

# GLOBALSAT WORLDCOM CORPORATION

## PRODUCT SPECIFICATIONS

### LoRaWAN Sensor Device

### MODEL: LS-113 (PM2.5)

Document Version: V0.3

ISSUED DATE: 2016/10/31



**Company Name: GLOBALSAT WORLDCOM CORPORATION**  
16F., No.186, Jian 1st Rd. Zhonghe Dist., New Taipei City 23553 Taiwan  
Tel:886-2-82263799 Fax:886-2-82263899  
Web: [www.globalsat.com.tw](http://www.globalsat.com.tw)  
E-mail: [lora@globalsat.com.tw](mailto:lora@globalsat.com.tw)

## **Introduction:**

LS-113 series are designed to measure Particle, Temperature and Humidity by LoRa long-range and low-power wireless connectivity. It is integrated LoRa wireless technology, Laser dust (PM2.5) sensor knowhow and high-performance MCU solution for various IoT markets usage. With calibrated dust (PM2.5) sensor module and compensated Temperature/ Humidity sensor integration, the data is ready for use. It is perfect to detect the dust in the air, like air purifier, air conditioner and air monitor.

## **Product Features:**

- LoRaWAN compliant
- High Receiver Sensitivity and long range solution
- Integrated with calibrated Dust Particles sensor
  - Accuracy:  $\mu\text{g}/\text{m}^3$
  - Range: 0-500  $\mu\text{g}/\text{m}^3$
- Integrated with Compensated Temp/ RH sensor
- Wide range DC power-in, 8~24V /or Micro-USB DC power-in, 5V

## Specifications

Wireless	
LoRa Module	LoRa Alliance certified module.
Sensitivity	-132 dBm @ 980bps
Tx Power	Up to 100mW
Standard/ Protocol	Comply with LoRaWAN protocol
LoRa Antenna	External Omni Antenna 824~960 MHz 2dBi SMA Male connector
Frequency	865~868MHz (Model : LS-113E) 902~928MHz (Model : LS-113H)
Sensor Operation	
Sensing Element	Dust: laser light scattering principle Temperature & humidity: CMOS sensor
The unit of measurement	µg/m <sup>3</sup>
Response Time	Dust: < 10 sec Temperature: min. 3 sec. ; max. 30sec. at τ63% Humidity: < 8 sec. at τ63%
Accuracy (at 25°C)	Dust: µg/m <sup>3</sup> Temperature: ±0.3°C Humidity: ±3 %RH
Repeatability	Dust: ±10% @ 100~500 µg/m <sup>3</sup> , ±10µg/m <sup>3</sup> @ 0~100µg/m <sup>3</sup> Temperature: ±0.1°C Humidity: ±0.1 %RH
Zero Drift	Temperature: < 0.04 °C/yr Humidity: < 0.5 %RH/yr.
Measurement Range*	Dust: 0-500 µg/m <sup>3</sup> Temperature: -40 ~ +125°C Humidity: 0 ~ 95 %RH
System Operation	
Temperature	-10 ~ + 60 °C
Humidity	0 ~ 95%RH, Non-condensing
Storage Temperature	-10 ~ +60 °C.
Warm-up Time	≤ 1 min. (at full specs ≤ 15 minutes)
Signal Output	NA

## Specifications

Alarm Output	NA
Power Supply	DC 8~24V or Micro-USB DC 5V
Power Consumption	TBD
Installation	Wall-mount
Dimension (mm)	Wall-mount: 113.57(H) x 80(W) x 28.79(D)
Case Material	ABS