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RF EXPOSURE EVALUATION

1. PRODUCT INFORMATION

FCC ID	2A98M-POWERMAX1800

2. EVALUATION METHOD AND LIMIT

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons.

§ 1.1310(e)(1) LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (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

*Note:

1. f= Frequency in MHz

   *=Plane-wave Equivalent Power Density

2. The MPE limit for General Population/Uncontrolled exposure to fixed transmitters is not applicable for portable transmitters. Portable devices evaluation shall be performed according to the SAR provisions in 47 CFR § 2.1093.

$S=PG/4\pi R^2$

Where:

S=power density (in appropriate units, e.g. mw/cm^2)

P=power input to antenna (in appropriate units , e.g. , mW)

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

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

3. CALCULATION

A minimum test separation distance ≥ 20 cm is required between the antenna and radiating structures of the device and nearby persons to apply mobile device exposure limits. The distance must be at least 20 cm and fully supported by the operating and installation configurations of the transmitter and its antenna(s), according to the source-based time-averaged maximum power requirements of § 2.1091(d)(2). In cases where cable losses or other attenuations are applied to determine compliance, the most conservative operating configurations and exposure conditions must be evaluated.

Antenna Gain=2.54dBi (Numeric 1.79), π=3.14
802.11b Single mode(Worst case) For 2.4GHz WIFI

Frequency	Output Power	Output Power	Power Density	Power Density Limit
MHz	dBm	mW	mW/cm2	mW/cm2
2462	15.97	39.54	0.01412	1

BLE 1M (Worst case 2402MHz)
Antenna Gain=2.54dBi (Numeric 1.79), π=3.14

Frequency	Output Power	Output Power	Power Density	Power Density Limit
MHz	dBm	mW	mW/cm2	mW/cm2
2402	7.05	5.07	0.00181	1

WPT

EUT Side	Frequency Range (KHz)	Probe A (A/m)	Probe B (A/m)	Probe C (A/m)	Probe D (A/m)	Probe E (A/m)	Limits (A/m)	50% Limit (A/m)
99% powe(15W)	115~205	0.338	0.329	0.313	0.325	0.404	1.63	0.815
50% powe(15W)	115~205	0.333	0.321	0.298	0.308	0.389		
1% powe(15W)	115~205	0.324	0.315	0.291	0.297	0.374		

Note:
1.Antenna gain provided by the applicant.Can affect the validity of results.
2.Only the worst case recorded.
3.E.I.R.P(dBm)=Max.Field strength of fundamental(dBuV/m) -95.2,for 3m.
4.Output Power=E.I.R.P - Antenna Gain.
5.2.4G WIFI , BLE and WPT can simultaneous transmission:
0.01412/1 + 0.00181/1 + 0.404/1.63=0.26378< 1.
Result: Compliant

--THE END--