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Shenzhen Branch

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SAR Evaluation Report

Application No.:	SZEM1603001903CR
Applicant:	Xi'an Skye Intelligence Technology Co., Ltd.
Manufacturer:	Xi'an Skye Intelligence Technology Co., Ltd.
Factory:	Xi'an Skye Intelligence Technology Co., Ltd.
Product Name:	Tracker
Model No.(EUT):	TR2
Trade Mark:	Skye Intelligence
FCC ID:	2AHTB-20151012
Standards:	47 CFR Part 1.1307 (2015) 47 CFR Part 2.1093 (2015) KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	2016-05-05
Date of Test:	2016-05-06 to 2016-05-31
Date of Issue:	2016-06-03
Test Result :	**PASS***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00		2016-06-03		Original

Authorized for issue by:				
Tested By		Hank yan.		2016-05-10
		(Hank yan) /Project Engineer		**Date**
Prepared By		Joyce Shi		2016-06-03
		(Joyce Shi) /Clerk		**Date**
Checked By		Eric Fu		2016-06-03
		(Eric Fu) /Reviewer		**Date**

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4 General Information

4.1 Client Information

Applicant:	Xi'an Skye Intelligence Technology Co., Ltd.
Address of Applicant:	Room 504 Block E, GLP I-Park, 211 Tiangu #8 Road, High-tech Zone, Xi'an 710077, China
Manufacturer:	Xi'an Skye Intelligence Technology Co., Ltd.
Address of Manufacturer:	Room 504 Block E, GLP I-Park, 211 Tiangu #8 Road, High-tech Zone, Xi'an 710077, China
Factory:	Xi'an Skye Intelligence Technology Co., Ltd.
Address of Factory:	Room 504 Block E, GLP I-Park, 211 Tiangu #8 Road, High-tech Zone, Xi'an 710077, China

4.2 General Description of EUT

Product Name:	Tracker
Model No.:	TR2
Trade Mark:	SKYE
Note:	The product uses an approved Bluetooth LE single module (FCC ID: WAP2001).
Operation Frequency:	UWB: 3.5GHz, 4.0GHz, 4.5GHz Bluetooth LE: 2402MHz to 2480MHz
Modulation Type:	UWB: BPM/BPSK Bluetooth LE: GFSK
Number of Channel:	UWB: 3 Bluetooth LE: 40
Sample Type:	Portable production
Antenna Type	UWB: PCB antenna Bluetooth LE: Chip antenna
Antenna Gain	UWB: 0dBi Bluetooth LE: 0.5dBi
Power Supply:	Battery: DC3.7V Li-ion Battery
Test Voltage:	AC 120V/60Hz

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4.3 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch E&E Lab

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China 518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

4.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 10m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-823, R-4188, T-1153 and C-2383 respectively.

• **FCC – Registration No.: 556682**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 556682.

• **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.5 Deviation from Standards

None.

4.6 Abnormalities from Standard Conditions

None.

4.7 Other Information Requested by the Customer

None.

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5 SAR Evaluation

5.1 RF Exposure Compliance Requirement

5.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

5.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation[17]
The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

5.1.3 EUT RF Exposure

The Max Conducted Peak Output Power of UWB is -10.00dBm in highest channel(4.5GHz), The Max Conducted Peak Output Power of UWB is 2.16dBm in lowest channel(2.402GHz);

The best case gain of the UWB antenna is 0dBi. And the best case gain of the Bluetooth LE antenna is 0.5dBi.

$EIRP_{(UWB)}$= -10.00dBm + 0dBi = -10.00dBm = 0.1mW

$EIRP_{(BLE)}$= 2.16dBm + 0.5dBi = 2.66dBm = 1.84502mW

According to the formula. calculate the EIRP test result:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)]

General RF $Exposure_{(UWB)}$ = (0.1mW / 5 mm) x √4.5GHz = 0.042 (I)

General RF $Exposure_{(BLE)}$ = (1.84502mW / 5 mm) x √2.402GHz = 0.572 (II)

I+II = 0.614 (III)

SAR requirement:

S= 3.0 (IV);

III < IV.

So the SAR report is not required.

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