Smart AC Controller

Featuring LoRaWAN®

UC701

UC701 is a LoRaWAN® smart AC controller that supports wireless IR control of mainstream air conditioning and PTAC systems via BMS systems or the paired Milesight WT401 thermostat. It allows automatic control through local schedules or remote cloud systems. UC701 provides built-in sensors and multiple interfaces to integrate with external sensors, enabling operational data collection, accurate control, and energy savings for air conditioning systems.

Compliant with Milesight LoRaWAN® gateway and Milesight Development Platform solution, users can control the air conditioner systems via webpage remotely.

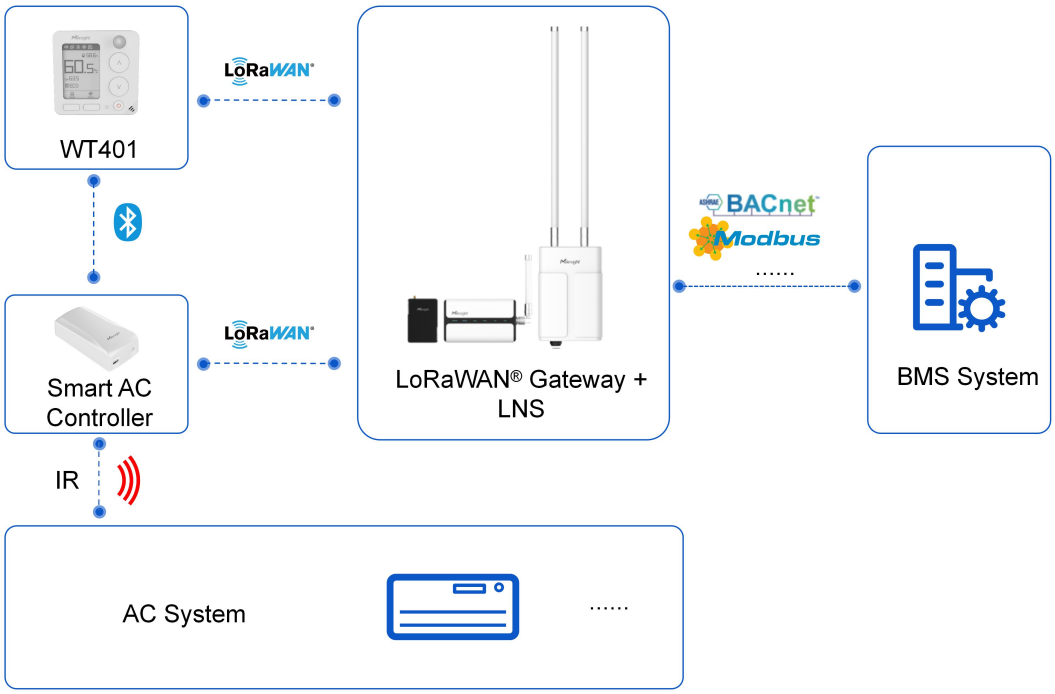


Features

- Provide wireless IR control without any cable connections
- Built-in IR code library compatible with mainstream air conditioner systems, with IR code learning capability
- Built-in sensor and rich external sensor inputs for accurate AC monitoring and control
- Built-in Bluetooth for easy configuration
- Support 5V DC power supply via Type-C, with an optional external battery compartment for flexible deployment
- Work with Milesight WT401 wireless thermostat via Bluetooth

- Support local rules for AC time on/off and temperature adjustment
- Enable real-time monitoring to ensure timely alerts for sudden temperature changes
- Store historical records locally and supports retransmission to prevent data loss
- Work well with standard LoRaWAN® gateways and network servers
- Compatible with Milesight Development Platform
- Support Firmware Update Over the Air (FUOTA)

Application Example



Specifications

Wireless Transmission	
Technology	LoRaWAN®
Antenna	Internal Antenna
Frequency	IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
Tx Power	16dBm (868 MHz)/22 dBm (915 MHz)
Sensitivity	-137dBm
Mode	OTAA/ABP Class B, Class C
Sensor	
Universal IR Emitter	
Compatibility	Any air conditioner or heat pumps with a remote control. Including: Mini Split, Window AC, Cassette, Portable, PTAC/PTHP, Central AC, etc.

IR Operating Distance	360°, Up to 10 meters without barriers
IR Learning Frequency	38 kHz
Temperature	
Operating Principle	Digital CMOSens® technology (MEMS)
Range	-20°C ~ 60°C
Accuracy	±0.5°C (0°C ~ 60°C), ±1°C (-20 ~ 0°C)
Humidity	
Operating Principle	Digital CMOSens® technology (MEMS)
Range	0-100% RH
Accuracy	±3% RH (40-85% RH), ±5% RH (0-40% RH, 85-100% RH)
Others	
External Sensor Input	1 × NTC Interface, 1 × Current Transformer Interface, 1 × IR Emitter Interface
Others	
LED Indicator	1 × Two-color Indicator
External Buttons	1 × Reboot/Reset Button, 1 × IR Code Learning Button
USB	1 × Type-C for Power Supply and Console
Software	
Configuration	Mobile App via Bluetooth®, Downlink
Communication	Pair with WT401 thermostat via Bluetooth
Advanced Feature	IR Code Learning, Local Control Schedule, Temperature Limit Mode, Open Window Detection, Threshold Alarm, Data Storage (1,200 entries), Data Retransmission, Data Retrievability, FUOTA
Physical Characteristics	
Power Supply	5V DC/1A via Type-C Port[1]
Operating Temperature	-20°C ~ 60°C
Relative Humidity	0% to 95% (Non-condensing)
Ingress Protection	IP40
Material & Color	PC, White (Black Customizable)
Dimension	96 × 48 × 26 mm
Installation	Wall Screws Mounting, 3M Tape Mounting

[1]: The controller supports connection to an external plug-in battery compartment.

◆ Optional Extended Accessories

Type	Introduction	Parameters
NTC Sensor	Detects the ambient temperature to monitor air conditioner operating status.	**Measuring Range**: -20°C ~ 60°C **Accuracy**: ± 1°C **Cable Length**: 2.5 m
Current Transformer	Measures air conditioner current to monitor operating status and power consumption.	**Detection Parameter**: RMS Current **Measuring Range**: 0-30A **Accuracy**: ± 1% (≥2.5A), ± 2% (1 - 2.5A), ± 5% (500mA - 1A), ± 20% (50 - 500 mA) **Color**: White (Black Customizable) **Cable Length**: 1.5 m
IR Emitter	Controls the air conditioner when UC701 is installed at a distance.	**IR Learning Frequency**: 38 kHz **Cable Length**: 1.2 m
Battery Compartment (Without Batteries)	Provide external battery power if a wired power source is difficult to deploy.	**Compatible**: 3 × AA Alkaline 1.5 V Batteries **Battery Life**: 2 years (EU868, Class B, 12-24 control numbers/day), 1.7 years (AU915, Class B, 12-24 control numbers/day) **Operating Temperature**: 0°C ~ 40°C **Installation**: Wall Screws or 3M Tape Mounting

◆ Dimensions (mm)

