

XMC7000



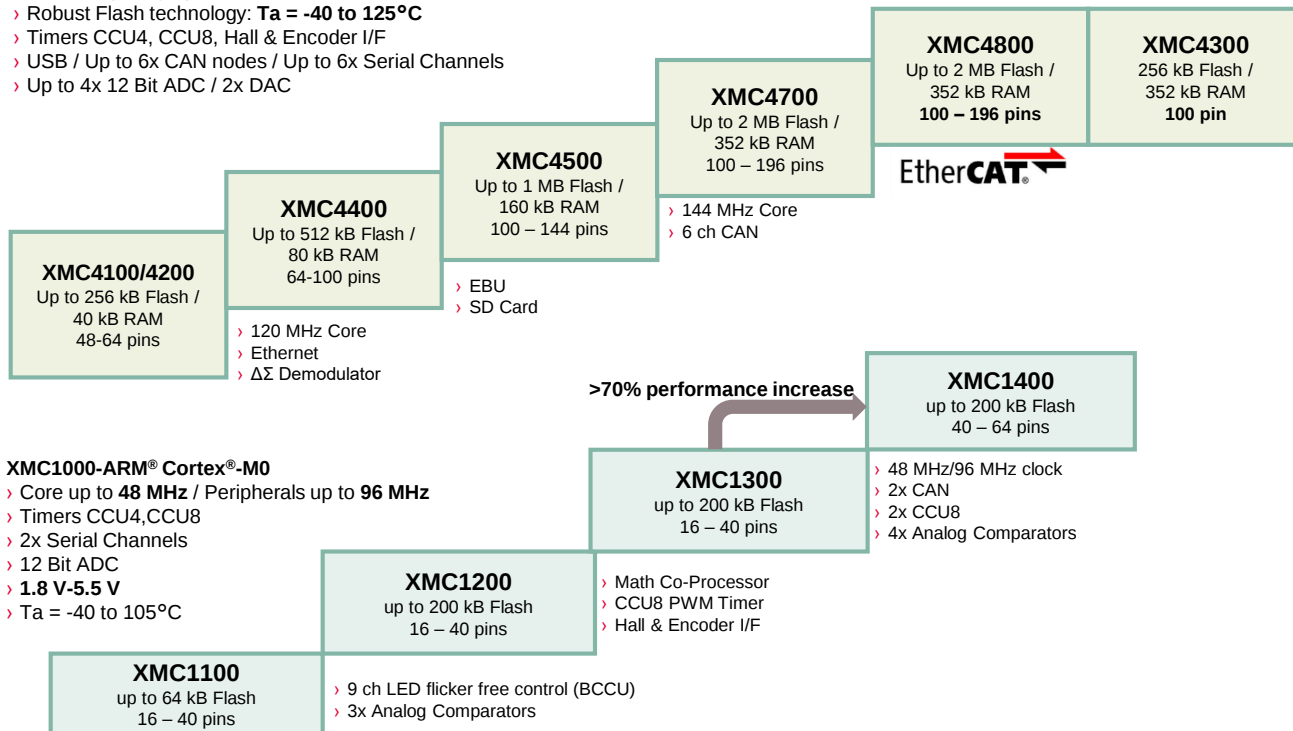
IFAG CSS ICW MCU IMS



XMC7000 Extends XMC™ Portfolio

XMC4000-ARM® Cortex®-M4 (with FPU)

- › CPU Frequency up to **144 MHz**
- › Robust Flash technology: **Ta = -40 to 125°C**
- › Timers CCU4, CCU8, Hall & Encoder I/F
- › USB / Up to 6x CAN nodes / Up to 6x Serial Channels
- › Up to 4x 12 Bit ADC / 2x DAC



XMC1000-ARM® Cortex®-M0

- › Core up to **48 MHz** / Peripherals up to **96 MHz**
- › Timers CCU4, CCU8
- › 2x Serial Channels
- › 12 Bit ADC
- › **1.8 V-5.5 V**
- › Ta = -40 to 105°C

XMC7100

4 MB Flash / 768 kB RAM,
250 MHz single/dual core
100 – 272 pin (QFP/BGA)

XMC7200

8 MB Flash / 1 MB RAM,
350 MHz single/dual core
176 – 272 pin (QFP/BGA)

- › **Single and dual core** Arm® Cortex®-M7 and Cortex®-M0+
- › M7 CPU core Frequency up to **350 MHz**
- › Temperature range: **Ta = -40 to 125°C**
- › **Read While Write (RWW)** Flash capability
- › Memory Up to **8 MB Flash, 1 MB RAM**
- › **TCPWM** timers of 102Ch 16 bit and 16Ch 32 bit
- › **Cryptography** Engine support
- › Interfaces such as CAN-FD, **Gb Ethernet**
- › **SMIF** and SDHC interface supported
- › Extended voltage operating range: **2.7 to 5.5V**
- › low power modes(LP/deep sleep, **hibernate..**)
- › Add. timer, ADC, CAN FD and Serial COM. Chs



XMC7100 series

SYSTEM				
ARM® Cortex-M7 (Single/Dual) FPU 250MHz	1M-4M RWW code flash	I-Cache D-Cache	Power Mode Management	PLL/FLL
	256kB work flash	DMA	LVD/BOD	RC Oscillators
ARM® Cortex-M0+ 100MHz Crypto	512-768 kB SRAM	MPU, PPU	RTC	Event Generation Timer
	Boot ROM eFuse	HSM	WDT	SWD/JTAG/Trace

REAL TIME CONTROL	
16-bit TCPWM	up to 72-ch ADC (3x SAR ADC)
32-bit TCPWM	Programmable trigger matrix
16-bit Motor TCPWM	

PERIPHERALS		
GPIOs	Smart I/Os	8-ch CAN-FD
SMIF	eMMC	I2S/TDM
Up to 11-ch SCB	Ethernet	

Description

Applications / Target Markets

- Industrial motor control and drives, inverters/converters (UPS, solar), High-end eBikes, LEVs, eV Chargers, PLCs

Feature highlights

- 32-bit MCU Core System**
 - Single/Dual 250-MHz Arm® Cortex®-M7 and 100MHz Cortex®-M0+
 - Up to 4-MB Flash, up to 768-kB SRAM, I/D-Cache
- 2.7-V to 5.5-V** Supply Voltage
- Up to 125°C** extended temperature range
- Interfaces:**
 - Up to 8-ch CAN FD, up to 11-ch SCB
 - eMMC, SMIF (QSPI/HS-SPI), 1-ch 10/100 Mbit Ethernet
- AD Converter**
 - Up to 72-ch, 12-bit with 3x successive approximation ADC (SAR ADC) units
- Timers**
 - Up to 12-ch 16-bit motor control, 63-ch 16-bit timer/counter/pulse-width modulation (TCPWM), and 8-ch 32-bit TCPWM
 - Event Generation Timer

Packages



QFP-100
QFP-144
QFP-176



BGA-272

XMC7200 series

SYSTEM				
ARM® Cortex-M7 (Single/Dual) FPU 350MHz	8MB RWW code flash	I-Cache D-Cache	Power Mode Management	PLL/FLL
	256kB work flash	DMA	LVD/BOD	RC Oscillators
ARM® Cortex-M0+ 100MHz Crypto	1MB SRAM	MPU, PPU	RTC	Event Generation Timer
	Boot ROM eFuse	HSM	WDT	SWD/JTAG/Trace

REAL TIME CONTROL	
16-bit TCPWM	up to 96-ch ADC (3x SAR ADC)
32-bit TCPWM	Programmable trigger matrix
16-bit Motor TCPWM	

PERIPHERALS		
GPIOs	Smart I/Os	10-ch CAN-FD
SMIF	eMMC	I2S/TDM
Up to 11-ch SCB	Gb Ethernet	

Description

Applications / Target Markets

- › Industrial motor control and drives, inverters/converters (UPS, solar), LEVs, eV Chargers, PLCs

Feature highlights

- › **32-bit MCU Core System**
 - Single/Dual 350-MHz Arm® Cortex®-M7 and Cortex®-M0+
 - Up to 8-MB Flash, up to 1MB SRAM, I/D-Cache
- › **2.7-V to 5.5-V** Supply Voltage
- › **Up to 125°C** extended temperature range
- › **Interfaces:**
 - Up to 10-ch CAN FD, up to 11-ch SCB
 - eMMC, SMIF (QSPI/HS-SPI), up to 2-ch 10/100/1000 Mbit Ethernet
- › **AD Converter**
 - Up to 96-ch, 12-bit with 3x successive approximation ADC (SAR ADC) units
- › **Timers**
 - Up to 15-ch 16-bit for motor control, 87-ch 16-bit timer/counter/pulse-width modulation (TCPWM) and 16-ch 32-bit TCPWM
 - Event Generation Timer

Packages



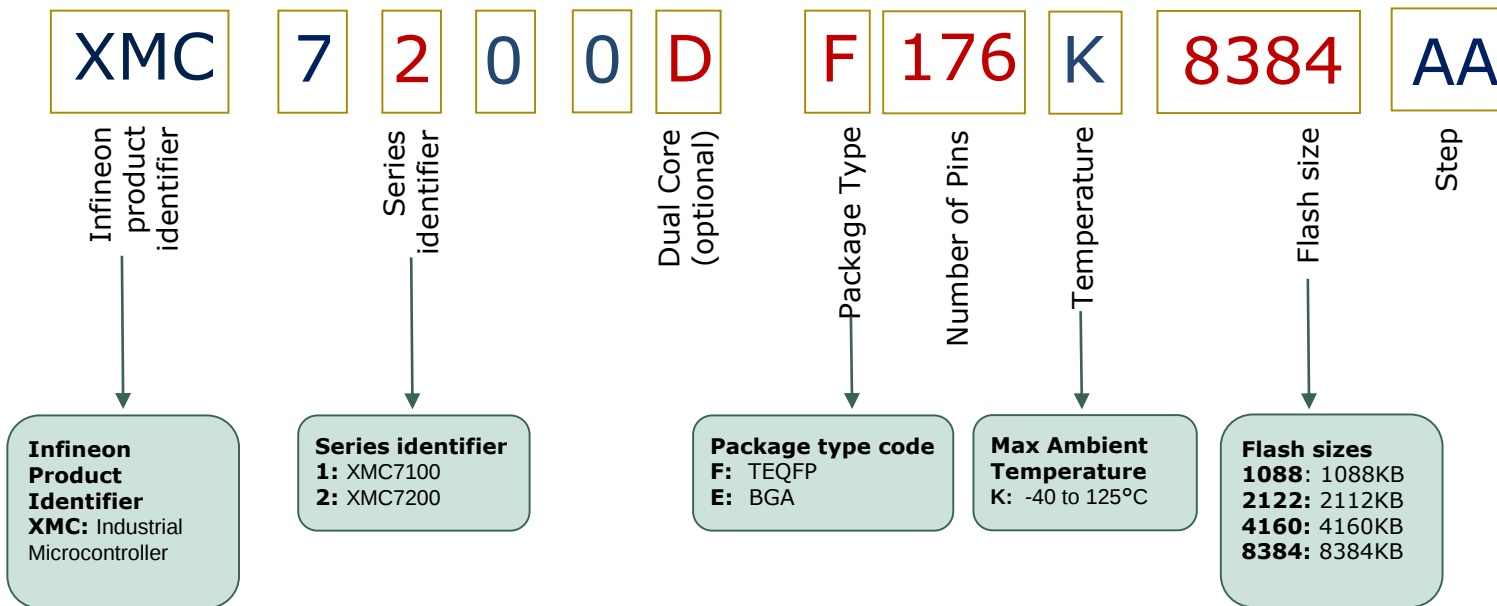
Key features and benefits



Infineon's XMC7000 at a glance: high quality grade industrial MCU platform

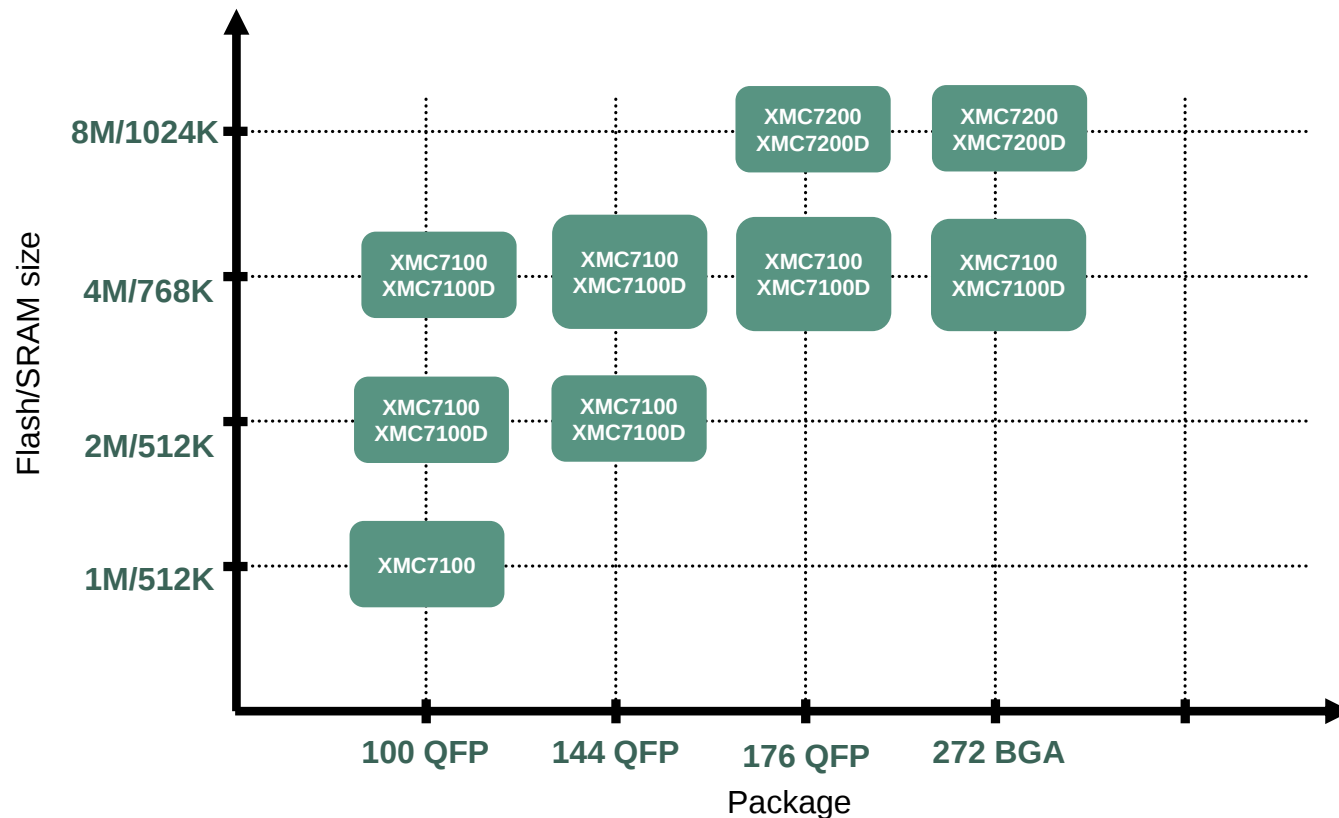
Key features	Key benefits	Value
Single/Dual Cortex®-M7 Arm® cores, up to 350MHz and memory up to 8MB	› Perfect fit for demanding industrial application use cases › Higher processing performance › Ability of task distribution	Best-in-class compute performance
Comprehensive set of advanced peripherals (ADCs, TCPWM Timers) along with competitive set of security offering	› Real time control › Optimal solution for motor control & power conversion applications › Advanced security options	Allowing developers to create feature optimized end products.
High quality and temperature grade of 125°C in combination with lower-power modes down to 8µA	› Low power to support electrification and digitization › Power saving in energy-critical applications › Ability to operate in high ambient environments	Increased flexibility and quality
Four footprint versions available in 17 different part numbers	› XMC7000 is easy to adapt on existing PCB › Different core/memory/package combinations	Optimal device arrangement

XMC7000 Part number coding



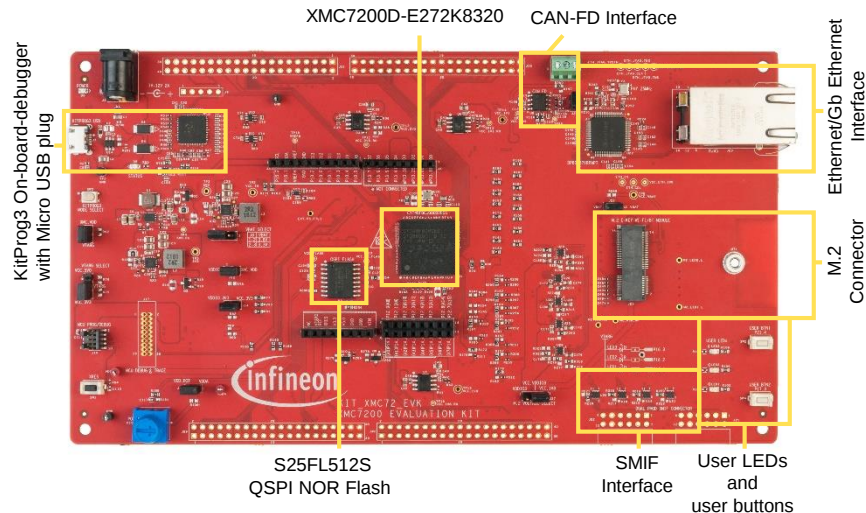
Available part numbers
XMC7100-F100K1088AA
XMC7100-F100K2112AA
XMC7100-F100K4160AA
XMC7100D-F100K2112AA
XMC7100D-F100K4160AA
XMC7100-F144K2112AA
XMC7100-F144K4160AA
XMC7100D-F144K2112AA
XMC7100D-F144K4160AA
XMC7100-F176K4160AA
XMC7100D-F176K4160AA
XMC7100-E272K4160AA
XMC7100D-E272K4160AA
XMC7200-F176K8384AA
XMC7200D-F176K8384AA
XMC7200-E272K8384AA
XMC7200D-E272K8384AA

XMC7000 portfolio matrix



The XMC7200 Evaluation Kit

XMC7200 Evaluation Kit



Applications



Features

- Evaluation board for XMC7200D-E272K8384 dual-core ARM® Cortex-M7 device running up to 350MHz
- Full system approach on the board, featuring Gigabit Ethernet PHY and connector, CAN-FD transceiver, NOR flash memories, user LEDs, buttons and potentiometers
- Modular system enablement through Arduino and M.2 connectors

Customer Benefits

- Out-of-the box experience with on-board-debugger and DC power supply provided
- Full integration in Modus Toolbox IDE through Board Support Package (BSP)
- Easy access and evaluation of all peripherals using code examples available in BSP
- Arduino and M.2 ecosystem access



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