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802.3ch link segment alien crosstalk

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Status

- In the previous standards 802.3bw and 802.3bp requirements on the alien crosstalk of the link segment have been defined in order to limit the noise at the receiver.
- For 802.3ch the alien crosstalk is expected to be lower, as shielded instead of unshielded cabling is used.
- Some measurement results of automotive cables and connectors are presented to quantify the order of magnitude of differential alien crosstalk that has to be expected.

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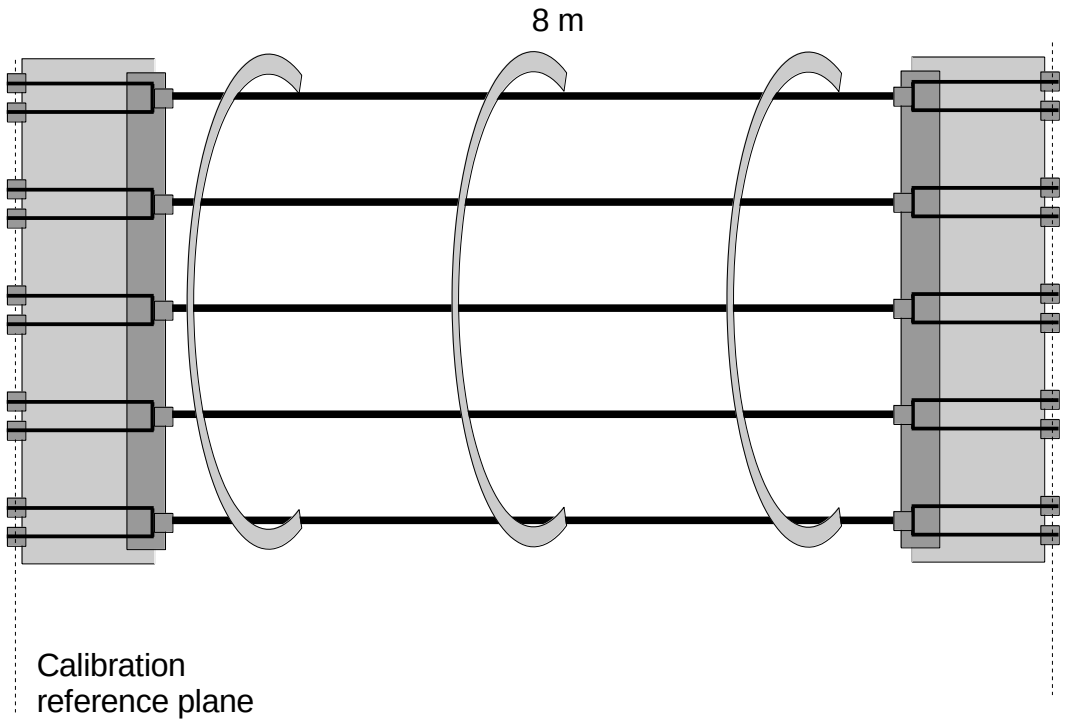
Measurement setup

- Measurement setup similar to 802.3bp Annex 97B Alien Crosstalk Test Procedure*
- 5 x 8 m cable length
- No inline connectors, multiport PCB connectors on both sides (worst case)
- Fixture crosstalk checked to be very small



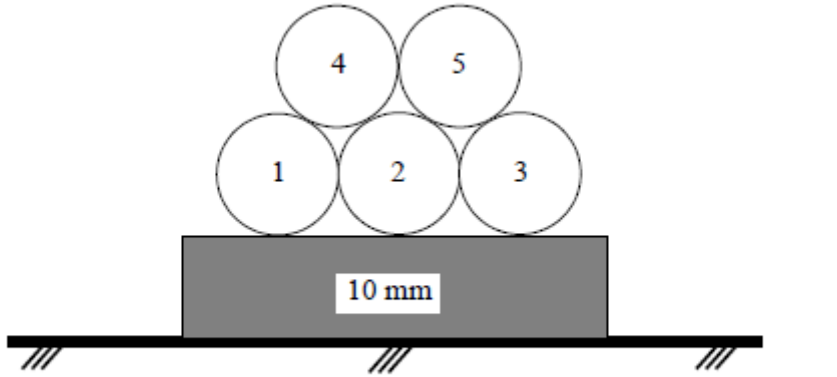


Figure 97B–5—Cable bundle in 4-around–1 configuration

* testfixtures not grounded to table due to STP

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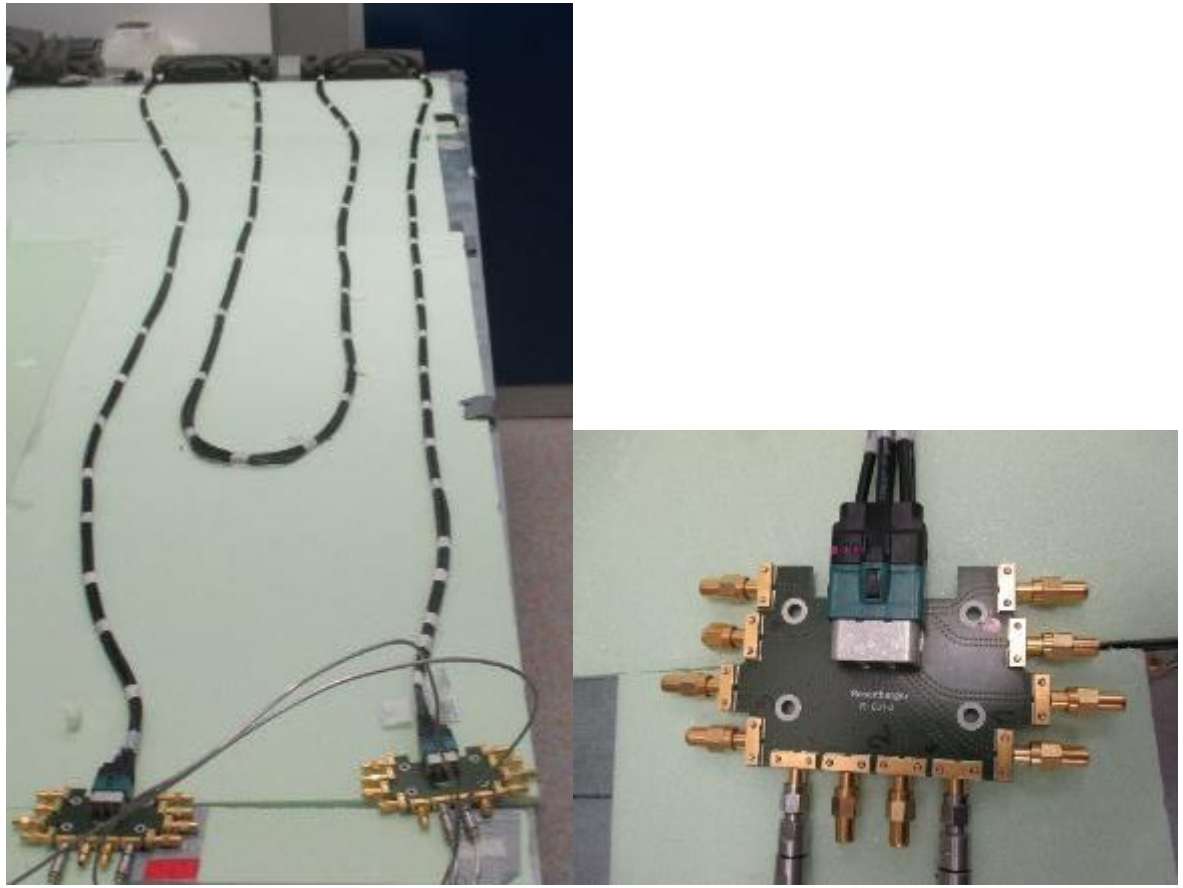
Measurement setup

- 5 x 8 m STP cable length with multiport connectors bundled together



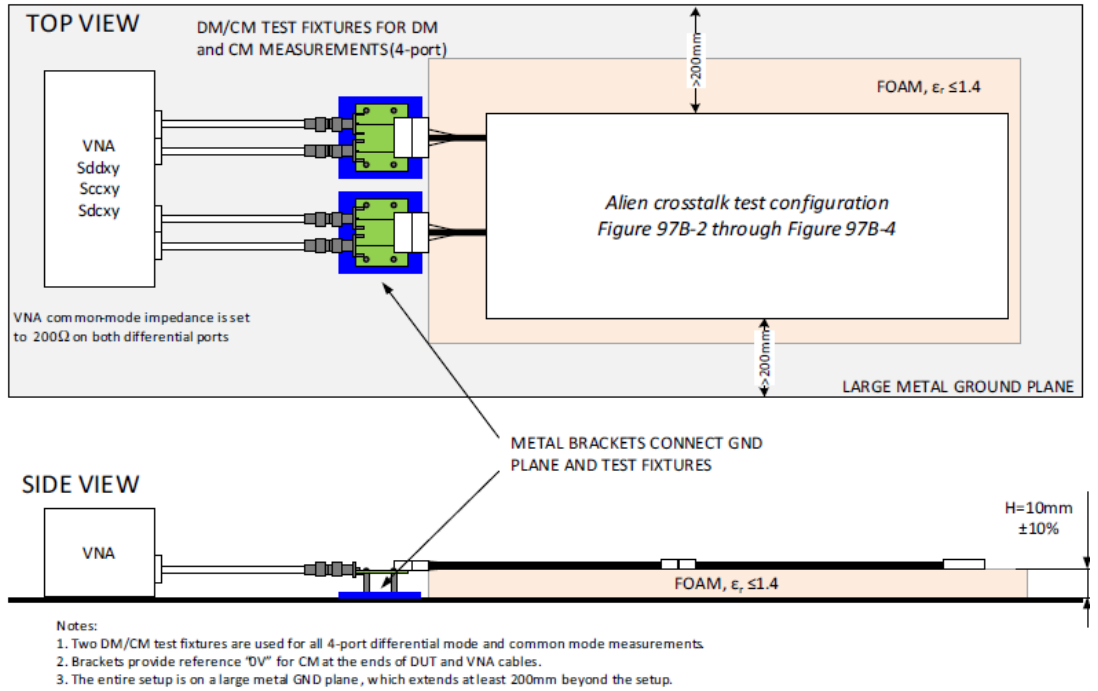


Figure 97B–1—Alien crosstalk test setup

testfixtures not grounded to table due to STP

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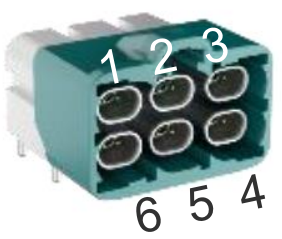
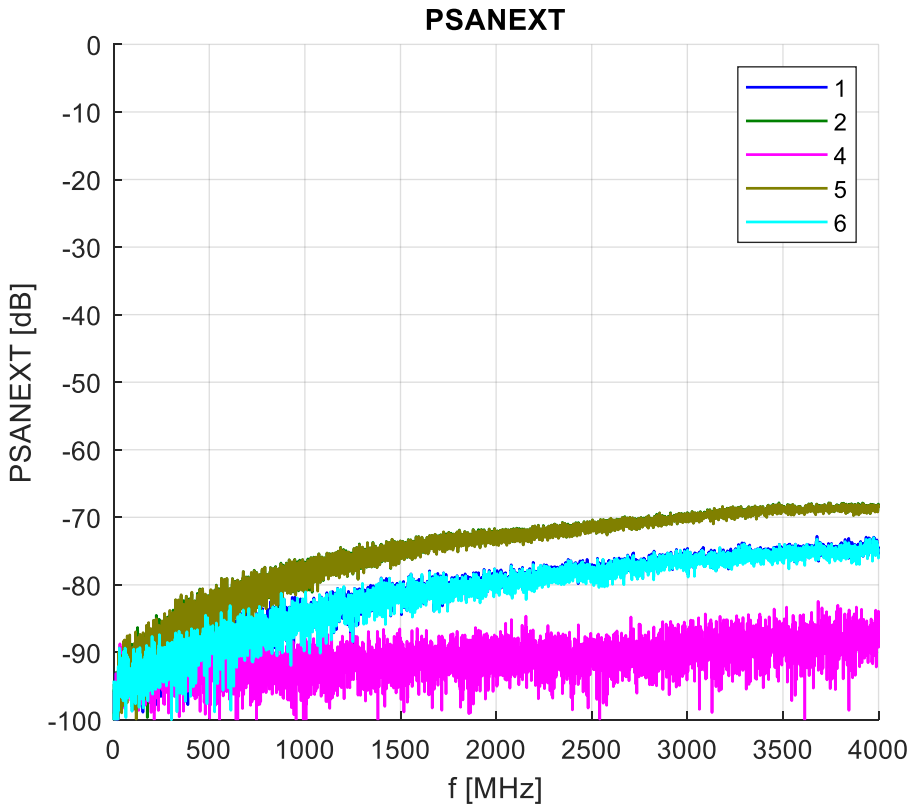
Measurement results

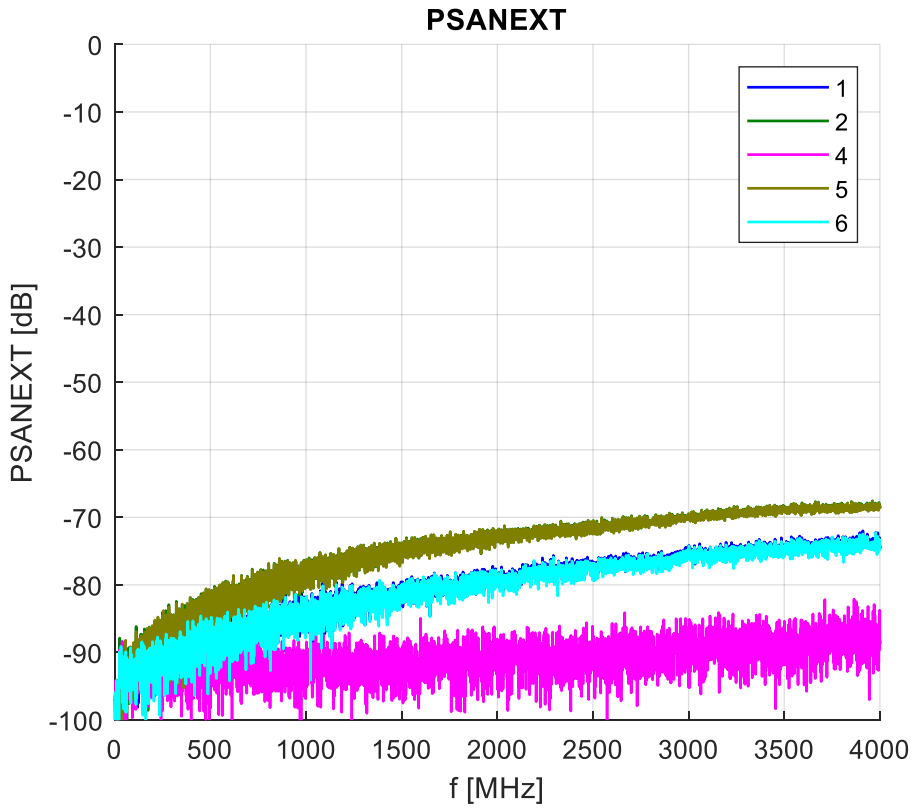
- PSANEXT



Side A



Side B



Port 3 not used

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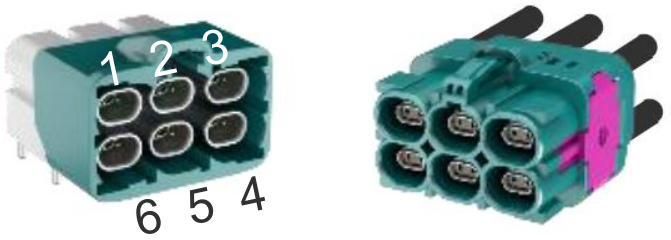
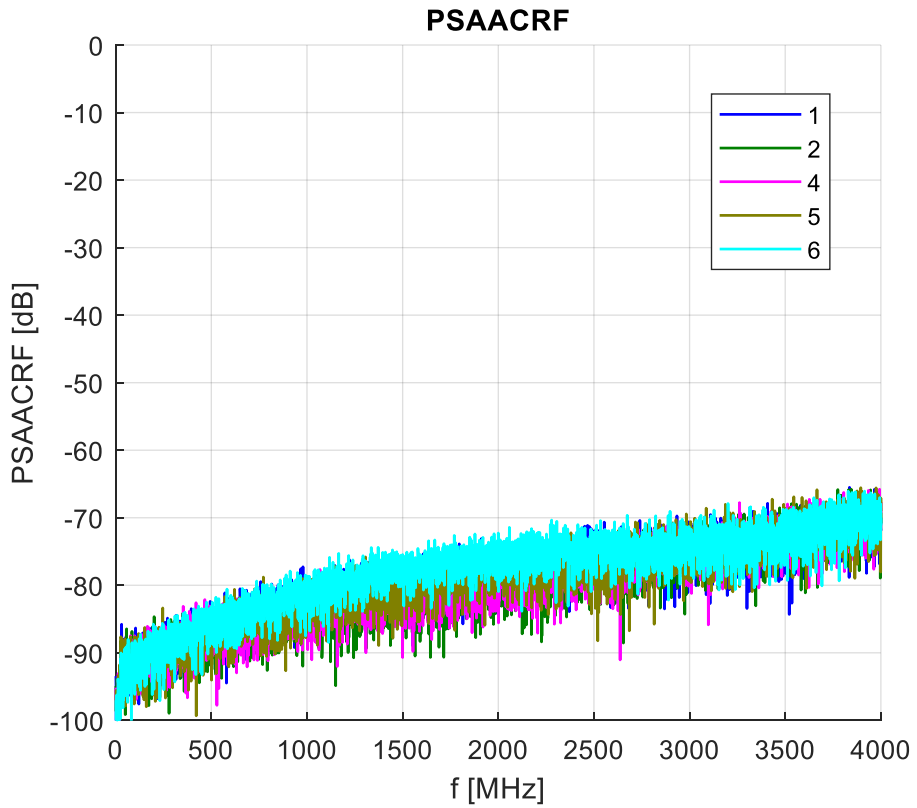
Measurement results

- PSAACRF



Side A



Port 3 not used

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Summary

- Alien crosstalk measurement data of an 8 m link segment was presented
- Working group member should discuss whether alien crosstalk of the link segment should be addressed within the standard or not