

HexNet
RF Module (MJP900-A2)
User Manual

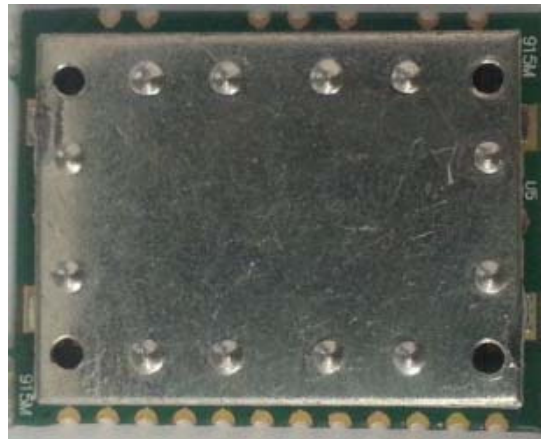
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Hexing Electrical Co.,Ltd.

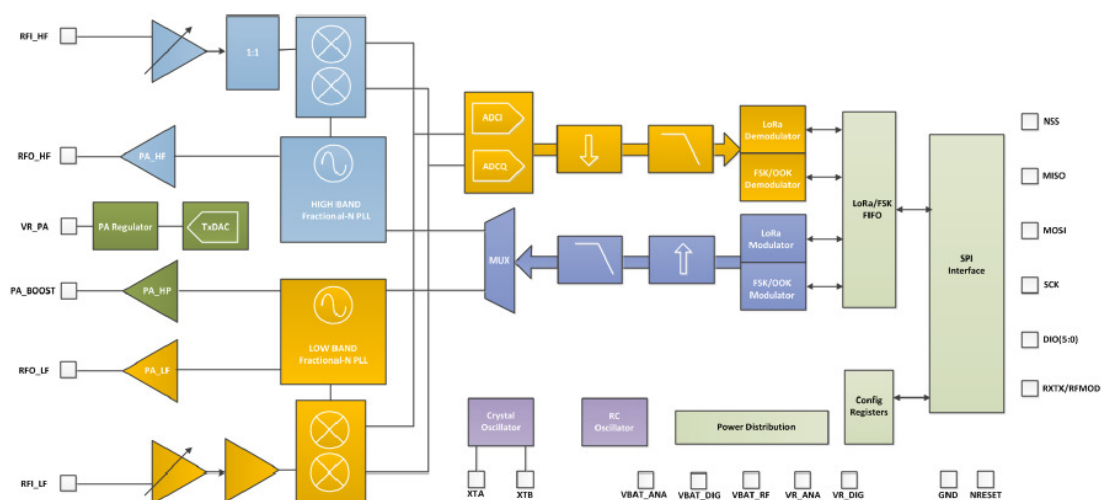
HexNet RF Module

1. Product Introduction

The HexNet RF module is a highly integrated half-duplex micropower wireless data transmission module. The HexNet RF module embedded high-performance RF chip. User programming has very good flexibility. This module provides multiple channels of choice, can modify band width, data rate and other parameters. HexNet module operating frequency include 915MHZ. The real figure as shown in the figure below.



2. RF Module Chip Block Diagram



3. RF Module Pin Definition

1	GND	GND
2	GND	GND
3	VCC_PA	PA chip power
4	GND	GND
5	GND	GND
6	GND	GND
7	VCC_RF	RF chip power
8	RESET	RESET Pin
9	DIO0	RXDone、TXDone、CADDone
10	DIO1	FHSS
11	DIO2	/
12	DIO3	CADDetected, PLL_Lock
13	DIO4	/
14	SCK	SPI Clock
15	MISO	SPI Data Out
16	MOSI	SPI Data In
17	NSS	SPI Selected Pin
18	GND	GND
19	RF	RF Antenna

4. 4-wire Serial Configuration and Data Interface

HexNet is configured via a simple 4-wire SPI-compatible interface (MOSI, MISO, SCLK, and NSS) where HexNet is the slave. This interface is also used to read and write buffered data.

The figure below shows a typical SPI single access to a register.

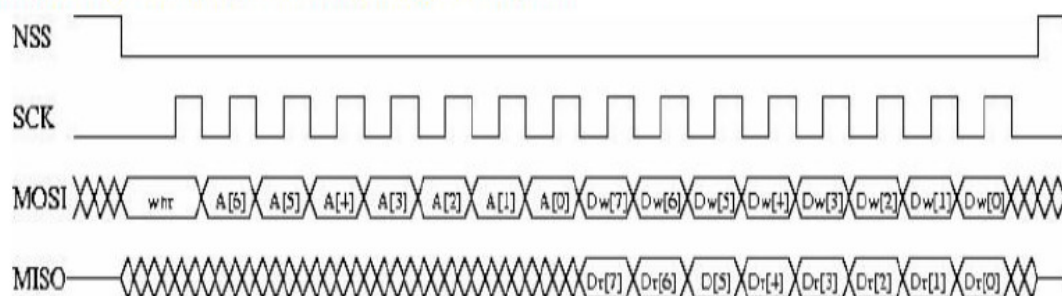


Figure 1 Configuration Registers Write and Read Operations

MOSI is generated by the master on the falling edge of SCK and is sampled by the slave (i.e. this SPI interface) on the rising edge of SCK. MISO is generated by the slave on the falling edge of SCK.

A transfer is always started by the NSS pin going low. MISO is high impedance when NSS is high.

The first byte is the address byte. It comprises:

- A wnr bit, which is 1 for write access and 0 for read access.
- Then 7 bits of address, MSB first.

The second byte is a data byte, either sent on MOSI by the master in case of a write access or received by the master on MISO in case of read access. The data byte is transmitted MSB first.

Proceeding bytes may be sent on MOSI (for write access) or received on MISO (for read access) without a rising NSS edge and re-sending the address. In FIFO mode, if the address was the FIFO address then the bytes will be written / read at the FIFO address. In Burst mode, if the address was not the FIFO address, then it is automatically incremented for each new byte received.

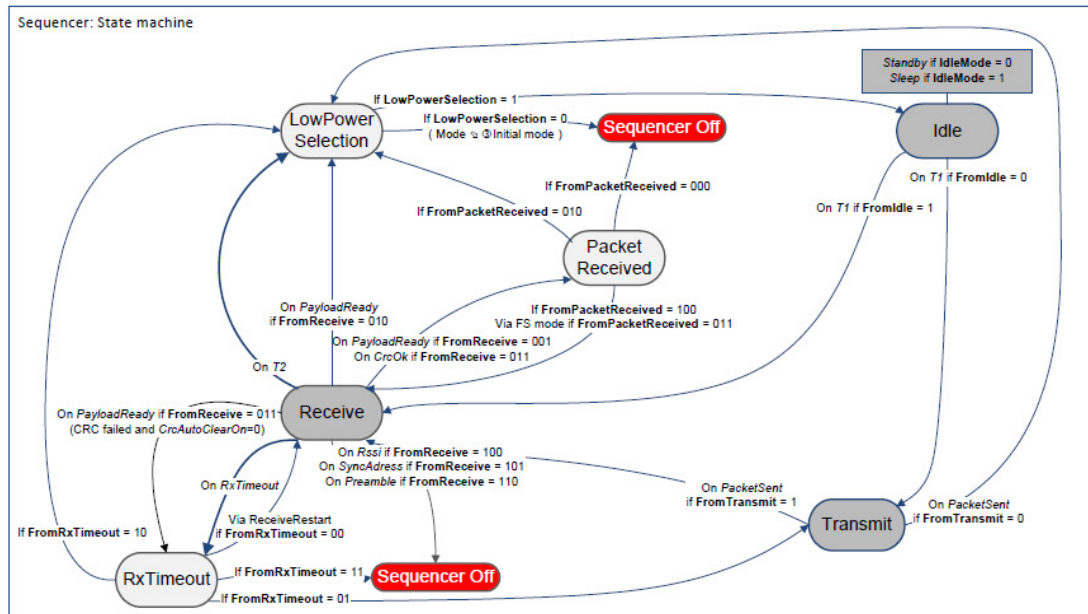
The frame ends when NSS goes high. The next frame must start with an address byte. The SINGLE access mode is therefore a special case of FIFO / BURST mode with only 1 data byte transferred.

During the write access, the byte transferred from the slave to the master on the MISO line is the value of the written register before the write operation.

5. User operation

This HexNet module is mainly used in power system, electricity information collection system. Mainly include the following equipments: Data Concentrator, Data Collector, Smart Electric Meter, etc.

Insert the HexNet module on user's printed circuit boards, use MCU SPI communication with the module. Control the RF register and FIFO to complete wireless data transceiver functions.



Note:

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- 2 All the final explanation and modification rights for all materials were reserved by Hexing Electrical Co., Ltd.

FCC Warning:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



The modular transmitter must be equipped with either a permanently affixed label or must be capable of electronically displaying its FCC identification number:

If using a permanently affixed label, the modular transmitter must be labeled with its own FCC identification number. and, if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: “Contains Transmitter Module FCC ID:2AIUZ-MJP900-A2.” Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement. In the latter case, a copy of these instructions must be included in the application for equipment authorization.

FCC Radiation Exposure Statement:

To satisfy FCC RF Exposure requirements for this transmission devices, a separation distance of 20cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.