

RF EXPOSURE REPORT



Applicant: Raytac Corp.
8F, No.788-1, Zhongzheng Rd., Zhonghe Dist., New Taipei City, 235, Taiwan

Manufacturer: Raytac Corp.
8F, No.788-1, Zhongzheng Rd., Zhonghe Dist., New Taipei City, 235, Taiwan

Product Name: WiFi Low Energy & IEEE 802.11 a/b/g/n/ac/ax Module

Brand Name: Raytac

Model No.: AN7002Q-U

Family Model No. AN7002Q-P, AN7002Q

Model Difference: Refer to Section 1.2

FCC ID SH6AN7002Q

Date of EUT Received: Sep. 05, 2024

Issue Date: Aug. 11, 2025

Approved By

John Yeh

We hereby certify that:

The above equipment was evaluated by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1091, KDB 447498 D01 v06.

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
TESA2507000558ES	00	Original	Aug. 01, 2025	Cindy Chou	
TESA2507000558ES	01	Modify EUT date	Aug. 11, 2025	Cindy Chou	*

Note:

- 1、The remark "*" indicates modification of the report upon requests from certification body.
- 2、Measurement results in the original test report TESA2503000202ES are partially leveraged in this test report which variation has been evaluated as no additional test required.
- 3、Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received.
And are assessed as electrically identical in RF characteristics, therefore, no further assessment required for the variant(s).
- 4、Please be noted that the report TESA2507000558ES will replace the previous TESA2503000202ES as the new version. Also be pay attention that TESA2503000202ES is ineffective anymore from now on.

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台灣檢驗科技股份有限公司

t (886-2) 2299-3279

f (886-2) 2298-0488

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	WiFi Low Energy & IEEE 802.11 a/b/g/n/ac/ax Module
Brand Name:	Raytac
Model No.:	AN7002Q-U
Family Model No. :	AN7002Q-P, AN7002Q
Model Difference:	Refer to Section 1.2

1.2 Model Difference

Diversity Description	Original Model	Series Model	Series Model
	AN7002Q-U	AN7002Q-P	AN7002Q
Input Power	3.6V	O	O
Power Consumption	No	No	No
Brand Name / Trade Mark	Raytac	Raytac	Raytac
PCB Layout	No	No	No
Circuit Diagram	No	No	No
Components	External Dipole/Monopole	On board PIFA antenna	On board monopole antenna
Function	No	No	No
Size	16.4 x10.8x2.1mm	17.1x10.8x2.1mm	17.1x10.8x2.1mm

Note: Use "O" when it is the same as main model.

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1.3 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, Neihu District, Taipei City, 222 Taiwan.	TW0029	23862	

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1.4 Antenna Information:

WLAN 2.4GHz

Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
Dipole	YAGEO	ANTX100ETHAB24553	2.4GHz	2.00
Dipole	ANTENOVA	SRE3W084-S9P		3.10
Monopole	TE	2344655-1		1.40
Dipole	ANTENOVA	SRF2W012-100		2.90

WLAN 5GHz

Antenna Type	Supplier	Antenna Part No.	Note
Dipole	YAGEO	ANTX100ETHAB24553	Ant 1
Dipole	ANTENOVA	SRE3W084-S9P	Ant 2
Monopole	TE	2344655-1	Ant 3
Dipole	ANTENOVA	SRF2W012-100	Ant 4

Operating Frequency (MHz)	Ant 1 Peak Gain (dBi)	Ant 2 Peak Gain (dBi)	Ant 3 Peak Gain (dBi)	Ant 4 Peak Gain (dBi)
5150.0 ~ 5250.0	3.00	5.20	3.70	4.50
5250.0 ~ 5350.0	3.00	5.20	3.70	4.50
5470.0 ~ 5725.0	3.00	5.20	3.70	4.50
5725.0 ~ 5850.0	3.00	5.20	3.70	4.50

Note: Antenna information is provided by the applicant.

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1.5 Rated Power

WLAN 5GHz (FCC)

Mode	Freq. Range (MHz)	Max. Output Power Include Tolerance (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Worst Case
WLAN 5GHz	5150~5250	15.00	5.20	20.20	V
	5250~5350	15.00	5.20	20.20	V
	5470~5725	15.00	5.20	20.20	V
	5725~5850	15.00	5.20	20.20	V

Note: PG information is provided by the applicant.

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2 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)

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	Collocated MPE
WLAN 2.4G	2462.00	20	13.5	3.10	45.71	0.009	1.000	Pass	0.009	V
WLAN 5G	5180.00	20	15	5.20	104.71	0.021	1.000	Pass	0.021	V

2.2.1 Collocated Power Density Calculation

Operation Mode	Power Density / Limit	Σ (Power Density / Limit)
WLAN 2.4G	0.009	0.030
WLAN 5G	0.021	

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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