

TEST REPORT

Application No.: SUCR2603000174TL
Applicant: Shanghai Sunmi Technology Co.,Ltd.
Address of Applicant: Room 505,No.388,Song Hu Road,Yang Pu District,Shanghai,China
Manufacturer: Shanghai Sunmi Technology Co.,Ltd.
Address of Manufacturer: Room 505,No.388,Song Hu Road,Yang Pu District,Shanghai,China
Equipment Under Test (EUT):
EUT Name: Wireless Data Terminal
Model No.: TFB1A
Trade Mark: SUNMI
FCC ID: 2AH25M3WH
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2026-03-04
Date of Test: 2026-05-13
Date of Issue: 2026-05-19

Test Result:
Pass*

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

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Revision Record			
Version	Description	Date	Remark
00	Original	2026-05-19	/

Authorized for issue by:			
Tested By			
		Hayley Zhang/Project Engineer	
Approved By			
		Cedar Cheng /Reviewer	



2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)	Pass
Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence		N/A	47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Maximum Conducted Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10-2020/Cor1-2023 7.8.5	47 CFR Part 15, Subpart C 15.247(b)(1)	Pass

Remark:

This test report (Report No.: SUCR260300017402 issue on 2026-05-19) is based on the original test report (Report No.: SUCR250500042201 issue on 2025-06-11).

Review this report and original report, this report just changing the parts according to the declaration letter from client.

Therefore in this report only power is performed, and other test data in this report are refer to the previous report with report number SUCR250500042201 issue on 2025-06-11.

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4 General Information

4.1 Details of E.U.T.

Power supply:	3.87V from battery
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.3
Modulation Type:	GFSK, pi/4DQPSK, 8DPSK
Number of Channels:	79
Channel Spacing:	1MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Antenna Type:	FPC Antenna
Antenna Gain:	2.01dBi (Provided by the manufacturer)

4.2 Environment Parameter

Environment Parameter	Selected Values During Tests	
Relative Humidity	47.2%	
Value	Temperature(°C)	Voltage(V)
NTNV	23.1	3.87
Note: NV:Normal Voltage LV:Low Extreme Test Voltage HV:High Extreme Test Voltage NT:Normal Temperature LT:Low Extreme Test Temperature HT:High Extreme Test Temperature		

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
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The EUT has been tested as an independent unit.			

4.4 Measurement Uncertainty & Decision Rule

No.	Item	Measurement Uncertainty
1	RF conducted power	$\pm 0.75\text{dB}$
2	Temperature test	$\pm 1^{\circ}\text{C}$
3	Humidity test	$\pm 3\%$
4	Supply voltages	$\pm 1\%$
5	Time	$\pm 3\%$
Remark: The U_{lab} (lab Uncertainty) is less than $U_{\text{CISPR/ETSI}}$ (CISPR/ETSI Uncertainty), so the test results – compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit; – non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.		

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu)
Pilot Free Trade Zone

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g., max. internal working frequency, antenna gain, cable loss, etc) is provided by the applicant. (If applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (If applicable).

3. Sample source: sent by customer.

4.6 Test Facility

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

• **A2LA (Certificate No. 6336.01)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.is accredited by the American Association for Laboratory Accreditation (A2LA).

• **FCC (Designation Number: CN1312)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized as an accredited testing laboratory. Test Firm Registration Number:717327

• **ISED (CAB Identifier: CN0120)**

SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

Company Number: 27594

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
RF Conducted Test						
1	Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	2026/1/14	2027/1/13
2	Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-15	2025/11/21	2026/11/20
3	MXG Vector signal genitor	KEYSIGHT	N5182B	SUWI-01-38-01	2026/1/14	2027/1/13
4	Signal Generator	ROHDE&SCHWARZ	SMW200A	SUWI-01-07-08	2026/1/14	2027/1/13
5	Signal Generator	ROHDE&SCHWARZ	SMW100A	SUWI-01-08-01	2026/1/14	2027/1/13
6	MXG Vector Signal Generator	ROHDE&SCHWARZ	SMR20	SUWI-01-33-01	2025/11/21	2026/11/20
7	Wideband Radio Communication Tester	ROHDE&SCHWARZ	CMW500	SUWI-01-16-13	4/22/2026	4/21/2027
8	Wideband Radio Communication Test Station	Anritsu	MT8000A	SUWI-01-34-02	11/21/2025	11/20/2026
9	Wideband Radio Communication Tester	Anritsu	MT8821C	SUWI-01-26-03	11/21/2025	11/20/2026
10	Power meter	Anritsu	ML2495A	SUWI-01-31-01	11/21/2025	11/20/2026
11	Pulse power sensor	Anritsu	MA2411B	SUWI-01-32-01	11/21/2025	11/20/2026
12	DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	1/14/2026	1/13/2027
13	Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-07	2/11/2026	2/10/2027
15	Measurement Software	TST	TST 272 V2.02	SUWI-03-55-03	NCR	NCR
16	RF Control unit	TST	TSCB3023R2	SUWI-02-20-01	NCR	NCR
17	RFCables	Tonscend	NA	SUWI-01-03-01	1/15/2026	1/14/2027

Remark: NCR=No Calibration Requirement.

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is FPC Antenna and no consideration of replacement.

The best case gain of the antenna is 2.01 dBi.

Antenna location: Refer to internal photo.

6.2 Other requirements Frequency Hopping Spread Spectrum System Hopping Sequence

6.2.1 Test Requirement:

47 CFR Part 15, Subpart C 15.247(a)(1),(g),(h)

6.2.2 Conclusion

Standard Requirement:

The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section. The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hopsets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

Compliance for section 15.247(a)(1):

According to Technical Specification, the pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONES; i.e. the shift register is initialized with nine ones.

> Number of shift register stages: 9

> Length of pseudo-random sequence: $2^9 - 1 = 511$ bits

> Longest sequence of zeros: 8 (non-inverted signal)

Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:

Each frequency used equally on the average by each transmitter.

According to Technical Specification, the receivers are designed to have input and IF bandwidths that match the hopping channel bandwidths of any transmitters and shift frequencies in synchronization with the transmitted signals.

Compliance for section 15.247(g):

According to Technical Specification, the system transmits the packet with the pseudorandom hopping frequency with a continuous data and the short burst transmission from the Bluetooth system is also transmitted under the frequency hopping system with the pseudorandom hopping frequency system.

Compliance for section 15.247(h):

According to Technical specification, the system incorporates with an adaptive system to detect other user within the spectrum band so that it individually and independently to avoid hopping on the occupied channels.

The system is designed not have the ability to coordinated with other FHSS System in an effort to avoid the simultaneous occupancy of individual hopping frequencies by multiple transmitter.



7 Radio Spectrum Matter Test Results

7.1 Maximum Conducted Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(1)

Test Method: ANSI C63.10-2020/Cor1-2023 Section 7.8.5

Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq$ hopping channels < 50
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.1 °C

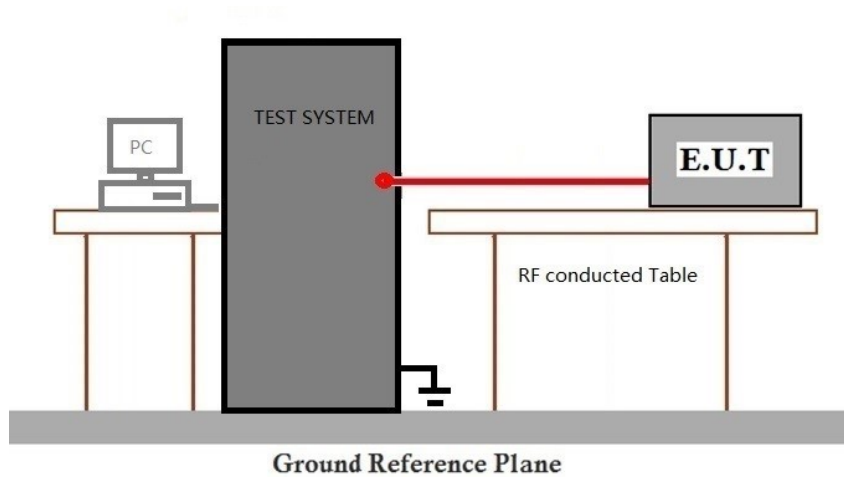
Humidity: 47.2 % RH

Atmospheric Pressure: 1001 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	TX_non-Hop mode_Keep the EUT in continuously transmitting mode with GFSK modulation, Pi/4DQPSK modulation, 8DPSK modulation. All modes have been tested and only the data of worst case is recorded in the report.

7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details



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8 Test Setup Photo

Refer to Appendix_Photographs of Test Setup for SUCR2603000174TL

9 EUT Constructional Details (EUT Photos)

Refer to Appendix_External Photos for SUCR2603000174TL and Appendix_Internal Photos for SUCR2603000174TL



10 Appendix

1. Maximum Conducted Output Power

1.1 Test Result

1.1.1 Power

Mode	TX Type	Frequency (MHz)	Packet Type	Maximum Peak Conducted Output Power (dBm)		Verdict
				ANT2	Limit	
GFSK	SISO	2402	DH5	7.05	≤ 30	Pass
		2441	DH5	7.55	≤ 30	Pass
		2480	DH5	5.30	≤ 30	Pass
Pi/4DQPSK	SISO	2402	2DH5	5.30	≤ 20.97	Pass
		2441	2DH5	6.12	≤ 20.97	Pass
		2480	2DH5	4.20	≤ 20.97	Pass
8DPSK	SISO	2402	3DH5	5.93	≤ 20.97	Pass
		2441	3DH5	6.46	≤ 20.97	Pass
		2480	3DH5	5.22	≤ 20.97	Pass

- End of the Report -