



easyBCU™

Automotive 32-bit Flash Microcontroller

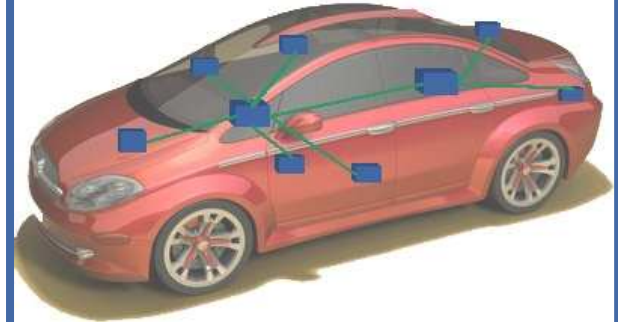
Targeting highly integrated Body Control Unit (BCU), Scaleo chip introduces **easyBCU™** System-on-Chip (SoC) family, successor of **easyCAN®** Interior & Body Microcontrollers delivered in millions to the automotive market.

Settled as a powerful Flash-based 32-bit Microcontrollers family, **easyBCU™** provides all the features set to support car electronics trends toward functions centralization and increasing in-car electronic control. **easyBCU™** helps solving automotive product designers challenges such as hardware and software performance requirements boost, while enabling drastic power consumption cut.

Built around the ARM® Cortex®-M3 processor, the **easyBCU™** family offers strong features for automotive software needs such as: efficient data manipulation operations, mixed 16-bit/32-bit instructions for optimum code density, short and predictable interrupt latency thanks to a tightly coupled interrupt controller featuring automated save and restore mechanism.

The first **easyBCU™** product introduced is **easyBCU6-F1536K**. It features large on-chip memory: 1.5 MByte program flash, 48 KByte isolated and secured data flash for EEPROM emulation and 80Kbyte of RAM. **easyBCU6-F1536K** comes with AUTOSAR compliant advanced automotive peripherals with a high degree of autonomy to off-load the CPU and reduce software complexity.

Scaleo chip provides a full AUTOSAR software support, including **easyBCU™** AUTOSAR MCAL and AUTOSAR OSEK.



Applications

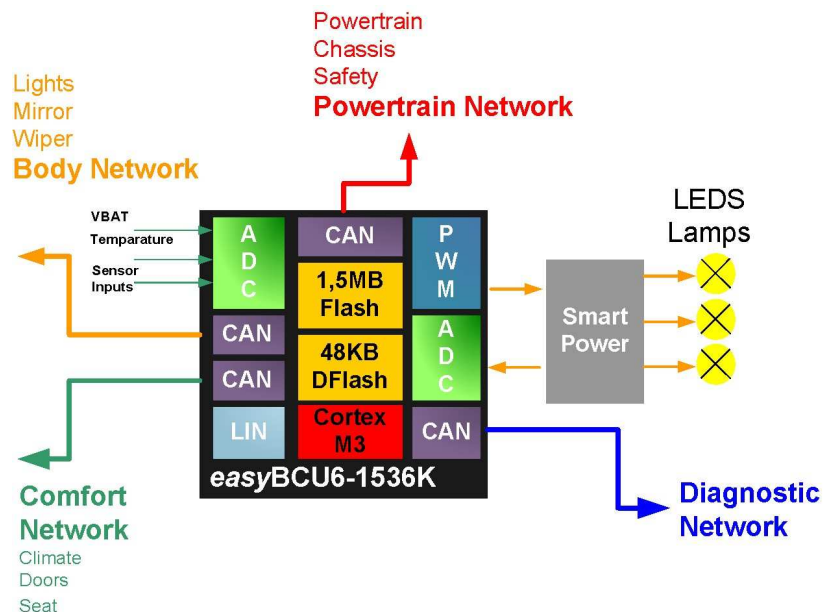
- ➔ Body Control Unit
- ➔ Central Body Gateway
- ➔ Door Control Unit
- ➔ Smart Junction Box
- ➔ Climate Control Unit

Features

- Best-in-class:
 - Processing performances
 - Code density
 - On-chip Flash capacity
 - Peripherals autonomy
 - Power Management system
- Fast interrupt system
- Fast wakeup
- Fault-Tolerant
- AUTOSAR OSEK Class IV ready
- Comprehensive AUTOSAR offer

easyBCU6-F1536K Highlights

- ARM® Cortex®-M3 processor
- On-chip 1,5 MByte Program Flash
- On-chip 48 KByte Secured Data Flash
- On-chip 80 KByte SRAM
- Memory Error Correction (ECC)
- Memory Protection Unit (MPU)
- Central Direct Memory Access (DMA)
- 6 channels 32 Mail-Boxes CAN
- 40 channels advanced ADC and PWM
- Internal 16MHz oscillator
- On-chip PMU with RTC
- -40° to +125° Operating conditions
- AEC-Q100 grade-1 qualification



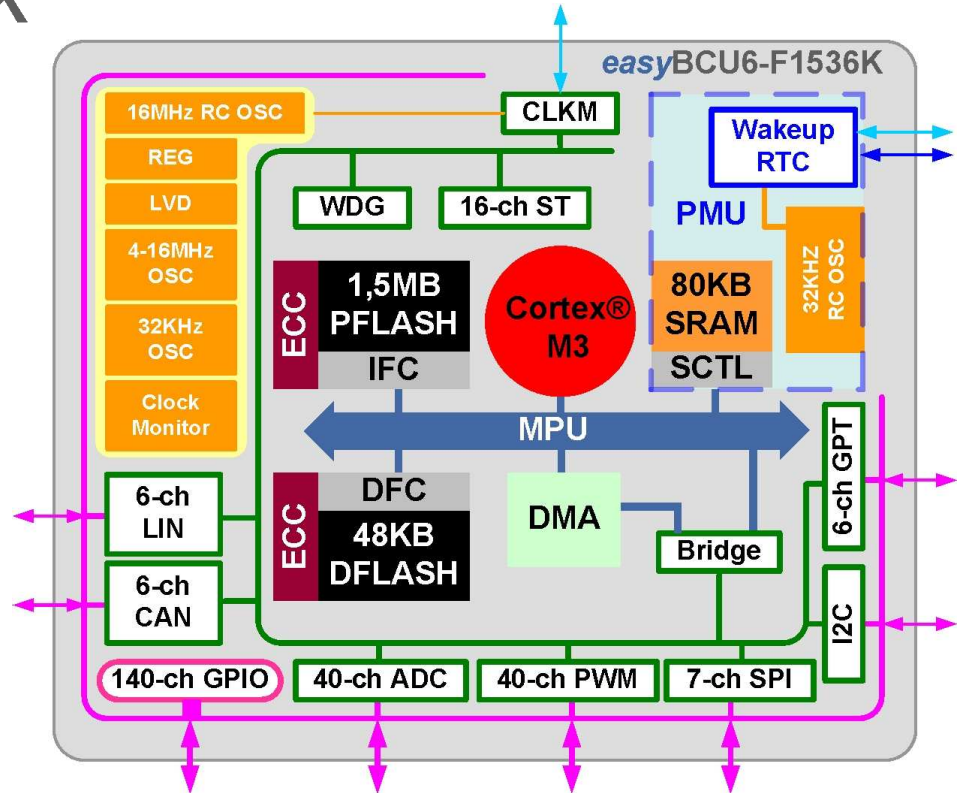


easyBCU6F1536K

Block diagram

Development support

- Evaluation board
- Development tools support:
 - ARM RealView® Suite
 - Lauterbach
 - Green Hills
- AUTOSAR Software
 - MCAL 2.1 & 3.1
 - OSEK 2.1 & 3.1
 - Eclipse based tools
 - Using CMMI L3 process
- MCU prototyping:
 - Fast2SoCModule™



Product details

- Cortex-M3 ARM® Thumb2 processor:
 - Up to 75 MHz
 - Built-in Interrupt controller
 - Built-in Memory Protection Unit
 - Single Instruction Multiple Data MAC unit
- On-chip Memories:
 - 1,5 MByte program flash
ECC: 1-bit correction / 2-bit detection
 - 48KByte data flash
ECC: 1-bit correction / 2-bit detection
 - 80 KByte of SRAM
- 16-ch Direct Memory Access (DMA)
- 6 channels 32 Mail-boxes CAN
 - CAN 2.0 A/B certified
- 6 channels LIN
 - LIN 1.2/1.3/2.0/2.1 certified
- 7-CS 8-bit/16-bit SPI, 3-ch full duplex
- 40 channels 10-bit ADC
 - Group management
 - PWM with analog feedback diagnosis
- 40-ch Pulse Width Modulation (PWM)
 - Configurable delays between channels
- 6-ch 16-bit General Purpose Timer (GPT)

- 8-ch 16-bit Simple Timer
- 16-bit Programmable Watchdog
- Low Power Management Unit (LPM)
 - RTC
 - Deep sleep mode management
 - 16 Wake-up source
- 140 General Purpose Input/Output (GPIO)
- Clock unit
 - 16-MHz internal oscillator
 - 32-KHz internal oscillator
 - Clock integrity and safety system
- Fully Static Operation
 - Unique 5 Volt supply
 - Power down mode
 - Voltage regulator
 - Low Voltage Detector (LVD)
 - Power On Reset (PoR)
 - -40° to +125°C Operating condition
- 176 lead free LQFP Package
- AEC-Q100 qualified

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