

# FCC ID : 2AAJ9BLUETOOTH

## 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 <sup>2</sup> )	Average Time
<b>(A) Limits for Occupational/Control Exposures</b>				
<b>300-1500</b>	--	--	<b>F/300</b>	<b>6</b>
<b>1500-100000</b>	--	--	<b>5</b>	<b>6</b>
<b>(B) Limits for General Population/Uncontrol Exposures</b>				
<b>300-1500</b>	--	--	<b>F/1500</b>	<b>6</b>
<b>1500-100000</b>	--	--	<b>1</b>	<b>30</b>

### 11.1 Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

$P_d$  = Power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

$P_d$  the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

### 11.2 Measurement Result

Power density limited:

$P_d$  = 1.0mW/ cm<sup>2</sup>

Antenna gain: 2.5dBi

GFSK

Channel	Channel Frequency (MHz)	Output Peak power (dBm)	Output Peak power (mW)	Antenna Gain (dBi) Numeric	Power density at 20cm (mW/ cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
1	2402	16.64	46.13	1.78	0.016	1.0
40	2441	15.91	38.99	1.78	0.014	1.0
79	2480	15.13	32.58	1.78	0.012	1.0

1/4 Π -DQPSK

Channel	Channel Frequency (MHz)	Output Peak power (dBm)	Output Peak power (mW)	Antenna Gain (dBi) Numeric	Power density at 20cm (mW/ cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
1	2402	15.02	31.77	1.78	0.011	1.0
40	2441	15.11	32.43	1.78	0.011	1.0
79	2480	14.92	31.05	1.78	0.011	1.0