

MPE TEST REPORT

Applicant	PATEO CONNECT Technology (Shanghai) Corporation
FCC ID	2BOT7-PCM3-NA
Product	Infotainment System
Brand	PATEO
Model	PCCM Plus 997/987 II; PCCM Plus 991/981 I
Report No.	EFTA25020036-IE-08-M1V2
Issue Date	August 21, 2025

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **§2.1091 and FCC 47 CFR Part 1 1.1310**. The test results show that the equipment tested can demonstrate

Prepared by: Wei Fangying

Approved by: Xu Kai

Eurofins TA Technology (Shanghai) Co., Ltd.

Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000

Version	Revision Description	Issue Date
Rev.0	Initial issue of report.	July 1, 2025
Rev.1	Updated data.	July 30, 2025
Rev.2	Updated data.	August 21, 2025
Note: This revised report (Report No.: EFTA25020036-IE-08-M1V2) supersedes and replaces the previously issued report (Report No.: EFTA25020036-IE-08-M1V1). Please discard or destroy the previously issued report and dispose of it accordingly.		

Table of Contents

1	Test Laboratory	4
1.1	Notes of the Test Report.....	4
1.2	Test Facility	4
1.3	Testing Location.....	4
1.4	Laboratory Environment	4
2	Description of Equipment Under Test	5
3	Maximum Tune up and Antenna Gain	7
4	MPE Limit.....	9
5	RF Exposure Evaluation Result.....	11
	ANNEX A: The EUT Appearance	13

1 Test Laboratory

1.1 Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (Shanghai) Co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2 Test Facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform measurements.

1.3 Testing Location

Company: Eurofins TA Technology (Shanghai) Co., Ltd.
Address: Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City: Shanghai
Post code: 201201
Country: P. R. China
Contact: Xu Kai
Telephone: +86-021-50791141/2/3
Fax: +86-021-50791141/2/3-8000
Website: <https://www.eurofins.com/electrical-and-electronics>
E-mail: Kain.Xu@cpt.eurofinscn.com

1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25°C
Relative humidity	Min. = 20%, Max. = 80%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

2 Description of Equipment Under Test

Client Information

Applicant	PATEO CONNECT Technology (Shanghai) Corporation
Applicant address	Room 3701, No. 866 Dongchangzhi Road, Hongkou District, Shanghai, 200080, PR.China
Manufacturer	PATEO CONNECT Technology (Shanghai) Corporation
Manufacturer address	Room 3701, No. 866 Dongchangzhi Road, Hongkou District, Shanghai, 200080, PR.China

General Technologies

EUT Description			
Model	PCCM Plus 997/987 II; PCCM Plus 991/981 I		
Lab Internal SN	EFTA25020036-IE-08/S01		
Hardware Version	V2.0		
Software Version	rc1.userdebug.PCM3		
Frequency	Band	TX (MHz)	RX (MHz)
	GSM 850	824 ~ 849	869 ~ 894
	PCS 1900	1850 ~ 1910	1930 ~ 1990
	WCDMA B2	1850 ~ 1910	1930 ~ 1990
	WCDMA B4	1710 ~ 1755	2110 ~ 2155
	WCDMA B5	824 ~ 849	869 ~ 894
	LTE Band 2	1850 ~ 1910	1930 ~ 1990
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 5	824 ~ 849	869 ~ 894
	LTE Band 7	699 ~ 716	729 ~ 746
	LTE Band 12	699 ~ 716	729 ~ 746
	LTE Band 13	777 ~ 787	746 ~ 756
	Wi-Fi 2.4G	2400 ~ 2483.5	2400 ~ 2483.5
	Wi-Fi 5GHz (U-NII-1)	5150 ~ 5250	5150 ~ 5250
	Wi-Fi 5GHz (U-NII-3)	5725~5850	5725~5850
	Bluetooth	2400 ~ 2483.5	2400 ~ 2483.5
	Bluetooth LE	2400 ~ 2483.5	2400 ~ 2483.5
Date of Testing	May 7, 2025~ May 22, 2025		
Date of Sample Received	May 7, 2025		

Note:

1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by the applicant.
2. All indications of Pass/Fail in this report are opinions expressed by Eurofins TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

3 Maximum Tune up and Antenna Gain

The numeric gain (G) of the antenna with a gain specified in dB is determined by

$$\text{Numeric gain (G)} = 10^{(\text{antenna gain}/10)}$$

According to specification 3GPP TS 51.010, the maximum power of the GSM can do the power reduction for the multi-slot. The allowed power reduction in the multi-slot configuration is as following:

Number of timeslots in uplink assignment	Permissible nominal reduction of maximum output power (dB)
1	0
2	0 to 3,0
3	1,8 to 4,8
4	3,0 to 6,0

Each Tx slots maximum tune up use the most strictest factor for evaluation by making calculation.

Band		Burst-Averaged output power (adjusted for tune up) (dBm)	Division Factors	Frame-Averaged output power (adjusted for tune up) (dBm)
GSM850	GSM	32.50	-9.03	23.47
	1 Txslot	32.50	-9.03	23.47
	2 Txslots	31.50	-6.02	25.48
	3 Txslots	29.50	-4.26	25.24
	4 Txslots	28.50	-3.01	25.49
GSM1900	GSM	27.00	-9.03	17.97
	1 Txslot	27.00	-9.03	17.97
	2 Txslots	27.00	-6.02	20.98
	3 Txslots	24.50	-4.26	20.24
	4 Txslots	23.00	-3.01	19.99

Note:

Division Factors

To average the power, the division factor is as follows:

1Txslot = 1 transmit time slot out of 8 time slots

=> conducted power divided by (8/1) => -9.03 dB

2Txslots = 2 transmit time slots out of 8 time slots

=> conducted power divided by (8/2) => -6.02 dB

3Txslots = 3 transmit time slots out of 8 time slots

=> conducted power divided by (8/3) => -4.26 dB

4Txslots = 4 transmit time slots out of 8 time slots

=> conducted power divided by (8/4) => -3.01 dB

Band	Maximum Tune up Power		Antenna Gain (dBi)	Numeric Gain
	(dBm)	(mW)		
GSM 850	25.49	354.00	6.85	4.84
PCS 1900	20.98	125.31	6.85	4.84
WCDMA B2	24.50	281.84	6.85	4.84
WCDMA B4	24.50	281.84	6.85	4.84
WCDMA B5	23.50	223.87	6.85	4.84
LTE Band 2	24.00	251.19	6.85	4.84
LTE Band 4	23.50	223.87	6.85	4.84
LTE Band 5	23.50	223.87	6.85	4.84
LTE Band 7	24.00	251.19	6.85	4.84
LTE Band 12	23.50	223.87	6.85	4.84
LTE Band 13	24.00	251.19	6.85	4.84
Wi-Fi 2.4G	18.50	70.79	5.90	3.89
Wi-Fi 5GHz (U-NII-1)	16.50	44.67	4.30	2.69
Wi-Fi 5GHz (U-NII-3)	16.50	44.67	5.20	3.31
Bluetooth	10.50	11.22	6.90	4.90
Bluetooth LE	9.50	8.91	2.90	1.95

4 MPE Limit

According to section 1.1310 of FCC 47 CFR Part 1, limits for maximum permissible exposure (MPE) are as following.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) 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
(ii) 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.*

Note1. Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational / controlled limits apply provided he or she is made aware of the potential for exposure.

Note2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

The maximum permissible exposure for 300~1500 MHz is $f/1500$, for 1500~100,000MHz is 1.0. So

Band	The Maximum Permissible Exposure (mW/cm ²)
GSM850	0.549
GSM1900	1.000
WCDMA B2	1.000
WCDMA B4	1.000
WCDMA B5	0.549
LTE Band 2	1.000
LTE Band 4	1.000
LTE Band 5	0.549
LTE Band 7	1.000
LTE Band 12	0.466
LTE Band 13	0.518
Wi-Fi 2.4GHz	1.000
Wi-Fi 5GHz	1.000
Bluetooth	1.000
Bluetooth LE	1.000

5 RF Exposure Evaluation Result

RF exposure evaluation method is based on KDB 447498 D01, this calculation is based on the conducted power, maximum power and antenna gain with provides the minimum separation distance. The formula shown below is from OET Bulletin 65 Edition 97-01 Per KDB 447498 D01:

$$S = PG / 4\pi R^2$$

Where: S = power density (in appropriate units, e.g. mW/cm²)

P = Time-average maximum tune up procedure (in appropriate units, e.g., mW)

G = the numeric gain of the antenna

R = distance to the center of radiation of the antenna

Note: Among them, R is calculated using 24cm.

Band	Maximum Tune up (dBm)	Antenna Gain (dBi)	Maximum EIRP (dBm)	PG (mW)	Result (mW/cm ²)	Limit Value (mW/cm ²)	The MPE Ratio
GSM 850	25.490	6.850	32.340	1713.957	0.237	0.549	0.431
PCS 1900	20.980	6.850	27.830	606.736	0.084	1.000	0.084
WCDMA B2	24.500	6.850	31.350	1364.583	0.189	1.000	0.189
WCDMA B4	24.500	6.850	31.350	1364.583	0.189	1.000	0.189
WCDMA B5	23.500	6.850	30.350	1083.927	0.150	0.549	0.273
LTE Band 2	24.000	6.850	30.850	1216.186	0.168	1.000	0.168
LTE Band 4	23.500	6.850	30.350	1083.927	0.150	1.000	0.150
LTE Band 5	23.500	6.850	30.350	1083.927	0.150	0.549	0.273
LTE Band 7	24.000	6.850	30.850	1216.186	0.168	1.000	0.168
LTE Band 12	23.500	6.850	30.350	1083.927	0.150	0.466	0.321
LTE Band 13	24.000	6.850	30.850	1216.186	0.168	0.518	0.324
Wi-Fi 2.4G	18.500	5.900	24.400	275.423	0.038	1.000	0.038
Wi-Fi 5GHz (U-NII-1)	16.500	4.300	20.800	120.226	0.017	1.000	0.017
Wi-Fi 5GHz (U-NII-3)	16.500	5.200	21.700	147.911	0.020	1.000	0.020
Bluetooth	10.500	6.900	17.400	54.954	0.008	1.000	0.008
Bluetooth LE	9.500	2.900	12.400	17.378	0.002	0.549	0.004

Note: R = 20cm

$\pi = 3.1416$

The MPE Ratio = Mac Result÷Limit Value

BT antenna and Wi-Fi 2.4GHz antenna and Wi-Fi 5GHz antenna can't transmit simultaneously.

So, the simultaneous transmitting antenna pairs as below:

TER = Wi-Fi 2.4GHz Antenna MPE Ratio + Wi-Fi 5GHz Antenna MPE Ratio + Zigbee Antenna MPE Ratio = 0.038 + 0.020 + 0.431 = 0.489 < 1

Note: For transmitters, the minimum separation distance is 24cm, even if calculations indicate MPE distance is less.

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

*****END OF REPORT *****