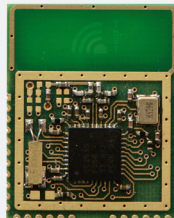


ZIGBEE™ PRO NETWORK PROCESSOR MODULE FOR THE 2.4 GHz ISM BAND

→ iM222A



radio module iM222A



OVERVIEW

The iM222A is a compact, low power radio module for the 2.4 GHz ISM band. It includes a transceiver and a microcontroller and is available either with internal PCB antenna or external antenna connection. The module is solderable like a SMD component and minimizes the need for an expensive and time-consuming RF development. The integrated ZigBee PRO Network Processor firmware with its easy to use API provides full ZigBee PRO functionality and thereby reduces the software development effort. The iM222A handles all ZigBee Protocol tasks and leaves the resources of the application microcontroller free to handle the application. The API is accessible either via UART or SPI and enables ZigBee network establishment and data exchange with only a handful of commands.

Furthermore, IMST provides customized application development (ZigBee PRO, IEEE 802.15.4, 6LoWPAN, RF4CE or proprietary), integration services, antenna development and measurement as well as qualification services (R&TTE) on the basis of the iM222A.

FEATURES:

- 2.4 GHz RF-Module, designed for ZigBee™
- Output power up to 4.5 dBm
- UART and SPI interface
- 12-Bit ADC
- 128-Bit AES encryption engine
- ZigBee Network Processor firmware
- Mesh-, Clustertree-, Star-Networks
- AODV-, Many-To-One and Source-Routing
- Integrated antenna or 50 Ohm pad
- Bootloading support

APPLICATIONS:

- Low-Power wireless sensor networks
- RF remote control and RF4CE systems
- Smart Metering systems
- Home-, Building-, Industrial Automation
- Lighting systems
- Health Care
- Consumer Electronics
- ...

The wide range of capabilities and functionalities provided by the iM222A can be tested by using our Starter Kit.

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→ Technical Data

General

Operating voltage:	2.0 V to 3.6 V, typ. 3.0 V
Supply current:	typ. 24.3 mA (RX) typ. 33.5 mA (TX @ 4.5 dBm) typ. 1 μ A (PM2, 32kHz crystal running) typ. 0.4 μ A (PM3)
Dimension (LxWxH):	approx. 20x25x5 mm
Operating temperature:	-20°C to +70°C

Radio

Frequency range:	2405 MHz to 2480 MHz
Operating channels:	16
Data rate:	250 kbps
Modulation:	O-QPSK , DSSS
Output power:	typ. 4.5 dBm (50 Ω Pad)
Receiver sensitivity:	typ. -97 dBm @ PER ¹ < 1 %
Antenna:	integrated PCB antenna or optional 50 Ω pad
Range:	up to 500m (line of sight, external antenna)

Interface

IO Ports:	2 general purpose IO (analog/digital) ² 2 digital IO ²
UART:	1 15.2 kBaud, RTS/CTS flow control ²
SPI:	up to 4 Mbps ²
RF:	IEEE 802.15.4

Certifications

Pre-qualified to ETSI EN 300 328
Lead-free and RoHs compliant



Subject to technical changes without notice.

¹ PER = Packet Error Rate, 20 bytes packet length

² For customized application development the following peripheral features are provided: 17 GPIOs, 8-Channel ADC, 5-Channel DMA, 2 USARTs , 4 Timer Units