

# WSG304S Sigfox Verified Module (RC1& BT)

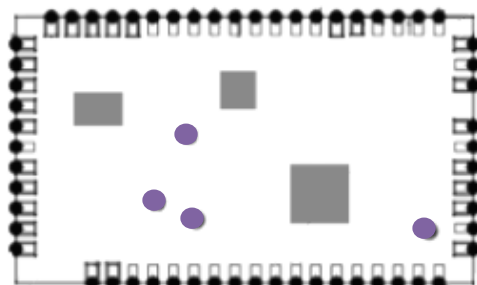
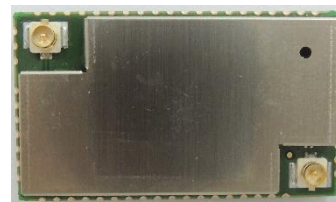
## RF Output Power Up To 14dBm (Sigfox) / 8dBm (BT)

WSG304S RC1 is a Sigfox + BLE dual modem module for the low power wide area network (LPWAN) market. It is designed with ST's system BlueNRG-1+S2-LP for the European market (EN 300 220). The module was designed for high performance, high quality, low cost, small form factor and most importantly, high RF power of up to 14dBm. The design is fully compliant to ETSI regulations. The Sigfox application is running on BlueNRG-1 at high efficiency executed at high efficiency using its internal 32bit core Cortex-M0 processor. Every module is preloaded with Sigfox application software, module specific ID/KEY/PAC as referring to Sigfox network system. The preloaded software also includes a bootloader which allows software update or future user application development.

Pin to pin compatible with WSG301S RC24 & BT Module

### Features

- Operating Frequency: ISM 868MHz(Sigfox)
- Operating Frequency: ISM 2400MHz~ 2483.5MHz(BT)
- Sigfox & BT compliant AT command set via UART
- Maximum transmission power: 14dBm
- Current consumption:
  - 21mA Tx at 14dBm (peak current with Sigfox packet transmission)
  - 11mA TX at 4dBm BT packet transmission
  - 3uA at sleep mode
- Small-form-factor
  - 16.5mm x 28.5mm Stamp type
  - Compact board design with low external component counts
- Voltage supply : 2.0V ~ 3.6V
- 160KB Flash & 24KB RAM Embedded
- Operation Temperature: -30°C ~ 80°C
- ETSI EN 300 220 compliant
- Preloaded Sigfox application with ID/KEY/PAC and bootloader for firmware update
- Evaluation kit available
- I/F : I2C\*1/UART\*1/GPIO\*4/ADC\*2/DIO\*3



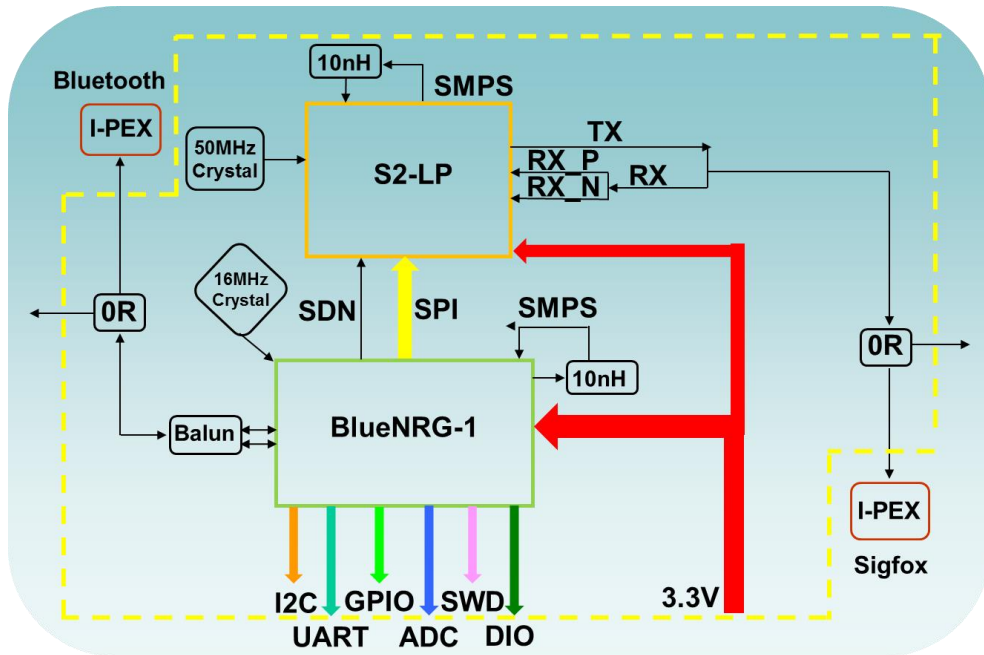
Pinout (bottom view)

- Thermal pad
- Test pad

Pin.	Pin Define	Status	Description
1,2,3,4,5,15,16,21,23,24,26,27,28,30,46,47,48,49,50,51,52,53,55,56,57,58,59.	GND.	GND.	Pin 60, 61, 62 Thermal pad.
6.	SPI_MISO.	I.	DIO3.
7.	SPI_MOSI.	O.	DIO2.
8.	SPI_SCLK.	I/O.	DIO0.
9.	CSN.	I/O.	DIO14.
10.	GPIO0.	I/O.	GPIO0.
11.	GPIO1.	I/O.	GPIO3.
12.	GPIO2.	I/O.	GPIO2.
13.	GPIO3.	I/O.	DIO13.
14.	SDN.	I/O.	SDN=0, Shutdown mode.
17.	DIO1.	I/O.	DIO1.
18.	TEST1.	O.	TEST1.
19.	ADC1.	I.	ADC1 (1V7~3V6).
20.	ADC1.	I.	ADC2(1V7~3V6).
22.	DIO12.	I/O.	DIO12.
25.	BT.	I/O.	BT Antenna.
29.	TEST.	I.	TEST.
31.	UART_RX.	I.	DIO11(115200bps).
32.	UART_TX.	O.	DIO8(115200bps).
33.	DIO7.	I/O.	DIO7.
34.	SWDIO.	I.	DIO10.
35.	SWCLK.	I.	DIO9.
36,37,38,39,44,45.	NC.	NC.	NC.
40.	I2C_DAT.	I/O.	DIO5.
41.	RESETN.	I.	Power on reset delay before VBAT.
43.	I2C_CLK.	I/O.	DIO4.
46.	VDD.	VDD.	VDD_3V3.
54.	ANT1.	I/O.	SigFox Antenna.

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**Functional Block Diagram**



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