Maximum Permissible Exposure Report

Product	:	Antenna Transceiver Module
Model Name	:	RYLR998
FCC ID	:	QLYRYLR998
Test Regulation	:	47 CFR FCC Part 2.1091
Received Date	:	2022/4/14
Test Date	:	2022/5/10 ~ 2022/5/20
Issued Date	:	2022/7/14
Applicant	:	REYAX TECHNOLOGY CO.,LTD. 4F.-15, No.26, Ln. 321, Yangguang St., Neihu Dist.Taipei City Taiwan
Issued By	:	Underwriters Laboratories Taiwan Co., Ltd. Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan

Testing Laboratory
3398

REVISION HISTORY

Original Test Report No.: 4790363992-US-R1-V0

Rev.	Test report No.	Date	Page revised	Contents
Original	4790363992-US-R1-V0	2022/7/14	-	Initial issue

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1. Attestation of Test Results

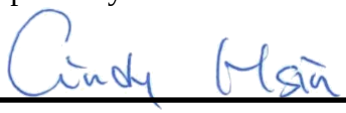
APPLICANT:	REYAX TECHNOLOGY CO.,LTD. 4F.-15, No.26, Ln. 321, Yangguang St., Neihu Dist.Taipei City Taiwan
MANUFACTURER:	REYAX TECHNOLOGY CO.,LTD. Rm. 1, 6F., No. 5, Ln. 345, Yangguang St., Neihu Dist., Taipei City, Taiwan (R.O.C.)
EUT DESCRIPTION:	Antenna Transceiver Module
BRAND:	REYAX
MODEL:	RYLR998
SAMPLE STAGE:	Mass-Production

APPLICABLE STANDARDS	
STANDARD	**Test Results**
47 CFR FCC PART 2.1091	PASS

Underwriters Laboratories Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Underwriters Laboratories Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Underwriters Laboratories Taiwan Co., Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Underwriters Laboratories Taiwan Co., Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Prepared By:



Cindy Hsin Date : 2022/7/14
Project Handler

Approved and Authorized By:

Kent Liu Date : 2022/7/14
Senior Laboratory Engineer

2. Test Methodology and Reference Procedures

The tests documented in this report were performed in accordance with KDB 447498 D01 General RF Exposure Guidance v06.

3. Facilities and Accreditation

Test Location	Underwriters Laboratories Taiwan Co., Ltd.
Address	Building B and Building E, No. 372-7, Sec. 4, Zhongxing Rd., Zhudong Township, Hsinchu County, Taiwan
Accreditation Certificate	Underwriters Laboratories Taiwan Co., Ltd. is accredited by TAF, Laboratory Code 3398.

4. Equipment Under Test

4.1. Description of EUT

Product Name	Antenna Transceiver Module
Brand Name	REYAX
Model Name	RYLR998
Operating Frequency	902.3MHz ~ 927.9MHz
Modulation	CSS
Number of Channel	129
Normal Voltage	3.3Vdc
Sample ID	Conducted Test: 4862516 Radiated Test: 4862518

Note:

1. The above EUT information is declared by manufacturer and for more detailed features description, please refer the manufacturer's or user's manual.

4.2. Description of Available Antennas

Ant. No.	Brand Name	Model Name	Ant. Type	Maximum Gain (dBi)
1	REYAX	RYAI915	Spring	2

Note: The above antenna information was provided from customer and for more detailed features description, please refer the manufacturer's specification or user's manual.

5. Requirement

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time |E|2, |H|2 or S (minutes)**
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
1500-100,000	--	--	1.0	30
Note 1: f = frequency in MHz, * means Plane-wave equivalent power density				
Note 2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.				

Power Density (S) is calculated by the following formula:

$S=(P*G)/4\pi R^2$

where: S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW)
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 (appropriate units, e.g., cm)

6. Radio Frequency Radiation Exposure Evaluation

LoRa

Evaluation Frequency (MHz)	Max. Average power (dBm)	Antenna Gain (dBi)	Max. EIRP (dBm)	Max. EIRP (mW)	Power density @ 20 cm (mW/cm^2)	Limit (mW/cm^2)
902.3 ~ 927.9	22.00	2.00	24.00	251.189	0.04997	0.60

Note:
1. Max. EIRP (dBm) = Max. Average power (dBm) + Antenna Gain (dBi)
2. Max. EIRP (mW) = $10^{(\text{Max. EIRP (dBm)} / 10)}$
3. Power density (mW/cm^2) = Max. EIRP (mW) / [$4 \times \pi \times$ (calculated distance)^2], the calculated distance is 20 cm.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

END OF REPORT