SG50

Ultra Low Power Solar LoRaWAN® Gateway



SG50 is an energy-efficient solar LoRaWAN® gateway designed for outdoor environments with limited power availability and ample solar energy resources. With built-in batteries and accessorial solar panel, SG50 can work independently in various scenarios especially the place with hard access to power resource.

Besides the high adaptability, SG50 is highly compatible with mainstream network servers and support remote management via remote network servers which provides both convenience and secured management.

Benefiting from its robust structural design and high IP67 protection rate, SG50 can work smoothly in harsh environments. It is specifically tailored for applications such as oil and gas, mining, forestry, and remote industries where power consumption must be carefully managed.

◆ Features

- Fast deployment with the all-in-one design and standard accessories
- Built-in rechargeable batteries & accessorial solar panel for wireless usage
- Support cellular for backhaul network enabling independent networking
- Equip with high-efficient power management design prolonging its battery life up to 4 days
- Compatible with remote management system for simple deployment even in remote regions
- IP67 enclosure and robust structural design promote its strength and working lifespan
- Equip with SX1302 chip, handling a higher amount of traffic with lower consumption

- Support 8 channels for more than 2000 end-nodes connections
- Equip with GPS for simple remote management and deployment

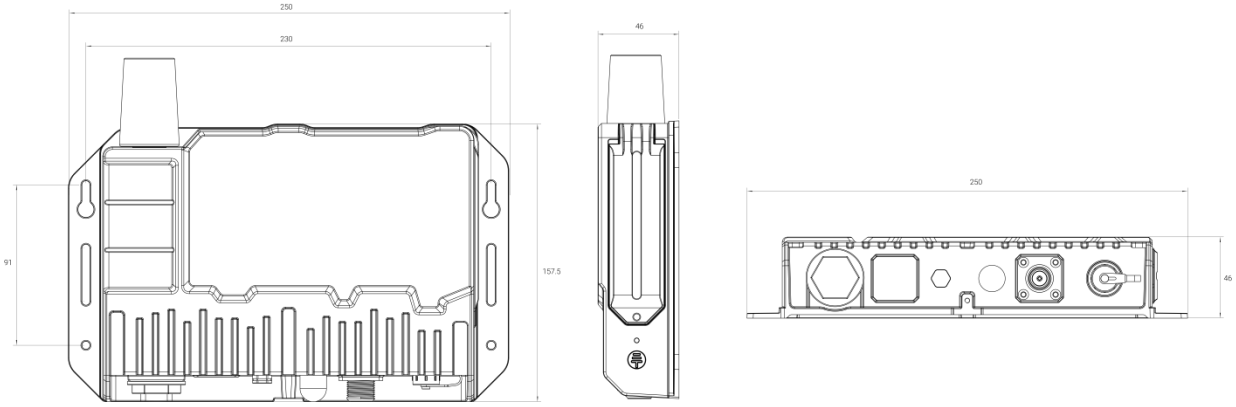
◆ Specifications

Hardware System	
CPU	Dual-core 240MHz, 32-bit Xtensa® LX7
Memory	8 MB PSRAM
Flash	16 MB
LoRaWAN®	
Antenna Connector	1 × 50 Ω N-Female External Connector
Channel	8 (Half-duplex)
Frequency Band	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
Sensitivity	-140 dBm Sensitivity @292bps
Output Power	27 dBm Max
Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C
LBT[1]	Support
Cellular Interface	
Network	4G LTE (CAT 1)/GSM
Antenna	1 × External Antenna (Share with GPS)
Cellular Band	**L08GL (Global except North America):** LTE-FDD: B1/2/3/4/5/7/8/12/13/17/18/19/20/25/26/28/66 LTE-TDD: B34/38/39/40/41; GSM: B2/3/5/8 **L09NA (North America):** LTE-FDD: B2/4/5/12/13/66
SIM Slot	1 (Nano SIM-4FF)
Wi-Fi Interface	
Antenna	1 × External Antenna
Standards	IEEE 802.11b/g/n, 2.4 GHz
Mode	AP Mode (Device Configuration Only)
GNSS	
Technology	GPS
Antenna	1 × External Antenna (Share with Cellular)
Others	

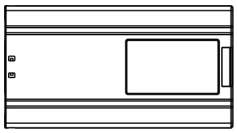
Button	1 × Reset/Wi-Fi Button
Console Port	1 × USB 2.0 (Type-C) for Power Supply and Console
LED Indicators	1 × SYSTEM, 1 × LTE, 1 × Wi-Fi
Built-in	Watchdog, Timer
Power Supply and Consumption	
Power Supply	1. Solar Power or DC Power (12~24VDC) via M12 Connector 2. 3.6V, 25000mAh Backup Batteries 3. 5V, 2A by Type-C Port
Battery Life[2]	Up to 4 Days Without Sunlight (100 Nodes Connection with 10 min Report Interval)
Power Consumption	Typical 0.8W
Physical Characteristics	
Ingress Protection	IP67
Housing & Color	Metal Cast Aluminum, White
Weight	1.275 kg (Without Batteries), 1.755 kg (With Batteries)
Dimension	250 × 157.5 × 46mm (9.84 x 6.20 x 1.81 in)
Installation	Wall or Pole Mounting
Environmental	
Operating Temperature	-30°C to +70°C (-22℉ to +158℉)
Charging Temperature	-20°C to +50°C (-4℉ to +122℉)
Storage Temperature	-40°C to +85°C (-40℉ to +185℉)
Relative Humidity	0% to 95% (Non-condensing) at 25°C/77℉

[1]AU915 and US915 do not support LBT.
[2] Tested under laboratory conditions and for guideline purposes only.

◆ Dimensions(mm)



◆ Accessories



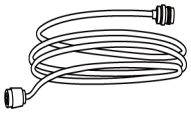
1 × Battery Pack



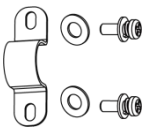
1 × SIM Card Ejector Tool



1 × LoRaWAN® Antenna



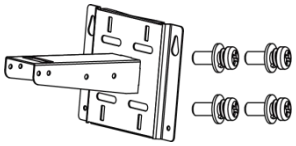
1 × Antenna Coaxial Cable (1m)



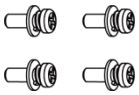
1 × Antenna U-strap Kit



1 × Antenna U-bolt Kit



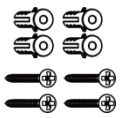
1 × Mounting Bracket Kit



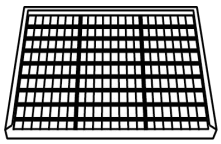
4 × Mounting Screws



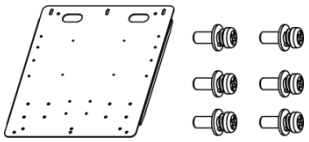
2 × Hose Clamps



4 × Wall Mounting Kits



1 × Solar Panel (With M12 Power Cable)



1 × Solar Panel Bracket Kit

***Note:**

1. Contact us if you need any other special accessories or customized accessories.
2. Optional solar panel specifications:

Model	SP1530 (Default)	SP1545 (Optional)
Electrical Characteristics		
Open-Circuit Voltage	17 V (± 0.3 V)	
Rated Voltage	15 V (± 0.3 V)	
Rated Current	2 A (± 5%)	3 A (± 5%)
Maximum Power	30 W (± 5%)	45 W (± 5%)
Minimal Power	28.5 W (± 5%)	43 W (± 5%)
Physical Characteristics		
Cell Type	Monocrystalline Silicon	
Operating Temperature	-20°C~80°C	
Weight	1.645kg	2.305kg
Dimension	533 × 303 × 17 mm	570 × 380 × 17 mm