



# Additions to Baseline Proposal for 1000m link specification

Matthias Fritsche

Harting Electronics

Dieter Schicketanz consultant

Reutlingen University

# Supporters

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- Ludwig Winkel Siemens
- Jens Gottron Siemens
- Masood Shariff Commscope

# 1000m Link proposal

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## **Assumptions discussed in former ad hoc's and interims:**

- **Up to 10 connectors**
- **100 ohm nominal impedance (assumption)**
- **1-20 MHz**
- **Cable used to model is deployed widely as Profibus PA; 1.05 mm copper diameter (= AWG 18)**
- **Mentioned but not written down**
  - Industrial environment E2 and E3
  - Non industrial E1 for cabling outside harsh environment

# What do we have

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- From January Huntington beach
- Diminico\_01\_0117 link Baseline accepted proposal (straw poll):
  - Insertion loss
  - 10 connectors
  - Return loss

# What is missing

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- To start having a baseline channel to be able to calculate Transmission and optional powering parameters the loop resistance should be added to the baseline parameters. Insertion loss is linked in any case to this.
- The assumption for insertion loss and return loss were taken assuming an AWG 18 cable and also the proposal *Jens Gottron, Ludwig Winkel Contribution to CSD and Objectives* assumed this type of cable.

# Loop resistance proposal

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Schicketanz Fritsche [Update to Proposal for 1000m link specification](#) 12/16 Proposed 45 Ohm

Chris Diminico presented 46.66 in [Link segment DC characteristics](#) 11/16 (not on the server)

**Therefore 46.5 Ohm should be used as link baseline proposal**

If this value is too high for some specific powering projects AWG 16 or even AWG 14 cables could be used in installations.

# Missing aspects: Environment

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- In industrial applications heavy shielded cablings are used nowadays. But at the beginning of the run, maybe in the building less disturbances can be expected.
- It is therefore proposed to use the EMC mice specification E1, E2 and E3 (similar to 802.3bp)

# PROPOSAL FOR ENVIRONMENTAL SPECIFICATIONS

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	Typical environment	Shielded	Unshielded
E3	Heavy industry	Coupling attenuation	TCL ELTCTL
E2	Light industry	Coupling attenuation	TCL ELTCTL
E1	office	Coupling attenuation	TCL ELTCTL



# PROPOSAL FOR ENVIRONMENTAL SPECIFICATIONS

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Excerpt of ISO/IEC 11801-1 for the frequencies of interest

	E1	E2	E3
CA	80-20log(f) 40max	90-20log(f), 40max	100-20log(f), 60max
TCL	53-15log(f) 40max	63-15log(f) 40max	73-15log(f) 40max
ELT CTL	30-20log(f)	40-20log(f)	50-20log(f) 40max

## Other missing link values that could be filled out later

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- Propagation delay
- Alien noise:
  - Depends on Phy definition.
  - Probably can be neglected below 30 MHz

End Main Part

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Thanks for your attention.