

Further considerations on IL motion and implications for other parameters

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12/14/2022

Agenda

- Remarks on last motion to IL
- Backward and connector compatibility
- 2 Amp issues
- Proposal to improve the motion formula

Remarks on last motion to IL

- A link (channel) is usually defined by:

$$4,05 \times \left(1,82\sqrt{f} + 0,0091 \times f + \frac{0,25}{\sqrt{f}} \right) + 5 \times 0,02\sqrt{f}$$

1

2

3

4

- Cable IL/100m (2) + number of connectors and respective losses (3, 4)
- The upfront factor (1) describes the length and the derating of the cords and the respective length

Remarks on last motion to IL

- The formula voted on looks similar but does not represent a cable while hiding the length portions

$$IL(f) = 4.92 * \text{SQRT}(f(\text{MHz}) + 0.04 * f(\text{MHz}) + 0.8) / \text{SQRT}(f(\text{MHz}) + 5 * 0.02 * \text{SQRT}(f(\text{MHz})))$$

Result:

- Other/ shorter lengths cannot be extracted
- How will PSAACR-F be defined?
- Evaluation of short and long length disturbances due to PSAACR-F in real installations cannot be executed
- How to develop planning and certification of installations?

Backward and connector compatibility

Backward compatibility is completely missing.

- Starting frequency

Connector compatibility

- Wire diameter

2 Amp issues

There is a discussion with ISO/IEC that all single pair links should be capable to carry 2 Amps. This was initiated and is promoted by IEEE 802.3 PDCC

(see https://www.ieee802.org/3/ad_hoc/PDCC/public/IEEE_802d3_contribution_to_SC25_Sept_2022.pdf)

How are we going to deal with this?

A presentation about these issues will be given during the January interim.

Proposals to improve the motion formula

We should ask our cable colleagues in IEC TC46 if there is a cable which can fulfil our motion formula.

Graber's formula was easier to understand for cabling experts.