ES820

Drive Recorder Module

At a glance

- Next-generation drive recorder module for challenging in-vehicle measurement applications
- Unattended measurement and recording of data from ECUs, buses, networks, sensors, and measuring instruments
- High computer power and large memory capacity for recording a large number of signals over a long period of time
- Exchangeable memory module for rapidly transferring large data volumes to the corporate network

Areas of application

The drive recorder module of the ES800 measurement, calibration, and prototyping system can be used for a variety of measurement tasks in the development, calibration, and validation of electronic vehicle systems.

The ES820 module is easy to integrate into existing vehicle instrumentation. Replacing the INCA PC or laptop, the module captures and records signals from ECUs, buses, networks, sensors, and measuring instruments in the vehicle. Once configured, the module records all data from connected devices without the user or driver having to do anything else.

Main functions

Using the ES89x and ES5xx interface modules, the ECUs can be connected to the drive recorder via ETK, XETK or FETK interfaces and multiple LIN, CAN/CAN FD and FlexRay buses. Additionally, the measurement modules of the ES400 and ES600 product families allow to record various signals of the vehicle environment. The ES820 module and the corresponding cables are designed for use in the passenger compartment or vehicle trunk and also at the test bench and in the laboratory.

A Gigabit Ethernet (host) interface allows users to connect a PC for configuring and reading the recorded data. An additional GE interface facilitates networking with compatible Gigabit Ethernet modules. To extend the system, for example with an external ES582 CAN FD bus interface module, four USB-A ports are available.

Event-driven activation of the drive recorder is possible via bus traffic, ignition, digital signals, or timers. This allows measurement tasks to be carried out autonomously. Four digital inputs and four digital outputs are available via a connector. They can be used as triggers or markers (inputs) and to display system statuses or events (outputs). In addition, the front panel control elements can be operated by a remote panel, for example from the driver's seat. An exchangeable memory module permits the recording of very large data volumes and rapid transfer of the data to the corporate network. This helps to minimize test vehicle downtime due to data transfer.

The ES820 Drive Recorder is compatible with ETAS INCA, the standard tool for measurement, ECU calibration, and diagnostics.

The selection of measurement signals, the setting of data acquisition rates, and the configuration of triggers and communication as well as diagnostic protocols are applied directly from INCA.

Technical Data

Size and weight	
Dimensions (HxWxD)	63 mm x 215 mm x 241 mm 2.48 in x 8.56 in x 9.49 in
Weight	3.7 kg / 8.16 lb

Environment	
Temperature range	-40 °C to +70 °C / -40 °F to +158 °F (operation) -40 °C to +85 °C / -40 °F to +185 °F (storage)
Robustness	Mechanical shock, vibration, fall, temperature change
Protection Class	IP40
Altitude	Max. 5,000 m / 16,400 ft height above sea level

Voltage supply	
Operating voltage	6 V to 32 V DC

Power consumption	
Continuous operation	< 5 A at 12 V, maximum 10 A
Standby	< 10 mA at 12 V, maximum 20 mA (low power standby) < 60 mA at 12 V, maximum 120 mA (fast boot standby)
Energy management (wake-up / standby)	„On/off" when a connected ES8xx module starts/stops, based on timer, via button on front panel, or via I/O interface
Protection	Reverse polarity protection, overvoltage protection

Host interface	
1x Gigabit Ethernet	100/1000Base-T

Device interface	
1x Gigabit Ethernet	100/1000Base-T
Current supply	0.5 A with connected interface modules

Extension options	
USB	2 x USB 3.0 type A and 2 x USB 2.0 type A

I/O interface	
25-pin Micro-DSUB	Remote power button, remote status LEDs, 4 x TTL input, 4 x TTL output, remote status output, "terminal 15"input

Status display	
LEDs	Displays operating status, interface activity, synchronization, measurement, memory

Control elements	
Buttons	Switching device on and off, safe release of memory module

Computer unit	
Processor	Intel Core i5-5350U, dual-core
Memory	4 GB RAM
Operating system	Windows Embedded 7

Storage	
Internal storage	128 GB Solid State Drive (SSD) (operating system, application and user data)
Exchangeable storage	SSD module with 500 GB or 1 TB storage capacity

Measurement readiness	
In operation	Immediately
In fast-boot standby	Approximately 10 seconds after being switched on[1]
In low-power standby	Approximately 60 seconds after being switched on[1]

Compatible hardware	
Host interface	Desktop or laptop PC with Ethernet connection
Device interface (GE)	Direct: ETAS ES89x interface modules Via ES89x module: ETAS ES59x interface modules and ETAS ES4xx/ES6xx measurement modules
USB	ES582 and ES584 USB CAN FD bus interfaces ES583.1 USB FlexRay Bus Interface

Software support	
ETAS INCA	From version 7.2

[1]Depending on measurement configuration.

Info A complete overview of ordering information and accessories for the ES820 module is available at www.etas.com/ES800. Further information can be obtained from your ETAS contact partner.