FCC 47 CFR MPE REPORT

Klipsch Group, Inc.

Portable Bluetooth Party Speaker

Model Number: Miami

FCC ID: STI-MIAMI

Applicant:	Klipsch Group, Inc.
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Maximum Permissible Exposure

1. Applicable Standards

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

1.1. Limits for Maximum Permissible Exposure (MPE)

(a) Limits for Occupational/Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-10000			5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Times $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-10000			1.o	30

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

1.2. MPE Calculation Method

E (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$ Power Density: Pd (W/m^2) = $\frac{E^2}{377}$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

Pd = $\frac{30 \times P \times G}{377 \times d^2}$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

2. Conducted Power Result

32883

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)
GFSK	2402	8.5	7.079
	2441	7.74	5.943
	2480	6.68	4.656
π/4-DQ PSK	2402	8.28	6.730
	2441	7.6	5.754
	2480	6.71	4.688
8-DPSK	2402	8.17	6.561
	2441	7.6	5.754
	2480	6.69	4.667
BLE 1M	2402	5.79	3.793
	2440	5.51	3.556
	2480	4.67	2.931

32889

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)
GFSK	2402	7.8	6.026
	2441	7.25	5.309
	2480	6.79	4.775
π/4-DQ PSK	2402	7.85	6.095
	2441	7.23	5.284
	2480	6.79	4.775
8-DPSK	2402	7.8	6.026
	2441	7.22	5.272
	2480	6.82	4.808
BLE 1M	2402	7.72	5.916
	2440	7.24	5.297
	2480	6.72	4.699

3. Calculated Result and Limit

32883

Mode	Peak output power (dBm)	Target power（dBm）	MAX Target power（dBm）	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
				(dBi)	(Linear)			
2.4G Band								
GFSK	8.5	8±1	9	2.12	1.629	0.00257	1	Complies
π/4-DQPSK	8.28	8±1	9	2.12	1.629	0.00257	1	Complies
8-DPSK	8.17	8±1	9	2.12	1.629	0.00257	1	Complies
BLE 1M	5.79	5±1	6	2.12	1.629	0.00129	1	Complies

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Mode	Peak output power (dBm)	Target power（dBm）	MAX Target power（dBm）	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
				(dBi)	(Linear)			
2.4G Band								
GFSK	7.8	7±1	8	2.12	1.629	0.00205	1	Complies
π/4-DQPSK	7.85	7±1	8	2.12	1.629	0.00205	1	Complies
8-DPSK	7.8	7±1	8	2.12	1.629	0.00205	1	Complies
BLE 1M	7.72	7±1	8	2.12	1.629	0.00205	1	Complies

MAX Power Density(S) (mW/cm2) 32883 Bluetooth	MAX Power Density(S) (mW/cm2) 32889 Bluetooth	Total Ratio	Limit Ratio	Test Result
0.00257	0.00205	0.00462	1	Complies

End of Test Report