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QRF-0100 ZigBee Module User Manual (Preliminary)

Doc. #: AN-QRF-0100-01

<Rev. 0.1>

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QuadRep Electronics [T] Ltd.

5F-13, No. 79, Hsin Tai Wu Rd, Sec.1, His-Chih, Taipei, Taiwan

TEL: +886-2-26989933

FAX: +886-2-26989911

http:// www.quadrep.com.tw

http:// www.quadrep.com.cn



Revision History

Revision	Date	Description of Change
0.1	Jan 10, 2007	Initial version

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1 · General Information:

The QRF-0100 module is a high output power (over 15dBm at antenna out) system that integrates UBEC's UZ2400, other necessary components such as crystal, switches, resistors and capacitors. The purpose of the QRF-0100 module is to provide our customers a flexible and reliable module for their application development. There is one interface for the QRF-0100 module (SPI). It's simple and convenient to program for both 802.15.4 and ZIGBEE applications.

UZ2400, 802.15.4 compliant transceiver, features a maximum 5 MHz serial interface when operating at 20MHz for various control purposes and it is a serial interface slave device. The basic serial interface consists of 4-wired bus: SCLK, SI, SO, and SEN. It provides accesses to various storage units: MAC/BB/RF control/status registers, TXFIFOs, RXFIFO and security key table.

2 · PCB

PCB details front view of QRF-0100 ZigBee module.

The PCB size is 1.425x 1.495 (cm²).

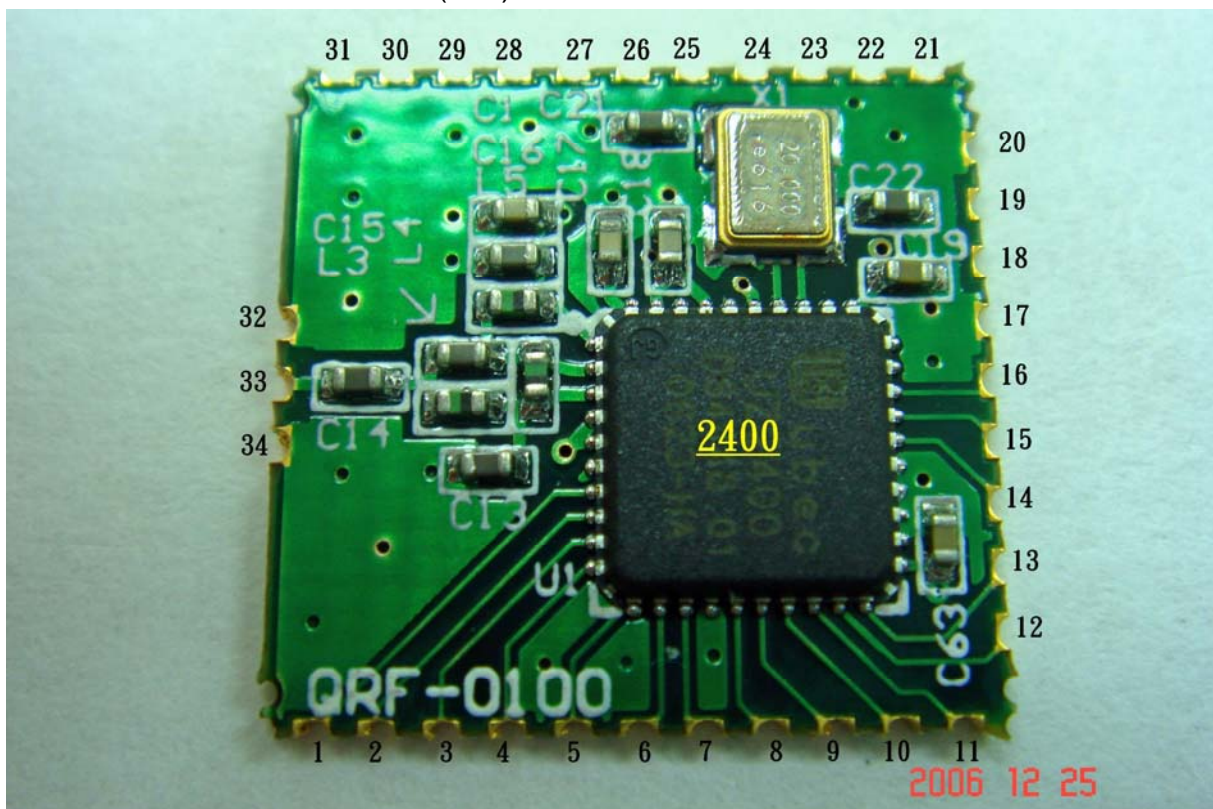


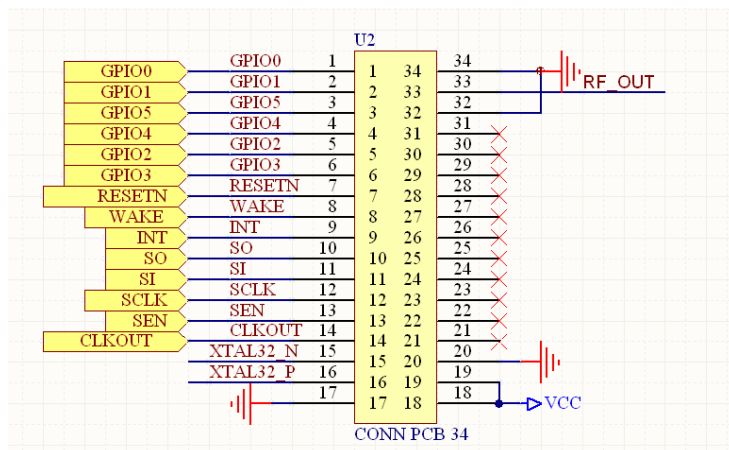
Figure 1 QRF-0100 QuadRep ZigBee Module



3 · Power Supply

Pad 18 and pad 19 are VCC input on QRF-0100 QuadRep ZigBee module. The voltage range is from 3.0V to 3.3V

4 · QRF-0100 Pad Definition:



Pad number	Name	Function	Definition
1	GPIO0	UZ2400 GPIO0	UZ2400 PIN 7
2	GPIO1	UZ2400 GPIO1	UZ2400 PIN 8
3	GPIO5	UZ2400 GPIO5	UZ2400 PIN 9
4	GPIO4	UZ2400 GPIO4	UZ2400 PIN 10
5	GPIO2	UZ2400 GPIO2	UZ2400 PIN 11
6	GPIO3	UZ2400 GPIO3	UZ2400 PIN 12
7	RESETN	UZ2400 Reset	UZ2400 PIN 13
8	WAKE	UZ2400 Wake	UZ2400 PIN 15
9	INT	UZ2400 Interrupt	UZ2400 PIN 16
10	SO	UZ2400 SPI SO	UZ2400 PIN 17
11	SI	UZ2400 SPI SI	UZ2400 PIN 18
12	SCLK	UZ2400 SPI CLK	UZ2400 PIN 19
13	SEN	UZ2400 SPI SEN	UZ2400 PIN 20
14	CLKOUT	UZ2400 Clock out	UZ2400 PIN 26
15	XTAL32N	UZ2400 Extra Oscillators	UZ2400 PIN 27
16	XTAL32P	UZ2400 Extra	UZ2400 PIN 28



		Oscillators	
17	GND	Grand	
18	VCC	Power in	
19	VCC	Power in	
20	None	Don't use	
21	None	Don't use	
22	None	Don't use	
23	None	Don't use	
24	None	Don't use	
25	None	Don't use	
26	None	Don't use	
27	None	Don't use	
28	None	Don't use	
29	None	Don't use	
30	None	Don't use	
31	None	Don't use	
32	GND	Grand	
33	RF_OUT	RF out	RF signal out
34	GND	Grand	

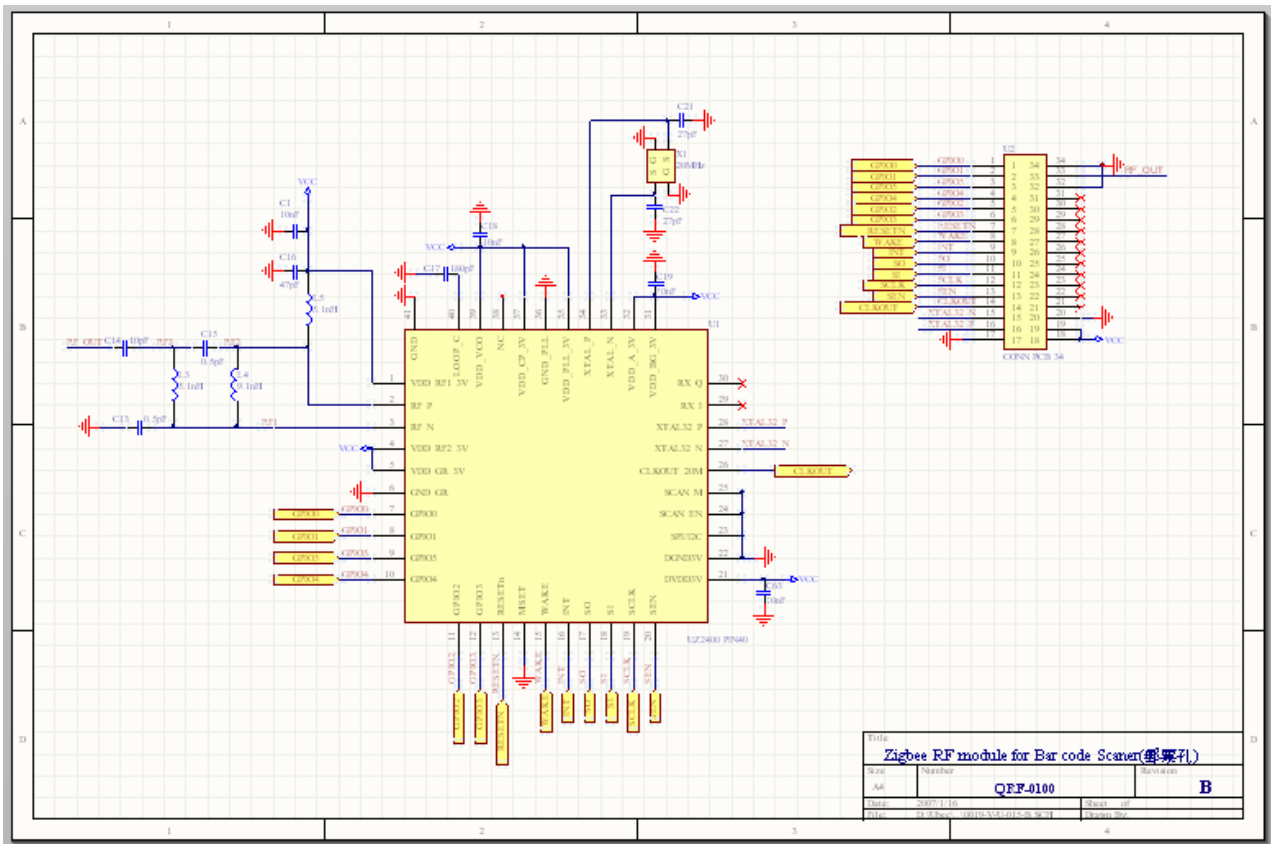
5 · Bill of Material

Item	Quantity	Reference	Part	Size
1	1	C1	10nF	0402
2	1	C13	0.5pF	0402
3	1	C14	1pF	0402
4	1	C15	0.5pF	0402
5	1	C16	47pF	0402
6	1	C17	100pF	0402
7	1	C18	10nF	0402
8	1	C19	10nF	0402
9	1	C21	27pF	0402
10	1	C22	27pF	0402
11	1	C63	10nF	0402
12	1	L3	5.1nH	0402

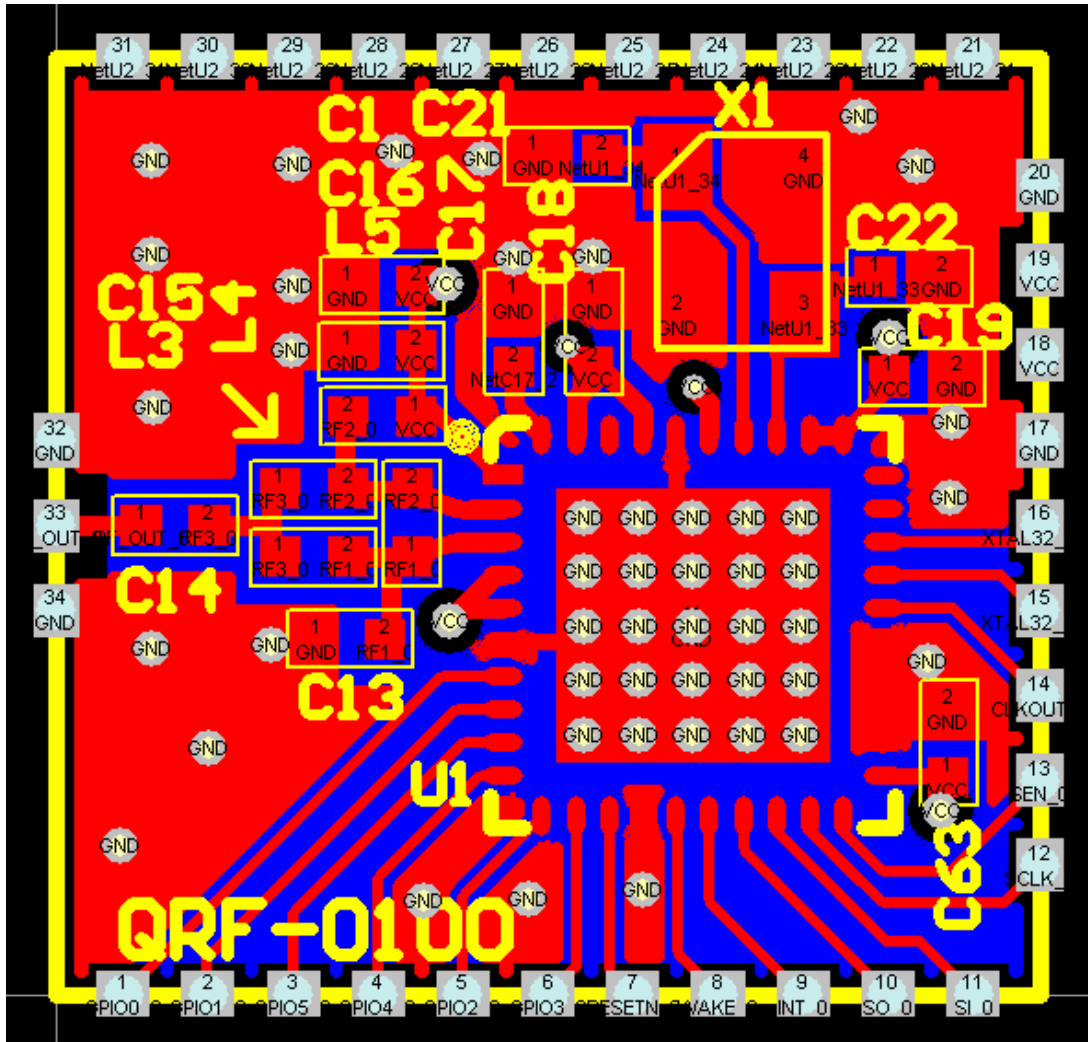


13	1	L4	9.1nH	0402
14	1	L5	5.1nH	0402
15	1	U1	UZ2400 PIN40	TQPF40
16	1	U2	CONN PCB 34	STAMP 34A
17	1	X1	20MHz	CX_101F
18	1	C1	10nF	0402

6 · Schematics:



7 · PCB Layout





9 · Reference Documents

- a. UBEC UZ2400 datasheet