

FCC ID : 2AB43-EPC1500RRI-V2

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

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

Where

P_d = Power density in mW/cm²

P_{out} =output power to antenna in mW

G = Numeric gain of the antenna relative to isotropic antenna

π =3.1416

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

Pd the limit of MPE, $1\text{mW}/\text{cm}^2$. 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.

11.2 Measurement Result

BT DSS

Channel Freq. (MHz)	modulation	conducted power (mW)	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm ²)	Power density Limits (mW/cm ²)
2402	GFSK	1.94	2.889	2dBm to 4dBm	4	1	0.00050	1
2441	GFSK	2.05	3.124	2dBm to 4dBm	4	1	0.00050	1
2480	GFSK	1.78	2.500	2dBm to 4dBm	4	1	0.00050	1
2402	$\pi/4$ - DQPSK	1.87	2.713	2dBm to 4dBm	4	1	0.00050	1
2441	$\pi/4$ - DQPSK	1.90	2.796	2dBm to 4dBm	4	1	0.00050	1
2480	$\pi/4$ - DQPSK	1.63	2.128	2dBm to 4dBm	4	1	0.00050	1
2402	8DPSK	1.99	2.981	2dBm to 4dBm	4	1	0.00050	1
2441	8DPSK	2.08	3.183	2dBm to 4dBm	4	1	0.00050	1
2480	8DPSK	1.82	2.599	2dBm to 4dBm	4	1	0.00050	1

WIFI DTS

Channel Freq. (MHz)	modulation	conducted power (mW)	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm2)	Power density Limits (mW/cm2)
2.412	11b	19.86	12.98	12dBm to 14dBm	14	1	0.00502	1
2.437	11b	24.04	13.81	12dBm to 14dBm	14	1	0.00502	1
2.462	11b	23.17	13.65	12dBm to 14dBm	14	1	0.00502	1
2.412	11g	17.54	12.44	12dBm to 14dBm	14	1	0.00502	1
2.437	11g	17.30	12.38	12dBm to 14dBm	14	1	0.00502	1
2.462	11g	16.98	12.30	12dBm to 14dBm	14	1	0.00502	1
2.412	11n HT20	13.46	11.29	10dBm to 12dBm	12	1	0.00317	1
2.437	11n HT20	14.52	11.62	10dBm to 12dBm	12	1	0.00317	1
2.462	11n HT20	14.39	11.58	10dBm to 12dBm	12	1	0.00317	1
2.422	11n HT40	11.72	10.69	10dBm to 12dBm	12	1	0.00317	1
2.437	11n HT40	11.32	10.54	10dBm to 12dBm	12	1	0.00317	1
2.452	11n HT40	19.86	10.43	10dBm to 12dBm	12	1	0.00317	1