Infineon

Never stop thinking

SmartLEWIS™ MCU
PMA71xx - Multiband UHF Transmitter Family with Embedded Microcontroller

The SmartLEWIS™ MCU family comprises an ASK/FSK transmitter for the sub 1GHz ISM frequency bands with embedded 8051 microcontroller as base functionality. Additionally, exciting peripheral functions are integrated, building a fully flexible and pin-compatible product family. You can use the internal multi-channel 10-bit analog to digital converter with its flexible high-gain settings as interface for a broad variety of analog sensors. The integrated LF-Receiver enables wireless wake-up in battery operated applications with ultra-long-lifetime or even contactless configuration of the device. A comprehensive software function library with high level commands in ROM allows easy and fast time to market development and helps reducing the user code size and as such expensive flash memory size. The software function library provides many powerful functions like AES-encryption and EEPROM emulation.

The SmartLEWIS™ MCU includes an advanced power control system making this family ideal for battery operated applications where low current consumption is necessary. In combination with state-of-the-art development tools this makes RF easy to use for everyone allowing simple and fast time-to-market.

Key Benefits
- Flexibility of design: only one device covering the sub 1GHz ISM frequency bands and three output power levels
- High level of integration with only a few external components lowers system cost and increases reliability
- ADC with flexible high gain settings and differential or single ended inputs support a broad variety of analog sensors
- 125kHz LF Receiver with wireless wakeup or contactless configuration of the device
- Extend battery life due to advanced power control system
- Easy-to-use tools enable to shorten development time

Main Features
- 315/434/868/915MHz RF transmitter
- 5/8/10 dBm output power
- Embedded 8051 microcontroller with 6kbyte code Flash
- Comprehensive software function library in ROM including e.g.:
  - EEPROM emulation
  - License free encryption algorithms support (e.g. AES)
- Embedded peripherals:
  - Manchester/biphase encoder/decoder
  - 16 bit CRC generator/checker
  - Pseudo random number generator
  - Watchdog timer
- 10-bit ADC with 3 differential inputs
- 125 kHz LF ASK receiver
- 10 general purpose I/Os
- I2C and SPI interface
- Integrated temperature and low battery sensor
- Autonomous system controller for enhanced power management
- Ultra low standby current: < 0.5μA
- Unique-ID on-chip
- Voltage range: 1.9 to 3.6 V
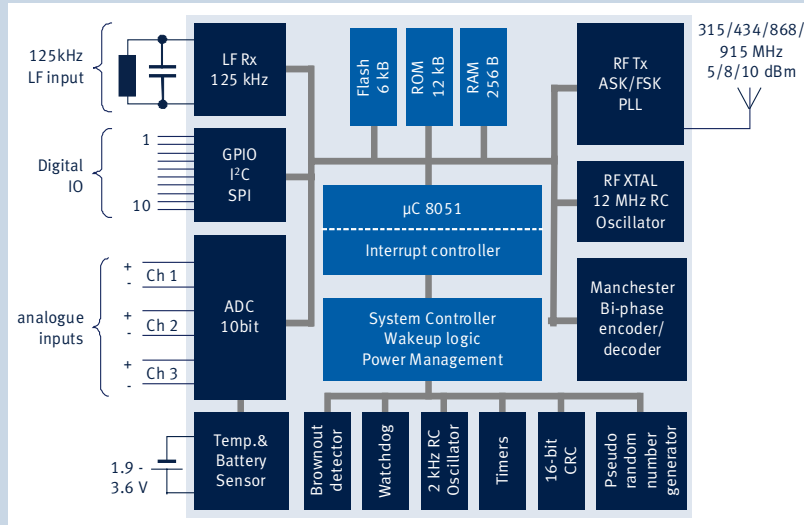- Temperature range: -40 to + 85° C

Applications
- Remote controls
- Home automation systems
- Security and alarm systems
- Automatic meter reading
- Active tagging/RFID
- Wireless sensing
- PMA51xx for automotive or harsh environment

www.infineon.com/PMA

SmartLEWIS™ MCU
PMA71xx - Multiband UHF Transmitter Family with Embedded Microcontroller

PMA7110 Block Diagram

PMA Product Family

SmartLEWIS MCU is a pin-compatible product family in the TSSOP-38 package with optimized feature set per family member to provide the right cost-feature ratio for your application needs.

PMA Product Family

Product Type	Package	Tx	MCU	ADC	LF Rx	Temperature Range	Automotive Qualified	Ordering Code
PMA 7105	PG-TSSOP-38	x	x			-40 - 85°C	no	SP000450408
PMA 7106	PG-TSSOP-38	x	x	x		-40 - 85°C	no	SP000450410
PMA 7107	PG-TSSOP-38	x	x		x	-40 - 85°C	no	SP000450412
PMA 7110	PG-TSSOP-38	x	x	x	x	-40 - 85°C	no	SP000430596
PMA 5105	PG-TSSOP-38	x	x			-40 - 125°C	yes	SP000463432
PMA 5110	PG-TSSOP-38	x	x	x	x	-40 - 125°C	yes	SP000373573

PMA Development Tooling

Try out the PMA71xx/51xx USB-RF-Kit! It contains everything you need and takes just a few steps to run.

Type	Frequency Band	Output Power	Ordering Code
PMAx110-315-5-USB-RF KIT	315MHz	5dBm	SP000409138
PMAx110-434-5-USB-RF KIT	434MHz	5dBm	SP000409140
PMAx110-868-10-USB-RF KIT	868MHz	10dBm	SP000426622