

RF Exposure Evaluation Report

APPLICANT : Powerfleet Inc.
EQUIPMENT : LV500
BRAND NAME : Powerfleet Inc
MODEL NAME : LV500
FCC ID : 2AG69LV5XXNQ
STANDARD : 47 CFR Part 2.1091
FCC KDB 447498 D01 v06

The product evaluation date was started from Jan. 17, 2025 and completed on Jan. 17, 2025. We, Sporton International Inc. (Shenzhen), would like to declare that the device has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Sporton International Inc. (Shenzhen), the test report shall not be reproduced except in full.



Approved by: Si Zhang

Sporton International Inc. (Shenzhen)

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People's Republic of China***



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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA4O1004	Rev. 01	Initial issue of report.	Feb. 18, 2025



1. Administration Data

1.1. Testing Laboratory

Sporton International Inc. (Shenzhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Testing Laboratory			
Test Firm	Sporton International Inc. (Shenzhen)		
Test Site Location	1/F, 2/F, Bldg 5, Shiling Industrial Zone, Xinwei Village, Xili, Nanshan, Shenzhen, 518055 People's Republic of China TEL: +86-755-86379589 FAX: +86-755-86379595		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	SAR01-SZ	CN1256	421272

Applicant	
Company Name	Powerfleet Inc.
Address	123 Tice Boulevard Suite 101, Woodcliff Lake, NJ 07677, United States

Manufacturer	
Company Name	Powerfleet Inc.
Address	123 Tice Boulevard Suite 101, Woodcliff Lake, NJ 07677, United States



2. Description of Equipment Under Test (EUT)

Product Feature & Specification	
EUT Type	LV500
Brand Name	Powerfleet Inc
Model Name	LV500
FCC ID	2AG69LV5XXNQ
Wireless Technology and Frequency Range	Bluetooth: 2402 MHz ~ 2480 MHz
Mode	Bluetooth LE
Antenna Gain	Bluetooth: 0.53 dBi
Antenna Type	Bluetooth: PCB Antenna
HW Version	176
SW Version	76
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Comments and Explanations:

1. The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.
2. The maximum RF output tune up power, antenna gain also the safe distance used for evaluate RF exposure were declared by manufacturer.

Contain WWAN Module Information	
Brand Name	Quectel
FCC ID	XMR202005BG95M5
Wireless Technology and Frequency Range	LTE Band 2 : 1850 MHz ~ 1910 MHz LTE Band 4 : 1710 MHz ~ 1755 MHz LTE Band 12 : 699 MHz ~ 716 MHz
Mode	LTE: QPSK / 16QAM



3. Maximum RF average output tune up power among production units

<Bluetooth>

Mode		Maximum Average power(dBm)
Bluetooth	LE	7.00



4. RF Exposure Limit Introduction

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
300-1500			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/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500			f/1500	30
1500-100,000			1.0	30

The MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = Power Density

P = Output Power at Antenna Terminals

G = Gain of Transmit Antenna (linear gain)

R = Distance from Transmitting Antenna



5. Radio Frequency Radiation Exposure Evaluation

5.1. Standalone Power Density Calculation

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
Bluetooth	2402.0	0.53	7.00	7.530	5.662	0.001	1.000	0.001

<LTE is just for co-located analysis>:

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
LTE Band 2	1850.7	1.00	24.00	25.000	316.228	0.063	1.000	0.063
LTE Band 4	1710.7	1.00	24.00	25.000	316.228	0.063	1.000	0.063
LTE Band 12	699.7	1.00	24.00	25.000	316.228	0.063	0.466	0.135

Note:

1. For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.
2. Chose the maximum power to do MPE analysis.

5.2. Collocated Power Density Calculation

WWAN Power Density / Limit	Bluetooth Power Density / Limit	Σ (Power Density / Limit) of WWAN + Bluetooth
0.135	0.001	0.136

Note:

1. According to the EUT characteristic, WWAN and Bluetooth can transmit simultaneously.
2. Σ (Power Density / Limit): This is a summation of [(power density for each transmitter/antenna included in the simultaneous transmission)/ (corresponding MPE limit)], for WWAN + Bluetooth.
3. Considering all transmitters of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 2 collocated transmitters is compliant.

Conclusion:

According to 47 CFR §2.1091, the RF exposure analysis concludes that the RF Exposure is FCC compliant.

-----THE END-----