



Test Report No.: FM180606N077



# RF EXPOSURE REPORT

Applicant	Panasonic Corporation of North America
Address	Two Riverfront Plaza, 9th Floor, Newark, New Jersey 07102-5490, United States

Manufacturer or Supplier	Panasonic Corporation
Address	1-15 Matsuo-cho, Kadoma City, Osaka 571-8504, Japan
Product	Wireless Speaker System
Brand Name	Technics
Model	SC-C50
Additional Model & Model Difference	N/A
Date of tests	Jun. 06, 2018 ~ Jul. 20, 2018

- FCC Part 2 (Section 2.1091)
- KDB 447498 D01
- IEEE C95.1

**CONCLUSION: The submitted sample was found to COMPLY with the test requirement**

Tested by Andy Zhu Project Engineer / EMC Department	Approved by Glyn He Supervisor/ EMC Department
	  Date: Jul. 30, 2018

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## RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
FM180606N077	Original release	Jul. 30, 2018

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## 1. CERTIFICATION

**PRODUCT:** Wireless Speaker System  
**BRAND NAME:** Technics  
**MODEL NO.:** SC-C50  
**ADDITIONAL MODEL:** N/A  
**FCC ID:** ACJ-SC-C50  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**APPLICANT:** Panasonic Corporation of North America  
**TESTED DATES:** Jun. 06, 2018 ~ Jul. 20, 2018  
**STANDARDS:** FCC Part 2 (Section 2.1091)  
KDB 447498 D01  
IEEE C95.1

## 2. RF EXPOSURE LIMIT

### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm <sup>2</sup> )	AVERAGE TIME (minutes)
<b>LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE</b>				
300-1500	...	...	F/1500	30
1500-100,000	...	...	1.0	30

F = Frequency in MHz

## 3. MPE CALCULATION FORMULA

$$Pd = (Pout * G) / (4 * pi * r^2)$$

where

Pd = power density in mW/cm<sup>2</sup>

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

## 4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

## 5. ANTENNA GAIN

The antennas provided to the EUT, please refer to the following table:

Frequency Band	Antenna Gain (dBi)	Antenna Type
Wi-Fi 2.4GHz	0.01	PCB Antenna
BT 2.4GHz	0.01	PCB Antenna
Wi-Fi 5GHz (5150-5250MHz)	0.25	PCB Antenna
Wi-Fi 5GHz (5250-5350MHz)	0.25	PCB Antenna
Wi-Fi 5GHz (5500-5725MHz)	0.76	PCB Antenna
Wi-Fi 5GHz (5725-5850MHz)	1.34	PCB Antenna

## 6. CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

The tuned conducted Average Power (declared by client)

Mode	Frequency (MHz)	Target Power (dBm)	Tolerance (dBm)	Lower Tolerance (dBm)	Upper Tolerance (dBm)
BT (GFSK)	2402-2480MHz	4	+/-2	2	6
BT (8DPSK)	2402-2480MHz	4	+/-2	2	6
BT-LE (GFSK)	2402-2480MHz	6	+/-2	4	8
802.11b	2412-2462MHz	16	+/-3	13	19
802.11g	2412-2462MHz	15	+/-3	12	18
802.11n HT20	2412-2462MHz	15	+/-3	12	18
802.11n HT40	2422-2452MHz	13	+/-3	10	16
Wi-Fi 5GHz(Band1)	5150-5250MHz	14	+/-4	10	18
Wi-Fi 5GHz(Band2)	5250-5350MHz	14	+/-4	10	18
Wi-Fi 5GHz(Band3)	5500-5725MHz	14	+/-4	10	18
Wi-Fi 5GHz(Band4)	5725-5850MHz	14	+/-4	10	18

The measured conducted Average Power

Mode	Frequency (MHz)	Averaged Power (dBm)
BT (GFSK)	2480	3.16
BT (8DPSK)	2441	3.30
BT-LE (GFSK)	2402	6.01
802.11b	2437	18.66
802.11g	2412	16.37
802.11n HT20	2437	16.22
802.11n HT40	2437	15.26
Wi-Fi 5GHz(Band1)	5200	17.67
Wi-Fi 5GHz(Band2)	5260	16.96
Wi-Fi 5GHz(Band3)	5580	17.00
Wi-Fi 5GHz(Band4)	5825	16.17

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/cm <sup>2</sup> )	LIMIT (mW/cm <sup>2</sup> )
BT 2.4GHz	8	0.01	20	0.001258	1.0
Wi-Fi 2.4GHz	19	0.01	20	0.015839	1.0
Wi-Fi 5GHz	18	1.34	20	0.017089	1.0

**CONCLUSION:**

Both of the WLAN 2.4GHz and 5GHz can not transmit simultaneously, but BT and WIFI can transmit simultaneously.

**CPD1 / LPD1 + CPD2 / LPD2 + .....etc. < 1**

**CPD = Calculation power density**

**LPD = Limit of power density**

$(0.001258/1)+(0.015839/1) = 0.017097 < 1$ , which is less than the “1” limit.

--- END ---