

# WIZ-RF30 Datasheet

( Version 1.0 )



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## Document Revision History

Date	Revision	Changes
2010-09-01	V1.0	Official Release

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# 1. Introduction

The RF-communication circuit and a highly effective STM32 MCU are embedded in module WIZ-RF30; user can write programs and attach various sensors to the module to use the module as a sensor node, or the user can control the system by using I/O of MCU.

## 1.1 Feature

- Worldwide 2.4GHz ISM band operation, 126 RF channels
- Ultra low power, compact and low cost RF transceiver
- Up to 2Mbps on-air data rate
- Enhanced ShockBurst™ hardware link layer
- Selective auto acknowledgement with payload
- Embedded Chip ANT for efficient radiation
- Dynamic payload length and Auto retransmit
- Embedded ARM 32bit Cortex-M3 CPU(64Kbytes of Flash memory)
- Support JTAG interface
- Support 7-Timers / I2C / USART / SPI / GPIO interface
- Compact design 30mm x 40mm x 14mm ( L x W x H )
- RoHS Compliant

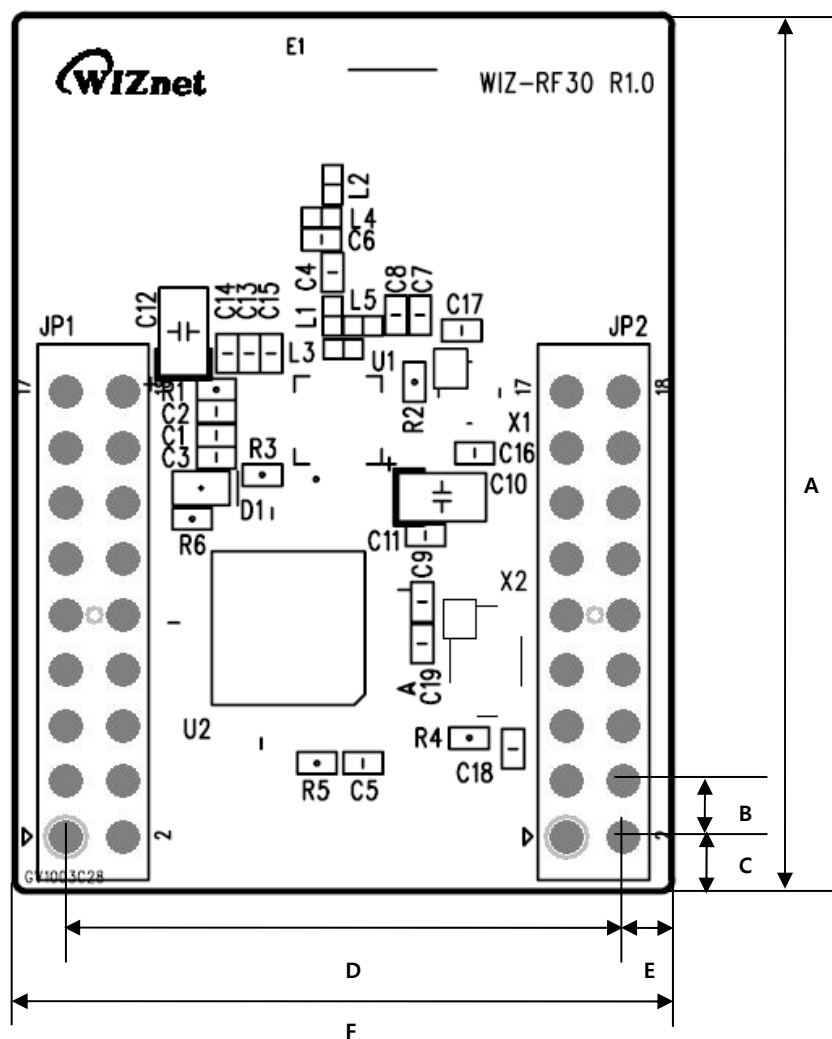
## 1.2 Specification

<b>General RF Conditions</b>	Radio Frequency	2.400 ~ 2.4835GHz
	Crystal Frequency	16MHz
	Frequency Deviation@2MHz	±30ppm
	Air Data Rate	250 ~ 2000kbps
	Non-overlapping Channel Spacing @2MHz	2MHz
	Modulation	GFSK
	Sensitivity(0.1%BER) @2MHz	-82dBm ※ <b>Chipset (nRF24L01P)</b>
<b>Internal Comm. Interface</b>	USART	TXD, RXD, CTS, RTS, CK
	SPI	MOSI, MISO, SCK, NSS1
	I2C	SDA, SCL, SMBAL
	JTAG	JNTRST, JTDI, JTDO, JTCK, RST
	GPIO	PAX, PBx, PCx
<b>Power on reset</b>		1us ~ 50ms(Power ramp up time)
<b>Dimension</b>		30mm x 40mm x 14mm ( Include connector size )
<b>Connector type</b>		2.54mm Pitch Pin-header, 18pin(2*9, 2EA)
<b>Input voltage</b>		1.9V ~ 3.6V
<b>Power consumption</b>		Active mode(Tx, 0dBm) : 11.1mA Active mode(Rx, 2Mbps) : 13.3mA Stanby mode : 1mA Deep sleep mode : 0.5uA MCU core(8MHz, 4MIPS) : 4mA
<b>Temperature</b>		-40℃ ~ +85℃
<b>Humidity</b>		10 ~ 90 %

Table 1. Specification

## 2. Hardware Specification

### 2.1 Dimension



A	B	C	D	E	F
40.00	2.54	2.54	25.40	2.30	30.00

Figure 1. WIZ-RF30 Dimensions (unit: mm)

## 2.2 Connector Specification

### JP1

REF.	Pin	Signal	Description
JP1	1	SPI2_MOSI	SPI2 Master Out Slave In
JP1	2	VCC	Power Input(1.9V ~ 3.6V)
JP1	3	SPI2_MISO	SPI2 Master In Slave Out
JP1	4	PC13	GPIO Port C 13 <sup>th</sup>
JP1	5	SPI2_SCK	SPI2 Clock
JP1	6	PC14	GPIO Port C 14 <sup>th</sup>
JP1	7	SPI2_NSSI	SPI2 NSSI
JP1	8	PC15	GPIO Port C 15 <sup>th</sup>
JP1	9	PB2/BOOT1	GPIO Port B 2 <sup>nd</sup> /BOOT Fuse
JP1	10	UART2_CTS	Uart2 Clear to Send
JP1	11	PB8	GPIO Port B 8 <sup>th</sup>
JP1	12	UART2_RTS	Uart2 Request to Send
JP1	13	PB9	GPIO Port B 9 <sup>th</sup>
JP1	14	UART2_TX	Uart2 Transmitted Data
JP1	15	/RESET	MCU RESET
JP1	16	UART2_RX	Uart2 Received Data
JP1	17	GND	Ground(0V)
JP1	18	GND	Ground(0V)

### JP2

REF.	Pin.	Signal	Description
JP2	1	VCC	Power Input(1.9V ~ 3.6V)
JP2	2	JNTRST	JTAG Port
JP2	3	PB10	GPIO Port B 10 <sup>th</sup>
JP2	4	JTDO	JTAG Port
JP2	5	PB11	GPIO Port B 11 <sup>th</sup>
JP2	6	JTDI	JTAG Port
JP2	7	BOOT0	Boot 0 fuse
JP2	8	JTCK	JTAG Port
JP2	9	I2C_SDA	I2C Data
JP2	10	JTMS	JTAG Port
JP2	11	I2C_SCL	I2C Clock

JP2	12	UART1_RTS	Uart1 Request to Send
JP2	13	I2C_SMBAI	I2C SMBAI
JP2	14	UART1_CTS	Uart1 Clear to Send
JP2	15	UART1_CK	Uart1 Transmitter Clock Out
JP2	16	UART1_TX	Uart1 Transmitted Data
JP2	17	GND	Ground(0V)
JP2	18	UART1_RX	Uart1 Received Data

**Table 2. Pin Header Connector PIN-Assignment**