



# FCC RADIO EXPOSURE TEST REPORT

**FCC ID** : NKR-SWA51

**Equipment** : Wireless Audio Module

**Brand Name** : WNC

**Model Name** : SWA51

**Applicant** : Wistron NeWeb Corporation  
20 Park Avenue II, Hsinchu Science Park, Hsinchu  
308 Taiwan

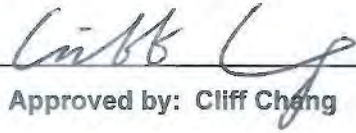
**Manufacturer** : Wistron NeWeb Corporation  
20 Park Avenue II, Hsinchu Science Park, Hsinchu  
308 Taiwan

**Standard** : 47 CFR Part 2.1091

The product was received on Aug. 21, 2018, and testing was started from Aug. 27, 2018 and completed on Sep. 25, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

  
Approved by: Cliff Chang

**SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory**

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



## Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
<b>1 General Description .....</b>	<b>5</b>
1.1 EUT General Information .....	5
1.2 Table for EUT type information .....	5
1.3 Testing Location .....	5
<b>2 Maximum Permissible Exposure .....</b>	<b>6</b>
2.1 Limit of Maximum Permissible Exposure .....	6
2.2 MPE Calculation Method.....	6
2.3 Calculated Result and Limit.....	7
<b>Photographs of EUT v01</b>	



### History of this test report

Report No.	Version	Description	Issued Date
FA882140	01	Initial issue of report	Oct. 16, 2018



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

Reviewed by: Sam Chen

Report Producer: Sandy Chuang



# 1 General Description

## 1.1 EUT General Information

RF General Information		
Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
5150-5250	5161.35MHz to 5245.35MHz	pi/4-DQPSK
5725-5850	5736.35MHz to 5820.35MHz	pi/4-DQPSK

## 1.2 Table for EUT type information

EUT type	Module	Firmware	Description
EUT 1	TX	3.152.15	The variation of EUT is for different firmware.
EUT 2	RX	3.152.1	

From the above models, model: EUT 1 was selected as representative model for the test and its data was recorded in this report.

## 1.3 Testing Location

Testing Location		
<input type="checkbox"/>	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086D with Industry Canada.



## 2 Maximum Permissible Exposure

### 2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Method

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \qquad \text{Power Density: } Pd \text{ (W/m}^2\text{)} = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = RF output power (W)

**G** = EUT Antenna numeric gain (numeric)

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$



### 2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm <sup>2</sup> )	S Limit (mW/cm <sup>2</sup> )
5.2G;G7D	4.10	7.55	11.65	0.50	12.15	0.01641	20	0.00326	1.00000
5.8G;D1D	3.50	7.76	11.26	0.50	11.76	0.01500	20	0.00298	1.00000

————THE END————