



EMF TEST REPORT

Product Name: UNMANNED SURFACE VEHICLE

Model Number: Tboat20, Tboat10

FCC ID: 2BCUE-TBOAT20

Issued For : Guangzhou Toksurvey Information Technology Co., Ltd
No.9 Caipin Road, Building B, Room 801-6, Huangpu District,
Guangzhou, China

Issued By : Shenzhen LGT Test Service Co., Ltd.
Room 205, Building 13, Zone B, Zhenxiong Industrial Park,
No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan
District, Shenzhen, Guangdong, China

Report Number: LGT26C208HA02

Sample Received Date: Mar. 26, 2026

Date of Test: Mar. 26, 2026 ~ Aug. 04, 2026

Date of Issue: Aug. 04, 2026

The test report is effective only with both signature and specialized stamp. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report only apply to the tested sample.



TEST REPORT CERTIFICATION

Applicant: Guangzhou Toksurvey Information Technology Co., Ltd
Address: No.9 Caipin Road, Building B, Room 801-6, Huangpu District, Guangzhou, China
Manufacturer: Guangzhou Toksurvey Information Technology Co., Ltd
Address: No.9 Caipin Road, Building B, Room 801-6, Huangpu District, Guangzhou, China
Product Name: UNMANNED SURFACE VEHICLE
Trademark: TOKNAV
Model Number: Tboat20, Tboat10
Sample Status: Normal

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47 CFR §2.1091 KDB 447498 D01 General RF Exposure Guidance v06	PASS

Prepared by:

chris chen

Chris Chen
Engineer

Approved by:

V. Ma

Technical Director





TABLE OF CONTENTS

1 . GENERAL INFORMATION	5
1.1 GENERAL DESCRIPTION OF THE EUT	5
1.2 TEST LABORATORY	5
2 . FCC 47CFR § 2.1091 REQUIREMENT	6
2.1 TEST STANDARDS	6
2.2 LIMIT	6
2.3 EUT OPERATION CONDITION	7
2.4 CLASSIFICATION	7
2.5 TEST RESULT	8



Revision History

Rev.	Issue Date	Revisions
00	Aug. 04, 2026	Initial Issue



1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name:	UNMANNED SURFACE VEHICLE	
Test Model Number:	Tboat20	
Series Number:	Tboat10	
Model Difference:	1. Dimensional differences (Tboat10 model: 980*520*254mm, Tboat20 model: 1280*580*430mm) 2. Number of network ports: (Tboat10 model comes standard with a single network port, Tboat20 model comes standard with dual network ports)	
Frequency Bands:	2.4G SRD	2411~2477MHz
	5.8G SRD	5730~5840MHz
	GSM	850: 824 MHz ~ 849MHz 1900: 1850 MHz ~ 1910MHz
	WCDMA	Band V: 824 MHz ~ 849 MHz Band II: 1850 MHz ~ 1910 MHz Band IV: 1710 MHz ~ 1755 MHz
	LTE	LTE Band 2:1850~1910MHz LTE Band 4:1710~1755MHz LTE Band 5: 824~849MHz LTE Band 7:2500~2570MHz LTE Band 12: 699-716MHz LTE Band 13: 777-787MHz LTE Band 25: 1850-1915MHz LTE Band 26: 814-824MHz/824-849MHz LTE Band 38: 2570-2620MHz LTE Band 41: 2496-2690MHz
Adapter:	Input: AC 100-240V 50/60Hz 5A Output: DC 33.6V 12.5A	
Battery:	Capacity: 25mAh Rated Voltage: 29.6V	
Hardware Version:	N/A	
Software Version:	N/A	

1.2 TEST LABORATORY

Company Name:	Shenzhen LGT Test Service Co., Ltd.
Address:	Room 205, Building 13, Zone B, Zhenxiong Industrial Park, No.177, Renmin West Road, Jinsha, Kengzi Street, Pingshan District, Shenzhen, Guangdong, China
Accreditation Certificate:	FCC Registration No.: 746540
	CAB ID: CN0136



2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)
Limits for Occupational / controlled Exposures			
0.3-3.0	614	1.63	*(100)
3.0-30	1842/f	4.89/f	*(900/f ²)
30-300	61.4	0.163	1.0
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
0.3-1.34	614	1.63	*(100)
1.34-30	824/f	2.19/f	*(180/f ²)
30-300	27.5	0.073	0.2
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

* = Plane-wave equivalent power density.

Friss Formula

Friss Transmission Formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.



2.3 EUT OPERATION CONDITION

EUT was enabled to transmit and receive at lowest, middle and highest channels.

2.4 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.



2.5 TEST RESULT

Turn up Result

Mode	Turn up Power
GSM 850	33.5±1dBm
GSM 1900	26.5±1dBm
WCDMA B2	24±1dBm
WCDMA B4	24±1dBm
WCDMA B5	23.5±1dBm
LTE B2	23.5±1dBm
LTE B4	22.5±1dBm
LTE B5	23±1dBm
LTE B7	22±1dBm
LTE B12	23±1dBm
LTE B13	23±1dBm
LTE B25	23±1dBm
LTE B26	23.5±1dBm
LTE B38	22.5±1dBm
LTE B41	23±1dBm
2.4G SRD	-3±2dBm
5.8G SRD	-3±2dBm

Note: dBm=dBuv/m@3m-95.2



The MPE result of worst mode:

RF Function	Max Turn up Power (dBm)	Duty cycle factor	Max Power (dBm)	Max Power (mW)	ANT Gain (dBi)	ANT Gain (gain of antenna in linear scale)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Ratio	Result
GSM 850(1Slot)	34.5	-9.03	25.47	352.37	3.5	2.24	0.157	0.549	0.286	Pass
GSM 1900(1Slot)	27.5	-9.03	18.47	70.31	5.5	3.55	0.050	1.000	0.050	Pass
WCDMA Band 2	25	0	25	316.23	5.5	3.55	0.223	1.000	0.223	Pass
WCDMA Band 4	25	0	25	316.23	5.5	3.55	0.223	1.000	0.223	Pass
WCDMA Band 5	24.5	0	24.5	281.84	3.5	2.24	0.126	0.549	0.229	Pass
LTE Band 2	24.5	0	24.5	281.84	5.5	3.55	0.199	1.000	0.199	Pass
LTE Band 2	23.5	0	23.5	223.87	5.5	3.55	0.158	1.000	0.158	Pass
LTE Band 5	24	0	24	251.19	3.5	2.24	0.112	0.549	0.204	Pass
LTE Band 7	23	0	23	199.53	4.6	2.88	0.114	1.000	0.114	Pass
LTE Band 12	24	0	24	251.19	3.5	2.24	0.112	0.466	0.240	Pass
LTE Band 13	24	0	24	251.19	3.5	2.24	0.112	0.518	0.216	Pass
LTE Band 25	24	0	24	251.19	5.5	3.55	0.177	1.000	0.177	Pass
LTE Band 26	24.5	0	24.5	281.84	3.5	2.24	0.126	0.543	0.231	Pass
LTE Band 38	23.5	-1.99	21.51	141.58	4.6	2.88	0.081	1.000	0.081	Pass
LTE Band 41	24	-1.99	22.01	158.85	4.6	2.88	0.091	1.000	0.091	Pass

RF Function	Max Turn up Power (dBm)	Max Turn up Power (mW)	ANT Gain (dBi)	ANT Gain (gain of antenna in linear scale)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Ratio	Result
2.4G SRD	-1.00	0.79	3	2.00	0.0003	1	0.0003	Pass
5.8G SRD	-1.00	0.79	3	2.00	0.0003	1	0.0003	Pass

Multiple transmission: GSM 850(1Slot)+ 2.4G SRD =0.286+0.0003=0.2863 < 1

Note:

1. The RF Exposure is less than the limit, complies with the exemption requirements.

END OF THE REPORT