RF Exposure Report

Report No.:	SA170326E01
FCC ID:	C3K1802
Test Model:	1802
Received Date:	Mar. 26, 2017
Test Date:	May 25, 2017
Issued Date:	June 23, 2017
Applicant:	Microsoft Corporation
Address:	One Microsoft Way Redmond WA 98052
Issued By:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
Lab Address:	E-2, No.1, Li Hsin 1st Road, Hsinchu Science Park, Hsinchu City 300, Taiwan R.O.C.

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Release Control Record

Issue No.	Description	Date Issued
SA170326E01	Original release.	June 23, 2017

1 Certificate of Conformity

Product:	802.11a/b/g/n/ac 2T2R dual-band wireless LAN radio
Brand:	Microsoft
Test Model:	1802
Sample Status:	ENGINEERING SAMPLE
Applicant:	Microsoft Corporation
Test Date:	May 25, 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 : Wendy Wu , **Date:** June 23, 2017

Wendy Wu / Specialist

Approved by : , **Date:** June 23, 2017

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^2)	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	($180/f^2$)*	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

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

where

Pd = power density in mW/cm^2

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

2.3 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**.

2.4 Antenna Gain

Transmitter Circuit	Antenna Type	Connecter Type	Antenna Gain(dBi)	Frequency range (MHz to MHz)	Antenna Type
Chain (0)	Microsoft	NA	5.6	2400~2500	PCB
			6.8	5150~5850	
Chain (1)	Microsoft	NA	5.5	2400~2500	PCB
			6.3	5150~5850	
For 1TX configuration mode: max gain was selected as representative antenna.					

2.5 Calculation Result

1TX Mode

Frequency Band (MHz)	Max Power (mW)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	354.813	25.50	5.60	20	0.25629	1
5180-5240	316.228	25.00	6.80	20	0.30111	1
5260-5320	316.228	25.00	6.80	20	0.30111	1
5500-5720	316.228	25.00	6.80	20	0.30111	1
5745-5825	316.228	25.00	6.80	20	0.30111	1

2TX Mode

Frequency Band (MHz)	Max Power (mW)	Max Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm^2)	Limit (mW/cm^2)
2412-2462	355.656	25.51	5.60	20	0.25690	1
5180-5240	316.978	25.01	6.80	20	0.30183	1
5260-5320	316.978	25.01	6.80	20	0.30183	1
5500-5720	316.978	25.01	6.80	20	0.30183	1
5745-5825	632.456	28.01	6.80	20	0.60223	1

NOTE: 1. This power include tune-up tolerance range that specified in 1803 Tune Up power table.

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