



MPE Report

Report No.:STS2601137H01

Issued for

SEEWORLD Technology Co.,ltd

4th Floor, No.121, Kecheng Building, Science Road, Luogang
District, Guangzhou, Guangdong Province, China

Product Name: Long standby Tracker

Brand Name: N/A

Model Name: W21L

Series Model(s): EF533, W21L-E, W21L-U, W21L-X

FCC ID: 2AWTV-W21L

Test Standard: FCC 47CFR §2.1091

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the ShenZhen STS Test Services Co., Ltd.

**TEST REPORT**

Applicant's Name : SEEWORLD Technology Co.,Ltd
Address..... : 4th Floor, No.121, Kecheng Building, Science Road, Luogang District, Guangzhou, Guangdong Province, China
Manufacturer's Name : SEEWORLD Technology Co.,Ltd
Address..... : 4th Floor, No.121, Kecheng Building, Science Road, Luogang District, Guangzhou, Guangdong Province, China

Product Description

Product Name : Long standby Tracker
Brand Name..... : N/A
Model Name..... : W21L
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Test Standards : FCC 47CFR §2.1091
447498 D01 Interim General RF Exposure Guidance v06

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Date of Test

Date of receipt of test item : 13 Jan. 2026
Date (s) of performance of tests..... : 13 Jan. 2026~06 Mar. 2026
Date of Issue : 06 Mar. 2026
Test Result..... : **Pass**

Testing Engineer :

(Aaron Bu)

Technical Manager :

(Skylar Li)

Authorized Signatory :

(Bovey Yang)





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**Revision History**

Rev.	Issue Date	Report No.	Effect Page	Contents
00	06 Mar. 2026	STS2601137H01	ALL	Initial Issue



1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Long standby Tracker	
Brand Name	N/A	
Model Name	W21L	
Series Model(s)	EF533, W21L-E, W21L-U, W21L-X	
Model Difference	Only the model names are different	
Product Description	The EUT is Long standby Tracker	
	Operation Frequency:	CAT-M: TX: CAT-M Band 2:1850~1910MHz CAT-M Band 4:1710~1755MHz CAT-M Band 5:824~849MHz CAT-M Band 12:699~716MHz CAT-M Band 13:777~787MHz CAT-M Band 25:1850~1915MHz CAT-M Band 26 Part 90:814~824MHz CAT-M Band 26 Part 22:824-849 MHz CAT-M Band 66:1710~1780MHz RX: CAT-M Band 2:1930 ~1990MHz CAT-M Band 4:2110~2155MHz CAT-M Band 5:869~894MHz CAT-M Band 12:729~746MHz CAT-M Band 13:746~756MHz CAT-M Band 25:1930~1995MHz CAT-M Band 26 Part 90:859~869MHz CAT-M Band 26 Part 22:869-894MHz CAT-M Band 66:2110~2200MHz NB-IoT: TX: NB IoT Band 2:1850~1910MHz NB IoT Band 4:1710~1755MHz NB IoT Band 5:824~849MHz NB IoT Band 12:699~716MHz NB IoT Band 13:777~787MHz NB IoT Band 17: 704-716 MHz NB IoT Band 25:1850~1915MHz NB IoT Band 26 Part 90:814~824MHz NB IoT Band 26 Part 22:824-849 MHz NB IoT Band 66:1710~1780MHz RX: NB IoT Band 2:1930 ~1990MHz NB IoT Band 4:2110~2155MHz NB IoT Band 5:869~894MHz NB IoT Band 12:729~746MHz NB IoT Band 13:746~756MHz NB IoT Band 17: 734-746 MHz NB IoT Band 25:1930~1995MHz NB IoT Band 26 Part 90:859~869MHz NB IoT Band 26 Part 22:869-894MHz NB IoT Band 66:2110~2200MHz



	Modulation Type:	CAT-M: QPSK, 16QAM NB-IoT: BPSK,QPSK
	Antenna gain:	CAT-M B2:-1.85 dBi CAT-M B4:-2.55 dBi CAT-M B5:-2.56 dBi CAT-M B12:-2.4 dBi CAT-M B13:-2.4 dBi CAT-M B25:-1.85 dBi CAT-M B26:-2.4 dBi CAT-M B66:-2.55 dBi NB IoT B2:-1.85 dBi NB IoT B4:-2.55 dBi NB IoT B5:-2.56 dBi NB IoT B12:-2.4 dBi NB IoT B13:-2.4 dBi NB IoT B17:-2.4 dBi NB IoT B25:-1.85 dBi NB IoT B26:-2.4 dBi NB IoT B66:-2.55 dBi
	Antenna Designation:	PIFA
Power Rating	Input: 5VDC	
Adapter	Rated Voltage: 3.0V Charge Limit Voltage: 4.2V Capacity: 5000mAh	
Battery	N/A	
Hardware Version	DC 4.5V ~ DC 5.5V (Normal: DC 5V)	
Software Version	Input: 5VDC	



1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01



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			
300 - 1500	--	--	F/300
3.0-30	1842/f	4.89/f	*(900/f ²)
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1.34-30	824/f	2.19/f	*(180f ²)
1500 – 100000	--	--	1.0

F= Frequency in MHz

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 TEST RESULT

Tune up

RF Function	Frequency (MHz)	Separation distance (cm)	Max AVG Power (dBm)	Turn Up Power (dBm)	Max Tune Up Power (dBm)	ANT Gain (dBi)	Max EIRP (dBm)	Max EIRP (mW)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Ratio	Result
NB-IoT Band 2	1850	20	25.00	25±1	26.00	-1.9	24.15	260.016	0.052	1	0.0517	Pass
NB-IoT Band 4	1710	20	25.00	25±1	26.00	-2.6	23.45	221.309	0.044	1	0.0440	Pass
NB-IoT Band 5	824	20	25.00	25±1	26.00	-2.6	23.44	220.800	0.044	0.5493333	0.0800	Pass
NB-IoT Band 12	699	20	25.00	25±1	26.00	-2.4	23.60	229.087	0.046	0.466	0.0978	Pass
NB-IoT Band 13	777	20	25.00	25±1	26.00	-2.4	23.60	229.087	0.046	0.518	0.0880	Pass
NB-IoT Band 17	704	20	25.00	25±1	26.00	-2.4	23.60	229.087	0.046	0.4693333	0.0971	Pass
NB-IoT Band 25	1850	20	25.00	25±1	26.00	-1.9	24.15	260.016	0.052	1	0.0517	Pass
NB-IoT Band 26	814	20	25.00	25±1	26.00	-2.4	23.60	229.087	0.046	0.5426667	0.0840	Pass
NB-IoT Band 66	1710	20	25.00	25±1	26.00	-2.6	23.45	221.309	0.044	1	0.0440	Pass
eMTC Band 2	1850	20	25.00	25±1	26.00	-1.9	24.15	260.016	0.052	1	0.0517	Pass
eMTC Band 4	1710	20	25.00	25±1	26.00	-2.6	23.45	221.309	0.044	1	0.0440	Pass
eMTC Band 5	824	20	25.00	25±1	26.00	-2.6	23.44	220.800	0.044	0.5493333	0.0800	Pass
eMTC Band 12	699	20	25.00	25±1	26.00	-2.4	23.60	229.087	0.046	0.466	0.0978	Pass
eMTC Band 13	777	20	25.00	25±1	26.00	-2.4	23.60	229.087	0.046	0.518	0.0880	Pass
eMTC Band 25	1850	20	25.00	25±1	26.00	-1.9	24.15	260.016	0.052	1	0.0517	Pass
eMTC Band 26	814	20	25.00	25±1	26.00	-2.4	23.60	229.087	0.046	0.5426667	0.0840	Pass
eMTC Band 66	1710	20	25.00	25±1	26.00	-2.6	23.45	221.309	0.044	1	0.0440	Pass

Note: 1. The Maximum power is less than the limit, complies with the exemption requirements.

2. The Bluetooth and WLAN can't simultaneous transmission at the same time.

3. ERP = EIRP - 2.15

※※※※※END OF THE REPORT※※※※※