KDB 680106 D01 V03
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 1, Subpart I, Section 1.1307
47 C.F.R. Part 2, Subpart J, Section 2.1093

MPE Test REPORT

For

All in One PC

Model: TPC-T011-34

Trade Name: HP

Issued to

INVENTEC CORPORATION
66 Hou-Kang st., Shih-Lin District, Taipei, Taiwan, R.O.C.

Issued by

Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
http://www.ccsrf.com
Issued Date: April 27, 2018

Testing Laboratory
1309

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	2018/04/27	Initial Issue	ALL	Jerry Chuang
01	2018/05/23	1. Revise KDB 680106 version to v03. 2. Revise test setup diagram and add remark to describe charge mode in section 3. 3. Add cable information in section 6.	P.1, P.4-P.7, P.10	Allison Chen

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1. EUT Specification

Equipment under Test: All in One PC

Trade Name: HP

Model Number: TPC-T011-34

Operating Frequency: 110kHz~ 145kHz

Date of Test: April 26, 2018

Applicable Standards
KDB 680106 D01 V03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 1, Subpart I, Section 1.1307 47 C.F.R. Part 2, Subpart J, Section 2.1093
Test Result
Pass

The test results in this report apply only to the tested sample of the stated device/equipment. Other similar device/equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.

Approved by: ***Tested by:***

Scott Hsu
Section Manager
Compliance Certification Services Inc.

Jerry Chuang
SAR Engineer
Compliance Certification Services Inc.

2. Test limit

FCC Rules and Regulations Part 1 Section 1.1310 and KDB 680106 D01 v03

§1.1310 : The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 – Limits for Maximum Permissible Exposure (MPE)
Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time (Minutes)
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/500	30
1500-100,000			1.0	30

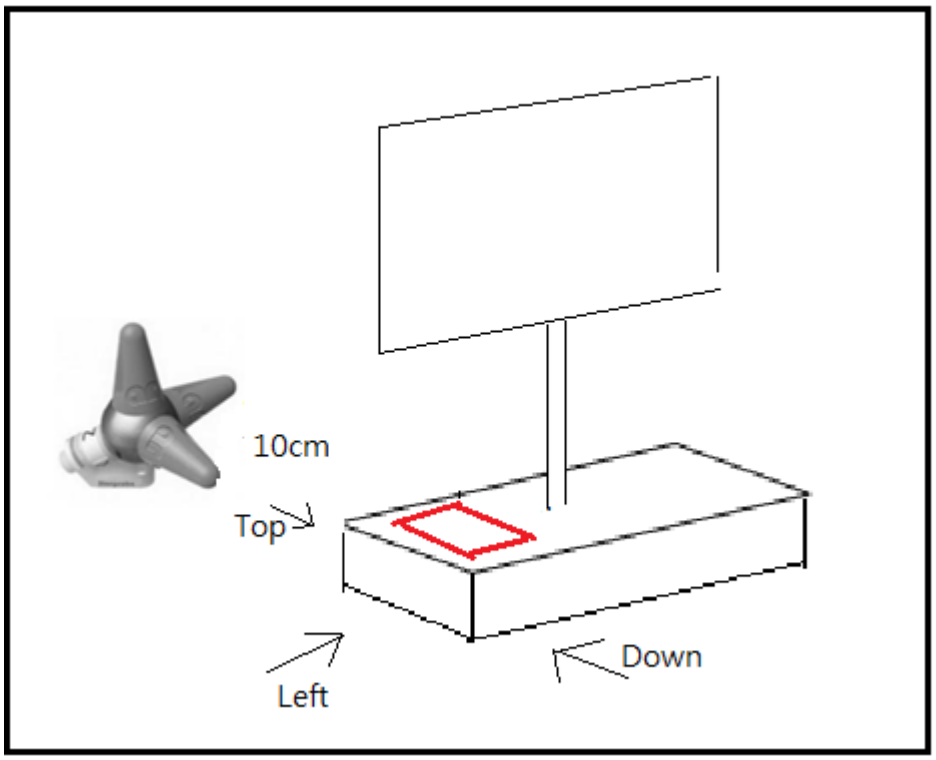
f = frequency in MHz

* = Plane-wave equivalent power density

Note to Table 1 : General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

3. Test Method

Test setup

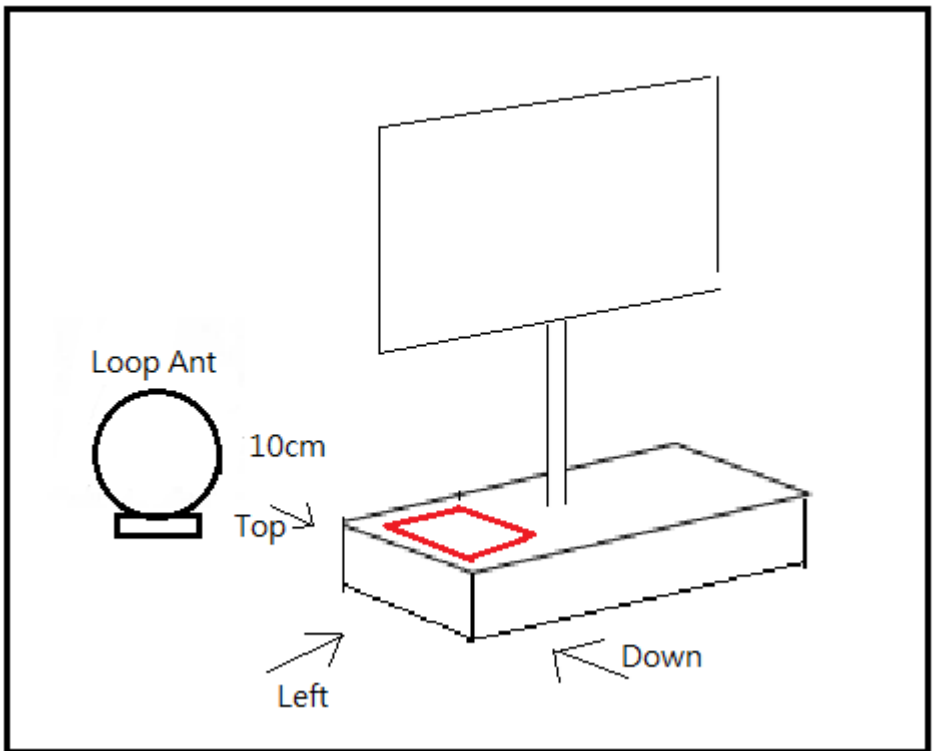


a) The measurement probe was placed at test distance as 10cm which is between the edge of the charger and the probe.

b) The highest emission level was recorded and compared with the limit as soon as measurement of each point (Top, Left and Down) was completed.

Remark: 1. The accessories battery is less than 50% performance in charge mode.

H-Field



a) The measurement probe was placed at test distance as 10cm which is between the edge of the charger and the probe.
b) The highest emission level was recorded and compared with the limit as soon as measurement of each point (Top, Left and Down) was completed.

Remark: 1. The accessories battery is less than 50% performance in charge mode.

4. Test Results

E-Field Strength

Test Distance (cm)	Test Position	Test result (V/m)	FCC Limit (V/m)	% of Limit
10 cm	Top	0.31	614	0.05 %
	Left	0.08	614	0.01 %
	Down	0.33	614	0.05 %

H-Field Strength

Test Distance (cm)	Test Position	Test result (A/m)	FCC Limit (A/m)	% of Limit
10 cm	Top	0.0073	1.63	0.44 %
	Left	0.0028	1.63	0.17 %
	Down	0.0078	1.63	0.47 %

5. Simultaneous Transmission Analysis

Both of the Wi-Fi, Bluetooth and Wireless Charger can transmit simultaneously, the formula of calculated the MPE is:

[Σ of MPE ratios] ≤ 1.0.

The Wi-Fi and Bluetooth values are taken from FCC ID: PD97265NG.

Max. Tune up power:

Bluetooth : 8.00 dBm (6.310 mW)
2.4GHz Band : 17.50 dBm (56.234 mW)
5GHz Band : 16.00 dBm (39.811 mW)

Antenna Gain:

BT: Antenna Gain : 2.76 dBi (Numeric gain: 1.89) Worst
2.4GHz: Antenna Gain : 2.76 dBi (Numeric gain: 1.89) Worst
5GHz: Antenna Gain : 2.85 dBi (Numeric gain: 1.93) Worst

2.4GHz:
Directional gain = 2.76 dBi +10log (2) = 5.77 dBi (Numeric gain: 3.78)
5GHz:
Directional gain = 2.85 dBi +10log (2) = 5.86 dBi (Numeric gain: 3.86)

Maximum Permissible Exposure

	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
Bluetooth	6.310	1.89	20	0.0024	1
2.4GHz Band	56.234	3.78		0.0423	
5GHz Band	39.811	3.86		0.0306	

5.1. Simultaneous Transmission Analysis Result

Wi-Fi + Bluetooth + Wireless Charger

Therefore the worst case situation is 0.0423 / 1 + 0.0024 / 1 + 0.0078 / 1.63 = 0.0495, which is less than “1”.

6. Equipment List

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due Date
Laser Powered Field Probe	AR	FL7006	0433723	2018/08/31
Loop Antenna	COM-POWER	AL-130	121051	2019/03/20
Spectrum Analyzer	Agilent	E4446A	US42510268	2019/02/05
Cable	HUBER SUHNER	SUCOFLEX 104PEA	20995	2018/07/30

Note: The calibration period equipment is 1 year.