



Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

TEST REPORT

Ordinance Article 2 paragraph 1 item (19)-3

Report Reference No..... : CTA25053000103

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Date of issue..... : Jun. 10, 2025

Testing Laboratory Name : Shenzhen CTA Testing Technology Co., Ltd.

Address..... : Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

Applicant's name..... : Shenzhen Hongmingcheng Technology Co., LTD.

Address : Room 212, 213, 214, 2F, Building A2, Hekan Industrial Zone, No. 41, Wuhe Avenue (South), Nankeng Community, Bantian Street, Longgang District, Shenzhen, China

Test specification

Standard : Ordinance Article 2 paragraph 1 item (19)-3

TRF Originator..... : Shenzhen CTA Testing Technology Co., Ltd.

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Test item description : Notebook computer

Trade Mark : N/A

Manufacturer : Shenzhen Hongmingcheng Technology Co., LTD.

Model/Type reference..... : D6

List Model : D7, D8, D9, E6, E7, E8, E9, Q6, Q7, Q8, Q9, T6, T7, TB, T9, Z6, Z7, Z8, Z9

Modulation : OFDM

Frequency..... : 5180MHz-5240MHz

Ratings : DC 7.7V From battery and DC 12.0V From external circuit

Result..... : **PASS**

TEST REPORT

Equipment under Test : Notebook computer

Model /Type : D6

Listed Models : D7, D8, D9, E6, E7, E8, E9, Q6, Q7, Q8, Q9, T6, T7, TB, T9, Z6, Z7, Z8, Z9

Model difference : The PCB board, circuit, structure and internal of these models are the same, Only model number and colour is different for these model.

Applicant : Shenzhen Hongmingcheng Technology Co., LTD.

Address : Room 212, 213, 214, 2F, Building A2, Hekan Industrial Zone, No. 41, Wuhe Avenue (South), Nankeng Community, Bantian Street, Longgang District, Shenzhen, China

Manufacturer : Shenzhen Hongmingcheng Technology Co., LTD.

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Test Result:	PASS
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1 SUMMARY

1.1 Test Standards

The tests were performed according to following standards:

[ARIB STD-T71](#): 5 GHz band low-power data communication system (5.2GHz band)

[MIC Notice No.88 Appendix No.45](#): 5 GHz band wide-band low-power data communication system

1.2 Test Description

ARIB STD-T71		
Clause	Description of Test	Result
3.1.2 (2) & 3.1.2 (3) & 3.1.2 (5)	Tolerances Of Antenna Power & E.I.R.P	PASS
3.1.2 (4)	Tolerance Of Frequency	PASS
3.1.2 (7)	Transmission Burst Length	PASS
3.1.2 (8) & 3.1.2 (10)	Tolerance Of Unwanted Emission Intensity & Tolerance Of Out-Of-Band Leakage Power	PASS
3.1.2 (9)	Tolerance Of Adjacent Channel Leakage Power	PASS
3.1.2 (11)	Tolerance Of Occupied Bandwidth	PASS
3.1.3 (1)	Secondary Radiated Emissions	PASS
3.1.4.1	Interference prevention function	PASS
3.1.5	Carrier Sensing function	PASS
Note: (1) N/A is an abbreviation for Not Applicable. (2) N/T means this test item is not tested.		

Note: 1: "N/A" denotes test is not applicable in this Test Report

2: MIC Notice No.88 Appendix No.45

3: MIC Ordinance Regulating Radio Equipment Section 4.17 of Article 49.20

4: Referenced in the standard ARIB STD-T71

5. The device only operating at W52 band.

1.3 TEST ENVIRONMENT

1.3.1 Address of the test laboratory

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

1.3.2 Test Facility

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

FCC-Registration No.: 517856 Designation Number: CN1318

Shenzhen CTA Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA-Lab Cert. No.: 6534.01

Shenzhen CTA Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

1.4 Measurement Uncertainty

For the test methods, according to the present document, the measurement uncertainty figures shall be calculated in accordance with TR100028-1 [2] and shall correspond to an expansion factor (coverage factor) $K=1.96$ or $K=2$ (which provide confidence levels of respectively 95% and 95.5% in the case where the distributions characterizing the actual measurement uncertainties are normal).

Parameter	Uncertainty
Frequency error / 99%&90% bandwidth	$\pm 1.62 \times 10^{-6}$
Total RF power, conducted	$\pm 0.8\text{dB}$
Spurious emissions, conducted	$\pm 0.8\text{dB}$
DC and low frequency voltages	$\pm 0.05\%$
Humidity	$\pm 5\%$
Temperature	$\pm 1^\circ\text{C}$

2 GENERAL INFORMATION

2.1 General Remarks

Date of receipt of test sample	:	May 30, 2025
Testing commenced on	:	May 30, 2025
Testing concluded on	:	Jun. 10, 2025

2.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Voltage	Normal Voltage	DC 7.70V
	High Voltage	DC 8.40V
	Low Voltage	DC 6.80V
Other	Normal Temperature	25°C
	Relative Humidity	55 %
	Air Pressure	989 hPa

Note: As the EUT was powered by DC 7.7V From battery and DC 12.0V From external circuit, and with the voltage stabilizing circuit used, the chip voltage received floating not exceed $\pm 1\%$ of nominal condition when working on extreme voltage, so all test performed at nominal voltage only.

2.3 General Description of EUT

Product Name:	Notebook computer			
Model/Type reference:	D6			
Power supply:	DC 7.7V From battery and DC 12.0V From external circuit			
Adapter information:	Model: M120300-A010JP Input: AC 100-240V 50/60Hz 0.8A Output: DC 12.0V 3.0A 36.0W			
Hardware version:	V1.0			
Software version:	V1.0			
Testing sample:	CTA250530001-1# (Engineer sample) CTA250530001-2# (Normal sample)			
WIFI				
Supported type:	20MHz system	40MHz system	80MHz system	160MHz system
	IEEE 802.11a IEEE 802.11n IEEE 802.11ac	IEEE 802.11n IEEE 802.11ac	IEEE 802.11ac	N/A
	5180MHz-5240MHz	5190MHz-5230MHz	5210MHz	N/A
Operation frequency:				
Modulation:	OFDM	OFDM	OFDM	N/A
Channel number:	4	2	1	N/A
Channel separation:	20MHz	40MHz	80MHz	N/A
Rated power:	ANT1: IEEE 802.11a: 2.0mW/MHz IEEE 802.11n HT20: 2.0mW/MHz IEEE 802.11ac HT20: 2.0mW/MHz IEEE 802.11n HT40: 1.0mW/MHz IEEE 802.11ac HT40: 1.0mW/MHz IEEE 802.11ac HT80: 0.5mW/MHz ANT2: IEEE 802.11a: 2.0mW/MHz IEEE 802.11n HT20: 2.0mW/MHz IEEE 802.11ac HT20: 2.0mW/MHz IEEE 802.11n HT40: 1.0mW/MHz IEEE 802.11ac HT40: 1.0mW/MHz IEEE 802.11ac HT80: 0.5mW/MHz MIMO:			

	IEEE 802.11n HT20: 4.0mW/MHz IEEE 802.11ac HT20: 4.0mW/MHz IEEE 802.11n HT40: 2.0mW/MHz IEEE 802.11ac HT40: 2.0mW/MHz IEEE 802.11ac HT80: 1.0mW/MHz
TPC:	Not support
Antenna type:	PIFA antenna
Antenna Gain:	0.74 dBi for Ant 1 and Ant2

Note: For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.4 Description of Test Modes

The EUT has been tested under typical operating condition. The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.

Operation Frequency List:

Operating band	20MHz		40MHz		80MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
W52 (5150MHz-5250MHz)	36	5180	38	5190	42	5210
	40	5200				
	44	5220	46	5230		
	48	5240				

Note: Test performed at the lowest/middle/highest frequencies selected in the list above for EUT supported while working on specified mode.

2.5 Measurement Instruments List

Item	Test Equipment	Manufacturer	Model No.	Equipment No.	Cal. Institution	Calibration Date	Calibration Due Date
1	Spectrum Analyzer	Agilent	N9020A	MY53281423	LISAI	2024/08/03	2025/08/02
2	Signal generator	Agilent	N5182A	MY46240709	LISAI	2024/08/03	2025/08/02
3	Power Meter	Agilent	U2021X	MY47410295	LISAI	2024/08/03	2025/08/02
4	DC Power Supply	Agilent	E3642A	N/A	LISAI	2024/08/03	2025/08/02
5	Oscilloscope	Tektronix	TDS3012	B021220	LISAI	2024/08/03	2025/08/02
6	Spectrum Analyzer	R&S	FSU	200311	LISAI	2024/08/03	2025/08/02
7	Spectrum analyzer	R&S	FSV40-N	102188	LISAI	2025/05/17	2026/05/16

Calibration by the calibration agencies listed in the table correspond to paragraph 4 (ii) (c) of Article 24-2 in the Radio Law".

LiSai-Guangzhou LiSai Calibration and Testing Co.,LTD.

Tiansu-Shenzhen Tiansu Measurement and Testing Co., Ltd.

2.6 Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Power Parameters:

Frequency Band	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
5180~5240MHz	36	5180	44	5220
	38	5190	46	5230
	40	5200	48	5240
	42	5210	/	/
For IEEE 802.11a/n HT20/ac VHT20, Channel 36, 40 and 48 were tested. For IEEE 802.11n HT40/ac VHT40, Channel 38 and 46 were tested. For IEEE 802.11ac VHT80, Channel 42 was tested.				

2.7 Description of Test Modes

Tested mode, channel, and data rate information				
Mode	Preliminary Test Data Rate (Mbps)	Final Test Data Rate (Mbps) (see Note)	Channel	Frequency (MHz)
IEEE 802.11a	6/54	6	Low :CH36	5180
	6/54	6	Middle: CH40	5200
	6/54	6	High: CH48	5240
IEEE 802.11n HT20	HT0/HT7	HT0	Low :CH36	5180
	HT0/HT7	HT0	Middle: CH40	5200
	HT0/HT7	HT0	High: CH48	5240
IEEE 802.11n HT40	HT0/HT7	HT0	Low :CH38	5190
	HT0/HT7	HT0	High: CH46	5230
IEEE 802.11ac VHT20	VHT0/VHT8	VHT0	Low :CH36	5180
	VHT0/VHT8	VHT0	Middle: CH40	5200
	VHT0/VHT8	VHT0	High: CH48	5240
IEEE 802.11ac VHT40	VHT0/VHT8	VHT0	Low :CH38	5190
	VHT0/VHT8	VHT0	High: CH46	5230
IEEE 802.11ac VHT80	VHT0/VHT8	VHT0	High: CH42	5210
Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.				

2.8 Test Voltage

POWER SUPPLY VOLTAGE FLUCTUATION TEST

Voltage Fluctuation Test	Normal Voltage	High Voltage +10% of Normal Voltage	Low Voltage -10% of Normal Voltage
Input To EUT	DC 7.70V	DC 8.40V	DC 6.80V
Output To RF Module	DC 3.30V	DC 3.30V	DC 3.30V
Voltage Variation (%)	--	--	--

Note:

Voltage Variation (%)

= (Output high or Low Voltage - Output Normal Voltage)/Output Normal Voltage* 100

During the input supply voltage to the EUT from the external power source is varied by +/- 10%, if output voltage had been confirmed that the fluctuation of power supply to the RF circuit of EUT (excluding power source) is equal to or less than +/-1%. Exempt extremely high and low supply voltage condition test, EUT only operated in normal voltage to test all regulations.

The sample power supply was confirmed that input voltage variation at the radio unit in the radio equipment to be tested is less than +1% against a variation of +10% at the input voltage from the external power supply to the radio equipment, and the radio equipment was designed so as to be operated in a specified voltage variation limit within +10%, Radio can only tested at rated voltage.

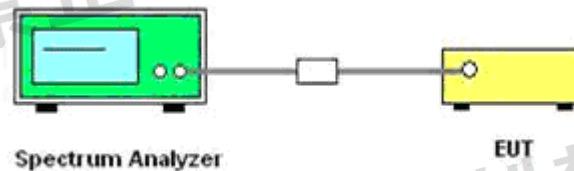
3 Test conditions and Results

3.1 Frequency Error

LIMIT

Tolerance of frequency shall be $\pm 20 \times 10^{-6}$.

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: non-modulation

Spectrum Condition:

- Frequency: test frequency
- Span: 300 KHz
- RBW: 10 KHz
- VBW: 10 KHz
- Sweep time: Auto
- Detector mode: Positive peak
- Indication mode: max hold

TEST RESULTS

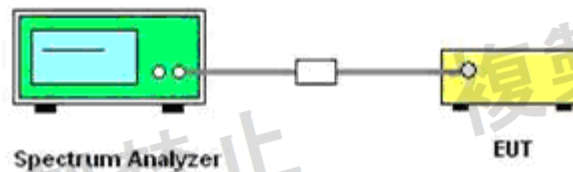
Please refer to the Appendix RF Test Data for WIFI5G ANT1 and the Appendix RF Test Data for WIFI5G ANT2.

3.2 Antenna Output Power and Output Power Tolerance

LIMIT

Operation Band	Item	20MHz system		40MHz system	80MHz system	160MHz system
W52 & W53	Antenna Power	DSSS, etc	OFDM	OFDM	OFDM	OFDM
		10mW/MHz	10mW/MHz	5mW/MHz	2.5mW/MHz	1.25mW/MHz
	Antenna power Tolerance		+20%, -80%			
	EIRP	W52	10mW/MHz	5mW/MHz	2.5mW/MHz	1.25mW/MHz
		W53	10mW/MHz: with TPC 5mW/MHz: without TPC	5mW/MHz: with TPC 2.5mW/MHz: without TPC	2.5mW/MHz: with TPC 1.25mW/MHz: without TPC	1.25mW/MHz: with TPC 0.625mW/MHz: without TPC
W56	Antenna Power	DSSS, etc	OFDM	OFDM	OFDM	OFDM
		10mW/MHz	10mW/MHz	5mW/MHz	2.5mW/MHz	1.25mW/MHz
	Antenna power Tolerance		+50%, -50%			
	EIRP		50mW/MHz: with TPC 25mW/MHz: without TPC	25mW/MHz: with TPC 12.5mW/MHz: without TPC	12.5mW/MHz: with TPC 6.25mW/MHz: without TPC	6.25mW/MHz: with TPC 3.125mW/MHz: without TPC

TEST CONFIGURATION



TEST PROCEDURE

- Connect the UUT to the spectrum analyzer as TEST CONFIGURATION and use the following settings:
- Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Centre Frequency: The center frequency of the channel under test.

Resolution BW: 1MHz.

Video BW: 1MHz.

Span: Wide enough to cover the complete power envelope of the signal of the EUT.

Trigger condition: Free run.

Sweep mode: Continuous sweeping.

Detector: Peak.

Trace Mode: Max Hold.

- When the trace is complete, find the peak value of the power envelope and record.

- Make the following changes to the setting of the Spectrum Analyzer:

Centre Frequency: Equal to the frequency recorded in step c

Resolution BW: 1MHz.

Video BW: 1MHz.

Span: 3MHz

Trigger condition: Free run.

Sweep mode: Continuous sweeping.

Detector: Average

Trace Mode: Max Hold.

When the trace is complete, find the peak value (value "A" in dBm) of the power envelope and record.

- Add the (stated) antenna assembly gain "G" in dBi of the individual antenna.

- If applicable, add the additional beamforming gain "Y" in dB.

The equivalent isotopically radiated power (P) shall be calculated using the formula below:

$$P = A + G + Y$$

TEST RESULTS

Conducted**ANT1:**

Mode	Channel (MHz)	Average burst power (dBm/MHz)	Output power (mW/MHz)	Limit (mW/MHz)	Rated output power (mW/MHz)	Tolerance (%)	Limit	Result
IEEE 802.11a	5180	1.82	1.520548	10	2.0	-23.97%	-	Pass
	5200	2.62	1.828100	10	2.0	-8.60%	80%~20%	
	5240	2.67	1.849269	10	2.0	-7.54%	%	
IEEE 802.11n HT20	5180	1.70	1.479108	10	2.0	-26.04%	-	Pass
	5200	2.21	1.663413	10	2.0	-16.83%	80%~20%	
	5240	3.03	2.009093	10	2.0	0.45%	%	
IEEE 802.11n HT40	5190	-0.13	0.970510	5	1.0	-2.95%	-	Pass
	5230	-0.12	0.972747	5	1.0	-2.73%	80%~20%	
IEEE 802.11ac VHT20	5180	2.02	1.592209	10	2.0	-20.39%	-	Pass
	5200	2.60	1.819701	10	2.0	-9.01%	80%~20%	
	5240	2.88	1.940886	10	2.0	-2.96%	%	
IEEE 802.11ac VHT40	5190	-0.22	0.950605	5	1.0	-4.94%	-	Pass
	5230	0.38	1.091440	5	1.0	9.14%	80%~20%	
IEEE 802.11ac VHT80	5210	-3.52	0.444631	2.5	0.5	-11.07%	-	Pass

ANT2:

Mode	Channel (MHz)	Average burst power (dBm/MHz)	Output power (mW/MHz)	Limit (mW/MHz)	Rated output power (mW/MHz)	Tolerance (%)	Limit	Result
IEEE 802.11a	5180	1.75	1.496236	10	2.0	-25.19%	-	Pass
	5200	2.56	1.803018	10	2.0	-9.85%	80%~20%	
	5240	2.68	1.853532	10	2.0	-7.32%	%	
IEEE 802.11n HT20	5180	1.62	1.452112	10	2.0	-27.39%	-	Pass
	5200	2.15	1.640590	10	2.0	-17.97%	80%~20%	
	5240	3.03	2.009093	10	2.0	0.45%	%	
IEEE 802.11n HT40	5190	-0.14	0.968278	5	1.0	-3.17%	-	Pass
	5230	-0.11	0.974990	5	1.0	-2.50%	80%~20%	
IEEE 802.11ac VHT20	5180	2.03	1.595879	10	2.0	-20.21%	-	Pass
	5200	2.55	1.798871	10	2.0	-10.06%	80%~20%	
	5240	2.81	1.909853	10	2.0	-4.51%	%	
IEEE 802.11ac VHT40	5190	-0.23	0.948418	5	1.0	-5.16%	-	Pass
	5230	0.36	1.086426	5	1.0	8.64%	80%~20%	
IEEE 802.11ac VHT80	5210	-3.50	0.446684	2.5	0.5	-10.66%	-	Pass

Note:

1). Test Result: Pass.

2). All test modes have been tested and we only record the worst result.

MIMO

Mode	Channel (MHz)	Output power (mW/MHz)			Limit (mW/MHz)	Rated output power (mW/MHz)	Tolerance (%)	Limit	Result
		ANT1	ANT2	MIMO					
IEEE 802.11n HT20	5180	1.479108	1.452112	2.931220	10.00	4.0	-26.72%	-80%-20%	Pass
	5200	1.663413	1.640590	3.304003	10.00	4.0	-17.40%	-80%-20%	Pass
	5240	2.009093	2.009093	4.018186	10.00	4.0	0.45%	-80%-20%	Pass
IEEE 802.11n HT40	5190	0.970510	0.968278	1.938788	5.00	2.0	-3.06%	-80%-20%	Pass
	5230	0.972747	0.974990	1.947737	5.00	2.0	-2.61%	-80%-20%	Pass
IEEE 802.11ac VHT20	5180	1.592209	1.595879	3.188088	10.00	4.0	-20.30%	-80%-20%	Pass
	5200	1.819701	1.798871	3.618572	10.00	4.0	-9.54%	-80%-20%	Pass
	5240	1.940886	1.909853	3.850739	10.00	4.0	-3.73%	-80%-20%	Pass
IEEE 802.11ac VHT40	5190	0.950605	0.948418	1.899023	5.00	2.0	-5.05%	-80%-20%	Pass
	5230	1.091440	1.086426	2.177866	5.00	2.0	8.89%	-80%-20%	Pass
IEEE 802.11ac VHT80	5210	0.444631	0.446684	0.891315	2.5	1.0	-10.87%	-80%-20%	Pass

EIRP

ANT1:

Mode	Channel (MHz)	Output power (dBm/MHz)	Antenna Gain (dBi)	EIRP (dBm/MHz)	EIRP (mW/MHz)	EIRP Limit (mW/MHz)	Result
IEEE 802.11a	5180	1.82	0.74	2.56	1.80	10	Pass
	5200	2.62	0.74	3.36	2.17	10	
	5240	2.67	0.74	3.41	2.19	10	
IEEE 802.11n HT20	5180	1.70	0.74	2.44	1.75	10	Pass
	5200	2.21	0.74	2.95	1.97	10	
	5240	3.03	0.74	3.77	2.38	10	
IEEE 802.11n HT40	5190	-0.13	0.74	0.61	1.15	5	Pass
	5230	-0.12	0.74	0.62	1.15	5	
IEEE 802.11ac VHT20	5180	2.02	0.74	2.76	1.89	10	Pass
	5200	2.60	0.74	3.34	2.16	10	
	5240	2.88	0.74	3.62	2.30	10	
IEEE 802.11ac VHT40	5190	-0.22	0.74	0.52	1.13	5	Pass
	5230	0.38	0.74	1.12	1.29	5	
IEEE 802.11ac VHT80	5210	-3.52	0.74	-2.78	0.53	2.5	Pass

ANT2:

Mode	Channel (MHz)	Output power (dBm/MHz)	Antenna Gain (dBi)	EIRP (dBm/MHz)	EIRP (mW/MHz)	EIRP Limit (mW/MHz)	Result
IEEE 802.11a	5180	1.75	0.74	2.49	1.77	10	Pass
	5200	2.56	0.74	3.30	2.14	10	
	5240	2.68	0.74	3.42	2.20	10	
IEEE 802.11n HT20	5180	1.62	0.74	2.36	1.72	10	Pass
	5200	2.15	0.74	2.89	1.95	10	
	5240	3.03	0.74	3.77	2.38	10	
IEEE 802.11n HT40	5190	-0.14	0.74	0.60	1.15	5	Pass
	5230	-0.11	0.74	0.63	1.16	5	
IEEE 802.11ac VHT20	5180	2.03	0.74	2.77	1.89	10	Pass
	5200	2.55	0.74	3.29	2.13	10	
	5240	2.81	0.74	3.55	2.26	10	
IEEE 802.11ac VHT40	5190	-0.23	0.74	0.51	1.12	5	Pass
	5230	0.36	0.74	1.10	1.29	5	
IEEE 802.11ac VHT80	5210	-3.50	0.74	-2.76	0.53	2.5	Pass

Note:

- 1). Test Result: Pass.
- 2). All test modes have been tested and we only record the worst result.

MIMO

Mode	Channel (MHz)	EIRP(dBm/MHz)			EIRP (mW/MHz)	Limit (mW/MHz)	Result
		ANT1 (dBm/MHz)	ANT2 (dBm/MHz)	MIMO (dBm/MHz)			
IEEE 802.11n HT20	5180	2.44	2.36	5.41	3.48	10	Pass
	5200	2.95	2.89	5.93	3.92	10	Pass
	5240	3.77	3.77	6.78	4.76	10	Pass
IEEE 802.11n HT40	5190	0.61	0.60	3.62	2.30	5	Pass
	5230	0.62	0.63	3.64	2.31	5	Pass
IEEE 802.11ac VHT20	5180	2.76	2.77	5.78	3.78	10	Pass
	5200	3.34	3.29	6.33	4.30	10	Pass
	5240	3.62	3.55	6.60	4.57	10	Pass
IEEE 802.11ac VHT40	5190	0.52	0.51	3.53	2.25	5	Pass
	5230	1.12	1.10	4.12	2.58	5	Pass
IEEE 802.11ac VHT80	5210	-2.78	-2.76	0.24	1.06	2.5	Pass

Note:

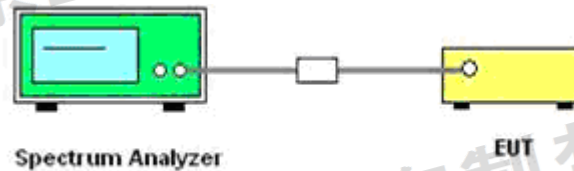
- 1). Test Result: Pass.
- 2). All test modes have been tested and we only record the worst result.

3.3 Occupied Bandwidth

LIMIT

Operation Band	20MHz system		40MHz system	80MHz system	160MHz system
W52 & W53	DSSS, etc	OFDM	OFDM	OFDM	OFDM
	18MHz	20MHz	40MHz	80MHz	160MHz
W56	20MHz		40MHz	80MHz	160MHz

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: modulation

Spectrum Condition:

1. Setting of SA is following as fellow:

- RBW: under 3% of OBW
- VBW: = RBW
- Sweep time: Auto
- Sweep Mode: Continuous sweep
- Detect mode: Positive peak
- Trace mode: Max hold

2. EUT have transmitted the maximum modulation signal and fixed channelize.

3. SA set to 99% of occupied bandwidth to measure occupied bandwidth.

TEST RESULTS

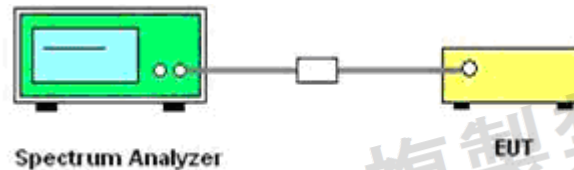
Please refer to the Appendix RF Test Data for WIFI5G ANT1 and the Appendix RF Test Data for WIFI5G ANT2.

3.4 Adjacent Channel Power

LIMIT

20MHz system		40MHz system	80MHz system
DSSS, etc	OFDM	OFDM	OFDM
$F_c \pm 20\text{MHz}$ $\pm 9\text{MHz BW: -25dBc}$	$F_c \pm 20\text{MHz}$ $\pm 10\text{MHz BW: -25dBc}$	$F_c \pm 40\text{MHz}$ $\pm 20\text{MHz BW: -25dBc}$	$F_c \pm 80\text{MHz}$ $\pm 40\text{MHz BW: -25dBc}$
$F_c \pm 40\text{MHz}$ $\pm 9\text{MHz BW: -40dBc}$	$F_c \pm 40\text{MHz}$ $\pm 10\text{MHz BW: -40dBc}$	$F_c \pm 80\text{MHz}$ $\pm 20\text{MHz BW: -40dBc}$	

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

Use Spectrum's ACP measurement function and set spectrum analyzer as follow:

Spectrum Condition:

- Frequency: test frequency
- Span: .>4 times integrate bandwidth
- RBW: 300 KHz
- VBW: 300 KHz
- Sweep time: Auto
- Sweep mode: Continuous
- Detector mode: Sample
- Indication mode: max hold

TEST RESULTS

Please refer to the Appendix RF Test Data for WIFI5G ANT1 and the Appendix RF Test Data for WIFI5G ANT2.

3.5 Unwanted Emission Strength and Out of Band Leakage Power

LIMIT

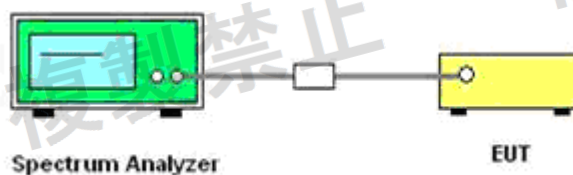
Out of Band Leakage Power

W52	20MHz system	
	OBW: 18MHz or less	OBW:18-19MHz
	5140-5142MHz: 2.5μW/MHz 5142-5150MHz: 15μW/MHz 5250-5251MHz: $10^{1-(f-9)}$ mW/MHz 5251-5260MHz: $10^{1-(8/90)(f-11)}$ mW/MHz 5260-5266.7MHz: $10^{-1.8-(6/50)(f-20)}$ mW/MHz 5266.7-5360MHz: 2.5μW/MHz f=MHz, Different from 5240(MHz)	5135-5142MHz: 2.5μW/MHz 5142-5150MHz: 15μW/MHz 5250-5251MHz: $10^{1-(f-9)}$ mW/MHz 5251-5260MHz: $10^{1-(8/90)(f-11)}$ mW/MHz 5260-5266.7MHz: $10^{-1.8-(6/50)(f-20)}$ mW/MHz 5266.7-5365MHz: 2.5μW/MHz f=MHz, Different from 5240(MHz)
	40MHz system	80MHz system
	5100-5141.6MHz: 2.5μW/MHz 5141.6-5150MHz: 15μW/MHz 5250-5251MHz: $10^{-(f-20)+\log(1/2)}$ mW/MHz 5251-5270MHz: $10^{-(8/190)(f-21)-1+\log(1/2)}$ mW/MHz 5270-5278.4MHz: $10^{-(3/50)(f-40)-1.8+\log(1/2)}$ mW/MHz 5278.4-5400MHz: 2.5μW/MHz f=MHz, Different from 5230(MHz)	5020-5123.2MHz: 2.5μW/MHz 5123.2-5150MHz: 15μW/MHz 5250-5251MHz: $10^{-(f-40)+\log(1/4)}$ mW/MHz 5251-5290MHz: $10^{-(8/390)(f-41)-1+\log(1/4)}$ mW/MHz 5290-5296.7MHz: $10^{-(3/100)(f-80)-1.8+\log(1/4)}$ mW/MHz 5296.7-5480MHz: 2.5μW/MHz f=MHz, Different from 5210(MHz)

Unwanted Emission Strength

Operation Band	20MHz system		40MHz system	80MHz system
	DSSS, etc	OFDM	OFDM	OFDM
W52 & W53	30~5,140MHz: 2.5μW/MHz	30~5,135MHz: 2.5μW/MHz	30~5,100MHz: 2.5μW/MHz	30~5,020MHz: 2.5μW/MHz
	5,360MHz~26GHz: 2.5μW/MHz	5,365MHz~26GHz: 2.5μW/MHz	5,400MHz~26GHz: 2.5μW/MHz	5,480MHz~26GHz: 2.5μW/MHz

TEST CONFIGURATION



TEST PROCEDURE

Out of Band Leakage Power

Enable EUT under transmission mode and connected it to the spectrum analyzer through antenna output port as the block diagram show in TEST CONFIGURATION

Use Spectrum's ACP measurement function and set spectrum analyzer as follow:

Spectrum Condition:

Step 1:

- Frequency: include each specified frequency range
- RBW: 1 MHz
- VBW: 1 MHz
- Span: Wide enough to cover the complete power envelope of the signal of the UUT.
- Detector: Peak
- Trace Mode: Max Hold

Step 2:

When the trace is complete, find the peak value of the power envelope and record the frequency.

Step 3:

Make the following changes to the settings of the spectrum analyzer:

- Centre Frequency: Equal to the frequency recorded in step 2.
- Span: 0 Hz
- RBW: 1 MHz
- VBW: 1 MHz
- Detector: RMS
- Trace Mode: Clear Write

Unwanted Emission Strength

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: modulation

Spectrum Condition:

- Frequency: 30MHz-26GHz
- RBW: 100 KHz (30MHz-1GHz), 1MHz (1GHz-26GHz)
- VBW: 100 KHz (30MHz-1GHz), 1MHz (1GHz-26GHz)
- Sweep time: Auto
- Detector mode: Positive peak
- Indication mode: max hold

TEST RESULTS

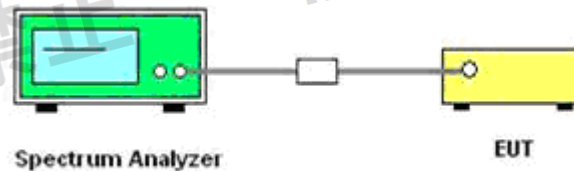
Please refer to the Appendix RF Test Data for WIFI5G ANT1 and the Appendix RF Test Data for WIFI5G ANT2.

3.6 Secondary Radiated Emission Strength

LIMIT

The limit on secondary emissions radiated from the receiving equipment within which the function of other radio equipment will not be impaired shall be, in terms of the power of a dummy antenna circuit that has the same electrical constant as the receiving antenna, 4nW or less at a frequency below 1 GHz and 20 nW or less at a frequency of 1 GHz or higher as measured using the circuit.

TEST CONFIGURATION



TEST PROCEDURE

The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram as TEST CONFIGURATION shows.

EUT Condition: modulation

Spectrum Condition:

- Frequency: 30MHz-26GHz
- RBW: 100 KHz (30MHz-1GHz), 1MHz (1GHz-26GHz)
- VBW: 100 KHz (30MHz-1GHz), 1MHz (1GHz-26GHz)
- Sweep time: Auto
- Detector mode: Positive peak
- Indication mode: max hold

TEST RESULTS

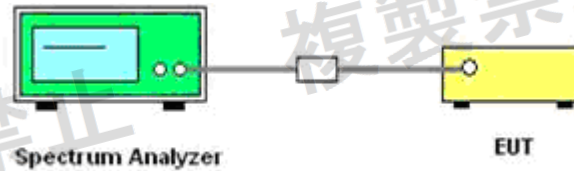
Please refer to the Appendix RF Test Data for WIFI5G ANT1 and the Appendix RF Test Data for WIFI5G ANT2.

3.7 Transmission Burst Length

LIMIT

Transmission Burst Length shall be 8ms or less.

TEST CONFIGURATION



TEST PROCEDURE

Enable EUT under transmission mode and connected it to the spectrum analyzer through antenna output port as the block diagram show in TEST CONFIGURATION

Use Spectrum's ACP measurement function and set spectrum analyzer as follow:

Spectrum Condition:

- Frequency: test frequency
- Span: 0Hz
- RBW: 10MHz
- VBW: =RBW
- Sweep time: Auto
- Sweep mode: single
- Detector mode: Peak
- Indication mode: max hold

TEST RESULTS

Please refer to the Appendix RF Test Data for WIFI5G ANT1 and the Appendix RF Test Data for WIFI5G ANT2.

3.8 Carrier Sense Function

LIMIT

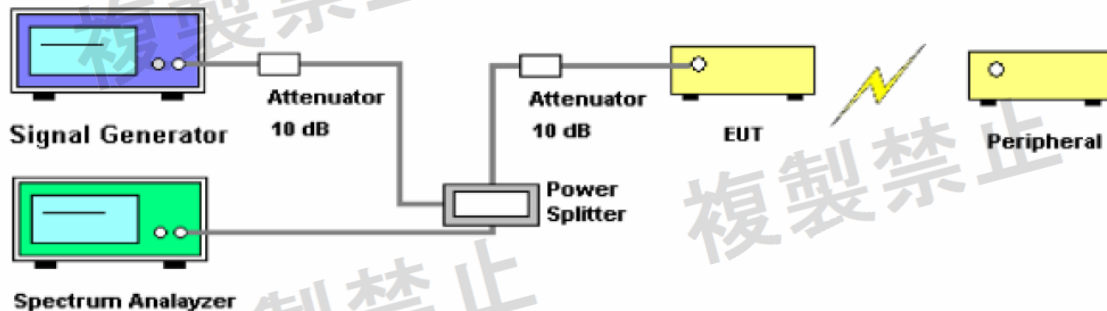
Item	Limits
Carrier Sense	Good - EUT stop RF transmission signal after carrier inject to EUT. (On $22.79 + Gr - 20 \cdot \log(f)$ [dBm] (Gr: dBi; f: MHz) or 100mV/m)

INSTRUMENTS SETTING

The following table is the setting of spectrum analyser and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	1 MHz
Span	0 MHz
Sweep	Continuous
Detector	Peak
Trigger mode	Video

TEST CONFIGURATION



TEST PROCEDURE

1. Set The EUT state in "normal mode link with wireless router".
2. SG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SG and power level is (on $22.79 + G - 20 \cdot \log(f)$ dBm) (G is the antenna gain is the test frequency).
3. Turn off the RF signal of the SG.
4. EUT have transmitted the maximum modulation signal and fixed channelize.
5. Setting the spectrum as follow :
RBW/VBW=1MHz/1MHz
Span=50MHz
Sweep time=auto
Sweep mode=continuous
Detect mode=positive peak
6. SG RF signal on.
7. EUT shall be stop the transmitted any signal and SG RF signal off, the EUT will be continuous transmitted signal.

TEST RESULTS

Remark: we test all modes, only worst cases were reported as below:

ANT1:

Test mode	Test frequency (MHz)	Interference signal level (dBm)	Test result
IEEE 802.11ac VHT20	5180	-50.25	Good
IEEE 802.11ac VHT40	5230	-50.33	Good
IEEE 802.11ac VHT80	5210	-50.30	Good

ANT2:

Test mode	Test frequency (MHz)	Interference signal level (dBm)	Test result
IEEE 802.11ac VHT20	5180	-50.25	Good
IEEE 802.11ac VHT40	5230	-50.33	Good
IEEE 802.11ac VHT80	5210	-50.30	Good

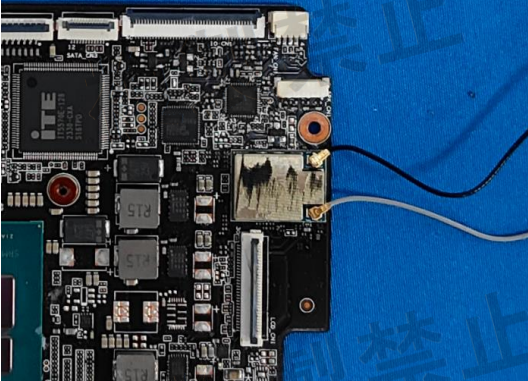
3.9 Construction Protection Method

REQUIREMENT

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 METHOD

all high-frequency section and modulation section was shielded by metal shield. As follow:



3.10 Interference Prevention Function

REQUIREMENT

Clarify the one automatically to transmit and to receive identification code with the wireless equipment of the wireless station used in the same premises.

Item	Limits
Identification code	≥ 48 bits

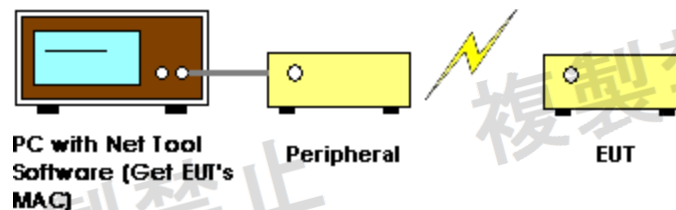
CONFIRMATION METHOD

All high-frequency section and modulation section packet in one IC, End user can not modify easily.

TEST PROCEDURE

1. In the case that the EUT has the function of automatically transmitting the identification code: a. Transmit the predetermined identification codes from EUT. b. Check the transmitted identification codes with the demodulator.
2. In the case of receiving the identification code: a. Transmit the predetermined identification codes from the counterpart. b. Check if communication is normal. c. Transmit the other signals than predetermined ID codes from the counterpart. d. check if the EUT stops the transmission, or if it displays that identification codes are different from the predetermined ones.

TEST CONFIGURATION

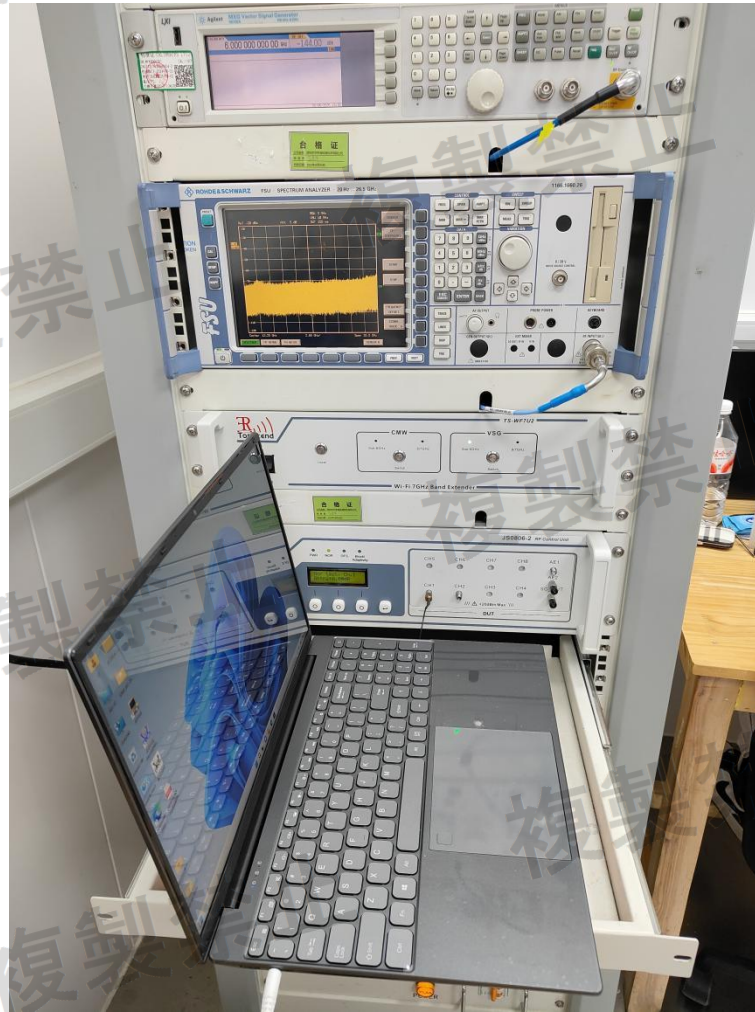


TEST RESULTS

PASS

MAC: 2B: C5: 1E: D4: 6A: 3D

4 Test Setup Photos of the EUT



5 Photos of the EUT

Reference to the test report CTA25053000101.

***** End of Report *****