ES891/ES892

FETK ECU and Bus Interface Module

The ES891/ES892 ECU and Bus Interface Modules are the key members of the modular ES800 Measurement, Calibration, and Prototyping System. Together, ETAS' ES891/ES892 modules, FETK, and INCA provide a future-proof solution for the validation and calibration of electronic systems in the vehicle and at the test bench.

Area of application

The ES891/ES892 modules record measurement data from ECUs and vehicle buses. They can be used for calibration, diagnostics, and ECU flash programming, or as an interface for prototyping modules. The ES891/ES892 modules, collect the recorded data and can transmit it via Gigabit Ethernet to a PC or laptop at a rate of up to 120 MB/s – in other words, the line speed.

Main functionality

As well as supporting Ethernet, FlexRay, CAN, CAN FD, and LIN vehicle buses, the modules support both ETAS' XETK and its high-performance FETK ECU interfaces. In fact, two FETKs can be connected simultaneously to one ES891/ES892 module.

Measurement modules from the ES400 or ES600 product families as well as ECU and bus interface modules from the ES51x, ES52x, and ES59x series can connect to the ES891/ES892 modules via Fast Ethernet. The ES891/ES892 modules capture all incoming signals synchronously, achieving time-stamp accuracy of the recorded data of better than one microsecond.

Open and compliant with standards

Thanks to the ES891/ES892 modules, applications can communicate with FETK ECUs via the standardized XCP-on-Ethernet protocol. ETAS has made C libraries available for complete integration of the ES891/ES892 modules into other tools. The ES891/ES892 modules' time synchronization conforms to the IEEE1588 standard, facilitating easy integration into heterogeneous test setups and automation solutions with a central clock.

At a Glance

FETK Interface Module of the ES800 Measurement, Calibration, and Prototyping System

The hardware modules permit transmission of data to a PC or Laptop via Gigabit Ethernet with rates up to the line speed

Two FETK/GE connections, one XETK/FE connection

One FlexRay interface with two channels (ES891)

Up to five CAN/CAN FD interfaces

One LIN interface

Time synchronous capture of measurement data compliant with IEEE1588 Precision Time Protocol standard

Robust metal housing (IP44)

Technical Data

Item	Characteristics	Features
Size and weight	Dimensions (HxWxD)	62.8 mm x 215 mm x 230 mm/ 2.47 in x 8.46 in x 9.05 in
	Weight	2.92 kg / 6.44 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)
	Tested for	Mechanical shock, vibration, fall, temperature shock, temperature alteration, according to EN 60068 and ISO 16750
	Protection class	IP44
	Altitude	Maximum 3.1 miles height above sea level
Power supply	Operating voltage	6 V bis 32 V DC
	Power consumption at 12 V DC	Typically 2.2 A in operation and 12 mA in standby
	Energy management (Wake-up / standby)	Power-on/off when Ethernet traffic starts/stops (PC or upstream module on/off), configurable: Power-on when CAN/CAN FD/Flexray traffic starts
	Protection	Reverse voltage protection up to 32 V, load dump protection
Host interface	Gigabit Ethernet	1x 100/1000 Base-T
Device interfaces	Fast Ethernet	1 XETK ECU interface. Alternatively: 1x 10/100 Base-T
	Gigabit Ethernet	2 FETK ECU interfaces with host-side XCP-on-Ethernet support. With the help of an adapter cable, ETKs of type ETK-S20 and ETK-S21 can be connected. Alternatively: 2x 10/100/1000 Base-T
	Power supply	Of connected ES4xx / ES6xx measurement modules and XETKs
	Synchronization	Resolution: 1 µs
Bus interfaces	CAN/CAN FD[1]	5 channels high-speed CAN (2.0 A and 2.0B), transfer of CAN-FD Dataframes up to 64 Byte and rates up to 5 Mbit/s
	FlexRay[1] (ES891 only)	1 FlexRay V2.1 interface with 2 channels A and B or one additional internal node for synchronizing the FlexRay bus
	LIN	1 channel, LIN V2.2A
Status display	LEDs	Status of operation, interfaces, and synchronization
Compatible hardware	PC / ETAS upstream module	PC with Ethernet port
	ETAS downstream modules	ES51x, ES520, ES590, ES591, ES592, ES593-D, ES595, ES600 Network and Interface Modules, ES4xx and ES6xx Measurement Modules, ES910 Prototyping and Interface Module, ES930 Multi-I/O Module XETK, BR-XETK with CBEB105 BroadR-Reach Media Converter
Support by software	ETAS INCA	INCA V7.2 and up

[1]When the FlexRay interface of the ES891 module is not used, the ES891 module provides five CAN / CAN FD channels also.

For complete ordering information and accessories for the ES891 and ES892 modules, please refer to www.etas.

For more information, please contact your local ETAS representative.

ETAS-PGA/MKC2_AKO/05_2016

ETAS Locations Worldwide

Germany
Stuttgart (Headquarter)

Brazil
São Bernardo do Campo

Canada
Kitchener

France
Saint-Ouen

India
Bangalore
Pune

Italy
Turin

Japan
Utsunomiya
Yokohama

Korea
Seongnam-si

P.R. China
Beijing
Changchun
Chongqing
Guangzhou
Shanghai
Wuhan

Sweden
Gothenburg

United Kingdom
Derby
York

USA
Ann Arbor

www.etas.com