



Fangguang Inspection & Testing Co., Ltd.



# RF Exposure Evaluation Declaration

Report No.: S20250714488301E02

Issue Date: 08-12-2025

**Applicant:** Jiangsu Shushi Technology Co., Ltd.  
**Address:** NO.9 Nanxu Road, RunZhou District, Zhenjiang, Jiangsu, China  
**FCC ID:** 2BAGQ-3RSM0247Z  
**Application Type:** Certification  
**Product:** Smart Soil Moisture Sensor  
**Model No.:** 3RSM0147Z  
**Trade Mark:**

**FCC Rule Part(s):** CFR 47, FCC Part 2.1091 Radio frequency radiation exposure evaluation: mobile devices.

**Item Receipt date:** Jul. 15, 2025  
**Test Date:** Jul. 16 ~ Jul. 31, 2025

Compiled By

Stone Zhang

(Stone Zhang)  
Senior Test Engineer

Approved By

Line Chen

(Line Chen)  
Engineer Manager



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in KDB 558074 D01. Test results reported herein relate only to the item(s) tested.

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The test report must not be used by the client to claim product certifications, approval, or endorsement by NVLAP, NIST or any agency of U.S. Government.

## Revision History

Report No.	Version	Description	Issue Date
S20250714488301E02	Rev. 01	/	08-12-2025

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## §2.1033 General Information

<b>Applicant:</b>	Jiangsu Shushi Technology Co., Ltd.
<b>Applicant Address:</b>	NO.9 Nanxu Road, RunZhou District, Zhenjiang, Jiangsu, China
<b>Manufacturer:</b>	Jiangsu Shushi Technology Co., Ltd.
<b>Manufacturer Address:</b>	NO.9 Nanxu Road, RunZhou District, Zhenjiang, Jiangsu, China
<b>Factory:</b>	Jiangsu Shushi Technology Co., Ltd.
<b>Factory Address:</b>	NO.9 Nanxu Road, RunZhou District, Zhenjiang, Jiangsu, China
<b>Test Site:</b>	Fangguang Inspection & Testing Co., Ltd.
<b>LAB ID:</b>	CN5037
<b>LAB registration number:</b>	600222-0
<b>Test Site Address:</b>	No.8 Ningyun Rd., Xinwu District Wuxi, Jiangsu 214000 China
<b>FCC Rule Part(s):</b>	FCC Part 2.1091
<b>FCC ID:</b>	2BAGQ-3RSM0247Z
<b>Test Device Serial No.:</b>	S/N.: / <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering

## 1. Product Information

### 1.1. Equipment Description

Product Name:	Smart Soil Moisture Sensor
Test Model:	3RSM0147Z
Trade Mark:	 THIRD REALITY
Input Voltage Range:	DC1.5V(1*AA)
Software Version:	v1.00.47
Hardware Version:	V1.7
EUT sample number:	S20250714488301-1-1/1-2

Note: This information is provided by the Customer and its authenticity is the responsibility of the Customer.

### 1.2. Product Specification Subjective to this Report

Zigbee Frequency	2405~2480MHz
Number of Channels	16
Channel Spacing	5 MHz
Type of modulation	O-QPSK
Antenna Type:	Single Ceramic Antenna
Antenna Gain:	2.8dBi

Note: The maximum Antenna Gain was declared by the manufacturer.

## 2. RF Exposure Evaluation

### 2.1. Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of 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> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula:  $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

Pd = power density in mW/cm<sup>2</sup>

Pout = 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

Pd is the limit of MPE, 1mW/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 r where the MPE limit is reached.

## 2.2. Calculation Method

Temperature:	26.7 °C
Relative Humidity:	44 %
ATM Pressure:	98.6 kPa
Test Data:	2025-07-30
Test Engineer:	Stone Zhang

Product	Smart Soil Moisture Sensor
Test Item	RF Exposure Evaluation

Mode	Frequency (MHz)	Maximum Conducted Output Power (dBm)	Antenna Gain (dBi)	PG		MPE (mW/cm <sup>2</sup> )	MPE Limits (mW/cm <sup>2</sup> )
				(dBm)	(mW)		
Zigbee	2405 - 2480	10.71	2.80	13.51	22.44	0.0045	1.00

Remark: 1. MPE use distance is 20cm from manufacturer declaration of user manual.

Remark: 2. Use the maximum gain of all bands when evaluating.

## CONCLUSION:

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

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4. The report content is only applicable to the tested sample(s) this time.
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7. This report is issued by the following laboratory premises:  
3/F., Comprehensive Laboratory Building, No.8, Ningyun Road, Xinwu District, Wuxi, Jiangsu, China (Ningyun Road Laboratory)

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