MPE TEST REPORT

Applicant	Asiatelco Technologies Co.
FCC ID	XYO-AS33
Product	GPS TrackerAS33
Model	AS33
Report No.	R2106A0521-M1V1
Issue Date	August 25, 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.

Yurui Zhao

Prepared by: Yurui Zhao

Guangchang Fan

Approved by: Guangchang Fan

TA Technology (Shanghai) Co., Ltd.

No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

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

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

Table of Contents

Version	Revision description	Issue Date
Rev.0	Initial issue of report.	August 6, 2021
Rev.1	Update information in Page 6.	August 25, 2021
Note: This revised report (Report No. R2106A0521-M1V1) supersedes and replaces the previously issued report (Report No. R2106A0521-M1). Please discard or destroy the previously issued report and dispose of it accordingly.		

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 **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.

1.3 Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China
City:	Shanghai
Post code:	201201
Country:	P. R. China
Contact:	Fan Guangchang
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	fanguangchang@ta-shanghai.com

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.	

2 Description of Equipment under Test

Client Information

Applicant	Asiatelco Technologies Co.
Applicant address	#289 Bisheng Road, Building-8, 301, China (Shanghai) Pilot Free Trade Zone Pudong, Shanghai 201204, China
Manufacturer	Asiatelco Technologies Co.
Manufacturer address	#289 Bisheng Road, Building-8, 301, China (Shanghai) Pilot Free Trade Zone Pudong, Shanghai 201204, China

General Technologies

Model	AS33
SN	866642050380692
Hardware Version	AS33_P1
Software Version	1.1.1.4
Date of Testing:	June 17, 2021 ~ July 29, 2021
Date of Sample Received:	April 8, 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.	

AS33 (Report No.: R2106A0521-M1V1) is a variant model of AT10-2 (Report No.: R2104A0318-M1V1).
This product changes as follows:
1. Add a power board.
2. The battery part becomes larger.
3. The shell becomes larger.
This report is only changes Product Name, Model Name, Antenna Gain, Hardware Version and Software Version.

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	Maximum Conducted Output Power (dBm)		Antenna Gain (dBi)	Numeric gain
	(dBm)	(mW)		
LTE Band 2	24.000	251.189	1.10	1.288
LTE Band 4	24.000	251.189	1.20	1.318
LTE Band 12	24.000	251.189	0.20	1.047
LTE Band 13	24.000	251.189	0.40	1.096
LTE Band 25	24.000	251.189	1.00	1.259
Bluetooth LE	-0.220	0.951	2.35	1.718

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 (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm2)	Averaging Time (minutes)
(A) Limits for Occupational/Controlled 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/Uncontrolled 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
* = 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)
LTE Band 2	1.000
LTE Band 4	1.000
LTE Band 12	0.477
LTE Band 13	0.525
LTE Band 25	1.000
Bluetooth LE	1.000

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^2)

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^2)	Limit Value (mW/cm^2)
LTE Band 2	1.10	24.000	25.100	323.594	0.064	1.000
LTE Band 4	1.20	24.000	25.200	331.131	0.066	1.000
LTE Band 12	0.20	24.000	24.200	263.027	0.052	0.477
LTE Band 13	0.40	24.000	24.400	275.423	0.055	0.525
LTE Band 25	1.00	24.000	25.000	316.228	0.063	1.000
Bluetooth LE	2.35	-0.220	2.130	1.633	0.0003	1.000
Note: **R** = 20cm **π**= 3.1416						

Note: For transmitters, minimum separation distance is 20cm, even if calculations indicate MPE distance is less.

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

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.