FCC RF EXPOSURE REPORT

FCC ID: 2AFG6-WF-Q379-USA1

Project No.	**: 1902C073**
Equipment	**: WiFi Module**
Model	**: WF-Q379-USA1**
Applicant	**: Guangzhou Shirui Electronics Co.,Ltd**
Address	**: 192 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, Guangdong, China**
According:	**: FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091**

BTL INC.

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Certificate #5123.02

REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	May 20, 2019
R01	Added the max simultaneous transmission MPE.	Jun. 27, 2019

1. GENERAL SUMMARY

Equipment	:	WiFi Module
Brand Name	:	seewo
Test Model	:	WF-Q379-USA1
Series Model	:	N/A
Applicant	:	Guangzhou Shirui Electronics Co.,Ltd
Manufacturer	:	Guangzhou Shirui Electronics Co.,Ltd
Address	:	192 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, Guangdong, China
Date of Test	:	Feb. 27, 2019 ~ Apr. 09, 2019
Test Sample	:	Engineering Sample No.: D190201760
Standards	:	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.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-6-1902C073) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

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 BT & LE:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1		TB-SR-41Y	Dipole	N/A	2.76

For 2.4G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	South star	N/A	PCB	N/A	3.95
2	South star	N/A	PCB	N/A	3.95

Note:
(1)This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain = G_{ANT}+10log (N)dBi, that is Directional gain=3.95+10log (2)dBi=6.96.
The output power limit is 30-6.96+6=29.04, the power spectral density limit is 8-6.96+6=7.04.

For 5G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	South star	N/A	PCB	N/A	3.33
2	South star	N/A	PCB	N/A	3.33

Note:
(1)This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain = GANT+10log (N)dBi, that is Directional gain=3.33+10log dBi=6.34.
So, the UNII-1, UNII-2A, UNII-2C output power limit is 24-6.34+6=23.66, the UNII-3 output power limit is 30-6.34+6=29.66. The UNII-1, UNII-2A, UNII-2C power spectral density Limit is 11-6.34+6=10.66, the UNII-3 power spectral density limit is 30-6.34+6=29.66.

3. TEST RESULTS

For BT:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Peak Output Power (dBm)	Max. Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
2.76	1.8880	6.28	4.246	0.00160	1	Complies

For LE:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Peak Output Power (dBm)	Max. Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
2.76	1.8880	-0.14	0.968	0.00036	1	Complies

For 2.4GHz:

Directional gain (dBi)	Directional gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.96	4.9659	20.72	118.032	0.11667	1	Complies

For 5GHz UNII-1:

Directional gain (dBi)	Directional gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.34	4.3053	12.49	17.742	0.01520	1	Complies

For 5GHz UNII-2A:

Directional gain (dBi)	Directional gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.34	4.3053	12.48	17.701	0.01517	1	Complies

For 5GHz UNII-2C:

Directional gain (dBi)	Directional gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.34	4.3053	12.46	17.620	0.01510	1	Complies

For 5GHz UNII-3:

Directional gain (dBi)	Directional gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.34	4.3053	12.23	16.711	0.01432	1	Complies

For the max simultaneous transmission MPE:

Power Density (S) (mW/cm^2)	Power Density (S) (mW/cm^2)	Power Density (S) (mW/cm^2)	Total	Limit of Power Density (S) (mW/cm^2)	Test Result
BT	2.4GHz	5GHz			
0.00160	0.11667		0.11827	1	Complies
0.00160		0.01520	0.01680	1	Complies

Note: The calculated distance is 20 cm.

End of Test Report