

VH6501

Precise Disturbance Hardware for CAN/CAN FD and Network Interface for CANoe

What is the VH6501 Interface

VH6501 is a flexible yet compact CAN/CAN FD disturbance hardware and a network interface for CANoe combined in one device. In particular, the combination of disturbance hardware and network interface allows very simple test setups for CAN/CAN FD compliance tests without an additional network interface or a special cable.

Application Areas

VH6501, along with VH1150¹, meets the hardware requirements for VW CAN FD conformance tests². Due to the seamless CANoe integration and its powerful CAPL API, other OEM conformance tests can also be efficiently implemented.

Almost any digital disturbances can be configured in CAPL as a sequence output and as a trigger condition. In addition, many typical analog disturbances are possible, such as short circuits of the CAN signals. Further fields of application are:

- > Exact sample point test of an ECU
- > Check of the ECU's behavior in the bus-off state
- > Short circuits and swapping of the CAN lines
- > Modification of the R/C network parameters

With the help of the CANoe Option .Scope and the Vector PicoScope hardware, all disturbances generated by VH6501 and the behavior of the ECU can be visually recorded and accurately analyzed. This is very helpful in documenting conformance tests. The seamless CANoe integration makes it quick and easy to create your own automated test using the CAPL API for this hardware.

Overview of Advantages

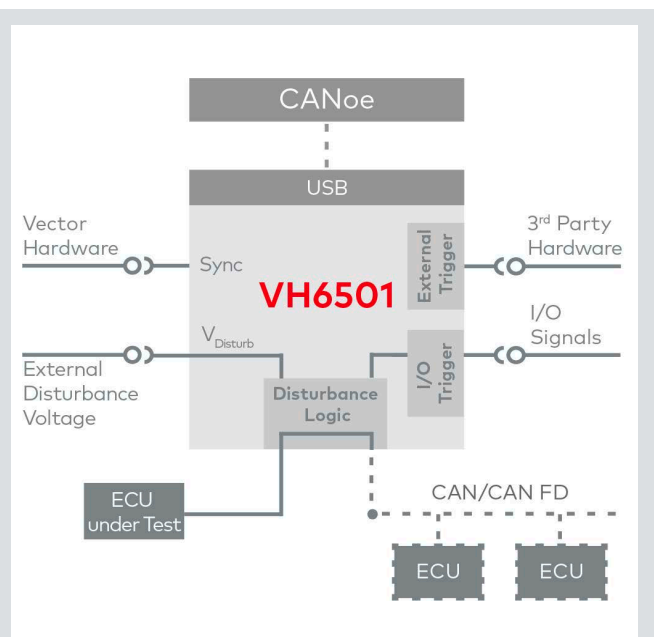
- > Disturbance hardware and network interface combined in one compact USB device
- > Extensive trigger sources and disturbance types
- > Fine granular output of complex disturbances
- > External trigger output
- > Seamless CANoe integration
- > CAPL functions for test automation
- > Analog/digital I/O functionality
- > Connection for external time synchronization

¹ CANoe Test Hardware, see separate fact sheet

² Software for VW conformance tests: CANoe Test Package VAG; see separate fact sheet



Reproducible disturbance of CAN/CAN FD networks with VH6501



Wiring options

Functions

Digital Disturbances

- > Arbitrary sequences of dominant and recessive levels (including recessive stress):
 - > Resolution of 6.25 ns
 - > Minimum pulse duration of approx. 50 ns
- > Max. 4,096 level change in a sequence
- > Support for different trigger conditions:
 - > I/O triggers
 - > Frame triggers, e.g. SOF, Frame, Bus Idle, Error
 - > Combined frame triggers for disturbing e.g. different IDs (up to 32 parallel conditions including wildcards)

Analog Disturbances

- > Asynchronous, without own trigger condition
- > Support for different error and test modes:
 - > Short-circuit tests
 - > Cross-wiring
 - > Modification of the R and C network parameters:
 - R: 500 Ω ... 25 k Ω (non-linear)
 - C: 100 pf ... 10 nF (non-linear)

More information: www.vector.com/vh6501

Technical Data

	VH6501
CAN/CAN FD channel	TJA1057 Piggyback CAN2.0: 2 MBit/s CAN FD: up to 8 MBit/s
Digital CAN disturbances	Arbitrary sequence of dominant and recessive levels: Min. step size 6.25 ns Min. dominant/recessive phase length of 50 ns
Analog CAN disturbances	Short circuit and cross wiring tests Modification of RC network parameter
I/O functionality (onboard)	Digital outputs: 1 Digital inputs: 2 Analog inputs: 1
Connectors	2x D-SUB9 (male+female) for 1 CAN channel 1x D-SUB9 for I/O; 1x Binder (type 711) for external trigger 1x Binder (type 711) for time synchronization with Vector hardware
PC interface	USB 2.0
External power supply	6 V...60 V DC
Power consumption	Typical 7 W
Operation system requirements	Windows 10 (32 bit or 64 bit), Windows 7/8.1 (32 bit or 64 bit)
Software requirements	Recommended CANoe version 10.0 SP3 (min. version 10.0 SP2)
Temperature range	Operation: -40 °C...+60 °C Storage: -40 °C...+85 °C
Dimensions (LxWxH)	Approx. 155 mm x 111 mm x 45 mm
Weight	Approx. 600 g