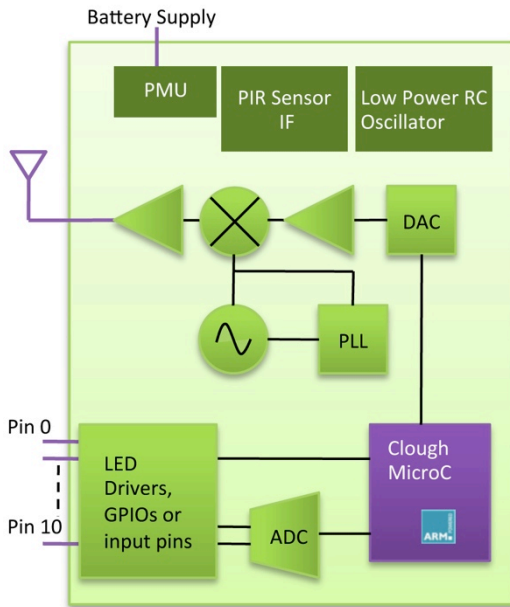# Heimdall-Slave Features

- ARM M0 32-Bit MCU
- 160kB Flash / 8kB SRAM
- 433MHz ISM-band integrated transmitter
- PIR sensor
- (1) 8-10 bit ADC
- (10) GPIO control pins
- (2) LED Driver Outputs
- 10kHz Auxiliary Clock (<1uA)
- Integrated power regulation

4x4 QFN Package

Recommended Applications

- Home alarm and commercial security systems
- Remote sensing applications for scientific and industrial applications
- General purpose infrared detection

iND80212 - "Heimdall-Slave"
PIR Sensor with Integrated Wireless Transmitter and 32-Bit ARM M0 Based Microcontroller

Device Description

Heimdall-Slave is a product consisting of a PIR (Pyroelectric Infra-Red) sensor, a highly integrated 433MHz ISM band radio transmitter together with a 32-bit general purpose ARM M0 based microcontroller.

Heimdall-Slave integrates 160kB of flash RAM and 8kB of SRAM on die for feature-rich applications. It integrates multiple clocking options including use of an external low cost 30MHz XTAL and integrated low power (<1uA) 10kHz auxiliary clock, for high performance, low power designs.

The integrated wireless transmitter operates in the 433 MHz ISM band with capability from 310MHz – 450 MHz covered by a single crystal and a fractional-N PLL. FSK, PSK and ASK modulation are all fully supported.

The PIR interface consists of two extremely low-power uncommitted operational amplifiers, which may be configured as bandpass filters to condition the PIR sensor's output; plus a window comparator, which may be used in combination with a digital state machine, to determine the validity of motion events.

Heimdall-Slave integrates an 8-10 bit ADC (SAR architecture) with up to 12 input channels. In addition it has 10 general purpose I/Os and two additional higher power I/Os capable of driving LEDs. An integrated bandgap reference supports a temperature sense circuit.

Heimdall-Slave is designed to run for many years on lithium batteries in wireless sensor applications such as home alarm systems, and has current consumption of < 5uA with the PIR sensor active. The current reduces to <1uA when the wake-up timer alone is active. The device can be powered without regulators from 2.2V to 3.2V or with regulators from 2.9V to 3.6V.

Ordering Information

Device Ordering Name	Platform	Temp Range	Package	Pins
iND80212 Heimdall-Slave	Home/ Commercial alarm wireless sensor	-10 C to +60 C	4x4 mm QFN	20 Pins @ 0.50 mm Pitch