RF Exposure Evaluation Report

FCC ID	:	**2AY4J-TK23**
Equipment	:	**Tack GPS Location Tracker**
Brand Name	:	**Tack**
Model Name	:	**TK23**
Marketing Name	:	**Tackgps Plus**
Applicant	:	**Tack One Private Limited** **22 SIN MING LANE #06-76, SINGAPORE 573969**
Manufacturer	:	**Tack One Private Limited** **22 SIN MING LANE #06-76, SINGAPORE 573969**
Standard	:	**47 CFR Part 2.1093**

We, SPORTON INTERNATIONAL INC has been evaluated this product in accordance with 47 CFR Part 2.1093 and it complies with applicable limit.

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code: 1190) and the FCC designation No. TW1190 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC evaluation.

The results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Laboratory, the test report shall not be reproduced except in full

Cona Huang

Approved by: Cona Huang / Deputy Manager

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Revision History

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FA342615	Rev. 01	Initial issue of report	Sep. 04, 2023
FA342615	Rev. 02	Add LTE Band 26	Sep. 06, 2023

1. General Information

1.1 Description of Device Under Test (DUT)

Product Feature & Specification	
DUT Type	Tack GPS Location Tracker
Brand Name	Tack
Model Name	TK23
Marketing Name	Tackgps Plus
FCC ID	2AY4J-TK23
Wireless Technology and Frequency Range	LTE Band 2: 1850 MHz ~ 1910 MHz LTE Band 4: 1710 MHz ~ 1755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz LTE Band 25: 1850 MHz ~ 1915 MHz LTE Band 26: 814 MHz ~ 849 MHz LTE Band 66: 1710 MHz ~ 1780 MHz WLAN 2.4 GHz Band: 2400 MHz ~ 2483.5 MHz Bluetooth: 2402 MHz ~ 2480 MHz
Mode	LTE: QPSK, 16QAM, WLAN: 802.11b/g/n HT20/HT40 Bluetooth LE
HW Version	Tack2023 v1.5
SW Version	Version 3

2. Maximum RF output power among production units

Mode	Maximum Output Power (dBm)
LTE Band 2	23
LTE Band 4	23
LTE Band 5	23
LTE Band 12	23
LTE Band 13	23
LTE Band 25	23
LTE Band 26	23
LTE Band 66	23
2.4GHz WLAN	9.75
Bluetooth	6

3. RF Exposure Evaluation

Wireless Band	Maximum Power (dBm)	Maximum Power (mW)	Transmission Duty Cycle (%)	Maximum Power * Duty Cycle (mW)	Distance (mm)	Calculated Freq.	Calculated Threshold	Limit Threshold	SAR Testing
LTE B2	23.00	199.53	3.75	7.48	5	1.910	2.07	3	not required
LTE B4	23.00	199.53	3.75	7.48	5	1.755	1.98	3	not required
LTE B5	23.00	199.53	3.75	7.48	5	0.849	1.38	3	not required
LTE B12	23.00	199.53	3.75	7.48	5	0.716	1.27	3	not required
LTE B13	23.00	199.53	3.75	7.48	5	0.787	1.33	3	not required
LTE B25	23.00	199.53	3.75	7.48	5	1.915	2.07	3	not required
LTE B26	23.00	199.53	3.75	7.48	5	0.849	1.38	3	not required
LTE B66	23.00	199.53	3.75	7.48	5	1.780	2.00	3	not required
2.4GHz WLAN	9.75	9.44	100.00	9.44	5	2.450	2.96	3	not required
Bluetooth	6.00	3.98	100.00	3.98	5	2.450	1.25	3	not required

Note:

1. For WWAN during the emergency operating mode with the most frequent transmission cycle, this device connects to the LTE network once every 2 mins to send data, each data transmission takes about 4.5secs. there, the transmission cycle is 4.5 secs / 120secs = 3.75%
2. Per KDB 447498 D01v06 the 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at *test separation distances* ≤ 50 mm are determined by:
   [(*max. power of channel, including tune-up tolerance, mW*)/(*min. test separation distance, mm*)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR
   - f(GHz) is the RF channel transmit frequency in GHz
   - Power and distance are rounded to the nearest mW and mm before calculation
   - The result is rounded to one decimal place for comparison

Conclusion: The maximum calculated exclusion threshold is 2.96 which is <= 3, SAR testing is not required.