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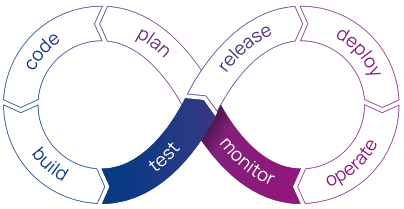
Autonomous Driving Control Unit Measurement System
GETK-P4.0A

High performance microprocessor data acquisition via PCIe

ETAS supports and facilitates the development of software-defined vehicles (SDV). The GETK-P4.0A includes the following:



Areas of application

- The GETK-P4.0A is an Autonomous Driving Control Unit (ADCU) access device designed for measuring middleware internal data in the context of Advanced Driver Assistance Systems (ADAS) and Highly Automated Driving (HAD) in the vehicle as well as in the laboratory.
- The GETK- P4.0A interacts with the middleware of the ADCU using PCIe 4.0 or lower to collect the measurement data of the Adaptive AUTOSAR applications.
- The GETK-P4.0A is used to collect data for analysis, calibration, verification and certification of HAD-functions.

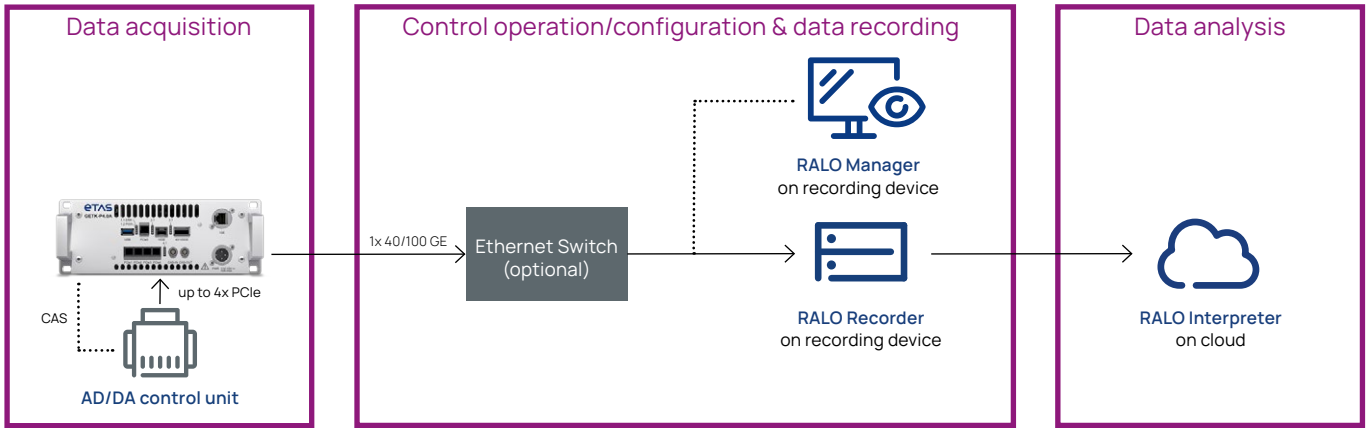
Functions

- High performance data acquisition of internal ADCU data via zero-copy DMA transfer
- Data acquisition from 4 microprocessors (max.) per device with up to 30 Gbps combined
- Time synchronization via IEEE1588 precision time protocol (PTP)
- Select and receive services from the supported middleware via a "publish-subscribe-model"
- High speed ethernet connection to recording device

Benefits

- Reduction of test runs/duration due to the ultra-high bandwidth of PCIe 4.0
- Highly compatible with most common microprocessors
- Multiple synchronized devices can be used in parallel due to scalable design
- Ultra-low CPU load on the ADCU due to DMA-transfer on the GETK-P4.0A
- Component-compatibility of the HAD/ADAS measurement software ETAS RALO enables seamless integration

Process of data acquisition



Components and key features

GETK-P4.0A	Supports middleware data measurement of PCIe based µPs and SoCs (e.g. Nvidia, NXP, Texas Instruments, Qualcomm, Renesas, Xilinx) via PCIe 4.0 (downwards compatible to 3.0 and 2.0)
	Flexible lane configuration (e.g. x4, x2 or x1) by using DMA-transfer with up to 30 Gbps combined
	PCIe channel extension up to 10 m in combination with ETAS PCIe optical cable
	Optimized form factor for 19" rack mounting
	Powered externally with a separate power cable
	40 / 100 Gbit ethernet interface to the recording system (TCP / IP)
	Cascading (CAS) interface for GPIO status information e.g. wake-up signals etc.
	Time synchronization via IEEE1588 optimized for ETAS HAD / ADAS measurement software RALO
Adapter cables	PCIe 4.0 optical cable
	Power supply cable
	Cascading (CAS) cable

Technical data

Dimensions (W x D x H)	241 mm x 262 mm x 88 mm
Weight	4.2 kg
Operating voltage	11 V – 15 V
Operation current	max. 10 A
Operation temperature	-20 °C to +50 °C (-4 °F to 122 °F)
Humidity	0 % to 95 %
Altitude	max. 5,000 m / 16,400 ft