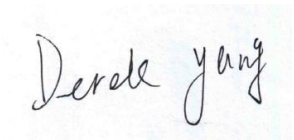
RF Exposure Evaluation Report

Application No.:	ZR/2019/30015
Applicant:	Qbic Technology Co., Ltd
Address of Applicant:	26F.-12, No.99, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 22175, Taiwan (R.O.C.)
Manufacturer:	Qbic Technology Co., Ltd
Address of Manufacturer:	26F.-12, No.99, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 22175, Taiwan (R.O.C.)
Factory:	TPV Electronics(Fujian) Co., Ltd
Address of Factory:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China
EUT Description:	Panel PC
Model No.:	TD-1050 PRO
Trade Mark:	Qbic
FCC ID:	2AF82-TD1050HPRO
Standards:	47 CFR Part 2 47 CFR Part 15 subpart C
Date of Receipt:	2019/3/14
Date of Test:	2019/3/14 to 2019/5/9
Date of Issue:	2019/5/9
Test Result:	**PASS***

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

Authorized Signature:



Derek Yang
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1 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00		2019/5/9		Original

Authorized for issue by:				
		Mike Hu **Mike Hu /Project Engineer**		2019/5/9
		David Chen **David Chen /Reviewer**		2019/5/9

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2 General Information

2.1 Client Information

Applicant:	Qbic Technology Co., Ltd
Address of Applicant:	26F.-12, No.99, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 22175, Taiwan (R.O.C.)
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Address of Manufacturer:	26F.-12, No.99, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 22175, Taiwan (R.O.C.)
Factory:	TPV Electronics(Fujian) Co., Ltd
Address of Factory:	Rongqiao Economic and Technological Development Zone, Fuqing City, Fujian Province, P.R.China

2.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
Post code:	518057
Telephone:	+86 (0) 755 2601 2053
Fax:	+86 (0) 755 2671 0594
E-mail:	ee.shenzhen@sgs.com

2.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

2.4 General Description of EUT

EUT Description::	Panel PC
Model No.:	TD-1050 PRO
Trade Mark:	Qbic
Hardware Version:	V0.010
Software Version:	715GA445-M0A-000-006K
Antenna Gain:	1.1dBi;

3 RF Exposure Evaluation

3.1 RF Exposure Compliance Requirement

3.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	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/f2)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz
*=Plane-wave equivalent power density
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula
Friis transmission formula: Pd = (Pout*G)/(4* Pi * R 2)
Where
Pd = power density in mW/cm2
Pout = output power to antenna in mW
G = gain of antenna in linear scale
Pi = 3.1416
R = distance between observation point and center of the radiator in cm
Pd id the limit of MPE, 1 mW/cm2 . If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

3.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually.

3.1.3 EUT RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0 / 2.0 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	Max Conducted Average Output Power (dBm)	Output Power to Antenna (dBm)	EIRP(ERP) Limit (dBm)	Output Power to Antenna (mw)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)	Gain according to EIRP (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
Bluetooth	2402	1.10	9.06	10.16	20.97	8.0538	0.0021	1.0000	11.91	27.95	11.91	Pass
2.4G WiFi	2412	1.10	16.35	17.45	20.97	43.1519	0.0111	1.0000	4.62	20.66	4.62	Pass

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