MPE TEST REPORT

Applicant	UAB TELTONIKA TELEMATICS
FCC ID	2A3HUFMC00A
Product	Fleet Management System
Brand	TELTONIKA TELEMATICS
Model	FMC00A-QBIB0
Report No.	R2206A0487-M1
Issue Date	August 5, 2022

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.

Wei Fangying　　Fan Guangchang

Prepared by: Wei Fangying　　*Approved by: Fan Guangchang*

TA Technology (Shanghai) Co., Ltd.

Building 3, No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

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

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

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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:	Building 3, 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	UAB TELTONIKA TELEMATICS
Applicant address	Saltoniskiu st. 9B-1,Vilnius,Lithuania
Manufacturer	UAB TELTONIKA TELEMATICS
Manufacturer address	Saltoniskiu st. 9B-1,Vilnius,Lithuania
Factory	UAB TELTONIKA EMS
Factory address	Ditvos st. 6, Vilnius,Lithuania

General Technologies

Model	FMC00A-QBIB0
IMEI	866258043620571
Hardware Version	FMC00A-80
Software Version	FMB.Ver.03.27.12
Date of Testing	June 7, 2022 ~ June 23, 2022
Date of Sample Received	June 6, 2022
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.	

3 Maximum Tune up Power 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 Tune up Power		Antenna Gain (dBi)	Numeric gain
	(dBm)	(mW)		
WCDMA Band II	24.0	251.189	2.50	1.778
WCDMA Band IV	24.0	251.189	2.50	1.778
WCDMA Band V	24.0	251.189	2.50	1.778
LTE Band 2	24.5	281.838	2.50	1.778
LTE Band 4	24.5	281.838	2.50	1.778
LTE Band 5	24.5	281.838	2.50	1.778
LTE Band 12	24.5	281.838	2.50	1.778
LTE Band 13	24.5	281.838	2.50	1.778
Bluetooth	6.0	3.981	-1.43	0.719
Bluetooth (Low Energy)	-2.5	0.562	-1.43	0.719

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)
WCDMA Band II	1.000
WCDMA Band IV	1.000
WCDMA Band V	0.549
LTE Band 2	1.000
LTE Band 4	1.000
LTE Band 5	0.549
LTE Band 12	0.466
LTE Band 13	0.518
Bluetooth	1.000
Bluetooth (Low Energy)	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 tune up (dBm)	Maximum EIRP (dBm)	PG (mW)	Test Result (mW/cm^2)	Limit Value (mW/cm^2)	The MPE ratio
WCDMA Band II	2.50	24.0	26.500	446.684	0.089	1.000	0.089
WCDMA Band IV	2.50	24.0	26.500	446.684	0.089	1.000	0.089
WCDMA Band V	2.50	24.0	26.500	446.684	0.089	0.549	0.162
LTE Band 2	2.50	24.5	27.000	501.187	0.100	1.000	0.100
LTE Band 4	2.50	24.5	27.000	501.187	0.100	1.000	0.100
LTE Band 5	2.50	24.5	27.000	501.187	0.100	0.549	0.182
LTE Band 12	2.50	24.5	27.000	501.187	0.100	0.466	**0.214**
LTE Band 13	2.50	24.5	27.000	501.187	0.100	0.518	0.192
Bluetooth	-1.43	6.0	4.570	2.864	0.001	1.000	**0.001**
Bluetooth (Low Energy)	-1.43	-2.5	-3.930	0.405	0.000	1.000	0.000
Note: **R** = 20cm **π**= 3.1416 The MPE ratio = Mac Test Result÷Limit Value							

So the simultaneous transmitting antenna pairs as below:

∑of MPE ratios=WWAN Antenna +Bluetooth =0.214 + 0.001= 0.215 <1

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.