

RF EXPOSURE EVALUATION

EUT Specification

EUT	Tiki Torch Bluetooth Speaker
Model Number	TT100, PBG-1280S These model are the same expect the model name and appearance, Here select TT100 for test.
FCC ID	2ALZLTIKITORCHTT100
Antenna gain (Max)	0dBi for PCB Antenna, 1.2dBi for Internal Antenna
Operation Frequency	BT:2408MHz-2480MHz 5.8G:5725MHz-5850MHz
Classification Per Stipulated Test Standard	§15.247(i), §2.1093
Modulation	BT: GFSK, pi/4-DQPSK, 8-DPSK 5.8G: FSK
Max. output power	BT: -4.26 dBm(0.000375W) 5.8G: 85.31 dBuV/m
Evaluation applied	☐ MPE Evaluation ☒ SAR Evaluation

Test Requirement:

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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
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1 Friis transmission formula: $P_d = \frac{P_{out} \cdot G}{4 \cdot \pi \cdot R^2}$

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

P_d the limit of MPE, 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

2 Measurement Result

BT:

Operating Mode	Test Channel	Tune up tolerance (dBm)	Max tune up conducted power(dBm)	Output Peak power (mW)	Ant. Gain (dBi)	Ant. Gain (numeric)	Power density at 20cm (mW/cm ²)	Power density Limits (mW/cm ²)
GFSK	0	-4 ± 1	-3	0.501	0	1.000	0.000100	1
	39	-4 ± 1	-3	0.501	0	1.000	0.000100	1
	78	-7 ± 1	-6	0.251	0	1.000	0.000050	1
pi/4-DQPSK	0	-4 ± 1	-3	0.501	0	1.000	0.000100	1
	39	-4 ± 1	-3	0.501	0	1.000	0.000100	1
	78	-7 ± 1	-6	0.251	0	1.000	0.000050	1
8-DPSK	0	-4 ± 1	-3	0.501	0	1.000	0.000100	1
	39	-4 ± 1	-3	0.501	0	1.000	0.000100	1
	78	-7 ± 1	-6	0.251	0	1.000	0.000050	1

For 5.8G, the power is too low,so No evaluation required .

Signature:



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