

# TEST REPORT

of

FCC CFR 47 part 1, 1.1307(b), 1.1310

FCC ID: WA2ST730P

Equipment Under Test : Tracking Device  
Model Name : ST730P  
Variant Model Name(s) : -  
Applicant : Suntech International Ltd.  
Manufacturer : Suntech International Ltd.  
Date of Receipt : 2020.12.11  
Date of Test(s) : 2020.12.03 ~ 2021.01.27  
Date of Issue : 2021.02.10

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

- 1) The results of this test report are effective only to the items tested.
- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
- 3) This test report cannot be reproduced, except in full, without prior written permission of the Company.

Tested by:

  
Jinhyoung Cho

Technical  
Manager:

  
Jungmin Yang

**SGS Korea Co., Ltd. Gunpo Laboratory**



**SGS Korea Co., Ltd.**

4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

<http://www.sgsgroup.kr>

Report Number: F690501-RF-RTL001672

Page: 2 of 5

# INDEX

## Table of Contents

Page

|                                 |   |
|---------------------------------|---|
| 1. General Information -----    | 3 |
| 2. RF Exposure Evaluation ----- | 4 |

## 1. General Information

### 1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

- 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

Telephone : +82 31 688 0901

FAX : +82 31 688 0921

### 1.2. Details of Applicant

Applicant : Suntech International Ltd.

Address : A-1705, 1706, Greatvalley, 32, Digital-ro 9-gil, Geumcheon-gu, Seoul,  
South Korea, 08512

Contact Person : Kim, Yo-han

Phone No. : +82 02 6327 5690

### 1.3. Details of Manufacturer

Company : Same as applicant

Address : Same as applicant

### 1.4. Description of EUT

|                      |                                                          |
|----------------------|----------------------------------------------------------|
| Kind of Product      | Tracking Device                                          |
| Model Name           | ST730P                                                   |
| Power Supply         | DC 3.6 V                                                 |
| Frequency Range      | 902.137 5 MHz ~ 904.662 5 MHz (Sigfox)<br>915 MHz (LoRa) |
| Modulation Technique | DPBSK, CSS                                               |
| Number of Channels   | 54 channels (Sigfox)<br>1 channel (LoRa)                 |
| Antenna Type         | PCB antenna                                              |
| Antenna Gain         | 1.48 dB i                                                |
| H/W Version          | 02                                                       |
| S/W Version          | 300T19                                                   |

### 1.5. Test Report Revision

| Revision | Report Number        | Date of Issue | Description |
|----------|----------------------|---------------|-------------|
| 0        | F690501-RF-RTL001672 | 2021.02.10    | Initial     |

## 2. RF Exposure Evaluation

### 2.1. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

#### 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> ) | Average Time     |
|---------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------------|------------------|
| (A) Limits for Occupational/Controlled Exposure         |                               |                               |                                     |                  |
| 0.3-3.0                                                 | 614                           | 1.63                          | *100                                | 6                |
| 3.0-30                                                  | 1842/f                        | 4.89/f                        | *900/f <sup>2</sup>                 | 6                |
| 30-300                                                  | 61.4                          | 0.163                         | 1.0                                 | 6                |
| 300-1 500                                               | -                             | -                             | f/300                               | 6                |
| 1 500-100 000                                           | -                             | -                             | 5                                   | 6                |
| (B) Limits for General Population/Uncontrolled Exposure |                               |                               |                                     |                  |
| 0.3-1.34                                                | 614                           | 1.63                          | *100                                | 30               |
| 1.34-30                                                 | 824/f                         | 2.19/f                        | *180/f <sup>2</sup>                 | 30               |
| 30-300                                                  | 27.5                          | 0.073                         | 0.2                                 | 30               |
| <b><u>300-1 500</u></b>                                 | -                             | -                             | <b><u>f/1500</u></b>                | <b><u>30</u></b> |
| 1 500-100 000                                           | -                             | -                             | 1.0                                 | 30               |

#### 2.1.1. Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where  $P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

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

$P_d$  the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

### 2.1.2. Test Result of RF Exposure Evaluation

Test Item : RF Exposure Evaluation Data

Test Mode : Normal Operation

### 2.1.3. Output Power into Antenna & RF Exposure Evaluation Distance

#### Sigfox

##### - Maximum tune up tolerance

| Frequency Range<br>(MHz) | Output Average<br>Power to Antenna<br>(dB m) | Antenna<br>Gain<br>(dB i) | Power Density<br>at 20 cm<br>(mW/cm <sup>2</sup> ) | Limits<br>(mW/cm <sup>2</sup> ) |
|--------------------------|----------------------------------------------|---------------------------|----------------------------------------------------|---------------------------------|
| 902.137 5 ~ 904.662 5    | 21                                           | 1.48                      | 0.035 215                                          | 0.60                            |

#### LoRa

##### - Maximum tune up tolerance

| Frequency<br>(MHz) | Output Average<br>Power to Antenna<br>(dB m) | Antenna<br>Gain<br>(dB i) | Power Density<br>at 20 cm<br>(mW/cm <sup>2</sup> ) | Limits<br>(mW/cm <sup>2</sup> ) |
|--------------------|----------------------------------------------|---------------------------|----------------------------------------------------|---------------------------------|
| 915                | 10                                           | 1.48                      | 0.002 797                                          | 0.61                            |

#### Note;

- The power density Pd (5th column) at a distance of 20 cm calculated from the friis transmission formula is far below the limit of 1 mW/cm<sup>2</sup>.
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- This equipment should be installed and operated with minimum 20 cm between the radiator and your body.
- The antenna gain of this transmitter is less than 6 dB i and must not be collocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.
- According to KDB 447498 D01 RF Exposure Guidance 4.1.
- The Sigfox and LoRa mode do not transmit simultaneously.

- End of the Test Report -