FCC RF EXPOSURE REPORT

FCC ID: ACJ-SC-C30

Project No.	**: 1906C102**
Equipment	**: Wireless Speaker system**
Model Name	**: SC-C30**
Series Model	**: N/A**
Applicant	**: Panasonic Corporation of North America**
Address	**: Two Riverfront Plaza, 9th Floor Newark, New Jersey 07102-5490, United States**
According	**: FCC Guidelines for Human Exposure IEEE C95.1 & FCC Part 2.1091**

BTL INC.

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Certificate #5123.02

1. GENERAL SUMMARY

Equipment	:	Wireless Speaker system
Brand Name	:	Technics
Test Model	:	SC-C30
Series Model	:	N/A
Applicant	:	Panasonic Corporation of North America
Manufacturer	:	Panasonic Corporation
Address	:	1-15 Matsuo-cho, Kadoma-shi, Osaka 571-8504, Japan
Factory	:	Panasonic AVC Networks Johor Malaysia
Address	:	IE,PLO 460, Jalan Bandar, 81700 Pasir Gudang, Johor, Malaysia
Date of Test	:	Feb. 11, 2019~Jun. 24, 2019
Test Sample	:	Engineering Sample No.: DG19061045
Standards	:	FCC Title 47 Part 2.1091, OET Bulletin 65 Supplement C

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-1-1906C102) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of A2LA according to the ISO/IEC 17025 quality assessment standard and technical standard(s).

2. MPE CALCULATION METHOD

Calculation Method of RF Safety Distance:

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

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	1

For 2.4G WIFI

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	1.0
2	N/A	N/A	PCB	N/A	1.5

Note: This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain =10log[$(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2$/N]dBi, that is Directional gain=10log[$(10^{1.0/20}+10^{1.5/20})^2$/2]dBi =4.26.

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB	N/A	3.60
2	N/A	N/A	PCB	N/A	3.20

Note: This EUT supports MIMO 2X2, any transmit signals are correlated with each other, so Directional gain =10log[$(10^{G1/20}+10^{G2/20}+...10^{GN/20})^2$/N]dBi, that is Directional gain=10log[$(10^{3.6/20}+10^{3.2/20})^2$/2]dBi =6.41.
the UNII-1, UNII-2A, UNII-2C, Output Power limit is 24-6.41+6=23.59
the UNII-3 Output Power limit is 30-6.41+6=29.59
the UNII-1, UNII-2A, UNII-2C, power spectral density limit is 11-6.41+6=10.59
the UNII-3 power spectral density limit is 30-6.41+6=29.59

3. TEST RESULTS

For BT:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Peak Output Power (dBm)	Max. Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
1	1.2589	3.91	2.4604	0.00062	1	Complies

For LE:

Antenna Gain (dBi)	Antenna Gain (numeric)	Max. Peak Output Power (dBm)	Max. Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
1	1.2589	3.97	2.4946	0.00063	1	Complies

For 2.4GHz:

Directional gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
4.26	2.6669	29.01	796.1594	0.42262	1	Complies

For 5GHz UNII-1:

Directional gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.41	4.3752	16.79	47.7529	0.04159	1	Complies

For 5GHz UNII-2A:

Directional gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.41	4.3752	16.56	45.2898	0.03944	1	Complies

For 5GHz UNII-2C:

Directional gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.41	4.3752	16.67	46.4515	0.04045	1	Complies

For 5GHz UNII-3:

Directional gain (dBi)	Antenna Gain (numeric)	Max. Output Power (dBm)	Max. Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
6.41	4.3752	16.57	45.3942	0.03953	1	Complies

Note: The calculated distance is 20 cm

End of Test Report