SenseCAP M1 LoRaWAN Indoor Gateway(2G RAM)

PRODUCT DETAILS

What is SenseCAP M1

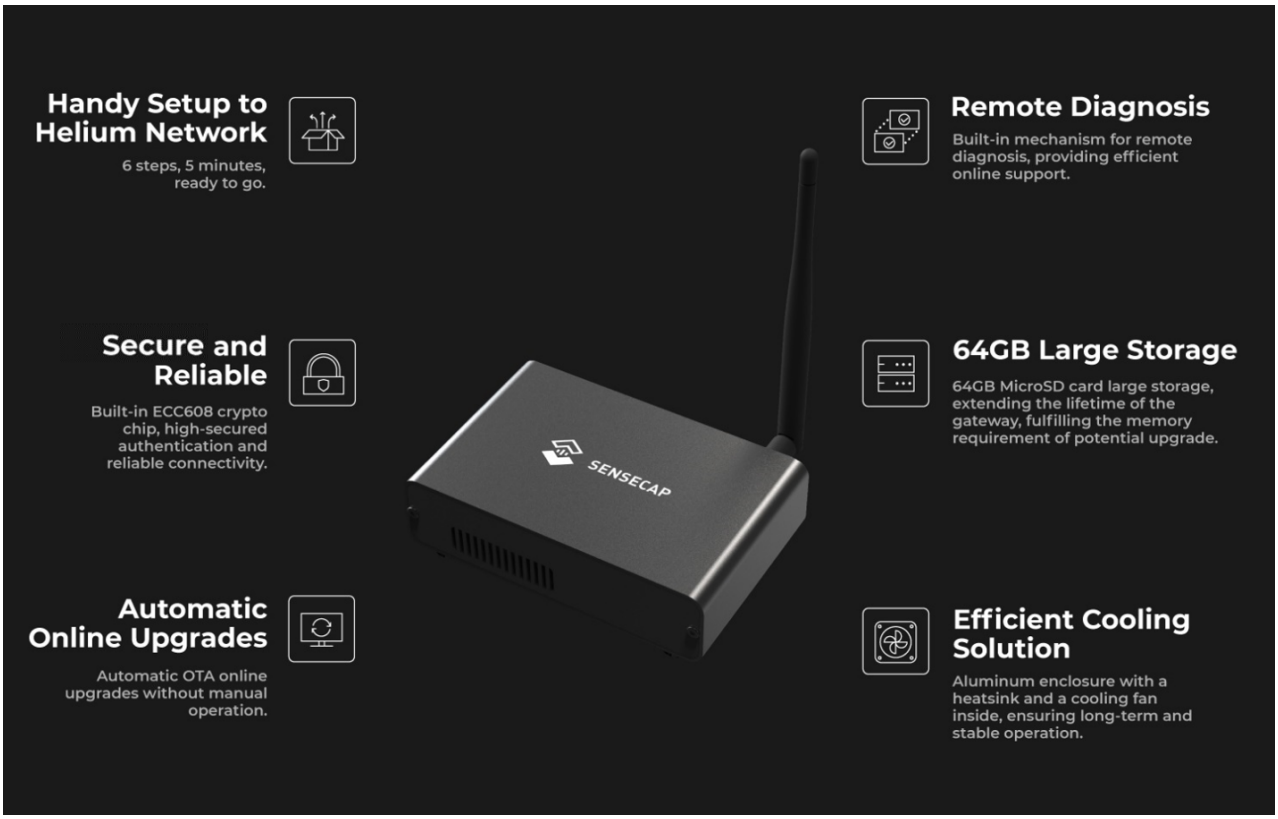
SenseCAP M1 is a high-performing, ready-to-use LoRaWAN indoor gateway compatible with Helium LongFi Network. SenseCAP M1 can connect to The People's Network within a few simple steps in minutes, and helps you build LoRa applications with low costs. SenseCAP M1 provides miles of wireless network coverage and data transmission capacity for LoRa/LoRaWAN devices. It helps you join and contribute to the infrastructure of The People's Network while enjoying the benefits from the Helium community.

System Structure

Features:

- **Handy Setup to Helium Network. 6 steps, 5 minutes, ready to go.**
- **Powered by Mature Hardware Solutions. Raspberry Pi 4(2G/4G/8G RAM) and WM1302/WM1303 (Semtech SX1302/SX1303) baseband LoRa chip.**
- **Secured and Reliable. Built-in ECC608 crypto chip, high-security authentication, and reliable connectivity.**
- **Automatic Online Upgrades. Automatic OTA upgrades, without manual operation.**
- **Remote Diagnosis. Built-in remote diagnostics mechanism, efficient online support.**

- **64GB Large Storage. 64GB MicroSD card large storage, extending the lifetime of the gateway, fulfilling the memory requirement of potential upgrade.**
- **Efficient Cooling Solution. Aluminum enclosure with a heatsink and cooling fan inside, ensuring long-term and stable operation.**
- **Multiple Accessories. Fiberglass antenna, slider pad for sliding rod installation, and upcoming outdoor enclosure, etc.**
- **FCC and CE Certificated. Available for personal and commercial use.**



Hardware Solutions

As a LoRaWAN gateway with powerful and stable performance, SenseCAP M1 is based on Raspberry Pi 4 (2G/4G/8G RAM) and embedded with a WM1302/WM1303 (Semtech SX1302/SX1303) LoRa concentrator, featuring miles of wide range of coverage and low-power consumption just as the electricity consumption of an ordinary light bulb.

Frequency Band Support

SenseCAP M1 has US915/EU868 versions with FCC/CE certificates respectively. It also supports frequency plans including EU868 / US915 / AU915 / KR920/ AS923 without further configuration. Each version has the corresponding antenna and power adapter. You could choose the frequency band version according to your placement region.

Communication Security

For the critical security issue, a built-in ECC608 crypto chip is embedded for highly secure authentication to effectively safeguard your device.

Automatic Online Updates

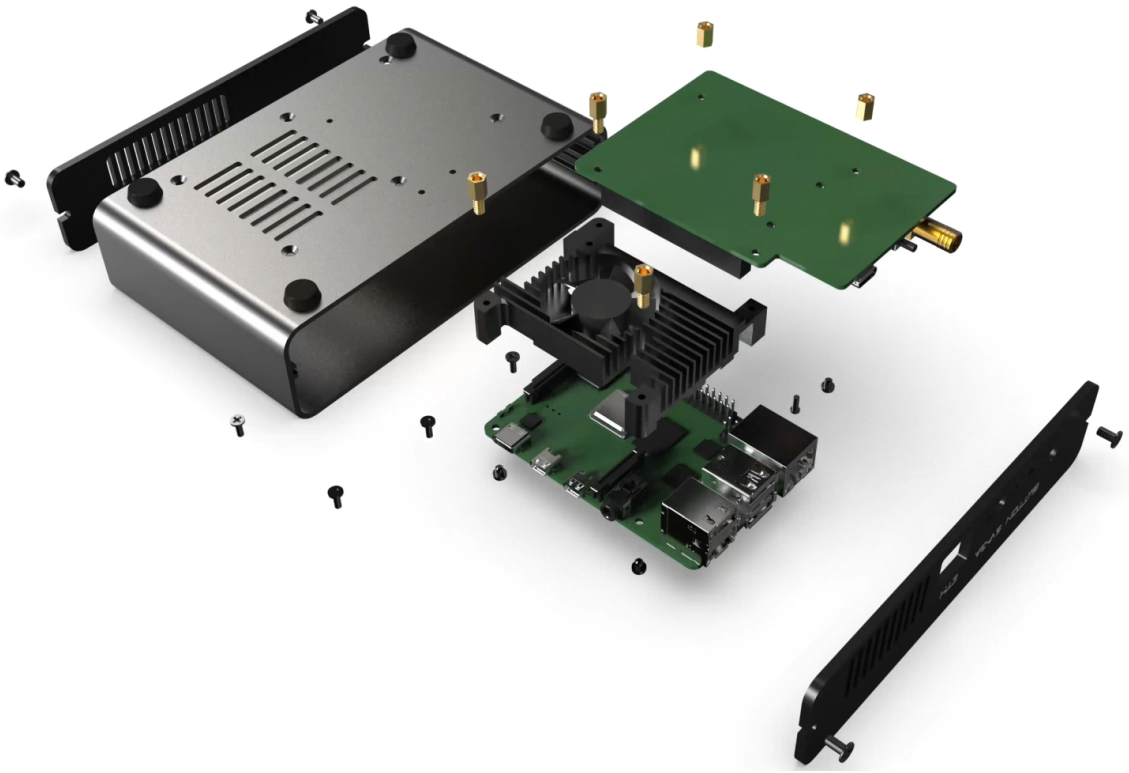
SenseCAP M1 provides operating system OTA and Docker-based software OTA to enable automatic online upgrades, without any activation or monitoring operation. Coming with a 64G MicroSD card, it also fulfills the memory requirement of potential upgrade.

Remote Diagnosis

A mature mechanism for remote diagnosis is built within SenseCAP M1, enabling timely online user support for possible issues of the SenseCAP M1 on your request.

Efficient Cooling Solution

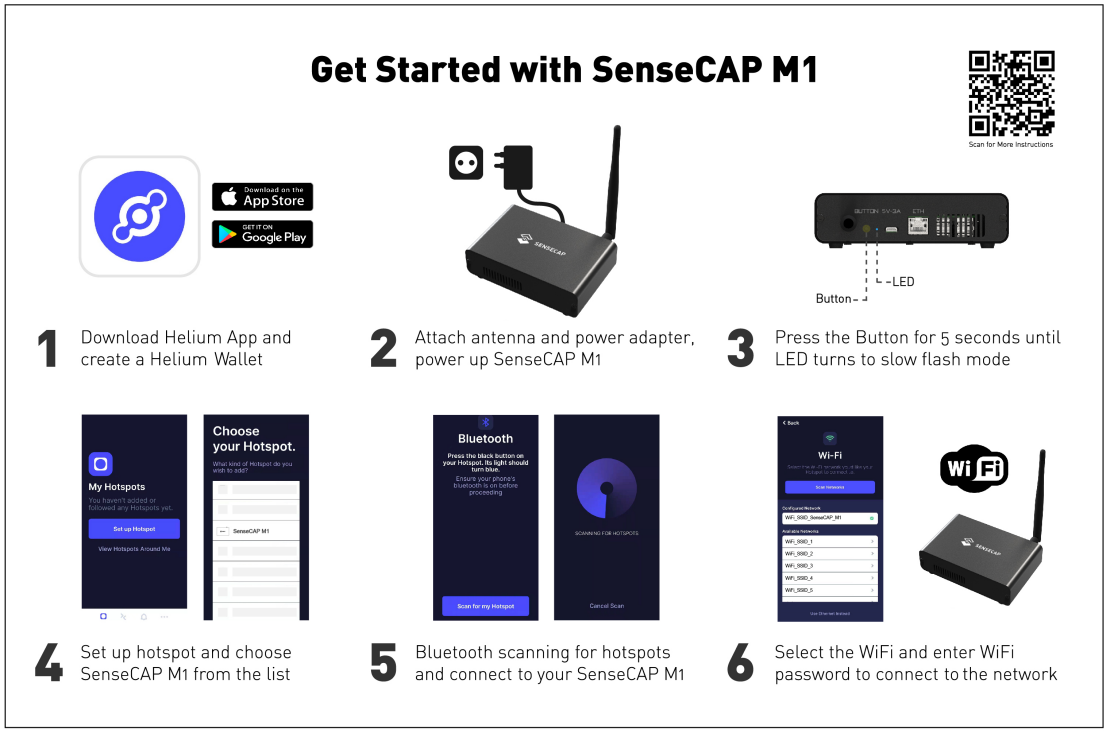
SenseCAP M1 comes with a better cooling solution. It has a heatsink and a cooling fan in the aluminum enclosure, which enables it to manage temperature automatically even in harsh environments, ensuring long-term and stable operation.



Handy Setup to Helium Network

SenseCAP M1 is super convenient to use. You could easily place your SenseCAP M1 next to your windows or fixed on the wall. It is also recommended to set gateways 350-400 meters away from each other to broaden the network coverage and to achieve more gains.

As a Helium compatible gateway with built-in Bluetooth, you can easily set up the SenseCAP M1 with the Helium App on your smartphone in minutes by following 6 simple steps (see detailed instructions on the SenseCAP M1 Wiki Page). SenseCAP M1 supports both WiFi or Ethernet connection to the internet.



Specifications

Processor	Raspberry Pi 4 (Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz)
RAM	2GB / 4GB / 8GB
Storage	64GB MicroSD Card
Frequency	EU868 Version: 863MHz ~ 870MHz US915 Version: 902MHz ~ 928MHz
Sensitivity	-125dBm @125KHz/SF7
	-139dBm @125KHz/SF12
TX Power	Up to 26 dBm

Antenna Gain	US915: 2.6 dBi EU868: 2.8 dBi
Antenna Impedance	50 Ohm
Antenna Radiation Pattern	Omni-Directional
Wi-Fi	2.4 GHz and 5.0 GHz IEEE 802.11ac wireless
Bluetooth	Bluetooth 5.0, BLE
LoRaWAN	Supports Class A, C
Input Voltage	DC 5V - 3A
Interfaces	USB Type-C (Power Supply) * 1 Ethernet RJ45 * 1 RP-SMA Female Antenna Connector* 1
Operating Temperature	0°C to 50°C
Relative Humidity	0% - 90% (non-condensing)
Heat Dissipation	Aluminum enclosure, a heatsink, and a cooling fan
IP Grade	IP20
Certification	FCC / CE