



# RF EXPOSURE REPORT

OF



The following samples were submitted and identified on behalf of the client as:

<b>Product Name</b>	Notebook PC
<b>Brand Name</b>	HP
<b>Model No.</b>	TPN-Q273
<b>Company Name</b>	HP Inc.
<b>Company Address</b>	1501 Page Mill Road, Palo Alto CA 94304 USA
<b>Standards</b>	Part 2.1093 KDB 680106 D01 RF Exposure Wireless Charging App v03r01
<b>FCC ID</b>	2APYS-HSNL01NFM
<b>Date of Receipt</b>	Dec. 08, 2021
<b>Date of Test(s)</b>	Dec. 11, 2021
<b>Date of Issue</b>	Dec. 24, 2021

In the configuration tested, the EUT complied with the standards specified above.

## Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS Taiwan Ltd. Central RF Lab or testing done by SGS Taiwan Ltd. Central RF Lab in connection with distribution or use of the product described in this report must be approved by SGS Taiwan Ltd. Central RF Lab in writing.

## Signed on behalf of SGS

Clerk / Ruby Ou	PM / Afu Chen	Approved By / John Yeh
Ruby Ou	afu Chen	John Yeh

Date: Dec. 24, 2021

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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## Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
EN/2021/B0016	Rev.00	Initial creation of document	Dec. 24, 2021	Ruby Ou	

Note:

- The mark " \* " is the revised version of the report due to comments submitted by the certification.

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## 1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

### 1.1 General Information

Product Name	Notebook PC
Brand Name	HP
Model No.	TPN-Q273
Integrated Module	Brand Name : hp Model Name : HSN-L01NFM
Modulation Type	ASK
Operating Frequency	13.56MHz
Number of Channel	1
Antenna Type	FPC

### 1.2 Test Facility

SGS Taiwan Ltd. Central RF Lab	
No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 33383, Taiwan	
FCC Designation Number	TW0028
Tel	+886-2-2299-3279
Fax	+886-2-2298-0488
Internet	<a href="http://www.tw.sgs.com/">http://www.tw.sgs.com/</a>

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## 2 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

### 2.1 Standard Applicable

According to KDB 680106 D01 RF Exposure Wireless Charging App v03r01.

RF exposure potential to users and bystanders is expected to vary according to factors inherent to the design of individual systems, which generally requires different evaluation considerations to show compliance.

When exposure concerns arise; for example, due to evolving products and operations, RF exposure evaluation may be requested under the provisions of Sections 1.1307 (c) and (d) to determine compliance. Because of significant variations in design and operating characteristics, the procedures required to evaluate RF exposure compliance for wireless power transfer are considered according to the exposure potentials of individual implementations

The RF exposure requirements must be determined in conjunction with the device operating characteristics, according to the mobile and portable exposure requirements in Sections 2.1091 and 2.1093 of the rules. SAR and MPE limits do not cover the frequency range for wireless power transfer applications which operate below 100 kHz and 300 kHz respectively; therefore, RF exposure compliance needs to be determined with respect to Sections 1.1307 (c) and (d) of the FCC rules.

### 2.2 Limits for Maximum Permissive Exposure (MPE)

Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m. A KDB inquiry is required to determine the applicable exposure limits below 100 kHz.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	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

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### 2.3 The Worst Charging Condition:

Ancillary Equipment	Charging Condition	Verdict
Load	Full Loading	PASS

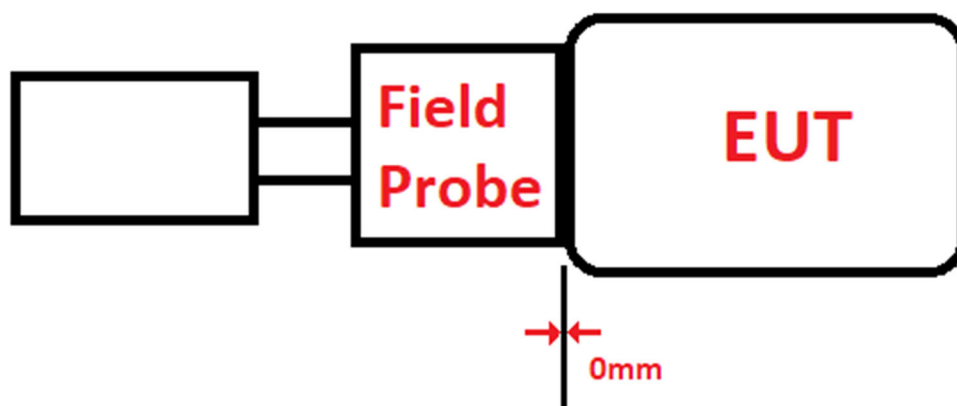
### 2.4 Measurement Procedure:

Per FCC guidance, the NFC WPT TX module will need to be tested with E and H filed strength measurements at a 0cm (zero) test distance on all sides for RF exposure compliance.

### 2.5 Measurement Equipment Used:

Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
Narda	EHP-200AC	3 kHz~30 MHz	180ZX00635	Feb.01,2021	Jan.31,2022
Narda	Software	EHP-200 TS 1.94 28/08/2020	N/A	Calibration not required	Calibration not required

### 2.6 Test Set-up:



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## 2.7 Maximum Permissible Exposure (MPE) Evaluation:

Antenna Manufacturer	Mode	Test position	Test distance(cm)	E-Field Strength (V/m)	E-Field Strength Limit (V/m)
Lbtcoil	Notebook	Bottom surface of keyboard	0	1.4228	60.77
		Top surface of keyboard	0	2.3209	60.77
		Front edge of keyboard	0	0.5103	60.77
		Right edge of keyboard	0	0.8947	60.77
	Tablet	Front Surface	0	1.1942	60.77
		Back surface	0	0.8247	60.77
		Top Edge	0	0.4354	60.77
		Bottom Edge	0	0.2114	60.77
		Left Edge	0	0.2113	60.77
		Right Edge	0	1.0995	60.77
Antenna Manufacturer	Mode	Test position	Test distance(cm)	H-Field Strength (A/m)	H-Field Strength Limit (A/m)
Lbtcoil	Notebook	Bottom surface of keyboard	0	0.0492	0.162
		Top surface of keyboard	0	0.1600	0.162
		Front edge of keyboard	0	0.0417	0.162
		Right edge of keyboard	0	0.1090	0.162
	Tablet	Front Surface	0	0.0340	0.162
		Back surface	0	0.1070	0.162
		Top Edge	0	0.1150	0.162
		Bottom Edge	0	0.0091	0.162
		Left Edge	0	0.0072	0.162
		Right Edge	0	0.0676	0.162

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