RF EXPOSURE
Test Report

Report No.: MTi210312007-01E6

Date of issue: May 21, 2021

Applicant: Lathem Time Corporation

Product name: Lathem Time Corporation

Model(s): PCPROX, UP3PCPROX

FCC ID: UP3-PCPROX

Shenzhen Microtest Co., Ltd.

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Instructions

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2. The test results of this report are only responsible for the samples submitted;
3. This report is invalid without the seal and signature of the laboratory;
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5. Any objection to this report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

TEST RESULT CERTIFICATION

Applicant's name.....:	Lathem Time Corporation
Address.....:	210 The Bluffs, Suite 107 SW Austell, GA 30168 United States
Manufacturer's Name .....:	SHENZHEN HEROFUN BIO-TECH CO., LTD
Address.....:	West 401, Building A2, TianRui Industrial Park, No. 35 FuYuan 1st Road, XinHe Community, FuHai Street, BaoAn District, Shenzhen, China
Product description	
Product name.....:	Lathem Time Corporation
Trademark .....:	Lathem
Model Name .....:	PCPROX
Serial Model	UP3PCPROX
Standards.....:	N/A
Test procedure .....:	KDB 447498 D01 v06
Date of Test	
Date (s) of performance of tests ..... :	Apr. 12, 2021 ~ May 13, 2021
Test Result..... :	Pass

This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Testing Engineer : Danny Xu

(Danny Xu)

Technical Manager : Leo Su

(Leo Su)

Authorized Signatory : Tom Xue

(Tom Xue)

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/cm2

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/cm2. 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

BT/BLE:

Operation Frequency: 2402-2480MHz,

Power density limited: 1mW/ cm^2

2.4GWiFi:

Operation Frequency: WIFI 802.11b/g/n HT20: 2412-2462MHz,

Power density limited: 1mW/ cm^2

5GWiFi:

802.11a: 20 MHz

802.11n: 20 MHz, 40 MHz

802.11ac: 20 MHz, 40 MHz, 80MHz

Antenna Type: FPC Antenna;
WIFI antenna gain: 1.13dBi

R=20cm

mW=10^(dBm/10)

antenna gain Numeric=10^(dBi/10)= 10^(1.13/10)=1.30

BR&EDR:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm2)	(mW/cm2)
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	5.275	6±1	7	5.012	1.13	1.30	0.0013	1
2441		6.758	6±1	7	5.012	1.13	1.30	0.0013	1
2480		6.706	6±1	7	5.012	1.13	1.30	0.0013	1
2402	π/4-DQPSK	3.146	4±1	5	3.162	1.13	1.30	0.0008	1
2441		4.129	4±1	5	3.162	1.13	1.30	0.0008	1
2480		4.158	4±1	5	3.162	1.13	1.30	0.0008	1
2402	8DPSK	3.758	4±1	5	3.162	1.13	1.30	0.0008	1
2441		4.542	4±1	5	3.162	1.13	1.30	0.0008	1
2480		4.544	4±1	5	3.162	1.13	1.30	0.0008	1

BLE:

Channel Freq. (MHz)	modulation	conducted power	Tune-up power (dBm)	Max		Antenna		Evaluation result	Power density Limits
		(dBm)		tune-up power		Gain		(mW/cm2)	(mW/cm2)
				(dBm)	(mW)	(dBi)	Numeric		
2402	GFSK	4.639	5±1	6	3.981	1.13	1.30	0.0010	1
2440		5.589	5±1	6	3.981	1.13	1.30	0.0010	1
2480		5.987	5±1	6	3.981	1.13	1.30	0.0010	1

2.4GWiFi：

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)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
2412	802.11b	15.68	16±1	17	50.118723	1.3	0.01296	1
2437		16.07	16±1	17	50.118723	1.3	0.01296	1
2462		15.83	16±1	17	50.118723	1.3	0.01296	1
2412	802.11g	15.75	16±1	17	50.118723	1.3	0.01296	1
2437		16.03	16±1	17	50.118723	1.3	0.01296	1
2462		15.74	16±1	17	50.118723	1.3	0.01296	1
2412	802.11n H20	14.37	14±1	15	31.622777	1.3	0.00818	1
2437		14.63	14±1	15	31.622777	1.3	0.00818	1
2462		14.23	14±1	15	31.622777	1.3	0.00818	1

5GWiFi：UNII-1

Frequency (MHz)	Modulation mode	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)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
5180	11a	12.66	13±1	14	25.118864	1.30	0.00999	1
5200	11a	12.73	13±1	14	25.118864	1.30	0.00999	1
5240	11a	13.39	13±1	14	25.118864	1.30	0.00999	1
5180	11n (HT20)	12.21	13±1	14	25.118864	1.30	0.00999	1
5200	11n (HT20)	12.41	13±1	14	25.118864	1.30	0.00999	1
5240	11n (HT20)	13.01	13±1	14	25.118864	1.30	0.00999	1
5190	11n (HT40)	11.93	12±1	13	19.952623	1.30	0.00794	1
5230	11n (HT40)	13.64	13±1	14	25.118864	1.30	0.00999	1
5180	11ac (HT20)	12.25	13±1	14	25.118864	1.30	0.00999	1
5200	11ac (HT20)	12.38	13±1	14	25.118864	1.30	0.00999	1
5240	11ac (HT20)	13.01	13±1	14	25.118864	1.30	0.00999	1
5190	11ac (HT40)	12.06	12±1	13	19.952623	1.30	0.00794	1
5230	11ac (HT40)	12.82	12±1	13	19.952623	1.30	0.00794	1
5210	11ac (HT80)	12.72	12±1	13	19.952623	1.30	0.00794	1

UNII-3

Frequency (MHz)	Modulation mode	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)	Numeric		
		Ant A	Ant A	Ant A	Ant A	Ant A	Ant A	
5745	11a	14.01	14±1	15	31.62278	1.30	0.00818	1
5785	11a	14.34	14±1	15	31.62278	1.30	0.00818	1
5825	11a	14.50	14±1	15	31.62278	1.30	0.00818	1
5745	11n (HT20)	13.89	14±1	15	31.62278	1.30	0.00818	1
5785	11n (HT20)	13.89	14±1	15	31.62278	1.30	0.00818	1
5825	11n (HT20)	14.18	14±1	15	31.62278	1.30	0.00818	1
5755	11n (HT40)	12.61	12±1	13	19.95262	1.30	0.00516	1
5795	11n (HT40)	11.92	12±1	13	19.95262	1.30	0.00516	1
5745	11ac (HT20)	12.79	12±1	13	19.95262	1.30	0.00516	1
5785	11ac (HT20)	12.28	12±1	13	19.95262	1.30	0.00516	1
5825	11ac (HT20)	11.98	12±1	13	19.95262	1.30	0.00516	1
5755	11ac (HT40)	12.47	12±1	13	19.95262	1.30	0.00516	1
5795	11ac (HT40)	11.83	12±1	13	19.95262	1.30	0.00516	1
5775	11ac (HT80)	12.82	12±1	13	19.95262	1.30	0.00516	1

Conclusion:

Simultaneous transmit:

BR&EDR +2.4G WIFI=0.0013+0.01296=0.01426

BR&EDR+5G WIFI UNII-1=0.0013+0.00999=0.01129

BR&EDR+5G WIFI UNII-3=0.0013+0.00818=0.00948

BLE+2.4G WIFI=0.0010+0.01296=0.01396

BLE+5G WIFI UNII-1=0.0010+0.00999=0.01099

BLE+5G WIFI UNII-3=0.0010+0.00818=0.00918

For the max result: 0.01426≤ 1.0 for 1g SAR, No SAR is required.

----END OF REPORT----