

FCC ID : 2AX5J-RAP1200P

1. 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

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

Where

Pd= Power density in mW/cm².

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 20cm.

Pd the limit of MPE, 1mW/cm². 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. EUT TECHNICAL DESCRIPTION

Characteristics	Description
Product	Wireless Access Point
Model Number	RG-RAP1200(P)

IEEE 802.11 WLAN Mode Supported	<input checked="" type="checkbox"/> 802.11b <input checked="" type="checkbox"/> 802.11g <input checked="" type="checkbox"/> 802.11n(20MHz channel bandwidth) <input checked="" type="checkbox"/> 802.11n(40MHz channel bandwidth)
Modulation	DSSS with DBPSK/DQPSK/CCK for 802.11b OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n
Operating Frequency Range	2412-2462MHz for 802.11b/g/n(HT20) 2422-2452MHz for 802.11b/g/n(HT40)
Number of Channels	11 channels for 802.11b/g/n(HT20) 7 Channels for 802.11n(HT40)
Antenna Type	Integrated Antenna
Antenna Gain	ANT1: 1.39dBi, ANT2: 1.29dBi

Wifi Type	<input checked="" type="checkbox"/> UNII-1: 5150MHz-5250MHz Band <input checked="" type="checkbox"/> UNII-2A: with 5250MHz-5350MHz Band <input checked="" type="checkbox"/> UNII-2C: with 5470MHz-5725MHz Band <input checked="" type="checkbox"/> UNII-3 with 5725MHz-5850MHz Band
WLAN Supported	<input checked="" type="checkbox"/> 802.11a <input checked="" type="checkbox"/> 802.11n(20MHz channel bandwidth) <input checked="" type="checkbox"/> 802.11n(40MHz channel bandwidth) <input checked="" type="checkbox"/> 802.11ac(20MHz channel bandwidth) <input checked="" type="checkbox"/> 802.11ac(40MHz channel bandwidth) <input checked="" type="checkbox"/> 802.11ac(80MHz channel bandwidth)
Data Rate	802.11a:54/48/36/24/18/12/9/6Mbps 802.11n:up to 600 Mbps 802.11ac:up to 1.733Gbps
Modulation	<input checked="" type="checkbox"/> OFDM with BPSK/QPSK/16QAM/64QAM for 802.11a/n <input checked="" type="checkbox"/> OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11ac
Frequency Range	<input checked="" type="checkbox"/> UNII-1: 5150MHz-5250MHz Band
	<input checked="" type="checkbox"/> 5180-5240MHz for 802.11a <input checked="" type="checkbox"/> 5180-5240MHz for 802.11n(HT20) <input checked="" type="checkbox"/> 5180-5240MHz for 802.11ac(HT20) <input checked="" type="checkbox"/> 5190-5230MHz for 802.11n(HT40) <input checked="" type="checkbox"/> 5190-5230MHz for 802.11ac(HT40) <input checked="" type="checkbox"/> 5210MHz for 802.11ac(HT80)
	<input checked="" type="checkbox"/> UNII-2A: with 5250MHz-5350MHz Band
	<input checked="" type="checkbox"/> 5260-5320MHz for 802.11a <input checked="" type="checkbox"/> 5260-5320MHz for 802.11n(HT20)

	<input checked="" type="checkbox"/> 5260-5320MHz for 802.11ac(HT20) <input checked="" type="checkbox"/> 5270-5310MHz for 802.11n(HT40) <input checked="" type="checkbox"/> 5270-5310MHz for 802.11ac(HT40) <input checked="" type="checkbox"/> 5290MHz for 802.11ac(HT80)
	<input checked="" type="checkbox"/> UNII-2C: with 5470MHz-5725MHz Band
	<input checked="" type="checkbox"/> 5500-5700MHz for 802.11a <input checked="" type="checkbox"/> 5500-5700MHz for 802.11n(HT20) <input checked="" type="checkbox"/> 5500-5700MHz for 802.11ac(HT20) <input checked="" type="checkbox"/> 5510-5670MHz for 802.11n(HT40) <input checked="" type="checkbox"/> 5510-5670MHz for 802.11ac(HT40) <input checked="" type="checkbox"/> 5530-5610MHz for 802.11ac(HT80)
	<input checked="" type="checkbox"/> UNII-3 with 5725MHz-5850MHz Band
	<input checked="" type="checkbox"/> 5745-5825MHz for 802.11a <input checked="" type="checkbox"/> 5745-5825MHz for 802.11n(HT20) <input checked="" type="checkbox"/> 5745-5825MHz for 802.11ac(HT20) <input checked="" type="checkbox"/> 5755-5795MHz for 802.11n(HT40) <input checked="" type="checkbox"/> 5755-5795MHz for 802.11ac(HT40) <input checked="" type="checkbox"/> 5775MHz for 802.11ac(HT80)
TPC Function	<input checked="" type="checkbox"/> Applicable <input type="checkbox"/> Not Applicable
Antenna Type	Internal Antenna
Antenna Gain	5150-5250MHz: Ant 1: 5.87dBi, Ant 2: 5dBi 5250-5350MHz: Ant 1: 5.87dBi, Ant 2: 5dBi 5470-5725MHz: Ant 1: 5.87dBi, Ant 2: 5dBi 5725-5850MHz: Ant 1: 5.87dBi, Ant 2: 5dBi

3. Measurement Result

Below mode can't transmit simultaneously.

Mode	Max Conducted Power (dBm)	Antenna gain (dBi)	Antenna Gain Numeric	R (cm)	Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
2.4G WIFI	17.87	1.39	1.377	20	0.0168	1
5G WIFI	20.43	5.87	3.864	20	0.0849	1

Note: All the modes are tested, only the worst data are described in the table.

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