

Product Specification

Product Name: Waterproof Industrial Gateway
Model Name: DSGW-010

Revision History

Specification		Sect.	Update Description	By
Rev	Date			
				Li

Approvals

Organization	Name	Title	Date

目录

Revision History	1
1. Introduction	3
1.1 Purpose&Description	3
1.2 Product Feature Summary	3
2. Mechanical Requirement	4
2.1 Interface	4
1. LED indicator	4
2.2 Dimension	4
3 Electrical Requirements.....	4
3.2.1 Wi-Fi Performance	6
3.2.2 ZigBee Performance	6
3.2.4 LTE Performance.....	6
4. QA Requirements	6
5. Application	7
5.3 AP-03 Locate the ship	9
6. Installation	10
8.Packing List.....	11
IP66.....	12

1. Introduction

1.1 Purpose&Description

It's a Bluetooth Gateway with POE or DC power supply. It can be used in various scenarios flexibly. It can control BLE device remotely, receives the data sent by the BLE devices and sends it to servers. The Wi-Fi data rate can be up to 580Mbps and the BLE data rate can be up to 2Mbps. It can also support the POE switch power supply and 12V adapter power supply, It reserves the ZigBee function and 4G LTE function.

1.2 Product Feature Summary

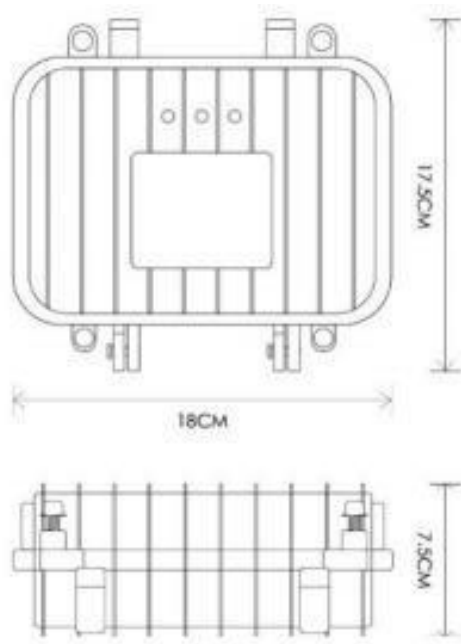
- ★ Support the POE switch power supply and 12V adapter power supply
- ★ Support IEEE802.3-2012 Type 1, the IEEE802.3-2012 Type 1 requires a power supply device (PSE) to provide 44 to 57V, and the power of the powered device(PD) must not exceed 12.95 W and the current does not exceed 350 mA
- Support IEEE802.11n,IEEE802.11g,IEEE 802.11b Protocol
- ★ Support Network Communication of 4G Module (LTE-TDD/LTE-FDD)
- ★ Support Bluetooth 5.2
- ★ Support ZigBee3.0 ;
- ★ Supporting waterproof IP66
- ★ One WAN/LAN variable network port
- ★ RoHS compliance(Lead-free)
- ★ FCC,CE compliance

2. Mechanical Requirement

2.1 Interface

1. LED indicator
2. RJ45Interface(Network Interface and POE Power Supply Interface)
3. DC power
4. WIFI Antenna
5. LTE Antenna
6. BT Antenna, Zigbee Antenna, Z-wave Antenna,

2.2 Dimension



3 Electrical Requirements

3.1 Hardware Information

Category	Specifications
Power Supply Port	Support DC input, input Voltage range is 10V to12V. The power seat aperture is 3.5mm. The needle diameter is1.35 mm and is positive. Power adapter: 100-240V 50/60HZ, Output is 12V/2A
Reset button	The reset button inside the gateway, After pressing the reset button for more than 5 seconds, the Wi-Fi unit will be restored to the factory settings.
Network Interface	The network interface supports CAT-5/CAT-5E to transmit data and POE Power Supply (voltage range is 44~ 57V). It is a WAN/LAN variable.

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杭州软库科技有限公司

Hangzhou Roombanker Technology Co., Ltd.

A DUSUN company

Indicator LEDs	1). Power LED normally on when powered on 2). Network LED normally on when connected 3). Wi-Fi LED normally on after connecting to Wi-Fi for 1-2 sec
Operating Temperature	-20°C~70°C
Currents	1000mA@12V
waterproof level	IP66

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3.2 Performance Requirement

3.2.1 Wi-Fi Performance

IEEE wireless LAN standard: IEEE802.11n; IEEE802.11g; IEEE 802.11b

Data Rate: IEEE 802.11b Standard Mode: 1, 2, 5.5, 11 Mbps

IEEE 802.11g Standard Mode: 6, 9, 12, 18, 24, 36, 48, 54 Mbps

IEEE 802.11n: MCS0~MCS7 @ HT20/ 2.4GHz band

MCS0~MCS7 @ HT40/ 2.4GHz band

Sensitivity: HT40 MCS7 : -70dBm@10% PER(MCS7) /2.4GHz band

HT20 MCS7 : -71dBm@10% PER(MCS7) /2.4GHz band

Transmit Power: IEEE 802.11n: 16dBm @HT20/40 MCS7 /2.4GHz band

IEEE 802.11g: 16dBm @54MHz

IEEE 802.11b: 18dBm @11MHz

Wireless Security: WPA/WPA2, WEP, TKIP, and AES

Working mode: Bridge、Gateway、AP Client

3.2.2 ZigBee Performance

TX Power: 17.5dBm

Range: 100 meters minimum, open filed

Receiving Sensibility: -94dBm

Frequency offset: +/-20KHZ

3.2.3 Bluetooth Performance

Bluetooth Protocol: Bluetooth 5.2

TX Power: 19.5dBm

Range: 150 meters minimum, open filed

Receiving Sensibility: -80dBm@0.1%BER

Frequency offset: +/-20KHZ

3.2.4 LTE Performance

Operation Frequency Band: 850/900/1800/1900MHZ

GPRS Characteristic

GPRS	Global: LTE FDD:B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 North America: LTE TDD:B2/B4/B12/B13
	LTE TDD:B39(for cat.M1 only)
	EGPRS
	Cat.M1/Cat.NB1

3.2.5 Ethernet Performance

WAN port: 10M/100M bps

LAN port: 10M/100M bps

4. QA Requirements

4.1 Quality Information

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Quality & Testing Information	
Information Description	Standard(Yes) custom(No)
ESD Testing	Yes
RF Antenna Analysis	Yes
Environmental Testing	Yes
Reliability Testing	Yes
Bluetooth Certification	Yes
Zigbee Certification	Yes
Waterproof test	Yes

4.2 Operate temperature

For gateway, the Standard temperature operates is at -20°C~70°C.

5. Application

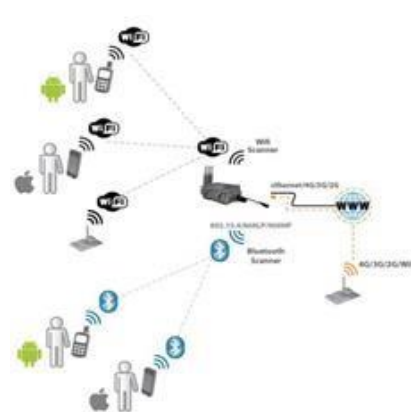
- 1) Bluetooth Gateway collects information about Beacon nearby, including RSSI, MAC, etc., once per second.
- 2) Bluetooth Gateway sends the Beacon information to Cloud via Wi-Fi or LTE once per second.
- 3) Bluetooth Gateway supports the TCP/IP, UDP protocol, and can support the MQTT, LWM2M protocol

5.1 AP-01 Monitor Shopping and Street Activity

The smart gateway can be used to detect iPhone and Android devices, which can be detected without the need of being connected to a specific Access Point, enabling the detection of any smartphone, laptop, or handsfree device which comes into the coverage area of this smart gateway and in general any device which works with Wi-Fi or Bluetooth interfaces. Users have to do nothing to be detected as the WIFI and Bluetooth radios are integrated into their smartphones.



Working Scenario



schematic diagram

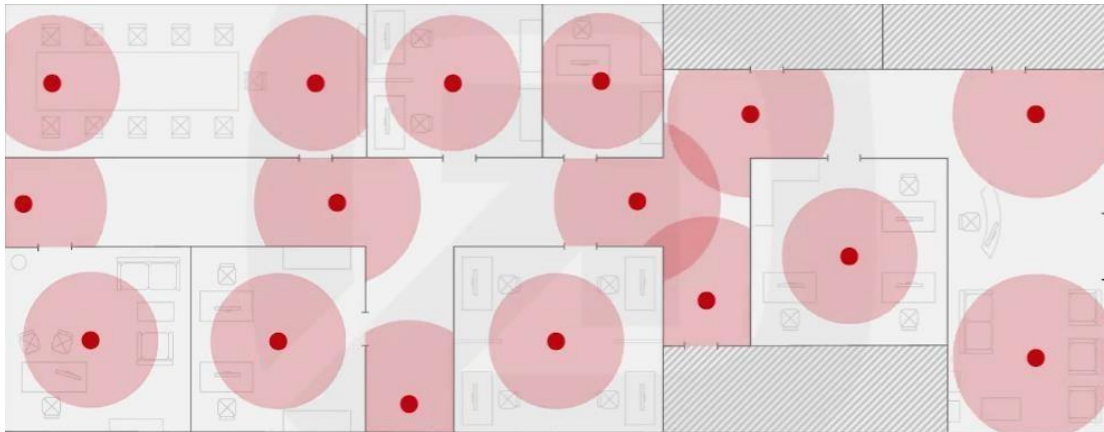
DB ID	Timestamp	MAC	AP	RSSI	Vendor
53483	2012-04-24 07:56:25	C4:2C:03:96:0E:4A		69	Apple
53482	2012-04-24 09:11:26	D8:2A:7E:10:1E:63	libelium_wsn1	60	Nokia Corporation

Example of information monitored by the WIFI Scanner

DB ID	Timestamp	MAC	ID	RSSI	CoD	Vendor
45400	2012-05-16 16:18:12	00:26:7E:5F:3C:18	myCar	-72	Handsfree	PARROT SA
78005	2012-04-20 12:59:27	D8:2A:7E:0E:C3:10	Tropic	-85	Smartphone	Nokia Corporation

Example of information monitored by the Bluetooth Scanner

5.2 AP-02 Beacons for Indoor guidance and location



Exemplary deployment of a beacon infrastructure

The beacon attached to the asset to be tracked sends BLE signals to Smart Gateway that are installed in the building. The Gateway processes the provided data and sends it via Wi-Fi, Ethernet to Server. Here, the position is displayed on a map, and motion statistics can be retrieved.

5.3 AP-03 Locate the ship



Working Scenario

The smart gateway can be used as a transmitter to connect various communication equipment on the ship and transmit signals to the monitoring center by the LTE. At the same time, the gateway can be connected to the camera or voice device, and the image can be encoded and transmitted back to the ground satellite fixed station through a variety of communication means. As a router, it is convenient for the crew to connect computers, mobile phones, etc., and access the Internet through the ground satellite master station to realize network surfing

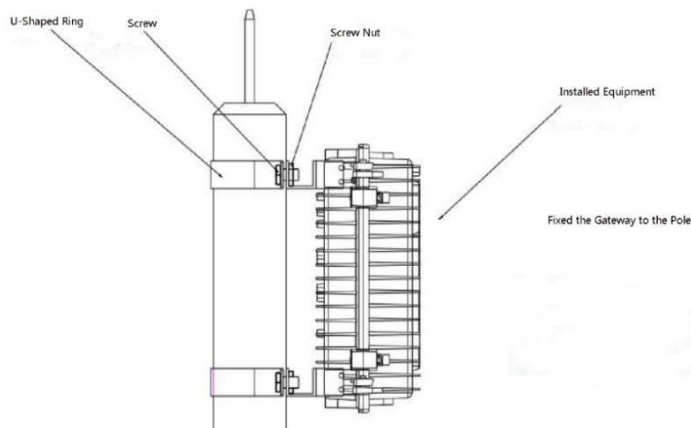
5.4 AP-04 Intelligent gateway Construction site management system



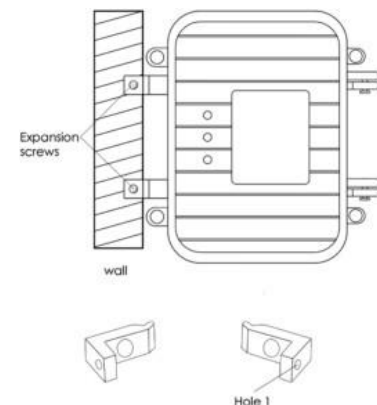
Wisdom site

As the central control gateway of the construction site, the monitoring information of various sensors in the construction site can be collected through Bluetooth, ZigBee, and Ethernet to realize real-time remote monitoring of the construction site. At the same time for the site of computers, printers to provide network access, convenient supervisor office.

6. Installation



Method 1 (Mast)



Method 2 (Mount)

8. Packing List

Gateway	1
adapter	1
network cable	1
Clamping Fixture	1
antenna	1

FCC Statement

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.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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.

To comply with RF exposure requirements, a minimum separation distance of 20 cm must be maintained between the users body and the device, including the antenna.

IP66

TECHNICAL REPORT



Report No.: TW2107216S
File reference No.: 2022-04-02
Applicant: Hangzhou Roombanker Technology Co., Ltd.
Product: waterproof industrial gateway
Model No.: DSGW-010, DSGW-010-1, DSGW-010-2, DSGW-010-3,
DSGW-010-4, DSGW-010-5, DSGW-010-6, DSGW-010-7,
DSGW-010C
Trade mark: N/A
Test Standards: IEC 60529:1989+A1:1999+A2:2013
Test Conclusions: Pass
Please refer to 5.1 and 5.2 for details.

Approved by

Jack Chum

Jack Chum

Manager

2022-04-02

Dated:

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

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