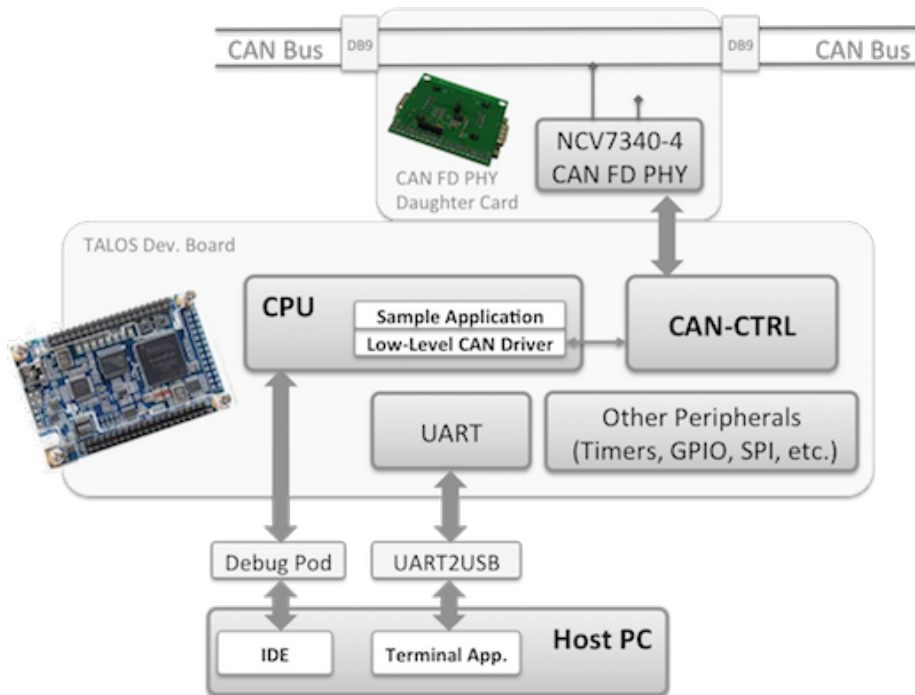


CAST

CANFD-RD

CAN2.0 & CAN FD Reference Design

The CANFD-RD is a complete reference design for a CAN node subsystem based on the CAN-CTRL CAN 2.0 & CAN FD Bus Controller IP Core. It can be used for evaluating the CAN-CTRL core, and it enables the rapid development of CAN FD applications or device prototypes.



Within the design, either a 32-bit BA22-DE or an 8-bit R8051XC2 microcontroller core controls the CAN-CTRL core. The MCU, CAN controller, and peripherals are hosted on the Talos FPGA evaluation kit. A daughter card connects the design to a physical CAN bus using an NCV7340-4 or NCV7351 CAN transceiver from On Semiconductor. The subsystem receives commands from and reports status to a host PC via a UART.

The reference design is delivered with low-level drivers and a sample application in source code for the embedded CPU. Users can extend the provided sample application or develop their own using just the low-level drivers.

User application development requires a debug-pod (optionally delivered with the reference design) and a software IDE for the processor (available from CAST for the BA22-DE, and from Keil or IAR Systems for the R8051XC2). User applications can exploit the available SPI, I2C, UART, and GPIO interfaces to communicate with other devices, such as sensors or actuators.

CAST services are available to port the reference design to other FPGA boards or to extend it with additional microprocessor peripherals. Integration with other CAN transceivers is also possible. Please contact CAST to discuss your project requirements (info@cast-inc.com, +1 201.391.8300).

Features

- Complete CAN node ready for integration and testing in any physical CAN network

Standards Compliance

- CAN 2.0 (A, B & ISO 11898)
- CAN FD
 - Non-ISO CAN FD (compliant to original Bosch protocol)
 - ISO CAN FD (compliant to new ISO 11898-1)
- TTCAN (ISO 11898-4 level 1)

Hardware

- Talos Evaluation Kit for the BA22-DE or the R8051XC2
 - DE0-Nano Terasic board
 - CDP-XC Debugging kit for the IAR or Keil IDE, or Beyond Debug Key for BeyondStudio
 - USB to RS232 cable
- CAN-FD PHY Daughter Card, using OnSemi's NCV7340-4 or NCV7351
- USB-to-RS232 cable
- Optional USB-to-JTAG, or USB to-Serial Debug POD for the BA22 or R8051XC2 processor

Software

- Sample CAN-CTRL Low-Level Device Drivers
- Sample Embedded Application

IP Cores

- Configurable 8-bit or 32-bit MCU
 - [BA22-DE](#) 32-bit embedded processor, or [R8051XC2](#), 8-bit 8051 processor
 - Configurable peripherals set. Default configuration includes Timers, UART, SPI, and I2C