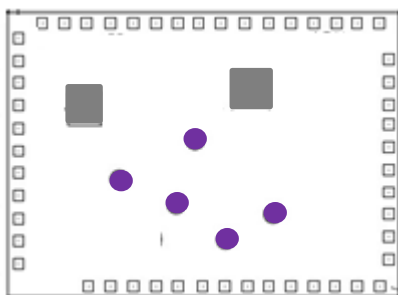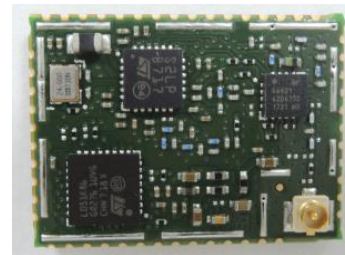# WSG300S Sigfox Verified Module (RC2/4)

RF Output Power Up To +22dBm (Sigfox)

WSG300S RC24 is a Sigfox modem module for the low power wide area network (LPWAN) market. It is designed with STM's system S2-LP+STM MCU+Sky66421 for the US or other FCC-like market (FCC Part 15.247). The module was designed for high performance, high quality, low cost, small form factor and most importantly, high RF power of up to 22dBm. The design is fully compliant to FCC regulations. The Sigfox application is running on STM32 MCU 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 WSG303S RC1 Module)

Features

- Operating Frequency: ISM RC2 (902MHz)
  and RC4 (920MHz)
- Sigfox compliant AT command set via UART
- Maximum transmission power: 22dBm
- Current consumption:
  - 184mA Tx at 22dBm (Peak current with Sigfox packet transmission)
  - 4.7uA at sleep mode
- Small-form-factor
  - 16.5x22.5mm stamp package
  - Compact board design with low external component counts
- Voltage supply : 2.0V ~ 3.6V
- 64KB Flash & 8KB RAM Embedded
- Operation Temperature: -40C ~ 85C
- FCC Part 15.247
- Preloaded Sigfox application with ID/KEY/PAC and bootloader for firmware update
- Evaluation kit available

Pin.	Pin Define	Status	Description
1,2,3,4,5,15,16,19,40, 41,42,43,44,45,47,48, 49,50,51,52,53	GND	GND	Pin 52, 53 Thermal pad
6	SDO	SPI1_MISO	PA6
7	SDI	SPI1_MOSI	PA7
8	SCLK	SPI1_SCK	PB3
9	CSN	I/O	PA1
10	GPIO0	I/O	PA0
11	GPIO1	I/O	PA4
12	GPIO2	I/O	PB1
13	GPIO3	I/O	PA15
14	SDN	I/O	SDN=0, Shutdown mode
17	USART_TX	O	PA2 (115200bps)
18	USART_RX	I	PA3 (115200bps)
19	PA5	I/O	PA5
20	PB0	EVENTOUT	PB0
21	PB2	LPTIM1_OUT	PB2
22	PA9	I/O	PA9
23	PA10	I	PA10
24	PA11	I/O	PA11
25	PA12	I/O	PA12
26	SWDIO	I	PA13
27	SWCLK	I	PA14
28	PA15	I/O	PA15
29	PB4	I/O	PB4
30	PB5	I/O	PB5
31	PB6	I/O	PB6
32	PB7	I/O	PB7
33	NRST	I	NRST
34	BOOT0	BOOT0	BOOT0
35	PB8	I2C1_SCL	PB8
36	XI	OSC32_IN	PC14-OSC_IN
37	XO	OSC32_OUT	PC15-OSC32_OUT
38	VDD	VDD	VDD_3V3
46	ANT1	I/O	SigFox Antenna

Pinout (bottom view)
- ■ Thermal pad
- ● Test pad

http:// www.liteon.com

Functional Block Diagram