

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 processor

> 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	<ul style="list-style-type: none"> > mobile, stationary, standalone > access to several bus channels, I/Os > suitable for environments with voltage dips and extreme temperature conditions 	<ul style="list-style-type: none"> > 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)	16GB (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 7/8.1 (32 and 64 bit), Windows 10 (64 bit)																																																																
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Channels	<table border="1"> <thead> <tr> <th>FlexRay</th> <th>CAN(FD)</th> <th>LIN/K-Line*</th> </tr> </thead> <tbody> <tr><td>1</td><td>6</td><td>-</td></tr> <tr><td>1</td><td>5</td><td>1</td></tr> <tr><td>1</td><td>4</td><td>2</td></tr> <tr><td>-</td><td>8</td><td>-</td></tr> <tr><td></td><td>7</td><td>1</td></tr> <tr><td></td><td>6</td><td>2</td></tr> <tr><td></td><td>5</td><td>3*</td></tr> <tr><td></td><td>4</td><td>4*</td></tr> </tbody> </table>	FlexRay	CAN(FD)	LIN/K-Line*	1	6	-	1	5	1	1	4	2	-	8	-		7	1		6	2		5	3*		4	4*	<table border="1"> <thead> <tr> <th>FlexRay</th> <th>CAN(FD)</th> <th>LIN/K-Line*</th> </tr> </thead> <tbody> <tr><td>1</td><td>6</td><td>-</td></tr> <tr><td>1</td><td>5</td><td>1</td></tr> <tr><td>1</td><td>4</td><td>2</td></tr> <tr><td>2</td><td>4</td><td>-</td></tr> <tr><td>2</td><td>3</td><td>1</td></tr> <tr><td>2</td><td>2</td><td>2</td></tr> <tr><td></td><td>8</td><td>-</td></tr> <tr><td></td><td>7</td><td>1</td></tr> <tr><td></td><td>6</td><td>2</td></tr> <tr><td></td><td>5</td><td>3*</td></tr> <tr><td></td><td>4</td><td>4*</td></tr> </tbody> </table>	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*
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	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	10piggy8642 - digital: 8 inputs, 6 outputs / analog: 4 inputs, 2 outputs																																																																
Onboard transceiver	4 x NXP TJA1051 (CAN highspeed) with electrical isolation																																																																
Temperatur range	Operating: -40...+60°C Storage: -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																																																																