

**ANALOG  
DEVICES**

**MicroConverter® 12-Bit ADCs and DACs with Embedded  
High Speed 62 kB Flash MCU**

## Preliminary Technical Data

## ADuC841/ADuC842/ADuC843

### FEATURES

Pin compatible

Upgrade to ADuC812/ADuC831/ADuC832

Increased performance

Single-cycle 16 MIPS 8052 core

High speed 400 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 kCycles endurance

2304 bytes on-chip data RAM

Smaller package

8 mm x 8 mm chip scale package

52 pin PQFP—pin compatible upgrade

Analog I/O

8-channel, 400 kSPS high accuracy, 12-bit ADC

On-chip, 20 ppm/°C voltage reference

DMA controller, high speed ADC-to-RAM capture

Two 12-bit voltage output DACs\*

Dual output PWM ?-? DACs

On-chip temperature monitor function

8051 based core

8051 compatible instruction set (16.7 MHz max)

High performance single-cycle core

32 kHz ext crystal, on-chip programmable PLL\*\*

12 interrupt sources, two priority levels

Dual data pointers, extended 11-bit stack pointer

On-chip peripherals

Time interval counter (TIC)

UART, I<sup>2</sup>C®, and SPI® Serial I/O

Watchdog timer (WDT)

Power supply monitor (PSM)

Power

Normal: 6 mA @ 5 V (core CLK = 2.098 MHz)\*\*

Power-down: 15µA @ 3 V\*\*

Development Tools

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

IDE based, assembly, and C source debugging

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### APPLICATIONS

Optical networking—laser power control

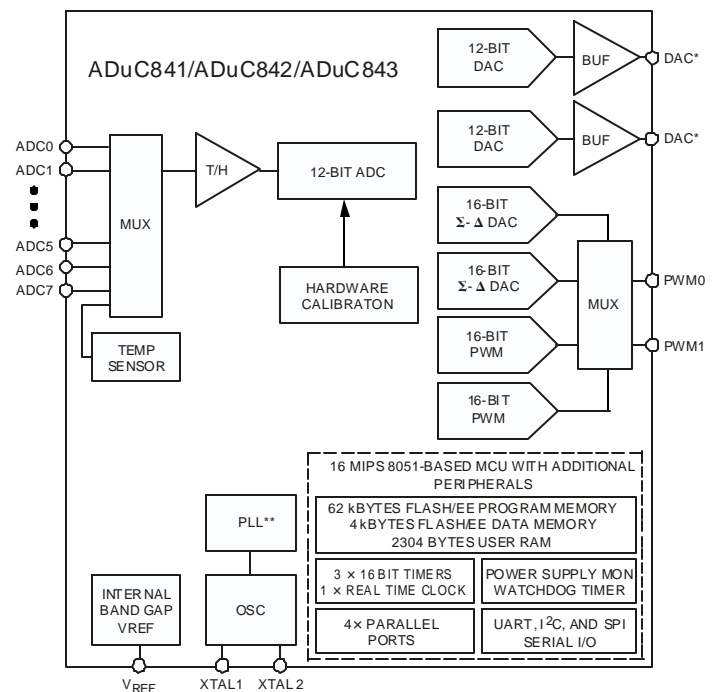
Base station systems

Precision instrumentation, smart sensors

Transient capture systems

DAS and communications systems

### FUNCTIONAL BLOCK DIAGRAM



\* ADuC841/ADuC842 Only

\*\* ADuC842/ADuC843 Only, ADuC841 driven directly by external crystal.

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