Dusun DSGW-095 Smart Gateway Owner's Manual

A Dusun Company
Product Name: Smart Gateway
Product Model: DSGW-095
Hangzhou Roombanker Technology Co., Ltd

Contents

Product Specification

Revision History

Specification		Sect.	Update Description	By
Rev.	Date			
1.0	2023-10-13		New version release	Yuzhewei
1.	2024-2-29		Update Parameters	Yuzhewei
1.	2024-5-22		Add new Type DSGW-095-2	Yuzhewei
1.	2024-8-1		Update Name	Yuzhewei

Approvals

Organization	Name	Title	Date

Model List

Feature Model	Wi-Fi	Ethernet	Bluetooth	Zigbee	Z-Wave	LTE Cat1	LTE Cat M1
DSGW-095-1	•	•	•	•	•	•	
DSGW-095-2	•	•	•	•			

Product Description

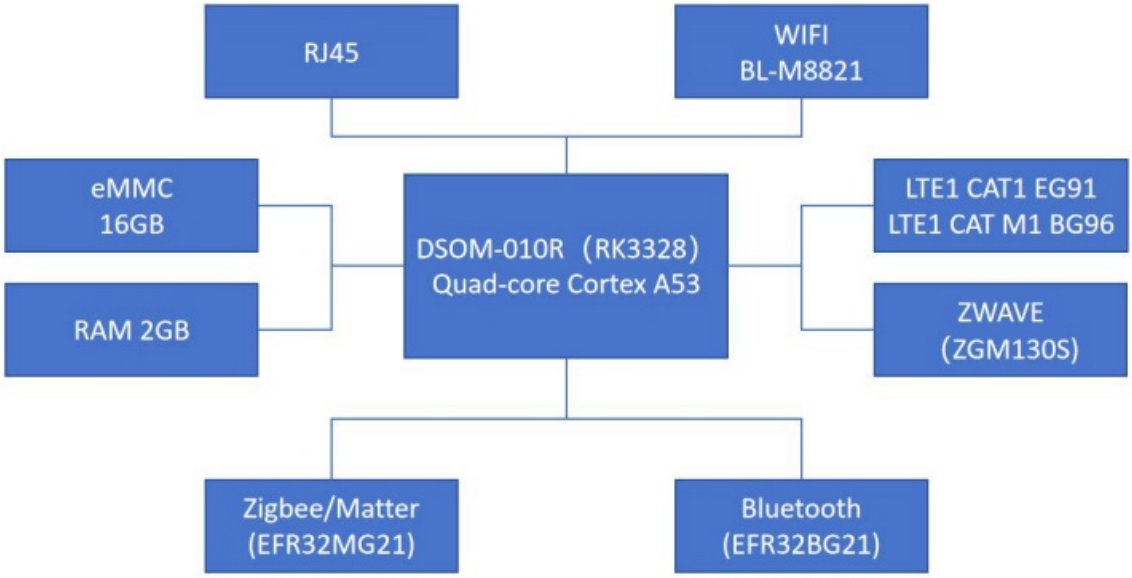
1.1. Purpose and Description

The DSGW-095 is a Ceiling-Mounted Gateway utilized in smart home systems, the intelligent security industry, and pension service applications. Serving as a central Gateway, it supports various wireless protocols, including Wi-Fi, LTE, Zigbee 3.0, and BLE 5.2. This allows users to connect to the network through Wi-Fi, Ethernet, or cellular networks. Additionally, it facilitates the integration of smart sensors by supporting their connection via its multi-protocol features.

1.2. Product Feature Summary

- OS: Debian 11
- USB 5V type-C and PoE power supply
- Processor: RK3328 Quad-core Cortex A53
- RAM: Up to 2GB
- eMMC: Up to 16GB
- Support IEEE802.11ac, IEEE802.11n, IEEE802.11g, IEEE 802.11b Protocol
- Support 4G LTE CATM1, CAT1
- Support Bluetooth 5.2, Zigbee3.0, Z-Wave, Wi-Fi 2.4/5G
- One WAN/LAN variable network port

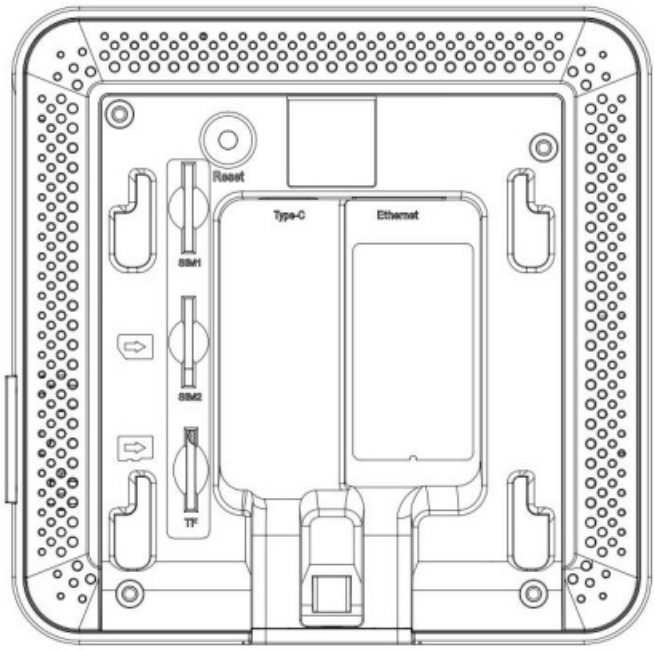
1.3. Hardware Block Diagram



Mechanical Requirement

2.1. Drawings

2.2. Interface



2.3. Dimensions

Specification

3.1. Technical Specification

Category	Specifications
CPU	RK3328 Quad-core Cortex A53

System	Debian 11
RAM	Up to 2GB
eMMC	Up to 16GB
TF Card	Up to 128GB
Power Supply	USB Type-C 5V/3A, POE
Reset	Factory reset button. To reset the Gateway to its original factory settings, press and hold it for more than 10 seconds
Network Interface	1 * WAN/ LAN 10/100 Mbps variable port
SIM	SIM Card Slot x 2
TF	1 * TF slot
WIFI	2.4/5G (BL-M8821)
LTE	CAT1 (EG91) /CAT M1 (BG96)
Wireless	Bluetooth 5.2 (EFR32BG21) Zigbee3.0 (EFR32MG21) Z-Wave (ZGM130S)
Indicator LEDs	1) Power(yellow): The yellow light stays on, that is the gateway is switched on. Th e 2) yellow light is off, that is the gateway is switched off 3) Network(yellow): It stays on after connecting to WIFI or LTE, otherwise it goes o ff 4) Wireless(yellow): It stays on long after connecting to Zigbee or Z-Wave, otherwi se it goes off
RTC	Reserve
Antenna	FPC Antenna
Installation method	Flat Ceiling
Operating Temperature	-10°C-55°C
Storage Temperature	-20°C-65°C
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 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 /2.4GHzband IEEE 802.11g: 16dBm @54MHz 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)<100mW Bandwidth (MHz):20MHz/40MHz Modulation: BPSK/QPSK, FHSSCCK/DSSS, 64QAM/OFDM
Bluetooth Performance	TX Power: 19.5±1.5dBm Range: 120 meters minimum, open filed Receiving Sensibility: -92dBm@0.1%BER 1Mbps Frequency offset: +/-30KHZ Frequency Range (MHz):2405~2480 Low Frequency (MHz):2400 High Frequency (MHz):2483.5 E.i.r.p (Equivalent Isotopically Radiated power)(mW)<100mW Bandwidth (MHz):2MHz Modulation: GFSK
Zigbee Performance	TX Power: 17.5dBm Range: 100 meters maximum, open filed Receiving Sensibility: -94dBm Frequency offset: +/-20KHZ Frequency Range (MHz):2400.0~2483.5 Low Frequency (MHz):2400 High Frequency (MHz):2483.5 E.i.r.p (Equivalent Isotopically Radiated power) (mW)<100mW Bandwidth (MHz):5MHz Modulation: OQPSK

Z-Wave Performance	TX power up to13dBm(20mW) RX sensitivity: @100kbps-97.5dBm Range: 100 meters maximum, open filed Default Frequency: 916MHz(Different country with different frequency)
LTE Cat1	LTE FDD: B2/B4/B5/B12/B13 WCDMA:B2/B4/B5 LTE FDD Data rate:10(DL)/5(DL)
LTE Cat M1	Operation Frequency Band: 850/900/1800/1900MHZ Global:LTE:FDD:B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B26/B28 North America: LTETDD:B2/B4/B12/B13 LTE TDD:B39(for cat.M1only)
WAN/LAN	10/100M bps

QA Requirements

Information Description	**Standard (Yes) custom(No)**
ESD Testing	YES
RF Antenna Analysis	YES
Environmental Testing	YES
Reliability Testing	YES
Certification	FCC

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 user's body and the device including the antenna.

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Documents / Resources

	Dusun DSGW-095 Smart Gateway [pdf] Owner's Manual DSGW-095, DSGW-095 Smart Gateway, Smart Gateway, Gateway

References

- Dusun IoT: Embedded Hardware Vendor/Manufacturer | IoT Gateway Expert
- [illegible]
- User Manual