RF EXPOSURE EVALUATION

EUT Specification

EUT	Zigbee Wireless Transmission Module
Model Number	AW5161P2EF
FCC ID	2AR25-AW5161P2EF
Antenna gain (Max)	2.15dBi
Operation Frequency	2405-2480MHz
Input Rating	DC 5V from PC
Classification Per Stipulated Test Standard	§15.247(i), §2.1093
Modulation	O-QPSK
Max. output power	19.21 dBm(0.083368 W)

Test Requirement:

RF EXPOSURE EVALUATION

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm^2)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	**--**	**--**	**F/300**	**6**
1500-100000	**--**	**--**	**5**	**6**
(B) Limits for General Population/Uncontrol Exposures				
300-1500	**--**	**--**	**F/1500**	**6**
1500-100000	**--**	**--**	**1**	**30**

1 Friis transmission formula: Pd= (Pout*G)\ (4*pi*R^2)

Where

Pd= Power density in mW/cm^2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1416

R= distance between observation point and center of the radiator in cm

Pd the limit of MPE, 1mW/cm^2. If we know the maximum gain of the nd total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

2 Measurement Result

Antenna gain:2.15dBi

DTS:

Transmit Frequency(MHz)	Mode	Measured Power (dBm)	Tune upPower (dBm)	Max tune up power(dBm)	Output Peak power (mW)	Ant. Gain (dBi)	Ant. Gain (numeric)	Power density at 20cm (mW/cm2)	Power density Limits (mW/cm2)
2.405	O-QPSK	19.21	19±1	20	100.000	2.15	1.641	0.0326384	1
2.445	O-QPSK	18.75	19±1	20	100.000	2.15	1.641	0.0326384	1
2.480	O-QPSK	18.44	19±1	20	100.000	2.15	1.641	0.0326384	1

Signature:

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