

RF EXPOSURE REPORT



FCC Applicant: Quanta Computer Inc.
No. 188, Wenhua 2nd Road, Guishan District, Taoyuan City
33377, Taiwan

FCC Manufacturer: Quanta Computer Inc.
No. 188, Wenhua 2nd Road, Guishan District, Taoyuan City
33377, Taiwan

Product Name: Flex Wireless Cradle

Brand Name: Clover

Model No.: K405

Model Difference: N/A

Report Number: TESA2206000146E5

FCC ID HFS-K405

Issue Date: Jul. 15, 2022

Date of Test: Jul. 05, 2022 ~ Jul. 08, 2022

Date of EUT Received: Jun. 02, 2022

Approved By

John Yeh

We hereby certify that:

The above equipment was verified by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1091.

The results of this report relate only to the sample identified in this report.

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
TESA2206000146E5	00	Original.	Jul. 15, 2022	Kimmy Chiou	

Note:

- The remark "*" indicates modification of the report upon requests from certification body.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	Flex Wireless Cradle
Brand Name:	Clover
Model No.:	K405
Model Difference:	N/A
Hardware Version:	N/A
Firmware Version:	N/A
EUT Series No.:	C045UT20760001
Power Supply:	12V from Switching Power Adapter

1.2 RF Specification

Technology:	Wireless Power Transfer
Operating Frequency	110 kHz ~ 205 kHz
FCC Transmit Power	< -5.03dBuV/m at 300m.
Number of Channels	1
Antenna Type	Coil

Note: Antenna information is provided by the applicant.

1.3 Test Facility

Laboratory	Test Site Address		FCC Designation number
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	<input type="checkbox"/>	No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan.	TW0027
	<input checked="" type="checkbox"/>	No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333	TW0028
	<input type="checkbox"/>	1F, No.8, Alley 15, Lane 120, Sec. 1, Nei Hu Road	TW0029

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2 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 Standard Applicable

According to KDB 680106 D01 RF Exposure Wireless Charging App v03

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 ²)	Averaging time (minutes)
(A) 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
(B) 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

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2.3 The Worst Charging Condition:

Ancillary Equipment	Charging Condition	Verdict
Load	Full Loading	PASS
Load	99% Loading	PASS
Load	50% Loading	PASS
Load	1% Loading	PASS
Note: For Wireless Power Consortium Qi specification, a lower operating frequency or high duty cycle result in the transfer of a higher amount of power and charging current.		

2.4 Measurement Procedure:

Per FCC guidance, the use condition for this device (wireless charger) is mobile. For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device. 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.

2.5 Measurement Equipment Used:

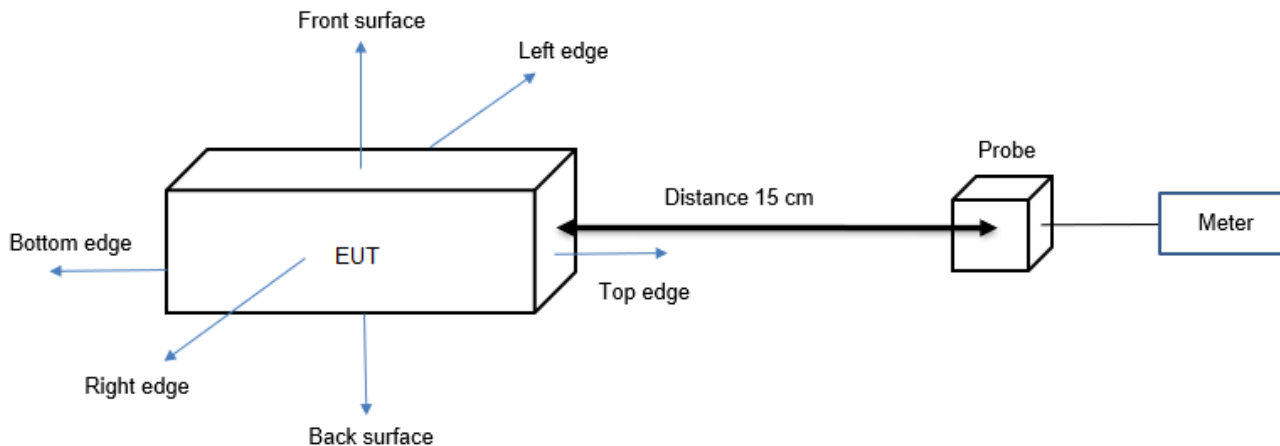
SAR Test Site:					
Manufacturer	Device	Type	Serial number	Date of last calibration	Date of next calibration
Narda	EHP-200AC	3 kHz~30 MHz	180ZX00635	Mar/10/2022	Mar/09/2023
Narda	Software	EHP-200 TS 1.94 28/08/2020	N/A	Calibration not required	Calibration not required

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2.6 Test Set-up:



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2.7 Maximum Permissible Exposure (MPE) Evaluation:

Maximum Permissible Exposure							
Test position	Test Distance	E-Field Strength (V/m)	E-Field Strength Limit (V/m)	Pass / Fail	H-Field Strength (A/m)	H-Field Strength Limit (A/m)	Pass / Fail
Front Surface	15cm	0.940	614	Pass	0.109	1.63	Pass
Top Edge	15cm	0.588	614	Pass	0.053	1.63	Pass
Bottom Edge	15cm	0.524	614	Pass	0.069	1.63	Pass
Right Edge	15cm	0.681	614	Pass	0.048	1.63	Pass
Left Edge	15cm	0.580	614	Pass	0.045	1.63	Pass

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