



Neutron Engineering Inc.

FCC RF EXPOSURE REPORT

FCC ID: ACJ-SC-ALL8

Project No. : 1312C279
Equipment : WIRELESS SPEAKER SYSTEM
Model : SC-ALL8
Applicant : Panasonic Corporation of North America
Address : Two Riverfront Plaza, 9th Floor, Newark, New Jersey, United States

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

Neutron Engineering Inc.

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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

Ant.	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	Internal	N/A	3.7
2	N/A	N/A	Internal	N/A	4.1

Note:

(1) The EUT incorporates a MIMO function. Physically, the EUT provides two completed two transmitters and two receivers (2T2R),

Operating Mode TX Mode	1TX	2TX
802.11a	V (ANT 1 or ANT 2)	-
802.11n(20MHz)	-	V (ANT 1 + ANT 2)
802.11n(40MHz)	-	V (ANT 1 + ANT 2)



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TEST RESULTS

EUT:	Portable Bluetooth Speaker	Model Name	SC-ALL8
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage :	120V/60Hz		
Test Mode :	Band 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
4.1	2.5704	14.38	27.4157	0.01402653	1	Complies
4.1	2.5704	14.14	25.9418	0.01327243	1	Complies
4.1	2.5704	14.01	25.1768	0.01288102	1	Complies

EUT:	Portable Bluetooth Speaker	Model Name	SC-ALL8
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage :	120V/60Hz		
Test Mode :	Band 1/TX N20 Mode-Total		

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
4.1	2.5704	16.11	40.8319	0.02089057	1	Complies
4.1	2.5704	16.63	46.0257	0.02354780	1	Complies
4.1	2.5704	16.32	42.8549	0.02192554	1	Complies

EUT:	Portable Bluetooth Speaker	Model Name	SC-ALL8
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage :	120V/60Hz		
Test Mode :	Band 1/TX N40 Mode-Total		

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
4.1	2.5704	16.13	41.0204	0.02098700	1	Complies
4.1	2.5704	16.91	49.0908	0.02511599	1	Complies



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EUT:	Portable Bluetooth Speaker	Model Name	SC-ALL8
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage :	120V/60Hz		
Test Mode :	Band 2/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
4.1	2.5704	18.94	78.3430	0.04008209	1	Complies
4.1	2.5704	18.91	77.8037	0.03980617	1	Complies
4.1	2.5704	17.56	57.0164	0.02917094	1	Complies

EUT:	Portable Bluetooth Speaker	Model Name	SC-ALL8
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage :	120V/60Hz		
Test Mode :	Band 2/TX N20 Mode-Total		

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
4.1	2.5704	18.99	79.2501	0.04054622	1	Complies
4.1	2.5704	18.99	79.2501	0.04054622	1	Complies
4.1	2.5704	18.23	66.5273	0.03403693	1	Complies

EUT:	Portable Bluetooth Speaker	Model Name	SC-ALL8
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage :	120V/60Hz		
Test Mode :	Band 2/TX N40 Mode-Total		

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
4.1	2.5704	16.88	48.7528	0.02494310	1	Complies
4.1	2.5704	15.88	38.7258	0.01981301	1	Complies



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EUT:	Portable Bluetooth Speaker	Model Name	SC-ALL8
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage :	120V/60Hz		
Test Mode :	Band 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
4.1	2.5704	17.43	55.3350	0.02831068	1	Complies
4.1	2.5704	18.98	79.0679	0.04045297	1	Complies
4.1	2.5704	16.27	42.3643	0.02167456	1	Complies

EUT:	Portable Bluetooth Speaker	Model Name	SC-ALL8
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage :	120V/60Hz		
Test Mode :	Band 3/TX N20 Mode-Total		

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
4.1	2.5704	16.85	48.4172	0.02477139	1	Complies
4.1	2.5704	16.98	49.8884	0.02552410	1	Complies
4.1	2.5704	16.98	49.8884	0.02552410	1	Complies

EUT:	Portable Bluetooth Speaker	Model Name	SC-ALL8
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage :	120V/60Hz		
Test Mode :	Band 3/TX N40 Mode-Total		

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
4.1	2.5704	16.23	41.9759	0.02147585	1	Complies
4.1	2.5704	16.95	49.5450	0.02534839	1	Complies
4.1	2.5704	16.94	49.4311	0.02529009	1	Complies

Note: the calculation distance is 20cm.