Product brief

XMC7000 Industrial Microcontrollers

The XMC7000 is the latest entry in Infineon's industrial microcontroller portfolio, equipped with peripherals such as CAN-FD, TCPWM and Gb Ethernet, which increase flexibility and offer added value. The XMC7000 architecture is built on a low-power 40-nm process technology and the MCUs offer best-in-class compute performance addressing high-end industrial applications.

The XMC7000 offers both single and dual-core Arm® Cortex®-M7 options, supported by a Arm® Cortex®-M0+ enabling designers to optimize their end products to meet the dynamic and demanding business conditions of industrial applications. The advanced peripheral set and robust security features make it attractive to customers, who need a high-quality MCU platform. The MCU is able to operate in harsh environments with a temperature range of -40°C to 125°C, and it is ideal for power critical applications based on its low-power modes, which go down to 8µA. The flexible XMC7000 comes in four package/pin types with 17 part number variants to meet many design requirements.

The XMC7000 family comes in 2 series: XMC7100 and XMC7200, and it is available in TQFP and LFBGA packages scaling from 100 to 272 pins. The XMC7200 integrates Gigabit Ethernet, providing real-time ethernet communications and reliable connectivity for always on applications. The XMC7000 family is ideal for motor control, digital power conversion and I/O applications.
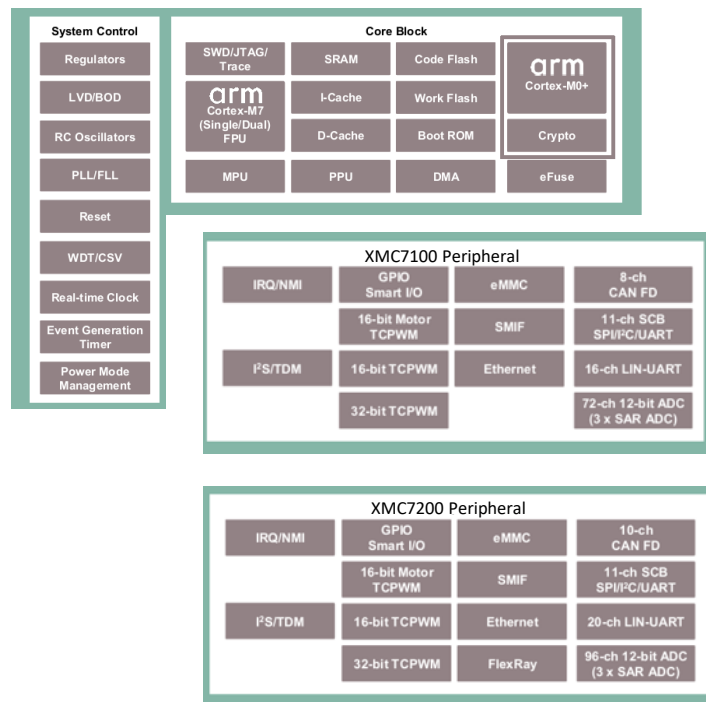
Key XMC™ 7000 family features

- Best-in-class performance, enabling task distribution
- XMC7000 delivers real-time control to meet even the most demanding industrial applications
- The advanced TCPWM is ideal for sophisticated motor control applications
- High-quality platform that operates in harsh environments -40°C to 125°C
- Broad offering of core, memory and package combinations for design flexibility

Key applications

Industrial Drives & Robotics	General purpose drives (GPD), Servo Drives, Medium Voltage Drives (MVD), Sensor nodes, Service robots, Industrial robots
EV-charging	AC or DC charging, Wallbox, Charging cable, Fast charging station, Inductive chargers, Power supply
Electric Two-Wheeler	Battery management system
PLC	Programmable Logic Control (PLC), I/O Modules

Silicon	Description
XMC7100-F100K1088AA	Single Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), TQFP 100pins, 1MB Flash
XMC7100-F100K2112AA	Single Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), TQFP 100pins, 2MB Flash
XMC7100-F100K4160AA	Single Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), TQFP 100pins, 4MB Flash
XMC7100D-F100K2112AA	Dual Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), TQFP 100pins, 2MB Flash
XMC7100D-F100K4160AA	Dual Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), TQFP 100pins, 4MB Flash
XMC7100-F144K2112AA	Single Core Arm® Cortex® M7(+ Arm® Cortex®-M0+), TQFP 144pins, 2MB Flash
XMC7100-F144K4160AA	Single Core Arm® Cortex® M7(+ Arm® Cortex®-M0+), TQFP 144pins, 4MB Flash
XMC7100D-F144K2112AA	Dual Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), TQFP 144pins, 2MB Flash
XMC7100D-F144K4160AA	Dual Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), TQFP 144pins, 4MB Flash
XMC7100-F176K4160AA	Single Core Arm® Cortex® M7(+ Arm® Cortex®-M0+), TQFP 176pins, 4MB Flash
XMC7100D-F176K4160AA	Dual Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), TQFP 176pins, 4MB Flash
XMC7100-E272K4160AA	Single Core Arm® Cortex® M7(+ Arm® Cortex®-M0+), LBGA 272pins, 4MB Flash
XMC7100D-E272K4160AA	Dual Core Arm® Cortex® M7(+ Arm® Cortex®-M0+), LFBGA 272pins, 4MB Flash
XMC7200-F176K8384AA	Single Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), TQFP 176pins, 8MB Flash
XMC7200D-F176K8384AA	Dual Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), TQFP 176pins, 8MB Flash
XMC7200-E272K8384AA	Single Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), LFBGA 272pins, 8MB Flash
XMC7200D-E272K8384AA	Dual Core Arm® Cortex® M7 (+Arm® Cortex®-M0+), LFBGA 272pins, 8MB Flash

System Control
- Regulators
- LVD/BOD
- RC Oscillators
- PLL/FLL
- Reset
- WDT/CSV
- Real-time Clock
- Event Generation Timer
- Power Mode Management

Core Block
- SWD/JTAG/Trace
- arm Cortex-M7 (Single/Dual) FPU
- SRAM
- I-Cache
- D-Cache
- MPU
- PPU
- Code Flash
- Work Flash
- Boot ROM
- DMA
- arm Cortex-M0+
- Crypto
- eFuse

XMC7100 Peripheral
- IRQ/NMI
- GPIO Smart I/O
- eMMC
- 8-ch CAN FD
- 16-bit Motor TCPWM
- SMIF
- 11-ch SCB SPI/I²C/UART
- I²S/TDM
- 16-bit TCPWM
- Ethernet
- 16-ch LIN-UART
- 32-bit TCPWM
- 72-ch 12-bit ADC (3 x SAR ADC)

XMC7200 Peripheral
- IRQ/NMI
- GPIO Smart I/O
- eMMC
- 10-ch CAN FD
- 16-bit Motor TCPWM
- SMIF
- 11-ch SCB SPI/I²C/UART
- I²S/TDM
- 16-bit TCPWM
- Ethernet
- 20-ch LIN-UART
- 32-bit TCPWM
- FlexRay
- 96-ch 12-bit ADC (3 x SAR ADC)