RF EXPOSURE

1. Information

1) Company Name : WIZNET Co., LTD.
2) Product Name : WiFi Module
3) Model Name : WIZ630wi
5) Antenna Maximum gain : 4.0 dBi
6) Maximum peak conducted output power : 9.7 mW

2. RF Exposure

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this Chapter.

Limits for Maximum Permissive Exposure: RF exposure is calculated.

Frequency Range	Electric Field Strength [V/m]	Magnetic Field Strength [A/m]	Power Density [mW/cm^2]	Averaging Time [minute]
Limits for General Population/Uncontrolled Exposure				
0.3 ~ 1.34	614.0	1.6	*(100)	30
1.34 ~ 30	824/f	2.19/f	*(180/f^2)	30
30 ~ 300	27.5	0.073	0.2	30
300 ~ 1500	/	/	f/1500	30
1500 ~ 15000	/	/	1	30

f = frequency in MHz, * = Plane-wave equivalent power density

MPE (Maximum Permissive Exposure) Prediction

Predication of MPE limit at a given distance: Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = PG/4\pi R^2$$

$$(\Rightarrow R = \sqrt{PG/4\pi S})$$

S = power density [mW/cm^2]
P = power input to antenna [mW]
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 [cm] (20 cm = limit for MPE estimates)

EUT: Maximum peak output power=9.7 [mW](= 9.88 dBm)& Antenna gain=2.51 [mW](=4.0 [dBi])	
100 mW, at 20 cm from an antenna 6 [dBi]	S = PG/4πR² = 100 × 3.98 / (4 × π × 400) = 0.0792 [mW/cm^2] < 1.0 [mW/cm^2]
9.7 mW, at 20 cm from the antenna 4.0 [dBi]	S = PG/4πR² = 0.0049 [mW/cm^2] < 1.0 [mW/cm^2]
9.7 mW, at 2.5 cm from the antenna 4.0 [dBi]	S = PG/4πR² = 0.3102 [mW/cm^2] < 1.0 [mW/cm^2]

RF Exposure Compliance Issue

The EUT is categorically excluded from routine environmental because it operates at very low power level. The equipment is deemed to complywith the SAR or MPE limits without testing due to this very lowpower level. SAR data was not submitted because the output power of the EUT was below the low thresholds in the Exclusion List.

Low threshold [(60/fGHz ≈ 25) mW, d < 2.5 cm, (120/fGHz ≈ 50) mW, d ≥2.5 cm], and
High threshold [(900/fGHz ≈ 370) mW, d < 20 cm], where fGHz: 2.44, d: distance to a person's body

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