XC822/XC824

Smart 8-bit Microcontrollers for Industrial Applications

The XC82x-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 4KB 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 motor control, lighting or other power conversion applications.

With the I²C interface and the integrated capacitive touch control functionality the XC822 and XC824 expand the feature set of the XC800 family to fit more industrial and home appliance markets.

Applications

- Efficient Drives & Automation
  - Brushless motors with advanced commutation to drive e.g. machine tools, pumps, compressors and fans
  - Automation networks for industrial production or building services
- Intuitive human machine interfaces
  - Multi gestural touch screens for industrial automation, medical devices or POS terminals
  - Integrated control elements with motor control, communication or power conversion functionality
- Intelligent Lighting
  - Dimming and color control of high brightness LEDs
  - Power, ignition or wear out control of HID
  - Lighting communication networks
- Smart Power Management
  - Efficient power conversion
  - Battery management
  - Induction cooking

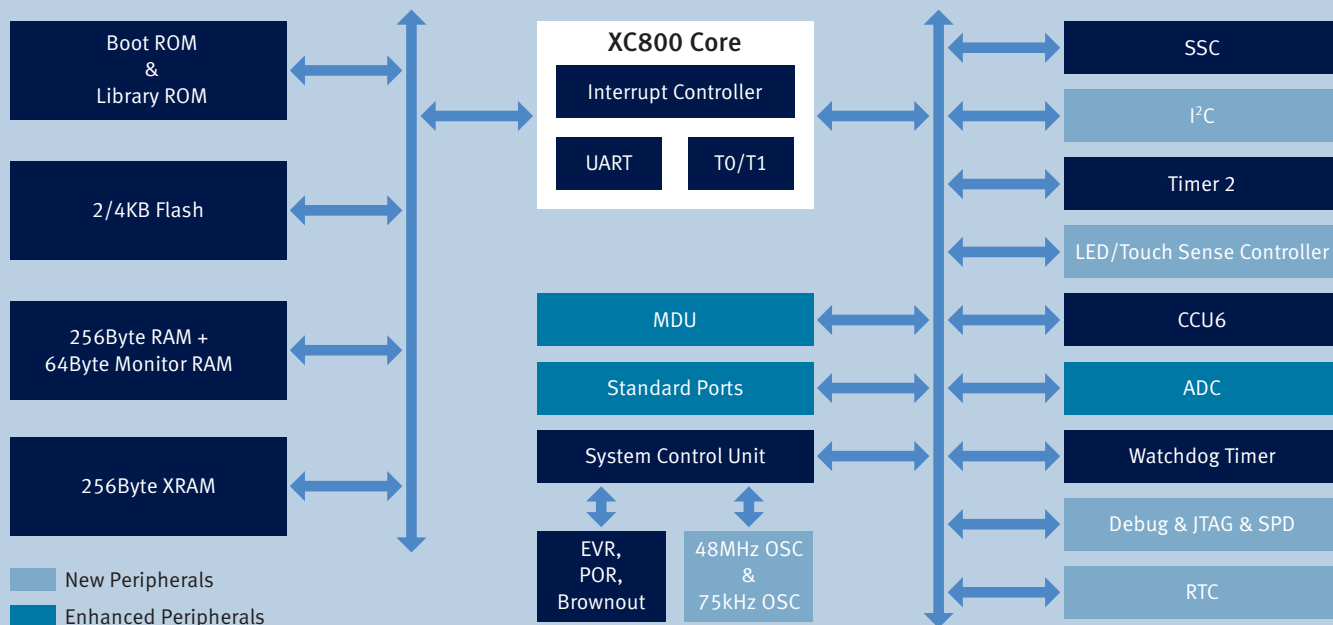www.infineon.com

Key Features

- 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 1µs.
- 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, I²C
- Power down/wake up modes
- Real time clock
- Background E²PROM emulation

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

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Block Diagram

| Boot ROM & Library ROM |
| 2/4KB Flash |
| 256Byte RAM + 64Byte Monitor RAM |
| 256Byte XRAM |

XC800 Core
- Interrupt Controller
- UART
- T0/T1

- MDU
- Standard Ports
- System Control Unit
- EVR, POR, Brownout
- 48MHz OSC & 75kHz OSC

- SSC
- I^{2}C
- Timer 2
- LED/Touch Sense Controller
- CCU6
- ADC
- Watchdog Timer
- Debug & JTAG & SPD
- RTC

■ New Peripherals
■ Enhanced Peripherals

Availability

Sales Code	Flash [KB]	Touch Control	MDU	Temperature [°C]	Package
SAF-XC822T-0FRI	2	yes	no	-40 … 85	PG-TSSOP-16
SAF-XC822-1FRI	4	no	no	-40 … 85	PG-TSSOP-16
SAF-XC822T-1FRI	4	yes	no	-40 … 85	PG-TSSOP-16
SAF-XC822M-1FRI	4	no	yes	-40 … 85	PG-TSSOP-16
SAF-XC824M-1FGI	4	no	yes	-40 … 85	PG-DSO-20
SAF-XC824MT-1FGI	4	yes	yes	-40 … 85	PG-DSO-20
SAK-XC824M-1FGI	4	no	yes	-40 … 125	PG-DSO-20
SAF-XC822MT-1FRI	4	yes	yes	-40 … 85	PG-TSSOP-16

Information For further information on technology, delivery terms and conditions and prices, please contact the nearest Infineon Technologies Office (www.infineon.com).

Warnings Due to technical requirements, components may contain dangerous substances. For information on the types in question, please contact the nearest Infineon Technologies Office. Infineon Technologies components may be used in life-support devices or systems only with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.