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Report No.: 2502TWN801-U8
Report Version: 1.0
Issue Date: 2025-05-07

Maximum Permissible Exposure

FCC ID: 2AF82-HC1570M
APPLICANT: Qbic Technology Co., Ltd.
Application Type: Certification
Product: Smart touch panel tablet
Model No.: Luminen 10 Pro
Brand Name: Qbic
FCC Rule Part(s): Part 2.1093 (Portable)
Received Date: February 4, 2025

Reviewed By

:

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Approved By

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Testing Laboratory
3261

The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report. Test results reported herein relate only to the item(s) tested.

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Revision History

Report No.	Version	Description	Issue Date	Note
2502TWN801-U8	1.0	Original Report	2025-05-07	

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	Smart touch panel tablet
Model No.	Luminen 10 Pro
Brand Name	Qbic
Supports Radios Spec.	WLAN: 2.4G: 802.11b/g/n-20/ax-20/ax-40; 5G: 802.11a/n-20/ac-20/ax-20/n-40/ac-40/ax-40/ac-80/ax-80, Band 1~4 WPAN: Bluetooth Dual Mode: V5.4 NFC 13.56MHz
Frequency Range	<u>2.4GHz:</u> For 802.11b/g/n-HT20/ax-HE20: 2412 ~ 2462 MHz For 802.11n-HT40/ax-HE40: 2422 ~ 2452 MHz <u>5GHz:</u> For 802.11a/n-HT20/ac-VHT20/ax-HE20: 5180~5240MHz, 5260~5320MHz, 5500~5720MHz, 5745~5825MHz For 802.11n-HT40/ac-VHT40/ax-HE40: 5190~5230MHz, 5270~5310MHz, 5510~5710MHz, 5755~5795MHz For 802.11ac-VHT80/ax-HE80: 5210MHz, 5290MHz, 5530MHz, 5610 MHz, 5690MHz, 5775MHz
Accessory	
Adapter	Brand Name: HOIOTO Model: ADS-25D-12 12018E Input: AC 100-240V~ 50-60Hz 0.7A Output: DC 12.0V 1.5A 18.0W DC Cable Out Non-Shielding, 1.7m

1.2. Antenna Description

Antenna Type	Frequency Band (MHz)	Tx Paths	Number of spatial streams	Max Antenna Gain (dBi)	Directional Gain (dBi)	CDD Directional Gain (dBi)	
						For Power	For PSD
BT/BLE Antenna							
PCB	2402 ~ 2480	1	--	1.75	--	1.75	--
Wi-Fi Antenna							
Chip	2412 ~ 2462	2	1	3.00	6.01	3.00	6.01
	5150 ~ 5250	2	1	3.30	6.31	3.30	6.31
	5250 ~ 5350	2	1	3.30	6.31	3.30	6.31
	5470 ~ 5725	2	1	3.30	6.31	3.30	6.31
	5725 ~ 5850	2	1	3.30	6.31	3.30	6.31
Remark:							
1. The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated. If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows. • For power spectral density (PSD) measurements on all devices, Array Gain = $10 \log (N_{ANT}/ N_{SS})$ dB; • For power measurements on IEEE 802.11 devices, Array Gain = 0 dB for $N_{ANT} \leq 2$;							
2. All messages of antenna were declared by manufacturer.							

2. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1. FCC Limits

According to FCC 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)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
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
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
0.3-1.4	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
1500-100,000	--	--	1.0	30

Note : (1) f= Frequency in MHz , (2) * = Plane-wave equivalent power density

Calculation Formula:

$$Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$$

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

Under normal use condition, is at least 20cm away from the body of the user .

So, this device is classified as **Mobile Device**.

2.2. Test Result

Band (MHz)	Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
BT	2402 ~ 2480	4.81	3.03	1.75	20	0.0009	1
BLE	2402 ~ 2480	5.10	3.24	1.75	20	0.0010	1
Wi-Fi 2.4G	2412 ~ 2462	17.05	50.70	3.00	20	0.0201	1
Wi-Fi 5G	5180 ~ 5825	17.15	51.88	3.30	20	0.0221	1

Conclusion :

$$\text{CPD1/LPD1} + \text{CPD2/LPD2} + \dots + \text{CPDN/LPDN} \leq 1$$

CPD : Calculation Power Density

LPD : Limit of Power Density

Mode	Power Density	Limit	Conclusion	Result (≤ 1)
BT	0.0009	1	0.0441	Pass
BLE 5.0	0.0010	1		
Wi-Fi 2.4G	0.0201	1		
Wi-Fi 5G	0.0221	1		

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