

8 Bit MCU, MicroConverter with ADC, ADUC Family ADUC8 Series Microcontrollers, 16.78 MHz, 62 KB

Manufacturers	<a href="#">Analog Devices, Inc</a>
Package/Case	QFP-52
Product Type	Embedded Processors & Controllers
RoHS	Green
Lifecycle	



Images are for reference only

Please submit RFQ for ADUC843BSZ62-5 or [Email to us: sales@ovaga.com](mailto:sales@ovaga.com) We will contact you in 12 hours.

[RFQ](#)

## General Description

The ADuC841/ADuC842/ADuC843 are complete smart transducer front ends, that integrates a high performance self-calibrating multichannel ADC, a dual DAC, and an optimized single-cycle 20 MHz 8-bit MCU (8051 instruction set compatible) on a single chip.

The ADuC841 and ADuC842 are identical with the exception of the clock oscillator circuit; the ADuC841 is clocked directly from an external crystal up to 20 MHz whereas the ADuC842 uses a 32 kHz crystal with an on-chip PLL generating a programmable core clock up to 16.78 MHz.

The ADuC843 is identical to the ADuC842 except that the ADuC843 has no analog DAC outputs.

The microcontroller is an optimized 8052 core offering up to 20 MIPS peak performance. Three different memory options are available offering up to 62 kBytes of nonvolatile Flash/EE program memory. Four kBytes of nonvolatile Flash/EE data memory, 256 bytes RAM, and 2 kBytes of extended RAM are also integrated on-chip.

The parts also incorporate additional analog functionality with two 12-bit DACs, power supply monitor, and a band gap reference. On-chip digital peripherals include two 16-bit  $\Sigma$ - $\Delta$  DACs, a dual output 16-bit PWM, a watchdog timer, a time interval counter, three timers/counters, and three serial I/O ports (SPI, I2C, and UART).

On the ADuC812 and the ADuC832, the I2C and SPI interfaces share some of the same pins. For backwards compatibility, this is also the case for the ADuC841/ADuC842/ADuC843.

However, there is also the option to allow SPI operate separately on P3.3, P3.4, and P3.5, while I2C uses the standard pins. The I2C interface has also been enhanced to offer repeated start, general call, and quad addressing.

On-chip factory firmware supports in-circuit serial download and debug modes (via UART) as well as single-pin emulation mode via the EA pin.

## Features

Pin compatible upgrade of ADuC812/ADuC831/ADuC832

Increased performance

## Application

Optical networking—laser power control

Base station systems

Single-cycle 20 MIPS 8052 core

High speed 420 kSPS 12-bit ADC

Increased memory

Up to 62 kBytes on-chip Flash/EE program memory

4 kBytes on-chip Flash/EE data memory

In-circuit reprogrammable

Flash/EE, 100 year retention, 100 kCycle endurance

2304 bytes on-chip data RAM

Smaller package

8 mm × 8 mm chip scale package

52-lead PQFP—pin-compatible upgrade

Analog I/O

8-channel, 420 kSPS high accuracy, 12-bit ADC

On-chip, 15 ppm/°C voltage reference

DMA controller, high speed ADC-to-RAM capture

Dual output PWM  $\Sigma$ - $\Delta$  DACs

On-chip temperature monitor function

8052 based core

8051 compatible instruction set (20 MHz max)

High performance single-cycle core

32 kHz external crystal, on-chip programmable PLL

12 interrupt sources, 2 priority levels

Dual data pointers, extended 11-bit stack pointer

On-chip peripherals

Time interval counter (TIC)

UART, I2C®, and SPI® Serial I/O

Watchdog timer (WDT)

Power supply monitor (PSM)

Precision instrumentation, smart sensors

Transient capture systems

DAS and communications systems

Power

Normal: 4.5 mA @ 3 V (core>

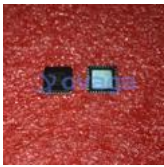
Power-down: 10  $\mu$ A @ 3 V

Development tools

Low cost, comprehensive development system incorporating nonintrusive single-pin emulation,

IDE based assembly and C source debugging

## 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](#)

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CSPBGA-256