



FCC 47 CFR MPE REPORT

Klipsch Group, Inc.

Portable Bluetooth Party Speaker

Model Number: New York

FCC ID: STI-NEWYORK

Applicant:	Klipsch Group, Inc.
Address:	3502 Woodview Trace, Indianapolis, IN 46268, USA
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

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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			1.0	30

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

1.2. MPE Calculation Method

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

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

Module No.: 32883

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)
GFSK	2402	5.02	3.177
	2441	4.82	3.034
	2480	3.87	2.438
$\pi/4$ -DQPSK	2402	5.2	3.311
	2441	4.88	3.076
	2480	3.97	2.495
8-DPSK	2402	5.18	3.296
	2441	4.87	3.069
	2480	3.93	2.472
BLE 1M	2402	5.17	3.289
	2440	5	3.162
	2480	4.04	2.535

Module No.: 32889

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)
GFSK	2402	8.1	6.457
	2441	7.86	6.109
	2480	7.54	5.675
$\pi/4$ -DQPSK	2402	8.12	6.486
	2441	7.84	6.081
	2480	7.54	5.675
8-DPSK	2402	8.09	6.442
	2441	7.83	6.067
	2480	7.53	5.662
BLE 1M	2402	8.02	6.339
	2440	7.82	6.053
	2480	7.49	5.610

3. Calculated Result and Limit

Module No.: 32883

Mode	Peak output power (dBm)	Target power (dBm)	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW /cm ²)	Limited of Power Density (S) (mW /cm ²)	Test Result
				(dBi)	(Linear)			
2.4G Band								
GFSK	5.02	5±1	6	2.12	1.629	0.00129	1	Complies
π/4-DQPSK	5.20	5±1	6	2.12	1.629	0.00129	1	Complies
8-DPSK	5.18	5±1	6	2.12	1.629	0.00129	1	Complies
BLE 1M	5.16	5±1	6	2.12	1.629	0.00129	1	Complies

Module No.: 32889

Mode	Peak output power (dBm)	Target power (dBm)	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW /cm ²)	Limited of Power Density (S) (mW /cm ²)	Test Result
				(dBi)	(Linear)			
2.4G Band								
GFSK	8.1	8±1	9	2.12	1.629	0.00257	1	Complies
π/4-DQPSK	8.12	8±1	9	2.12	1.629	0.00257	1	Complies
8-DPSK	8.09	8±1	9	2.12	1.629	0.00257	1	Complies
BLE 1M	8.02	8±1	9	2.12	1.629	0.00257	1	Complies



MAX Power Density(S) (mW/cm ²) 32883 Bluetooth	MAX Power Density(S) (mW/cm ²) 32889 Bluetooth	Total Ratio	Limit Ratio	Test Result
0.00129	0.00257	0.00386	1	Complies

End of Test Report