

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

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

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1 Test Summary

Test Item	Band ^[1]	FCC rules No.	Test Requirements	Result
Antenna Requirement	--	15.203/15.407(a)	--	PASS
Maximum Conducted Output Power	Band I	15.407(a)(iv)	< 250mW	PASS
	Band II-A	15.407(a)(2)	<MIN{250mW,11dBm+10*Ig(EBW)}	
	Band II-C			
	Band III	15.407(a)(3)	< 1W	
Note 1: Band I: 5150-5250MHz Band II-A: 5250-5350MHz Band II-C: 5470-5725MHz Band III: 5725-5850MHz				

Remark:

This test report (Report No.: SUCR260300016504 issue on 2026-03-23) is based on the original test report (Report No.: SUCR250200007204 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 SUCR250200007204 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	
WLAN Mode Supported:	802.11a:	20 MHz channel bandwidth
	802.11n:	20 MHz / 40 MHz channel bandwidth
	802.11ac:	20 MHz / 40 MHz / 80 MHz channel bandwidth
	802.11ax:	20 MHz / 40 MHz / 80 MHz channel bandwidth
Operation Frequency:	5150MHz to 5250MHz 5250MHz to 5350MHz 5470MHz to 5725MHz 5725MHz to 5850MHz	
Modulation Type:	802.11a:	OFDM (BPSK, QPSK, 16QAM, 64QAM)
	802.11n:	OFDM (BPSK, QPSK, 16QAM, 64QAM)
	802.11ac:	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
	802.11ax:	OFDM/OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Channel Spacing:	20MHz:	802.11a/n(HT20)/ac(VHT20)/ax(HE20)
	40MHz:	802.11n(HT40)/ac(VHT40)/ax(HE40)
	80MHz:	802.11ac(VHT80)/ax(HE80)
Antenna Type:	FPC Antenna	
Antenna Gain:	5150MHz to 5250MHz: 2.6dBi(Ant3); -2.51dBi(Ant2) 5250MHz to 5350MHz: 2.7dBi(Ant3); -1.72dBi(Ant2) 5470MHz to 5725MHz: 2.56dBi(Ant3); 0.97dBi(Ant2) 5725MHz to 5850MHz: 2.1dBi(Ant3); 0.92dBi(Ant2)	
	Note: The antenna gain are derived from the gain information report provided by the manufacturer.	
Smart System:	☒ SISO	802.11a
	☒ MIMO	802.11n/ac/ax: 2Tx & 2Rx
TPC Function:	☒ Support, ☐ Not Support	
DFS Function:	☐ Master	
	☐ Slave with radar detection	☒ Slave without radar detection
RF Cable:	2dB	
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.		
In FCC 15.31, for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table, and the selected channel to perform the test as below:		
Frequency range over which device operates	Number of Measurement Frequencies Required	Location of Measurement Frequency in Band of Operation
1 MHz or less	1	centre

1 MHz to 10 MHz	2	1 near high end, 1 near low end
Greater than 10 MHz	3	1 near high end, 1 near centre

For UNII Band I:		
Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac/ax 20MHz	The Lowest channel	5180
	The Middle channel	5200
	The Highest channel	5240
IEEE 802.11n/ac/ax 40MHz	The Lowest channel	5190
	The Highest channel	5230
IEEE 802.11ac/ax 80MHz	The Middle channel	5210

For UNII Band II-A:		
Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac/ax 20MHz	The Lowest channel	5260
	The Middle channel	5280
	The Highest channel	5320
IEEE 802.11n/ac/ax 40MHz	The Lowest channel	5270
	The Highest channel	5310
IEEE 802.11ac/ax 80MHz	The Middle channel	5290

For UNII Band II-C:		
Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac/ax 20MHz	The Lowest channel	5500
	The Middle channel	5580
	The Highest channel	5700
IEEE 802.11n/ac/ax 40MHz	The Lowest channel	5510
	The Middle channel	5550
	The Highest channel	5670
IEEE 802.11ac/ax 80MHz	The Middle channel	5530

For UNII Band III:		
Mode	Channel	Frequency(MHz)
IEEE 802.11a/n/ac/ax 20MHz	The Lowest channel	5745
	The Middle channel	5785
	The Highest channel	5825
IEEE 802.11n/ac/ax 40MHz	The Lowest channel	5755

	The Highest channel	5795
IEEE 802.11ac/ax 80MHz	The Middle channel	5775

2.5 Test Environment and Mode

Environment Parameter	101 kPa Selected Values During Tests	
Relative Humidity	44-46 % RH Ambient	
Value	Temperature(°C)	Voltage(V)
NTNV	22~23	3.87
Remark: NV: Normal Voltage NT: Normal Temperature		

2.6 Description of Support Units

Description	Manufacturer	Model No.	FCC ID
Router	ASUS	GT-AXE11000	MSQ-RTAXJF00

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
802.11a	6 Mbps	/
802.11n (HT 20)	/	MCS0 (13 Mbps)
802.11n (HT 40)	/	MCS0 (27 Mbps)
802.11ac (VHT 20)	/	MCS0 (13 Mbps)
802.11ac (VHT 40)	/	MCS0 (27 Mbps)
802.11ac (VHT 80)	/	MCS0 (58.5 Mbps)
802.11ax (HE 20)	/	MCS0 (16 Mbps)
802.11ax (HE 40)	/	MCS0 (32 Mbps)
802.11ax (HE 80)	/	MCS0 (68 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	±0.54dB
2	RF power density, conducted	±1.03dB
3	Spurious emissions, conducted	±0.54dB
4	Radio Frequency	1%
5	Duty Cycle	±0.37%
6	Occupied Bandwidth	1%
7	Conduction Emission	± 2.90dB (150kHz to 30MHz)
8	Radiated Emission	± 3.13dB (9k -30MHz)
		± 4.8dB (30M -1GHz)
		± 4.8dB (1GHz to 18GHz)
		± 4.80dB (Above 18GHz)
Remark: The U _{lab} (lab Uncertainty) is less than U _{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 15 Section 15.203
The antenna is FPC Antenna and no consideration of replacement. The best case gain of the antenna is 5150MHz to 5250MHz: 2.6dBi(Ant3); -2.51dBi(Ant2); 5250MHz to 5350MHz: 2.7dBi(Ant3); -1.72dBi(Ant2); 5470MHz to 5725MHz: 2.56dBi(Ant3); 0.97dBi(Ant2); 5725MHz to 5850MHz: 2.1dBi(Ant3); 0.92dBi(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 Unequal antenna gain:

Operation Frequency	ANT3 Gain (dBi)	ANT2 Gain (dBi)	Directional gain For Power (dBi)	Directional gain For PSD (dBi)	Power Limit Reduction (dBm)	PSD Limit Reduction (dBm)
5150MHz to 5250MHz	2.6	-2.51	2.6	3.43	0	0
5250MHz to 5350MHz	2.7	-1.72	2.7	3.78	0	0
5470MHz to 5725MHz	2.56	0.97	2.56	4.81	0	0
5725MHz to 5850MHz	2.1	0.92	2.1	4.54	0	0

5150MHz to 5250MHz:

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

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

5250MHz to 5350MHz:

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

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

5470MHz to 5725MHz:

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

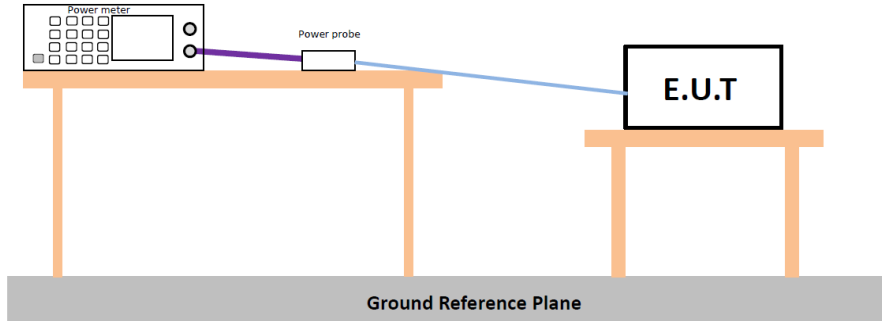
PSD Limit Reduction = Directional gain – 6dBi, (Directional gain < 6dBi) =0

5725MHz to 5850MHz:

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 15 Section 15.407(a)	
Test Method:	ANSI C63.10-2020/Cor1-2023 Section 12.4	
Test Setup:	 * Test with power meter (Detector function: Average) Method PM-G is measurement using a gated RF average power meter. Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Because the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.	
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:	Frequency Band	Limit
	5150-5250MHz	Not exceed 250mW(23.98dBm)
	5250-5350MHz	The lesser of 250mW(23.98dBm) or 11+ 10logB
	5470-5725MHz	The lesser of 250mW(23.98dBm) or 11+ 10logB
	5725-5850MHz	Not exceed 1W(30dBm)
	*Where B is the 26dB emission bandwidth in MHz	
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 Average Conducted Output Power (dBm)				Verdict
					ANT2	ANT3	MIMO	Limit	
802.11a	SISO	5180	/	/	15.81	15.16	/	<=23.98	Pass
		5200	/	/	15.68	15.07	/	<=23.98	Pass
		5240	/	/	15.82	15.28	/	<=23.98	Pass
		5260	/	/	16.32	15.68	/	<=23.98	Pass
		5300	/	/	16.18	15.27	/	<=23.98	Pass
		5320	/	/	16.46	15.60	/	<=23.98	Pass
		5500	/	/	12.50	11.65	/	<=23.98	Pass
		5580	/	/	12.40	11.71	/	<=23.98	Pass
		5700	/	/	12.26	11.78	/	<=23.98	Pass
		5745	/	/	17.71	16.08	/	<=30	Pass
		5785	/	/	17.77	16.18	/	<=30	Pass
802.11n (HT20)	MIMO	5825	/	/	17.91	16.14	/	<=30	Pass
		5180	/	/	14.84	14.27	17.57	<=23.98	Pass
		5200	/	/	14.69	14.23	17.48	<=23.98	Pass
		5240	/	/	14.75	14.31	17.55	<=23.98	Pass
		5260	/	/	15.13	14.63	17.90	<=23.98	Pass
		5300	/	/	15.22	14.54	17.90	<=23.98	Pass
		5320	/	/	15.26	14.35	17.84	<=23.98	Pass
		5500	/	/	11.84	11.18	14.53	<=23.98	Pass
		5580	/	/	11.68	11.52	14.61	<=23.98	Pass
		5700	/	/	11.78	11.45	14.63	<=23.98	Pass
		5745	/	/	17.62	16.08	19.93	<=30	Pass
802.11n (HT40)	MIMO	5785	/	/	17.79	15.99	19.99	<=30	Pass
		5825	/	/	17.88	16.28	20.16	<=30	Pass
		5190	/	/	12.81	11.61	15.26	<=23.98	Pass
		5230	/	/	12.72	11.45	15.15	<=23.98	Pass
		5270	/	/	13.24	12.53	15.91	<=23.98	Pass
		5310	/	/	13.36	12.58	16.00	<=23.98	Pass
		5510	/	/	12.18	10.52	14.44	<=23.98	Pass
		5550	/	/	12.49	10.64	14.67	<=23.98	Pass
		5670	/	/	12.35	10.73	14.63	<=23.98	Pass
		5755	/	/	18.01	16.49	20.33	<=30	Pass
		5795	/	/	17.69	16.24	20.04	<=30	Pass
802.11ac (VHT80)	MIMO	5210	/	/	11.16	9.65	13.48	<=23.98	Pass
		5290	/	/	12.81	11.63	15.27	<=23.98	Pass
		5530	/	/	10.09	9.58	12.85	<=23.98	Pass
		5610	/	/	10.21	9.82	13.03	<=23.98	Pass
		5775	/	/	14.90	13.51	17.27	<=30	Pass
802.11ax (HEW20)	MIMO	5180	SU	/	13.73	12.62	16.22	<=23.98	Pass
		5200	SU	/	13.78	12.54	16.21	<=23.98	Pass
		5240	SU	/	13.62	12.79	16.23	<=23.98	Pass
		5260	SU	/	14.25	13.34	16.83	<=23.98	Pass
		5300	SU	/	14.58	13.65	17.15	<=23.98	Pass
		5320	SU	/	14.69	13.74	17.25	<=23.98	Pass
		5500	SU	/	11.12	10.29	13.73	<=23.98	Pass
		5580	SU	/	11.26	10.37	13.85	<=23.98	Pass

		5700	SU	/	11.41	10.23	13.87	<=23.98	Pass
		5745	SU	/	16.39	14.98	18.75	<=30	Pass
		5785	SU	/	16.20	15.07	18.68	<=30	Pass
		5825	SU	/	16.27	15.17	18.77	<=30	Pass
802.11ax (HEW40)	MIMO	5190	SU	/	10.16	9.82	13.00	<=23.98	Pass
		5230	SU	/	10.56	9.64	13.13	<=23.98	Pass
		5270	SU	/	12.20	10.59	14.48	<=23.98	Pass
		5310	SU	/	12.24	10.84	14.61	<=23.98	Pass
		5510	SU	/	10.26	8.73	12.58	<=23.98	Pass
		5550	SU	/	10.22	8.65	12.51	<=23.98	Pass
		5670	SU	/	10.34	8.71	12.61	<=23.98	Pass
		5755	SU	/	15.55	14.16	17.92	<=30	Pass
		5795	SU	/	15.54	14.21	17.94	<=30	Pass
802.11ax (HEW80)	MIMO	5210	SU	/	11.00	9.81	13.46	<=23.98	Pass
		5290	SU	/	11.18	9.75	13.53	<=23.98	Pass
		5530	SU	/	9.25	7.62	11.52	<=23.98	Pass
		5610	SU	/	9.27	7.80	11.60	<=23.98	Pass
		5775	SU	/	13.11	11.57	15.42	<=30	Pass

---End of Report---