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Features

- CAN 2.0B protocol compatible (ISO 11898-1, ARINC 825 L2)
- Supporting Standard (11-bit Identifier) and Extended Frame (29-bit Identifier)
- Data rates up to 1 Mbit/s (High Speed)
- Clock Prescaler provides a wide frequency range
- MAC layer, highly flexible
- Bosch Reference CAN model proven
- Certified for aviation
- Soft IP (VHDL) to be implemented on any kind of logic IC

General Description

The Controller Area Network is a high reliable serial bus protocol defined in the Bosch CAN specification 2.0B.
The TES CAN Protocol Controller is a CAN interface core comprising the Medium Access Control layer, also known as Transfer Layer.

The main tasks of the MAC layer are:

- Message framing
- Transmission and reception of frames
- Arbitration
- Error detection and signaling
- Fault confinement
- Bit timing and synchronization

In addition, this CAN Protocol Controller contains a 13-byte Transmit Buffer for the message to be sent. To achieve a high flexibility for this core, the acceptance filtering and buffering of received messages is provided for an application specific Link Control Layer, which can be implemented in HW, SW or a reasonable combination.
Compliance to the CAN 2.0B specification is checked against the Bosch VHDL Reference CAN model.
The TES CAN Protocol Controller is a Soft IP core written in the hardware description language VHDL. The core is intended for use in a system-on-chip environment. It can be implemented in a wide range of applications and target technologies on any kind of logic IC. The code is synthesizable for standard cell ASIC and user programmable logic devices (FPGA). The synthesis has been proven with various synthesis tools.
High quality design is assured as it conforms to the TES' Guidelines for Structured IC Design. The aviation-certified TES CAN Protocol Controller is used in several aircrafts.