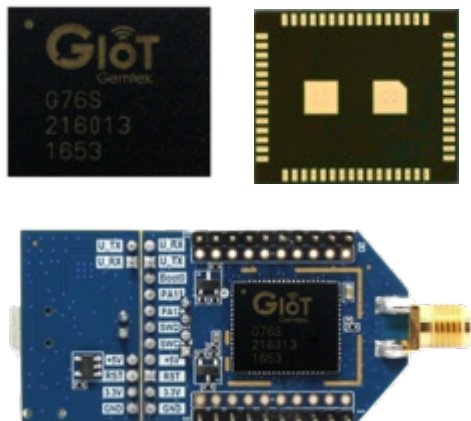# G76S & G78S SiP Module

## ⚒ Features

- LoRaWAN certified
- Compliance with LoRaWAN 1.0.1, Class A/C
- The world's smallest LoRa SiP module with MCU solution
- Design for quick sensor integration to LPWAN
- High sensitivity down to -148 dBm
- Optional support a wide frequency range from 470MHz to 928MHz in different SKU*see specification below for more details.
- Patented "Report Mode" for the most efficient and cost-effective sensor integration
- Evaluation board and SDK support for AT command interface, Modbus interface and generic GPIO, UART interface

G76S and G78S SiP Modules are general purpose SiP modules for sensor integration. Sensor vendors can speed up their LPWAN integration by embedding this module in their product designs. This SiP module follows LoRaWAN Protocol Class A/C with comprehensive AT command sets, will take care of the LPWAN communication with standard LoRaWAN gateways as a modem.

The SiP module is LoRaWAN certified, no more worries about the interoperability issue. Sensor product can integrate this SiP module as a modem and use AT command sets or Modbus interface to send or receive data, through UART interface. Moreover, the sensor product can be controlled by the MCU of the module using patented "Report mode", that automatically reads data from sensor directly without additional components.

## Specification

| | |
|---|---|
| **Model Name** | G76S / G78S |
| **Frequency Band** | G76S for EU 863~870 MHz / US 902~928 MHz / India 865~867 MHz / AS 923 MHz<br>G78S for CN 470~510 MHz |
| **Number of Channels** | Configurable up to 64 channels / Nodes will select available channel to send data |
| **WAN Protocol** | LoRaWAN |
| **Modulation** | Based on LoRaWAN |
| **RF Transceiver** | SX1276 |
| **Transmit RF Power** | 19 dBm |
| **Receive Sensitivity** | Down to -136 dBm |
| **Operation Temperature*** | -20ºC ~ 70ºC |
| **Storage Temperature** | -50ºC ~ 105ºC |
| **Power Voltage** | 2.0V ~ 3.6V |
| **Interfaces** | UART interface with AT command and Modbus, generic GPIOs and ADCs |
| **Dimensions** | L:13mm x W:11mm x H:1.1mm |
| **Weight** | 0.41 g |
| **Security** | AES 128 |

*Note: If desire to operate the device when the environment temperature is lower than -20ºC, please do not use SF12.

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| SKU Detail | | | |
|---|---|---|---|
| **SKU** | Countries | Channels | Frequency Band (MHz) |
| **G76S** | Universal | 64 | 862~928 |
| **G78S** | China | 16 | CN470 (470~510) |
| * Samples are also available for India 865~867 MHz | | | |

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