RF EXPOSURE
Test Report

Report No.:	MTi240624026-05E3
Date of issue:	2024-09-19
Applicant:	Shenzhen QM PanelLan Technology Co.,Ltd.
Product:	PanelLan SC07
Model(s):	ZX4D30CE08S
FCC ID:	2BCBK-ZX4D30CE08S

Shenzhen Microtest Co., Ltd.

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Test Result Certification	
Applicant:	Shenzhen QM PanelLan Technology Co.,Ltd.
Address:	Room 805, Block A, Building 6, Shenzhen International Innovation Valley, Xili Community, Nanshan District, Shenzhen
Manufacturer:	Shenzhen QM PanelLan Technology Co.,Ltd.
Address:	Room 805, Block A, Building 6, Shenzhen International Innovation Valley, Xili Community, Nanshan District, Shenzhen
Product description	
Product name:	PanelLan SC07
Trademark:	PanelLan
Model name:	ZX4D30CE08S
Series Model:	N/A
Standards:	N/A
Test procedure:	KDB 447498 D01 v06
Date of Test	
Date of test:	2024-07-03 to 2024-07-26
Test result:	Pass

Test Engineer	:	Yanice Xie
		(Yanice.Xie)
Reviewed By	:	David. Lee
		(David Lee)
Approved By	:	Leon chen
		(Leon Chen)

RF EXPOSURE EVALUATION

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)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
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
300-1,500			f/300	6
1,500-100,000			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	$*180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

MPE Calculation Method

Friis transmission formula: $Pd= (Pout*G)\ (4*pi*R^2)$

Where

Pd= Power density in mW/cm^2

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1415926

R= distance between observation point and center of the radiator in cm(20cm)

Pd the limit of MPE, $1mW/cm^2$. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

Measurement Result

BLE:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm2

Antenna Type: PCB Antenna

Antenna gain: -0.47 dBi

R=20cm

mW=10^(dBm/10)

Antenna gain Numeric=10^(dBi/10)= 10^(-0.47/10)=0.90

2.4G WiFi:

Operation Frequency: 802.11b/g/n20: 20 MHz

Power density limited: 1mW/ cm2

Antenna Type: PCB Antenna

Antenna gain: -0.47 dBi

R=20cm

mW=10^(dBm/10)

Antenna gain Numeric=10^(dBi/10)= 10^(-0.47/10)=0.90

BLE:

Channel Freq. (MHz)	modulation	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Max tune-up power (mW)	Antenna Gain (dBi)	Antenna Gain Numeric	Evaluation result (mW/cm^2)	Power density Limits (mW/cm^2)
2402	GFSK-2M	5.60	5±1	6	3.981	-0.47	0.90	0.0007	1
2440		5.22	5±1	6	3.981	-0.47	0.90	0.0007	1
2480		3.93	4±1	5	3.162	-0.47	0.90	0.0006	1

2.4G WIFI:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power	Max		Antenna		Evaluation result at 20cm	Power density Limits
		(dBm)	(dBm)	tune-up power		Gain		Power density(mW/cm2)	(mW/cm2)
				(dBm)	(mW)	(dBi)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
2412	802.11b	16.98	17±1	18	63.096	-0.47	0.90	0.01126	1
2437		16.75	17±1	18	63.096	-0.47	0.90	0.01126	1
2462		16.58	17±1	18	63.096	-0.47	0.90	0.01126	1
2412	802.11g	17.44	17±1	18	63.096	-0.47	0.90	0.01126	1
2437		17.06	17±1	18	63.096	-0.47	0.90	0.01126	1
2462		16.84	17±1	18	63.096	-0.47	0.90	0.01126	1
2412	802.11n H20	16.06	17±1	18	63.096	-0.47	0.90	0.01126	1
2437		15.81	15±1	16	39.811	-0.47	0.90	0.00711	1
2462		15.40	15±1	16	39.811	-0.47	0.90	0.00711	1

Conclusion:

BT and 2.4GWiFi cannot work at the same time.

For the max result: 0.01126≤ 1.0 test exclusion threshold, No SAR is required.

----END OF REPORT----