

XCORE-200 SERIES

The xcore-200 series is a programmable platform for embedded systems designers who want to differentiate their products with specific interfaces, features and capabilities. Fast processing, low latency and inherent flexibility ensure it's well matched against the high demands of today's IoT applications.

Unlike conventional microcontrollers, xcore-200 delivers high performance, complete timing determinism and the ability to add differentiating hardware features in a low-cost, easy-to-implement solution. The range offers scalable multicore compute, with 8 to 32 cores across the range - each logical core can execute computational code, advanced DSP, control (I/O).

The series carries three classes of device: the XU/XUF USB enabled microcontrollers, the XL/XLF general purpose microcontrollers and the XE/XEF ethernet enabled microcontrollers. All are supported by the xTIMEcomposer tools and software libraries available from xmos.ai.



FEATURE HIGHLIGHTS

Common features across all classes of device include:

MULTICORE COMPUTE

Performance from 1000 MIPS (at 8 cores) to 4000 MIPS (at 32 cores), with a dual-issue processor pipeline to boost peak compute performance.

ON-CHIP MEMORY

Between 512kb and 1024kb on-chip SRAM (depending on the chip) can be accessed in a single cycle reducing shared memory requirements by passing data directly between tasks executing on logical cores.

COMMUNICATION

The xconnect switch acts as a high-speed network, enabling all cores to communicate with each other.

HARDWARE RESPONSE PORTS

Flexible, configurable I/O capability: 1-bit, 4-bit, 8-bit, 16-bit and 32-bit ports provide support for serialised and buffered data transfer.

EMBEDDED FLASH

Each member of the xCORE-200 family has an embedded flash option for applications.

SECURE BOOT

There is also an area of one-time programmable memory with AES support to implement secure boot functionality.

XU/XUF FEATURES

Multicore compute up to 1000MIPS (8 core) and 4000MIPS (32 core performance)

Dual processor pipeline to boost peak compute to 4000MIPS and 2000MMACS

Up to 1024KB on-chip SRAM memory

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

XL/XLF FEATURES

Multicore compute up to 1000MIPS (8 core) and 2000MIPS (16 core performance)

Dual issue processor pipeline to boost peak compute to 2000MIPS and 1000MMACS

Up to 512KB on-chip SRAM memory

XE/XEF FEATURES

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

Dual processor pipeline to boost peak compute to 4000MIPS and 2000MMACS

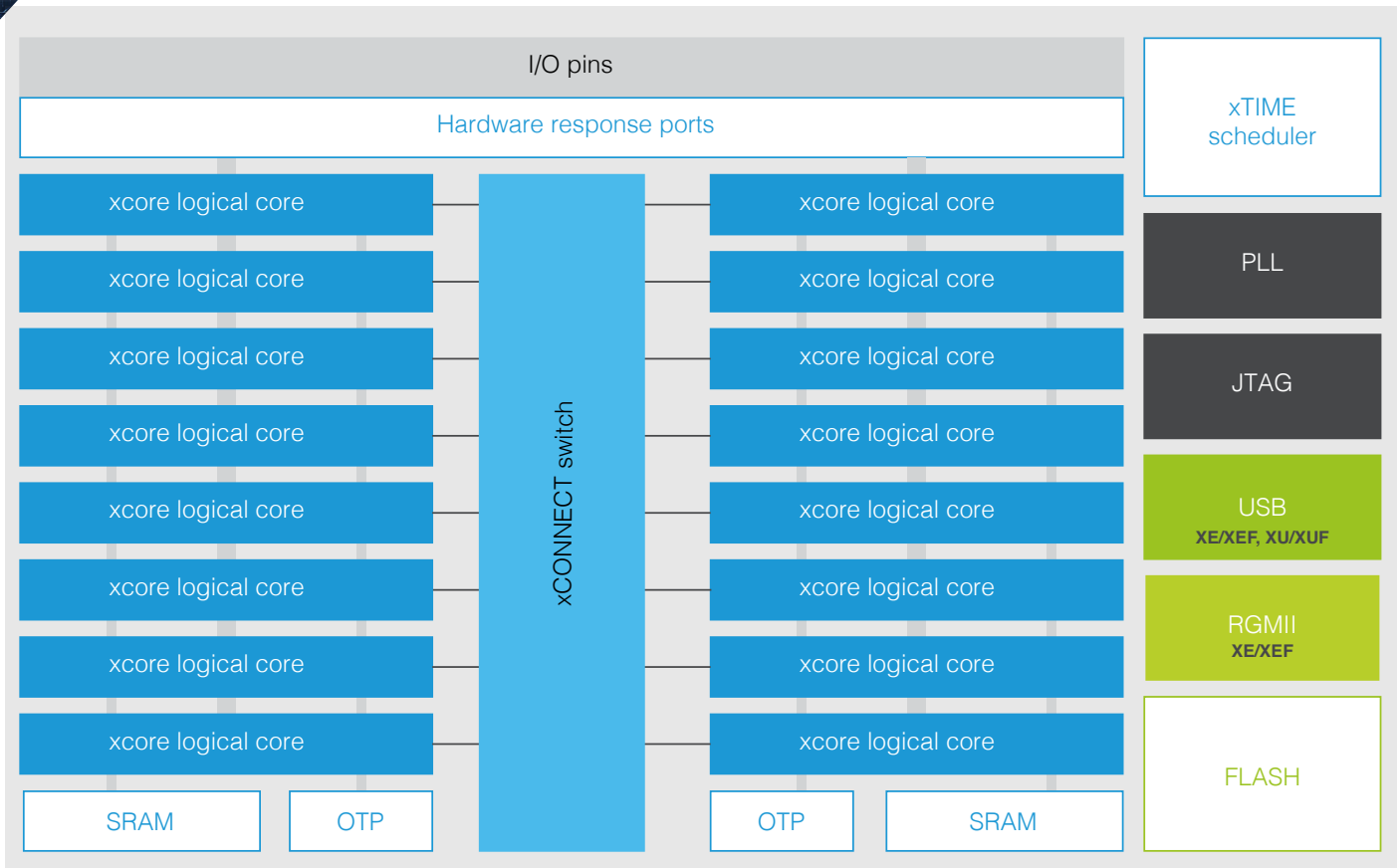
Up to 1024KB on-chip SRAM memory

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

Integrated Gigabit Ethernet RGMII interface

Available in a range of resource densities, packages, performance and temperature grades depending on your needs. See xmos.ai for details.

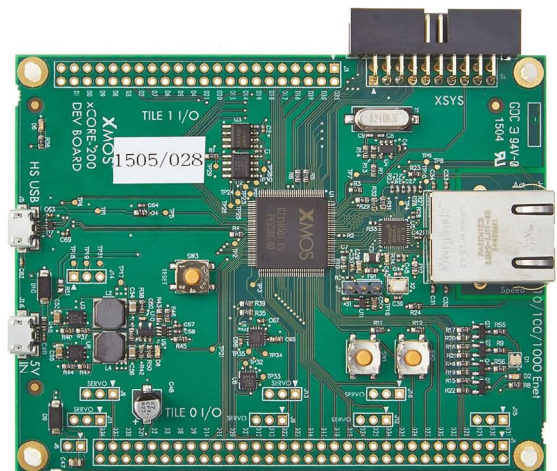
BLOCK DIAGRAM



EXPLORER KIT | XK-EVK-XE216

The Explorer Kit features the XE216-512-TQ128 device with 16 logical cores delivering up to 2000MIPS deterministically. The combination of high-speed USB interface, 10/100/1000 Mbps Ethernet interface and 53 high performance GPIO make it ideal for a wide range of applications including networking and digital audio. The board also carries a 3D accelerometer, 3-axis gyroscope and six servo interfaces, to support rapid prototyping of motor and motion control projects.

It is powered by USB micro-B connectors. The xTAG debug adapter is included in the box.



APPLICATIONS



IOT



USB AUDIO



ROBOTICS



MOTION CONTROL



For further information, please visit xmos.ai/xcore-200/

Copyright © 2020 XMOS Ltd. All rights reserved