

FCC RF EXPOSURE REPORT

FCC ID: YR8ES820

Project No. : 2108H047
Equipment : 4G waterproof GPS Tracker
Brand Name : esky
Test Model : ES820
Series Model : N/A
Applicant : eSky wireless Inc.
Address : A311#,258,Road Ren'ai suzhou china
Manufacturer : eSky wireless Inc.
Address : A311#,258,Road Ren'ai suzhou china
Date of Receipt : Aug. 26, 2021
Date of Test : Sep. 02, 2021 ~ Sep. 26, 2021
Issued Date : Nov. 05, 2021
Report Version : R00
Test Sample : Engineering Sample No.: SH2021082426.
Standard(s) : FCC Guidelines for Human Exposure IEEE C95.1 & KDB447498 D01

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.



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TESTING CERT #5123.02

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Nov. 05, 2021

1. TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3,Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

BTL's Test Firm Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

2. LOW DUTY ANALYSIS

The product define three user modes are "Business Mode", "Private Mode" and "SOS call".

Business Mode: the device will report GPS data every 5 mins via WCDMA or LTE, the upload time is about 2 seconds, this mode is low duty cycle mode.

Private Mode: the device stops to report, press button on case to change the mode.

SOS call: press button start to the SOS.

The Business Mode is low duty mode, according the section 6.3 of FCC KDB Publication 447498 D01 and the reporting requirements for analysis reports in section 2.4 of FCC KDB Publication 865664 D02, the duty cycle as follow:

The transmission time only 2 seconds pre each 5 mins, the duty cycle only 0.67%.

And FCC confirms acceptance of FCC tracking number 258762 in the low duty cycle analysis of the Business Mode transmission mode.

3. GENERAL CONCLUSION

According to FCC KDB447498 D01, Appendix A, SAR Test Exclusion Thresholds for 100 MHz - 6 GHz and ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}]$$

≤ 3.0 for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ 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

**Appendix A - SAR Test Exclusion Thresholds for 100 MHz - 6 GHz
and ≤ 50 mm**

MHz	5	10	15	20	25	30	35	40	45	50	mm
150	39	77	116	155	194	232	271	310	349	387	SAR Test Exclusion Thresholds (mW)
300	27	55	82	110	137	164	192	219	246	274	
450	22	45	67	89	112	134	157	179	201	224	
835	16	33	49	66	82	98	115	131	148	164	
900	16	32	47	63	79	95	111	126	142	158	
1500	12	24	37	49	61	73	86	98	110	122	
1900	11	22	33	44	54	65	76	87	98	109	
2450	10	19	29	38	48	57	67	77	86	96	
3600	8	16	24	32	40	47	55	63	71	79	
5200	7	13	20	26	33	39	46	53	59	66	
5400	6	13	19	26	32	39	45	52	58	65	
5800	6	12	19	25	31	37	44	50	56	62	

4. TABLE FOR FILED ANTENNA

Brand	Model Name	Antenna Type	Connector	Gain(dBi)	Note
N/A	N/A	N/A	N/A	1.997112536	WCDMA II
N/A	N/A	N/A	N/A	2.983971461	WCDMA IV
N/A	N/A	N/A	N/A	-4.448946567	WCDMA V
N/A	N/A	N/A	N/A	1.997112536	LTE B2
N/A	N/A	N/A	N/A	2.983971461	LTE B4
N/A	N/A	N/A	N/A	-4.448946567	LTE B5
N/A	N/A	N/A	N/A	-1.293400945	LTE B12
N/A	N/A	N/A	N/A	-1.293400945	LTE B13
N/A	N/A	N/A	N/A	-1.293400945	LTE B14
N/A	N/A	N/A	N/A	2.983971461	LTE B66
N/A	N/A	N/A	N/A	-0.861487628	LTE B71

5. TEST RESULTS

The maximum tune-up power as follow:

Band	Target Power (dBm)	Tolerance(dB)	Max.Tune-up (dBm)
UMTS B2	24.00	+1 / -3	25.00
UMTS B4	24.00	+1 / -3	25.00
UMTS B5	24.00	+1 / -3	25.00
LTE B2	21.50	+/- 2	23.50
LTE B4	21.50	+/- 2	23.50
LTE B5	23.00	+/- 2	25.00
LTE B12	23.00	+/- 2	25.00
LTE B13	23.00	+/- 2	25.00
LTE B14	23.00	+/- 2	25.00
LTE B66	21.50	+/- 2	23.50
LTE B71	23.00	+/- 2	25.00

The maximum time-avg tune-up power as follow:

Band	Max Output Power(dBm)	Duty Cycle (%)	Duty Cycle Factor(dB)	Max Tune-up power including Duty Factor(dBm)
LTE B2/4/66	23.5	0.67	-21.74	1.76
WCDMA II / IV / V LTE B5/12/13/14/71	25	0.67	-21.74	3.26

Note: 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 5 secs.

Band	Max Time avg Tune-up power (dBm)	Max Time avg Tune-up power (mW)	Distance (mm)	Result	Limit
WCDMA II / IV / V LTE B5/12/13/14/71	3.26	2.119	5	0.657	3.0
LTE B2/4/66	1.76	1.500	5	0.465	3.0

Note:

(1) Output power including tune up tolerance.

(2) No SAR evaluation required since transmitter power is below FCC threshold.

End of Test Report