

RF EXPOSURE EVALUATION REPORT

Application No.: FYCR2212000506AT
Applicant: BTI Wireless
Address of Applicant: 14600 Industry Circle, La Mirada, CA 90638
Manufacturer: BTI Wireless
Address of Manufacturer: 14600 Industry Circle, La Mirada, CA 90638
Factory: Sunwave Communications Co., Ltd.
Address of Factory: 581 Huoju Avenue, Binjiang District, Hangzhou, China

Equipment Under Test (EUT):

EUT Name: 5G CPE

Model No.: CPX80I

Trade Mark:

FCC ID: WBKCPX80I

Standard(s) : 47 CFR Part 1.1307

47 CFR Part 1.1310

FCC Rules 47 CFR §2.1091

KDB 447498 D04 interim General RF Exposure Guidance v01

Date of Receipt: 2022-12-09

Date of Evaluation: 2022-12-09 to 2023-01-09

Date of Issue: 2023-01-10

Evaluation Result:	Pass*
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* In the configuration evaluated, the EUT complied with the standards specified above.

Winkey Wang
EMC Technical Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2023-01-10		Original

Authorized for issue by:			
		_____ Tree Zhan/Project Engineer	
		_____ Winkey Wang/Reviewer	

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3 General Information

3.1 Details of E.U.T.

Power supply:	DC24V by AC/DC power adapter Adapter M/N: ASSA67A-240100 Adapter input: AC100-240V, 50/60Hz, 0.8A Adapter output: DC24V/1.0A
Cable(s):	Power adapter cable: 1.2m unshielded cable without ferrite core DC converter cable: 2.1m unshielded cable without ferrite core DC to RJ45(female) cable: 2.1m unshielded cable without ferrite core
Sample Type:	Mobile production
NR Operation Frequency Band:	SA: n48, n78
RF Output mode:	SISO
Modulation Type:	DFT-s-OFDM: PI/2 BPSK, QPSK, 16QAM, 64QAM, 256QAM CP-OFDM: QPSK, 16QAM, 64QAM, 256QAM
NR Power Class:	Level 3
SCS:	30KHz for n48, n78
Antenna Type:	External Antenna
Antenna Gain:	1.29dBi
SIM Card:	This device has dual SIM Card slots. Both the SIM slots have been tested. SIM1 was worst case, only record SIM1.

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3.2 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc. Shenzhen branch.

Fuyong lab. Xinlong TechnoPark, Fengtang Road, Fuyong Subdistrict, Bao'an, Shenzhen, China

Tel: +86 755 8866 3988 Fax: +86 755 2671 0594

No tests were sub-contracted.

3.3 Test Facility

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

- **A2LA (Certificate No. 6606.01)**

Compliance Certification Services (Kunshan) Inc. Shenzhen branch is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6606.01.

- **FCC –Designation Number: CN1322**

Compliance Certification Services (Kunshan) Inc. Shenzhen branch has been recognized as an accredited testing laboratory.

Designation Number: CN1322. Test Firm Registration Number: 718073

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

Compliance Certification Services (Kunshan) Inc. Shenzhen branch has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0129.

IC#: 28189.

3.4 Deviation from Standards

None

3.5 Abnormalities from Standard Conditions

None

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4 Radio Spectrum Technical Requirement

4.1 RF Exposure Compliance Requirement

4.1.1 Limits

According to FCC Part1.1310: 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 part1.1307(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 Exposures				
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
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	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
300–1500 .....	.....	.....	f/1500	30
1500–100,000 .....	.....	.....	1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = power density in mW/cm²

P_{out} = 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

P_d is the limit of MPE, 1 mW/cm². 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.

4.1.2 Test Procedure

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

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4.1.3 EUT RF Exposure Evaluation**For NR:**

Antenna Gain: n48/n78: 1.29dBi, the maximum Gain measured in fully anechoic chamber is n48/n78: 1.35 in linear scale.

Frequency (MHz)	Operation Band	Max Conducted Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit (mW/cm ²)	Result
3624.99	n48	23	199.5262	0.0534	1.00	PASS
3624.99	n78	23	199.5262	0.0534	1.00	PASS

Remark:

- 1.Max output power including tune up.
- 2.Support bandwidth for n48 is 20MHz and 40MHz,
- 3.Support bandwidth for n78 is 20MHz,30MHz,40MHz,50MHz,60MHz,70MHz,80MHz,90MHz,100MHz.

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5 EUT Constructional Details (EUT Photos)

Refer to Appendix – External and Internal Photos for FYCR2212000506AT.

--End of the Report--

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