

Chaveiro Features

- ARM M0 32-bit MCU
- 160kB Flash / 8kB SRAM
- ISM 433MHz FSK/DPSK/ASK Transmitter
- (1) 8-10 bit ADC
- (10) Digital GPIOs
- (2) LED drivers
- Red LED
- Blue LED
- Low Battery Detection
- Temp Sensor
- 30MHz RC Oscillator
- 10kHz Auxiliary Clock ($<1\mu\text{A}$)
- (3) 32 Bit Timers
- Watchdog Timer

The block diagram illustrates the system architecture of the Clough MicroC. A **Battery Supply** provides power to the **PMU** (Power Management Unit), **PIR Sensor IF** (PIR Sensor Interface), and **Low Power RC Oscillator**. The **PIR Sensor IF** is connected to an antenna. The **Low Power RC Oscillator** feeds into a **PLL** (Phase-Locked Loop), which also receives input from a **Clough MicroC** module. The output of the PLL is connected to a **DAC** (Digital-to-Analog Converter). The **Clough MicroC** module also contains an **ADC** (Analog-to-Digital Converter). The **ADC** is connected to the **LED Drivers, GPIOs or input pins** block. The **LED Drivers, GPIOs or input pins** block is connected to **Pin 10** and also has a connection to the **Clough MicroC** module. The **Clough MicroC** module is shown with the **Atmel** logo.

Recommended Applications

- Garage door openers
- Automotive alarms
- Wireless industrial door and security systems

iND80210 - “Chaveiro”

32-Bit ARM M0 μ Controller and Wireless Transmitter

Device Description

Chaveiro is a member of indie's family of general purpose wireless microcontrollers. It consists of a highly integrated 32-bit general purpose ARM M0-based microcontroller, clocking at up to 20MHz. It also integrates an ISM band ASK/FSK/DPSK transmitter operating at 433MHz with an output power of up to +13dBm. It is intended to support a wide array of wireless applications including garage door openers and radio controlled industrial door and security systems as well as automotive alarm systems.

The iND80210 integrates 160kB of flash RAM and 8kB of SRAM on die for feature-rich applications or applications requiring redundancy of data storage. It integrates multiple clocking options including a high accuracy (1%) 30MHz RC oscillator and low power (<1uA) 10kHz auxiliary clock. It also contains (3) 32-bit timers, and a watchdog timer for high performance, low power designs.

Chaveiro also integrates multiple types of GPIOs. There are 10 digital GPIOs: two of these can drive LEDs, and one is suitable for driving a blue LED as it is coupled to an integrated charge pump circuit.

Chaveiro integrates a power management block including on-chip regulators and can be powered from a voltage range of 2.2V to 3.2V. The on chip power management also produces a regulated 1.8V supplied to an external pin.

ind80210 also contains an 8-10 bit ADC (SAR architecture) with 12 channels and provides access to a PTAT circuit for battery and temperature monitoring.

All of these features are packaged in a low cost, 4x4mm 20 pin QFN package and are suitable for applications from -40C to +85C.

Ordering Information