

xCORE-USB

Flexible multicore microcontrollers with High Speed USB



FEATURES

- **Multicore compute** with up to 1000 MIPS across 16 cores
- **Integrated High Speed USB 2.0 PHY** giving 480Mbps data rates
- **Hardware response ports** with up to 100x faster I/O response
- **Wide range of proven soft IP blocks** to implement your exact mix of peripherals
- **DSP integration** using our native 32b/64b instructions

Easy to use with our free xSOFTip Explorer[™] and xTIMEcomposer Studio[™] tools

The xCORE[™]-USB Series of multicore microcontrollers combines the flexibility, low latency and determinacy of xCORE, with an integrated High Speed USB 2.0 PHY supporting 480Mbps data rates and USB Audio Class 2. Available in variants with 6, 8, 10, 12 and 16 logical cores, the family addresses a range of demanding applications including high performance peripherals, audiophile consumer audio, sound-bars, multi-channel USB audio interfaces, DJ products, USB speakers, and protocol conversion plus bridging.

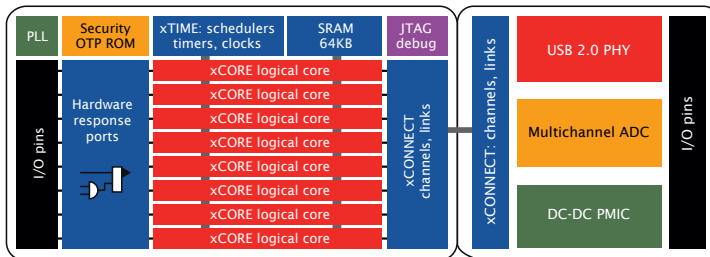
Additional features include a multichannel 12bit 1MSPS analog-to-digital converter, standby and deep sleep modes for energy-sensitive applications, power-on-reset, watchdog timer, brownout detection and integrated oscillator circuits.

xCORE multicore microcontrollers let you program the mix of interfaces and functionality you want for your design. They provide a level of real-time performance not seen in other embedded processors.

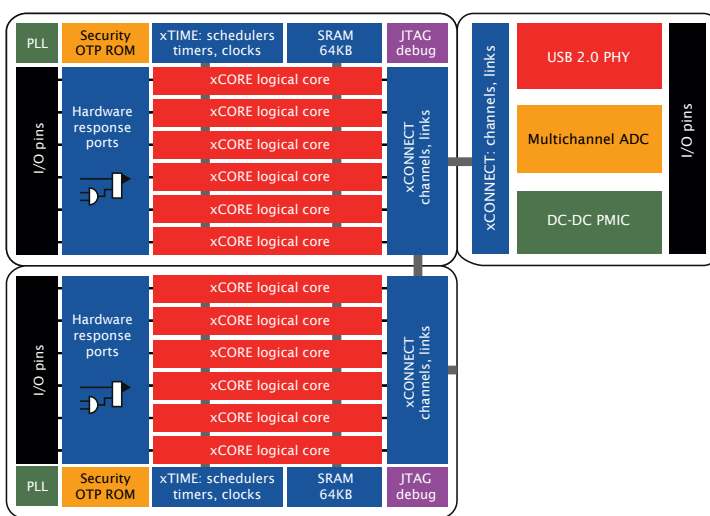
Unlike conventional microcontrollers, xCORE multicore microcontrollers execute multiple real-time tasks simultaneously. Devices consist of one or more xCORE tiles, each containing up to eight xCORE logical cores.

Each logical processor core can execute computational code, advanced DSP code, control software (including taking logic decisions and executing a state machine) or software that handles I/O operations.

The devices include scheduling hardware that performs functions similar to those of an RTOS; and hardware that connects the cores directly to I/O ports, ensuring not only fast processing but extremely low latency. The use of interrupts is eliminated, ensuring deterministic operation.



The U-Series includes the U6-64 and U8-64 devices with one xCORE tile that contains six or eight logical cores respectively. The U12 device comprises two tiles, each containing six logical processors. Other dual tile devices include the U8, U10 and U16 devices, with each xCORE tile containing four, five and eight logical cores.



ORDERING INFORMATION

xCORE-USB devices are available in a range of resource densities, package, performance and temperature grades depending on your needs.

Part number	xCOREs	RAM Kbytes	I/O	Max MIPS	Package
XS1-U6A-64	6	64	38	500	FBGA96
XS1-U8A-64	8	64	38	500	FBGA96
XS1-U8A-128	8	128	73	1000	FBGA217
XS1-U10A-128	10	128	73	1000	FBGA217
XS1-U12A-128	12	128	73	1000	FBGA217
XS1-U16A-128	16	128	73	1000	FBGA217

For pricing and availability, please visit our website for a list of our distributors.

<http://www.xmos.com/distributors>.

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