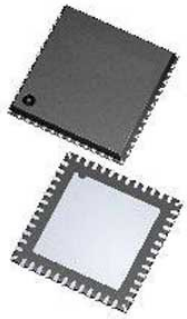
ADUCM361BCPZ128

Data Sheet

ARM MCU, Precision Analogue, ADUC Family ADUCM3 Series Microcontrollers, ARM Cortex-M3, 32bit

Manufacturers	Analog Devices, Inc
Package/Case	QFN48
Product Type	Embedded Processors & Controllers
RoHS	Green
Lifecycle	



Images are for reference only

Please submit RFQ for ADUCM361BCPZ128 or Email to us: sales@ovaga.com We will contact you in 12 hours. RFQ

General Description

The ADuCM361 contains all the features of the ADuCM360 except that one of the AFE's is removed.

The device contains an on-chip 32 KHz oscillator and an internal 16MHz high-frequency oscillator. This clock is routed through a programmable clock divider from which the MCU core clock operating frequency is generated. The maximum core clock speed is 16MHz, not limited by operating voltage or temperature.

The microcontroller core is a low power ARM Cortex-M3, 32-bit RISC machine, offering up to 20 MIPS peak performance, incorporating a flexible 11-channel DMA controller supporting SPI, UART, I2C communication peripherals. 128k Bytes Flash/EE and 8k Bytes SRAM are integrated on-chip.

Benefits:Flexibility with Precision

The Analog sub-system consists of an ADC connected to a flexible input MUX, operateingin fully differential and single ended modes. Other ADC features include dual programmable excitation current sources, burn-out current sources and a bias voltage generator to set the common-mode voltage of an input channel. A low-side internal ground switch allows bridge power down between conversions. The ADC contains two parallel filters – The Sinc3 or Sinc4 filter is for precision measurements. The Sinc2 filter is for fast measurements and for detection of step changes in the input signal The device contains a low noise, low drift internal band-gap reference or can accept up to 2 external reference sources in ratiometric measurement configurations. A single-channel buffered voltage output DAC is available. A range of on-chip peripherals are integrated on-chip. These include UART, I2C and dual SPI Serial I/O communication controllers, 19-Pin GPIO Ports, 2 General Purpose Timers, Wake-up Timer, Watchdog Timer and a 16-bit PWM with six output channels.

Low Power

The ADuCM361 is designed to operate in battery powered applications where low power operation is critical. The microcontroller core can be configured in a normal operating mode consuming 290µA/MHz (including Flash/SRAM Idd) resulting in an overall system current consumption of 1mA with all peripherals active.

The part can be configured in a number of low power operating modes under direct program control, including hibernate mode (internal wake-up timer active) consuming only 4µA. In hibernate mode, peripherals such as external interrupts or the internal wake up timer can wake up the device. This allows the part to operate in an ultra-low power operating mode and still respond to asynchronous external or periodic events.

Ease of Use

On-chip factory firmware supports in-circuit serial download via a serial wire interface (2-pin JTAG system) and UART while non-intrusive emulation is also supported via the serial wire interface. These features are incorporated into a low-cost QuickStart Development System.

Features

Analog input/output

Single (24-bit) ADC

6 differential or 12 single-ended input channels

Programmable Gain Amplifiers (PGA) (1-128)

Flexible input MUX for input channel selection

Buffers for external reference connection

Programmable sensor excitation current sources

On-chip precision voltage reference

Single 12-bit voltage output DAC

NPN mode for 4 mA to 20 mA loop applications

Microcontroller

ARM Cortex-M3 32-bit processor

Serial wire download and debug

Internal watch crystal for wakeup timer

16 MHz oscillator with 8-way programmable divider

Memory

128 kB Flash/EE Memory, 8k Bytes SRAM

In-circuit debug/download via Serial Wire and UART

Power

Operates directly from a 3.0V battery

Power consumption

MCU Active Mode: Core consumes 290µA / MHz

Active Mode: 1.0mA (All peripherals active), core operating at 500KHz

Supply Range: 1.8V to 3.6V (max)

Power down mode: 4µA (WU Timer Active)

Application

Industrial

Industrial Automation and Process Control

4 mA to 20 mA Loop-Powered Smart Sensor Systems

Temperature Sensor

Pressure Sensor

Flow Meter

Smart Transmitters

Medical

Portable Medical devices

Patient monitoring

Instrumentation

Data Acquisition Modules

Handheld Instruments

On-chip peripheral

UART, I2C and 2 x SPI serial I/O

16-bit PWM controller

19-pin multifunction GPIO Port

See data sheet for additional features

Package and temperature range

48-lead LFCSP (7mm x 7mm) package –40°C to 125°C

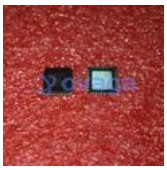
Development tools

Low cost QuickStart Development System

Third-party compiler and emulator tool support

Multiple functional safety features for improved diagnostics

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

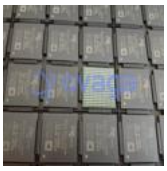
Analog Devices, Inc

BGA-208

ADSP-21369BBPZ-2A

Analog Devices, Inc

SBGA-256



ADSP-BF561SBBCZ-5A

Analog Devices, Inc

CSPBGA-256