



# Module EM9209 High 1.5-72kbps, 2.4GHz FSK Transceiver

## Description

The EMRF9209SMA module is based on EM Microelectronic's 2.4GHz ISM Band RF transceiver. This product is highly optimized for battery operated wireless applications such as wireless sensors and control, gaming, human interface devices, and security networks.

The purpose of the EMRF9209SMA module family is to offer a very high level of integration requiring a minimum of additional components to build complete applications while maintaining design and software flexibility. It offers a plug and play solution for any EM9209 application without any additional hardware nor RF layout.

A EMRF9209SMA module combined with EMEDVK9209 evaluation-kit allows the user to evaluate RF and electrical performances. Reference designs of each module are also available upon request for quick prototyping.

## Global features

- Low Voltage: 1.9V to 3.6V battery operation
- Low Power
- High Performance and High sensitivity
- Programmable output
- Ultra compact radio design with low BOM cost
- Flexible interface

## Applications

- Remote sensing and control
- Wireless mice, keyboards, toys etc...
- Wireless watch sensors, sports equipment
- Alarm and security systems

## Capabilities

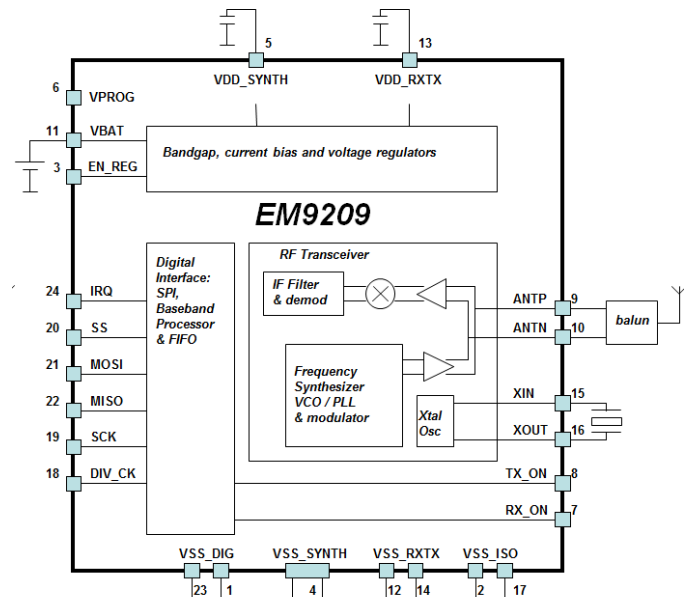
- USB interface to connect the PC
- Demonstrate two way communication
- Range testing
- Measure power consumption
- Control TX power
- Measure RX sensitivity
- Prototyping by using embedded 32-bit MCU

## Ordering Information

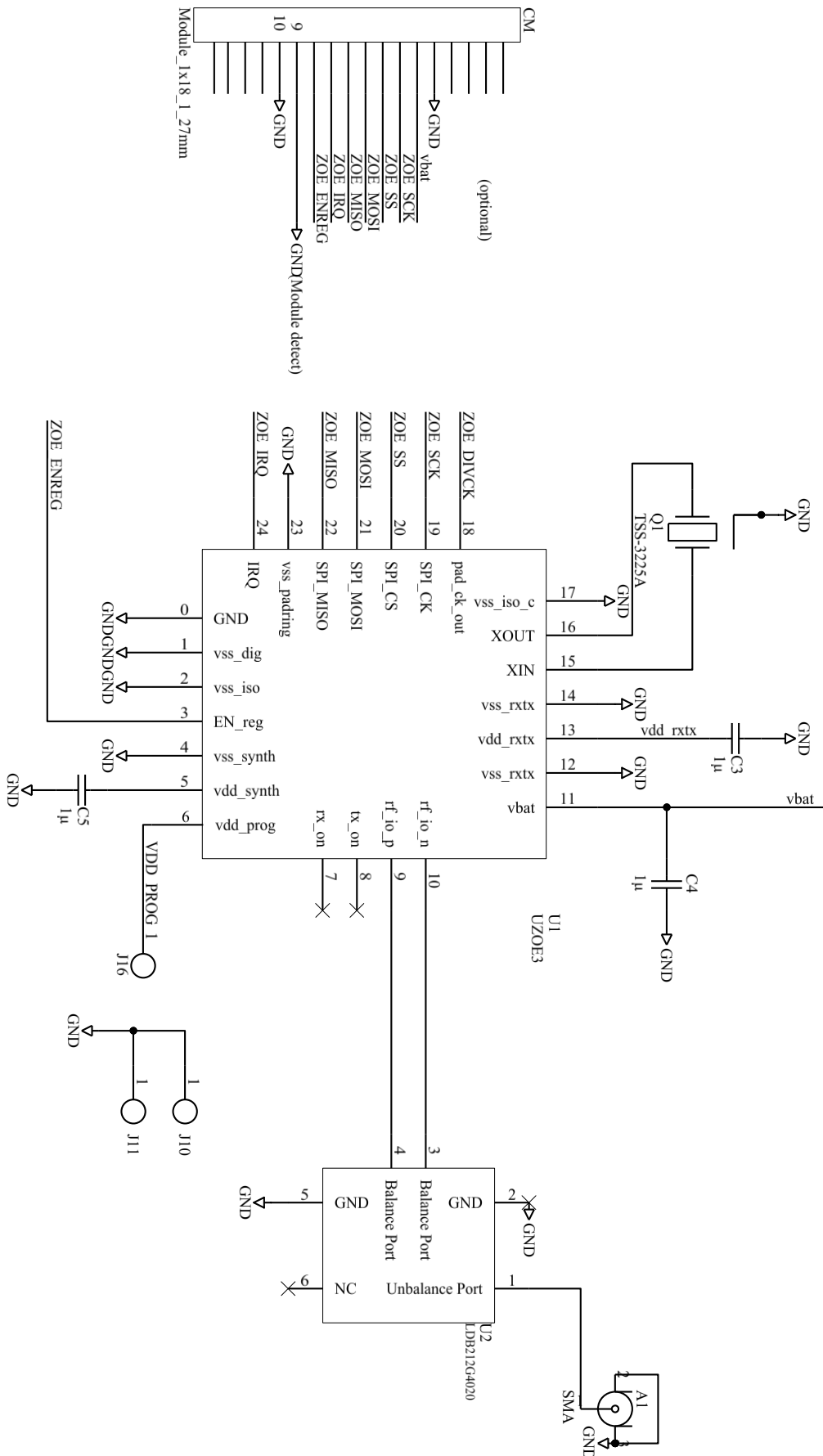
Part Number	Description
EMRF9209SMA	Module EM9209 SMA

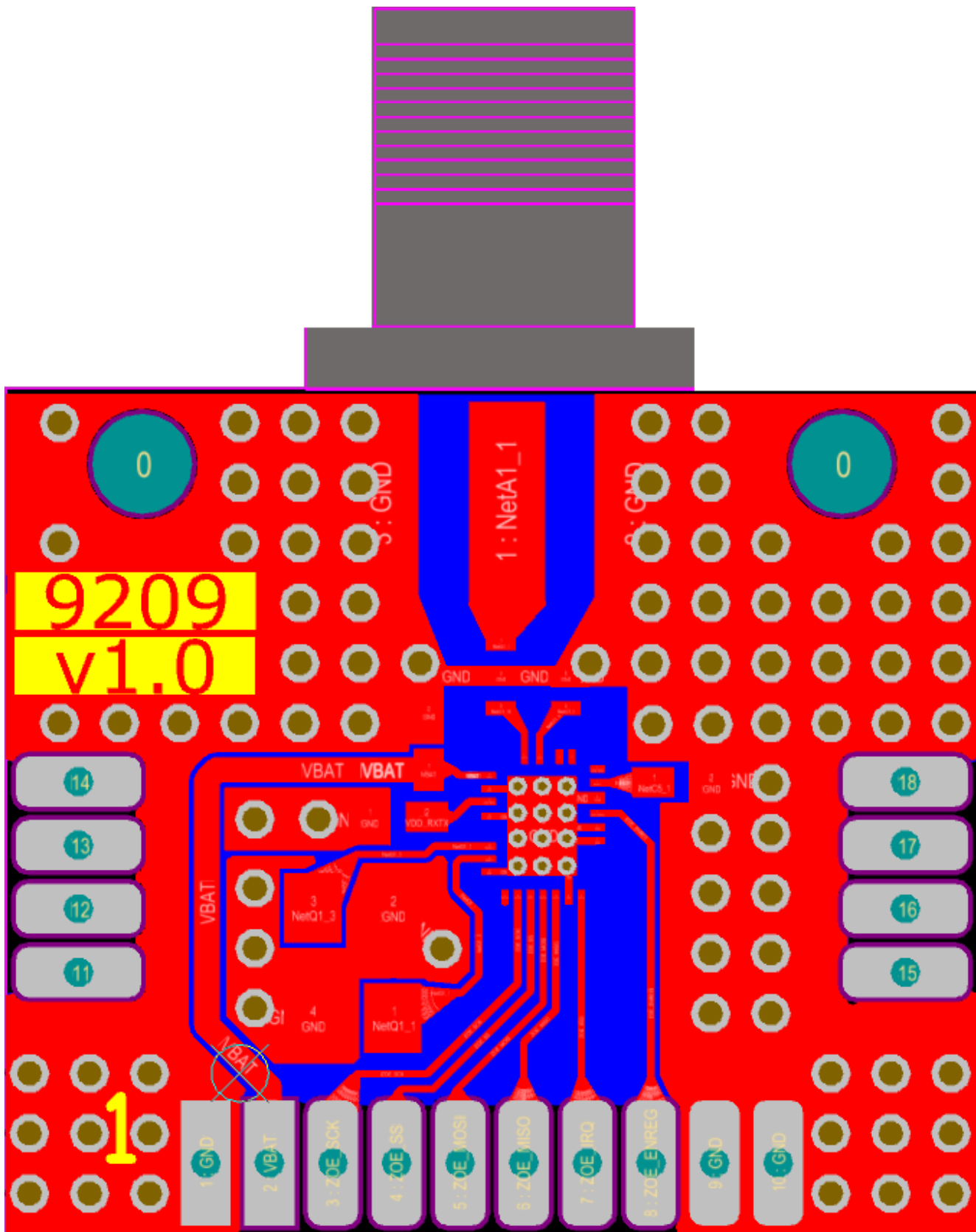
## Specifications

Voltage range	1.9 to 3.6V
Sowerdown	< 1uA
Standby	140uA
Transmit mode -1dBm	11mA
Transmit mode +10dBm	36mA
Receive mode (Normal sensitivity)	7mA
Receive mode (High sensitivity)	8mA
Frequency band	2.4GHz ISM
RF Channel	20 channels
Modulation type	FSK
On-air data rate	1.2 to 72kbit/s
Output power	-20 to 10 dBm
Output power steps	8
Sensitivity	-115dBm



## EM9209 Die version schematic and layout





## QFN24 package version schematic & layout

