

# UWB-03S User Guide

## 1. Functional description

The UWB ceiling type anchor acts as a bridge between the tag and indoor positioning system. The precision positioning system transmits positioning data to the server via wire or wireless network.

The UWB anchor has two kinds of design : embedded with wire network (RJ45) or wireless (2.4G WiFi) network for different environmental conditions.

UWB ceiling type anchor (Model : UWB-03S)

### **UWB**

Operational range: max. 100m ( 30~50m recommended )

Communication interface: UWB/RJ45 /WiFi

Protocol & frequency : 802.15.4a UWB , 3.25GHz~6.75GHz

Working mode : TOF

Antenna angle : 360 degree

Installation : Ceiling type

Input: DC +5V

## **RJ45**

Working mode : AP mode/ station mode

Network protocol : PPPoE/ DHCP customer mode /DHCP Server

Safety strategy : supporting 64/128 bit WEB encryption, WPA-PSK encryption, WPA2-PSK encryption

Configuration management : Web user management entity (remote management/ local management), support SNMP, support TFTP/HTTP software upgrade

## **WiFi**

Starting time requires 1 second

Serial command : AT + ping

Interface mode : UART/SPI/GPIO

Interface speed : 1200~460800 bps

Support SmartConfig– configuration key

Support 4 kinds of configurations that make configured easier

Selection of 8 GPIO for users to control

Selection of 3 types of power mode

Support IPV4 and IPV6

Support IEEE 802.11 b/g standard

Support serial communication, the speed can reach 44KB

Support SPI firmware upgrade, SPI speed is 1~24M

Network mode : Infra/Adhoc/AP


Support network protocol : TCP/UDP/ICMP/DHCP/DNS/HTTP

Support several WiFi encryption protocols, applicable to Router, supporting Iphone and Android

## 2. Interface introduction



3. Model specifications

1. UWB Ceiling Anchor (Standard)	
	<div>1.Operational range : max. 100m ( 30~50m recommended )</div> <div>2.Communication interface : UWB/RJ45 /WiFi</div> <div>3.Communication protocol : 802.15.4a UWB</div> <div>4.Frequency : 3.25GHz~6.75GHz</div> <div>5. Working method : TOF</div> <div>6.Antenna angle : 360 degree</div> <div>7.Installation : ceiling type</div> <div>8.Input voltage : DC5V/PoE</div> <div>9.Dimensions (W x Dx H) : 110×110×33 mm(outside)</div> <div>10.Model : UWB-03S</div>

## 4. Specifications (UWB)

Items	Detail
Model Name	UWB-03S
Processor	DW 1000+STM32
Flash	
Communication range	Up to 100 m (max.)
Communication interface	UWB / RJ45 / WiFi
Frequency	UWB : 3.25~6.75GHz / WiFi : 2.412~2.484 GHz
Power consumption	* .Transmitting mode < 50mA * .Receiving mode < 50mA * .standby mode < 50mA
Environment	* .Operating temperature -25~+75℃ * .Storage temperature -40~+80℃ * .Operating Humidity max.95%RH
Power supply	DC5V/PoE
Dimensions (W x Dx H)	110 X 110 X 33 (mm)

## 5. Specifications (WiFi)

	Items	Detail
Wireless	Wireless standard	IEEE802.11b/g 802.11n forecast
	Frequency	2.412~2.484 GHz
	Sensitivity	802.11b: -90 dBm @ 11Mbps (typical) 802.11g: -70 dBm @ 54Mbps (typical)
	Data rate	802.11b: 1,2,5.5,11 Mbps 802.11g: 6,9,12,18,24,36,48,54 Mbps
	Modulation system	DSSS, OFDM, DBPSK, DQPSK, CCK, QAM16/64
	Output power	802.11b: 17±2 dBm (typical) 802.11g: 15±1 dBm (typical)
	Antenna interface	IPX/micro strip
Hardware	Interface type	UART/SPI
	interface speed	1200~460800 bps
	Working voltage	3.3±0.3 V
	working current	170mA (typical)
	Temperature	-20~75 °C
	Storage temperature	-40~+85 °C
	Environmental certification	RoHS
Software	Network type	Infra/Adhoc/AP

	Safety regime	WEP/WPA-PSK/WPA2-PSK
	Encryption	WEP64/WEP128/TKIP/CCMP(AES)
	AP paradigm	Support 4 STA connection Support communication between STA and AP, but not support communication between STA and STA Encryption to support OPEN and WEP
	Working paradigm	Auto/command
	Serial command	AT+ping
	TCP	max. number of connection: 8 max. number of client: 8 max. number of server: 3~4 Local server that connects max. number of client: 4
	UDP	max. number of connection: 5~6
	Highest transmission rate	44K bytes
	Arguments configuration	Support 4 kinds of configuration: 1. UART interface command (AT ping) 2. SmartConfig one key mode 3. Web parameter configuration 4. Udp remote way

## 6. Installation

UWB-03S module uses a suction cup installer. With the different type of installer, the installation process is different too. Here is a demonstration of how to mount a suction type module.

### 1. Installation instructions

\* This instruction is for reference only.

#### 1. UWB-03S Module overview :



Front View

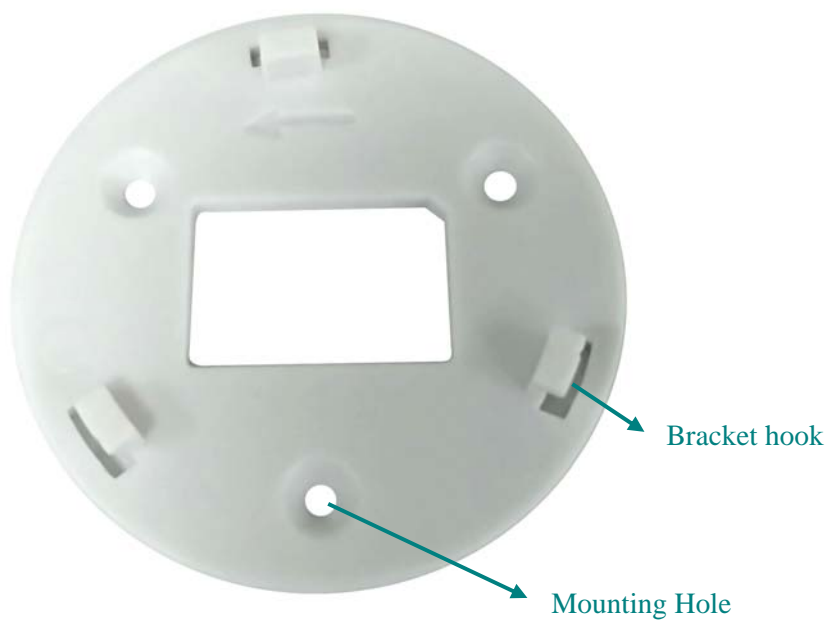


Bracket slot

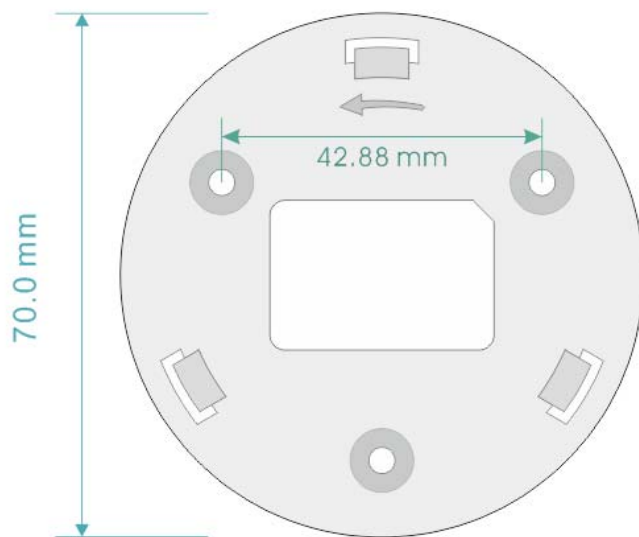


Back View

A removable bracket plate is included for the wall mounting system as shown



Dimensions :



Front View



Side View

2. Accessories included :

KA3X12 screw x 3

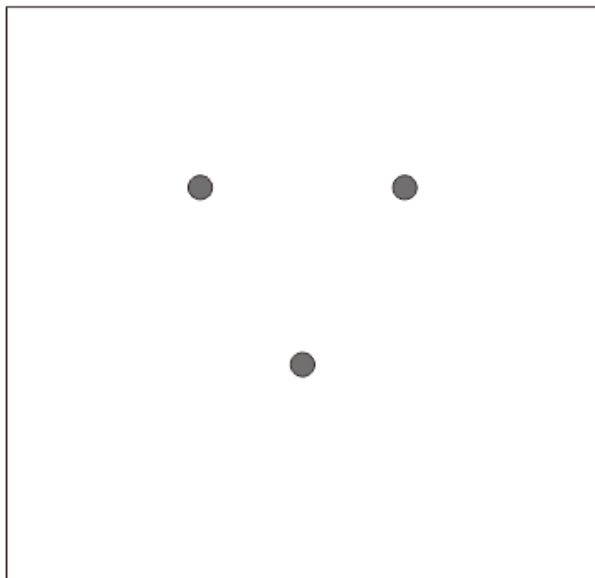
Make sure the screw head diameter does not exceed more than 8mm.



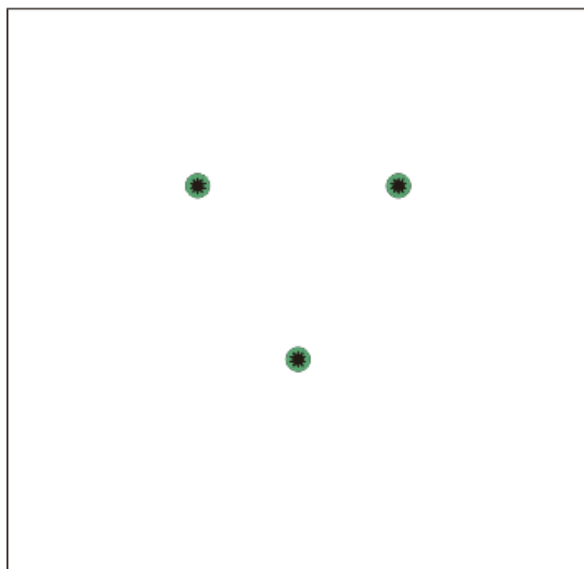
Plastic anchors M6X20 x 3



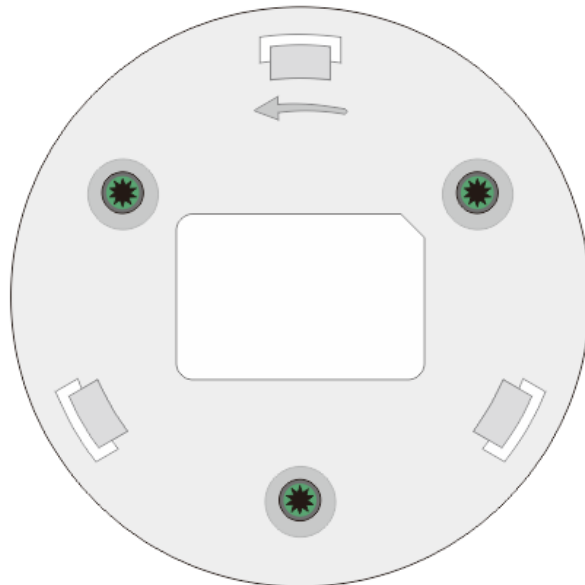
3. Drill 3 holes in the wall, each aperture is measured at 5mm and make sure the drilled holes are aligned to the mounting holes on the bracket plate.



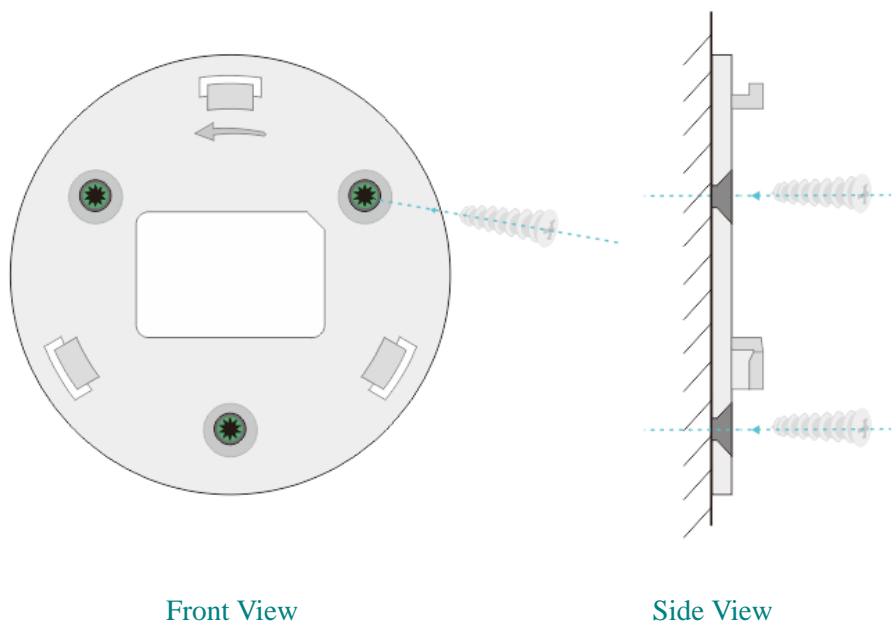
4. Begin with the M6, insert it into the drilled holes.



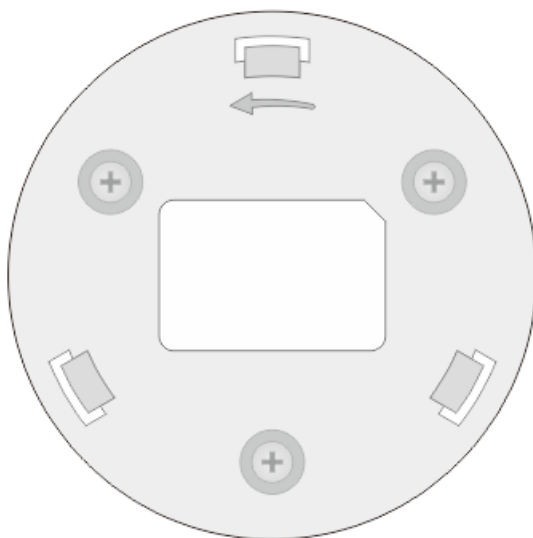
5. Align the mounting holes to the bracket plate.



6. Screw in the KA3X12 into each hole.



7. Installation complete:



8. Once the bracket had been mounted onto the wall, attach UWB-03S onto the bracket and rotate clockwise to secure and lock its position.

## **FCC Statement**

### **15.19**

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

### **15.21**

Note: The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

### **15.105(b)**

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help

## **RF Exposure Statement**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

This equipment may only be operated indoors. Operation outdoors is in violation of 47 U.S.C. 301 and could subject the operator to serious legal penalties.