Hangzhou Roombanker Technology Co., Ltd

A Dusun Company

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DSGW-230-15-US-ONITY IoT Ceiling Edge Computing Gateway

Product Specification

Product Name: IoT Ceiling Edge Computing

Gateway Product Model: DSGW-230-15-US-ONITY

Revision History

Specification			

Rev.	Date	Sect.	Update Description	By
1.0	2024-11-09		New version release	WX

Approvals

Organization	Name	Title	Date

Model List

Feature / Model	Wi-Fi 2.4G/5G	Bluetooth 5.2	Zigbee 3.0	LTE Cat1	eSIM
DSGW-230-15-EU-ONITY	●	●		●	
DSGW-230-15-US-ONITY	●	●		●	

Region List

Type	Region	LTE
-EU	Europe	EG91-EX
-US	North America	EG91-NAXD

Product Description

1.1. Purpose and Description

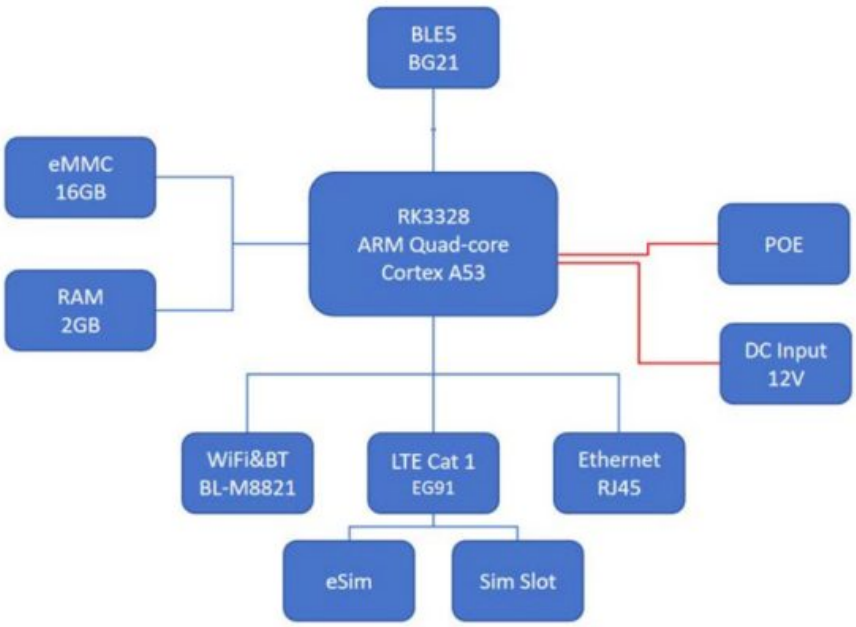
The DSGW-230 is a multi-protocol IoT gateway with edge computing capabilities. This intelligent gateway can be powered via PoE (Power over Ethernet) or a USB Type-C connection. It provides reliable connectivity for a wide range of wireless IoT devices.

With its modular architecture, the DSGW-230 allows for extensive customization of its features, providing an off-the-shelf solution tailored to your needs. Connectivity options include LTE, Bluetooth, Wi-Fi, Ethernet.

1.2. Product Feature Summary

- Support IEEE802.11ac, IEEE802.11n, IEEE802.11g, IEEE 802.11b Protocol
- Support 4G LTE CAT1
- Support Bluetooth 5.2, Wi-Fi 2.4/5G
- One Gigabit WAN/LAN variable network port
- One USB 2.0

1.3. Hardware Block Diagram



Mechanical Requirement

2.1. Drawings and Dimension

2.2. Interface

Specification

3.1. Technical Specification

Category	Specifications
CPU	RK3328 Quad-core Cortex A53
System	Debian 11

RAM	2GB
eMMC	16GB
SD card	Up to 128GB
Power Supply	DC 12V/1.5A
Reset	Factory reset button. To reset the Gateway to its original factory settings, press and hold it for more than 10 seconds
User-Defined button	Support
Switch	On/Off power
Network Interface	CAT-5/CAT-5e cables for data transmission and PoE Supply wit h a voltage range of 44 to 57V 1 * 1000M WAN/LAN variable port
USB	USB2.0 Type-C
SIM Card Slot	Dual Micro SIM card slots, link backup capability, Dual card with single standby mode lDimensions: 12mm x 15mm
eSIM	Support
TF Card Slot	1
Indicator LEDs (RG B)	1). Power LED 2). Wireless LED 3 LTE indicator
Antenna	Zigbee/BLE PCB, Z-Wave/Wi-Fi FPC Antenna
Installation method	Flat, Ceiling
RTC	Real-Time Clock operated from an onboard battery

Operating Temperature	-10℃~55℃
Storage Temperature	-40℃~65℃
Operating Humidity	10%~90%
IP Rating	IP22

Performance Requirement	
Wi-Fi Performance	IEEE Wireless LAN standard: IEEE802.11ac, IEEE802.11n, IEEE802.11g, IEEE802.11b ● **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 HT 40 MCS9: -63dBm@10% PER(MCS9) /5GHz band HT40 MCS7: -70dBm@10% PER(MCS7) /2.4GHz band HT20 MCS 7: -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 @54 MHz IEEE 802.11b: 18dBm @11MHz ● Wireless Security: WPA/WPA2, WEP, TKIP, and AES

	● Working mode: Bridge, AP Client ● Range: 50 meters maximum, open field ● Transmit Power:17dBm ● Highest Transmission Rate: 300Mbps ● Frequency offset: +/- 50KHZ ● Frequency Range (MHz): 2412.0~2483.5 ● Low Frequency (MHz):2400 ● High Frequency (MHz):2483.5 ● E.i.r.p (Equivalent Isotopically Radiated power) (mW)<100 mW ● Bandwidth (MHz):20MHz/40MHz ● Modulation: BPSK/QPSK, FHSSCCK/DSSS, 64QAM/OFDM

Bluetooth 5.2 Performance	● TX Power: 19.5dBm ● Range: 100 meters maximum, open filed ● Receiving Sensibility: -92dBm@0.1%BER, 1Mbps ● 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)<10 mW ● Bandwidth (MHz):2MHz ● Modulation: GFSK

LTE CAT1	-US EG91-NAXD ● LTE FDD: B2/B4/B5/B12/B13/B25/B26 ● WCDMA: B2/B4/B5 ● LTE FDD Data rate:10(DL)/5(DL) -EU : EG91-EX ● LTE FDD: B1/B3/B7/B8/B20/B28 ● WCDMA: B1/B8 ● LTE FDD Data rate:10(DL)/5(DL)
WAN/LAN	1000 Mbps

QA Requirement

Information Description	**Standard(Yes) Custom(No)**
ESD Testing	Yes
RF Antenna Analysis	Yes
Environmental Testing	Yes
Reliability Testing	Yes
Certification	FCC, CE, RoHS, BQB

Software

System	**System/Driver**	**Support**
	Ubuntu	●
	Debian11	●
	Uboot	●
	UART	●

Driver	SPI	●
	I2C	●
	USB	●
	eMMC	●
	PCIe	●
	Ethernet	●
	SDIO	●
	SPI	●
	I2C	●
	USB	●
	BLE5.2	●
	Wi-Fi 2.4/5G	●
Application	Wi-Fi Sniffer	Demo source code
	Beacon Scanner	Demo source code
	MQTT Client	Demo source code

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 20cm must be maintained between the user's body and the handset, including the antenna.

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Documents / Resources

	Dusun IoT DSGW-230-15-US-ONITY IoT Ceiling Edge Computing Gateway [pdf] User Manual R32-10105776G1, R3210105776G1, 10105776g1, DSGW-230-15-US-ONITY IoT Ceiling Edge Computing Gateway, DSGW-230-15-US-ONITY, IoT Ceiling Edge Computing Gateway, Ceiling Edge Computing Gateway, Edge Computing Gateway, Computing Gateway, Gateway

References

- Bot Verification
- [redacted]
- User Manual

Dusun

IoT

10105776g1, Ceiling Edge Computing Gateway, Computing Gateway, DSGW-230-15-US-ONITY, DSGW-230-15-US-ONITY IoT Ceiling Edge Computing Gateway, Dusun IoT, Edge Computing Gateway, gateway, IoT Ceiling Edge Computing Gateway, R32-10105776G1, R3210105776G1

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