



# EMF TEST REPORT

Product Name: High Precision GNSS Receiver

Model Name: T40, T40Pro

FCC ID: 2BCUE-T40

Issued For : Guangzhou Toksurvey Information Technology Co., Ltd

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Guangzhou, China

Issued By : Shenzhen LGT Test Service Co., Ltd.

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## 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: High Precision GNSS Receiver

Trademark: TOKNAV

Model Name: T40

Series Model: T40Pro

Sample Status: Normal

### APPLICABLE STANDARDS

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

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### Revision History

Rev.	Issue Date	Revisions
00	Sep. 12, 2025	Initial Issue



## 1. GENERAL INFORMATION

### 1.1 GENERAL DESCRIPTION OF THE EUT

Product Name:	High Precision GNSS Receiver	
Trademark:	TOKNAV	
Test Model Name:	T40	
Series Model:	T40Pro	
Model Difference:	T40 has AR module, laser module, laser camera, T40Pro has AR module, camera.	
Frequency Bands:	Bluetooth	2402-2480MHz
	2.4G WLAN	802.11b/g/n(20MHz): 2412~2462MHz 802.11n(40MHz):2422~2452MHz
	5G WLAN	IEEE 802.11a/n(HT20)/ac(VHT20): 5.180GHz-5.240GHz IEEE 802.11n(HT40)/ac(VHT40): 5.190GHz-5.230GHz IEEE 802.11ac(VHT80): 5.210GHz
	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 0.7A Max Output: DC 12V 2A 24.0W	
	Battery Charger: Input: DC 9-12V Output: DC 8.4V 1.5A	
Battery:	Capacity: 3400mAh Rated Voltage: 7.2V	
Hardware Version:	T86R-PCBA.1.1.250410	
Software Version:	T86-FMW3.2.635.2507.2767	



## 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	A2LA Certificate No.: 6727.01
	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 <sup>2</sup> )
<b>Limits for Occupational / controlled Exposures</b>			
0.3-3.0	614	1.63	*(100)
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )
30-300	61.4	0.163	1.0
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
<b>Limits for General population / Uncontrolled Exposure</b>			
0.3-1.34	614	1.63	*(100)
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )
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.

Friis Formula

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

Where

P<sub>d</sub> = power density in mW/cm<sup>2</sup>

P<sub>out</sub> = output power to antenna in mW

G = gain of antenna in linear scale

$\pi = 3.1416$

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±1dBm
GSM 1900	29±1dBm
WCDMA B2	29±1dBm
WCDMA B4	25±1dBm
WCDMA B5	22±1dBm
LTE B2	23.5±1dBm
LTE B4	24.5±1dBm
LTE B5	22.5±1dBm
LTE B7	23±1dBm
LTE B12	24.5±1dBm
LTE B13	23±1dBm
LTE B17	23.5±1dBm
LTE B41	23.5±1dBm
LTE B66	22.5±1dBm
BT-GFSK	23±1dBm
BT-π/4-DQPSK	24±1dBm
BT-8DPSK	23±1dBm
BLE 1M-GFSK	23±1dBm
2.4G WIFI-802.11b	4.5±1dBm
2.4G WIFI-802.11g	3.5±1dBm
2.4G WIFI-802.11n(HT20)	3.5±1dBm
2.4G WIFI-802.11n(HT40)	4±1dBm
5G WIFI-802.11a	4±1dBm
5G WIFI-802.11n(HT20)	13.5±1dBm
5G WIFI-802.11n(HT40)	15±1dBm
5G WIFI-802.11ac(VHT20)	15±1dBm
5G WIFI-802.11ac(VHT40)	15±1dBm
5G WIFI-802.11ac(VHT80)	12.5±1dBm

**The MPE result of worst mode:**

RF Function	Frequency (MHz)	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/cm²)	Limit (mW/cm²)	Ratio	Result
GSM (4Slot)	824	30	-3.01	26.99	500.03	0.1	1.02	0.102	0.549	0.185	Pass
WCDMA	824	25.5	0	25.5	354.81	1.1	1.29	0.091	0.549	0.166	Pass
LTE	824	25.5	0	25.5	354.81	0.1	1.02	0.072	0.549	0.131	Pass

RF Function	Frequency (MHz)	Max Turn up Power (dBm)	Max Turn up Power (mW)	ANT Gain (dBi)	ANT Gain (gain of antenna in linear scale)	Power Density (mW/cm²)	Limit (mW/cm²)	Ratio	Result
BLE	2480	5.50	3.55	2.9	1.95	0.001	1	0.001	Pass
BT	2480	5.50	3.55	2.9	1.95	0.001	1	0.001	Pass
2.4G WIFI	2422	16.00	39.81	2.9	1.95	0.015	1	0.015	Pass
5G WIFI	5180	14.50	28.18	4.3	2.69	0.015	1	0.015	Pass

**Multiple transmission:  $0.185+0.015=0.201 < 1$** **Note:**

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

※※※※※END OF THE REPORT※※※※※