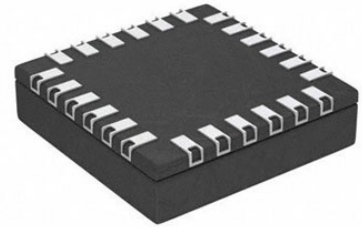


32bit ARM Cortex M3 Microcontroller, 26MHz, 128 kB Flash, 64-Pin LFCSP

Manufacturers	Analog Devices, Inc
Package/Case	64-WFQFN, CSP
Product Type	Embedded Processors & Controllers
RoHS	Pb-free Halide free
Lifecycle	



Images are for reference only

Please submit RFQ for ADUCM3027BCPZ or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

General Description

The ADuCM3027/ADuCM3029 microcontroller units (MCUs) are ultra low power microcontroller systems with integrated power management for processing, control, and connectivity. The MCU system is based on the ARM® Cortex®-M3 processor, a collection of digital peripherals, embedded SRAM and flash memory, and an analog subsystem which provides clocking, reset, and power management capability in addition to an analog-to-digital converter (ADC) subsystem. For a feature comparison across the ADuCM3027/ADuCM3029 product offerings, see Table 1.

Table 1. Product Flash Memory Options

Device	Embedded Flash Memory Size
ADuCM3029	256 kB
ADuCM3027	128 kB

System features that are common across the ADuCM3027/ADuCM3029/ADuCM3029-1/ADuCM3029-2 MCUs include the following:

Up to 26 MHz ARM Cortex-M3 processor

Up to 256 kB of embedded flash memory with error correction code (ECC)

Optional 4 kB cache for lower active power

64 kB system SRAM with parity

Power management unit (PMU)

Multilayer advanced microcontroller bus architecture (AMBA) bus matrix

Central direct memory access (DMA) controller

Beeper interface

Serial port (SPORT), serial peripheral interface (SPI), inter-integrated circuit (I2C), and universal asynchronous receiver/transmitter (UART) peripheral interfaces

Cryptographic hardware support with advanced encryption standard (AES) and secure hash algorithm (SHA)-256

Real-time clock (RTC)

General-purpose and watchdog timers

Programmable general-purpose input/output (GPIO) pins

Hardware cyclic redundancy check (CRC) calculator with programmable generator polynomial

Power-on reset (POR) and power supply monitor (PSM)

12-bit successive approximation register (SAR) ADC

True random number generator (TRNG)

To support low dynamic and hibernate power management, the ADuCM3027/ADuCM3029 MCUs provide a collection of power modes and features, such as dynamic and software controlled clock gating and power gating.

The ADuCM3029-1 and ADuCM3029-2 MCU models share the same features and functionality as that of the ADuCM3029 MCU. All specifications pertaining to the ADuCM3027 and ADuCM3029 are also applicable to the ADuCM3029-1 and ADuCM3029-2.

For full details on the ADuCM3027/ADuCM3029 MCUs, refer to the ADuCM302x Ultra Low Power ARM Cortex-M3 MCU with Integrated Power Management Hardware Reference Manual.

Product Highlights

Industry leading ultralow power consumption.

Robust operation, including full voltage monitoring in deep sleep modes, ECC support on flash, and parity error detection on SRAM memory.

Leading edge security. Fast encryption provides read protection to customer algorithms. Write protection prevents device reprogramming by unauthorized code.

Failure detection of 32 kHz LFXTAL via interrupt.

SensorStrobe™ for precise time synchronized sampling of external sensors. Works in hibernate mode, resulting in drastic current reduction in system solutions. Current consumption reduces by 10 times when using, for example, the ADXL363 accelerometer. Software intervention is not required after setup. No pulse drift due to software execution.

Features

EEMBC ULPMark™-CP score: 245.5

Ultra low power active and hibernate mode

Active mode dynamic current: 30 μ A/MHz (typical)

Flexi mode: 300 μ A (typical)

Hibernate mode: 750 nA (typical)

Shutdown mode: 60 nA (typical)

ARM Cortex-M3 processor with MPU

Application

Internet of Things (IoT)

Electronic shelf label (ESL) and signage

Smart infrastructure

Smart lock

Asset tracking

Smart machine, smart metering, smart building, smart city, and smart agriculture

Wearables

Up to 26 MHz with serial wire debug interface

Fitness and clinical

Power management

Machine learning and neural network

Single-supply operation (VBAT): 1.74 V to 3.6 V

Optional buck converter for improved efficiency

Memory options

128 kB/256 kB of embedded flash memory with ECC

4 kB of cache memory to reduce active power

64 kB of configurable system SRAM with parity up to 32 kB of SRAM retained in hibernate mode

Safety

Watchdog with dedicated on-chip oscillator

Hardware CRC with programmable polynomial

Multiparity bit protected SRAM

ECC protected embedded flash

Security

TRNG

User code protection

Hardware cryptographic accelerator supporting AES-128, AES-256, and SHA-256

Digital peripherals

3 SPI interfaces to enable glueless interface to sensors, radios, and converters

I2C and UART interfaces

SPORT for natively interfacing with converters and radios

Programmable GPIOs (44 in LFCSP and 34 in WLCSP)

3 general-purpose timers with PWM support

RTC and FLEX_RTC with SensorStrobe and time stamping

Programmable beeper

25-channel DMA controller

Clocking features

26 MHz clock: on-chip oscillator, external crystal oscillator

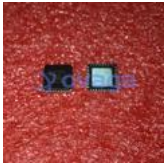
32 kHz clock: on-chip oscillator, low power crystal oscillator

Integrated PLL with programmable divider

Analog peripherals

12-bit SAR ADC, 1.8 MSPS, 8 channels, and digital comparator

Related Products



[ADUC7022BCPZ62](#)

Analog Devices, Inc
LFCSP-40



[ADUC7020BCPZ62](#)

Analog Devices, Inc
LFCSP-40



[ADUC841BSZ62-5](#)

Analog Devices, Inc
QFP-52



[ADUC841BSZ62-3](#)

Analog Devices, Inc
QFP-52



[ADUC831BSZ](#)

Analog Devices, Inc
QFP-52



[ADSP-BF527BBCZ-5A](#)

Analog Devices, Inc
BGA-208



[ADSP-21369BBPZ-2A](#)

Analog Devices, Inc
SBGA-256



[ADSP-BF561SBBCZ-5A](#)

Analog Devices, Inc
CSPBGA-256