

TEST REPORT

Application No.: SUCR2603000165TL
FCC ID: 2AH25M3WH
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
EUT Description: Wireless Data Terminal
Model No.: TF31A
Trade Mark: SUNMI
Standards: FCC 47 CFR Part 2, Subpart J
FCC 47 CFR Part 15, Subpart C
Date of Receipt: 2026-03-04
Date of Test: 2026-03-13
Date of Issue: 2026-03-23

Test Result :	PASS *
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* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

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Revision Record			
Version	Description	Date	Remark
01	Original	2026-03-23	/

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

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1 Test Summary

Test Item	FCC Rule No.	Test Method	Result
Antenna Requirement	15.203/15.247(b)	--	PASS
Conducted Output Power	15.247 (b)(3)	ANSI C63.10- 2020/Cor1-2023 Section 11.9.1	PASS

Remark:

This test report (Report No.: SUCR260300016503 issue on 2026-03-23) is based on the original test report (Report No.: SUCR250200007203 issue on 2025-05-27).

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

Considering to the difference, pre-scan were performed on the sample in this report to find the items which can be influential to the result in the original test report for fully retest.

Therefore in this report only power is performed, and other test data in this report are refer to the previous report with report number SUCR250200007203 issue on 2025-05-27.

2 General Information

2.1 Details of Client

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

2.2 Test Location

Company:	SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.
Address:	South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone
Post code:	215000
Test engineer:	Ives Cheng, King-p Li

2.3 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

2.4 General Description of EUT

Power Supply:	3.87V from battery		
Operation Frequency:	802.11b/g/n(HT20)/ax(HE20):		2412MHz to 2462MHz
Modulation Type:	802.11b:	DSSS (DBPSK, DQPSK, CCK)	
	802.11g/n:	OFDM (BPSK, QPSK, 16QAM, 64QAM)	
	802.11ax:	OFDM/OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)	
Number of Channels:	802.11b/g/n(HT20)/ax(HE20): 11		
Channel Spacing:	5MHz		
Smart System:	☒ SISO	802.11b/g	
	☒ MIMO	802.11n/ax: 2Tx & 2Rx	
Antenna Type:	FPC Antenna		
Antenna Gain:	3.1dBi(Ant3); -1.74dBi(Ant2)		
	Note: The antenna gain are derived from the gain information report provided by the manufacturer.		
RF Cable:	1dB		
Remark: As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.			

Operation Frequency of each channel (802.11b/g/n HT20 /ax HE20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		
Remark: In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:							
Channel		Frequency for 802.11 b/g/n (HT20) /ax (HE20)					
The Lowest channel		2412MHz					
The Middle channel		2437MHz					
The Highest channel		2462MHz					

2.5 Test Environment and Mode

Environment Parameter	102 kPa Selected Values During Tests	
Relative Humidity	44 % RH Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	23	3.87
Remark: NV: Normal Voltage NT: Normal Temperature		

2.6 Description of Support Units

The EUT has been tested as an independent unit.

2.7 Worst-case configuration and mode

Low data rate was used to test on antenna port conducted tests and radiated spurious emissions since it has the highest maximum power. Following are the worst-case data rates set for test:

Modulation Type	SISO - Data Rate	CDD/MIMO - Data Rate
802.11b	1 Mbps	/
802.11g	6 Mbps	/
802.11n (HT 20)	/	MCS0 (13 Mbps)
802.11ax (HE 20)	/	MCS0 (16 Mbps)

3 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	2025/5/8	2026/5/7
8	Wideband Radio Communication Test Station	Anritsu	MT8000A	SUWI-01-34-02	2025/11/21	2026/11/20
9	Wideband Radio Communication Tester	Anritsu	MT8821C	SUWI-01-26-03	2025/11/21	2026/11/20
10	Power meter	Anritsu	ML2495A	SUWI-01-31-01	2025/11/21	2026/11/20
11	Pulse power sensor	Anritsu	MA2411B	SUWI-01-32-01	2025/11/21	2026/11/20
12	DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	2026/1/14	2027/1/13
13	Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-07	2026/2/11	2027/2/10
14	Temperature Chamber	GIANT FORCE	ICT-017-40-SP-SD	SUWI-01-13-02	2025/5/7	2026/5/6
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	2026/1/15	2027/1/14

4 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	$\pm 0.54\text{dB}$
2	RF power density, conducted	$\pm 1.03\text{dB}$
3	Spurious emissions, conducted	$\pm 0.54\text{dB}$
4	Radio Frequency	1%
5	Duty Cycle	$\pm 0.37\%$
6	Occupied Bandwidth	1%
7	Conduction Emission	$\pm 2.90\text{dB}$ (150kHz to 30MHz)
8	Radiated Emission	$\pm 3.13\text{dB}$ (9k -30MHz)
		$\pm 4.8\text{dB}$ (30M -1GHz)
		$\pm 4.8\text{dB}$ (1GHz to 18GHz)
		$\pm 4.80\text{dB}$ (Above 18GHz)

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.

5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(b)
15.203 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.	
The antenna is FPC Antenna and no consideration of replacement. The best case gain of the antenna is 3.1dBi(Ant3); -1.74dBi(Ant2). <i>Note:</i> <i>The antenna gain are derived from the gain information report provided by the manufacturer.</i> <i>Remark:</i> <i>As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.</i>	

Cyclic Delay Diversity (CDD) System:

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

If all antennas have the same gain, G_{ANT} , Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

- For power spectral density (PSD) measurements on all devices,
 $Array\ Gain = 10 \log(N_{ANT}/N_{SS} = 1) \text{ dB}$.
- For power measurements on IEEE 802.11 devices:
 $Array\ Gain = 0 \text{ dB}$ (i.e., no array gain) for $N_{ANT} \leq 4$;

For power, the directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The Power and PSD limit should be modified if the directional gain of eut is over 6dbi.

The EUT supports CDD System.

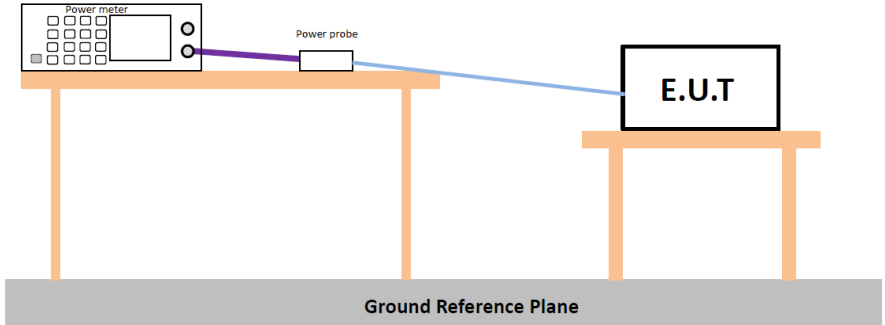
All antennas have the Unequal antenna gain:

ANT3 Gain (dBi)	ANT2 Gain (dBi)	Power DG (dBi)	PSD DG (dBi)	Power Limit Reduction(dB)	PSD Limit Reduction(dB)
3.1	-1.74	3.1	4.02	0	0

Power Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

PSD Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

5.2 Conducted Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10-2020/Cor1-2023 Section 11.9.1
Test Setup:	 * Test with power meter (Detector function: Peak)
Test Instruments:	Refer to section 3 for details.
Exploratory Test Mode:	Transmitting with all kind of modulations, data rates
Final Test Mode:	Refer to section 2.7 for details.
Limit:	30dBm
Test Results:	Pass
The detailed test data see: Appendix	

6 Test Setup Photo

Refer to Appendix_Photos of Test Setup for SUCR2603000165TL

7 EUT Constructional Details (EUT Photos)

Refer to Appendix_External Photos for SUCR2603000165TL and Appendix_Internal Photos for SUCR2603000165TL

8 Appendix

1. Maximum Conducted Output Power

1.1 Test Result

1.1.1 Power

Mode	TX Type	Frequency (MHz)	RU	RU Pos	Maximum Peak Conducted Output Power (dBm)				Verdict
					ANT3	ANT2	MIMO	Limit	
802.11b	SISO	2412	/	/	13.44	13.34	/	<=30	Pass
		2437	/	/	13.73	13.55	/	<=30	Pass
		2462	/	/	13.64	13.42	/	<=30	Pass
802.11g	SISO	2412	/	/	14.19	14.30	/	<=30	Pass
		2437	/	/	14.42	14.22	/	<=30	Pass
		2462	/	/	14.34	14.31	/	<=30	Pass
802.11n (HT20)	MIMO	2412	/	/	13.53	13.58	16.56	<=30	Pass
		2437	/	/	13.60	13.22	16.42	<=30	Pass
		2462	/	/	13.68	13.46	16.58	<=30	Pass
802.11ax (HEW20)	MIMO	2412	SU	/	12.17	12.32	15.26	<=30	Pass
		2437	SU	/	12.08	12.36	15.23	<=30	Pass
		2462	SU	/	12.26	12.22	15.25	<=30	Pass
Note1: Antenna Gain: ANT3: 3.10dBi; ANT2: -1.74dBi;									
Note2: Directional Gain: 3.10dBi									

---End of Report---