

# Automotive Electronics

## VHDL Reference CAN



**BOSCH**  
Invented for life

```
process (BOSCH VHDL_Reference_CAN IP)
begin
  if (CAN IP Module in VHDL) then

    -- VHDL_Reference_CAN

  endif;
end process;
```

### VHDL Reference CAN

#### Customer benefits:

- ▶ Most widely spread tool for verification of VHDL-based CAN implementations
- ▶ Reduces risk to fail CAN conformance test

#### Features

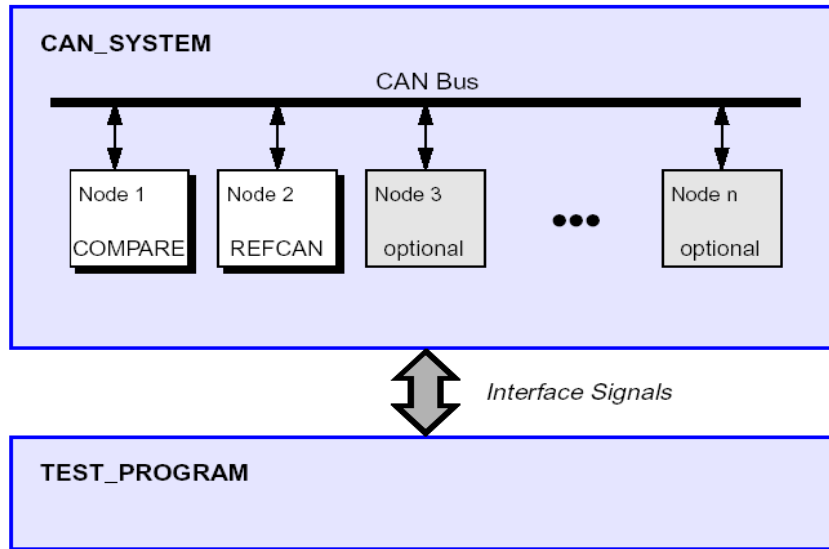
- ▶ Supports CAN and CAN FD according to ISO 11898-1:2015
- ▶ Flexible test bench environment
- ▶ Simulates entire CAN bus system (number of nodes defined by user)
- ▶ Test program set can be extended by user
- ▶ Run time information stored in trace file
- ▶ Generation of pattern files supported

#### General description

The VHDL Reference CAN is intended for semiconductor designers/manufacturers who want to build their own implementation of a CAN or CAN FD device using VHDL as a hardware description language.

The test bench supplied with this VHDL Reference CAN assures the conformity of the CAN Protocol Controller part of an user-defined implementation with ISO 11898-1:2015.

## Block diagram



## Functions

User-defined implementations of CAN controllers are verified in a test bench consisting of a CAN system and a set of test programs.

The CAN system consists of several CAN controller nodes linked by the CAN bus.

Simulation controlled by test program linked by a set of interface signals.

## Deliverables

- ▶ Detailed User's Manual
- ▶ Example of an implementation for fast start-up
- ▶ Well documented source code
- ▶ Tested with
  - Mentor Graphics ModelSim and Cadence NCSim
- ▶ Prepared for porting to other VHDL simulators

**Robert Bosch GmbH**  
Sales Semiconductors

Postbox 13 42  
72703 Reutlingen  
Germany  
Tel.: +49 7121 35-2179  
Fax: +49 7121 35-2170

**Robert Bosch LLC**  
Component Sales

15000 Haggerty Road  
Plymouth, MI 48170  
USA  
Tel.: +1 734-979-3000

**Robert Bosch K.K.**  
Component Sales

9-1, Ushikubo 3-chome  
Tsuzuki-ku, Yokohama 224  
Japan  
Tel.: +81 45 9 12-83 01  
Fax: +81 45 9 12-95 73

E-Mail: [bosch.semiconductors@de.bosch.com](mailto:bosch.semiconductors@de.bosch.com)

E-Mail: [bosch.semiconductors@us.bosch.com](mailto:bosch.semiconductors@us.bosch.com)

Internet: [www.bosch-semiconductors.com](http://www.bosch-semiconductors.com)