



FCC RF EXPOSURE REPORT

For

Fleet Tracking Device

MODEL NUMBER: FT202-LM0Q-AT

FCC ID: 2AP3PFT200

REPORT NUMBER: 4788458487-2

ISSUE DATE: December 21, 2018

Prepared for

**Flex Industrial, Ltd.
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Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
--	08/13/2018	Initial Issue	
V1	12/21/2018	Add new models	Denny Huang



TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS.....	4
2. TEST METHODOLOGY	5
3. FACILITIES AND ACCREDITATION.....	5
4. EQUIPMENT UNDER TEST	6
5. REQUIREMENT	7



1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Flex Industrial, Ltd.
Address: Level 3, Alexander House, 35 Cybercity, Ebene, Mauritius

Manufacturer Information

Company Name: Flex Industrial, Ltd.
Address: Level 3, Alexander House, 35 Cybercity, Ebene, Mauritius

EUT Description

EUT Name: Fleet Tracking Device
Model: FT202-LM0Q-AT
Series Model: FT201-LM0Q-AT, FT204-LM0Q-AT
FT201-LM0Q-VZ, FT202-LM0Q-VZ, FT204-LM0Q-VZ
Model Different: Please refer to section 4
Brand Name: /
Sample Status: Normal
Sample Received Date: August 06, 2018
Date of Tested: August 07, 2018 ~ August 10, 2018

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47CFR§2.1091	Complies
KDB-447498 D01 V06	Complies

Tested By:

Denny Huang
Engineer Project Associate

Checked By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo
Laboratory Manager



2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091, KDB 447498 D01 General RF Exposure Guidance v06.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	A2LA (Certificate No.: 4102.01) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. FCC (FCC Designation No.: CN1187) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules IC(Company No.: 21320) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320. VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011) UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011
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4. EQUIPMENT UNDER TEST

Equipment	Fleet Tracking Device		
Model:	FT202-LM0Q-AT		
Series Model:	FT201-LM0Q-AT, FT204-LM0Q-AT FT201-LM0Q-VZ, FT202-LM0Q-VZ, FT204-LM0Q-VZ		
Model Difference	FT201-LM0Q-AT, FT204-LM0Q-AT are the same with FT202-LM0Q-AT except the following part: FT201-LM0Q-AT has no battery and buzzer; FT204-LM0Q-AT has 1-wire chip and no buzzer; FT201-LM0Q-VZ is the same with FT201-LM0Q-AT; FT202-LM0Q-VZ is the same with FT202-LM0Q-AT; FT204-LM0Q-VZ is the same with FT204-LM0Q-AT.		
Product Description (Bluetooth)	Operation Frequency	2402 MHz ~ 2480 MHz	
	Modulation Type		Data Rate
	GFSK		1Mbps
Rated Input	DC 12V		
Battery	DC 3.7V, 220mAh		
Bluetooth Version	BT V4.1		



5. REQUIREMENT

LIMIT AND CALCULATION METHOD

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.
Limits for General Population/Uncontrolled Exposure

RF EXPOSURE LIMIT

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (Minutes)
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 -- 1500	--	--	f/1500	30
1500 -- 100,000	--	--	1.0	30

CALCULATION METHOD

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

Where:

S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna



CALCULATED RESULTS

BLE Mode					
Frequency	Output Power	Output Power	Power Density	Limit	Test Result
MHz	dBm	mW	mW/cm ²	mW/cm ²	--
2402~2480	7.5	5.62	0.0031	1.0	Complies

LTE/GSM Mode (FCC ID: XMR201707BG96)					
Frequency	Output Power	Output Power	Power Density	Limit	Test Result
MHz	dBm	mW	mW/cm ²	mW/cm ²	--
699-716	24	251.2	0.04	0.466	Complies

Note: 1. Antenna Gain=2.72dBi (Numeric 1.87) for BT; Antenna Gain=0.8 dBi (Numeric 1.20) for LTE/GSM, $\pi=3.141$.

2. The BLE power comes from turn up power which declared by customer, the LTE power comes from the original module report.

3. The minimum separation distance of the device is greater than 20 cm.

4. All of transmitter function can Tx simultaneously for the EUT, so the combined Power Density is $0.04+0.0031=0.0431\text{mW/cm}^2$ less than 0.466.

5. Calculate by WORST-CASE mode.

END OF REPORT