Welcome to E-XFL.COM

What is "Embedded - Microcontrollers"?

"Embedded - Microcontrollers" refer to small, integrated circuits designed to perform specific tasks within larger systems. These microcontrollers are essentially compact computers on a single chip, containing a processor core, memory, and programmable input/output peripherals. They are called "embedded" because they are embedded within electronic devices to control various functions, rather than serving as standalone computers. Microcontrollers are crucial in modern electronics, providing the intelligence and control needed for a wide range of applications.

Applications of "Embedded - Microcontrollers"

Details	
Product Status	Discontinued at Digi-Key
Core Processor	XCore
Core Size	32-Bit 16-Core
Speed	2000MIPS
Connectivity	RGMII, USB
Peripherals	-
Number of I/O	67
Program Memory Size	-
Program Memory Type	ROMless
EEPROM Size	-
RAM Size	256K x 8
Voltage - Supply (Vcc/Vdd)	0.95V ~ 3.6V
Data Converters	-
Oscillator Type	External
Operating Temperature	-40°C ~ 85°C (TA)
Mounting Type	Surface Mount
Package / Case	128-TQFP Exposed Pad
Supplier Device Package	128-TQFP (14x14)
Purchase URL	https://www.e-xfl.com/product-detail/xmos/xe216-256-tq128-i20

xCORE-200 XE/XEF Ethernet + USB

A new generation of high performance Ethernet-enabled multicore microcontrollers

FEATURES

Multicore compute with up to 2000MIPS (16 core) and 4000MIPS (32 core) performance.

Hardware Response™ ports provide flexible, high-performance configurable I/O capability.

Integrated Gb Ethernet RGMII interface.

Integrated USB 2.0 PHY for high and full-speed host and device operation.

Up to 1024KB on-board memory for demanding applications.

Embedded flash option – up to 2048KB on-board.

Free software library support to implement your exact mix of peripherals.

Easy to use with our free xTIMEcomposer Studio™ tools.

The xCORE-200™ Gigabit Ethernet family of devices (XE and XEF) extends the popular xCORE™ architecture to provide increased performance, memory footprint and flexibility for the most demanding applications.

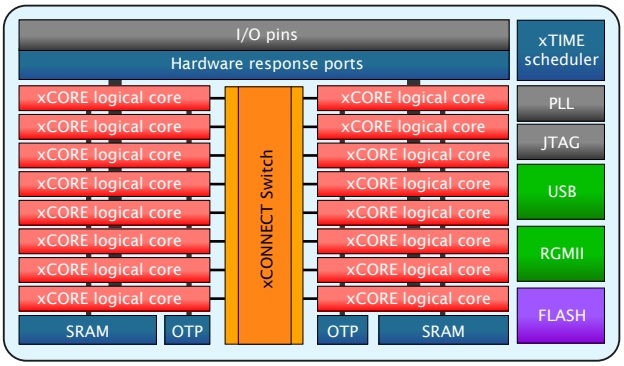
xCORE-200 XE/XEF devices contain integrated Gigabit Ethernet RGMII interfaces and USB2.0 PHYs (host or device) with a dual-issue processor pipeline that boosts peak compute performance up to 4000MIPS and 2000MMACS.

Up to 1024KB on-chip SRAM memory is available. Each member of the xCORE-200 family has an embedded flash option.

The flexible Hardware Response ports are bonded out to I/O pins as 1bit, 4bit, 8bit, 16bit and 32bit ports, and provide support for serialized and buffered data transfer. Up to 176 general purpose I/O are available for user configuration.

xCORE-200 is supported by the advanced XMOS xTIMEcomposer Studio™ development environment, and a wide range of microcontroller and application libraries are freely downloadable from www.xmos.com.

Unlike conventional microcontrollers, xCORE-200 multicore microcontrollers execute multiple real-time tasks simultaneously. The xCORE-200 XE/XEF family includes devices with 16, 24 and 32 cores. Each logical core can execute computational code, advanced DSP code, control software (including logic decisions and executing a state machine) or drive and sample data on the I/O ports.



xCORE-200™ XEF216

The devices include xTIME scheduling hardware that performs functions similar to those of an RTOS, and hardware that connects the cores directly to I/O pins, ensuring fast processing and extremely low latency. The xTIME scheduler eliminates the use of interrupts and ensures deterministic operation.

The on-chip SRAM can be accessed in a single cycle, reducing shared memory requirements by passing data directly between tasks executing on logical cores. Similarly the xCONNECT switch is a high-speed network allowing all cores to communicate with each other.

xCORE-200 multicore microcontrollers include an area of one-time programmable memory with AES support to allow the implementation of secure boot functionality.

ORDERING INFORMATION

xCORE-200 XE/XEF devices are available in a range of resource densities, packages, performance and temperature grades depending on your needs.

						Package [GPIOs]		
Family	Cores	RAM (KB)	Flash (KB)	RGMII	USB PHY	TQ128	FB236	FB374
XE216	16	256 512	-	1	1	XE216-256-TQ128 [81] XE216-512-TQ128 [81]	XE216-256-FB236 [128] XE216-512-FB236 [128]	
XE224	24	512 1024	-	1	2			XE224-512-FB324 [176] XE224-1024-FB324 [176]
XE232	32	512 1024	-	2	2			XE232-512-FB324 [176] XE232-1024-FB324 [176]
XEF216	16	256 512	2048	1	1	XEF216-256-TQ128 [81] XEF216-512-TQ128 [81]	XEF216-256-FB236 [128] XEF216-512-FB236 [128]	
XEF224	24	512 1024	2048	1	2			XEF224-512-FB324 [176] XEF224-1024-FB324 [176]
XEF232	32	512 1024	2048	2	2			XEF232-512-FB324 [176] XEF232-1024-FB324 [176]

For pricing and availability, please visit the XMOS website for a list of our distributors. www.xmos.com/distributors.