

RF Exposure Report

Report No.: SABEMT-WTW-P21090660

FCC ID: 2AYRA-08321

Test Model: MR2000

Variant Model: MR20MS, MR20EC, ME20WH

Received Date: Sep. 30, 2021

Test Date: Oct. 07 ~ Nov. 21, 2021

Issued Date: Jan. 18, 2022

Applicant: Linksys USA, Inc.

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Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
Lin Kou Laboratories

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**FCC Registration /
Designation Number:** 788550 / TW0003



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Table of Contents

Release Control Record	3
1 Certificate of Conformity	4
2 RF Exposure	5
2.1 Limits for Maximum Permissible Exposure (MPE).....	5
2.2 MPE Calculation Formula	5
2.3 Classification	5
3 Calculation Result of Maximum Conducted Power	6

Release Control Record

Issue No.	Description	Date Issued
SABEMT-WTW-P21090660	Original release	Jan. 18, 2022

1 Certificate of Conformity

Product: AX3000 DUAL-BAND WIFI 6 ROUTER

Brand: LINKSYS

Test Model: MR2000

Variant Model: MR20MS, MR20EC, ME20WH

Sample Status: Engineering sample

Applicant: Linksys USA, Inc.

Test Date: Oct. 07 ~ Nov. 21, 2021

Standards: FCC Part 2 (Section 2.1091)

References Test Guidance: KDB 447498 D01 General RF Exposure Guidance v06

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 RF characteristics under the conditions specified in this report.

Prepared by : Pettie Chen , **Date:** Jan. 18, 2022
Pettie Chen / Senior Specialist

Approved by : Jeremy Lin , **Date:** Jan. 18, 2022
Jeremy Lin / Project Engineer

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/cm²

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**.

3 Calculation Result of Maximum Conducted Power

Frequency Band (MHz)	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
CDD Mode					
2412-2462	23.36	4.09	20	0.111	1
5180-5240	27.24	3.65	20	0.244	1
5260-5320	23.72	3.57	20	0.107	1
5500-5720	23.67	3.81	20	0.111	1
5745-5825	28.17	3.81	20	0.314	1
Beamforming Mode					
2412-2462	22.64	6.91	20	0.179	1
5180-5240	27.00	6.57	20	0.453	1
5260-5320	23.19	6.57	20	0.188	1
5500-5720	23.14	6.79	20	0.196	1
5745-5825	28.17	6.79	20	0.623	1

Frequency Band (MHz)	EIRP (dBm)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
CDD Mode				
5845-5885	33.36	20	0.431	1
Beamforming Mode				
5845-5885	35.93	20	0.779	1

Frequency Band (MHz)	Max AV Power (dBm)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
BT LE 2402~2480	16.91	3.95	20	0.024	1
BT EDR 2402~2480	16.51	3.95	20	0.022	1

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
2. The above Antenna information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2412-2462MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.91\text{dBi}$.
 5180-5240MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.57\text{dBi}$.
 5260-5320MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.57\text{dBi}$.
 5500-5720MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.79\text{dBi}$.
 5745-5825MHz: Directional gain = $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2/2] = 6.79\text{dBi}$.

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

$$WLAN 2.4G + 5GHz + BT = 0.179 / 1 + 0.779 / 1 + 0.024 / 1 = 0.982$$

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

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