VN8900

Modular FlexRay/CAN FD/LIN/J1708/K-Line Network Interface with up to 8 Channels

What is VN8900

The VN8900 network interface is a modular designed interface hardware with various possible channel combinations for CAN FD, LIN, FlexRay, J1708 and K-Line.
A particular focus here is on parallel access to multiple bus channels and I/Os with high requirements on real-time and latencies also in standalone operating mode.

Base Units and Plug-in Modules

A VN8900 system consists of a base unit and a plug-in module

Base Units:

> **VN8911:**
   Base unit with integrated Intel ATOM processsor

> **VN8914:**
   High performance base unit with integrated Core i7 processor of the 6th generation.

The base units contain the component "Extended Real Time" (ERT). This component improves the latency and the determinism of CANoe and CANape. It also executes predefined functions under real-time conditions.

Plug-in Modules:

> **VN8970/VN8972:**
   FlexRay/CAN/CAN FD/LIN/J1708/
   K-Line modules with analog/digital IO expandability

Overview of Advantages

> Keypad for standalone operating mode
> Network interface with integrated real-time computer
> Modular concept allows a wide range of channel combinations by simply interchangeable transceivers for different bus physics
> Optimal performance for CANoe/CANape/ CANalyzer applications with CAN, CAN FD, FlexRay, LIN, J1708 and K-Line bus access
> Real-time bypassing and rapid prototyping platform in combination with CANape
> SSD/CFast memory
> Integrated analog/digital I/O interface
> Minimal latency times and synchronized interfaces
> Easy to configure via USB plug & play or Ethernet interface

Base units with plug-in modules and transceiver piggybacks for different bus physics

Technical Data

Base Units	VN8911	VN8914
Application areas	> mobile, stationary, standalone > access to several bus channels, I/Os > suitable for environments with voltage dips and extreme temperature conditions	> stationary, standalone > access to several bus channels, I/Os > high performance data throughput > test stands with extensive CANoe configurations or MATLAB simulations > huge laboratory test environment
CPU	Intel ATOM E3845 Quad Core	Intel Core-i7 6822EQ Quad Core
Supported plug-in modules	VN8970	VN8970/VN8972
Ethernet ports	2 x GbETH	
USB host interface	1 x USB 2.0, 1 x USB 3.0 (Superspeed)	3 x USB 3.0 (Superspeed)
USB client interface	1 x USB 3.0 (Superspeed)	1 x USB 3.0 (Superspeed) with screw locking
Hardware sync.	1x	
Solide state drive (SSD)	16 GB (CFast)	
SD card slot	direct access at the back side	
Power-Up-Down (e.g. clamp 15)	yes	
Keypad and LED	back side	front side
Input voltage	6...36 V	10...36 V
Temperature range	-40...+60°C	0...+50°C
Cooling	passive	active fan
Component "Extended Real Time" (ERT)	yes	
Driver library	XL Driver Library for FlexRay/CAN/LIN via USB or Ethernet	
Operating system (host PC)	Windows 10 (64 bit)	

Plug-in Modules	VN8970	VN8972
Channels	FlexRay / CAN(FD) / LIN/K-Line* 1 / 6 / - 1 / 5 / 1 1 / 4 / 2 - / 8 / - / 7 / 1 / 6 / 2 / 5 / 3* / 4 / 4*	FlexRay / CAN(FD) / LIN/K-Line* 1 / 6 / - 1 / 5 / 1 1 / 4 / 2 2 / 4 / - 2 / 3 / 1 2 / 2 / 2 / 8 / - / 7 / 1 / 6 / 2 / 5 / 3* / 4 / 4* additionally 1 digital/analog IO channel configurable with piggyback; * max. 2 K-Line channels possible
CAN controller	FPGA-based Vector CAN controller CAN FD capable, full support of all CANoe.CAN functions, e.g. send Errorframes, measurement of bus load and ListenOnly mode	
FlexRay cluster (A+B)	1	2
FlexRay controller (analysis)	Bosch E-Ray (FPGA)	Bosch E-Ray (FPGA)
FlexRay controller (startup)	Fujitsu MB88121	Bosch E-Ray (FPGA)
FlexRay send buffer	2 MB	
LIN controller	Vector LIN-Controller (FPGA) compatible to LIN1.3, LIN2.0, LIN2.1 and J2602, full support of all CANoe.LIN functions, e.g. conformity tests, stress functions, and flash mode of 7269 transceiver.	
Supported transceiver	Support of all magnetically/capacitive decoupled piggybacks, as well as J1708opto piggyback.	
IO expandability	IOpiggy8642 - digital: 8 inputs, 6 outputs / analog: 4 inputs, 2 outputs	
Onboard transceiver	4 x NXP TJA1051 (CAN highspeed) with electrical isolation	
Temperatur range — Operating: / Storage:	-40...+60° C / -40...+85 °C	0...+50 °C / -40...+85 °C
Power consumption (typ.)	7 W	8 W
Power supply	via base unit	
Time stamp accuracy	1 µs	

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