

GA-210 Reference Guide

GIPS Technology Co., Ltd

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1 INTRODUCTION

1.1 Main Features

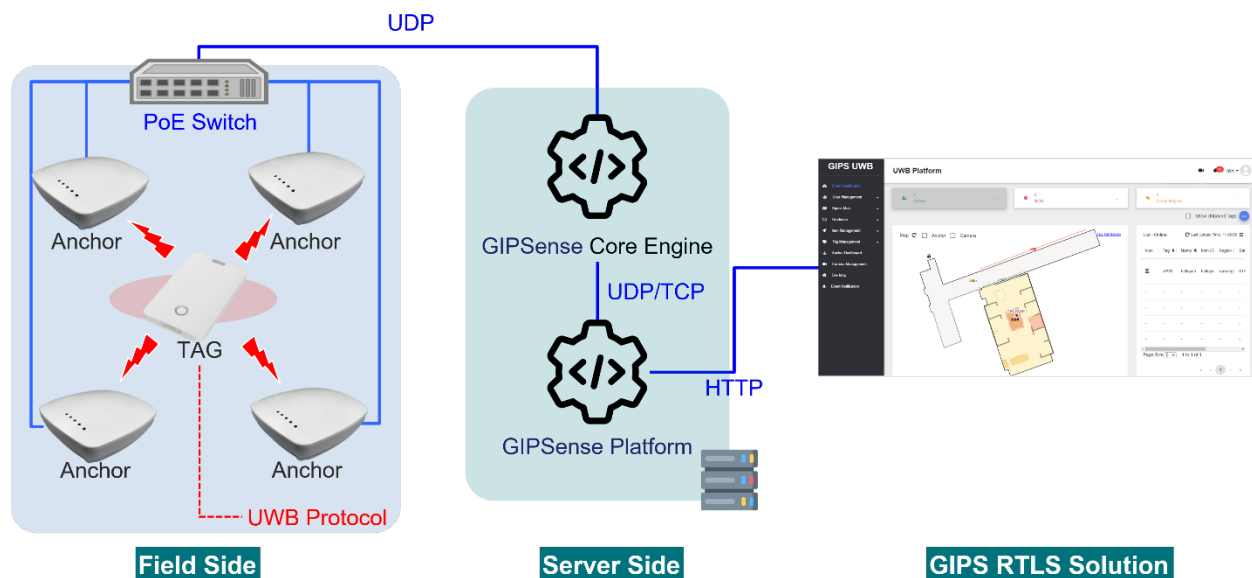
- Meet IEEE 802.15.4a UWB
- Meet IEEE 802.11 b/g/n
- Support power-over-ethernet 802.3af
- 10/100M Ethernet
- BLE 4.2
- ToF/TDoA Mode Supported

1.2 Description

GA-210 is the UWB anchor used in GIPS Real Time Location System (RTLS) solution, supports the TOF / TDOA positioning algorithm. GIPS RTLS solution can be applied in hospital, factory, warehouse and other fields.

The typical deployment structure is shown as below figure, GA-210 receives the signal from the UWB tags in the field side, and upload the packet data to the server side. GA-210 could be configured by the software on the server side, also transit the command from the server to the tags.

GA-210 supports standard IEEE802.3af PoE power supply, can be managed by PoE switch, also can powered by DC power supply. The power supply voltage is DC 5V. GA-210 supports WiFi 2.4Ghz, the data can be transferred through the wireless connection. It facilitates the deployment of the anchors in some environments.

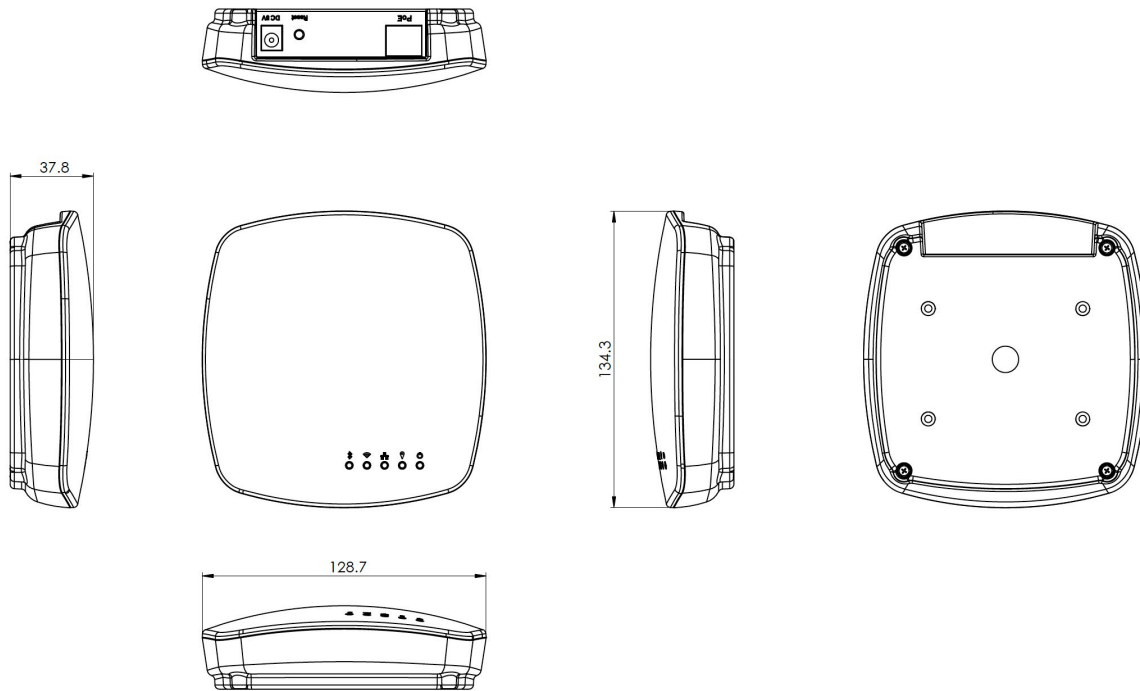


1.3 Product outline

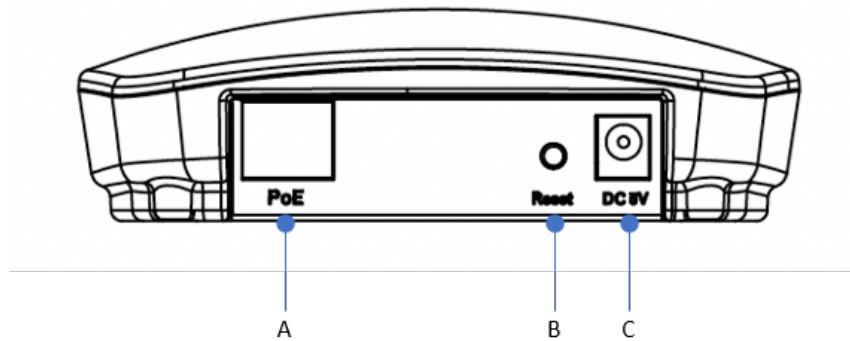
1.3.1. Product Pictures



1.3.2. Product Dimension



1.3.3. Product I/O



- A : RJ45, PoE supported
- B : Reset button
- C : DC-5V Input

2 PRODUCT SPECIFICATION

General	
Standard	IEEE802.15.4a IEEE802.11 b/g/n IEEE802.3af BLE 4.2
External I/O	DC power jack RJ45 connector Reset button
Dimension (mm)	128 x 134 x 37
Weight (g)	250
Power Requirement	+5V DC-in / Powered LAN(POE)
Power Dissipation	< 1.6W
Indicator Light	• PWR: Green, Bright after power on • UWB: Green, Flicker during positioning interaction • LAN: Green, Flicker in wired data transmission • Wi-Fi: Green, Flicker in Wi-Fi data transmission • BLE: Blue, Bright after power on
Temperature	• Operating: -20°C~65°C • Storage: -40°C~85°C
Humidity	• Operating: 0%~90% without condensation • Storage: 0%~90% without condensation
UWB	
Working Frequency	3.25GHz~6.75GHz
Physical Rate	110 Kbps / 850 Kbps / 6.8 Mbps (Adjustable)
Output power (25°C)	-41.3dBm/MHz ~ -24dBm/MHz (Adjustable)
Channel Bandwidth	500 MHz
Antenna Specification	Built-in flex antenna, peak gain 5dbi (average)
Working Mode	ToF / TDoA
Time SYNC	Wireless SYNC

Wifi	
Protocols	IEEE 802.11 b/g/n (802.11n up to 150 Mbps)
Frequency Range	2.3GHz ~ 2.5GHz
Antenna Specification	Built-in flex antenna, peak gain 3.2dbi (typical)
Modulation technique	11b/11g/11n
Output power (25°C)	Up to +21 dbm
Receiving sensitivity	-98 dbm
Channel Bandwidth	20Mz/40MHz
Networking Mode	Bridge
WLAN Mode	AP STATION AP + STATION
Networking Protocol	P2P , TCP/IP , UDP , DHCP
Wi-Fi Encryption	AES 64/128/256
Authentication	WEP / WPA-PSK / WPA2-PSK / WPS3-PSK
BLE	
Protocols	Bluetooth v4.2 BR/EDR and BLE specification
Radio	NZIF receiver with –97 dBm sensitivity Class-1, class-2 and class-3 transmitter AFH
Antenna Specification	Built-in flex antenna, peak gain 3.2dbi (typical)
Output power (25°C)	+10 dbm
Receiving sensitivity	-98 dbm
Others	
Configuration Tools	GIPS_Anchor_Monitor_v1.0.0 (Windows Application) GIPS_BLE_Monitor_v1.0.0(Android APP)

Federal Communication Commission Interference Statement

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 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.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

FCC Radiation Exposure Statement

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

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

UWB systems operating under the provisions of this section shall bear the following or similar statement in a conspicuous location on the device or in the instruction manual supplied with the device: "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."



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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, and (2) This device must accept any interference received, including interference that may cause undesired operation.