Product Specification

Product Name: Dual-band Wi-Fi Smart Gateway
Model Name: DSGW-023

Revision History

Specification		Sect.	Update Description	By
Rev	**Date**			
1.0	2020-08-11		New version release	
1.1	2022-7-26		Add Tuya zigbee	Li
1.2	2022-8-1		Adjust Led colours	Li
1.3	2022-9-15		Add lte version	Li

Approvals

Organization	*Name*	*Title*	*Date*

Model List

Feature / Mode	Wi-Fi 2.4G/5G	Bluetooth 5.2	Zigbee3.0	Z-Wave	Tuya-zigbee	LTE
DSGW-023-1	●	●	●	●		
DSGW-023-2	●	●				
DSGW-023-3	●		●			
DSGW-023-4	●				●	
DSGW-023-5	●	●	●	●		●

杭州市大关路 189 号万通中心 A 幢 8 楼,310004
Tel:86-571-86769027/8 8810480
Website: www.dusuniot.com www.dusunremotes.com www.dusunlock.com

Floor 8, building A, Wantong center,
Hangzhou 310004, china

1. Introduction

1.1 Purpose& Description

DSGW-023 smart router gateway can as a Wi-Fi access point and IoT gateway. It offers continual high-speed data transmission for multiple devices at the same time. Built-in 880MHz MIPS® 1004KEc™ dual-core processor provides powerful data handling capacity to improve wireless transfer efficiency.

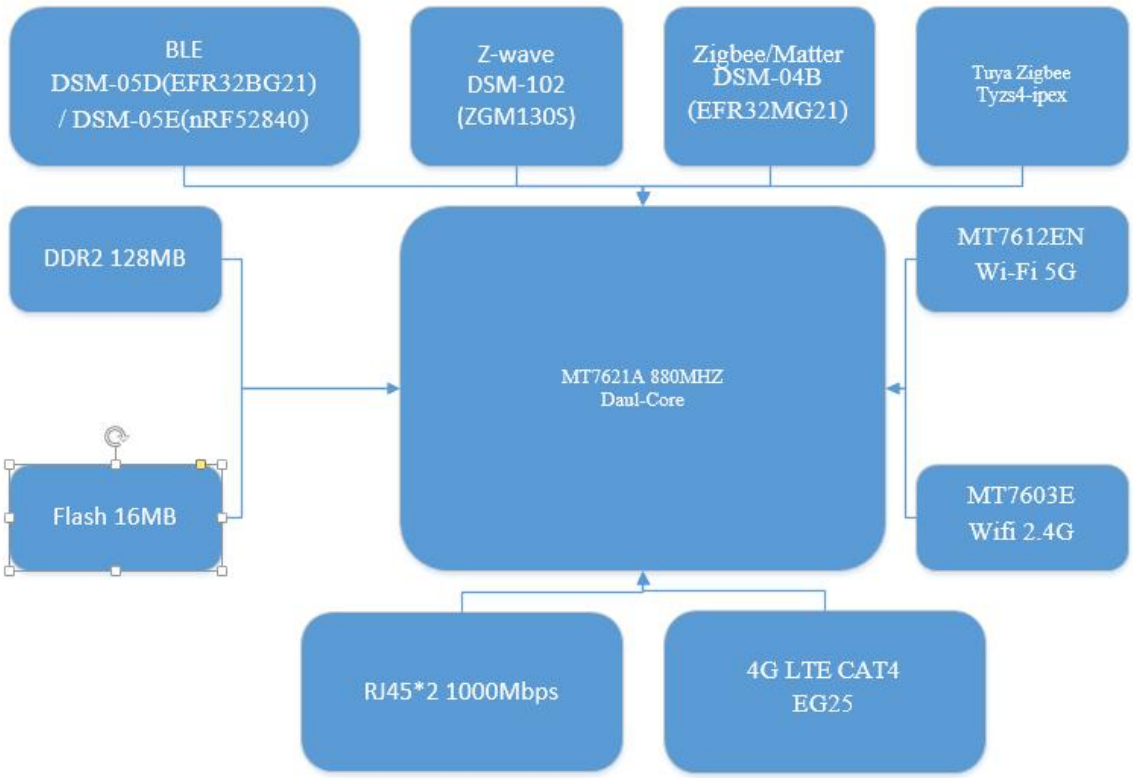
Meanwhile, simultaneous dual band with middle power design on both bands makes wireless connection more flexible and stable, especially over long distance. Generally, DSGW-023 is designed for medium-size homes with increasing demand for high-speed Wi-Fi.

DSGW-023 smart router gateway also can be a IoT gateway, it can support zigbee, BLE, Z-Wave protocol and connect the IoT devices.

1.2 Product Feature Summary

- Support 12V adapter power supply
- Support AC1200 Wi-Fi, IEEE802.11AC, IEEE802.11n, IEEE802.11g, IEEE 802.11b Protocol;
- Support Bluetooth 5.2/SIG mesh; Zigbee3.0; Z-wave,LTE
- Gigabit Ethernet port

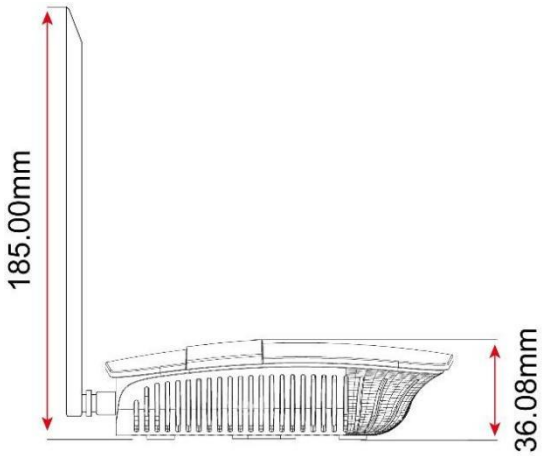
1.3 Hardware block diagram

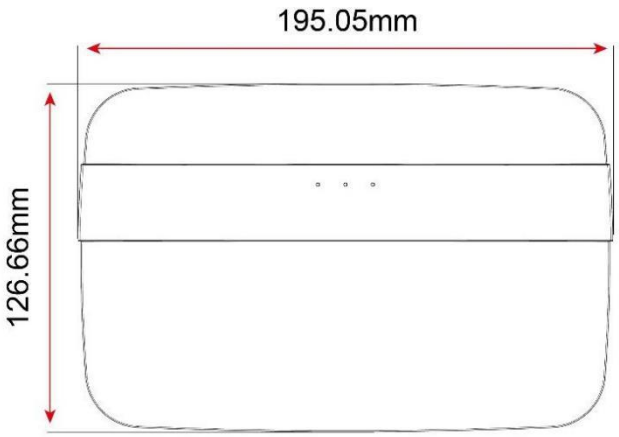


2. Mechanical Requirement

2.1 Drawings

2.2 Dimension





3 Electrical Requirements

3.1 Hardware Information

Category	Specifications
CPU	880MHz MIPS® 1004KEc™ dual-core processor
RAM	512MB
Storage	eMMC up to 8GB
Sim	Micro sim card
Power Supply Port	Support DC Input, input Voltage range is 11.5V to 12.5V. The power seat aperture is 5.5mm. 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	WAN Port,LAN Port
Indicator LEDs	1）. Power LED normally on when powered on（ green）； 2) . Wireless LED normally on when connected （ yellow ） ； 3）. Wi-Fi LED normally on after connecting to Wi-Fi for 1-2 sec.（yellow）。
Environment	Operating Temperature: 0℃~40℃ (32℉ ~104℉) Storage Temperature: -40℃~70℃ (-40℉ ~158℉) Operating Humidity: 10%~90% non-condensing Storage Humidity: 5%~90% non-condensing

3.2 Performance Requirement

3.2.1 Wi-Fi Performance

Wireless Feature

Wi-Fi-Performance	● IEEE wireless LAN standard: IEEE802.11ac， IEEE802.11n; IEEE802.11g; IEEE 802.11b ● Data Rate: IEEE 802.11b Standard Mode:1,2,5.5,11Mbps 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 MCS0~MCS9 @ HT40/ 5GHz band IEEE 802.11ac: MCS0~MCS9 @ VHT80/ 5GHz band ● Sensitivity: VHT80 MCS9 : -60dBm@10% PER(MCS9) /5GHz band HT40 MCS9 : -63dBm@10% PER(MCS9) /5GHz band HT40 MCS7 : -70dBm@10% PER(MCS7) /2.4GHz band HT20 MCS7 : -71dBm@10% PER(MCS7) /2.4GHz band ● Transmit Power: IEEE 802.11ac: 13dBm @HT80 MCS9 /5GHz band IEEE 802.11ac: 16dBm @HT80 MCS0 /5GHz band IEEE 802.11n: 14dBm @HT20/40 MCS7 /5GHz band

	IEEE 802.11n: 16dBm @HT20/40 MCS0 /5GHz band 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
ZigBee3.0 Performance	● TX Power: 17.5dBm ● Range: 100 meters minimum, open filed ● Receiving Sensibility:-94dBm ● Frequency offset: +/-20KHZ
Bluetooth Performance	● TX Power: 19.5dBm ● Bluetooth: 19.5dBm ● Range: 150 meters minimum, open filed ● Receiving Sensibility: -80dBm@0.1%BER ● Frequency offset: +/-20KHZ ● Frequency Range (MHz):2401.0~2483.5 ● Low Frequency (MHz):2400 ● High Frequency (MHz):2483.5 ● E.i.r.p (Equivalent Isotopically Radiated power) (mW)<10mW ● Bandwidth (MHz):2MHz ● Modulation: GFSK
Z-wave Performance	● TX power up to13dBm (20mW) ● RX sensitivity: @100kbps-97.5dBm ● Range: 100 meters minimum, open filed ● Default Frequency: 916MHz(Different country with different frequency)
Ethernet	● WAN port: 10M/100M/1000M bps ● LAN port: 10M/100M/1000M bps
LTE cat.4	● LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28 ● LTE-TDD: B38/B39/B40/B41 ● WCDMA: B1/B2/B4/B5/B6/B8/B19; GSM: B2/B3/B5/B8

3.2.2 Software feature

Quality of Service	Prioritizes network traffic by device or application
WAN Type	Dynamic IP/Static IP/PPPoE/PPTP(Dual Access)/L2TP(Dual Access)
Management	Access Control, Local Management, Remote Management reboot schedule

DHCP	Server, Client, DHCP Client List, Address Reservation
Port Forwarding	Virtual Server, Port Triggering, UPnP, DMZ
Dynamic DNS	DynDns, NO-IP

VPN	PPTP VPN, IPSec VPN , OpenVPN
Access Control	Parental Control, Local Management Control
Firewall Security	DoS, SPI Firewall, IP Address Filter/Domain Filter, IP and MAC Address Binding
Protocols	Supports IPv4 and IPv6
Guest Network	2.4GHz guest network x 1, 5GHz guest network x 1
IPSec VPN	Supports up to 10 IPSec VPN tunnels
IoT protocol	Zigbee3.0 , BLE, Z-Wave

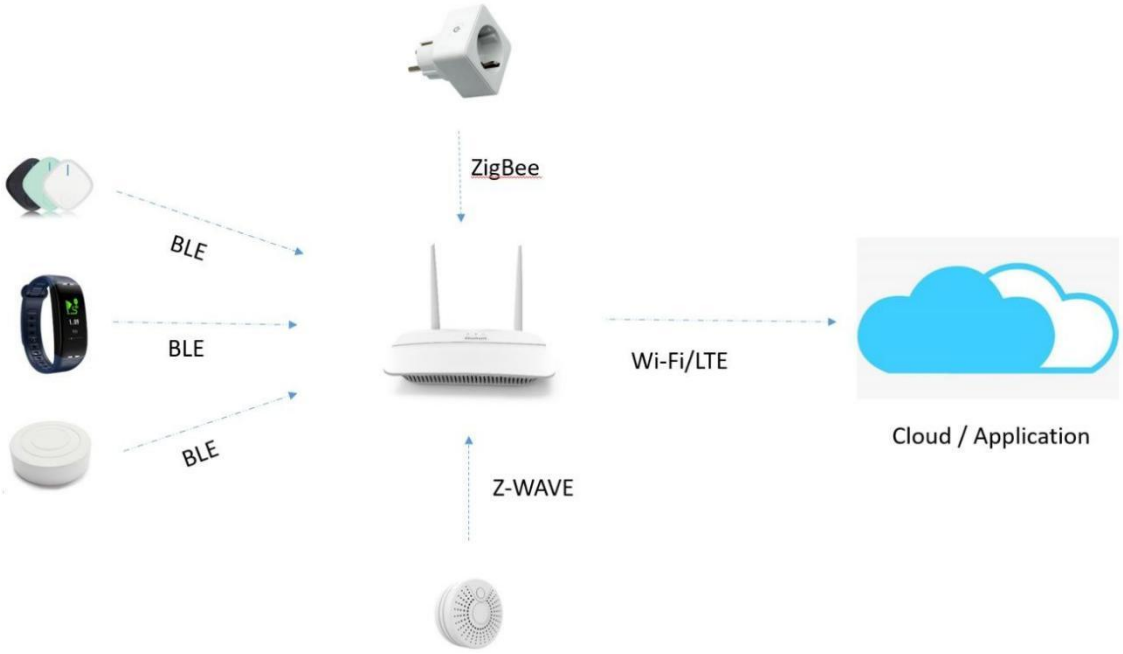
4. QA Requirements

4.1 Quality Information

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

5. Application

1) Smart Gateway collects information about Beacon nearby, including RSSI, MAC, etc., once per second.
2) Smart Gateway sends the Beacon information to Cloud via Wi-Fi.
3) Smart Gateway supports the TCP/IP, UDP protocol, and can support the MQTT, LWM2M protocol.
4) Smart Gateway support connects Zigbee.
5)Smart Gateway support Cellular network


ZigBee
BLE
BLE
BLE
Wi-Fi/LTE
Cloud / Application
Z-WAVE