

# S76G Rev.04

## Product Brief



### FEATURE

#### ● Platform Features

- ST micro controller: STM32L073Z
- High performance ARM® Cortex®-M0+ 32-bit RISC core operating at a 32 MHz frequency
- 192 Kbytes of Flash memory
- 20 Kbytes of SRAM
- Serial wire debug (SWD) & JTAG
- USB 2.0 full-speed device/host

#### ● LORA Features

- LORA chip: Semtech SX1276
- LoRa Modem
- +20 dBm constant RF output vs. V supply
- Programmable bit rate up to 37500 bps
- High sensitivity: down to -137 dBm
- Excellent blocking immunity
- Preamble detection
- Automatic RF Sense and CAD with ultra-fast AFC
- Payload up to 128 bytes with CRC

#### ● GNSS Features

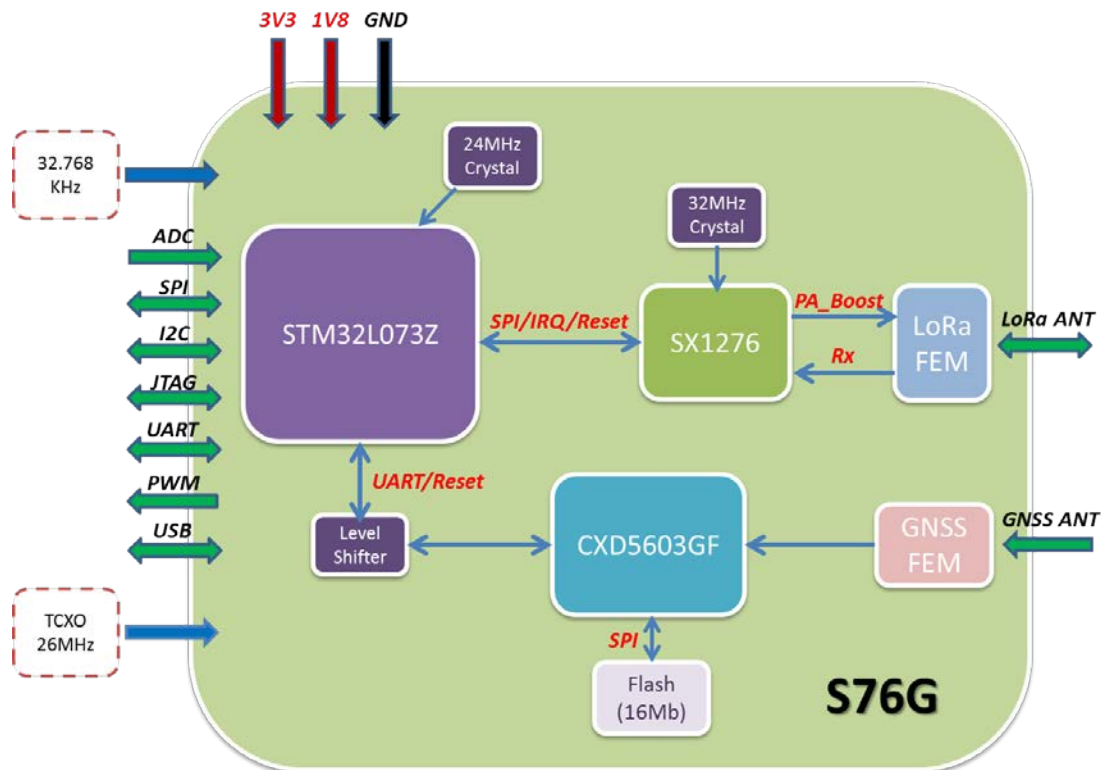
- GNSS chip: SONY CXD5603GF
- GPS/GLONASS/GALILEO/BEIDOU(after ICD released) receiver
- Ultra-low power consumption
- Embedded noise filters and spectrum analyzer for development
- Supports SBAS/QZSS

#### ● Other Features

- 24MHz crystal for STM32L073Z and 32MHz crystal for SX1276 are inside module
- 16Mbits Flash for CXD5603GF is inside module
- Level shifter for communication between STM32L073Z and CXD5603GF is inside module
- LoRa FEM(with matching) and GNSS(GPS/GLONASS/GALILEO/BEIDOU) FEM(with matching) are inside module
- Additional 32.768KHz crystal and 26MHz TCXO signal sources are needed
- Epoxy molding finished module in LGA type
- Small size : 13m X 11 X 1.55 mm

#### ● RoHS & Halogen free compliant / Lead free

## S76G Block Diagram



## Technical Specification

Model Name	S76G
Product Description	LoRa and GNSS Wireless Communication Module
Package	LGA type
Host Interface	UART
Dimension	13 mm x 11 mm x 1.55 mm

## Operation Conditions

Operating Voltage	<ul style="list-style-type: none"> <li>■ 3.3V for MCU / LoRa function</li> <li>■ 1.8V for GNSS function</li> </ul>
Temperature	<ul style="list-style-type: none"> <li>■ Storage : -50°C ~ +105°C</li> <li>■ Operating : -25°C ~ +85°C</li> </ul>
Humidity	<ul style="list-style-type: none"> <li>■ Operating : 10 ~ 95% (Non-Condensing)</li> <li>■ Storage : 5 ~ 95% (Non-Condensing)</li> </ul>

## Electrical Specifications

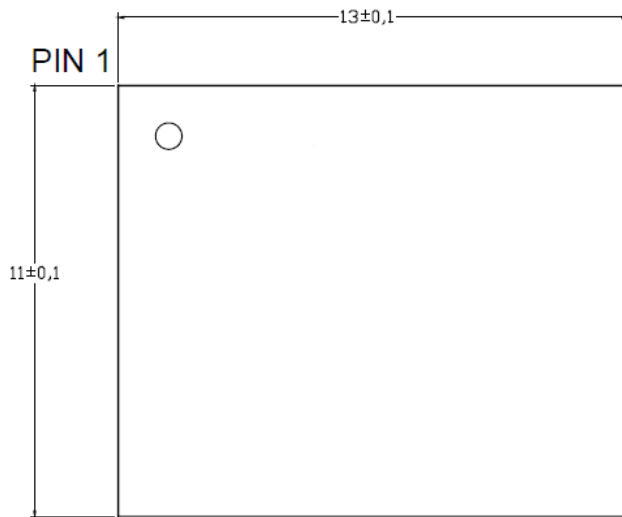
Frequency	<ul style="list-style-type: none"> <li>■ LoRa frequency band: EU868 / US915</li> <li>■ GNSS frequency band: GPS/GLONASS/GALILEO/BEIDOU</li> </ul>
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## S76G PIN Definition

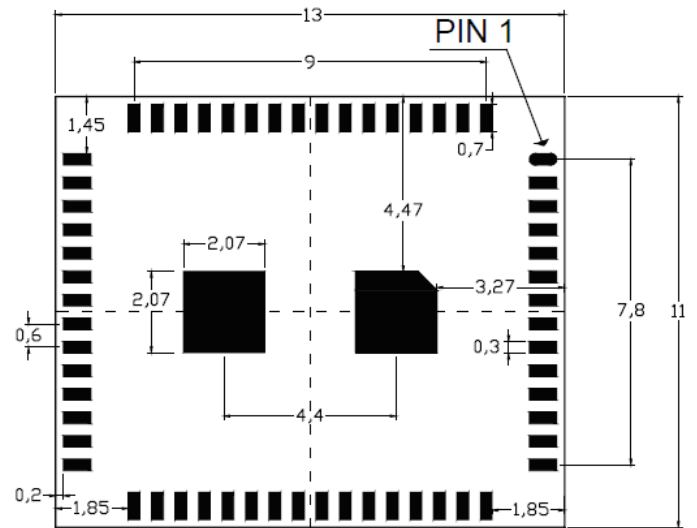
Pin No.	Pin Name	Pin No.	Pin Name
1	VDD_3V3	32	GND
2	GND	33	NC
3	GND	34	GND
4	MCU_Reset	35	GND
5	GND	36	NC
6	OSC32_IN	37	GND
7	OSC32_OUT	38	NC
8	GND	39	GND
9	PA0	40	NC
10	PA2_TXD_A	41	GND
11	PA3_RXD_A	42	NC
12	GND	43	GND
13	GPS_I2C_SDA	44	GPS_ANT
14	GPS_I2C_SCL	45	PA8_USART1_CK
15	PA4_SPI1_NSS	46	PA9_USART1_TX
16	PA5_SPI1_SCK	47	PA10_USART1_RX
17	PA6_SPI1_MISO	48	PA11_USART1_CTS
18	PA7_SPI1_MOSI	49	PA12_USART1_RTS
19	PC4_ADC1	50	PA13_SWDIO
20	PB0_ADC2	51	PA14_SWCLK
21	PB1_ADC3	52	GPS_TCXO_CLK_IN
22	GPS_TCXO_EN	53	GND
23	GPS_1PPS_OUT	54	VDD_1V8
24	GPS_RST_X	55	NC
25	GPS_UART_TXD	56	PB5
26	GPS_UART_RXD	57	PB6_SCL
27	GND	58	PB7_SDA
28	RXTX/RFMOD	59	BOOT0
29	GND	60	PB8_IO_LED_FCT
30	RF_ANT	61	GND
31	PA1_RF_FEM_CPS	62	GND

## S76G Mechanical Dimension

Unit: mm



TOP VIEW



BOTTOM VIEW