

RF Exposure Evaluation Report

Report No.: RWAQ202400227E

Applicant: Kirisun Communication Co.,Ltd.

Address: 3rd Floor, Building A, Tongfang Information Harbour, No.11
Langshan Road Nanshan District, Shenzhen 518057 China

Product Name: DMR Digital Repeater

Product Model: TB2210-B1

Multiple Models: N/A

Trade Mark: Tait

FCC ID: Q5ETB2210B1

Standards: 47 CFR §1.1310
KDB 447498 D01 General RF Exposure Guidance v06

Test Date: 2024-03-27

Test Result: Complied

Report Date: 2024-04-07

Reviewed by:

Frank Yin

Approved by:

Jacob Kong

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Revision History

Version No.	Issued Date	Description
00	2024-04-07	Original

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1 General Information

1.1 Client Information

Applicant:	Kirisun Communication Co.,Ltd.
Address:	3rd Floor, Building A, Tongfang Information Harbour, No.11 Langshan Road Nanshan District, Shenzhen 518057 China
Manufacturer:	Kirisun Communication Co.,Ltd.
Address:	3rd Floor, Building A, Tongfang Information Harbour, No.11 Langshan Road Nanshan District, Shenzhen 518057 China

1.2 Product Description of EUT

Sample Serial Number	6M-1 (assigned by WATC)
Sample Received Date	2024-03-08
Sample Status	Good Condition
Frequency Range	136-174MHz
Rated Output Power [#]	45Watts, 40Watts, 35Watts, 30Watts, 25Watts, 20Watts, 15Watts, 10Watts, 5Watts
Modulation Technology	FM, 4FSK
Antenna Gain [#]	10dBi
Spatial Streams	SISO (1TX, 1RX)
Power Supply	AC 100-240V 50/60 Hz or DC 10.8-15.6V, 15A
Operating temperature [#]	-30 deg.C to +60 deg.C
Adapter Information	N/A
Modification	Sample No Modification by the test lab

1.3 Laboratory Location

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

Tel: +86-755-29691511, Email: qa@watc.com.cn

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 463912, the FCC Designation No. : CN5040.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0160.

2 RF Exposure Evaluation

2.1 Standard

According to §1.1310, radio frequency devices 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.

Table 1 to § 1.1310(e)(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)
(i) 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
(ii) 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.

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:

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

2.2 Result

Radio	Frequency (MHz)	Maximum Conducted Power including Tune-up Tolerance	Maximum Antenna Gain		Min. safety separation distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(W)	(dBi)	(numeric)			
VHF	136-174	45	10	10	190	0.99	1.0

Note:

1. The Maximum Conducted Power including Tune-up Tolerance was declared by manufacturer.
2. The maximum allowed Antenna gain is 10dBi, which provided by manufacturer.
3. To maintain compliance with the RF exposure guidelines, keep at least a 1.9m distance from antenna to nearby person/body.

Result: Complied.

---End of Report---