

Test report No: 6207948.51

ASSESSMENT REPORT

RF Exposure Evaluation

Identification of item tested	Multiple connected self-organizing network communication modules
Trademark	N/A
Model and /or type reference	RXD-UR2EM-01
Features	5Vdc
FCC ID	2BLNO-RXDUR2EM01
Applicant's name / address	Zhejiang Estotech Power Supply Technology Co., Ltd 1588 North Ring Road, Dipu Street, Anji County, Huzhou City, Zhejiang Province, China.
Test method requested, standard	FCC CFR Title 47 Part 2 Subpart J Section 2.1091 KDB 447498 D01 General RF Exposure Guidance v06 IEEE Std C95.3:2002
Verdict Summary	IN COMPLIANCE
Prepared by (name / position & signature)	Adrian Shi Technical Supervisor 
Approved by (name / position & signature)	Lei Chen Senior Project Manager 
Date of issue	2025-04-22
Report template No	TRF_MPE_RF01 V1.0

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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GENERAL CONDITIONS

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.
5. This report will not be used for social proof function in China market.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%
Atmospheric pressure	86 kPa – 106 kPa

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

DEFINITION OF SYMBOLS USED IN THIS TEST REPORT

<input checked="" type="checkbox"/> Indicates that the listed condition, standard or equipment is applicable for this report/test/EUT.			
<input type="checkbox"/> Indicates that the listed condition, standard or equipment is not applicable for this report/test/EUT.			
Decimal separator used in this report	<input checked="" type="checkbox"/>	Comma (,)	<input type="checkbox"/> Point (.)

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
QP	: Quasi-Peak
CAV	: CISPR Average
AV	: Average
CDN	: Coupling Decoupling Network
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
BW	: Bandwidth
AM	: Amplitude Modulation
PM	: Pulse Modulation
HCP	: Horizontal Coupling Plane
VCP	: Vertical Coupling Plane
U_N	: Nominal voltage
T_x	: Transmitter
R_x	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report nr.	Date	Description
6207948.51	2025-04-22	First release.

REMARKS AND COMMENTS

The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).

The test results relate only to the samples tested.

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1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Description of the item	Multiple connected self-organizing network communication modules
Model / Type number	RXD-UR2EM-01
Trademark.....	N/A
FCC ID	2BLNO-RXDUR2EM01
ISED Number	6207948-1
Manufacturer.....	Zhejiang Estotech Power Supply Technology Co., Ltd 1588 North Ring Road, Dipu Street, Anji County, Huzhou City, Zhejiang Province, China.

Mode of Operation	SRD
Operating frequency range(s)	2402~2480 MHz
Type of Modulation	GFSK
Antenna type.....	PCB Antenna
Antenna gain.....	6.28 dBi
Number of channel	40

Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	<input type="checkbox"/>	AC:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	DC: 5V					
	<input type="checkbox"/>	Battery:					
Mounting position.....	<input checked="" type="checkbox"/>	Table top equipment					
	<input type="checkbox"/>	Wall/Ceiling mounted equipment					
	<input type="checkbox"/>	Floor standing equipment					
	<input type="checkbox"/>	Hand-held equipment					
	<input type="checkbox"/>	Other:					

Intended use of the Equipment Under Test (EUT)
The product is communication module which supports 2.4GHz function.

1.2 **Test date**

Test Location	DEKRA Testing and Certification (Shanghai) Ltd. No.250, Jiangchangsan Road, Jing'an District, Shanghai, China
Date of receipt of test item	2024-10-28
Date (s) of performance of tests	2024-10-28 to 2025-04-22

1.3 **Test Facility**

FCC Designation Number	:	CN1358
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2 Maximum Permissible Exposure (MPE)

2.1 Limit

According to FCC Part 1.1310, The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b).

Table 1 – 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 (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) 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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

2.2 MPE Calculation Method

Calculation Formula from FCC OET 65:

$$S = \frac{P * G}{4 * \pi * R^2}$$

Where:

S = Power Density (mW/cm²)

P = output power of the antenna (mW)

G = antenna gain relative to an isotropic antenna

R = distance from the antenna to the point of investigation (cm)

2.3 Result of MPE for standalone

Standalone mode

Mode	Frequency Range (MHz)	Max Tune-up Power (dBm)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	FCC Limit (mW/cm ²)
SRD	2402 ~ 2480	6.23	6.28	0.00355	1

2.4 Conclusion

The Power Density at the position which is 20 cm far from the EUT is smaller than the General Population / Uncontrolled Exposure limit.

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