

FCC RF EXPOSURE REPORT

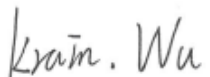
FCC ID: Q78-ZXV10B820CA15

Project No. : 1912H040
Equipment : Hybrid STB
Brand Name : ZTE
Test Model : ZXV10 B820C-A15
Series Model : N/A
Applicant : ZTE Corporation
Address : ZTE Plaza, Hi-Tech Park, Nanshan District, Shenzhen, Guangdong, P.R.China
Manufacturer : ZTE Corporation
Address : ZTE Plaza, Hi-Tech Park, Nanshan District, Shenzhen, Guangdong, P.R.China
Date of Receipt : Jan. 13, 2020
Date of Test : Jan. 13, 2020~Feb. 16, 2020
Issued Date : Feb. 28, 2020
Report Version : R00
Test Sample : Engineering Sample No.: SH201912301
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	Feb. 28, 2020

1. 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 2.4G Wifi

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	Internal	N/A	4.4
2	N/A	N/A	Internal	N/A	4.3

Note:

The EUT incorporates a MIMO function. Physically, the EUT provides two completed transmitters and receivers (2T2R), all transmit signals are completely correlated, then,

Direction gain= Directional gain = $10\log[(10G_1/20+10G_2/20+\dots+10G_N/20)2/N]$ dBi, that is

Directional gain = $10\log[(104.4/20+104.3/20)2/2]$ dBi = 7.36. So, the output power limit is $30-7.36+6=28.64$, the power spectral density limit is $8-7.36+6=6.64$.

For 5G Wifi

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	Internal	N/A	4.9
2	N/A	N/A	Internal	N/A	4.9

Note:

Antenna Gain=4.9 dBi. This EUT supports MIMO 2X2, any transmit signals are correlated

with each other, so Directional gain = $G_{Ant. 1}+10\log(N)$ dBi, that is Directional

gain = $4.9+10\log(2)$ dBi = 7.9; So, the UNII-1, UNII-2A, UNII-2C output power limit is $24-7.9+6=22.1$. The UNII-3 output power limit is $30-7.9+6=28.1$, The UNII-1, UNII-2A, UNII-2C power spectral density limit is $11-7.9+6=9.1$ the UNII-3 power spectral density limit is $30-7.9+6=28.1$.

For BT:

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

For LE

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

2. 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	1.5849	6.50	4.4668	0.00141	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	1.5849	2.00	1.5849	0.00050	1	Complies

For 2.4GHz:

Antenna Gain (dBi)	Antenna 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
7.36	5.4450	27.50	562.3413	0.60947	1	Complies

For 5GHz:

Antenna Gain (dBi)	Antenna 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
7.9	6.1660	19.00	79.4328	0.09749	1	Complies

For the max simultaneous transmission MPE:

BT+LE+2.4G+5G

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			
0.00141	0.60947		0.61088	1	Complies
0.00141		0.09749	0.0989	1	Complies

Note: The calculated distance is 20 cm.
Output power including tune up tolerance.

End of Test Report