LoRaWAN® Agricultural Monitoring Node-to-App Starter Kit

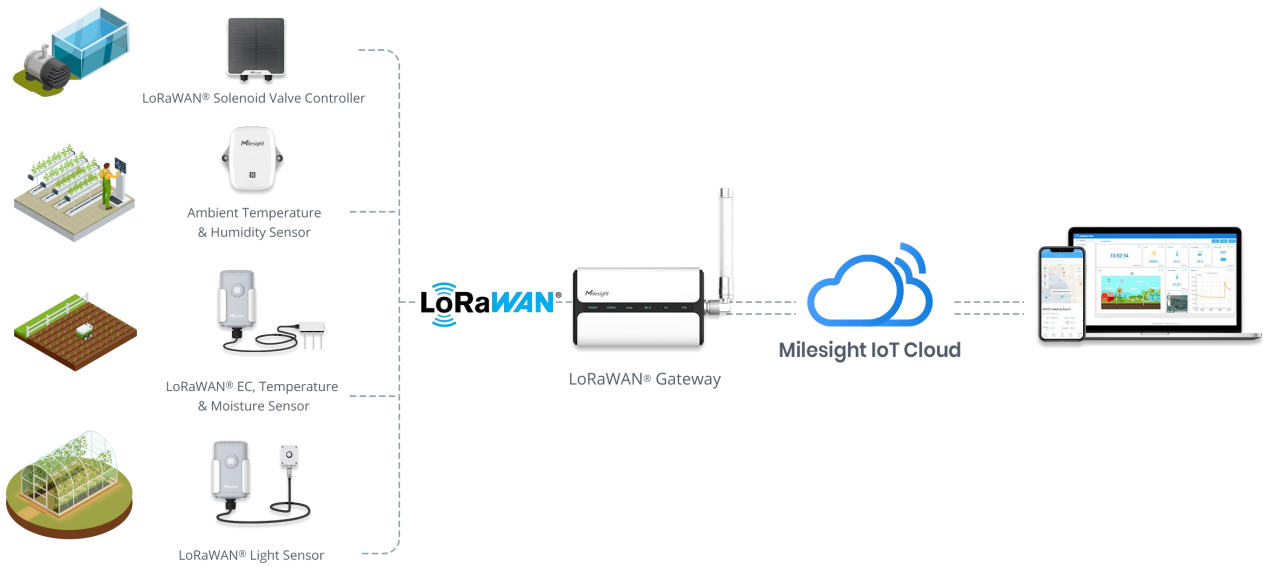
◆ Introduction

Milesight LoRaWAN® Agricultural Monitoring Node-to-App Starter Kit is designed for simplifying the process of PoC about LoRaWAN® network establishment and remote monitoring for the agricultural environment.

◆ Checklist

Qty	Model	Description	LoRa Frequency
1	UG65	Semi-industrial LoRaWAN® Gateway (Wi-Fi, Cellular and PoE supported)	CN470/EU868 /IN865/RU864/AU915 /US915/KR920/AS923
1	EM300-TH	LoRaWAN® Temperature and Humidity Sensor	
1	EM500-LGT	LoRaWAN® Light Sensor	
1	EM500-SMTC	LoRaWAN® Soil Moisture, Temperature and Electrical Conductivity Sensor	
1	UC511	LoRaWAN® Solenoid Valve Controller	
1 Year	Milesight IoT Cloud	Standard Subscription	/

◆ Topology



◆ 5 Steps to Start the Online Monitoring

1. Register a Milesight IoT Cloud account at cloud.milesight-iot.com;
2. Add UG65 to Milesight IoT Cloud;
3. Add 4 LoRaWAN nodes to Milesight IoT Cloud;
4. Create your dashboard on Milesight IoT Cloud;
5. Download Milesight IoT Cloud app from Google Play or Apple Store.

Start monitoring the status of your agricultural application!

◆ Specifications

➢ UG65 LoRaWAN® Gateway

LoRaWAN	
Antenna	2 × Internal Antennas + 1 × 50 Ω N-Female External Connector
Channel	8 (Half/Full-duplex)
Interfaces	
Ethernet Port	1 × 10/100/1000Mbps (PoE PD)
Cellular Interface	1 × SIM Card (2FF)
Wi-Fi Interface	802.11 b/g/n(2.4GHz), AP or Client Mode
Physical Characteristics	
Power Supply	9-24 VDC or 802.3 af PoE
Operating Temperature	-40°C to +70°C
Ingress Protection	IP65
Dimension	180 × 110× 56.5 mm
Installation	Desktop, Wall or DIN Rail Mounting

More info: https://www.milesight-iot.com/lorawan/gateway/ug65/

➢ EM300-TH Temperature and Humidity Sensor

Measurement	
Temperature Range	-30°C to + 70°C
Temperature Accuracy	0°C to + 70°C (±0.3°C), -30°C to 0°C(±0.6°C)
Humidity Range	0% to 100% RH
Humidity Accuracy	±3% RH from 10% to 90%, ±5% RH below 10% and above 90%
Physical Characteristics	
Power Supply	4000 mAh Replaceable Li-SOCL$_2$ Battery
Ingress Protection	IP67
Dimension	88.5 × 85.3 × 27 mm
Installation	Wall Mounting

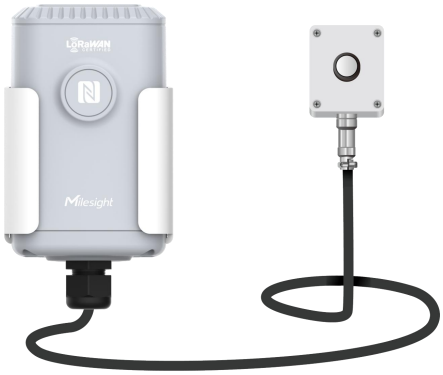
More info: https://www.milesight-iot.com/lorawan/sensor/em300-th/

➢ UC511 Solenoid Valve Controller

Interface	
Solenoid Interface	2 × Solenoid Interfaces, Supporting 2 Wires 5/9/12V DC Latching Solenoids
Pulse Interface	2 × Pulse Interfaces, Supporting 2 Pulse Meters
Physical Characteristics	
Power Supply	Solar powered (5V, 1.6W) + 5100 mAh Rechargeable Battery
Operating Temperature	-20°C to +60°C
Ingress Protection	IP67
Dimension	116 × 116× 45.5 mm
Installation	Wall or Pole Mounting

More info: https://www.milesight-iot.com/lorawan/controller/uc51x/

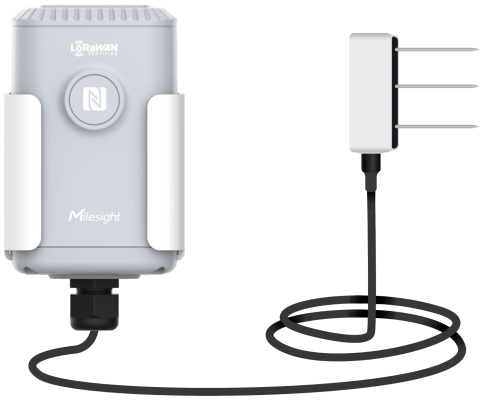
➢ EM500-LGT Light Sensor



Measurement	
Light Range	0~100000 lux
Light Accuracy	±3%
Light Resolution	1 lux
Physical Characteristics	
Cable Length	3 m
Power Supply	19000 mAh Li-SOCL$_2$ Battery
Operating Temperature	-30°C to +60°C
Ingress Protection	IP67(Transceiver)/IP65 (Light Sensor)
Dimension	Transceiver: 105.4 × 71 × 69.5 mm Light Sensor: 64 × 58 × 34 mm
Installation	Pole, Wall or DIN Rail Mounting

More info: https://www.milesight-iot.com/lorawan/sensor/em500-lgt/

EM500-SMTC Soil Sensor



Measurement		
Temperature	Range	-40°C ~80°C
	Accuracy	±0.5°C
	Resolution	0.1°C
Moisture	Range	0% to 100% RH
	Accuracy	±2%(0~50%), ±3%(50%~100%)
	Resolution	0.01%
Conductivity	Range	0~20000 μs/cm
	Accuracy	±3%(0~10000 μs/cm), ±5%(10000~20000 μs/cm)
	Resolution	1 μs/cm
Physical Characteristics		
Cable Length		2 m
Power Supply		19000 mAh Li-SOCL$_2$ Battery
Operating Temperature		-30°C to +70°C
Ingress Protection		IP67 (Transceiver)/IP68(Soil Sensor)
Dimension		Transceiver: 105.4 × 71 × 69.5 mm Soil Sensor: 88 × 68 × 26 mm (Probe Length: 50mm)
Installation		Pole, Wall or DIN Rail Mounting

More info: https://www.milesight-iot.com/lorawan/sensor/em500-smtc/