

Updating the approved base line text from May 2014 with the proposed following updates :

33.1.4.3 4-Pair Operation Channel Requirement for Pair to Pair Resistance Unbalance

See informative Annex __

- NOTE: The pair-to-pair resistance unbalance values are preliminary working numbers used for characterizing cabling while awaiting input from ISO/IEC SC25 (developing the second edition of ISO/IEC TR 29125) and TIA TR42 (developing a revision of TIA TSB-184). These groups have works in progress that are expected to include pair-to-pair resistance unbalance specifications suitable for reference.

Informative Annex __

4 pair operation requires the specification of resistance difference between each two pairs of the channel, not greater than 100 milliohms or resistance unbalance of 7.5% whichever is a greater unbalance. Resistance unbalance between the channel pairs is a measure of the difference of resistance of the common mode pairs of conductors used for power delivery. Channel pair to pair resistance unbalance is defined by equation 33-1.1:

$$\left(\frac{R_{ch_max} - R_{ch_min}}{R_{ch_max} + R_{ch_min}} \right) \times 100\% \quad 33-1.1$$

Channel pair to pair resistance difference is defined by equation 33-1.2:

$$R_{ch_max} - R_{ch_min} \quad 33.1.2$$

Where:

Rch_max is the sum of channel pair elements with highest common mode resistance.

Rch_min is the sum of channel pair elements with lowest common mode resistance

Common mode resistance is the resistance of the two wires in a pair (including connectors), connected in parallel.

Note: 7.5% is the worst case pair to pair resistance unbalance at 100 milliohms of channel pair to pair resistance difference. At 100m channel length, the cable and connectors ensures 5.5% maximum channel pair to pair resistance unbalance.