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7/24/2024

1501 Page Mill Road
Palo Alto, CA, 943041126
USA

Dear Tony Griffiths,

Enclosed is the EMC test report for testing of the HP Inc., model PATX-STX-72R tested to the requirements of FCC Part 2.1091, RSS-102 Issue 6, and IEC62311 Issue 2

Thank you for using the services of Eurofins E&E North America. If you have any questions regarding these results or if MET can be of further service to you, please do feel free to contact me.

Sincerely,

Nancy LaBrecque
Documentation Department
Eurofins Electrical and Electronic Testing NA, Inc.

Reference: WIRA131254 - MPE

ACCREDITED
TESTING CERT #0591.06

Eurofins MET Laboratories Inc. (Eurofins E&E North America) is part of the Eurofins Electrical & Electronics (E&E) global compliance network.

RF Exposure Criteria
Test Report
Using Maximum Permissible Exposure (MPE) Calculations

for the

HP Inc.
Model: PATX-STX-72R

Tested under

FCC Part 2.1091, RSS-102 Issue 6, and IEC62311 Issue 2

Report: WIRA131254 - MPE

7/24/2024

Bryan Taylor, Wireless Team Lead
Electromagnetic Compatibility Lab

Nancy LaBrecque
Documentation Department

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules Part 15.247 under normal use and maintenance.

Matthew Hinojosa
EMC Manager, Austin Electromagnetic Compatibility Lab

Report Status Sheet

Revision	Report Date	Reason for Revision
0	7/24/2024	Initial Issue.

Table of Contents

List of Tables

List of Terms and Abbreviations

AC	**A**lternating **C**urrent
ACF	**A**ntenna **C**orrection **F**actor
Cal	**Cal**ibration
d	**M**easurement **D**istance
dB	**D**eci**b**els
dBµA	**D**eci**b**els above one **micro**amp
dBµV	**D**eci**b**els above one **micro**volt
dBµA/m	**D**eci**b**els above one **micro**amp **per m**eter
dBµV/m	**D**eci**b**els above one **micro**volt **per m**eter
DC	**D**irect **C**urrent
E	**E**lectric Field
DSL	**D**igital **S**ubscriber **L**ine
ESD	**E**lectro**s**tatic **D**ischarge
EUT	**E**quipment **U**nder **T**est
f	**F**requency
CISPR	**C**omite **I**nternational **S**pecial des **P**erturbations **R**adioelectriques (International Special Committee on Radio Interference)
GRP	**G**round **R**eference **P**lane
H	Magnetic Field
HCP	**H**orizontal **C**oupling **P**lane
Hz	**H**er**z**
IEC	**I**nternational **E**lectrotechnical **C**ommission
kHz	**k**ilo**H**er**z**
kPa	**k**ilo**Pa**scal
kV	**k**ilo**v**olt
LISN	**L**ine **I**mpedance **S**tabilization **N**etwork
MHz	**M**ega**H**ertz
µ**H**	**microH**enry
µ**F**	**microF**arad
µ**s**	**micros**econds
PRF	**P**ulse **R**epetition **F**requency
RF	**R**adio **F**requency
RMS	**R**oot-**M**ean-**S**quare
V/m	**V**olts **per m**eter
VCP	**V**ertical **C**oupling **P**lane

1.0 Requirements Summary

Page Number	Test Name	Result
14	IEC62311: 2019 MPE Limits (For General Public Exposure)	**Compliant**
15	RSS-102 Issue 6 MPE Limits (For General Public Exposure)	**Compliant**
15	FCC Part 2.1091 MPE Limits (For General Public Exposure)	**Compliant**

Table 1. Summary of Test Results

2.0 Equipment Configuration

2.1 Overview

Eurofins MET Labs was contracted by HP Inc. to perform testing on the model PATX-STX-72R, under HP Inc.'s purchase order number 3700139236.

This document describes the test setups, test methods, required test equipment, and the test limit criteria used to perform compliance testing of the HP Inc. model PATX-STX-72R.

The results obtained relate only to the item(s) tested.

Product Marketing Name Tested:	Poly Studio X72		
Product Marketing Name Included by Similarity:	Poly Studio V72 (Note: this is a software depopulated version of the Poly Studio X72)		
Model(s) Number:	PATX-STX-72R		
FCCID:	M72-STX72R		
ICID:	1849C-STX72R		
EUT Specifications:	Primary Power: 100 – 230VAC		
	Antenna Gain[1]:	Bluetooth: 3.1dBi 2.4GHz Band WiFi: 6.11dBi (MIMO Array Gain) 5GHz Band WiFi: 6.31dBi (MIMO Array Gain)	
	EUT Frequency Ranges:	Bluetooth / BLE: 2402 – 2480MHz	
		2.4GHz WiFi: 2412 – 2462MHz	
		U-NII-1: 5150 – 5250 MHz	
		U-NII-2A: 5250 – 5350 MHz	
		U-NII-2C: 5470 – 5725 MHz	
		U-NII-3: 5725 – 5895 MHz	
	Maximum Conducted Output Power:	Bluetooth / BLE: 6.74dBm	
		2.4GHz WiFi: 13.09dBm	
		U-NII-1: 12.87dBm	
		U-NII-2A: 13.10dBm	
		U-NII-2C: 14.27dBm	
		U-NII-3: 14.17dBm	
Analysis:	The results obtained relate only to the item(s) tested.		
Environmental Test Conditions:	Temperature: 15-35° C		
	Relative Humidity: 30-60%		
	Barometric Pressure: 860-1060 mbar		
Type of Filing:	Original		
Evaluated by:	Bryan Taylor		
Report Date(s):	4/16/2024 through 5/22/2024		

Table 2. EUT Summary Table

[1] The antenna gain information was provided by HP Inc. at the time of testing.

Description	Model Number	Part Number	Serial Number	Rev #
Poly Studio X72 (Conducted Radio System)	PATX-STX-72R	2215-88502-001	8G241085CDA0FZ	HWv3
Poly Studio X72 (Radiated Radio System)	PATX-STX-72R	2215-88502-001	8G24098E9084FZ	HWv3
Mass Power AC/DC PSU	S065 1A1205 00B3	N/A	N/A	N/A

Figure 1. EUT List

2.2 Test Site

All testing was performed at Eurofins MET Labs, Inc., 13501 McCallen Pass, Austin TX 78753. All equipment used in making physical determinations is accurate and bears recent traceability to the National Institute of Standards and Technology.

Radiated Emissions measurements were performed in a 10 meter semi-anechoic chamber (equivalent to an Open Area Test Site). In accordance with §2.948(a)(3), a complete site description is contained at Eurofins MET Labs.

ISED Lab Info:
CAB Identifier: US0004
Company Number: 2043D

FCC Lab Info:
Designation Number: US1127

2.3 References

IEC62311 Edition 2.0 (2019-04)	Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz to 300 GHz)
RSS-102: Issue 6	Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)
FCC Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices.

Table 3. References

2.4 Description of Test Sample

The HP Inc. model PATX-STX-72R (marketed as Poly Studio X72 or Poly Studio V72), is a video conferencing bar designed to act as a video endpoint over LAN networks. The device is powered by an external AC/DC power supply and the top-level version of the PATX-STX-72R contains 2.4GHz / 5GHz Wi-Fi (6) and Bluetooth radio interfaces.

2.5 Support Equipment

Support equipment necessary for the operation and testing of the EUT is included in the following list.

Name/Description	Manufacturer	Model Number	Customer Supplied Calibration Data
3mm Audio Headset and Mic	N/A	N/A	N/A
Poly External RJ11 Mic	Poly	2201-87610-001	N/A
HP USB Keyboard	HP	KU-0316	N/A
Dell Inspiron Laptop	Dell	P107F	N/A
Bluetooth remote Controller	Poly/Remotec	P010	N/A
Poly External IP Mic (RJ45)	Poly	P013	N/A
Delta Midspan POE Injector	Delta	ADH-45AR-F	N/A
HP 4K Monitor	HP	1B9T0AA	N/A
HP 4K Monitor	HP	1B9T0AA	N/A
CISCO AIR Wi-Fi Router	CISCO	AIR-LAP1142N-A-K9	N/A
CISCO WAN Wired Router	CISCO	RV042G	N/A
Poly Studio X30	Poly	P018	N/A
LG Monitor	LG	24UD58-B	N/A

Figure 2. Support Equipment

2.6 Ports and Cabling Information

Port Name on EUT	Cable Description or reason for no cable	Qty	Length as tested (m)	Max Length (m)	Shielded? (Y/N)	Termination Box ID & Port Name
Stereo Line IN	Wired 3mm		1m	1m	No	Headset
Stereo Line OUT	Wired 3mm		1m	1m	No	Mic
Mic Port	RJ11 Cable		5m	5m	Yes	Poly External Microphone
RJ45 Corporate	Cat 5e		4.5	4.5	Yes	Cloud/Router
RJ45 LLN	Cat 5e		4.5	4.5	Yes	IP Mic via POE Injector
HDMI Aux Out	HDMI		2m	2m	Yes	4K Monitor
HDMI Primary Out	HDMI		2m	2m	Yes	4K Monitor
HDMI Content Input	HDMI		2m	2m	Yes	Dell Laptop
USB 3.0	USB		2m	2m	Yes	USB Mouse
USB 3.0	USB		2m	2m	Yes	USB Keyboard
USB 3.1 Type C					No	Service port only

Figure 3. Ports and Cabling Information

2.7 Modifications

2.7.1 Modifications to EUT

No modifications were made to the EUT.

2.7.2 Modifications to Test Standard

No modifications were made to the test standard.

2.8 Disposition of EUT

The test sample including all support equipment submitted to the Electro-Magnetic Compatibility Lab for testing was returned to HP Inc. upon completion of testing.

3.0 Maximum Permissible Exposure Results

3.1 IEC62311 (ICNIRP) RF Exposure Limits

Table 7. Reference levels for general public exposure to time-varying electric and magnetic fields (unperturbed rms values).[a]

Frequency range	E-field strength ($V\ m^{-1}$)	H-field strength ($A\ m^{-1}$)	B-field (μT)	Equivalent plane wave power density S_{eq} ($W\ m^{-2}$)
up to 1 Hz	—	3.2×10^4	4×10^4	—
1–8 Hz	10,000	$3.2 \times 10^4/f^2$	$4 \times 10^4/f^2$	—
8–25 Hz	10,000	$4{,}000/f$	$5{,}000/f$	—
0.025–0.8 kHz	$250/f$	$4/f$	$5/f$	—
0.8–3 kHz	$250/f$	5	6.25	—
3–150 kHz	87	5	6.25	—
0.15–1 MHz	87	$0.73/f$	$0.92/f$	—
1–10 MHz	$87/f^{1/2}$	$0.73/f$	$0.92/f$	—
10–400 MHz	28	0.073	0.092	2
400–2,000 MHz	$1.375f^{1/2}$	$0.0037f^{1/2}$	$0.0046f^{1/2}$	$f/200$
2–300 GHz	61	0.16	0.20	10

[a] Note:
1. f as indicated in the frequency range column.
2. Provided that basic restrictions are met and adverse indirect effects can be excluded, field strength values can be exceeded.
3. For frequencies between 100 kHz and 10 GHz, S_{eq}, E^2, H^2, and B^2 are to averaged over any 6-min period.
4. For peak values at frequencies up to 100 kHz see Table 4, note 3.
5. For peak values at frequencies exceeding 100 kHz see Figs. 1 and 2. Between 100 kHz and 10 MHz, peak values for the field strengths are obtained by interpolation from the 1.5-fold peak at 100 kHz to the 32-fold peak at 10 MHz. For frequencies exceeding 10 MHz it is suggested that the peak equivalent plane wave power density, as averaged over the pulse width does not exceed 1,000 times the S_{eq} restrictions, or that the field strength does not exceed 32 times the field strength exposure levels given in the table.
6. For frequencies exceeding 10 GHz, S_{eq}, E^2, H^2, and B^2 are to be averaged over any $68/f^{1.05}$-min period (f in GHz).
7. No E-field value is provided for frequencies <1 Hz, which are effectively static electric fields. perception of surface electric charges will not occur at field strengths less than 25 kVm^{-1}. Spark discharges causing stress or annoyance should be avoided.

3.2 RSS-102 RF Exposure Limits

Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m^2)	Reference Period (minutes)
0.003-10[21]	83	90	-	Instantaneous*
0.1-10	-	0.73/ ƒ	-	6**
1.1-10	87/ $ƒ^{0.5}$	-	-	6**
10-20	27.46	0.0728	2	6
20-48	58.07/ $ƒ^{0.25}$	0.1540/ $ƒ^{0.25}$	8.944/ $ƒ^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 $ƒ^{0.3417}$	0.008335 $ƒ^{0.3417}$	0.02619 $ƒ^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ $ƒ^{1.2}$
150000-300000	0.158 $ƒ^{0.5}$	4.21 x 10^{-4} $ƒ^{0.5}$	6.67 x 10^{-5} ƒ	616000/$ƒ^{1.2}$

Note: ƒ is frequency in MHz.
* Based on nerve stimulation (NS).
** Based on specific absorption rate (SAR).

3.3 FCC Exposure Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f^2)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) 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
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

Test Procedure:

An MPE evaluation for was performed in order to show that the device was compliant with the general population exposure limits. The maximum power density was calculated for each transmitter band at a separation distance of 20cm using the maximum declared output power including tune up tolerance.

For each transmitter the maximum RF exposure at a 20 cm distance using the formula:

$$ConductedPower_{mW} = 10^{ConductedBwer(dBm)/10}$$

$$PowerDensity = \frac{ConductedPower_{mW} \times Ant.Gain}{4\pi \times (20_{cm})^2}$$

For transmitters that could operate simultaneously, the MPE to limit ratio for each was calculated and then summed. If the sum of the MPE to limit ratios was less than 1, that specific combination of transmitters was deemed to comply.

Test Results:

The model PATX-STX-72R was **compliant** with FCC Part 2.1091, RSS-102 Issue 6, and IEC62311 Issue 2. The calculated maximum power density at 20cm distance was equal to or less than the required limits for general population exposure for FCC Part 2.1091, RSS-102 Issue 6, and IEC62311 Issue 2. Additionally, the sum of the worst case for each MPE to Limit ratio is less than 1 indicating that all radios may transmit simultaneously.

Test Data:

Duty Cycle	100 (%)							
Separation Dist.	20 (cm)							
Operating Mode	Frequency (MHz)	Declared Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value (mW/cm^2)	MPE Limit (mW/cm^2)	Margin to Limit (mW/cm^2)	MPE / Limit Ratio (for Co-Location)
2.4GHz WiFi	2412	13.09	13.09	6.11	0.0165	1.0000	0.9835	0.0165
Bluetooth	2402	6.74	6.74	3.1	0.0019	1.0000	0.9981	0.0019
U-NII Band WiFi	5180	14.27	14.27	6.31	0.0227	1.0000	0.9773	0.0227
							Sum:	0.0412

FCC MPE Data

Duty Cycle	100 (%)							
Separation Dist.	20 (cm)							
Operating Mode	Frequency (MHz)	Declared Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value (W/m^2)	MPE Limit (W/m^2)	Margin to Limit (W/m^2)	MPE / Limit Ratio (for Co-Location)
2.4GHz WiFi	2412	13.09	13.09	6.11	0.1655	5.3660	5.2005	0.0308
Bluetooth	2402	6.74	6.74	3.1	0.0192	5.3508	5.3316	0.0036
U-NII Band WiFi	5180	14.27	14.27	6.31	0.2274	9.0471	8.8197	0.0251
							Sum:	0.0596

ISED MPE Data

Duty Cycle	100 (%)							
Separation Dist.	20 (cm)							
Operating Mode	Frequency (MHz)	Declared Max Cond. Power (Inc. Tolerance) (dBm)	Duty Cycle Adjusted Cond. Output Power (dBm)	Antenna Gain (dB)	MPE Value (W/m^2)	MPE Limit (W/m^2)	Margin to Limit (W/m^2)	MPE / Limit Ratio (for Co-Location)
2.4GHz WiFi	2412	13.09	13.09	6.11	0.1655	10.0000	9.8345	0.0165
Bluetooth	2402	6.74	6.74	3.1	0.0192	10.0000	9.9808	0.0019
U-NII Band WiFi	5180	14.27	14.27	6.31	0.2274	10.0000	9.7726	0.0227
							Sum:	0.0412

IEC62311 MPE Data

Test Engineer(s): Bryan Taylor

Test Date(s): 4/16/2024 - 5/22/2024