

Comment i-204 (145.2.8.5, P 156, L 51)

Equation 145-8 contains the parts that allow us to calculate the value of ICon-2P in case of operating over 2-pairs and for the dual-signature case.

However, for the most important use case which is operating over 4-pairs, ICon-2P can't be calculated due to missing information for the value of IPort-2P-other.

There is no information to find the value of ICon-2P_other in order to calculate the value of ICon-2P. As a result, the spec is broken.

145.2.8.5 Continuous output current capability in the POWER_ON state

I_{Port-2P} and I_{Port-2P-other} are the currents on the pairs with the same polarity of the two pairsets and are defined in Equation (145-5) and in Equation (145-6).

PSEs shall be able to source I_{Con-2P}, the current the PSE supports on each powered pairset, as defined in Equation (145-8).

$$I_{\text{Con-2P}} = \left. \begin{cases} P_{\text{Class}} / V_{\text{PSE}} & \text{when in 2-pair mode} \\ \min(I_{\text{Con}} - I_{\text{Port-2P-other}}, I_{\text{Con-2P-unb}}) & \text{when 4-pair powering a single-signature PD} \\ P_{\text{Class-2P}} / V_{\text{PSE}} & \text{when 4-pair powering a dual-signature PD} \end{cases} \right\}_A \quad (145-8)$$

where

- P_{Class}* is P_{Class} as defined in Equation (145-2)
- P_{Class-2P}* is P_{Class-2P} as defined in Equation (145-3)
- V_{PSE}* is the voltage at the PSE PI as defined in 145.1.3
- I_{on}* is the total current a PSE is able to source as defined in Equation (145-9)
- I_{Con-2P-unb}* is the current a PSE is able to source on a pairset due to unbalance as defined in Table 145-16
- I_{Port-2P-other}* is the output current on the other pairset as defined in Equation (145-6)

$$I_{\text{Port-2P-other}} = \left. \begin{cases} I_{\text{Port-2P-sec}} & \text{for the Primary Alternative} \\ I_{\text{Port-2P-prim}} & \text{for the Secondary Alternative} \end{cases} \right\}_A \quad (145-6)$$

I_{Port-2P-other} is just behavioral description of the current but no information to calculate it is supplied by the spec.

Proposed remedy

1. *Replace the middle part of Equation (145-8) with the actual ICon-2P current:*

$$\min(0.5 \times I_{\text{Con}} \times (1 \pm K_{\text{Ipeak}}), I_{\text{Con-2P-unb}})$$

2. *Add to the where list:*

K_{Ipeak} is defined by Equation (145-13)

3. *Delete IPort-2P-other from the where list.*

End of Baseline

