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RF Exposure Evaluation Report

Product : ePaper
Trade mark : Qbic

Model/Type reference : EP-0700, EP-07XXXXXXX (where

X = 0-9, a-z, A-Z, "-", or blank for

marketing purpose)

Serial Number : N/A

 Report Number
 : EED32P80649803

 FCC ID
 : 2AF82-EP0700

 Date of Issue
 : May 30, 2023

Test Standards : 47 CFR Part 1.1307

47 CFR Part 1.1310 47 CFR Part 2.1091 47 CFR Part 2.1093

447498 D04 Interim General RF

Exposure Guidance v01

Test result : PASS

Prepared for:

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Prepared by:

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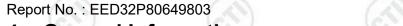


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4 General Information

4.1 Client Information

Applicant:	Qbic Technology Co., Ltd.				
Address of Applicant:	26 F12, No. 99, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221416, Taiwan, China				
Manufacturer:	Qbic Technology Co., Ltd.				
Address of Manufacturer:	26 F12, No. 99, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221416, Taiwan, China				
Factory 1:	Jiangxi Xingtai Technology Inc.				
Address of Factory 1:	Jizhou District industrial park, Ji'an, Jiangxi, China				
Factory 2:	Qbic Technology Co., Ltd.				
Address of Factory 2:	26 F10, No. 99, Sec. 1, Xintai 5th Rd., Xizhi Dist., New Taipei City 221416, Taiwan, China				
Factory 3:	Lih Rong Electronic Enterprise Co., Ltd.				
Address of Factory 3:	No. 486, Sec. 1, Wanshou Rd., Guishan Dist., Taoyuan City 333026, Taiwan, China				
Factory 4:	Lih Rong Electronic Enterprise Co., Ltd				
Address of Factory 4:	No. 1, Gaoxia Rd., Zhongli Dist., Taoyuan City 320030, Taiwan, China				

4.2 General Description of EUT

Product Name:	ePaper
Model No.(EUT):	EP-0700, EP-07XXXXXXX (where X = 0-9, a-z, A-Z, "-", or blank for marketing purpose)
Test Model No.:	EP-0700
Trade Mark:	Qbic

4.3 Product Specification subjective to this standard

For BLE		
Frequency Range:	2402MHz~2480MHz	_0
Modulation Type:	GFSK	
Test Power Grade:	Default	
Test Software of EUT:	Direct Test Mode	
Antenna Type:	FPC Antenna	
Antenna Gain:	1.3dBi	
Power Supply:	DC 3V	
Max Conducted Peak	-0.1dBm	
Output Power:	The Max Conducted Peak Output Power data refer to the report EED3	32P80649801
For NFC		
Operation Frequency:	13.56MHz	(~1)
Modulation Type:	ASK	









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Antenna Type:	PCB antenna
maximum Field Strength	52.97 dBµV/m
(E) @3m	The maximum Field Strength data refer to the report EED32P80649802

A.A		
Sample Received Date:	May 06, 2023	
Sample tested Date:	May 06, 2023 to May 15, 2023	

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified. Model No.: EP-0700, EP-07XXXXXXXX (where X = 0-9, a-z, A-Z, "-", or blank for marketing purpose)
Only the model EP-0700 was tested. They have same electrical, PCB and layout, only the model names are different for marketing requirements.







4.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

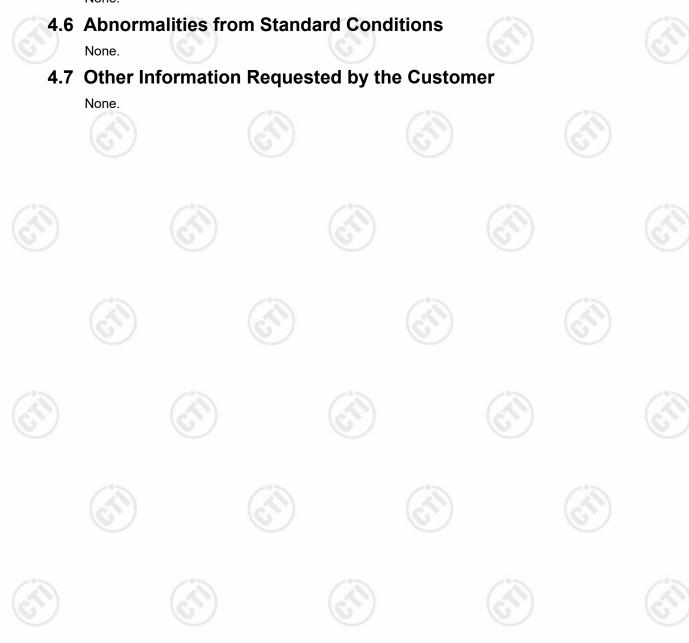
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted. FCC Designation No.: CN1164

4.5 Deviation from Standards

None.





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5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Limits

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by Formula

$$P_{\text{th}} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \le 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \le 40 \text{ cm} \end{cases}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,\text{cm}}\sqrt{f}}\right)$$

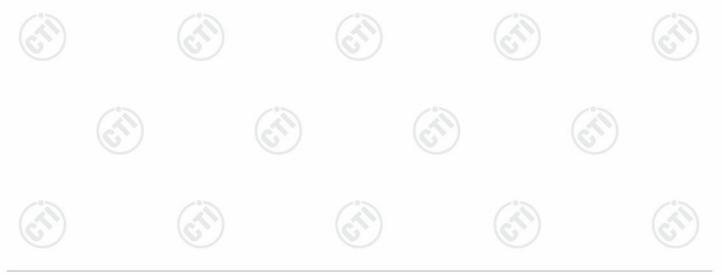
and f is in GHz, d is the separation distance (cm), and ERP20cm is per Formula (B.1).

$$P_{\text{th}} (\text{mW}) = ERP_{20 \text{ cm}} (\text{mW}) = \begin{cases} 2040f & 0.3 \text{ GHz} \le f < 1.5 \text{ GHz} \\ \\ 3060 & 1.5 \text{ GHz} \le f \le 6 \text{ GHz} \end{cases}$$
(B. 1)

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

5.1.2 Test Procedure

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





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5.1.3 EUT RF Exposure Evaluation

For Stand alone:

For BLE

Frequency	Max.	Antenna	EIRP	ERP	ERP	Limit	Result
(MHz)	Conducted	Gain (dBi)	(dBm)	(dBm)	(mW)	(mW)	
	Output						
/°>	power			-05		100	
(~1)	(dBm)			(24)			
2480	-0.1	1.3	1.2	-0.95	0.804	3060	PASS

Note:

- ① EIRP=conducted power + antenna gain;
- ② ERP=EIRP-2.15
- ③ Only the worst case data was recorded in the report.

For NFC:

	ı				
Frequency	maximum	EIRP	EIRP	Limit	Result
(MHz)	Field	(dBm)	(mW)	(mW)	
	Strength		(0,)		(0,
	(E) @3m				
	(dBµV/m)				
13.56	52.97	-42.33	0.0000585	100	PASS

The maximum Field Strength of the transmitter was 52.97 dBµV/m at 3m which equals 0.0000585mW which is well below the exemption limit of 1mW.

Note:

① EIRP (dBm) = E(dB μ V/m) -95.3

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

End of Report **

