

## Features overview

### ARM7TDMI™ ARM Thumb processor core

- High performance 32-bit RISC
- High Density 16-bit Instruction Set Architecture (Thumb)
- Embedded ICE

### 8 Kbytes Internal RAM

### 256 Kbytes Internal Program Flash

### Lite Direct Memory Access (LDMA)

- 5 channels
- peripherals ⇔ memories transfers
- memory ⇔ memory transfers

### Clock generator with configurable PLL

### 16-level priority, Generic Interrupt Controller

- 10 external interrupt lines

### 3x16-bit General Purpose Timer (GPT)

- 3 configurable modes: counter, PWM, capture
- 3x16-bit capture/compare

### 4x16-bit Simple Timer (ST)

- 2 channels on peripheral clock
- 2 channels on Low frequency clock
- autoreload

### 16-bit Stamp timer (STT)

- CAN messages stamp on low frequency clock

### 16-bit Programmable Watchdog (WD)

### 16-bit Capture Modules (CAPT)

- 1 DMA channels

### 1 I<sup>2</sup>C Modules (I2C)

- 400Kbit/s in fast mode & 100Kbit/s in normal mode

### 4 Pulse Width Modulation (PWM)

- channel 16-bit counter

### 1 CAN controllers certified 2.0A and 2.0B full speed

- 32 buffers each
- Stampable message

### 2 UART-LIN

- Full LIN 1.2 and 2.0 hardware support
- 5 to 9-bits data length
- J1587 protocol support
- 1 UART with synchronous transfer support
- 3 DMA channel

### 2 Master/Slave Serial Port Interface (SPI)

- 1 SPI 1 to 8 bit programmable data length
- 1 SPI 8 to 16-bit programmable data length
- 4 channel DMA

### 16 channel 10-bit Analog/Digital Converters (ADC)

- 16 analog inputs.
- 10-bit +/- 1 LSB DNL in worst condition
- 10-bit +/- 1 LSB INL in worst condition
- 1 DMA channel
- 500KSps
- 1 conversion register per channel

### Clock Manager (CM)

- Internal ring oscillator @1MHz control
- Phased-Locked Loop control (PLL)
- Peripheral and CPU clock gating control
- Power-Mode control :
  - Idle mode: only CPU clock stop
  - Normal and High speed mode
  - Stop mode: selected clocks stop
  - Sleep/Lowpower Modes
- Clock monitor

### 59 multiplexed GPIO

### Power On Reset (POR)

### Low Voltage Detector (LVD)

- Interrupt and reset generation

### Fully Static Operation: 0Hz to 20MHz

- Only 5V supply for Core and IOs
- 3.0~5.5V IOs
- -40° to +105°C Operating Temperature Range

### 100-lead free LQFP Package

### AEC-Q100 qualification

### Mass production released

## easyCAN1F concept

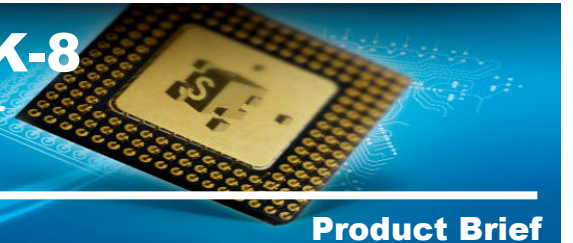
The *easyCAN1F* belongs to the *easyCAN* product family. The *easyCAN* family is supported by a platform of tools and product that includes:

- A development tool based on Scaleo chip FCM3 enabling accurate prototyping, emulation and validation
- Chip Support Package sw drivers (CSP)

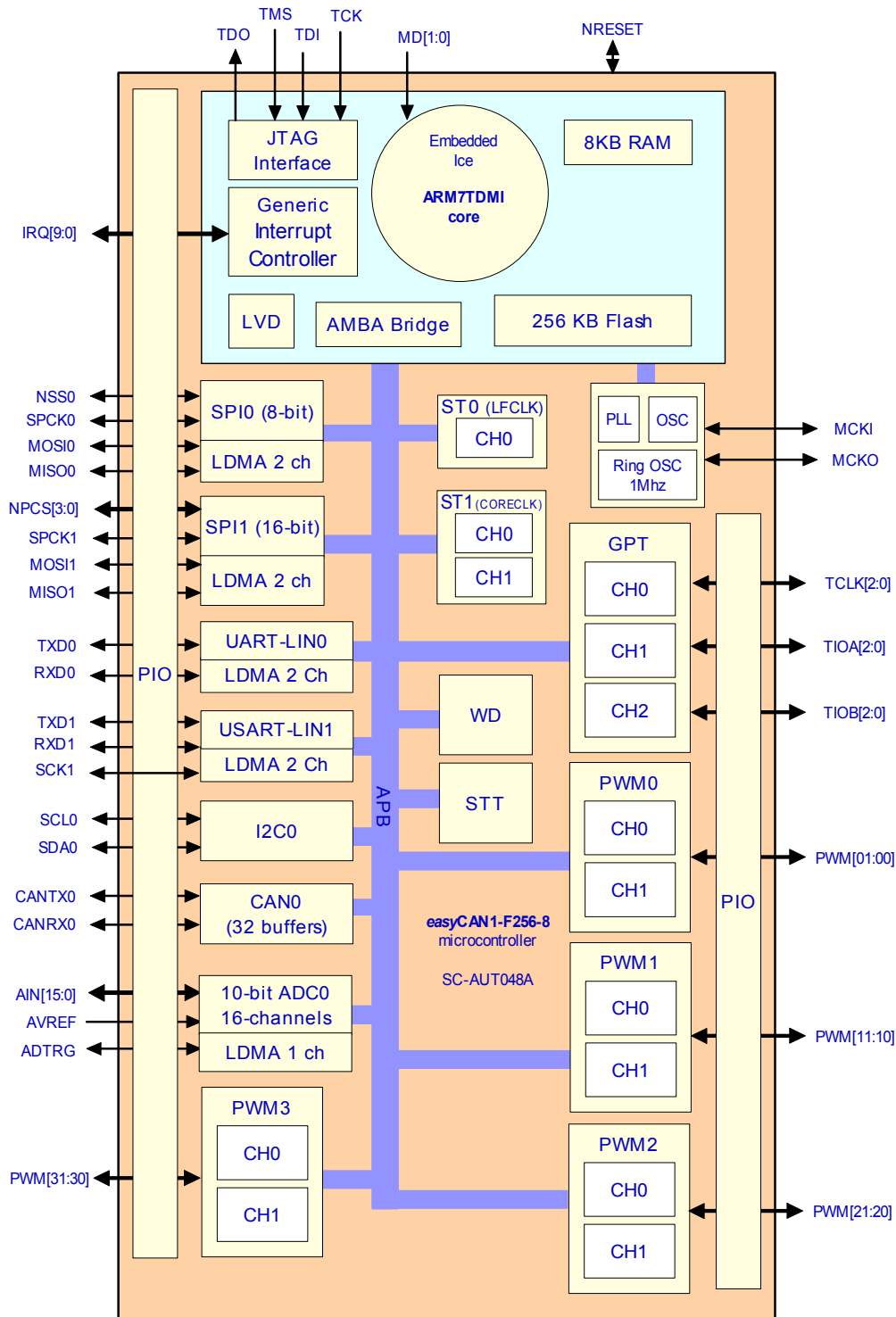
The *easyCAN1F* is based on a ARM7TDMI™ embedded processor that combines the high performance of a 32-bit RISC together with the high code density of its 16-bit instruction and a very low power consumption.

The *easyCAN1F* embeds all necessary RAM and Flash memories for maximum performance with an optimised system cost. Real-time software is efficiently handled thanks to a collection of sophisticated peripheral modules.

The device is manufactured using high density CMOS technology. By combining ARM7TDMI™ core with on-chip RAM, Flash and a wide range of peripheral functions on a monolithic chip, the Scaleo chip *easyCAN1F* is a powerful microcontroller that provides a flexible, cost effective solution to compute-intensive embedded control applications in the automotive and industrial world.



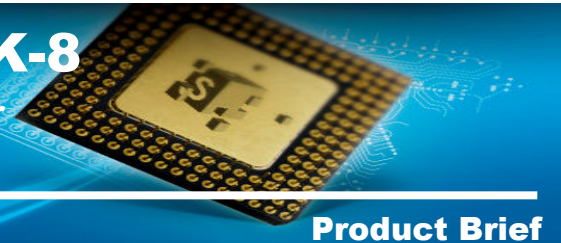
### Block diagram





# easyCAN1 F256K-8

## Automotive Microcontroller



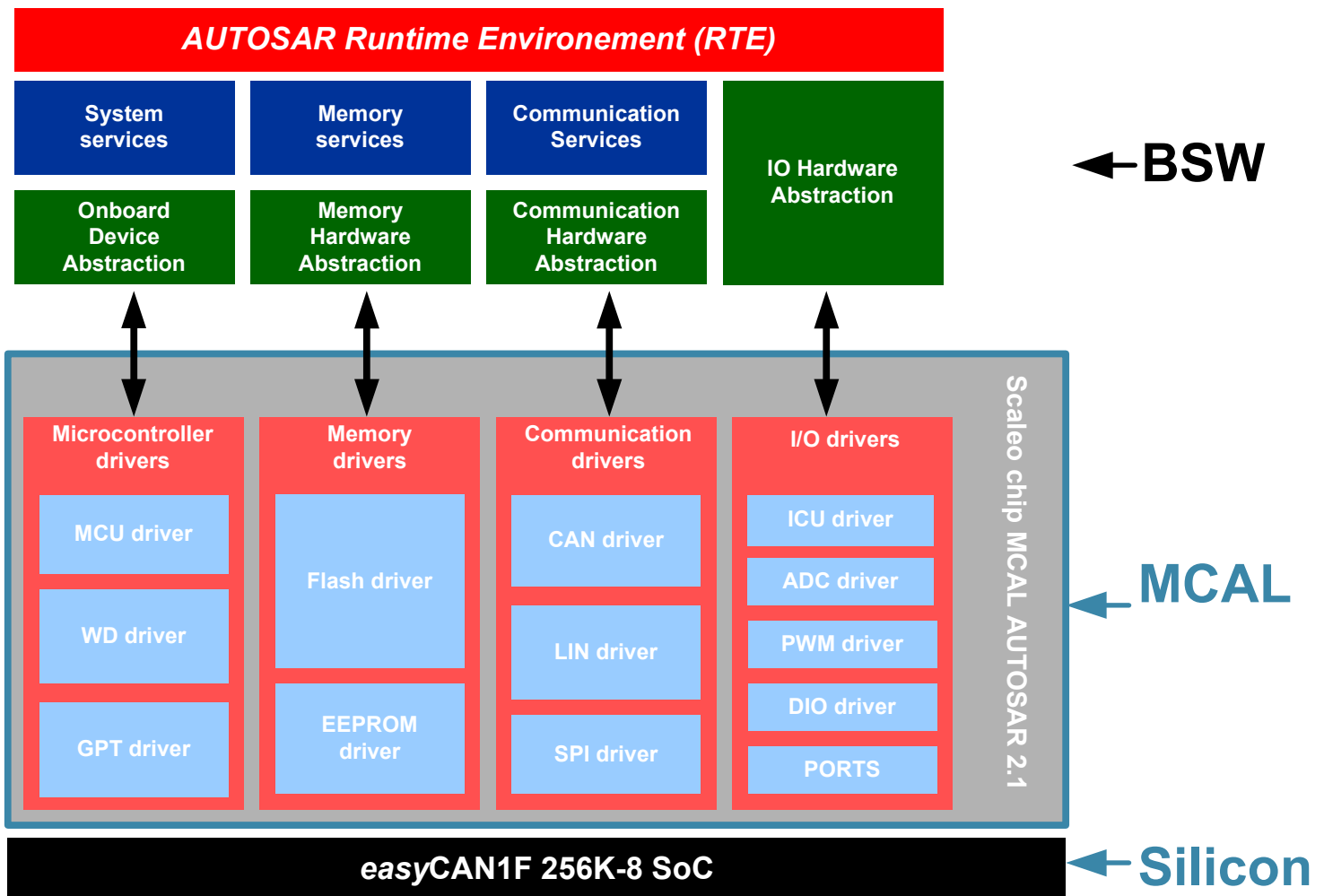
Product Brief

### AUTOSAR MCAL package

Scaleo chip offers AUTOSAR Micro-controller Abstraction Layer (MCAL) software conforming to the AUTOSAR R2.1 standard. Thanks to its knowhow on its automotive silicon product Scaleo chip develops optimized MCAL software to enable the best hardware features utilization.

Scaleo chip MCAL AUTOSAR R2.1 package:

- Optimized MCAL, enabling all hardware resources.
- CMMI level 3 development process.
- Software MCAL code source
- AUTOSAR template files
- Software MCAL datasheet
- Software MCAL test specification and criteria
- Software unitary tests
- Software Integration tests
- Software MCAL test reports



Product Status: **Mass production**