

## **MPE TEST REPORT**

Applicant Spireon Inc

FCC ID O9YFLF3L

**Product** GPS tracker

Model Flex2-L

**Report No.** R2109A0848-M1V1

Issue Date October 27, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC 47 CFR Part 1 1.1310.** The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Prepared by: Fangying Wei

Approved by: Guangchang Fan

Guangchang Fan

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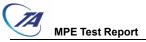
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Version	Revision description	Issue Date
Rev.0	Initial issue of report.	October 19, 2021
Rev.1	Update FCC ID in Page 1.	October 27, 2021

Note: This revised report (Report No. R2109A0848-M1V1) supersedes and replaces the previously issued report (Report No. R2109A0848-M1). Please discard or destroy the previously issued report and dispose of it accordingly.



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**Test Laboratory** 

**Notes of the Test Report** 

This report shall not be reproduced in full or partial, without the written approval of 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)

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

**Testing Location** 

Company:

TA Technology (Shanghai) Co., Ltd.

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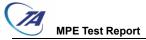


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### 1.4 Laboratory Environment

Temperature	Min. = 18°C, Max. = 25 °C		
Relative humidity	Min. = 30%, Max. = 70%		
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.



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### 2 Description of Equipment under Test

#### **Client Information**

Applicant	Spireon Inc		
Applicant address	9724 Kingston Pike, Suite 800 Knoxville		
Manufacturer	Asiatelco Technologies Co		
Manufacturer address	#289 Bisheng Road, Building-8, 3F, Zhangjiang Hi-Tech Park,		
manufacturer address	Pudong, Shanghai 201204, China		

#### **General Technologies**

Model	Flex2-L	
IMEI	861836059908801	
HW Version	P3.0.0	
SW Version	B1	
Date of Testing:	October 12, 2021	
Received:	September 23, 2021	

Note: 1. The EUT is sent from the applicant to 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 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.

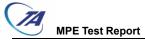


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## 3 Maximum conducted output power (measured) and antenna Gain

The numeric gain (G) of the antenna with a gain specified in dB is determined by Numeric gain (G)=10^(antenna gain/10)

Band		cted Output Power Bm)	Antenna Gain	Numeric gain
	(dBm)	(mW)	(dBi)	
WCDMA Band II	24.000	251.189	1.000	1.259
WCDMA Band V	21.000	125.893	1.200	1.318
LTE Band 2	26.000	398.107	1.000	1.259
LTE Band 4	24.000	251.189	1.000	1.259
LTE Band 12	24.000	251.189	1.200	1.318



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### 4 Test Result

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

TABLE 1 – LIMITS FOR MAXIMUN PERMISSIBLE EXPOSURE (MPE)

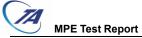
Frequency Range	Electric Field	Magnetic Field	Power Density	Averaging Time
(MHz)	Strength	Strength		
	(V/m)	(A/m)	(mW/cm2)	(minutes)
	(A) Limits for Occu	upational/Controlle	Exposures	
0.3-3.0	614	1.63	*(100)	6
3-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500			f/300	6
1500-100,000			5	6
(B)	Limits for General	Population/Uncont	rolled Exposure	
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

f = frequency in MHz

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.

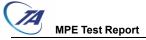
Note2: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

<sup>\* =</sup> Plane-wave equivalent power density



Report No.: R2109A0848-M1V1 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/cm²)
WCDMA Band II	1.000
WCDMA Band V	0.549
LTE Band 2	1.000
LTE Band 4	1.000
LTE Band 12	0.466



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RF Exposure Calculations:

The following information provides the minimum separation distance for the highest gain antenna provided. This calculation is based on the conducted power, considering maximum power and antenna gain. The formula shown in KDB 447498 D01 is used in the calculation.

Equation from KDB 447498 D01 General RF Exposure Guidance v06 (10/23/2015) is:

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

Where: S = power density (in appropriate units, e.g. mW/cm<sup>2</sup>)

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 (20 cm = limit for MPE)

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	PG (mW)	Test Result (mW/cm <sup>2</sup> )	Limit Value (mW/cm <sup>2</sup> )
WCDMA Band II	1.000	24.000	25.000	316.228	0.063	1.000
WCDMA Band V	1.200	21.000	22.200	165.959	0.033	0.549
LTE Band 2	1.000	26.000	27.000	501.187	0.100	1.000
LTE Band 4	1.000	24.000	25.000	316.228	0.063	1.000
LTE Band 12	1.200	24.000	25.200	331.131	0.066	0.466

Note: **R** = 20cm

 $\pi$ = 3.1416

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



**ANNEX A: The EUT Appearance** 

The EUT Appearance are submitted separately.

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