

## Wireless Instrumentation Platform

non-volatile memory, and USB interface. All analog and digital I/O signals are brought to the edge of the board where they are available to the user through a pin array.

The CFT3001 is controlled by a Freescale HCS08 microcontroller with a watchdog timer. The MCU provides 4 KB of random access memory and 60 KB of flash memory. The flash memory can be locked with block protection to prevent readout or inspection. Three low power states are provided including Wait, Stop2 and Stop3. The CFT3001 provides in-circuit programmability through the HCS08 BDM interface.

Two 16-bit timers/pulse width modulators are integrated in the MCU as well as an 8-channel, 10-bit ADC. In addition, the CFT3001 provides an additional 4-/8-channel, 24-bit ADC and an 8-channel, 16-bit DAC for precision data acquisition and control. 32 KB of FRAM memory is available for non-volatile data logging. Wired connectivity is provided through a USB port with a Type B connector, an RS232C serial port and an I2C serial port.

The CFT3001 supports wireless connectivity using a fully compliant IEEE 802.15.4 transceiver that provides 250 Kbps O-QPSK modulation across 16 channels in the 2.45 GHz ISM band. The transceiver is connected to the microcontroller and an on-board chip antenna (with an optional SMA connector to an external antenna). The IEEE 802.15.4 transceiver is ZigBee™ compliant.

The CFT3001 works in conjunction with Crossfield's CFT3003 USB Wireless Adapter and software to provide a complete solution for wireless instrumentation.

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### Features

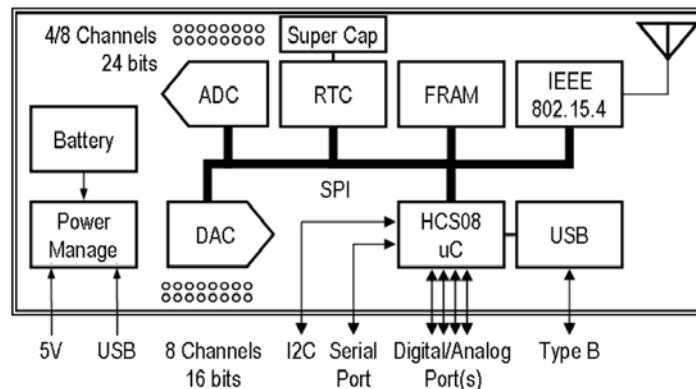
- IEEE 802.15.4 ZigBee™ wireless networking
- On-board antenna (external via optional SMA connector)
- HCS08 microcontroller with 60 KB Flash and 4 KB RAM
- Three low-power modes
- MCU GPIO with programmable pullups
- Two 16 bit timers/pulse width modulators
- Real-time clock with Supercap backup
- 4-/8-channel 24 bit ADC with precision reference
- 8-channel 16 bit DAC with precision reference
- Absolute or ratiometric measurements
- 32 KB FRAM for non-volatile data logging
- Type B USB port, RS-232C serial port, I2C port
- Powered by two AA batteries, USB or +5V wall adapter
- Low battery detection

### Applications

- Industrial/process control
- Lighting control
- Scientific instrumentation
- Health care

### Description

Crossfield's CFT3001 Wireless Instrumentation Platform offers an easy to implement, low power solution for system integrators that need to add wireless sensor networking capability to their specialty instruments. The CFT3001 includes an 8-bit microcontroller, IEEE 802.15.4 transceiver, real-time clock, precision ADC, precision DAC,



CFT3001 Functionality

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