Microsoft

RF Exposure Evaluation Report

For

MODEL NO. 1836
FCC ID: C3K1836

Test Report No. S-242-FCC-SAR-1
Issue Date: July 03, 2021

FCC CFR47 Part 2.1093

Prepared by
Microsoft EMC Laboratory
17760 NE 67th Ct,
Redmond WA, 98052, U.S.A.
425-421-9799

A2LA ACCREDITED
TESTING CERT #3472.01

1   Record of Revisions

Revision	Date	Section	Page(s)	Summary of Changes	Author/Revised By:
1.0	07/03/2021	All	All	Version 1.0	Wei Sun

Table of Contents

Test Report Attestation

Microsoft Corporation
Model: 1836
FCC ID: C3K1836

Applicable Standards

Specification	Test Result
FCC CFR47 Part 2.1093	Pass

Microsoft EMC Laboratory attests that the product model identified in this report has been tested to and meets the requirements identified in the above standards. The test results in this report solely pertains to the specific sample tested, under the conditions and operating modes as provided by the customer.

This report shall not be used to claim product certification, approval, or endorsement by A2LA or any agency of any Government.
Reproduction, duplication, or publication of extracts from this test report requires prior written approval of Microsoft EMC Laboratory.

Written By: Wei Sun
SAR/Radio Test Engineer

Reviewed/ Issued By: Zack Gray
SAR Test Lead

2 Product Description

Company Name:	Microsoft Corporation
Address:	One Microsoft Way
City, State, Zip:	Redmond, WA 98052-6399
Customer Contact:	Vishwas Varadanahalli Narayan
Functional Description of the EUT:	Wireless Input Accessory Device
Model:	1836
FCC ID:	C3K1836
Radio Description:	WLAN 2.4 GHz: 802.11g, 802.11n 20 MHz BW's WLAN 5 GHz: 802.11a, 802.11n 20MHz BW's Bluetooth™ (Basic and Enhanced Data Rates, LE) (This report only covers the addition of BTLE)
Frequency Range of Operation:	2.4- 2.4835 GHz
Max Antenna Gain:	4.7 dBi (2.4GHz)
EUT Classification:	DTS device
Equipment Design State:	Production
Equipment Condition:	Good
RF Exposure Conditions:	Extremity Exposure, Body Exposure

3 Deviations from Standards

None.

4 Facilities and Accreditations

4.1 Test Facility

All test facilities used to collect the test data are located at Microsoft EMC Laboratory, 17760 NE 67th Ct, Redmond WA, 98052, USA

4.2 Accreditations

The lab is established and follows procedures as outlined in IEC/ISO 17025 and A2LA accreditation requirements.
A2LA Accredited Testing Certificate Number: 3472.01

5   SAR Test Exclusion

5.1   SAR Test Exclusion Criteria

The minimum separation distance of 5mm is used for the evaluation.

5.2   FCC

According to FCC KDB 447498 D01 General RF Exposure Guidance v06 Section 4.3.1, the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm is defined as

$$\frac{(max.power\ of\ channel,\ including\ tune-up\ tolerance,\ mW)}{(min.test\ separation\ distance,\ mm)}\ X\ [\sqrt{f_{(GHz)}}] \leq 3.0$$

where

- $f_{(GHz)}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

5.2.1   FCC SAR Test Exclusion Evaluation

The EUT is excluded from routine SAR evaluation measurements since the SAR test exclusion criteria are met.

Frequency (GHz)	Output power including tune-up tolerance (dBm)	Output power including tune-up tolerance (mW)	Separation Distance (mm)	SAR Exclusion Calculation	SAR Exclusion Calculation Threshold	Result
2.48	5	3	5	0.9	<3.0	SAR Testing Excluded

Note: this report was prepared to address the addition of BTLE radio for this model. RF exposure evaluation for the radios of the original device certification can be found in the report issued by the Microsoft EMC lab #: S-TR136-FCCSAR-3.

End of Report