



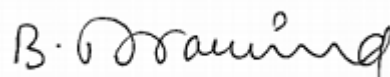
## Test Report

Prepared for Harman International Industries, Inc.

This report presents Maximum Permissible Exposure for

**R1 INT NA 3B HW4**

Prepared by



Aravind Buddana

Engineer II

Approved by



Jason Kanakry

General Manager

Issue date: 10/25/2024

Report No: J23133-R1 INT NA 3B HW4-FCC-RF-MPE v1

This test result relates only to the described test object.

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Customer must not use this test report as the product certification of each accreditation body or each national organization.

The test is traceable to national standard or related international standard

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## 1. Test Request Information

|                            |                                                                                                         |
|----------------------------|---------------------------------------------------------------------------------------------------------|
| Test Request #:            | 7700206789                                                                                              |
| Test Requested By:         | Pranav Patel<br>Harman International Industries, Inc.<br>30001 Cabot Drive, Novi, MI 48377              |
| Test item Description:     | R1 INT NA 3B HW4                                                                                        |
| Part Number:               | P68581660ZZ                                                                                             |
| DUT Sample Number:         | J23133#2 NA 3B                                                                                          |
| Hardware Version of DUT:   | N/A                                                                                                     |
| Software Version of DUT:   | N/A                                                                                                     |
| Component Category of DUT: | N/A                                                                                                     |
| FCC ID:                    | 2AHPN-BE2878                                                                                            |
| Type of Test:              | FCC/ISED Certification                                                                                  |
| Test Method:               | CFR Title 47 FCC Part 15.247, 1.1307, 1.1310, 2.1091<br>KDB 447498 D04 General RF Exposure Guidance v01 |
| Deviations from standard:  | None                                                                                                    |
| Approved Test Plan Number: | N/A                                                                                                     |
| Test Plan Revision:        | N/A                                                                                                     |
| Date test sample received: | 06-26-2024                                                                                              |
| Date test started:         | 07-24-2024                                                                                              |
| Date test finished:        | 10-16-2024                                                                                              |

## 2. Test Laboratory Information

|                                   |                                                                                                                                                                                                                                 |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Location of Test Lab:</b>      | The radiated and conducted emissions test sites are located at<br>Bureau Veritas<br>815 N. Opdyke Rd #100,<br>Auburn Hills, MI 48326,<br>Phone: +1-248-836-4700                                                                 |
| <b>Key Contact:</b>               | Jason Kanakry (General Manager)<br>Jason.Kanakry@BureauVeritas.com<br>Phone: +1-248-836-4747                                                                                                                                    |
| <b>Laboratory Accreditations:</b> | BUREAU VERITAS CONSUMER PRODUCTS SERVICES, INC is accredited in accordance<br>with the recognized International Standard ISO/IEC 17025:2017 General requirements<br>for the competence of testing and calibration laboratories. |
| <b>ISO/IEC 17025:2017:</b>        | 5678.01                                                                                                                                                                                                                         |
| <b>FCC Test Site Number:</b>      | US1278 (242530)                                                                                                                                                                                                                 |
| <b>IC Test Site Number:</b>       | US0229 (26240)                                                                                                                                                                                                                  |

### 3. RF Exposure

#### 3.1 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 a Mobile Device.

#### 3.2 Max Conducted Power and Antenna Information

| Band             | Antenna Type           | Max Conducted Power (dBm) | Max Conducted Power (mW) | EIRP (W)    | ERP(mW)     | Antenna Gain (dBi) |
|------------------|------------------------|---------------------------|--------------------------|-------------|-------------|--------------------|
| BT Classic       | Integrated PCB antenna | -2.334                    | 0.584251721              | 0.000439137 | 0.267670186 | -1.24              |
| WLAN 2.4G        | Integrated PCB antenna | 6.704                     | 4.681661397              | 0.004554073 | 2.775875604 | -0.12              |
| WLAN 5G (UNII-1) | Integrated PCB antenna | 3.301                     | 2.13845443               | 0.003954577 | 2.410460394 | 2.67               |
| WLAN 5G (UNII-3) | Integrated PCB antenna | 7.552                     | 5.691149576              | 0.008076069 | 4.922661804 | 1.52               |

#### 3.3 Calculation for MPE

##### Simultaneous Transmission Configuration-1

| Band             | Transmit Frequency (MHz) | $\lambda/2\pi$ (m) | Separation Distance (m) | Radio Power (dBm) | Radio Power (W) | Antenna Gain (dBi) | Antenna Gain (Lin eq.) | ERP (W)     | Threshold ERP (W) | Result ERP(W)/ERPth |
|------------------|--------------------------|--------------------|-------------------------|-------------------|-----------------|--------------------|------------------------|-------------|-------------------|---------------------|
| BT Classic       | 2402                     | 0.019864051        | 0.2                     | -2.334            | 0.000584252     | -1.24              | 0.7516229              | 0.00026767  | 0.768             | 0.000348529         |
| 2.4G WLAN        | 2437                     | 0.019578766        | 0.2                     | 6.704             | 0.004681661     | -0.12              | 0.9727472              | 0.002775876 | 0.768             | 0.003614421         |
| 5G WLAN (UNII-1) | 5180                     | 0.009211091        | 0.2                     | 3.301             | 0.002138454     | 2.67               | 1.8492686              | 0.00241046  | 0.768             | 0.00313862          |

ERP(W) of Simultaneous Transmission Configuration-1 of BT Classic + 2.4G WLAN + 5G WLAN (UNII-1) = **0.00710157** is less than equal to ERP Threshold.

##### Simultaneous Transmission Configuration-2

| Band             | Transmit Frequency (MHz) | $\lambda/2\pi$ (m) | Separation Distance (m) | Radio Power (dBm) | Radio Power (W) | Antenna Gain (dBi) | Antenna Gain (Lin eq.) | ERP (W)     | Threshold ERP (W) | Result ERP(W)/ERPth |
|------------------|--------------------------|--------------------|-------------------------|-------------------|-----------------|--------------------|------------------------|-------------|-------------------|---------------------|
| BT Classic       | 2402                     | 0.019864051        | 0.2                     | -2.334            | 0.000584252     | -1.24              | 0.7516229              | 0.00026767  | 0.768             | 0.000348529         |
| 2.4G WLAN        | 2437                     | 0.019578766        | 0.2                     | 6.704             | 0.004681661     | -0.12              | 0.9727472              | 0.002775876 | 0.768             | 0.003614421         |
| 5G WLAN (UNII-3) | 5825                     | 0.00819115         | 0.2                     | 7.552             | 0.00569115      | 1.52               | 1.4190575              | 0.004922662 | 0.768             | 0.006409716         |

ERP(W) of Simultaneous Transmission Configuration-2 of BT Classic + 2.4G WLAN + 5G WLAN (UNII-3) = **0.010372666** is less than equal to ERP Threshold.

Notes:-

- Minimum separation distance must be  $\geq \text{wavelength}/2\pi$  meters  
Where Wavelength =  $\text{Transmit Frequency} \times 10^6$
- Threshold ERP as per Transmit frequency

| RF Source frequency (MHz) | Threshold ERP (watts) |
|---------------------------|-----------------------|
| 0.3-1.34                  | $1,920 R^2$           |
| 1.34-30                   | $3,450 R^2 / f^2$     |
| 30-300                    | $3.83 R^2$            |
| 300-1,500                 | $0.0128 R^2 f$        |
| 1,500-100,000             | $19.2 R^2$            |

### 3.4 Conclusion

The maximum calculations of above situations, the ERP (W) is less than equal to ERP Threshold.

Document Revisions

| Version | Date       | Modifier        | Changes                                                         |
|---------|------------|-----------------|-----------------------------------------------------------------|
| 1.0     | 10/25/2024 | Aravind Buddana | <ul style="list-style-type: none"><li>Initial release</li></ul> |

End of Report