RFM12　Demo Kit User Manual
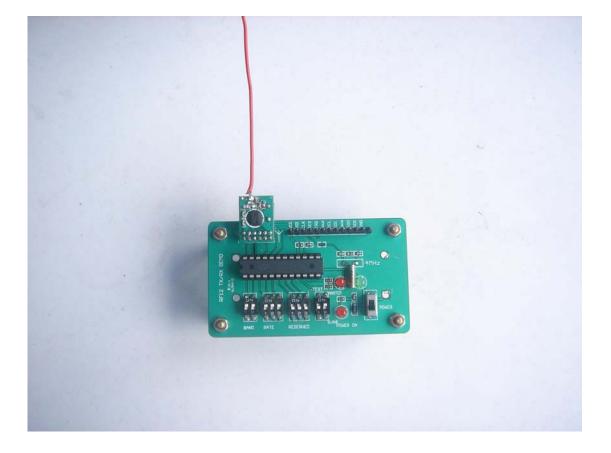
HOPE MICROELECTRONICS CO.,LTD

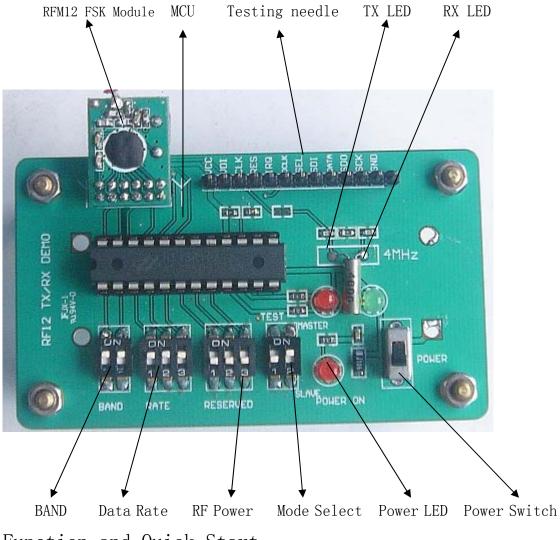Rm B.8/F LiJingGe Emperor Regency 6012 ShenNan Rd., Shenzhen,China

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General Description：

RFM12 Demo Kit is designed mainly for the purpose of testing the RFM12 module function: RF working distance, fast software development.

Construction:

RFM12 FSK Module   MCU   Testing needle   TX LED   RX LED

BAND   Data Rate   RF Power   Mode Select   Power LED   Power Switch

Function and Quick Start：

Note: Make sure the setting on the two demo board are exactly the same, otherwise no link between the two transceiver module could be established.

1、Band Selection：ON =1，OFF=0

SW1	SW2	
0	0:	315MHZ
0	1:	434MHZ
1	0:	869MHZ
1	1:	915MHZ

2、Data Rate：ON=1，OFF=0

SW1	SW2	SW3	
0	0	0	1.2kbps
0	0	1	2.4kbps
0	1	0	4.8kbps
0	1	1	9.6kbps
1	0	0	17.8kbps
All Others :			17.8kbps

3、Mode：ON=1，OFF=0

SW1	SW2	
0	0:	Slave FIFO RX mode（RF link can be established）
0	1:	Master FIFO TX mode（RF link can be established）
1	0	Testing RX mode（DATA, DCLK output, no RF link）
1	1	Testing TX mode（1010... data sent in selected mode ontinuously）

4、TX Power Selection：ON=1，OFF=0

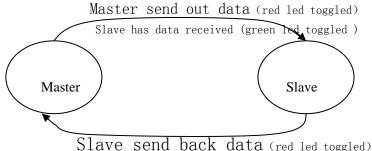| SW1	SW2	SW3	
0	0	0	0db
0	0	1	−3db
0	1	0	−6db
0	1	1	−9db
1	0	0	−12db
1	0	1	−15db
1	1	0	−18db
1	1	1	−21db

Function Description：

1. RF link mode

        The setting on two different demo board has to be same.
        After Power up, master sends out one packets of data every second,
    after sending out the data, the receiver is switched to RX mode
    immediately, TX will be toggled once. After data received and verified

on the slave side, RX LED(green)will be toggled once，in the mean time slave will send back one frame of data, slave TX led(red) will be toggled once. After having data received and verified, master will toggle RX led(green) once. The same procedure will be repeated in the next cycle again.

Master send out data (red led toggled)

Slave has data received (green led toggled)

Master   Slave

Slave send back data (red led toggled)

Master has data received (green led toggled once)

Data Packets：

	Pre-amble	Sync Word	Data	Check sum	
	0xAA,0xAA,0xAA,0xAA	0x2D, OXD4	0x31, 0x32, ……, 0x3F	0x78	0xAA

2. De-bugging Mode

This is useful for software engineers to develop codes using this RF module

Mode Setting：1 0
Slave testing mode for user to develop code for transmission：
The demo kit will work at non FIFO reception mode，DCLK will be presented in same data rate selected，DATA pin has received data output。When there is data transmitted, observing on DCLK and DATA pin to see received data(AAH or 55H data pattern for easier observation)

Mode setting：1 1（TX led on）
Master testing mode for user to develop code for receiver：
The demo kit will work at non FIFO transmission mode，"AAH" will be sent out continuously so data will be sent out continuously into the air thus there is signal for user to tune their receiver.

Precautions:

1. Power supply ranges from 2.2V—5.5V
2. When the demo kit is used for RF link testing purpose, make sure the setting on both board are exactly the same.
3. Once there is a setting change happened, make sure to re-start the system by switching on the power to make the setting valid.