RF EXPOSURE EVALUATION

FCC ID : WQTKSTB2020

Standard Requirement

The following FCC Rule Parts and procedures are applicable :

Part 1.1310 Radiofrequency radiation exposure limits
Part 2.1091 Radiofrequency radiation exposure evaluation : Mobile device

Table 1 below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields.

Table 1—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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
300-1,500			f/1500	30
1,500-100,000			**1.0**	30

*f = frequency in MHz * = Plane-wave equivalent power density*

MPE calculation

$S = EIRP / (4\pi R^2)$

Where S : Power density
EIRP : P x G
P : Maximum transmitter power
G : Antenna gain
R : distance to the centre of radiation of the antenna

Safety distance(R) : 20 cm

Mode	Conducted Output power [dBm]	Antenna Gain [dBi]	Power tolerance [dB]	Power density [mW/cm²]	Limit [mW/cm²]
Bluetooth	9.485	3.18	+ 1	0.005	1
Bluetooth LE	5.996	3.18	+ 1	0.002	
Zigbee	1.513	3.18	+ 1	0.001	
802.11b	16.24	1.9	+ 1	0.016	
802.11g	13.98	1.9	+ 1	0.010	
802.11n(HT20)_ 2.4 GHz	14.34	1.9	+ 1	0.011	
802.11n(HT40)_ 2.4 GHz	12.29	1.9	+ 1	0.007	
802.11a_UNII 1	13.72	2.0	+ 1	0.009	
802.11a_UNII 2A	13.90	2.0	+ 1	0.010	
802.11a_UNII 2C	13.78	2.0	+ 1	0.009	
802.11a_UNII 3	13.92	2.0	+ 1	0.010	
802.11n(HT20)_UNII 1	16.05	2.0	+ 1	0.016	
802.11n(HT20)_UNII 2A	16.19	2.0	+ 1	0.017	
802.11n(HT20)_UNII 2C	16.49	2.0	+ 1	0.018	
802.11n(HT20)_UNII 3	15.90	2.0	+ 1	0.015	
802.11n(HT40)_UNII 1	11.83	2.0	+ 1	0.006	
802.11n(HT40)_UNII 2A	12.30	2.0	+ 1	0.007	
802.11n(HT40)_UNII 2C	12.75	2.0	+ 1	0.007	
802.11n(HT40)_UNII 3	11.96	2.0	+ 1	0.006	
802.11ac(VHT20)_UNII 1	15.69	2.0	+ 1	0.015	
802.11ac(VHT20)_UNII 2A	15.91	2.0	+ 1	0.015	
802.11ac(VHT20)_UNII 2C	16.23	2.0	+ 1	0.017	
802.11ac(VHT20)_UNII 3	15.77	2.0	+ 1	0.015	
802.11ac(VHT40)_UNII 1	14.62	2.0	+ 1	0.012	
802.11ac(VHT40)_UNII 2A	14.93	2.0	+ 1	0.012	
802.11ac(VHT40)_UNII 2C	15.27	2.0	+ 1	0.013	
802.11ac(VHT40)_UNII 3	14.44	2.0	+ 1	0.011	
802.11ac(VHT80)_UNII 1	11.28	2.0	+ 1	0.005	
802.11ac(VHT80)_UNII 2A	12.00	2.0	+ 1	0.006	
802.11ac(VHT80)_UNII 2C	12.65	2.0	+ 1	0.007	
802.11ac(VHT80)_UNII 3	11.30	2.0	+ 1	0.005	

Conclusion

This confirms compliance to the required Radio frequency radiation exposure limit.