FCC Part 1.1310

RF Exposure Evaluation REPORT

For

Renesas Design Korea Inc.

FCC ID：2AU49-RRQ61051008

Model：RRQ61051-008

Report Type：Original Report	**Product Name**：RRQ61051 Module

Report Number： **RLK250801004RF07**

Report Date： **2025-12-31**

Prepared By： **Bay Area Compliance Laboratories Corp.**
(Linkou Laboratory)
No. 6, Wende 2Rd., Guishan Dist.,
Taoyuan City 33382, Taiwan (R.O.C.).
Tel: +886 (3) 3961072
Fax: +886 (3) 3961027
www.baclcorp.com.tw

Facilities：**The test site used by Bay Area Compliance Laboratories Corp. (Linkou Laboratory) to collect test data is located on No. 6, Wende 2Rd., Guishan Dist, Taoyuan City 33382, Taiwan (R.O.C.).**

Note: It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Linkou Laboratory)

Statement of Compliance

Applicant (Certification Holder)	Renesas Design Korea Inc.
	7th SiliconPark, 35 Pangyo-ro 255 beon-gil Bundang-gu, Seongnam-si, Gyeonggi-do, 13486
Brand (Trade) Name	Renesas
Product (Equipment) Name	RRQ61051 Module
Model Name	RRQ61051-008

Measurement Procedures and Standards Used:

☒ FCC Part 2.1091

☒ FCC Part 1.1310

1. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Linkou Laboratory).
2. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.
3. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
4. The determination of the test results does not require consideration of the uncertainty of the measurement, unless the assessment is required by customer agreement, regulation or standard document specification.
5. Bay Area Compliance Laboratories Corp. (Linkou Laboratory) is not responsible for the authenticity of the information provided by the applicant that affects the test results.

Report Issued Date ： 2025-12-31

Reviewed By ： Rory Cheng

Revision History

Revision	No.	Report Number	Issue Date	Description	Author/ Revised by
0.0	RLK250801004	RLK250801004RF07	2025-12-31	Original Report	Cedric Xu

Note: It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (*Linkou Laboratory*)

TABLE OF CONTENTS

1. General Information 5

Product Description for Equipment under Test (EUT) 5

2. RF Output Power Evaluation 6

3. FCC §1.1310 - RF Exposure 7

Applicable Standard 7

4. RF Exposure Evaluation Result 9

Note: It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (*Linkou Laboratory*)

1. General Information

Product Description for Equipment under Test (EUT)

Product Name	RRQ61051 Module
Main Model Name	RRQ61051-008
Series Model Name	N/A
Model Discrepancy	N/A
Frequency Range	BLE(1M): 2402 ~ 2480 MHz IEEE 802.11b/g/n HT20/ax HE20 Mode: 2412 ~ 2462 MHz IEEE 802.11a/n HT20/ac VHT20/ax HE20 Mode:5150 ~ 5250 MHz IEEE 802.11a/n HT20/ac VHT20/ax HE20 Mode:5250 ~ 5350 MHz IEEE 802.11a/n HT20/ac VHT20/ax HE20 Mode:5470 ~ 5725 MHz IEEE 802.11a/n HT20/ac VHT20/ax HE20 Mode:5725 ~ 5850 MHz
Modulation Technique	BLE(1M) Mode: GFSK IEEE 802.11a Mode: OFDM IEEE 802.11b Mode: DSSS IEEE 802.11g Mode: OFDM IEEE 802.11n HT20 Mode: OFDM IEEE 802.11ac VHT20 Mode: OFDM IEEE 802.11ax HE20 Mode: OFDMA
Antenna Specification	PCB Antenna 2.4G Gain：-0.2 dBi 5G Gain：3.4 dBi

**All measurement and test data in this report was gathered from production sample serial number: RLK250801004-01 (Assigned by BACL (Linkou Laboratory)).*

***802.11ax mode only support full RU

***This device cannot run both WIFI 2.4G and WIFI 5G simultaneously.

Note: It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (*Linkou Laboratory*)

2. RF Output Power Evaluation

Please refer to RF report No: RLK250801004RF04 / RLK250801004RF05

Mode	Band	Freq.(MHz)	Tune-Up Power (dBm)	Ant. Gain(dBi)
BLE(1M)	---	2402	2.00	-0.2
802.11b	---	2437	18.50	-0.2
802.11g	---	2462	15.50	-0.2
802.11n20	---	2462	15.00	-0.2
802.11ax20	---	2462	15.50	-0.2
802.11a	UNII-1	5180	15.50	3.4
802.11a	UNII-2A	5260	15.50	3.4
802.11a	UNII-2C	5580	17.00	3.4
802.11a	UNII-3	5785	14.50	3.4
802.11n20	UNII-1	5200	15.50	3.4
802.11n20	UNII-2A	5300	15.50	3.4
802.11n20	UNII-2C	5500	17.50	3.4
802.11n20	UNII-3	5785	14.50	3.4
802.11ac20	UNII-1	5180	15.50	3.4
802.11ac20	UNII-2A	5300	15.00	3.4
802.11ac20	UNII-2C	5580	16.00	3.4
802.11ac20	UNII-3	5785	14.00	3.4
802.11ax20	UNII-1	5180	15.50	3.4
802.11ax20	UNII-2A	5260	16.00	3.4
802.11ax20	UNII-2C	5580	16.50	3.4
802.11ax20	UNII-3	5785	14.00	3.4

Note: It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (*Linkou Laboratory*)

3. FCC §1.1310 - RF Exposure

Applicable Standard

According to subpart §1.1310 (a) Specific absorption rate (SAR) shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in § 1.1307(b) of this part within the frequency range of 100 kHz to 6 GHz (inclusive).

§1.1310 (d)(2) For operations within the frequency range of 300 kHz and 6 GHz (inclusive), the limits for maximum permissible exposure (MPE), derived from whole-body SAR limits and listed in Table 1 in paragraph (e)(1) of this section, may be used instead of whole-body SAR limits as set forth in paragraphs (a) through (c) of this section to evaluate the environmental impact of human exposure to RF radiation as specified in § 1.1307(b) of this part, except for portable devices as defined in § 2.1093 of this chapter as these evaluations shall be performed according to the SAR provisions in § 2.1093.

§1.1310 (d)(3) At operating frequencies above 6 GHz, the MPE limits listed in Table 1 in paragraph (e)(1) of this section shall be used in all cases to evaluate the environmental impact of human exposure to RF radiation as specified in § 1.1307(b) of this part.

For single RF sources (*i.e.,* any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);
(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold *Pth* (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). *Pth* is given by:

$$P_{th}\ (\text{mW}) = \begin{cases} ERP_{20\ cm}(d/20\ \text{cm})^x & d \le 20\ \text{cm} \\ ERP_{20\ cm} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\ cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases}$$

(C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be

Note: It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (*Linkou Laboratory*)

used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of λ/4 or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.

4. RF Exposure Evaluation Result

§ 1.1307(b)(3)(i)(C) PASS

Mode	Band	Freq. (MHz)	Tune-Up Power (dBm)	Antenna Gain (dBi)	Tune-Up Power (mW)	Tune-Up ERP (dBm)	Tune-Up ERP (mW)
BLE(1M)	---	2402	2.00	-0.2	1.58	-0.35	0.92
802.11b	---	2437	18.50	-0.2	70.79	16.15	41.21
802.11g	---	2462	15.50	-0.2	35.48	13.15	20.65
802.11n20	---	2462	15.00	-0.2	31.62	12.65	18.41
802.11ax20	---	2462	15.50	-0.2	35.48	13.15	20.65
802.11a	UNII-1	5180	15.50	3.4	35.48	16.75	47.32
802.11a	UNII-2A	5260	15.50	3.4	35.48	16.75	47.32
802.11a	UNII-2C	5580	17.00	3.4	50.12	18.25	66.83
802.11a	UNII-3	5785	14.50	3.4	28.18	15.75	37.58
802.11n20	UNII-1	5200	15.50	3.4	35.48	16.75	47.32
802.11n20	UNII-2A	5300	15.50	3.4	35.48	16.75	47.32
802.11n20	UNII-2C	5500	17.50	3.4	56.23	18.75	74.99
802.11n20	UNII-3	5785	14.50	3.4	28.18	15.75	37.58
802.11ac20	UNII-1	5180	15.50	3.4	35.48	16.75	47.32
802.11ac20	UNII-2A	5300	15.00	3.4	31.62	16.25	42.17
802.11ac20	UNII-2C	5580	16.00	3.4	39.81	17.25	53.09
802.11ac20	UNII-3	5785	14.00	3.4	25.12	15.25	33.50
802.11ax20	UNII-1	5180	15.50	3.4	35.48	16.75	47.32
802.11ax20	UNII-2A	5260	16.00	3.4	39.81	17.25	53.09
802.11ax20	UNII-2C	5580	16.50	3.4	44.67	17.75	59.57
802.11ax20	UNII-3	5785	14.00	3.4	25.12	15.25	33.50

Note：The mode selection is to choose the worst case of each band.

Note: It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (*Linkou Laboratory*)

Mode	Freq.(MHz)	λ/2π (mm)	Distance applies	ERP Limit (mW)	Result
BLE(1M)	2402	19.88	apply	768.00	exempt
802.11b	2437	19.59	apply	768.00	exempt
802.11g	2462	19.39	apply	768.00	exempt
802.11n20	2462	19.39	apply	768.00	exempt
802.11ax20	2462	19.39	apply	768.00	exempt
802.11a	5180	9.22	apply	768.00	exempt
802.11a	5260	9.08	apply	768.00	exempt
802.11a	5580	8.56	apply	768.00	exempt
802.11a	5785	8.25	apply	768.00	exempt
802.11n20	5200	9.18	apply	768.00	exempt
802.11n20	5300	9.01	apply	768.00	exempt
802.11n20	5500	8.68	apply	768.00	exempt
802.11n20	5785	8.25	apply	768.00	exempt
802.11ac20	5180	9.22	apply	768.00	exempt
802.11ac20	5300	9.01	apply	768.00	exempt
802.11ac20	5580	8.56	apply	768.00	exempt
802.11ac20	5785	8.25	apply	768.00	exempt
802.11ax20	5180	9.22	apply	768.00	exempt
802.11ax20	5260	9.08	apply	768.00	exempt
802.11ax20	5580	8.56	apply	768.00	exempt
802.11ax20	5785	8.25	apply	768.00	exempt

Note: The Tune-up output power was declared by the Applicant.
The minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates
ERP (watts) is no more than the calculated value prescribed for that frequency
R must be at least $\lambda/2\pi$
λ is the free-space operating wavelength in meters

This product does not have any form of simultaneous transmission capability.

Result: Compliance.

******* END OF REPORT *******

Note: It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (*Linkou Laboratory*)