

FCC RF EXPOSURE REPORT

FCC ID: UXD16001

Project No. : 1602C119
Equipment : Wireless speaker
Model : LS50 Wireless
Applicant : GP Electronics HK Ltd.
Address : 9/F, Building 12W, 12 Science Park West
Avenue, Hong Kong Science Park, Pak Shek
Kok, New Territories, Hong Kong

According: : FCC Guidelines for Human Exposure IEEE
C95.1

B T L I N C .

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MPE CALCULATION METHOD:

Calculation Method of RF Safety Distance:

$$S = \frac{PG}{4\pi^2} = \frac{EIRP}{4\pi^2}$$

where:

S = power density

P = power input to the antenna

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

Table for Filed Antenna

For BT, LE:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	PCB	N/A	-0.22

For 2.4G WiFi:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	PCB	N/A	-0.26
2	N/A	N/A	PCB	N/A	0.74

Note: Equipment with 2 diversity antennas operating in switched diversity mode by which at any moment in time only 1 antenna is used.

For 5G:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain(dBi)
1	N/A	N/A	PCB	N/A	-0.6
2	N/A	N/A	PCB	N/A	-0.43

Note: Equipment with 2 diversity antennas operating in switched diversity mode by which at any moment in time only 1 antenna is used.

TEST RESULTS

BT:

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature :	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX Mode _1Mbps		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-0.22	0.9506	4.02	2.5235	0.00048	1	Complies
-0.22	0.9506	3.87	2.4378	0.00046	1	Complies
-0.22	0.9506	2.69	1.8578	0.00035	1	Complies

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature :	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX Mode _3Mbps		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-0.22	0.9506	4.03	2.5293	0.00048	2	Complies
-0.22	0.9506	3.52	2.2491	0.00043	4	Complies
-0.22	0.9506	2.33	1.7100	0.00032	5	Complies

LE:

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	CH00, CH19 , CH39		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-0.22	0.9506	-1.11	0.7745	0.00015	1	Complies
-0.22	0.9506	-1.11	0.7745	0.00015	1	Complies
-0.22	0.9506	-1.64	0.6855	0.00013	1	Complies

2.4G WIFI:

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX B Mode_CH01/06/11		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
0.74	1.1858	14.83	30.4089	0.00718	1	Complies
0.74	1.1858	18.49	70.6318	0.01667	1	Complies
0.74	1.1858	18.25	66.8344	0.01577	1	Complies

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX G Mode_CH01/06/11		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
0.74	1.1858	21.11	129.1219	0.03048	2	Complies
0.74	1.1858	21.29	134.5860	0.03177	4	Complies
0.74	1.1858	20.38	109.1440	0.02576	5	Complies

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N20 Mode_CH01/06/11		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
0.74	1.1858	20.96	124.7384	0.02944	6	Complies
0.74	1.1858	21.34	136.1445	0.03213	7	Complies
0.74	1.1858	20.31	107.3989	0.02535	8	Complies

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	TX N40 Mode_CH03/06/09		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
0.74	1.1858	20.64	115.8777	0.02735	1	Complies
0.74	1.1858	20.05	101.1579	0.02388	1	Complies
0.74	1.1858	19.48	88.7156	0.02094	1	Complies

5G:

UNII-1

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-1/TX A Mode		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-0.43	0.9057	13.53	22.5424	0.00406	1	Complies
-0.43	0.9057	15.56	35.9749	0.00649	1	Complies
-0.43	0.9057	14.31	26.9774	0.00486	1	Complies

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-1/TX N20 Mode		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-0.43	0.9057	13.42	21.9786	0.00396	2	Complies
-0.43	0.9057	14.46	27.9254	0.00503	4	Complies
-0.43	0.9057	14.21	26.3633	0.00475	5	Complies

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-1/TX N40 Mode		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-0.43	0.9057	15.13	32.5837	0.00587	6	Complies
-0.43	0.9057	15.08	32.2107	0.00581	7	Complies

UNII-3:

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-3/ TX A Mode		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-0.6	0.8710	11.3	13.4896	0.00234	1	Complies
-0.6	0.8710	10.56	11.3763	0.00197	1	Complies
-0.6	0.8710	11.63	14.5546	0.00252	1	Complies

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-3/TX N20 Mode		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-0.6	0.8710	10.26	10.6170	0.00184	2	Complies
-0.6	0.8710	8.28	6.7298	0.00117	4	Complies
-0.6	0.8710	10.48	11.1686	0.00194	5	Complies

EUT :	Wireless speaker	Model Name :	LS50 Wireless
Temperature:	25 °C	Relative Humidity:	55 %
Test Voltage :	AC 120V/60Hz		
Test Mode :	UNII-3/ TX N40 Mode		

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)	Test Result
-0.6	0.8710	9.58	9.0782	0.00157	6	Complies
-0.6	0.8710	15.08	32.2107	0.00558	7	Complies

Note: the calculated distance is 20 cm.