FCC RF EXPOSURE REPORT

FCC ID: 2AWG9-OSPREY

Project No.	:	2107C014
Equipment	:	4G LTE WiFi Router
Brand Name	:	WiFiRanger
Test Model	:	OSPREY
Series Model	:	N/A
Applicant	:	WiFiRanger, A LinOra Company
Address	:	943 W Overland Road, , Meridian,Idaho United States 83642
Manufacturer	:	Shenzhen Comnect Technology Co.,Ltd
Address	:	G Zone, 3/F, Building 1, Baisha High-Tech Park, Xili Street, Shenzhen
Factory	:	Shenzhen Comnect Technology Co.,Ltd
Address	:	Second Standard Factory, Zhongcai Road, Yingbin Avenue, Luxi Industrial Park,Jiangxi
Date of Receipt	:	Jul. 08, 2021
Date of Test	:	Jul. 09, 2021 ~ Aug. 16, 2021
Issued Date	:	Sep. 06, 2021
Report Version	:	R02
Test Sample	:	Engineering Sample No.: DG2021070562 for WIFI, DG2021070560 for WCDMA and LTE.
Standard(s)	:	FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091 FCC Title 47 Part 2.1091, OET Bulletin 65 Supplement C

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

Vegeta Li

Prepared by : Vegeta Li

Steven Lu

Approved by : Steven Lu

ACCREDITED
TESTING CERT #5123.02

Add: No. 3 Jinshagang 1st Rd. Shixia, Dalang Town, Dongguan City, Guangdong, People's Republic of China
Tel: +86-769-8318-3000
Web: www.newbtl.com

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Aug. 23, 2021
R01	Updated the max simultaneous transmission MPE.	Aug. 25, 2021
R02	Modified the comments of Timco.	Sep. 06, 2021

1. TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No. 3 Jinshagang 1st Rd. Shixia, Dalang Town, Dongguan City, Guangdong, People's Republic of China.
BTL's Test Firm Registration Number for FCC: 357015
BTL's Designation Number for FCC: CN1240

2. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi r^2} = \frac{EIRP}{4\pi r^2}$$

where:
S = power density
P = power input to the antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Table for Filed Antenna:
For WLAN 2.4GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Dipole	N/A	3.2
2	N/A	N/A	Dipole	N/A	3.2

Note:
1) This EUT supports MIMO 4X4, any transmit signals are correlated with each other, so Directional gain=G_{ANT}+10log(N)dBi, that is Directional gain=3.2+10log(2)dBi=6.21. So, the output power limit is 30-(6.21-6)=29.79, the power spectral density limit is 8-(6.21-6)=7.79.
2) The antenna gain is provided by the manufacturer.

For 5GHz:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
1	N/A	N/A	Dipole	N/A	4.09	UNII-1
					4.06	UNII-3

Note: The antenna gain is provided by the manufacturer.

For WCDMA:

Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
N/A	N/A	Dipole	N/A	1.9	WCDMA Band II
N/A	N/A	Dipole	N/A	1.9	WCDMA Band IV
N/A	N/A	Dipole	N/A	3.1	WCDMA Band V

Note: The antenna gain is provided by the manufacturer.

For LTE:

Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
N/A	N/A	Dipole	N/A	1.9	LTE Band 2
N/A	N/A	Dipole	N/A	1.9	LTE Band 4
N/A	N/A	Dipole	N/A	3.1	LTE Band 5
N/A	N/A	Dipole	N/A	3.2	LTE Band 12
N/A	N/A	Dipole	N/A	3.2	LTE Band 13
N/A	N/A	Dipole	N/A	3.2	LTE Band 14

Note: The antenna gain is provided by the manufacturer.

3. TEST RESULTS

For 2.4GHz:

Directional gain (dBi)	Directional Gain (numeric)	Max.Tune Up Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.21	4.1783	14	25.1189	0.02089	1	Complies

For 5GHz UNII-1:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max.Tune Up Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
4.09	2.5645	17	50.1187	0.02558	1	Complies

For 5GHz UNII-3:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max.Tune Up Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Test Result
4.06	2.5468	15	31.6228	0.01603	1	Complies

For WCDMA:

Band	Frequency (MHz)	Max.Tune Up Power (dBm)	Antenna Gain (dBi)	Antenna Gain (linear)	Output Power to Antenna	Power Density (mW/cm^2)	Power Density Limit (mW/cm^2)	Test Result
WCDMA II	1880	24.00	1.9	1.55	389.05	0.0774	1.0000	Complies
WCDMA IV	1712.4	22.50	1.9	1.55	275.42	0.0548	1.0000	Complies
WCDMA V	846.6	22.50	3.1	2.04	363.08	0.0722	0.5644	Complies

For LTE:

Band	Frequency (MHz)	Max.Tune Up Power (dBm)	Antenna Gain (dBi)	Antenna Gain (linear)	Output Power to Antenna	Power Density (mW/cm^2)	Power Density Limit (mW/cm^2)	Test Result
Band 2	1855	22.50	1.9	1.55	275.42	0.0548	1.0000	Complies
Band 4	1710.7	22.50	1.9	1.55	275.42	0.0548	1.0000	Complies
Band 5	829	22.50	3.1	2.04	363.08	0.0722	0.5527	Complies
Band 12	700.5	22.50	3.2	2.09	371.54	0.0739	0.4670	Complies
Band 13	782	22.50	3.2	2.09	371.54	0.0739	0.5213	Complies
Band 14	793	22.50	3.2	2.09	371.54	0.0739	0.5287	Complies

For the max simultaneous transmission MPE:

Ratio			Total	Limit of Ratio	Test Result
2.4GHz	5GHz	LTE			
0.02089	0.02558	0.158244	0.204714	1	Complies

Note: The calculated distance is 20 cm.

End of Test Report