

1.Module: LGSWAAC63

This Module is based on REALTEK RTL8822EU-CG chipset .It is a complete dual-band(2.4GHz and 5GHz)WIFI 2×2 MIMO MAC/PHY/Radio System-on-a-Chip. This module provides a high level of integration with a dual-stream IEEE 802.11ac MAC/ base band/radio. The WLAN operation supports 20MHz,40MHz and 80MHz channels for data rates up to 866.7Mbps. It is also backward complied with IEEE 802.11a standard from 5.15~5.825GHz wideband and IEEE 802.11b/g standard from 2.4~2.5GHz. It can be used to provide up to 54Mbps for IEEE 802.11a and IEEE 802.11g, 11Mbps for IEEE 802.11b and 300Mbps for IEEE 802.11n. The Bluetooth part supports latest 5.3.

2.Features

Chips	RTL8822EU
Spec	IEEE 802.11 ac/a/b/g/n 2T2R WLAN BLUETOOTH 5.3
Frequency Band	2400 ~ 2483.5 MHz、 5150~5850 MHz
Power Voltage	3.3V
Dimension	35x50x10.8mm
Environmental Range	Operation temperature:0~60℃
Modulation	BPSK/QPSK/16QAM/64QAM/256QAM/DBPSK/DQPSK/CC K、 GFSK π /4-DQPSK 8DPSK

3.Electrical Characteristics

Parameter	Min	Max	Unit
Power Supply Voltage	3.135V	3.6V	V
Ambient Temperature	0	60	°C

4.Digital I/O

Parameter	Minimum	Normal	Maximum	Units
Input high voltage	-	0	0.9	V
Input low voltage	2	3.3	3.6	V
Output high voltage	0	--	0.33	V
Output low voltage	2	--	3.3	V

5. RF Specifications

Conducted_FCC/ISED

1. Wifi 2.4 GHz

Channel	Bandwidth (MHz)	ANT1	ANT2	MIMO	Tol
1~11	b	17	17	20	+/-2
12~13	b	14	14	17	
1~11	g	15	15	18	
12~13	g	12	12	15	
1~11	n	15	15	18	
12~13	n	12	12	14	

2. Wifi 5GHz

Bandwidth (MHz)	ANT1 (dBm)	ANT2 (dBm)	MIMO (dBm)	Tol (dB)
a	13	14	16	+/-2
n20	13	14	16	
n40	13	14	16	
ac20	13	13	16	
ac40	13	13	16	
ac80	13	12	16	

3. Bluetooth (BT/BLE)

Bandwidth (MHz)	Min. (dBm)	Typ. (dBm)	Max. (dBm)	Tol (dB)
2402	6	8	10	+/-2
2480				

EIRP_CE/UKCA

1. BT / Wifi 2.4 GHz / 5GHz

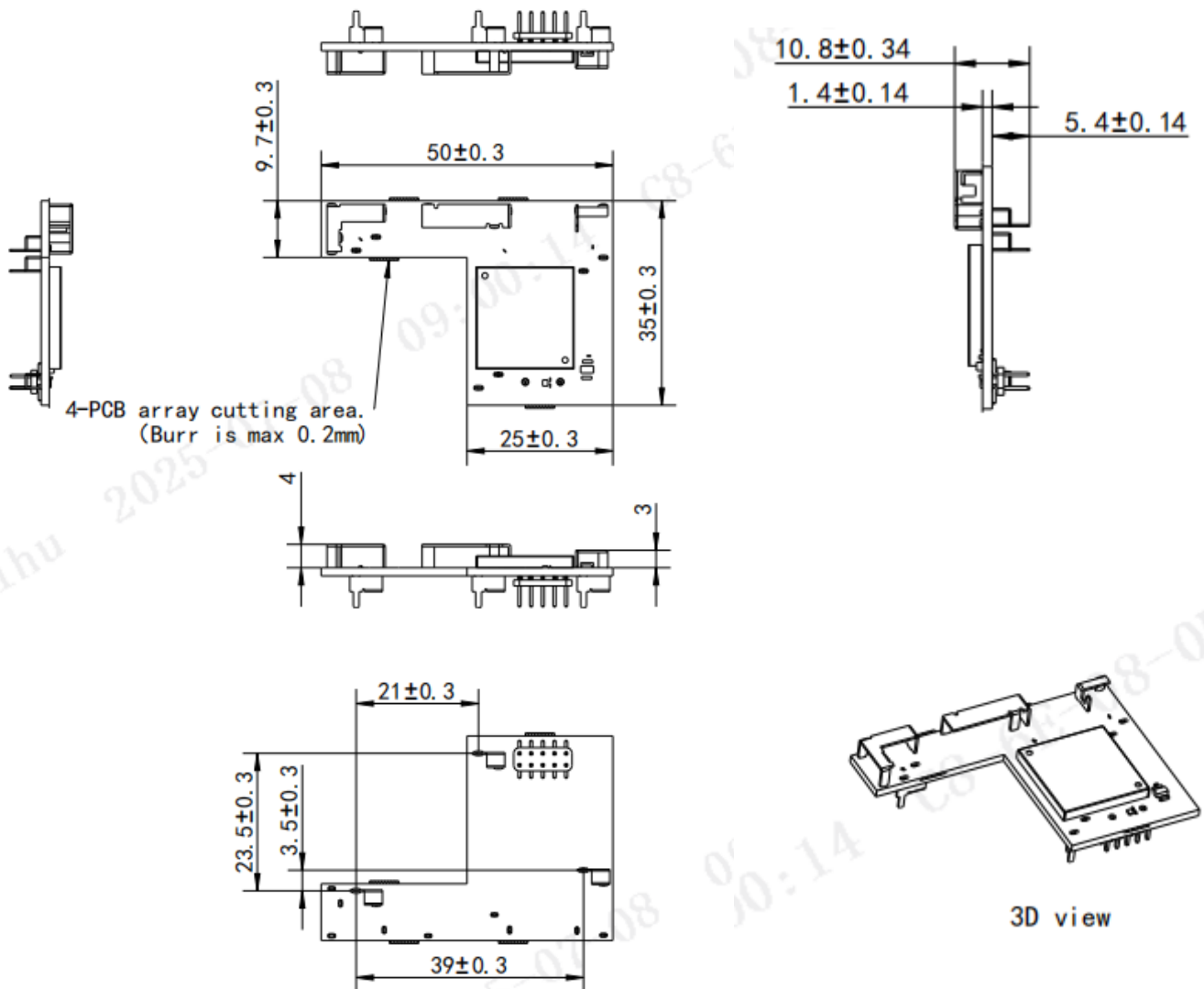
1. Wifi 2.4 GHz / 5GHz

Item		Frequency	Average output Power (MIMO,EIRP)	Tolerance
Standrad		IEEE 802.11 a/b/g/n/ac		
Frequency	2.4 G	2 400 ~ 2 483.5 MHz	18 dBm	±2 dB
	5G Low	5 150 ~ 5 250 MHz	19 dBm	
		5 250 ~ 5 350 MHz	17.5dBm	
		5 470 ~ 5 725 MHz	19 dBm	
	5G High	5 725 ~ 5 850 MHz	11.9 dBm	

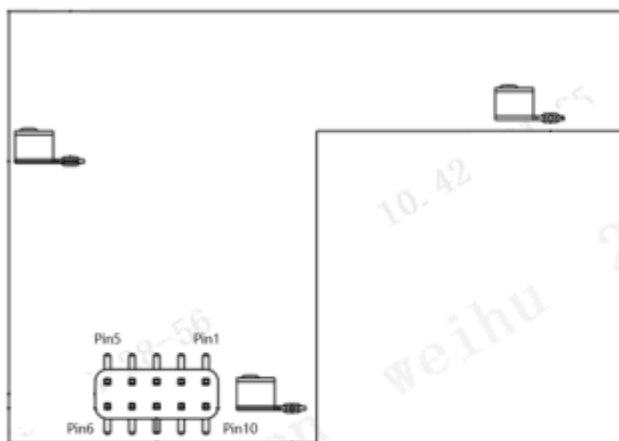
2. BT

Item	Frequency	Average output Power (MIMO,EIRP)	Tolerance
BT	2 400 ~ 2 483.5MHz	8 dBm	±2 dB
BT LE	2 400 ~ 2 483.5 MHz	8 dBm	

6. Pin Description and Outline

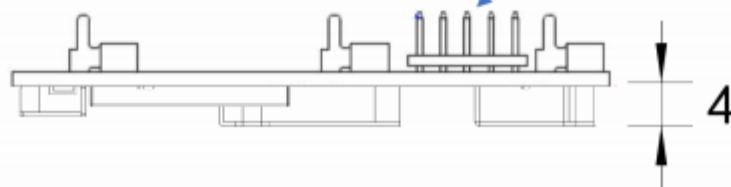


Pin No.	Pin Name	I/O	Pin Description
1	GND	-	GND
2	WOBLE	O	BT Wake up Host
3	GND	-	GND
4	D- (USB_DM)	I/O	USB Communication signal (USB_DM)
5	VCC	I	VDD 3.3V
6	VCC	I	VDD 3.3V
7	D+(USB_DP)	I/O	USB Communication signal (USB_DP)
8	GND	-	GND
9	WOWL	O	Wi-Fi Wake up Host
10	RESET_N	I	RESET



BOT VIEW

Refer to 3142.007070.5220500
of LH (Pitch 2.0 SMD)



<CE Statement>

RF Exposure The antenna (or antennas) must be installed so as to maintain at all times a distance minimum of at least 20 cm between the radiation source (antenna) and any individual.

This device may not be installed or used in conjunction with any other antenna or transmitter

Simplified Declaration of Conformity (CE / UK)

Hereby, LG Electronics declares that hat LGSWAAC63 is in compliance with Directive 2014/53/EU. The fulltext of the EU declaration of conformity is available at the following internet address: <http://www.lg.com/global/support/cedoc/cedoc#>

Hereby, [LG Electronics Inc.]. declares that LGSWAAC63 is in compliance with the Radio Equipment Regulations 2017. The full text of the UK declaration of conformity is available at the following internet address: <http://www.lg.com/global/support/cedoc/cedoc#>

The use of the 5150 –5350 MHz band is restricted to indoor use only.

This restriction will be applied in all member states.

The postal address: LG Electronics European Shared Service Center B.V.

Krijgsman 1, 1186 DM Amstelveen, The Netherlands

UK Importer: LG Electronics U.K. Ltd

The postal Address: Velocity 2, Brooklands Drive, Weybridge, KT13 0SL

<FCC Statement>

FCC Part 15.19 Statements:

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.

FCC Part 15.21 statement

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

Regulatory notice to host manufacturer according to KDB 996369 D03 OEM Manual v01>

List of applicable FCC rules

This module has been granted modular approval as below listed FCC rule parts.

-FCC Rule parts 15.247, 15.407

Summarize the specific operational use conditions

-The OEM integrator should use equivalent antennas which is the same type and equal or less gain than an antenna listed below in this instruction manual.

Limited module procedures (Only limited modular approval)

single module

Trace antenna designs (Only trace antenna module) N/A

If trace antenna designs are applicable, full-detail design specifications are required per D02 Module Q&A Question 11.

For a modular transmitter with trace antenna designs, see the guidance in Question 11 of KDB Publication 996369 D02 FAQ – Modules for Micro-Strip Antennas and traces. The integration information shall include for the TCB review the integration instructions for the following aspects: layout of trace design, partslist (BOM), antenna, connectors, and isolation requirements.

- a) Information that includes permitted variances (e.g., trace boundary limits, thickness, length, width, shape(s), dielectric constant, and impedance as applicable for each type of antenna);
- b) Each design shall be considered a different type (e.g., antenna length in multiple(s) of frequency, the wavelength, and antenna shape (traces in phase) can affect antenna gain and must be considered);
- c) The parameters shall be provided in a manner permitting host manufacturers to design the printed circuit (PC) board layout;
- d) Appropriate parts by manufacturer and specifications;
- e) Test procedures for design verification; and
- f) Production test procedures for ensuring compliance

RF exposure considerations

The module has been certified for integration into products only by OEM integrators under the following condition:

- The antenna(s) must be installed such that a minimum separation distance of at least **20 cm** is maintained between the radiator (antenna) and all persons at all times.
- The transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

TV use

As long as the three conditions above are met, further transmitter testing will not be required.

OEM integrators should provide the minimum separation distance to end users in their end-product manuals.

Antennas

This module is certified with the following integrated antenna.

-Type: metal press antenna

- 1) Ant 1(wifi 0) Peak gain: -4.5dBi for 2.4 GHz and 2.19 dBi for 5 GHz
- 2) Ant.2(wifi 1) Peak gain: -1.96 dBi for 2.4 GHz and 2.23 dBi for 5 GHz
- 3) BT Peak gain: -1.77dBi

Any new antenna type, higher gain than listed antennas should be met the requirements of FCC rule 15.203 and 2.1043 as permissive change procedure.

Label and compliance information

End Product Labeling (FCC)

The module is labeled with its own FCC ID. If the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. In that case, the final end product must be labeled in a visible area with the following:

“Contains FCC ID: 2BOL3LGSWAAC63

Information on test modes and additional testing requirements

-OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, additional transmitter in the host, etc.).

Additional testing, Part 15 Subpart B disclaimer

-The final host product also requires Part 15 subpart B compliance testing with the modular transmitter installed to be properly authorized for operation as a Part 15 digital device.

Note EMI Considerations

Note that a host manufacture is recommended to use D04 Module Integration Guide recommending as "best practice" RF design engineering testing and evaluation in case non-linear interactions generate additional non-compliant limits due to module placement to host components or properties

For standalone mode, reference the guidance in D04 Module Integration Guide and for simultaneous mode; see D02 Module Q&A Question 12, which permits the host manufacturer to confirm compliance.

How to make changes

Since only Grantees are permitted to make permissive changes, when the module will be used differently than granted, please contact the module manufacture on below contact information.

-. Contact information: younguk.nam@lge.com / Tel: 82-31-8066-5539

<ISED Statement>

RSS-GEN, Sec. 7.1.3—(licence-exempt radio apparatus)

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

RF Exposure

The antenna (or antennas) must be installed so as to maintain at all times a distance minimum of at least **20 cm** between the radiation source (antenna) and any individual. This device may not be installed or used in conjunction with any other antenna or transmitter.

l'exposition aux RF

L'antenne (ou les antennes) doivent être installées de manière à maintenir en permanence une distance minimale de **20 cm** entre la source de rayonnement (antenne) et toute personne. Cet appareil ne doit pas être installé ni utilisé conjointement à une autre antenne ou un autre émetteur.

End Product Labeling (ISED)

The module is labeled with its own IC Certification Number. If the IC Certification Number are not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. In that case, the final end product must be labeled in a visible area with the following:

"Contains IC: 2703H-LGSWAAC63"

Étiquetage du produit final

Le module est étiqueté avec son propre numéro de certification IC. Si le numéro de certification IC n'est pas visible lorsque le module est installé à l'intérieur d'un autre appareil, alors l'extérieur de l'appareil dans lequel le module est installé doit également afficher une étiquette faisant référence au module inclus. Dans ce cas, le produit final doit être étiqueté dans une zone visible avec les éléments suivants :

"Contient IC : 2703H-LGSWAAC63"

* 5150-5350 MHz is indoor use only.

* 5150-5350 MHz est réservé à une utilisation en intérieur uniquement.