

xCORE-Analog Series

Analog-enabled flexible multicore microcontrollers



FEATURES

- **Multicore compute**
 - Up to 1000 total MIPS
 - 6–16 logical cores
- **Hardware Response ports**
 - Up to 100x faster I/O response
- **Wide range of proven soft IP blocks**
 - Tailor your peripheral mix
 - Fast and easy design
- **Analog peripherals**
 - 8 channel 12bit ADC
 - DCDC and power management
 - Silicon oscillator
 - Real time clock, 500uW in sleep mode
 - 128 bytes of deep sleep memory
- **Easy to use**
 - Free xTIMEcomposer Studio™ and xSOFTip Explorer™ tools

The xCORE-Analog Series (A-Series) is a comprehensive range of 32-bit multicore microcontrollers that combine the low latency and timing determinism of the xCORE™ architecture with the simplicity and ease of use of integrated analog peripherals.

Software-programmable in an environment that is familiar to any C programmer, A-Series devices allow you to blend control code, DSP and software-defined interfaces. The integrated analog peripherals provide low power sleep modes, simplified board design and precise control of analog inputs.

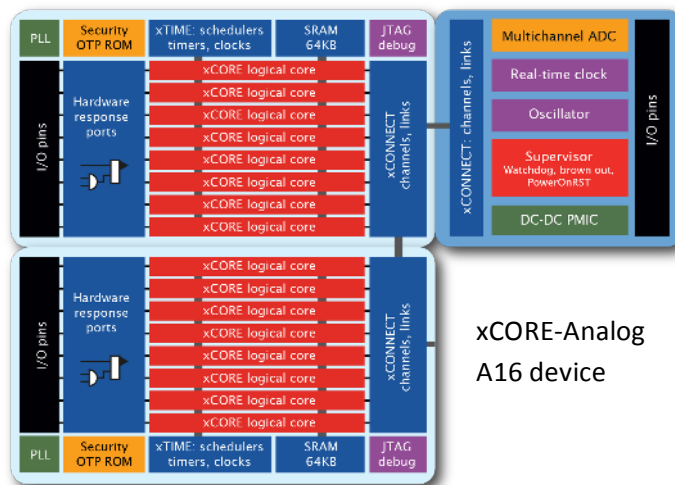
The integrated 12bit 1MSPS analog-to-digital converter offers up to 8 multiplexed input channels. The sampling of the ADC is controlled directly by the xCORE Hardware Response ports, allowing accurate control of the ADC from software. Together with the deterministic execution of the xCORE, this enables the sampling of the ADC to be precisely controlled by application functions.

xCORE-Analog devices are backed with proven IP blocks from our xSOFTip library, allowing you to quickly add interface and processor functionality such as Ethernet, PWM, stepper control and graphics driver to your xCORE device.

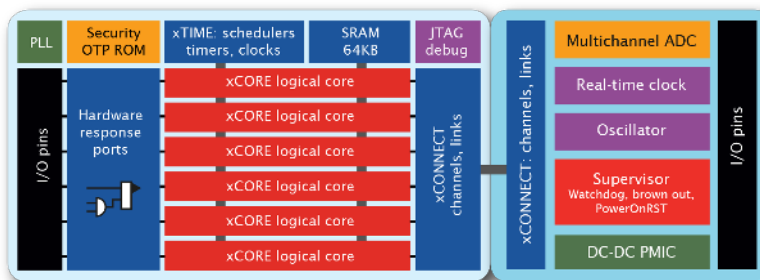
A-Series devices consist of one or two xCORE tiles containing multiple logical cores, together with an analog tile directly connected via the high speed xCONNECT links. This enables rapid monitoring of analog signals and precise coordination across the system. The xCORE DSP instructions can be utilized for filtering and conditioning the data, before sending it to your choice of software implemented peripherals with incredibly low latency.

The integrated power management enables xCORE to enter deep sleep modes, with power consumption as low as 500uW. The real time clock, or an external pin can be used to wake the device.

The A-Series includes devices with 6, 8, 10, 12 and 16 cores, with pin compatible options throughout the range. The A16 device is pin compatible with the A12, A10 and A8-128 devices, allowing developers to cost-optimize by moving to smaller devices, and feature-optimize with the more powerful devices. Similarly, it enables designers to reuse designs and IP across multiple product variants. All devices are available in commercial and industrial temperature grades.



xCORE-Analog A16 device



xCORE-Analog A6 device

ORDERING INFORMATION

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

Part	Cores	RAM Kbytes	Max I/O	Max MIPS	Packages
XS1-A6A-64	6	64	42	500	FBGA96
XS1-A8A-64	8	64	42	500	FBGA96
XS1-A8A-128	8	128	90	1000	FBGA217
XS1-A10A-128	10	128	90	1000	FBGA217
XS1-A12A-128	12	128	90	1000	FBGA217
XS1-A16A-128	16	128	90	1000	FBGA217

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

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