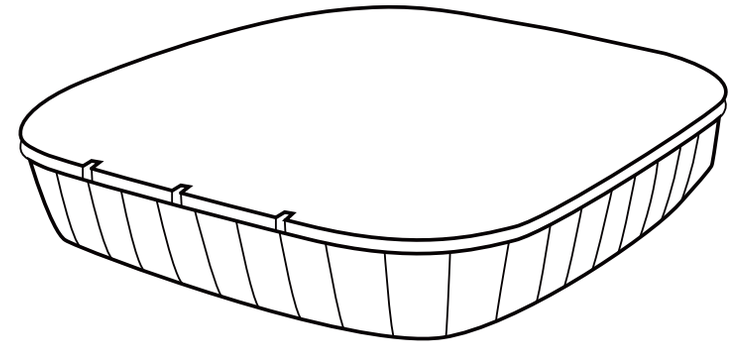
ViTRACE™
by piper



Piper Networks Inc.

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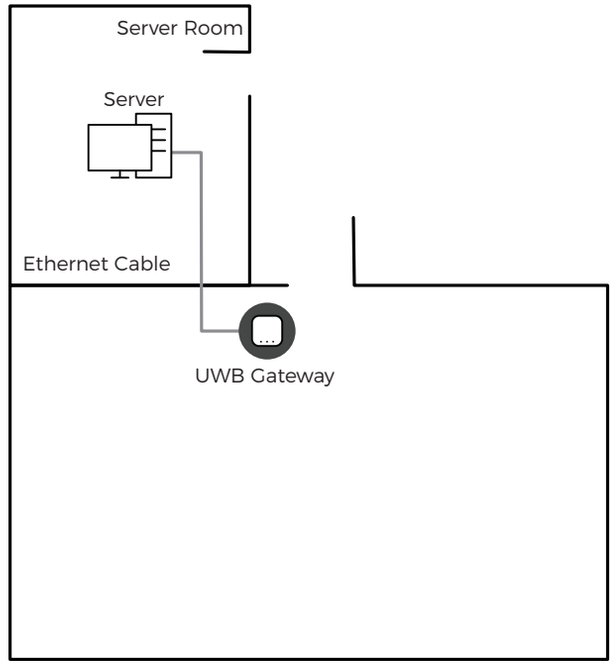
1.Introduction

1.1.Product Description

VG1001 UWB Gateway is designed to collect data from UWB Tags when UWB tags are within 3m and stay for at least 1 second. The collecting process might affect the alarm and recording function of UWB Tag. The collected data will be uploaded to the designated server, and will be only held by the owner of UWB Gateway and server.

1.2.Typical Applications

In typical cases, UWB Gateway is mounted near main entrance, and connected to a designated local server. When a person carries a UWB Tag through the mair entrance, if the distance between the UWB Tag and the UWB Gateway is with 3m and stay for more than 1 second, the recorded alarm data in the UWB Tag be collected by the UWB Gateway, and finally be uploaded to the server.



2.Panels

2.1.Front panel of the UWB Gateway

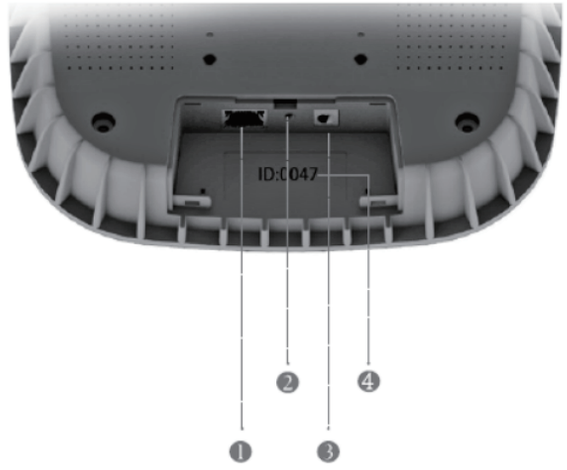
Three LED indicators are on the front panel of VG1001 UWB Gateway to indicate its working status.

Description		
1	Network Link Indicator	LED is On: No network link LED is Flashing: Network link is normal.
2	Wireless Indicator (reserved)	This indicator is reserved for further use.
3	UWB Link Indicator	LED is On: No link with the tag LED is Flashing: Tag link is normal.

2.Panels

2.2.Rear panel of the UWB Gateway

The rear panel of VG1001 UWB Gateway includes network connector, power supply connector, reset button and label.

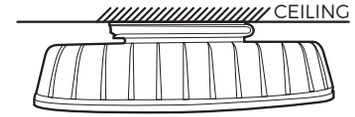


Description		
1	RJ45 Network Port	PoE power input & network transmission multiplexing port.
2	Reset Button	When power is on, use a needle to press this button and hold for 15 seconds and then release. The UWB Gateway will restore the factory settings and restart.
3	DC24V Power Adaptor Port	DC power input interface, connect to 24VDC/1A adapter.
4	Label Zone	UWB Gateway information.

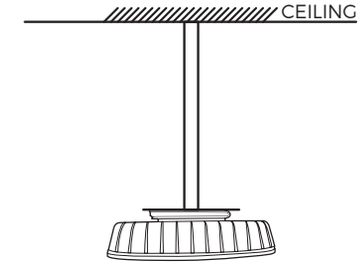
3.Installation and power supply

3.1.Installation of UWB Gateway

The VG1001 UWB Gateway is generally installed near the entrance, and the installation height is generally 2m. The installation method is as follows:



Ceiling installation



Suspension installation

UWB gateway can only effectively cover a range of 3m radius. It should be installed with care to function normally. You need to pay attention to the following:

- The UWB Gateway should be installed in the correct posture, face down. The UWB Gateway should not be installed vertically or at an angle.

- The UWB Gateway should not be blocked by objects. Keep away from obstructions such as weak current bridges, fire pipes, air conditioning pipes and other shelters.

- Avoid installing the UWB Gateway on top of the ceiling (no matter the material of the ceiling is metallic, like aluminum gussets, or non-metallic, like gypsum boards and glass plates).

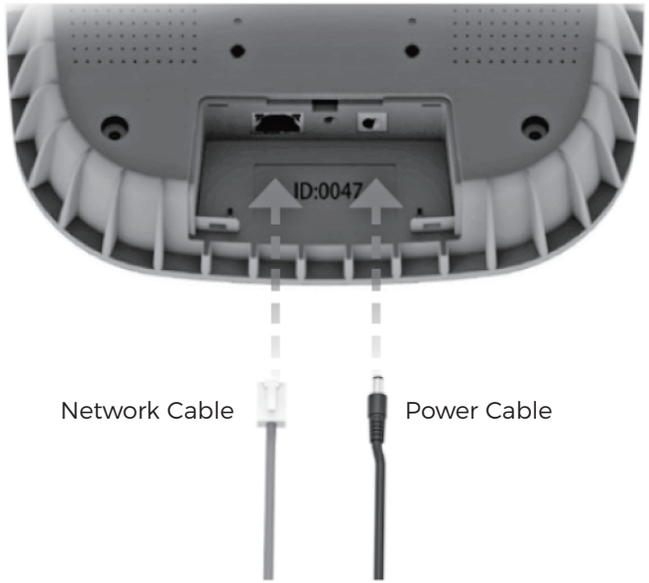
- Keep away from objects that easily cause signal reflection, including large-area metals and large screens.

3.2.Power supply

UWB Gateway has two power supply methods: PoE and DC.

Power over Ethernet Use Cat 5+ network cable to connect PoE switch (which meets the 802.3af standards) and UWB Gateway. Note that the distance between PoE switch and UWB Gateway should not exceed 80 meters. This method uses a single cable to achieve both power and network connection.

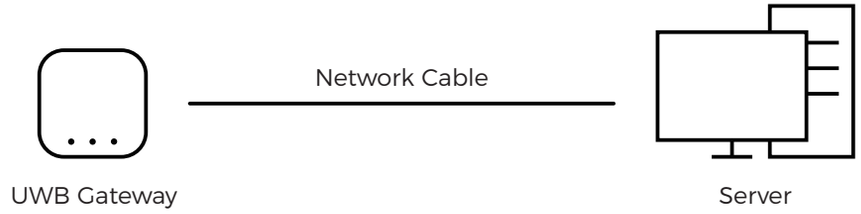
DC Power UWB Gateway uses 24VDC/1A adapter for power supply. Please use the original adapter or selected adapter that meets the above specifications. At the same time, use Cat 5+ network cable to connect an ordinary network switch and the UWB Gateway to achieve network connection.



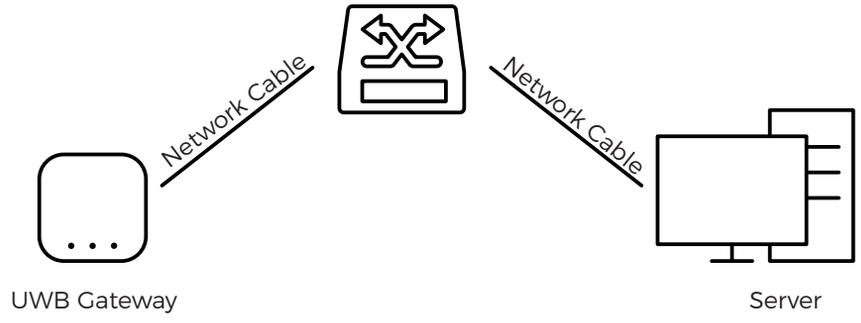
4. Internet connection of UWB Gateway

4.1.Wired network

There are two main connection methods between the UWB Gateway and the computer, as shown in Figures 4.1 and 4.2:



4.1 Direct connection via network cable



4.2 Connection via network switch

4.2.Network configuration

You need the “Social Distancing Contact Tracing Software” to configure the Gateway. Please refer to “Software Installation and Deployment Instructions” for detailed configuration steps. If you don’t get the software, contact your system administrator for help. Here is the basic network knowledge of the UWB Gateway.

The VG1001 UWB Gateway uses a fixed IP address to access the network and does not support either the DHCP function, nor the network domain name function.

The default IP of the UWB Gateway is "192.168.1.X" and the network port number is "48200". The X in IP varies with the ID of the UWB Gateway. You can get the default IP from the label on the packaging box.

Before modifying the network settings of the UWB Gateway, you should first modify the IP address of the computer. It is recommended to configure the computer's network as:

IP: 192.168.1.11

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.1

5.Data Collection

The main purpose of VG1001UWB Gateway is to collect data from UWB Tags. It takes about 1 second for each UWB Tag to upload its alarm records. The effective data collection zone is a circle with a radius of 3m and centered on the UWB Gateway. Please ensure that UWB Tags stay in the collection zone for more than 1 second to ensure the collecting process.

During collecting, the alarm function of UWB Tags may be interfered. It will return to normal when leaving the data collection zone.

The collected data will be uploaded to the designated server, and is only owned and controlled by the owner of the server.

6.Important safety information for UWB Gateway

WARNING: Failure to follow these safety instructions could result in fire, electric shock, injury, or damage to UWB Gateway or other property. Read all the safety information below before using UWB Gateway.

Handling Handle UWB Gateway during transportation, installation and other cases with care. UWB Gateway contains sensitive electronic components and can be damaged if dropped, burned, punctured, or crushed.

Repairing Don’t open UWB Gateway and don’t attempt to repair UWB Gateway yourself. Disassembling UWB Gateway may damage it, and may cause injury to you. If UWB Gateway is damaged or malfunctions, contact local distributor for help.

Powering UWB Gateway uses 24VDC / 1A adapter for power supply. Please use the original adapter or selected adapter that meets the above specifications. It’s important to keep UWB Gateway and the power adapter installed in a well-ventilated area. Using a UWB Gateway power adaptor that’s damaged, using a third-party selected powering solution which doesn't meet 24VDC/1A or local

safety regulation requirements, or powering UWB Gateway when moisture is present, can cause fire, electric shock, injury, or damage to UWB Gateway or other property.

Prolonged heat exposure UWB Gateway and the power adapter comply with applicable surface temperature standards and limits. UWB Gateway and the power adapter will become warm when plugged in to a power source.

Radio frequency exposure UWB Gateway uses radio signals to connect to UWB Tags. UWB Gateway has been tested and meets applicable limits for radio frequency (RF) exposure.

Radio frequency interference Observe signs and notices that prohibit or restrict the use of electronic devices. Although UWB Gateway is designed, tested, and manufactured to comply with regulations governing radio frequency emissions, such emissions from UWB Gateway can negatively affect the operation of other electronic equipment, causing them to malfunction. Unplug the UWB Gateway power adaptor and the PoE cable when use is prohibited, or when asked to do so by authorities.

Medical device interference UWB Gateway contains components and radios that emit electromagnetic fields. These electromagnetic fields may interfere with medical devices, such as pacemakers and defibrillators. Consult your physician and medical device manufacturer for information specific to your medical device and whether you need to maintain a safe distance of separation between your medical device and UWB Gateway. Stop using UWB Gateway if you suspect they are interfering with your medical device.

Not a medical device UWB Gateway is not a medical device and should not be used as a substitute for professional medical judgment. It is not designed or intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of any condition or disease. Please consult your healthcare provider prior to making any decisions related to your health.

Not an absolutely reliable equipment UWB Gateway is not intended for use where the failure of the device could lead to death, personal injury, disease transmission or severe environmental damage.

Explosive and other atmospheric conditions Powering on UWB Gateway in any area with a potentially explosive atmosphere, such as areas where the air

contains high levels of flammable chemicals, vapors, or particles (such as grain, dust, or metal powders), may be hazardous. Exposing UWB Gateway to environments having high concentrations of industrial chemicals, including near evaporating liquified gasses such as helium, may damage or impair UWB Gateway functionality. Obey all signs and instructions.

Choking hazard Some UWB Gateway bands may present a choking hazard to small children. Keep these bands away from small children.

7.Important handling information for UWB Gateway

Exposure to liquid UWB Gateway is not water resistant. Always avoid exposing UWB Gateway to liquids and moisture.

Cleaning and care Keep UWB Gateway clean and dry, but avoid damaging UWB Gateway. Observe the following:

- Don't clean UWB Gateway while it's powering.
- Don't dry UWB Gateway using any external heat source (for example, a hair dryer).
- Don't use cleaning products, ultrasonic cleaners, or compressed air when cleaning your UWB Gateway.

Using buttons, connectors, and ports Never apply excessive pressure to a button on UWB Gateway, or force a powering connector into a port, because this may cause damage that is not covered under the warranty. If the connector and port don't join with reasonable ease, they probably don't match. Check for obstructions and make sure that the connector matches the port and that you have positioned the connector correctly in relation to the port.

Operating temperature UWB Gateway is designed to work best in ambient temperatures between -4˚F and 158˚ F (-20˚ and 70˚ C) and be stored in temperatures between -40˚F and 185˚ F (-40˚ and 85˚ C). UWB Gateway can be damaged if stored or operated outside of these temperature ranges. Avoid exposing UWB Gateway to dramatic changes in temperature or humidity.

Indoor Use UWB Gateway is designed for indoor use only.

8.FCC compliance statement

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

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

UWB devices may not be employed for the operation of toys. Operation onboard an aircraft, a ship or a satellite is prohibited.

FCC ID: 2AIK7VG1001

9.Disposal and recycling information for UWB Gateway

UWB Gateway disposal and recycling

Your UWB Gateway should not be disposed of with household waste. Dispose of your UWB Gateway in accordance with local environmental laws and guidelines.

European Union—Disposal Information

The symbol above means that according to local laws and regulations your product and/or its battery shall be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. The separate collection and recycling of your product and/or its battery at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

Disclaimer: The UWB Gateway is not intended to be used as a treatment for COVID-19 and also not as a protective device against contracting COVID-19. The UWB Tag is a social distancing device, can only be used in the context of social distancing and contact tracing among persons, any usage not related to social distancing are strictly prohibited. Depending on the design of usage location / environment and the way how it is used, there could be false positives due to tissue, walls, structures or other factors and false negatives due to bodily interference, electromagnetic interference, or other factors. We warranties that the UWB Gateway performs to the requirements listed on the UWB Gateway spec sheet. All sales are final.

10.Responsibility statement

- The product is an auxiliary tool, which cannot replace any safety management system, measure and rescue solution for hazardous operation or supervision system and measure for operation management. Please do not reduce safety awareness while using the product, and timely charge the product and check its operation state when the power is low.
- Measurement data and results of this product are for reference only, shall not be served as the basis for diagnosis and treatment. Products described in the Manual (including hardware and software) are all provided in the "current situation" within the maximum range allowed by laws, and there may exist defects, errors or faults. The Company does not provide express or implied guarantee in any form, or compensate for any special, incidental, accidental or indirect damages caused by using the Manual or products of the Company.
- The Company does not undertake any responsibility for any damage to personal or property interests of one's own or third party caused by failing to use the product according to the Manual and warning statement.
- The Company does not undertake any responsibility for any product operation abnormality, information disclosure or other problems caused by network attack, hacker virus infection or other unknown risks due to Internet access during product use.
- The product promoting pictures and advertisements are used only for instruction and promotion. Physical products prevail in all cases.
- The data in the Manual are all theoretical values obtained by the internal lab in specific testing environments. However, there may exist differences due to individual product differences, software version, using conditions and different environmental factors, and actual using conditions shall prevail in all cases.

- The Company will not send special notice in the case of being necessary to modify and adjust the above.

For more information, please contact support@pipernetworks.com

11 .Appendix

VG1001 UWB Gateway		
Frequency	6.1GHz~6.9GHz	
Transmit power density	< -41.3dBm/Mhz	
Collect Distance	3~5m(LOS)	
Interface Type	Ethernet RJ45	
Interface Speed	100Mbps	
Interface Protocol	TCP/IP	
Interface Connect Distance	100m	
Transmission medium	CAT5+	
Dimensions	200mmx200mmx40mm	
Weight	400g	
Power Supply Interface	POE	DC
Voltage	48V	24V
Current	0.5A	1A
Working temperature	-20-70℃	
Storage temperature	-40-85℃	
Working humidity	10% - 90% non condensing	
Storage humidity	5% - 95% non condensing	