

TEST REPORT

Applicant: Fujian Newland Payment Technology Co.,Ltd.

Address: No. B602, Building #1, Haixia Jingmao Plaza, Fuzhou Bonded Area 350015, Fujian, China

Product Name: Unattended Terminal

Model Name: U200

Type of Equipment: Certification Ordinance Article 2-1-19-3

Test method(s): DSPR 5 G H z 帶小電力データ通信システムの 特性試験方法

Report Number: 2502V69755E-RF-07D

Report Date: 2025/9/16

The above device has been tested and found compliant with the requirement of the relevant standards by Bay Area Compliance Laboratories Corp. (Dongguan).

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2502V69755E-RF-07	Original Report	2025/9/16

GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

Product Name:	Unattended Terminal
Test Model:	U200
Rated Input Voltage:	7-48Vdc
Serial Number:	36UV-8
EUT Received Date:	2025/7/21
EUT Received Status:	Good

Accessory Information

Accessory Description	Manufacturer	Model	Parameters
Adapter	SHENZHEN HONOR ELECTRONIC CO., LTD.	ADS-25SGP-12 12024E	Input: AC 100-240V, 50/60Hz, Max 0.7A Output: DC 12V, 2.0A, 24W

Technical Specification

Operation Frequency Range:	802.11 a/n20/ac20: 5180-5240MHz, 5260-5320 MHz,5500-5720MHz 802.11 n40/ac40: 5190/5230MHz, 5270/5310 MHz,5510-5710MHz 802.11 ac80: 5210/5290/5530/5610MHz
Nominal RF Output Power (Conducted, mW/MHz):	W52(5180-5240MHz): 802.11a:10mW/MHz; 802.11n 20/ac 20:10mW/MHz; 802.11n 40/ac 40: 5mW/MHz; 802.11ac80:2.5mW/MHz W53(5260-5320 MHz): 802.11a:10mW/MHz; 802.11n 20/ac 20:10mW/MHz; 802.11n 40/ac 40: 5mW/MHz; 802.11ac80:2.5mW/MHz W56(5500-5720MHz): 802.11a:5mW/MHz; 802.11n 20/ac 20:5mW/MHz; 802.11n 40/ac 40: 2.5mW/MHz; 802.11ac80:1mW/MHz
Number of TX Chain(s)	1
Number of RX Chain(s)	1
Antenna System:	SISO
5.2G, Antenna Gain (dBi)▲:	-0.28
5.3G, Antenna Gain (dBi)▲:	1.2
5.6G, Antenna Gain (dBi)▲:	1.2
Modulation Type:	OFDM
Emission Type	G1D, D1D
Note: 1. The manufacturer declares that the EUT is a client device, without radar detection but with TPC function. 2. The Nominal RF Output Power is from a certified wireless module (model name: SC200E-WF, MIC ID: 201-240479) in device.	

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

Measurement Uncertainty

Parameter	Measurement Uncertainty
Frequency error	$\pm 0.082 \times 10^{-6}$
Occupied bandwidth	$\pm 5\%$
Unwanted emission strength(TX&RX)	$\pm 2.47\text{dB}$
RF output power, conducted	$\pm 0.61\text{dB}$
Temperature	$\pm 1^\circ\text{C}$
Humidity	$\pm 5\%$
Duty Cycle	1%
DC and low frequency voltages	$\pm 0.4\%$

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in engineering mode, which was provided by manufacture. The system supports 802.11 a/n20/n40/ac20/ac40/ac80.

For W52 band, 7 channels are provided:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
38	5190	46	5230
40	5200	48	5240
42	5210	/	/

For 802.11a/n20/ac20, Channel 36, 40 and 48 were tested; for 802.11n 40/ac40, Channel 38, 46 were tested; for 802.11ac80, Channel 42 was tested.

For W53 band, 7 channels are provided:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
54	5270	62	5310
56	5280	64	5320
58	5290	/	/

For 802.11a/n20/ac20, Channel 52, 56 and 64 were tested; for 802.11n 40/ac40, Channel 54, 62 were tested; for 802.11 ac80, Channel 58 was tested.

For W56 band, 21 channels are provided:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
102	5510	126	5630
104	5520	128	5640
106	5530	132	5660
108	5540	134	5670
110	5550	136	5680
112	5560	138	5690
116	5580	140	5700
118	5590	142	5710
120	5600	144	5720
122	5610	/	/

For 802.11a/n20/ac20, Channel 100, 116 and 144 were tested; for 802.11n40/ac40, Channel 102, 118 and 142 were tested; for 802.11ac80, Channel 106, and 122 was tested.

The extreme voltage test conditions which were declared by the manufacturer and the normal conditions are as below:

NV: Normal Voltage 12V_{DC}

LV: Low Voltage 7V_{DC}

HV: High Voltage 48V_{DC}

The EUT in built a power manage system, power deviation of the RF system input is less than 1% when the extreme voltage supplied, therefore the test only performed at normal condition. Details as following:

Voltage Condition	External Input Voltage (V _{DC})	RF system input Voltage(V _{DC})
NV	12	3.3
LV	7	3.3
HV	48	3.3

Note: The EUT(model: U200) comes in two versions: one with a TOF sensor and another without a TOF sensor. Their technical structures are exactly the same except with or without TOF sensor. The version with TOF sensor was used for tests.

EUT Exercise Software

The 'QRCT3[▲]' was used for setting EUT into engineering mode, which was provided by manufacturer. The maximum power level was configured by the software as below table[▲]. The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the output power across all data rates, bandwidths, and modulations.

Operation Bands	Mode	Channel	Frequency (MHz)	Data rate (Mbps)	Power level Setting
W52	802.11 a	Low	5180	6	Default
		Middle	5200	6	Default
		High	5240	6	Default
	802.11n20	Low	5180	MCS0	Default
		Middle	5200	MCS0	Default
		High	5240	MCS0	Default
	802.11n40	Low	5190	MCS0	Default
		High	5230	MCS0	Default
	802.11 ac80	Middle	5210	MCS0	Default
W53	802.11 a	Low	5260	6	Default
		Middle	5280	6	Default
		High	5320	6	Default
	802.11n20	Low	5260	MCS0	Default
		Middle	5280	MCS0	Default
		High	5320	MCS0	Default
	802.11n40	Low	5270	MCS0	Default
		High	5310	MCS0	Default
	802.11 ac80	Middle	5290	MCS0	Default
W56	802.11 a	Low	5500	6	Default
		Middle	5580	6	Default
		High	5720	6	Default
	802.11n20	Low	5500	MCS0	Default
		Middle	5580	MCS0	Default
		High	5720	MCS0	Default
	802.11n40	Low	5510	MCS0	Default
		Middle	5590	MCS0	Default
		High	5710	MCS0	Default
	802.11 ac80	Low	5530	MCS0	Default
		High	5610	MCS0	Default

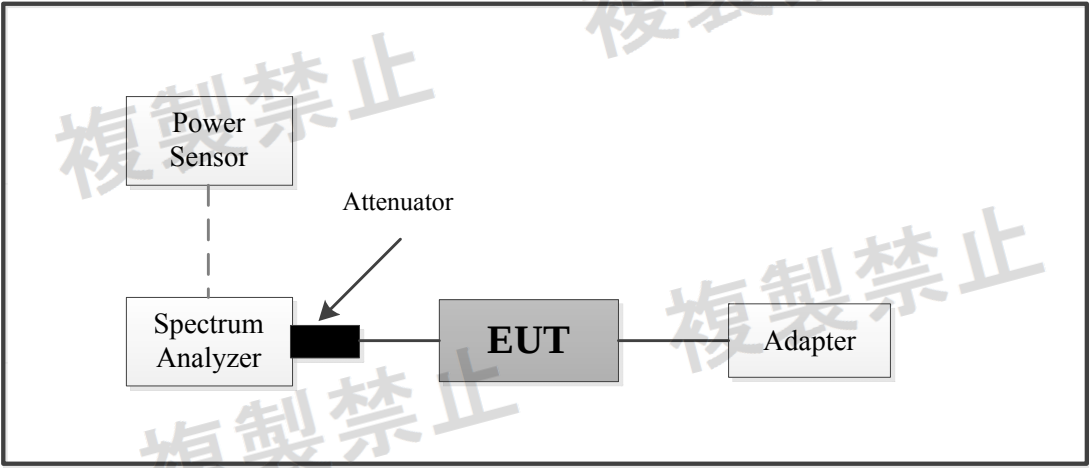
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

Support Cable List and Details

Cable Description	Shielding Cable	Ferrite Core	Length (m)	From Port	To
DC Cable	NO	YES	3	Adapter	EUT

Configuration of Test Setup



SUMMARY OF TEST RESULTS

SN	Description Of Test	Result
1	Frequency Tolerance	Compliant**
2	Occupied Bandwidth	Compliant**
3	(1) Transmitter Spurious Emission Strength	Compliant**
4	(2) Out-Band Leakage Power	Compliant**
5	Output Power and Output Power Tolerance	Note*
6	Adjacent Channel Power	Compliant**
7	Secondary Radiated Emission Strength	Compliant**
8	Radio Interference Prevention Capability	Compliant**
9	Transmission Burst Length	Compliant**
10	Transmission Power Control Function (TPC)	Compliant
11	Carrier Sense Capability	Compliant**
12	Dynamic Frequency Selection (DFS)	Compliant*
13	Construction Protection Confirmation	Compliant

Note:

Compliant*: Please refer to the DFS test report.

Compliant**: The test results please refer to the report of the certified RF module in the device, report No.:

TCWA24050009602[▲], which was released by Suzhi TOWE Wireless Testing (Shenzhen) Co., Ltd. on 2024/7/19

Note*: The test item was reported only for power check. The test results please refer to the report of the certified RF module in the device, report No.:TCWA24050009602[▲], which was released by Sushi TOWE Wireless Testing(Shenzhen) Co.,Ltd., issued on 2024/07/19.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date	Calibration Agency	Calibration Method Note
R&S	Spectrum Analyzer	FSP 38	100478	2025/09/05	2026/09/04	BACL Metrology	C
Eastsheep	Coaxial Attenuator	2W-SMA-JK-6G-10dB	F-08-EM505	2025/6/6	2026/06/05	BACL(DG)	D
Anritsu	Microwave Peak Power Sensor	MA24418A	12618	2025/06/11	2026/06/10	BACL Metrology	C

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Note:

- A. Calibration conducted by the National Institute of Information and Communications Technology (NICT) (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1).
- B. Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Law (Law No. 51 of 1992).
- C. Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).
- D. Calibration conducted by using measuring instruments and other equipment which shall have been given any of calibration, etc. listed above from a) to c)

Test Environmental Conditions

Temperature:	27.1℃
Relative Humidity:	68%
ATM Pressure:	99.7kPa
Tester:	Cooper Zhou
Test Date:	2025/9/8

5 - OUTPUT POWER AND OUTPUT POWER TOLERANCE

Limit

For W52, W53 Band:

Item	Band	Limits
Antenna Power	W52/W53	20M System: $\leq 10\text{mW/MHz}$ 40M System: $\leq 5\text{mW/MHz}$ 80M System: $\leq 2.5\text{mW/MHz}$
E.I.R.P.	W52	20M System: $\leq 10\text{mW/MHz}$ 40M System: $\leq 5\text{mW/MHz}$ 80M System: $\leq 2.5\text{mW/MHz}$
	W53	With TPC: 20M System: $\leq 10\text{mW/MHz}$ 40M System: $\leq 5\text{mW/MHz}$ 80M System: $\leq 2.5\text{mW/MHz}$ Without TPC: 20M System: $\leq 5\text{mW/MHz}$ 40M System: $\leq 2.5\text{mW/MHz}$ 80M System: $\leq 1.25\text{mW/MHz}$
Antenna Power Tolerance	W52/W53	$\leq +20\%$, -80%

For W56 Band:

Item	Band	Limits
Antenna Power	W56	20M System: $\leq 10\text{mW/MHz}$ 40M System: $\leq 5\text{mW/MHz}$ 80M System: $\leq 2.5\text{mW/MHz}$
E.I.R.P.	W56	With TPC: 20M System: $\leq 50\text{mW/MHz}$ 40M System: $\leq 25\text{mW/MHz}$ 80M System: $\leq 12.5\text{mW/MHz}$
		Without TPC: 20M System: $\leq 25\text{mW/MHz}$ 40M System: $\leq 12.5\text{mW/MHz}$ 80M System: $\leq 6.25\text{mW/MHz}$
Antenna Power Tolerance	W56	$\leq +50\%$, -50%

Test Procedure

Step 1:

Use the following settings on the spectrum analyser:

- Centre Frequency: The centre frequency of the channel under test.
- Resolution BW: 1 MHz.
- Video BW: 3 MHz.
- Detector mode: Peak.
- Averaging: Off.
- Sweep: Continuous.
- Span: Twice the nominal OBW.

Step 2:

Connect the E.U.T. to the Spectrum Analyzer and switch on the U.U.T.

Step 3:

Adjust the Reference Level of the Spectrum Analyzer so that the peak of the power envelope is between the Reference Level and the Reference Level - 10 dB. This assumes a 10 dB/division setting is used on the spectrum analyser.

Step 4:

Use the marker to find the peak value of the power envelope.

Adjust the centre frequency of the analyser to the marker frequency, resulting in the peak of the power envelope being in the centre of the screen.

Step 5:

Change the Spectrum Analyzer settings as follows:

- Resolution BW: 1 MHz.
- Video BW: 1 MHz.
- Detector mode: Peak.
- Averaging: Off.
- Sweep: Continuous.
- Span: 0 Hz.

Step 6:

Connect a Power Meter to the "Narrow I.F" output port of the Spectrum Analyzer. The power meter is set Auto Duty factor.

NOTE: The IF output of the spectrum analyser may be 20 dB or more below the input level of the spectrum analyser. Unless the power meter has adequate sensitivity, a wideband amplifier may be required.

Adjust the Centre Frequency of the spectrum analyser carefully (fine tune) for maximum indication on the power meter.

The level measured by the power meter shall be recorded as level "D".

The maximum e.i.r.p. is calculated from the above measured "D", and the applicable antenna assembly gain "G" in dBi, according to the formula below. If more than one antenna assembly is intended for this power setting, the gain of the antenna assembly with the highest gain shall be used.

- $PD = D + G$

The above procedure shall be repeated for each of the frequency channels.

Where the spectrum analyser bandwidth is non-Gaussian, a suitable correction factor shall be determined and applied.

Test Data

Test Result: Compliant

Test Mode: *Transmitting*

Output Power and Output Power Tolerance

Test Condition: NV

W52

Mode	Antenna gain (dBi)	Declared power (mW/MHz)
802.11a	-0.28	10
802.11n20	-0.28	10
802.11n40	-0.28	5
802.11ac20	-0.28	10
802.11ac40	-0.28	5
802.11ac80	-0.28	2.5

Mode	Channel	Antenna output power (dBm/MHz)	Antenna output power(mW/MHz)		Antenna output tolerance(%)		EIRP (mW/MHz)		Verdict
			Result	Limit	Result	Limit	Result	Limit	
802.11a	Low	6.60	4.571	≤ 10	-54.29	-80~+20	4.29	10	Pass
	Middle	6.43	4.395	≤ 10	-56.05	-80~+20	4.12	10	Pass
	High	6.59	4.560	≤ 10	-54.40	-80~+20	4.28	10	Pass
802.11n20	Low	6.10	4.074	≤ 10	-59.26	-80~+20	3.82	10	Pass
	Middle	5.47	3.524	≤ 10	-64.76	-80~+20	3.30	10	Pass
	High	6.25	4.217	≤ 10	-57.83	-80~+20	3.95	10	Pass
802.11n40	Low	2.65	1.841	≤ 5	-63.18	-80~+20	1.73	5	Pass
	High	3.71	2.350	≤ 5	-53.00	-80~+20	2.20	5	Pass
802.11ac20	Low	6.17	4.140	≤ 10	-58.60	-80~+20	3.88	10	Pass
	Middle	6.15	4.121	≤ 10	-58.79	-80~+20	3.86	10	Pass
	High	6.15	4.121	≤ 10	-58.79	-80~+20	3.86	10	Pass
802.11ac40	Low	3.21	2.094	≤ 5	-58.12	-80~+20	1.96	5	Pass
	High	3.24	2.109	≤ 5	-57.82	-80~+20	1.98	5	Pass
802.11ac80	Middle	-0.34	0.925	≤ 2.5	-63.00	-80~+20	0.87	2.5	Pass

W53

Mode	Antenna gain (dBi)	Declared power (mW/MHz)
802.11a	1.20	10
802.11n20	1.20	10
802.11n40	1.20	5
802.11ac20	1.20	10
802.11ac40	1.20	5
802.11ac80	1.20	2.5

Mode	Channel	Antenna output power (dBm/MHz)	Antenna output power (mW/MHz)		Antenna output tolerance (%)		EIRP (mW/MHz)		Verdict
			Result	Limit	Result	Limit	Result	Limit	
802.11a	Low	7.09	5.117	≤ 10	-48.83	-80~+20	6.75	10	Pass
	Middle	6.13	4.102	≤ 10	-58.98	-80~+20	5.41	10	Pass
	High	6.57	4.539	≤ 10	-54.61	-80~+20	5.98	10	Pass
802.11n20	Low	6.43	4.395	≤ 10	-56.05	-80~+20	5.79	10	Pass
	Middle	5.98	3.963	≤ 10	-60.37	-80~+20	5.22	10	Pass
	High	6.10	4.074	≤ 10	-59.26	-80~+20	5.37	10	Pass
802.11n40	Low	3.24	2.109	≤ 5	-57.82	-80~+20	2.78	5	Pass
	High	2.53	1.791	≤ 5	-64.18	-80~+20	2.36	5	Pass
802.11ac20	Low	5.41	3.475	≤ 10	-65.25	-80~+20	4.58	10	Pass
	Middle	5.53	3.573	≤ 10	-64.27	-80~+20	4.71	10	Pass
	High	6.02	3.999	≤ 10	-60.01	-80~+20	5.27	10	Pass
802.11ac40	Low	2.98	1.986	≤ 5	-60.28	-80~+20	2.62	5	Pass
	High	1.66	1.466	≤ 5	-70.68	-80~+20	1.93	5	Pass
802.11ac80	Middle	-0.94	0.805	≤ 2.5	-67.80	-80~+20	1.06	2.5	Pass

W56

Mode	Antenna gain (dBi)	Declared power (mW/MHz)
802.11a	1.20	5
802.11n20	1.20	5
802.11n40	1.20	2.5
802.11ac20	1.20	5
802.11ac40	1.20	2.5
802.11ac80	1.20	1

Mode	Channel	Antenna output power (dBm/MHz)	Antenna output power(mW/MHz)		Antenna output tolerance(%)		EIRP (mW/MHz)		Verdict
			Result	Limit	Result	Limit	Result	Limit	
802.11a	Low	6.17	4.140	≤ 10	-17.20	-50~+50	5.46	50	Pass
	Middle	6.43	4.395	≤ 10	-12.10	-50~+50	5.79	50	Pass
	High	6.53	4.498	≤ 10	-10.04	-50~+50	5.93	50	Pass
802.11n20	Low	4.93	3.112	≤ 10	-37.76	-50~+50	4.10	50	Pass
	Middle	6.17	4.140	≤ 10	-17.20	-50~+50	5.46	50	Pass
	High	5.31	3.396	≤ 10	-32.08	-50~+50	4.48	50	Pass
802.11n40	Low	2.83	1.919	≤ 5	-23.24	-50~+50	2.53	25	Pass
	Middle	3.24	2.109	≤ 5	-15.64	-50~+50	2.78	25	Pass
	High	3.29	2.133	≤ 5	-14.68	-50~+50	2.81	25	Pass
802.11ac20	Low	5.82	3.819	≤ 10	-23.62	-50~+50	5.03	50	Pass
	Middle	5.89	3.882	≤ 10	-22.36	-50~+50	5.12	50	Pass
	High	6.43	4.395	≤ 10	-12.10	-50~+50	5.79	50	Pass
802.11ac40	Low	3.33	2.153	≤ 5	-13.88	-50~+50	2.84	25	Pass
	Middle	3.18	2.080	≤ 5	-16.80	-50~+50	2.74	25	Pass
	High	2.94	1.968	≤ 5	-21.28	-50~+50	2.59	25	Pass
802.11ac80	Low	-0.71	0.849	≤ 2.5	-15.10	-50~+50	1.12	12.5	Pass
	Middle	-0.24	0.946	≤ 2.5	-5.40	-50~+50	1.25	12.5	Pass
	High	-1.02	0.791	≤ 2.5	-20.90	-50~+50	1.04	12.5	Pass

Note 1: Antenna Output Power = Reading (mW/MHz) / Duty Cycle;

Antenna Output Power Tolerance = (Antenna Output power - Declared Power) / Declared Power*100%.

Note 2: The device with TPC function.

Note 3: For Antenna output power(dBm), the duty cycle was taken into considerations.

Note 4: By power check, the checked power is closed to the power of certified module, and there is hardly much difference.

13 - CONSTRUCTION PROTECTION CONFIRMATION

Limit

The high-frequency section and modulation section of the radio equipment except for the antenna system shall not be capable of being opened easily.

Confirmation Result

Compliant, the RF part (Except for antenna) was covered by metal shielding case, it can't be opened easily. Please refer the EUT photo.

EXHIBIT A – EUT PHOTOGRAPHS

Please refer to the attachment “2502V69755E-RF-EXP” EUT External photos and “2502V69755E-RF-INP” EUT Internal photos.

EXHIBIT B – TEST SETUP PHOTOGRAPHS

Please refer to the attachment “2502V69755E-RF-07-TSP” Test Setup Photos.

******END OF REPORT******