



## XC822/XC836

### Smart 8-bit Microcontrollers for Automotive Applications

The XC82x-Series and the XC83x-Series is the advanced entry level for Infineon's 8-bit microcontroller family XC800 running at 24MHz. A comprehensive set of peripherals with 2KB and 8KB Flash memory is now available in low pin count packages.

Communication interfaces and fast control loops with multichannel 10-bit ADCs and PWM signal generation are featured as well as safety and low power modes. The MDU co-processor boosts up standard 8-bit processing performance. This enables more efficient and intelligent designs for low cost motor control or any kind of satellite  $\mu$ C applications.

With the I<sup>2</sup>C interface and the integrated capacitive touch control functionality the XC82x/XC83x expands the feature set of the XC800 family to address new areas in the automotive and motorcycle market.

#### Applications

- Low cost motor control
  - Brushless DC motors with advanced commutation to drive e.g. pumps, fans
  - Direct operation of stepper motors for low cost stepper gauges/dashboards
- Automotive capacitive touch /haptic control
  - Dimming and color control of high brightness LEDs e.g. interior lighting
  - Control of door pannel like window lift, mirror
  - Sun roof control
  - Seat control
  - Center stack control e.g. HVAC
  - Backlighting control e.g. dashboard
- Motorcycle
  - Motorcycle BCM
  - Motorcycle dashboard
  - CDI (Capacitor Discharger Ignition)

[www.infineon.com/XC800](http://www.infineon.com/XC800)

#### Key Features

##### XC82x-Series

- Touch control with advanced ROM-library
- MDU for additional performance and advanced control like sinusoidal commutation of motors
- 10-bit ADC with high accuracy over 4 channels. Fast conversion in 1 $\mu$ s
- Capture/Compare Unit (CCU6) dedicated for flexible PWM signal generation over 4 channels
- Direct HW-link between ADC and CCU6 for fast control loops
- Serial interfaces: UART, SPI, I<sup>2</sup>C
- Power down/wake up modes
- Real time clock
- Background E<sup>2</sup>PROM emulation

##### XC83x-Series

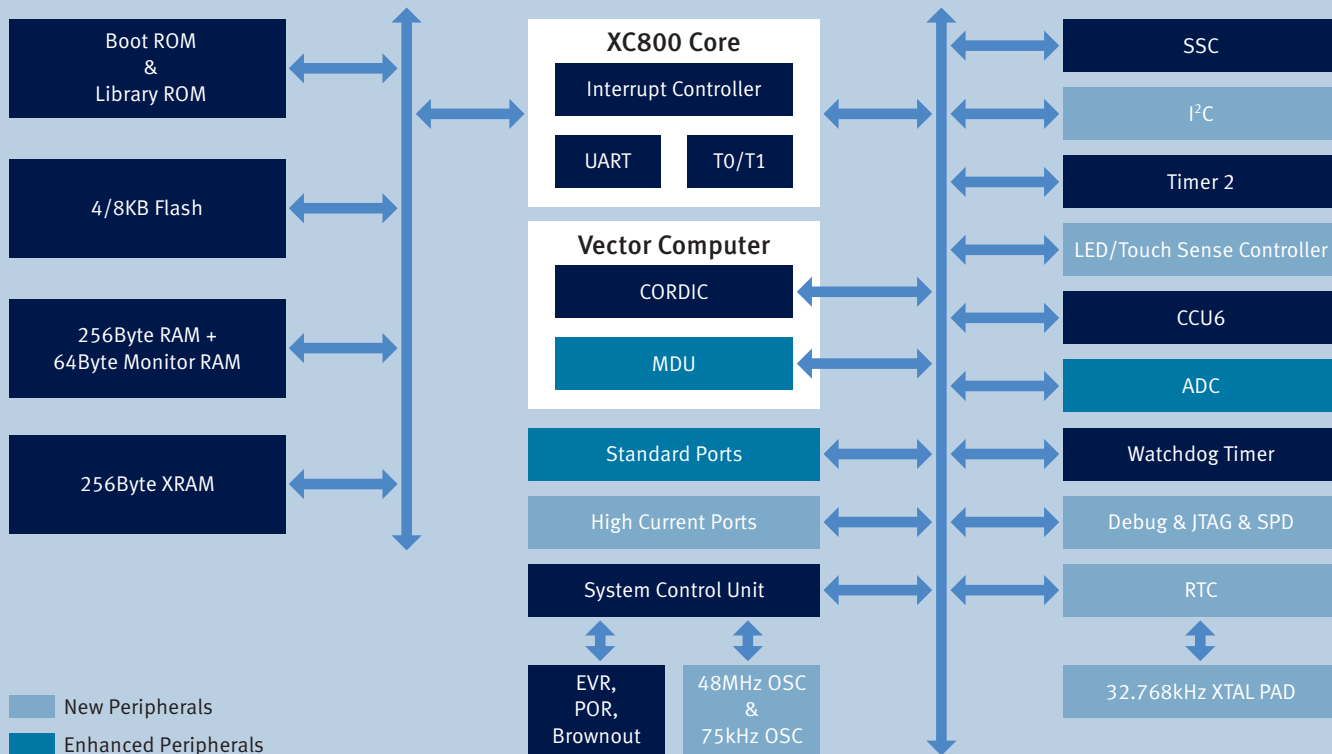
- Touch control with advanced ROM-library
- Vector computer co-processor for field oriented control of sensor less motors
- 10-bit ADC with high accuracy over 8 channels. Fast conversion in 1 $\mu$ s
- Capture/Compare Unit (CCU6) dedicated for flexible PWM signal generation over 4 channels
- Direct HW-link between ADC and CCU6 for fast control loops
- Serial interfaces: UART, SPI, I<sup>2</sup>C
- Power down/wake up modes
- Real time clock
- High current pads to directly drive stepper motors or LED-displays (up to 50mA)
- Background E<sup>2</sup>PROM emulation

The XC82x/XC83x-Series is fully supported by Infineon's free tool chain DAVE™ Bench for fast time to market.

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Block Diagram XC836



### Availability

Product	Flash [KB]	ADC	Co-Processor	50mA Ports	Temperature Range [°C]	Package	AEC Q100
SAK-XC822MT-0FRA	2	8ch/10bit	yes	no	-40 ... 125	PG-TSSOP-16	yes
SAK-XC822MT-1FRA	4	8ch/10bit	yes	no	-40 ... 125	PG-TSSOP-16	yes
SAK-XC836MT-1FRA	4	8ch/10bit	yes	6	-40 ... 125	PG-TSSOP-28	yes
SAK-XC836MT-2FRA	8	8ch/10bit	yes	6	-40 ... 125	PG-TSSOP-28	yes

Published by  
Infineon Technologies AG  
85579 Neubiberg, Germany

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Order Number: B158-H9514-X-X-7600  
Date: 08 / 2010

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