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VN1600

Bus Interfaces for CAN, CAN FD, CAN XL, LIN, K-Line, J1708 and IO

What is VN1600

The VN1600 interface family provides a flexible and fast access to CAN, CAN FD, CAN XL and LIN networks. While the VN1610/VN1611 with 2 channels focuses on minimum size and weight, the 4-channel VN1630A/VN1640A is designed for flexibility and IO support. The VN1630 log additionally has a recording functionality. The 4-channel VN1641 provides access to CAN, CAN FD and CAN XL networks. Whether in the laboratory, at the test bench, at the service garage or in the vehicle, these interfaces provide the ideal connection between Vector tools and the physical networks. The VN1600 family supports a wide range of applications, from simple bus analysis to complex remaining bus simulations, diagnostic, calibration and flash programming tasks.

Overview of Advantages

- High flexibility in the selection of bus transceivers thanks to proven CAN/LIN/J1708 piggies*
- Power supplied via USB, also in 4-channel applications
- Optimal performance for CANoe*, CANalyzer*, CANape* or customer applications, even in parallel (multi-application)
- Support of CAN FD up to 8 Mbit/s
- Support of CAN XL up to 20Mbit/s (VN1641)
- Advanced LIN stress e.g. for LIN 2.1 conformance tests (VN1630A/VN1630 log/VN1640A)
- Synchronized channels with minimal latency times
- K-Line support* (VN1611/VN1630A/VN1630 log/VN1640A)
- Fast CAN flashing by a hardware-based flash routine implementation
- LEDs for displaying channel activity and device status (VN1630A/VN1630 log/VN1640A/VN1641)
- Easy configuration of the recording functionality with the Vector Logger Configurator when using VN1630 log

* Ask Vector about required software versions and supported piggies.



Functions

> Flexible FPGA-based CAN and LIN implementation allows 100 % bus load on all channels
> Support of CAN XL with modes Error Signaling Enabled and Error Signaling Disabled (VN1641)
> Max bitrates: CAN (max. 2 Mbit/s), CAN FD (max. 8 Mbit/s), CAN XL (max. 20 Mbit/s) and LIN (max. 115 kbit/s)
> Performing LIN 2.1 conformance tests with CANoe (VN1630A/VN1630 log/VN1640A)
> The integrated IO functionality of the VN1630A/VN1630 log/VN1640A/VN1641 makes it possible to synchronously acquire signals along with CAN/LIN messages and switch loads up to 500 mA via a digital output
> Recording functionality for monitoring vehicle communication (CAN (FD), LIN) with VN1630 log. Data is stored on an SD/SDHC card (up to 32 GB).

Analog/digital IO: VN1630A/VN1630 log/VN1640A/VN1641

> Analog input:
1 channel, 0...18 V, max. 50 V, (ext. circuitry required)
Ri > 1 MOhm, 10 bit ADC at 1 kS/s
> Digital input:
2 channels, Schmitt trigger, max. 32 V, Vhigh ≥ 2.7 V, Vlow ≤ 2.2 V, Vhyst = 0.5 V, Ri > 200 kOhm, max. 1 kHz
> Digital output:
1 channel, open collector, max. 32 V, max. 500 mA, max. 1 kHz
> D-SUB9 socket

More information: www.vector.com/vn1600

Technical Data

	VN1610	VN1611	VN1630A/VN1630 log	VN1640A	VN1641
Max. Channels	2	2	4	4	4
Variable Transceiver (piggies)	–	–	2	4	4
Permanently installed transceiver	2	2	2	–	–
Channel combinations					
fixed	2 x CAN FD	1 x LIN/K-Line 1 x CAN FD	2 x CAN FD	–	–
variable (piggybacks)	–	–	0..2 x CAN FD/LIN/ J1708/K-Line	0..4 x CAN FD/ LIN/J1708 0..2 x K-line/SENT	0..4 CAN XL 0..4 CAN FD
No. of D-SUB connectors	1 (dual channel)		2 (dual channel)	4 (single channel)	
Time stamp accuracy					
resolution	8 µs				
within one device	1 µs				
SW sync. of multiple devices	typ. 50 µs				
with sync cable	–	–	typ. 1 µs	typ. 1 µs	typ. 1 µs
IEEE1588 - PTP	–	–	–	–	typ. 1 µs
Bitrates	CAN up to 2 Mbit/s. CAN FD up to 8 Mbit/s. LIN up to 330 kbit/s.				CAN up to 2 Mbit/s. CAN FD up to 8 Mbit/s. CAN XL up to 20 Mbit/s.
Recording funtionality	–	–	VN1630 log	–	–
Error frame / remote frame	Bit-precise detection and generation				
Operating system	Windows 10 (64 bit) / Windows 11 (64 bit)				Windows 11 (64 bit)
External power supply	VN1610/VN1611/VN1630A/VN1640A: no external power supply required; VN1630 log: 6 V .. 50 V				USB: bus powered ETH: USB Type C min. 7.5 W
Host interface	USB 2.0 high-speed				USB 3.2 Gen. 1 Ethernet 1000BASE-T
Temperature range					
operating	-40..+70 °C				-40..+55 °C
storage	-40...+85 °C				-40..+85 °C
Dimensions (LxWxH) [mm]	65 x 42 x 20		VN1630A: 90 x 110 x 35 VN1630 log: 150 x 110 x 35	88 x 111 x 45	114 x 111 x 45
Weight	ca. 80 g		VN1630A: ca. 230 g VN1630 log: ca. 400 g	ca. 330 g	ca. 450 g
Housing	Robust plastic housing		Highly robust aluminium housing		

V3.0 | 2024-03

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