

FCC RF EXPOSURE REPORT

FCC ID: 2AV2N-SR1041Y

Project No. : 2009C029A
Equipment : Wireless Router
Brand Name : FiberHome
Test Model : SR1041Y
Series Model : N/A
Applicant : Fiberhome Telecommunication Technologies Co., Ltd.
Address : No.88 Youkeyuan Road, Hongshan District, Wuhan, Hubei , China
Manufacturer : Fiberhome Telecommunication Technologies Co., Ltd.
Address : No.88 Youkeyuan Road, Hongshan District, Wuhan, Hubei , China
Factory : Fiberhome Telecommunication Technologies Co., Ltd.
Address : No.88 Youkeyuan Road, Hongshan District, Wuhan, Hubei , China
Date of Receipt : Sep. 18, 2020
Date of Test : Sep. 21, 2020 ~ Nov. 07, 2020
Issued Date : Dec. 02, 2020
Report Version : R00
Test Sample : Engineering Sample No.: DG2020091428
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.



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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Dec. 02, 2020

1. TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, 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:

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

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 2.4GHz:

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1		XD2C-A165W5D-01C	Dipole	N/A	5.34
2		XD2C-A226W5D-01C	Dipole	N/A	4.97

Note:

This EUT supports CDD, and all antenna gains are not equal, so Directional

gain=10log[(10^{G1/20}+10^{G2/20}+...10^{GN/20})²/N]dBi, that is Directional gain=10log[(10^{5.34/20}+10^{4.97/20})²/2]dBi =8.17.

So, the output power limit is 30-(8.17-6)=27.83, the power spectral density limit is 8-(8.17-6)=5.83.

Table for Antenna Configuration:

Operating Mode TX Mode	1TX	2TX
IEEE 802.11b	V (Ant. 1)	-
IEEE 802.11g	V (Ant. 1)	-
IEEE 802.11n (HT20)	-	V (Ant. 1+ Ant. 2)
IEEE 802.11n (HT40)	-	V (Ant. 1+ Ant. 2)
IEEE 802.11ax (HE20)	-	V (Ant. 1+ Ant. 2)
IEEE 802.11ax (HE40)	-	V (Ant. 1+ Ant. 2)

For 5GHz

Ant.	Brand	P/N	Antenna Type	Connector	Gain (dBi)
1		XD2C-B110W5D-01C	Dipole	N/A	5.08
2		XD2C-B228W5D-01C	Dipole	N/A	5.03

Note:

This EUT supports CDD, and all antenna gains are not equal, so Directional gain= $10\log[(10^{G1/20}+10^{G2/20}+...+10^{GN/20})^2/N]$ dBi, that is Directional gain= $10\log[(10^{5.08/20}+10^{5.03/20})^2/2]$ dBi =8.07. So, the UNII-1, UNII-3 output power limit is 30-(8.07-6)=27.93, the UNII-2A, UNII-2C output power limit is 24-(8.07-6)=21.93. The UNII-1 power spectral density limit is 17-(8.07-6)=14.93, the UNII-2A, UNII-2C power spectral density limit is 11-(8.07-6)=8.93, the UNII-3 power spectral density limit is 30-(8.07-6)=27.93.

Table for Antenna Configuration:

Operating Mode TX Mode	1TX	2TX
IEEE 802.11a	V (Ant. 1)	-
IEEE 802.11n(HT20)	-	V (Ant. 1+ Ant. 2)
IEEE 802.11n(HT40)	-	V (Ant. 1+ Ant. 2)
IEEE 802.11ac(VHT20)	-	V (Ant. 1+ Ant. 2)
IEEE 802.11ac(VHT40)	-	V (Ant. 1+ Ant. 2)
IEEE 802.11ac(VHT80)	-	V (Ant. 1+ Ant. 2)
IEEE 802.11ax(HE20)	-	V (Ant. 1+ Ant. 2)
IEEE 802.11ax(HE40)	-	V (Ant. 1+ Ant. 2)
IEEE 802.11ax(HE80)	-	V (Ant. 1+ Ant. 2)

3. TEST RESULTS

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
8.17	6.5615	21.92	155.5966	0.20321	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
8.07	6.4121	17.54	56.7545	0.07244	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
8.07	6.4121	16.34	43.0527	0.05495	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
8.07	6.4121	17.03	50.4661	0.06441	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
8.07	6.4121	19.16	82.4138	0.10518	1	Complies

For the max simultaneous transmission MPE:

Power Density (S) (mW/cm ²)	Power Density (S) (mW/cm ²)	Total	Limit of Power Density (S) (mW/cm ²)	Test Result
2.4GHz	5GHz			
0.20321	0.10518	0.30839	1	Complies

Note: The calculated distance is 20 cm.

End of Test Report