

RF EXPOSURE REPORT

OF

FCC Applicant: QUANTA COMPUTER INC
NO.188, WENHWA 2ND RD., GUISHAN DIST., TAOYUAN
CITY 33377, TAIWAN

Product Name: Intel Dual-Band Wireless-AC 7265

Brand Name: INTEL

Model No.: 7265NGW

Model Difference: N/A

Report Number: E2/2019/C0054

FCC ID: HFSGQE100

IC: 1787B-GQE100

FCC Rule Part Part 2.1091

IC Rule: RSS-102 issue 5 Mar. 19, 2015

Issue Date:

We hereby certify that:

The above equipment was verified by SGS Taiwan Ltd. The evaluation in this report is in compliance with the above rule(s).

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

Approved By: _____

Yeh John / Asst. Manager

John Teh



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Revision History

Report Number	Revision	Description	Issue Date	Remark
E2/2019/C0054	Rev.00	Original.	Apr. 01, 2020	Revised By: Stefanie Yu

Note:

1、Host Multiple Model numbers or Trademarks

The variant model numbers are assessed as identical in hardware and software to each other, hence all variants are fully covered by the test results in this test report without further verification test.

2、Disclaimer

Variant information among host model numbers is provided by the applicant, test results of this report are applicable to the sample EUT received.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

General Information of Host:

Product Name:	Meeting Computer System	
Brand Name:	N/A	
Model No. of Host:	GQE10A, GQE10C	
Model Difference:	For the marketing purpose	
Hardware Version:	N/A	
Software Version:	N/A	
Model No. of BT/WLAN Module:	7265NGW	
Class II & Class IV Permissive change:	Intel Dual-Band Wireless-AC 7265 installed in Meeting Computer System	
Power Supply:	19V from AC/DC Adapter	
	Adapter:	Model No.: PA-1900-92, Supplier: ASUS

1.2 Maximum Output power

The Max. output power value is derived from below test report under the original
FCC ID: PD97265NG, Grant date: 03-21-2014 and
ISED Certification number: 1000M-7265NG, Approval date: 03-24-2014.

Bluetooth	Report Number:	41273RRF.001
	Issue date:	2014-03-12
	Test Lab:	AT4 wireless, S.A.
BLE / WLAN 2.4GHz	Report Number:	41273RRF.002
	Issue date:	2014-03-12
	Test Lab:	AT4 wireless, S.A.
WLAN 5GHz	Report Number:	41273RRF.003
	Issue date:	2014-03-13
	Test Lab:	AT4 wireless, S.A.

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1.3 Antenna Information:

1.3.1 BT / WLAN 2.4GHz

Antenna Type	Supplier	Main / Aux	Antenna Part No.	Freq. (MHz)	Peak Antenna Gain (dBi)
Metal Type	WNC	Main	0WD	2.4GHz	-1.07
		Aux	0WD		-1.30

1.3.2 WLAN 5GHz

Antenna Type	Supplier	Antenna Part No.	Main / Aux	Note
Metal Type	WNC	0WD	Main	Ant 1
		0WD	Aux	Ant 2

Operating Frequency (MHz)			Ant 1 Peak Gain (dBi)	Ant 2 Peak Gain (dBi)
5150.0	~	5250.0	2.41	2.20
5250.0	~	5350.0	1.98	2.09
5470.0	~	5725.0	1.60	2.31
5725.0	~	5850.0	1.51	2.31

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1.4 Rated Power

1.4.1 Bluetooth / WLAN 2.4GHz

Mode	Freq. Range (MHz)	Channels	Modulation Technology	Max Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Worst Case
BR+EDR	2402-2480	79	GFSK + $\pi/4$ DQPSK + 8DPSK	5.37	-1.3	4.07	V
BLE	2402-2480	40	GFSK	3.51		2.21	
802.11b/g/n_HT20	2412-2462	11	DSSS & OFDM	20.18	-1.07	19.11	V
802.11 n_HT40				16.5		15.43	

1.4.2 WLAN 5GHz:

802.11	Freq. Range (MHz)	Modulation Technology	Module	Max. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Worst Case
a	5150~5250	OFDM	7265NGW	14.47	2.41	16.88	
	5250~5350			15.90	2.09	17.99	
	5470~5725			15.71	2.31	18.02	
	5725~5850			15.67	2.31	17.98	
n HT20 ac VHT20	5150~5250			14.54	2.41	16.95	
	5250~5350			16.70	2.09	18.79	
	5470~5725			17.66	2.31	19.97	
	5725~5850			16.56	2.31	18.87	
n HT40 ac VHT40	5150~5250			16.95	2.41	19.36	
	5250~5350			19.64	2.09	21.73	
	5470~5725			19.51	2.31	21.82	
	5725~5850			19.52	2.31	21.83	
ac VHT80	5150~5250			14.65	2.41	17.06	
	5250~5350			14.69	2.09	16.78	
	5470~5725			19.58	2.31	21.89	
	5725~5850			28.14	2.31	30.45	V

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2 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
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
300-1500	/	/	f/1500	30
1500-15000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equipment power density

Prediction of MPE limit at a given distance

$$S = PG / 4\pi R^2$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

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2.2 ISED Standard Applicable

This submittal(s) (test report) is intended to comply with RSS-102 issue 5 Radio frequency Radiation Exposure requirement.

This is a Mobile device, the MPE is required.

Limits for Maximum Permissible Exposure (MPE)

RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)				
Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field Strength (A/m rms)	Power Density (W/m ²)	Reference Period (minutes)
0.003-10	83	90	-	Instantaneous*
0.1-10	-	$0.73/f$	-	6**
1.1-10	$87/f^{0.5}$	-	-	6**
10-20	27.46	0.0728	2	6
20-48	$58.07/f^{0.25}$	$0.1540/f^{0.25}$	$8.944/f^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	$3.142 f^{0.3417}$	$0.008335 f^{0.3417}$	$0.02619 f^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	$616000/f^{1.2}$
150000-300000	$0.158 f^{0.5}$	$4.21 \times 10^{-4} f^{0.5}$	$6.67 \times 10^{-5} f$	$616000/f^{1.2}$

F = frequency in MHz

* = Based on nerve stimulation (NS).

** = Based on specific absorption rate (SAR)

Maximum Permissible Exposure (MPE) Evaluation

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

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2.3 Power Density Calculation (Worst Case)

FCC Standalone MPE

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. output Power (dBm)	Antenna Gain (dBi)	Max. output Power EIRP (mW)	Power Density (PD) (mW/cm ²)	Limit (mW/cm ²)	Pass / Fail	Power Density / Limit	Collocated MPE
BT	2437.00	20	5.37	-1.30	2.55	0.001	1.000	Pass	0.001	V
WLAN 5G	5775.00	20	28.14	2.31	1109.17	0.221	1.000	Pass	0.221	V

ISED Standalone MPE

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. output Power (dBm)	Antenna Gain (dBi)	Output Power EIRP (mW)	Power Density (PD) (W/m ²)	Limit (W/m ²)	Pass / Fail	Power Density / Limit	Collocated MPE
BT	2402.00	20	5.37	-1.30	2.55	0.005	5.351	Pass	0.001	V
WLAN 5G	5775.00	20	28.14	2.31	1109.17	2.208	9.745	Pass	0.227	V

2.4 Collocated Power Density Calculation

FCC Collocated MPE

Max BT PD / Limit	Max WLAN PD / Limit	Σ (Power Density / Limit) of BT+ WLAN
0.001	0.221	0.222

ISED Collocated MPE

Max BT PD / Limit	Max WLAN PD / Limit	Σ (Power Density / Limit) of BT+ WLAN
0.001	0.227	0.228

Note:

1. Σ (E- Field Strength / Limit): This is a summation of [(E- Field Strength for each transmitter/antenna included in the simultaneous transmission) / (corresponding MPE limit)].
2. Considering the collocated transmitters, the aggregated (E- Field Strength /limit) is smaller than 1, and MPE of collocated transmitters is compliant

~ End of Report ~

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