


Report No.: XEWM2311000559RG04  
 Rev.: 01  
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# TEST REPORT

**Application No.:** XEWM2311000559RG  
**Applicant:** Beijing InHand Networks Technology Co., Ltd.  
**Address of Applicant:** Room 501, floor 5, building 3, yard 18, ziyue road, chaoyang district, Beijing  
**Manufacturer:** Beijing InHand Networks Technology Co., Ltd.  
**Address of Manufacturer:** Room 501, floor 5, building 3, yard 18, ziyue road, chaoyang district, Beijing  
**EUT Description:** 5G Fixed Wireless Access  
**Model No.:** FWA02  
 FWA03  
 FWA12  
 FWA32  
 FWA62  
 FWA92  
**Trade Mark:**   
**FCC ID:** 2AANY-FWA  
**Standards:** 47 CFR Part 2.1091  
 FCC KDB 447498 D01 v06  
**Date of Receipt:** 2023/11/02  
**Date of Issue:** 2023/11/21

<b>Test Result:</b>	<b>PASS*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Peter Tan  
 Regulatory Technical Manager



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# 1 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2023/11/21		Original

<b>Prepared By</b>	 <hr/> <b>(Leah Chen) / Test Engineer</b>
<b>Checked By</b>	 <hr/> <b>(Andy Yao) / Reviewer</b>

**Remark:**

According to the Declaration letter from client, these models are the same in these: appearance, PCB layout and basic software function; The only difference is that the products are used in different markets. Therefore in this report only the Model No. (FWA02) was recalculated, and internal wiring were identical for all above items. Only different on model No. for marketing requirement.



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## 2 General Information

### 2.1 Client Information

Applicant:	Beijing InHand Networks Technology Co., Ltd.
Address of Applicant:	Room 501, floor 5, building 3, yard 18, ziyue road, chaoyang district, Beijing
Manufacturer:	Beijing InHand Networks Technology Co., Ltd.
Address of Manufacturer:	Room 501, floor 5, building 3, yard 18, ziyue road, chaoyang district, Beijing

### 2.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **A2LA (Certificate No. 4854.01)**

SGS-CSTC Standards Technical Services (Xi'an) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4854.01.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services (Xi'an) Co., Ltd. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0095.

IC#: 25613.

• **FCC –Designation Number: CN1337**

SGS-CSTC Standards Technical Services (Xi'an) Co., Ltd. has been recognized as an accredited testing laboratory.


Designation Number: CN1337.

Test Firm Registration Number: 917410



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### 2.3 General Description of EUT

EUT Description:	5G Fixed Wireless Access
Model No.:	FWA02 FWA03 FWA12 FWA32 FWA62 FWA92
Trade Mark:	
Hardware Version:	V1.2
Software Version:	V2.0
Power Supply:	DC 12V
Antenna Type:	WIFI: Built in WiFi antenna LTE: External rod antenna
Antenna Gain:	LTE Band 48: 1.96dBi (Ant6);
	Wi-Fi 2.4G: 4.13dBi (Ant1); 4.13dBi (Ant2); 4.13dBi (Ant3); 4.13dBi (Ant4)
	5150MHz to 5250MHz: 3.55dBi (Ant1); 3.55dBi (Ant2); 3.55dBi (Ant3); 3.55dBi (Ant4)
	5725MHz to 5850MHz: 4.90dBi (Ant1); 4.90dBi (Ant2); 4.90dBi (Ant3); 4.90dBi (Ant4)
Note:	The antenna gain are derived from the gain information report provided by the manufacturer.
Remark:	As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.



### 3 RF Exposure Evaluation

#### 3.1 RF Exposure Compliance Requirement

##### 3.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	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

RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

$$\text{Friis transmission formula: } Pd = (\text{Pout} * G) / (4 * \text{Pi} * R^2)$$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



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### 3.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually

### 3.1.3 EUT RF Exposure Evaluation

Output Power Into Antenna & RF Exposure Evaluation Distance:

This confirmed that the device comply with MPE limit.

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	Max Conducted Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
LTE Band 48	3552.5	1.96	21.00	22.96	23.00	0.0393	1.0000	2.00	16.01	2.00	Pass
2.4G WiFi	2412.0	4.13	21.00	25.13	30.00	0.0648	1.0000	NA			Pass
5G WiFi	5180.0	4.90	21.00	25.90	30.00	0.0774	1.0000				Pass



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### 3.1.4 Exposure calculations for multiple sources

When a number of sources at different frequencies, and/or broadband sources, contribute to the total exposure, it becomes necessary to weigh each contribution relative to the MPE in accordance with the provisions of Table(A) and Table(B). To comply with the MPE, the fraction of the MPE in terms of E2, H2 (or power density) incurred within each frequency interval should be determined and the sum of all such fractions should not exceed unity.

In order to ensure compliance with the MPE for a controlled environment, the sum of the ratios of the power density to the corresponding MPE should not exceed unity. That is

$$\sum_{i=1}^n \frac{S_i}{MPE_i} \leq 1$$

The product also has multiple transmitters The Simultaneous Transmission Possibilities are as below:

Simultaneous Tx Combination	Configuration
1	LTE + 2.4G WiFi
2	LTE + 5G WiFi
3	2.4G WiFi + 5G WiFi
4	LTE + 2.4G WiFi + 5G WiFi

No.	Mode	Power Density (mW/cm <sup>2</sup> )	MPE Limit (mW/cm <sup>2</sup> )	Result Ratio	Total Ratio	Limit	Result
1	LTE Band 48	0.0393	1.0000	0.0393	0.1041	1.0000	Pass
	2.4G WiFi	0.0648	1.0000	0.0648			
2	LTE Band 48	0.0393	1.0000	0.0393	0.1167	1.0000	Pass
	5G WiFi	0.0774	1.0000	0.0774			
3	2.4G WiFi	0.0648	1.0000	0.0648	0.1422	1.0000	Pass
	5G WiFi	0.0774	1.0000	0.0774			
4	LTE Band 48	0.0393	1.0000	0.0393	0.1815	1.0000	Pass
	2.4G WiFi	0.0648	1.0000	0.0648			
	5G WiFi	0.0774	1.0000	0.0774			

---End of Report---

