

## RF Exposure Report

**Report No.:** SA171027E03

**FCC ID:** 2AF5PMR2600

**Test Model:** MR2600

**Series Model:** MR2600XY (where X can be A, B, C, D or blank, and Y can be A, B, C, D, or blank, for identical hardware models for marketing purposes only)

**Received Date:** Oct. 27, 2017

**Test Date:** Dec. 13, 2017

**Issued Date:** Jan. 04, 2018

**Applicant:** MTRLC LLC

**Address:** PO Box 121147 Boston, MA 02112-1147, United States.

**Issued By:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch  
Hsin Chu Laboratory

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Taiwan R.O.C.

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### Release Control Record

Issue No.	Description	Date Issued
SA171027E03	Original release.	Jan. 04, 2018

## 1 Certificate of Conformity

**Product:** AC2600 WiFi Gigabit Router

**Brand:** Motorola

**Test Model:** MR2600

**Series Model:** MR2600XY (where X can be A, B, C, D or blank, and Y can be A, B, C, D, or blank, for identical hardware models for marketing purposes only)

**Sample Status:** ENGINEERING SAMPLE

**Applicant:** MTRLC LLC

**Test Date:** Dec. 13, 2017

**Standards:** FCC Part 2 (Section 2.1091)

KDB 447498 D01 General RF Exposure Guidance v06

IEEE C95.1-1992

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

**Prepared by :** Mary Ko , **Date:** Jan. 04, 2018  
Mary Ko / Specialist

**Approved by :** May Chen , **Date:** Jan. 04, 2018  
May Chen / Manager

## 2 RF Exposure

### 2.1 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)
Limits For General Population / Uncontrolled Exposure				
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1500	...	...	f/1500	30
1500-100,000	...	...	1.0	30

f = Frequency in MHz ; \*Plane-wave equivalent power density

### 2.2 MPE Calculation Formula

$$P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$$

where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

### 2.3 Classification

The antenna of this product, under normal use condition, is at least 42cm away from the body of the user.  
So, this device is classified as **Mobile Device**.

## 2.4 Antenna Gain

Antenna NO.	Ant. Gain (dBi)	Ant. Net Gain (dBi)	Frequency range (GHz to GHz)	Antenna Type	Connector Type	Cable Loss(dB)	Cable Length (mm)
1	5	4.42	2.4~2.4835GHz	Dipole	i-pex(MHF)	0.58	150
	5	4.04	5.15~5.85GHz	Dipole	i-pex(MHF)	0.96	150
2	5	4.27	2.4~2.4835GHz	Dipole	i-pex(MHF)	0.73	180
	5	3.7	5.15~5.85GHz	Dipole	i-pex(MHF)	1.3	180
3	5	4.27	2.4~2.4835GHz	Dipole	i-pex(MHF)	0.73	180
	5	3.7	5.15~5.85GHz	Dipole	i-pex(MHF)	1.3	180
4	5	4.42	2.4~2.4835GHz	Dipole	i-pex(MHF)	0.58	150
	5	4.04	5.15~5.85GHz	Dipole	i-pex(MHF)	0.96	150

## 2.5 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
2412-2462	906.761	10.37	42	0.44543	1
5180-5240	389.192	9.89	42	0.17118	1
5745-5825	994.756	9.89	42	0.43753	1

Note:

2.4GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 10.37\text{dBi}$

5GHz: Directional gain =  $10 \log[(10^{G0/20} + 10^{G1/20} + 10^{G2/20} + 10^{G3/20})^2 / 4] = 9.89\text{dBi}$

### Conclusion:

The formula of calculated the MPE is:

$CPD1 / LPD1 + CPD2 / LPD2 + \dots \text{etc.} < 1$

CPD = Calculation power density

LPD = Limit of power density

WLAN 2.4GHz + WLAN 5GHz =  $0.44543 / 1 + 0.43753 / 1 = 0.88296$

**Therefore the maximum calculations of above situations are less than the "1" limit.**

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