ETAS FlexECU is an open, cost-effective, production-ready ECU development platform designed for the efficient development of new control concepts.

**Major components of the FlexECU:**
FlexECU is based on a production-intent version of the current Bosch diesel and gasoline ECU hardware with Infineon TriCore microcontroller.

It comes with EHOOKS, the easy-to-use integration environment (shipped complete with the compiler), which makes it much easier and quicker to integrate prototype software elements from ASCET, Simulink®, and other model-based development tools, as well as hand coded C into existing software.

What’s more, the package also contains the basic software with an open API, ersetzen durch: including simple and complex I/O drivers and an OSEK-compliant real-time operating system.
Whether you’re developing a hybrid control system, a complete engine management system, or simply a new control system feature or function, let FlexECU be your cost-effective, field-proven control system development platform.

FlexECU is an open control system development platform consisting of (Figure 1):

1. State-of-the-art Bosch production intent ECU hardware (Gasoline and Diesel, see reverse for I/O), together with:
   - Available wiring harness and breakout box

2. An easy-to-use integration environment (includes compiler) that facilitates the integration of prototype software (from Simulink, ASCET, hand coded C, and other model-based development tools),

3. Basic low-level ECU software with an open API (including simple and complex I/O drivers and OSEK-compliant RTOS),
   - Available Bosch engine management software
   - High-quality, responsive engineering services and support from ETAS and the Bosch Engineering Group to customize your solution when and where you need it
   - Optional ETK high-speed ECU interface for measurement, calibration, and ECU programming
   - Compatible with INCA, ETAS’ industry-leading calibration tool, and other 3rd-party tools

Figure 1: Components of the FlexECU
Why choose FlexECU?

— Increase confidence by implementing prototype control systems directly on a production-ready ECU
— Save time and effort migrating prototype control systems to production
— Utilize world-class Bosch fuel-injection technology
— Utilize world-class Bosch knock-detection technology
— Low-cost alternative to traditional rapid prototyping
— Scalable, from one system to one hundred; supports advanced R&D to fleet validation

Find out more!

To learn more about how FlexECU can fit into your development environment, or to schedule a demonstration, contact your local ETAS sales representative.

The breakout box offers manual access to all FlexECU signal and supply pins.
ECU signals and supply lines are routed via bridges.

Figure 2: Hardware of the ETAS FlexECU.
Technical Data

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
<th>Features</th>
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</thead>
</table>
| ECU Core                  | Microcontroller                      | **Gasoline**  
Bosch MED17.3.4  
Infineon Tri-Core TC1797,  
32bit  
180 MHz  
1.8 MB Code; 215kB Data  
43kB  
2kB (emulation)  
**Diesel**  
Bosch EDC17CV41  
Infineon Tri-Core TC1797,  
32bit  
180 Mhz  
1 MB Code; 208kB Data  
42kB  
2kB (emulation) |
| Memory                    | Clock Frequency  
Flash  
RAM  
EEPROM                   |                                  |
| Inputs                    | Supply Voltage  
Digital Inputs                  | 8 – 16 V  
9 (+ 2 dedicated to IGN and Flash)  
4  
Hall  
30  
LSU and/or LSF up to 4 | 9 – 32 V  
13  
5  
Inductive or Hall  
14 passive, 15 active  
N/A  
N/A |
|                           | Frequency Inputs  
Cam-/Crankshaft Inputs  
Analog Inputs  
Lambda Knock |                                  |
| Outputs                   | PWM Outputs  
Digital Outputs  
H-Bridge Drivers  
Mass-Flow Valve Drivers  
Main Power Relays  
Injector Drivers  
Ignition Drivers          | 22 Low-Side; 1 High-Side  
11 Low-Side  
3  
2  
External up to 8 (either GDI or PFI)  
up to 8 (external coil) | 3 Low-Side; 14 High-Side  
16 Low-Side; 3 High-Side  
2  
N/A  
8 internal  
8 solenoid  
N/A |
|                           | CAN ETK                              | 3 HS (125k-1000k baud)  
High-speed memory emulator (optional) | 3 HS (125k-1000k baud)  
High-speed memory emulator (optional) |
| Communications            | Operating Temperature Range          | -40 to 85 °C (non ETK)  
Atmospheric pressure | -40 to 85 °C (non ETK)  
Atmospheric pressure |
| Environmental             |                                      |                                  |

Ordering Information

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