Test points and fixtures
for 802.3bj backplane

Charles Moore: Avago Technologies
Pavel Zivny: Tektronix
Mike Dudek: QLogic

Purpose and content

Purpose

- 802.3bj backplane test points specifications proposal
  - Alignment of backplane and cable test points specifications

Content

- Test Points
  - Cable review
  - Backplane proposal
- Test Fixtures

Align with cable test points in IEEE802.3ba, i.e. Fig. 85-2

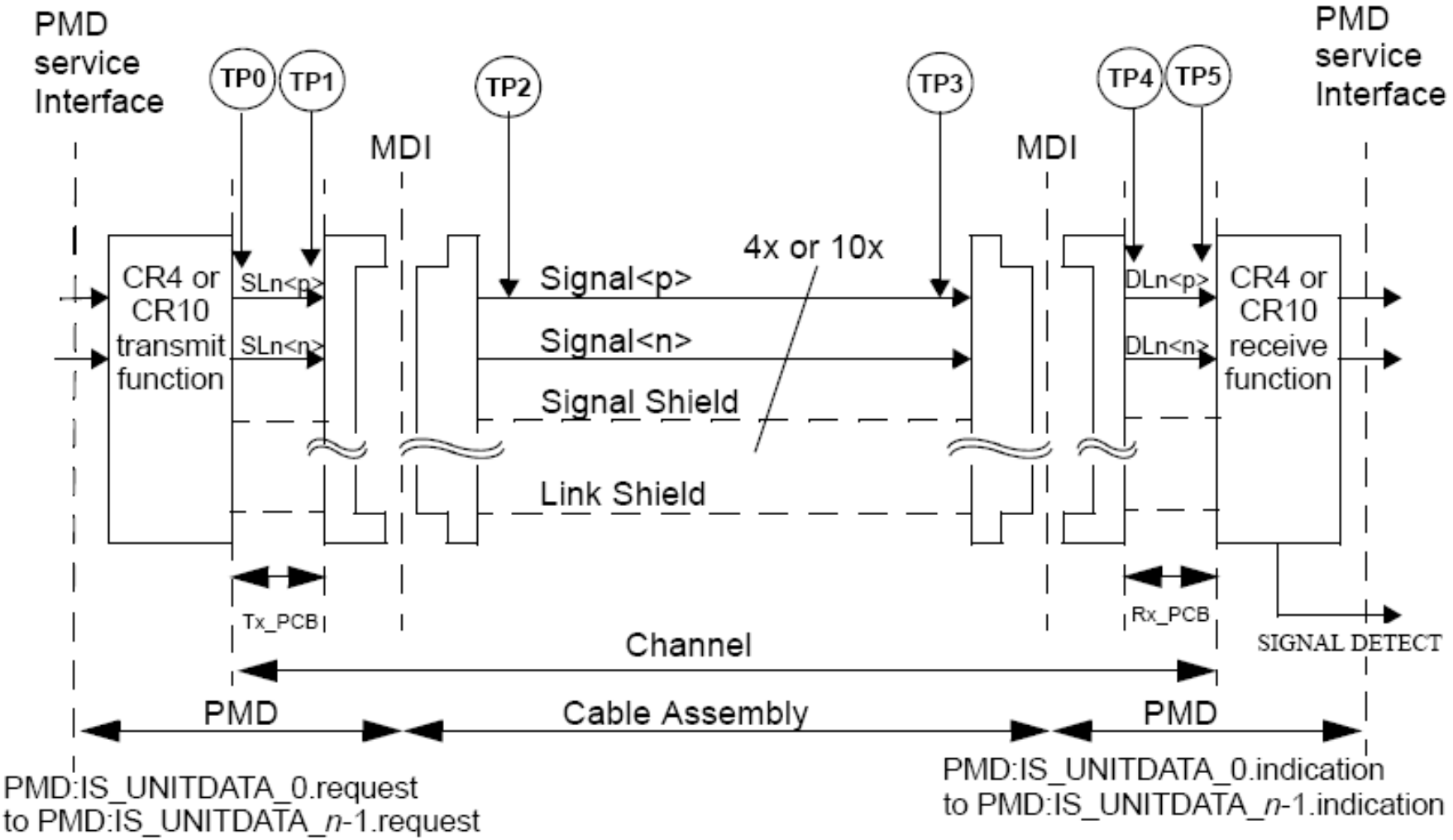
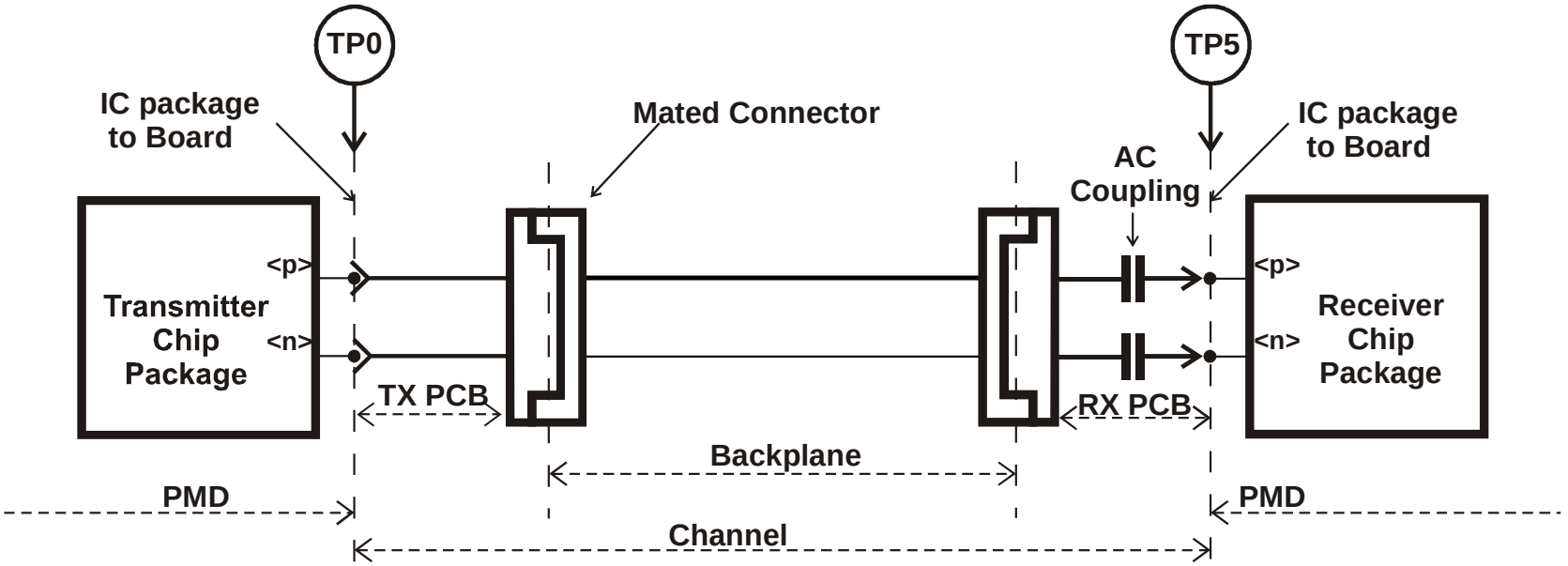


Figure 85–2—40GBASE-CR4 or 100GBASE-CR10 link (half link is illustrated)

Recommended backplane test points



Considerations:

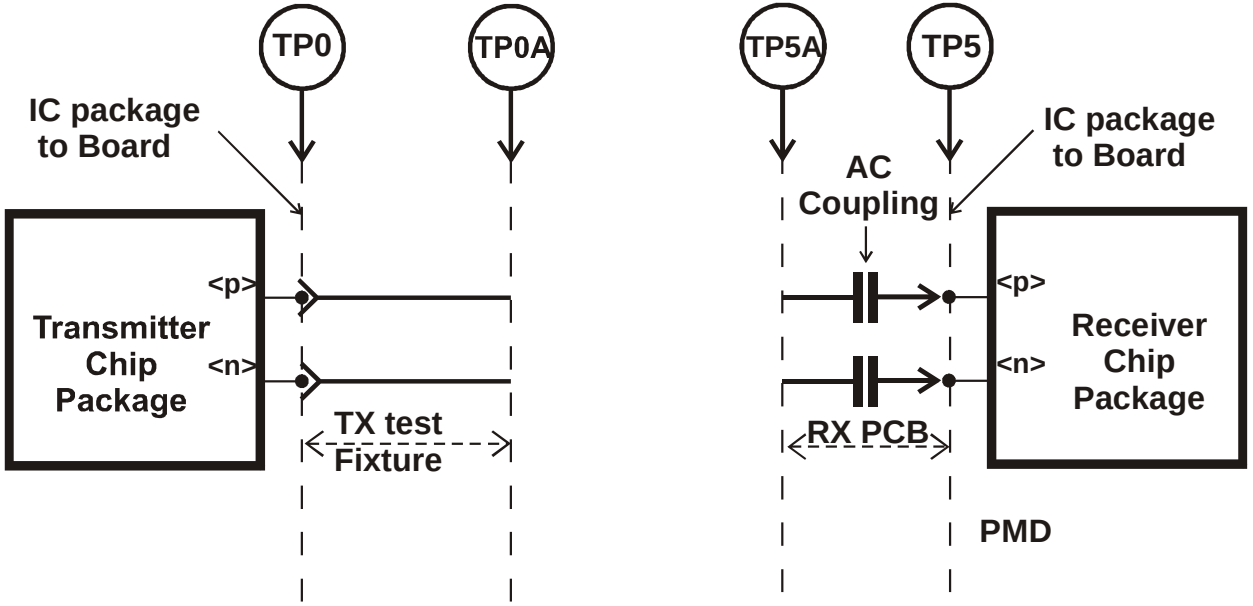
- Aligned with the cable specification
- TP0 and TP5 defined; rationale on next slide

Test fixtures for both cables and PHYs

- We have used test fixtures in the past to measure cables and host ports. We will continue to use them although connectors and insertion characteristics may change.
- We can no longer test PHYs as though the tester is connected directly to the part, the effects of losses in the channel connecting the part under test and the tester must be taken into account. This was done in IEEE802.3ba, Clause 85 for both the receiver and the transmitter but the channel, the host trace, was part of what was measured.

  For IEEE802.3bj KR we will need to specify the PHY at or near the PMD IC package (TP0 and TP5).
- To test the Rx and Tx IC package we will need a specified channel and a spec which takes it into account. The Rx and Tx test fixture channels need to be specified.

Fixtures for PHY test near the PMD IC package



- TX and RX IC characteristics verified at TP0A resp. TP5A
- Whether we de-embed the test fixtures from TP0A to TP0, from TP5A to TP5 is for further study.

Conclusion

- Follow example of 802.3ap and 802.3ba CR, specify the PHY at or near the PMD IC package (TP0 and TP5)
- De-embedding can be considered

Thank you.