

# UA-221 Datasheet

Nanjing Woxu Communication Technology Co., Ltd.

[www.woxuwireless.com](http://www.woxuwireless.com)

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## 1 Introduction

UA-221 is a new generation UWB positioning base station refined by Nanjing Woxu based on years of on-site product use. With wired time synchronization and dual UWB channels as typical features, the reliability and environmental adaptability of the system are significantly improved. The power supply, network, and time between equipment support synchronous cascading, which can reach unlimited levels in theory, greatly simplifying construction. The product is mainly oriented to industry 4.0 and other fields. The UA-221-based system can provide both UWB uplink and downlink positioning systems at the same time. The uplink can directly go to the server for positioning management, and the downlink positioning method can realize autonomous positioning of unlimited capacity tags, and realize autonomous positioning and route planning of robots. And so on, security management can also be done through autonomous positioning.

UA-221 supports BLE 5.0 or ZigBee 3.0 protocol and can be used to assist positioning or access to the Internet of Things. At the same time, it supports a custom sensor interface, which can be connected to sensors such as temperature, humidity, air pressure and sound according to needs. So UA-221 can be defined as an IoT gateway that supports precise positioning.

In order to meet the reliability of industrial environment, UA-221 supports IP67 protection level, and the operating temperature range is  $-40^{\circ}\text{C}\sim 85^{\circ}\text{C}$ .

## 2 Main feature

- Wired time synchronization
- Network, synchronization and power supply cascade
- UWB full band support

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- BLE 5.0 o ZigBee 3.0
- -40°C~85°C
- IP67
- Optional support for sensor access

### 3 Product Picture

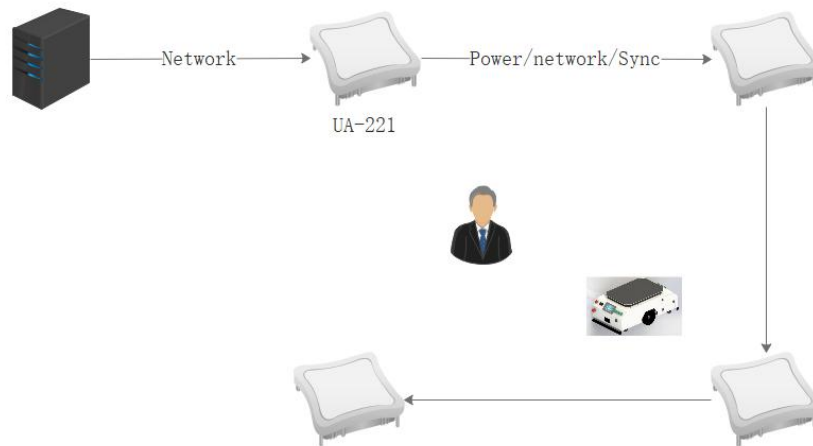


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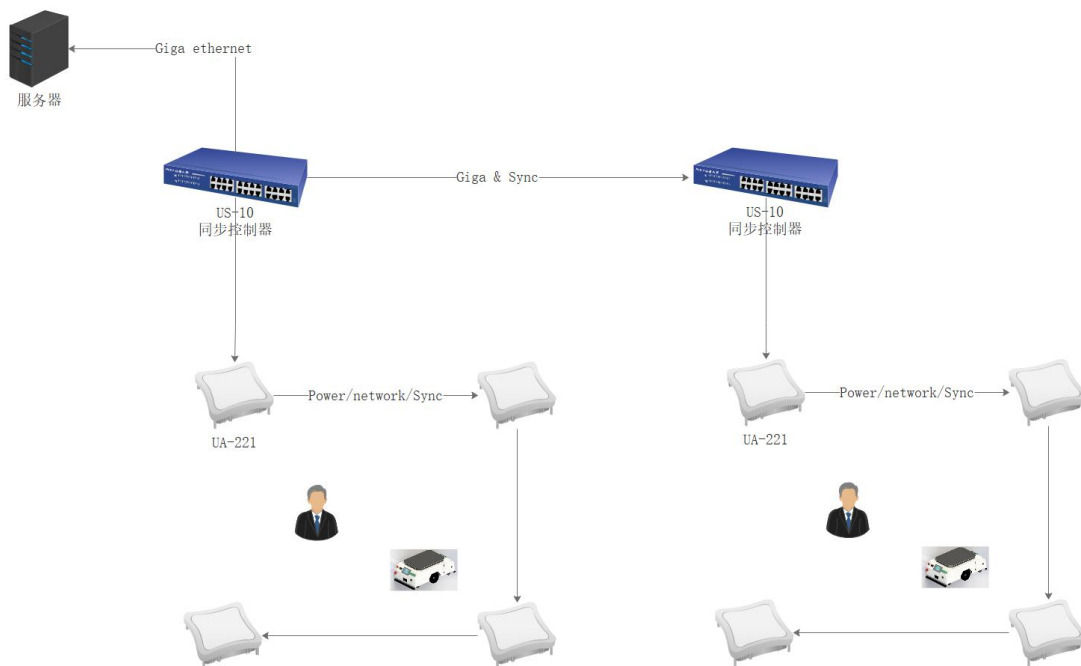
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## 4 Application architecture



Simple network model



Large network model

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## 5 Product Spec.

Item	Description	
<b>Overview</b>		
Product name	UA-221	
Interface	RJ45 × 2	
	DC interface×1 (two-core aviation plug)	
	Sensor expansion port × 1 (optional)	
Output voltage	DC 24~48V	
	PoE 24~48V	
Average power waste	< 5W	
Installation method	Ceiling/Wall hanging	
LED	PWR (left side)	Power supply normally: light is on
	Red	No power supply: off
	Status (right side)	Work normally: light is on
		Abnormal synchronization: flashing, 1s interval
Green	Unable to connect to the server: flashing every 2 seconds	
<b>RF Spec. (UWB)</b>		
Working frequency	3~9GHz	
Physical rate	110 Kbps	

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	850 Kbps
	6.8 Mbps
Output power	-41.3 dBm/MHz (typical)
Channel bandwidth	500MHz
Antenna gain	0dBi

### RF Spec. (BLE/ZigBee 3.0)

Working frequency	2400-2483.5MHz
Output power	5dBm
Receiving sensitivity	-89dBm
Antenna gain	1.5dBi

### Software Spec.

UWB working mode	TDoA/ToF
UWB typical working distance	30m@6.8Mbps
Time synchronization	Wired time synchronization
	Wireless time synchronization
UWB positioning model	Upstream server location
	Downlink broadcast positioning
2.4GHz working mode	BLE 5.0
	ZigBee 3.0

Configuration manner	server configuration
	Web configuration
Configuration management	WEB
	Interface B
Network protocol	UDP
Uplink interface	Interface B

### Physical Spec.

Size (mm)	230*230*60mm (without bracket)
Weight (gram)	680

### Environmental Spec.

Temperature	Work temperature -40°C ~ 85°C
	Storage temperature -40°C ~ 85°C
Humidity	Work temperature: 0% ~ 90% non-condensing
Protection level	IP67
RoHs	Compatible

## 6 Delivery content

Model	Specification	Quantity	Order number
UA-221	Wired time synchronization anchor	1	AA01UA221000
Bracket	Ceiling mounting bracket, white, with matching screws	1	/

**Accessory (not including in the scope delivery, if you have any requirements, please contact WOXU in advance)**

Model	Specification	Order number
Power adapter	48V, 1.25A	AD0201480100