



# PSE Unbalance Requirements

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## Problem Statement

- Equation 33-14 requirements are based on worst-case V-port-pse, min. However, when higher V-port-pse is used (eg 57V), Equation 33-14 may be relaxed to allow lower RPSE values. This results in more flexible PSE designs.
- Separate from V-port-pse issue, we have found that at low RPSE (60mOhm, which is allowed), Equation 33-14 is not sufficient in order to meet I-con-2p-unb for each Class.

$$R_{PSE\_max} = \left\{ \begin{array}{ll} 2,200 \times R_{PSE\_min} - 0,040 & \text{for Class 5} \\ 2,015 \times R_{PSE\_min} - 0,040 & \text{for Class 6} \\ 1,800 \times R_{PSE\_min} - 0,030 & \text{for Class 7} \\ 1,750 \times R_{PSE\_min} - 0,030 & \text{for Class 8} \end{array} \right\}_{\Omega} \quad (33-14)$$

where

$R_{PSE\_max}$  is, given  $R_{PSE\_min}$ , the highest allowable common mode effective resistance in the powered pairs of the same polarity.

$R_{PSE\_min}$  is the lower PSE common mode effective resistance in the powered pairs of the same polarity.

## Proposed Remedy

- Update Equation 33-14 to include the effect of V-port-pse-2p.
  - Preliminary discussions between members of the TF show that this can be done. We intend to present modified Equation 33-14 for next meeting.