

TTP Physical Layer – Status

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TTP Physical Layer – Status

- Several types of physical layer can be used today for TTP
 - MFEM transmission
 - ISO 11898 (CAN type) is suitable for low speed TTP applications (up to 500 kbit/s)
 - Fast standard RS 485 transceivers work up to 5 Mbit/s (up to 10 Mbit/s with NRZ transmission)
- TTP Physical Layer implementations will exceed currently available standard transceivers in:
 - Support for data rates of up to 10 Mbit/s
 - Defined bus idle behavior without bus biasing
 - Defined (fail silent) common mode behavior
 - Compatibility to 42V PowerNet
 - Adaption to communication controller supply voltage (2.5V, 3.3V, 5V)
 - Diagnostics and wake-up function

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TTP Physical Layer – Status



Physical Layer Working Group

Transceiver Specification and Design Milestones

- Start definition phase Q1/2002 ✓
- Specification freeze for testchip Q3/2002 ✓
- Preliminary specification (draft) Q4/2002 ✓
- Data sheet transceiver-chip (AS8221) Q4/2002 ✓
- Test chip available Q1/2003 ✓
- Test chip bug report Q2/2003 ✓
- Final specification (without pinning) Q2/2003 ✓
- Final specification (with pinning) Q3/2003 ✓

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Specification - Conformance

- Complete design specification
- Spec includes all details to completely specify the transceiver
- Any chip that meets the specification is conform to TTP
- No additional specification for conformance test necessary (!)

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Physical Layer Working Group Transceiver Roadmap

- Final design will start with customer order t0
- Bug fix for testchip 2nd generation t+1 month
- Fabout testchip 2nd generation t+6 months
- 2nd generation test chip available t+7 months
- Verification of test-chip t+8 months
- Start final design t+10 months
- Engineering samples t+15 months
- Internal qualification t+19 months

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Supplier for Transceiver

- Second source is mandatory
- Suppliers in the working group are up to now
 - austriamicrosystems
 - Infineon Technologies
- Additional suppliers
 - More suppliers plan to join

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Ongoing activities of Physical Layer WG

- Aerospace requirements (star/hub)
- Study to check the practical limits of bus-wiring in a car
 - In terms of maximum node number
 - Checking the effect of non ideal wiring (star geometry of bus) with distributed termination (compared to CAN networks today)
- EMC study with 2nd generation test chips

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