_PSE-2P through two common mode resistances, Rsource_min and R source_max, as defined in Equation (145-32) and shown in Figure 145-34."

This is a troublesome statement for a few reasons:

- dual-sig PDs are already required not to exceed PClass_PD-2P (which equates to Icon-2P) under any circumstance.
- Icon-2P is a PSE parameter, unknowable to the PD.

-Yair: If you test it under the conditions of 145.3.8.10 i.e. with a voltage source and Rsource that the current will be Icon-2P which is a common parameter for the PD and PSE due to the fact that it is current – the same current: Icon-2P=Pclass/Vpse=Pclass_PD/Vpd +the conditions of 145.3.8.10.

-Lennart looking at your remedy options;

Option1: Is no good. In this case the conditions to meet Icon-2P are not specified.

Option 3: Is no good. Missing "shall" for the conditions to meet Icon-2P.

Option 3:

-Yes, you can replace it with Pclass_PD/Vpd but not all relevant parameters are specified in Table 124-25 e.g. Vpd.

- PClass_PD-2P / VPD is accurate but kind of od description It is better Icon-2P={PClass_PD-2P / VPD}$_A$

- What this really tries to do is qualify that PClass_PD-2P shall to only apply to PDs connected to a channel with acceptable unbalance. Yair: Correct.

Proposed Remedy:

[Baseline starts here]

1. Re-instate PPort_PD and PPort_PD-2P as they were in D2.2
2. Make the following changes below.

145.3.8.2 Input average power

P$_{Class\_PD}$ and P$_{Class\_PD-2P}$ in Table 145–28 are determined per the assigned Class. P$_{Class\_PD}$ values for each Class are shown in Table 145–24, P$_{Class\_PD-2P}$ values for each Class are shown in Table 145–25. The assigned PSE Class is determined by the number of class events and the requested Class by the PD, as shown in Table 145–11. P$_{Class\_PD}$ is the maximum average PI power and applies to single-signature PDs. P$_{Class\_PD-2P}$ is the maximum average power on a pairset and applies to dual-signature PDs.

The maximum average power, PClass_PD or PClass_PD-2P in Table 145–24, Table 145–25, and Table 145–28 or PDMaxPowerValue in 145.5.3.3, is calculated over a 1 second interval under the conditions specified in 145.3.8.10. PDs may dynamically adjust their maximum required operating power below PClass_PD or PClass_PD-2P as described in 145.5. PDs may also adjust their maximum required operating power below PClass_PD or PClass_PD-2P by using Autoclass (see

145.3.6.2). PDs that have successfully completed DLL classification, shall not exceed a power consumption of PDMaxPowerValue as defined in 145.5.3.3.

145.3.8.10 PD pair-to-pair current unbalance

Under all operating states, single-signature PDs shall not………

Under all operating states, dual-signature PDs shall not exceed ~~I_{Con-2P}~~ $Icon-2P = \left\{ \dfrac{PClass\_PD-2P}{Vpd} \right\}_A$ as defined in <u>Table 145-25</u> ~~Equation (145–8)~~ for longer than T_{CUT-2P} min as defined in Table 145–16 on any pair when PD PI pairs of the same polarity are connected to all possible common source voltage in the range of V_{Port_PSE-2P} through two common mode resistances, R_{source_min} and R_{source_max}, as defined in Equation (145–32) and shown in Figure 145–34.

[Lennart: We can move down the new equation and add "where" list and make it nicer to read.]

[Baseline ends here]