

RF Exposure Report (FCC)

Report No.: FCC_RF_SL21022601-HAR-284_R1 EXT ER 2B_MPE

FCC ID: 2AHPN-BE2858

Model: R1 EXT ER 2B MY22

Received Date: 3/15/2021

Test Date: 4/15/2021-7/21/2021

Issued Date: 8/11/2021

Applicant: HARMAN INTERNATIONAL

Address: 30001 Cabot Drive, Novi, MI 48377, USA

Manufacturer: HARMAN INTERNATIONAL

Address: 30001 Cabot Drive, Novi, MI 48377, USA

Issued By: Bureau Veritas Consumer Products Services, Inc.

Lab Address: 775 Montague Expressway, Milpitas, CA 95035

**FCC Registration /
Designation Number:** 540430



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Release Control Record

| Issue No. | Description | Date Issued |
|--|------------------|-------------|
| FCC_RF_SL21022601-HAR-284_R1 EXT ER 2B_MPE | Original Release | 8/11/2021 |

1 Certificate of Conformity

Product: Automotive Infotainment Unit

Brand: HARMAN

Model: R1 EXT ER 2B MY22


Sample Status: Final Product

Applicant: HARMAN INTERNATIONAL

Test Date: 4/15/2021-7/21/2021

Standard: 47 CFR FCC Part 2.1093

The above equipment has been tested by **Bureau Veritas Consumer Products Services, Inc., Milpitas 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 :  , **Date:** 8/11/2021
Jude Semana / Compliance Engineer


Approved by : _____ , **Date:** 8/11/2021
Gary Chou / Engineer Reviewer

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.

2.4 Calculation Result of Maximum Conducted Power

| Type | Frequency Band (MHz) | Max Power (dBm) | Max Power (mW) | Turn-Up Tolerance | Antenna Gain (dBi) | Distance (cm) | Power Density (mW/cm ²) | Limit (mW/cm ²) |
|-------------|----------------------|-----------------|----------------|-------------------|--------------------|---------------|-------------------------------------|-----------------------------|
| BT-BDR | 2402-2480 | 4.7 | 2.95 | ± 1dB | 1.43 | 20 | 0.001262 | 1 |
| 2.4GHz WLAN | 2412-2462 | 20.05 | 101.157 | ± 1dB | 1.43 | 20 | 0.031042 | 1 |
| 5GHz WLAN | 5180-5240 | 13.65 | 23.17 | ± 1dB | 2.60 | 20 | 0.008394 | 1 |
| 5GHz WLAN | 5745-5825 | 11.92 | 15.56 | ± 1dB | 1.49 | 20 | 0.003664 | 1 |

Note:

1. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

3 Conclusion

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

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