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The Power Leader of Global Engineering Companies

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RF EXPOSURE EVALUATION

FCC ID : 2AKKW-WIZFI320

Standard Requirement

The following FCC Rule Parts and procedures are applicable :

Part 1.1310 Radiofrequency radiation exposure limits

Table 1 below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields.

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 Exposure				
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
300-1,500			f/300	6
1,500-100,000			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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz

** = Plane-wave equivalent power density*



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MPE calculation

$$S = \text{EIRP} / (4\pi R^2)$$

Where

- S : Power density (mW/cm²)
- EIRP (mW) : P * T * G
- EIRP (dBm) : P + T + G
- P (dBm) : Maximum transmitter power
- G (dBi) : Antenna gain
- T (dB) : Power tolerance
- R (cm) : Safety distance

Safety distance(R) : 20 cm

EUT RF Exposure

Mode	Frequency [MHz]	Conducted Output power [dBm]	Antenna Gain [dBi]	Power tolerance [dB]	EIRP [dBm]	EIRP [mW]	Power density [mW/cm ²]	Limit [mW/cm ²]
Bluetooth	2 441	8.16	3.28	+ 1.0	12.44	17.54	0.0035	1
Bluetooth LE	2 440	5.35	3.28	+ 1.0	9.63	9.18	0.0018	1
802.11b	2 412	15.25	3.28	+ 1.0	19.53	89.74	0.0179	1
802.11g	2 412	13.50	3.28	+ 1.0	17.78	59.98	0.0119	1
802.11n(HT20)	2 412	13.26	3.28	+ 1.0	17.54	56.75	0.0113	1
802.11n(HT40)	2 422	11.25	3.28	+ 1.0	15.53	35.73	0.0071	1

Conclusion

This confirms compliance to the required Radio frequency radiation exposure limit.

▶ The exposure of the variant model(WiZFi320-CON) is not a problem because the basic model gain is higher than the variant model antenna gain value.

Antenna gain

Basic model : 3.28 dBi

Variant Model : 3.0 dBi