



RF EXPOSURE REPORT



Applicant: Qisda Corporation
NO. 157, SHAN-YING ROAD, SHAN-TING LI, GUEISHAN
DIST., TAOYUAN CITY 333, TAIWAN

Product Name: Bluetooth/WLAN Antenna Device

Brand Name: QISDA

Model No.: S4CWM-11WS-B255C

Model Difference: N/A

Report Number: TESA2306000336ES

FCC ID VRSS4CWM11B255

Date of EUT Received: January 11, 2023

Issue Date: September 20, 2023

John Teh

Approved By _____

John Yeh

We hereby certify that:

The above equipment was evaluate by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1091.

The results of this report relate only to the sample identified in this report.

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2306000336ES	00	Original.	August 18, 2023	Karen Huang	
TESA2306000336ES	01	Modify product name	September 20, 2023	Karen Huang	*

Note:

- The remark "*" indicates modification of the report upon requests from certification body.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	Bluetooth/WLAN Antenna Device
Brand Name:	QISDA
Model No.:	S4CWM-11WS-B255C
Model Difference:	N/A
Hardware Version:	C0
Firmware Version:	P219
EUT Series No.:	N/A
Power Supply:	12Vdc

1.2 Evaluation site

Laboratory	Site Address	FCC Designation number	ISED Company Number	CAB Identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	<input type="checkbox"/> No. 134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, 24803, Taiwan.	TW0027	4620A	TW3702
	<input checked="" type="checkbox"/> No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 333 Taiwan.	TW0028	4620E	
	<input type="checkbox"/> 1F, No. 8, Alley 15, Lane 120, Sec. 1, Nei Hu Road, Nei Hu District, Taipei City, 222 Taiwan.	TW0029	23862	

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1.3 Antenna Information:

ANT 1 / ANT 2	Freq. (MHz)	Peak Antenna Gain (dBi)
ANT 1	2.4GHz	-1.88
ANT 2		-1.06

ANT 1 / ANT 2	Note
ANT 1	Ant 1
ANT 2	Ant 2

Operating Frequency (MHz)	Ant 1 Peak Gain (dBi)	Ant 2 Peak Gain (dBi)
5150.0 ~ 5250.0	2.27	0.82
5250.0 ~ 5350.0	2.68	2.20
5470.0 ~ 5725.0	2.41	5.07
5725.0 ~ 5850.0	2.25	3.42

Note: Antenna information is provided by the applicant.

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2 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equipment power density

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

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2.2 Power Density Calculation (Worst Case)

FCC Standalone MPE

CH B (ANT 1)									
Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. Output Power Include Tolerance (dBm)	Antenna Gain (dBi)	Max. EIRP (mW)	Power Density (PD) (mW/cm ²)	Limit (mW/cm ²)	Pass / Fail	Power Density / Limit
WLAN 5G	5470.00	20	15	2.41	55.08	0.011	1.000	Pass	0.011
CH A (ANT 2)									
Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. Output Power Include Tolerance (dBm)	Antenna Gain (dBi)	Max. EIRP (mW)	Power Density (PD) (mW/cm ²)	Limit (mW/cm ²)	Pass / Fail	Power Density / Limit
BT	2480.00	20	8.31	-1.06	5.31	0.0011	1.000	Pass	0.001
WLAN 2.4G	2442.00	20	15	-1.06	24.77	0.005	1.000	Pass	0.005
WLAN 5G	5725.00	20	15	3.42	69.50	0.014	1.000	Pass	0.014

2.3 Collocated Power Density Calculation

FCC Collocated MPE	
Operation Mode	Σ (Power Density / Limit)
5G CH B + 5G CH A	0.025
5G CH B + BT	0.012

Note:

1. Σ (Power Density / Limit): This is a summation of [(Power Density for each transmitter/antenna included in the simultaneous transmission) / (corresponding MPE limit)].
2. Considering the collocated transmitters, the aggregated (Power Density /limit) is smaller than 1, and MPE of collocated transmitters is compliant

~ End of Report ~

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