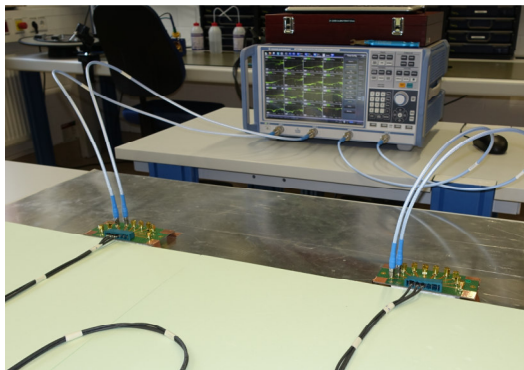
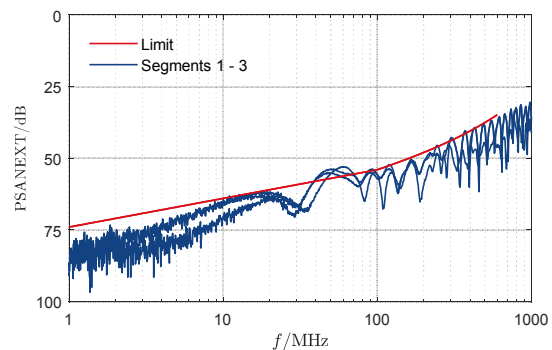


Forschungsbericht



Setup with network analyzer and communication channel



Power sum alien near-end crosstalk (PSANEXT)

Kanal- und Komponentenanalyse für 1000BASE-T1 Automotive Ethernet

Analysis of Channel and Components for 1000BASE-T1 Automotive Ethernet

In this work we analyzed the physical layer of modern 1000BASE-T1 Automotive Ethernet applications. Particularly, crosstalk of a specific communication channel using unshielded twisted pair (UTP) cables was measured. Here, well defined setups were used in order to make results comparable.

Measured crosstalk at the near end and the far end were both above specified limits according to document OPEN Alliance, Channel and Components Requirements for 1000BASE-T1 Automotive Ethernet. Hence, signal integrity and Electromagnetic Compatibility (EMC) of the communication channel under test could be impaired. Future work will concentrate on measures in order to reduce this crosstalk significantly.

Also, important parameters of the media dependent interface (MDI) were measured, in particular return loss (RL), longitudinal conversion loss (LCL) and transverse conversion loss (TCL).

For all measurements the device under test was in SLAVE mode with normal operation. Measured return loss was within specified limit according to IEEE802.3bp, section 97.7.2.1. Further, longitudinal conversion loss and transverse conversion loss were within specified limits according to IEEE802.3bp, section 97.7.2.2.

Kontaktdaten

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