Test Report

Prepared for Harman International Industries, Inc.

This report presents Maximum Permissible Exposure for

R1 INT NA 3B HW4

Prepared by

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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

Contents

1. Test Request Information

Test Request #:	7700206789
Test Requested By:	Pranav Patel
	Harman International Industries, Inc.
	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
	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

Location of Test Lab:	The radiated and conducted emissions test sites are located at Bureau Veritas 815 N. Opdyke Rd #100, Auburn Hills, MI 48326, Phone: +1-248-836-4700
Key Contact:	Jason Kanakry (General Manager) Jason.Kanakry@BureauVeritas.com Phone: +1-248-836-4747
Laboratory Accreditations:	BUREAU VERITAS CONSUMER PRODUCTS SERVICES, INC is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.
ISO/IEC 17025:2017:	5678.01
FCC Test Site Number:	US1278 (242530)
IC Test Site Number:	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)	λ/2π (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)	λ/2π (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 >=wavelength/2PI meters

  Where Wavelength = Transmit Frequency*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	$19.2R^2$.

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	• Initial release

End of Report