Wireless IoT Controller with external antenna that supports RTC and WiFi R206C Data Sheet

Wireless Sensor Network Based on LoRa Technology

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Introduction

R206C is a highly reliable wireless smart cloud gateway. As the core of the entire wireless smart IoT system, R206C achieves the combination of cloud technology, WiFi, and Netvox LoRa. The Netvox APP (Android and iOS) can control the device. Users can also monitor all changes in the network by accessing R206C through the cloud, and easily realize real IoT remote control to achieve energy saving, carbon reduction, and green environmental protection.

Operating Principle

R206C integrates a chip module and a wifi module that comply with LoRaWAN wireless protocol. The coexistence of LoRa and WIFI technology can easily establish a connection between LoRa sensor and wifi in the wireless intelligent Internet of Things system which is a more suitable solution.

Netvox LoRa private protocol is a private wireless communication protocol based on the feature of LoRa that is long distance, low power consumption, using CSMA/CA mechanism, and AES128 encryption. Netvox LoRa private protocol frequency bands are as follows:

500.1 MHz_China Region   China Region

920.1 MHz_Asia Region   Asia includes Japan, Singapore, Southeast Asia
     and other regions

865.2 MHz_INDIA Region   India

868.0 MHz_EU Region   European Region

915.1 MHz_AU/US Region   America/Australia

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Main Characteristic

- Support LoRa wireless network

- Support Netvox Cloud

- Support Gateway mode

- Two RJ-45

- LoRa communication distance 10km (in an open space)

- Wifi communication distance 250 meters (in an open space)
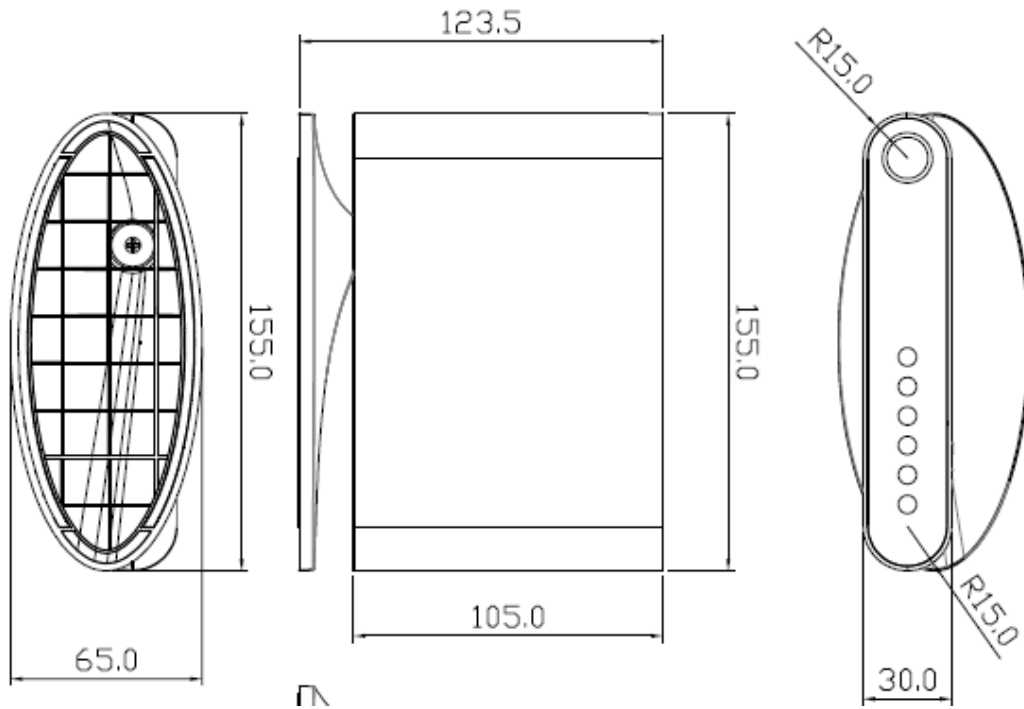
- External suction cup antenna

- RTC

Application

- Smart city

- Intelligent building

- Smart Home

- Smart transportation

- Smart logistics
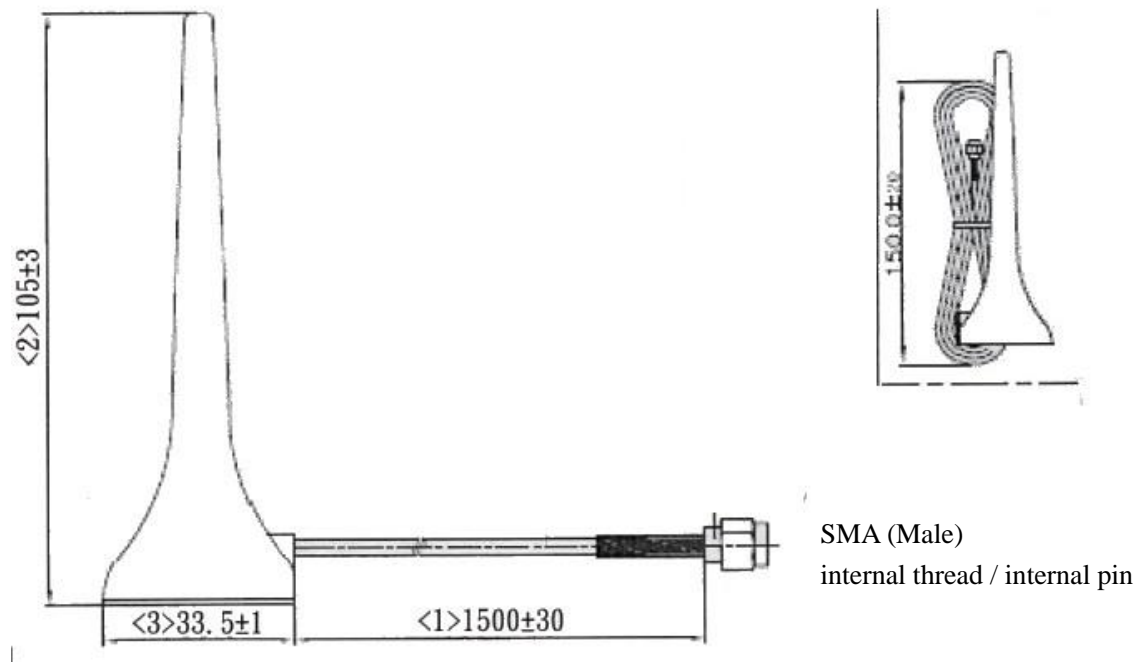
- Smart meter reading

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Dimension

1. Host Body Dimension: 123.5*155*65mm

2. LoRa External suction cup antenna

SMA (Male)
internal thread / internal pin

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Hardware Description

	Description	Remarks
Main Chip	MT7620A	Ralink Mediatek
Flash	32MB	
DDR2	128MB	
LoRa	R100 (SX1276)	Netvox
Ethernet Port	Two RJ45 ports (LAN/WAN)	
LED Indicator	Power / LAN / WAN / WiFi / Cloud / WPS	
Reset Button	Tact Switch	
Power Adapter	Input: 100 ~ 240V AC Output: 12V/1.5A DC	

Indicator

Indicator	Status	Description
Power	On	Power On
	Off	Power Off
LAN	On	Connected
	Off	Not Connected
	Flash	Data Transmitting
WAN	On	Connected
	Off	Not Connected
	Flash	Data Transmitting
Wi-Fi	On	Wi-fi On
	Off	Wi-fi Off
	Flash	Data Transmitting
WPS	On	Connected
	Off	WPS Off
	flash	WPS On

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Button

Button	Description
WPS Button	Press to turn on the WPS function
Reset Button	Press to restart the device Press and hold for 5 seconds, and then release to reset and restart

Electric

Operating Power	Input: 100～240V AC Output: 12V/1.5A DC (Power Adapter)
Power Consumption	2.2W (28mA @230V 50Hz) (typical value)

Frequency

	LoRa	WiFi
Frequency Range	410-525MHz 862-1020MHz (User can select the desired frequency band)	2.4～2.4835 GHz
Communication Channel	(Users can choose according to their needs)	11, 13 or 14 channels (according to specification of each country) Ch1—2412MHz Ch2—2417MHz Ch3—2422MHz ～ Ch14—2477MHz
Bandwidth	125k Hz	20/40MHz
Antenna Type	External antenna	Built-in PCB antenna
TX Power	US915 20dbm AS923 16dbm AU915 20dbm CN470 19.15dbm EU868 16dbm KR920 14dbm IN865 20dbm	18.5dBm (maximum, it can be set according to requirements)

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Communication Distance	Up to 10 km (the actual transmission distance depends on the environment)	250 meters (the actual transmission distance depends on the environment)
RX Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps) -121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)	-75.5dBm
Data Transfer Rate	0.3～50kbps (it can be set according to requirements)	>120Mbps
Modulation Method	LoRa/FSK	DSSS
Supportable LoRaWAN Band	EU863-870, US902-928, AU915-928, KR920-923, AS923, CN470-510 (Note: The frequency band is optional and needs to be configured before shipment.)	

Physical

Dimension	123.5mm * 155mm * 65mm (without LoRa suction cup antenna)
Shell Material	PC510
Ambient Temperature Range	-10℃ ～ 50℃
Storage Temperature Range	-20℃ ～ 60℃
Ambient Humidity Range	0 ～ 95%RH
Storage Humidity Range	0 ～ 95%RH
Mounting Method	Keep flat