Precision Analog Microcontroller with RF Transceiver, ARM Cortex-M3

Data Sheet

ADuCRF101

FEATURES

Analog I/O
6-channel, 12-bit SAR ADC
    Single-ended and differential inputs
    Programmable data rate of up to 167 kSPS
    On-chip voltage reference
    Supply range: 2.2 V to 3.6 V
    Power consumption
        280 nA in power-down mode, nonretained state
        1.9 μA in power-down mode, processor memory and transceiver memory retained
        210 μA/MHz, Cortex-M3 in active mode
        12.8 mA transceiver in receive mode, Cortex-M3 in power-down mode
        9 mA to 32 mA transceiver in transmit mode, Cortex-M3 in power-down mode
RF transceiver
    Frequency bands
        862 MHz to 928 MHz
        431 MHz to 464 MHz
    Multiple configurations supported
    Receiver sensitivity, bit error rate (BER)
        −107.5 dBm at 38.4 kbps, 2FSK
    Single-ended and differential power amplifier (PA)
    Low external bill of materials (BOM)
Microcontroller
    32-bit ARM Cortex-M3 processor
    Serial wire download and debug
    External watch crystal for wake-up timer
    16 MHz internal oscillator with 8-way, programmable divider

Memory
    128 kB Flash/EE memory, 16 kB SRAM
    10,000-cycle Flash/EE endurance
    10-year Flash/EE retention
    In-circuit download via serial wire and UART
On-chip peripherals
UART, I²C, and SPI serial I/O
    28-pin GPIO port
    2 general-purpose, 16-bit timers
    32-bit wake-up timer
    16-bit watchdog timer
    8-channel pulse-width modulation (PWM)
Package
    64-lead, 9 mm × 9 mm LFCSP
    Temperature range: −40°C to +85°C
Tools
    Low cost development system
    Third-party compiler and emulator tool support

APPLICATIONS

Battery-powered wireless sensors
Medical telemetry systems
Industrial and home automation
Asset tracking
Security systems (access systems)
Health and fitness applications

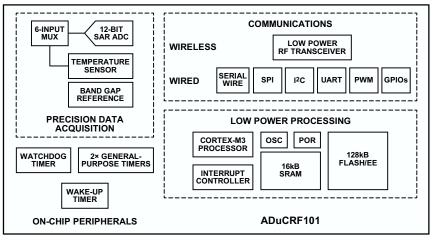*For more information, email ADuCRF101@analog.com.*

FUNCTIONAL BLOCK DIAGRAM

Figure 1.

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NOTES

I²C refers to a communications protocol originally developed by Philips Semiconductors (now NXP Semiconductors).

ANALOG DEVICES

www.analog.com