

MAXIMUM PERMISSIBLE EXPOSURE EVALUATION REPORT

Applicant: Magnadyne Corporation

Address: 1111 W. Victoria Street Compton, CA 90220 USA

Product Name: Wireless/LTE Repeater

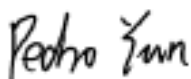
FCC ID: ZGM-RVLINK

Standard(s): 47 CFR §1.1310, 47 CFR §2.1091,
47 CFR §15.247(i), 47 CFR §15.407(f)

Report Number: 2402W44990E-RF-00D

Report Date: 2024/10/15

The above device has been tested and found compliant with the requirement of the relative standards by Bay Area Compliance Laboratories Corp. (Dongguan).



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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2402W44990E-RF-00D	Original Report	2024/10/15

1. GENERAL INFORMATION

1.1 General Description Of Equipment under Test

EUT Name:	Wireless/LTE Repeater
EUT Model:	RV2480
Multiple Model:	RV2460
Rated Input Voltage:	DC 12V from adapter
EUT Received Date:	2024/8/22
EUT Received Status:	Good
Note: The multiple models are electrically identical with the test model. Please refer to the declaration letter for more detail, which was provided by manufacturer.	

2. RF EXPOSURE EVALUATION (MPE)

2.1 RF Exposure Evaluation

2.1.1 Applicable Standard

According to subpart 15.247(i), 15.407(f) and subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (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

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

According to §1.1310 and §2.1091 RF exposure is calculated.

2.1.2 Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

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, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

2.1.3 Calculated Data:

Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
2.4G Module	2412-2462	3.62	2.30	28.5	707.95	30.00	0.144	1.0
2.4G +5G Module	2412-2462	4.08	2.56	28.5	707.95	30.00	0.160	1.0
	5150-5250	2.62	1.83	18.5	70.79	30.00	0.011	1.0
	5725-5850	3.31	2.14	21	125.89	30.00	0.024	1.0
WCDMA B2	1850-1910	2.12	1.63	25	316.23	30.00	0.046	1.0
WCDMA B4	1710-1755	1.53	1.42	25	316.23	30.00	0.040	1.0
WCDMA B5	824-849	-0.13	0.97	25	316.23	30.00	0.027	0.55
LTE B2	1850-1910	2.12	1.63	25	316.23	30.00	0.046	1.0
LTE B4	1710-1755	1.53	1.42	25	316.23	30.00	0.040	1.0
LTE B5	824-849	-0.13	0.97	25	316.23	30.00	0.027	0.55
LTE B12	699-716	-5.3	0.30	25	316.23	30.00	0.008	0.47
LTE B13	777-787	-2.19	0.60	25	316.23	30.00	0.017	0.52
LTE B14	788-798	-1.89	0.65	25	316.23	30.00	0.018	0.53
LTE B66	1710-1780	3.22	2.10	25	316.23	30.00	0.059	1.0
LTE B71	663-698	-6.55	0.22	25	316.23	30.00	0.006	0.44

Note: The device contains a certified WWAN module, FCC ID: XMR201808EC25AF, certified on 08/03/2021, IC: 10224A-2018EC25AF.

Note:

The Conducted output power including Tune-up Tolerance provided by manufacturer.

Simultaneous transmission:

2.4G Module and 2.4G +5G Module 2.4G Wifi can't transmit simultaneously, but 2.4G Module, 2.4G +5G Module 5G Wifi and WWAN can transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

$$S_{2.4G \text{ Module}}/S_{limit-2.4G \text{ Module}} + S_{2.4G +5G \text{ Module}}/S_{limit-2.4G +5G \text{ Module}} + S_{WWAN}/S_{limit-WWAN}$$

$$= 0.144/1.0 + 0.024/1.0 + 0.059/1.0$$

$$= 0.227$$

$$< 1.0$$

Result: Compliant. The device compliant Simultaneous transmission at 30cm distances.

EXHIBIT A - EUT PHOTOGRAPHS

Please refer to the attachment 2402W44990E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2402W44990E-RF-INP EUT INTERNAL PHOTOGRAPHS.

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