

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: Bluetooth Low Energy Module

Brand Name: Raytac

Model No.: AN54LV

Family Model No.: AN54LV-P, AN54LV-U, AN54LV-K

Model Difference: Please refer to section 1.2 for more details

FCC ID SH6AN54LV

IC: 8017A-AN54LV

Date of EUT Received: N/A, this report is only calculated based on the test results, there will be no date of EUT received.

Issue Date: Jul. 23, 2026

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 §2.1093, KDB 447498 D01 v06 and RSS-102 issue 6.

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
TESA2606000400ES	00	Original	Jun. 17, 2026	Kimmy Chiou	
TESA2606000400ES	01	Modify comment	Jul. 23, 2026	Kimmy Chiou	*

Note:

- 1、The remark "*" indicates modification of the report upon requests from certification body.
- 2、Variant information of model numbers is provided by the applicant, test results of this report are applicable to the sample EUT(s) received.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	Bluetooth Low Energy Module
Brand Name:	Raytac
Model No.:	AN54LV
Family Model No.:	AN54LV-P, AN54LV-U, AN54LV-K
Model Difference:	Please refer to section 1.2 for more details

1.2 Model Difference

The differences between models can be found in the table below:

Models*	Components	Size
AN54LV	On board Chip Antenna	6.4x8.4x1.5mm
AN54LV-U	External Dipole	6.4x8.4x1.5mm
AN54LV-P	On board Printed Antenna	6.4x8.4x1.5mm
AN54LV-K	External Dipole	6.4x5.9x1.5mm

1.3 Evaluation site

Laboratory		Site Address	FCC Designation number/ Registration Number	ISED Company Number	CAB Identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	☐	No. 134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, 24803, Taiwan.	TW0027/ 891563	4620A	TW3702
	☒	No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 333 Taiwan.	TW0028/ 200037	4620E	
	☐	1F, No. 8, Alley 15, Lane 120, Sec. 1, Nei Hu Road, Nei Hu District, Taipei City, 222 Taiwan.	TW0029/ 150169	23862	

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1.4 Antenna Information:

Antenna	Antenna Type	Supplier	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
Ant 1	Dipole	Raytac Corp.	AN54LV-K	2.4GHz	2.11
Ant 2	Dipole	KYOCERA AVX	1001932PT-AC10L0100		2.03
Ant 3	Dipole	molex	2042811100		2.00
Ant 4	PIFA	Raytac Corp.	AN54LV		0.57
Ant 5	Dipole	Raytac Corp.	AN54LV-P		0.80

Note: Antenna information is provided by the applicant.

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1.5 Rated Power

Mode	Freq. Range (MHz)	Channels	Max Output Power (dBm)	Antenna Gain (dBi)	Antenna Directional Gain (dBi)	EIRP (dBm)	Worst Case
BLE	2402-2480	40	7.34	2.11	N/A	9.45	V

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2 RF EXPOSURE EVALUATION FOR PORTABLE CONDITIONS

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.

2.1.1 As per KDB 447498 D01 4.3.1,

Step a: For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\sqrt{f(\text{GHz})}} \right] \leq 3.0 \text{ for 1-g Head \& Body SAR and } \leq 7.5 \text{ for 10-g extremity Hand SAR, where}$$

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as numeric thresholds in **step b)** below

Step b: For 100 MHz to 6 GHz and test separation distances > 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following (also illustrated in Appendix B):

- 1) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz
- 2) $\{[\text{Power allowed at numeric threshold for 50 mm in step a)}] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

Step c: For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):

- 1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by $[1 + \log(100/f(\text{MHz}))]$
- 2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by $\frac{1}{2}$
- 3) SAR measurement procedures are not established below 100 MHz

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2.2 Measurement Result:

Step a:

This is a portable device and the max. output power including tune-up tolerance is 5.42 (mW), lower than the threshold given and derived as formula given above, where

$$=5.42(\text{mW})/5(\text{mm})*\sqrt{2.48(\text{GHz})} = 1.70708490708576 < 3.0$$

Frequency (MHz)	Max. output power including tune-up tolerance(dBm)	Max. output power including tune-up tolerance(mW)	Distance (mm)	Result	≤ 3.0 for 1-g SAR
2480	7.34	5.42	5	1.707	TRUE

As the result of calculation result indicates, the RF exposure generating from given transmitter (transmitter employed digital modulation) can be excluded from SAR measurement, and is deemed compliant with RF exposure as per FCC.

Conclusion: Source-base time average power is below Exemption Criteria and/or Routine Evaluation MPE thresholds, therefore the device is compliant FCC RF exposure requirement.

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2.3 ISED Standard Applicable

According to RSS-102 Issue 6 section 6.3 SAR exemption limits

Devices operating at or below the applicable output power levels (adjusted for tune-up tolerance) specified in table 11, based on the separation distance, are exempt from SAR evaluation. The separation distance, defined as the distance between the user and/or bystander and the antenna and/or radiating element of the device or the outer surface of the device, shall be less than or equal to 20 cm for these exemption limits to apply.

Table 11: Power limits for exemption from routine SAR evaluation based on the separation distance

Frequency (MHz)	≤ 5 mm (mW)	10 mm (mW)	15 mm (mW)	20 mm (mW)	25 mm (mW)	30 mm (mW)	35 mm (mW)	40 mm (mW)	45 mm (mW)	> 50 mm (mW)
≤ 300	45	116	139	163	189	216	246	280	319	362
450	32	71	87	104	124	147	175	208	248	296
835	21	32	41	54	72	96	129	172	228	298
1900	6	10	18	33	57	92	138	194	257	323
2450	3	7	16	32	56	89	128	170	209	245
3500	2	6	15	29	50	72	94	114	134	158
5800	1	5	13	23	32	41	54	74	102	128

For limb-worn devices where the 10 gram of tissue applies, the exemption limits for routine evaluation in table 11 are multiplied by a factor of 2.5. For controlled-use devices where the 8 W/kg for 1 gram of tissue applies, the exemption limits for routine evaluation in table 11 are multiplied by a factor of 5. When the operating frequency of the device is between two frequencies located in table 11, linear interpolation shall be applied for the applicable separation distance. If the separation distance of the device is between two distances located in table 11, linear interpolation may be applied for the applicable frequency. Alternatively, the limit corresponding to the smaller distance may be employed. For example, in case of a 7 mm separation distance, either use the exception value for a 5 mm separation distance or interpolate between the limits corresponding to 5 mm and 10 mm separation distances.

For implanted medical devices, the exemption limit for routine SAR evaluation is set at an output power of 1 mW, regardless of frequency.

The SAR levels from exempted transmitters shall be included in the compliance assessment and the determination of the TER.

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2.4 Result:

Freq. (MHz)	Max. output power including tune-up tolerance(dBm)	Peak Gain (dBi)	Max Conducted Output Power (mW)	e.i.r.p (mW)	Exemption Limit (mW)
2480	7.34	0.8	5.420	6.516	7.5

Measurement Result

The e.i.r.p is 6.516mW when the device operates at the separation distance below or equals to 5mm. It is below the SAR exemption limit 7.5mW.

The Limb Limit is calculated from the applicable Body Limit as follows:

Limb Limit = Body Limit $\times$ 2.5 = 3 mW $\times$ 2.5 = 7.5 mW.

This calculation result is applicable to Antenna 4 and Antenna 5.

Freq. (MHz)	Max. output power including tune-up tolerance(dBm)	Peak Gain (dBi)	Max Conducted Output Power (mW)	e.i.r.p (mW)	Exemption Limit (mW)
2480	7.34	2.11	5.420	8.810	9.5

Measurement Result

The e.i.r.p is 8.81mW when the device operates at the separation distance below or equals to 6mm. It is below the SAR exemption limit 9.5mW.

The Limb Limit is calculated from the applicable Body Limit as follows:

Limb Limit = Body Limit $\times$ 2.5 = 3.8 mW $\times$ 2.5 = 9.5 mW.

This calculation result is applicable to Antenna 1, Antenna 2, and Antenna 3.

~ End of Report ~

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