

MPE

FCC ID: QISEG8245H

Applicant: Huawei Technologies Co.,Ltd.

Exposure category: General population/uncontrolled environment

EUT Type: Production Unit

Device Type: AP

Refer Standard: FCC Part 2.1091: Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)

FCC MPE Limited:

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
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
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

Test Data

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

Where: S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Antenna Gain information

Antenna Gain1: 5dBi=3.16

Antenna Gain2: 5dBi=3.16

Antenna Gain1+2: 5dBi=3.16_{note1}

Note 1: According to KDB 662911, all transmit signals are completely uncorrelated with each other. Directional gain = G_{ANT}

Note 2: Note: According to KDB 662911, all transmit signals are completely uncorrelated with each other. Directional gain = $10 \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10})/N_{ANT}]$ dBi

2.4GHz WLAN Maximum conducted output power:

Mode	Channel	Frequency (MHz)	Output Power(dBm)		Tune up tolerance (dBm)
			Ant. 1	Ant. 2	
802.11b	1	2412	20.01	20.84	20±1
	6	2437	25.43	25.05	25±1
	11	2462	20.11	20.47	20±1
802.11g	1	2412	22.71	22.98	22±1
	6	2437	26.77	26.85	26±1
	11	2462	22.68	22.86	22±1

Mode	Channel	Frequency (MHz)	Output Power(dBm)			Tune up tolerance (dBm)
			Ant. 1	Ant. 2	Ant. 1+2	
802.11n20	1	2412	16.37	16.14	19.27	19±1
	6	2437	26.39	26.30	29.36	28.5±1
	11	2462	16.03	16.02	19.04	19±1
802.11n40	3	2422	14.16	13.32	16.77	16±1
	6	2437	26.44	26.23	29.35	28.5±1
	9	2452	13.89	13.16	16.55	16±1

Calculation results (for FCC): pass

Mode/Channel	Frequency (MHz)	Maximum tune up power(dBm)	RF distance(cm)	ANT. Gain(dBi)	Result (mW/cm ²)	Limit (mW/cm ²)
802.11b	2412	21	20	5	0.079	1.0
802.11b	2437	26	20	5	0.251	
802.11b	2462	21	20	5	0.079	
802.11g	2412	23	20	5	0.126	
802.11g	2437	27	20	5	0.315	
802.11g	2462	23	20	5	0.126	
802.11n20	2412	20	20	5	0.079	
802.11n20	2437	29.5	20	5	0.560	
802.11n20	2462	20	20	5	0.079	
802.11n40	2422	17	20	5	0.032	
802.11n40	2437	29.5	20	5	0.560	
802.11n40	2452	17	20	5	0.032	