

## TEST REPORT

**Product** : WIFI+BT Module  
**Trade mark** : GSD  
**Model/Type reference** : WCT5JM2611  
**Serial Number** : N/A  
**Report Number** : EED32N80695205  
**Date of Issue** : Oct . 12, 2021  
**Product Class** : Item 19-3 of Article 2 Paragraph 1  
**Test result** : PASS

Prepared for:

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Prepared by:

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Date:

Oct . 12, 2021



Check No.: 4252050821

## 2 Version

Version No.	Date	Description
00	Oct . 12, 2021	Original

## 3 Test Summary

Test	Test Requirement	Limit/Severity	Result
Antenna Requirement	Item 19-3 of Article 2 Paragraph 1	Notice 88 Appendix 43,B-1 (1)&(2)	PASS
Number of channels or channel separation	Item 19-3 of Article 2 Paragraph 1	7	PASS
Tolerance of frequency	Item 19-3 of Article 2 Paragraph 1	20×10-6 or less	PASS
Occupied Bandwidth	Item 19-3 of Article 2 Paragraph 1	For BW=20MHz:OFDM ≤ 19MHz; Others ≤ 18MHz For BW=40MHz:OFDM ≤ 38MHz For BW=80MHz:OFDM ≤ 78MHz	PASS
Tolerance of adjacent channel leakage power	Item 19-3 of Article 2 Paragraph 1	Adjacent channel leakage power See page 82	PASS
Antenna Power	Item 19-3 of Article 2 Paragraph 1	OFDM 20MHz sys: 10mW/MHz or less 40MHz sys: 5 mW /MHz or less 80MHz sys: 2.5 mW /MHz or less Tolerance : +20%,-80%	PASS
Unwanted Emission Strength	Item 19-3 of Article 2 Paragraph 1	See page 119	PASS
Interference prevention capability	Item 19-3 of Article 2 Paragraph 1	Article 49	PASS
Carrier sense capability	Item 19-3 of Article 2 Paragraph 1	Article 49	PASS
RF accessibility	Item 19-3 of Article 2 Paragraph 1	Article 49	PASS
Burst Length	Item 19-3 of Article 2 Paragraph 1	8ms or less	PASS
Limit of secondary radiated emissions(conducted)	Item 19-3 of Article 2 Paragraph 1	(1) Below 1GHz : 4nW (2) 1GHz - 10GHz : 20nW (3) 10GHz or higher : 20nW	PASS

**Remark:**

Company Name and Address shown on Report, the sample(s) and sample Information was/ were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

EUT: In this whole report EUT means Equipment Under Test.

Tx: In this whole report Tx (or tx) means the product in transmitting status.

Rx: In this whole report Rx (or rx) means the product in receiving status.

RF: In this whole report RF means Radiated Frequency.

DS: Direct spreading

FH: Frequency hopping

OFDM: Orthogonal frequency division multiplexing.

The tested samples have two supply samples, since the two supply samples only changed for different market and customer, The Electrical circuit design, Layout, components and internal wiring are identical. Only the Integral Antenna is different. The others are the same.

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## 5 General Information

### 5.1 Client Information

Applicant:	Hui Zhou Gaoshengda Technology Co.,LTD
Address of Applicant:	No.2, Jin-da Road, Huinan High-tech Industrial Park, Hui-ao Avenue, Huizhou City, Guangdong, China
Manufacturer:	Hui Zhou Gaoshengda Technology Co.,LTD
Address of Manufacturer:	No.2, Jin-da Road, Huinan High-tech Industrial Park, Hui-ao Avenue, Huizhou City, Guangdong, China
Factory:	Hui Zhou Gaoshengda Technology Co.,LTD
Address of Factory:	No.2, Jin-da Road, Huinan High-tech Industrial Park, Hui-ao Avenue, Huizhou City, Guangdong, China

### 5.2 General Description of EUT

Product Name:	WIFI+BT Module
Model No.:	WCT5JM2611
Trade Mark:	GSD
EUT Supports Radios application:	5.250-5.350GHz
Operating Frequency:	5.250-5.350GHz
Conducted rate power:	1.80mW/MHz (MIMO W53 Band_802.11a-HT20) 1.80mW/MHz (MIMO W53 Band_802.11n-HT20) 1.00mW/MHz (MIMO W53 Band_802.11n-HT40) 1.80mW/MHz (MIMO W53 Band_802.11ac-VHT20) 1.00mW/MHz (MIMO W53 Band_802.11ac-VHT40) 0.50mW/MHz (MIMO W53 Band_802.11ac-VHT80)
Type of Modulation:	IEEE for 802.11a: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE for 802.11ac: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK)
Transmit Data Rate:	IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps IEEE 802.11n HT20: up to 288.9 Mbps, HT40: up to 600 Mbps IEEE 802.11ac VHT20: up to 346.7 Mbps, VHT40: up to 800 Mbps, VHT80: up to 1733.3 Mbps
Antenna Type:	Integral Antenna
Antenna gain (WCT5J-40):	Ant 1: 3.86dBi; Ant 2: 3.86dBi;
Antenna gain(WCT5H-40):	Ant 1: 3.83dBi; Ant 2:3.83dBi;
Function:	<input checked="" type="checkbox"/> SISO <input checked="" type="checkbox"/> 2x2 MIMO <input type="checkbox"/> TPC
Test Power Grade:	Default
Test Software of EUT:	QATool_Dbg.exe
Power Supply:	DC 5V
Sample Received Date:	Aug. 06, 2021
Sample tested Date:	Aug. 06, 2021 to Oct . 12, 2021

## 5.3 EUT test environment range

Temperature:	25 °C
Humidity:	56% RH
Atmospheric Pressure:	1010mbar

## 5.4 Description of Support Units

The EUT has been tested with associated equipment below.

Associated equipment name		Manufacture	model	S/N serial number	Supplied by	Certification
A	Netbook	Lenovo	E49	--	Lenovo	MIC

## 5.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

## 6 Equipment List

Equipment	Manufacturer	Model	Serial No.	Cal. Date	Due date	Calibration body	Classification
Spectrum Analyzer	R&S	FSV40	101200	09-02-2020 08-26-2021	09-01-2021 08-25-2022	LISAI	(c)
Spectrum Analyzer	Keysight	N9010A	MY54510339	12-28-2020	12-27-2021	CTIMT	(c)
Temperature/ Humidity Indicator	biaozhi	GM1360	EJ1611459	02-21-2021	02-20-2022	CTIMT	(c)
Signal Generator	Keysight	E8257D	MY53401106	12-28-2020	12-27-2021	CTIMT	(c)
Digital multimeter	FLUKE	111	90240138	05-13-2020 05-10-2021	05-12-2021 05-09-2022	CTIMT	(c)
DC Power	Keysight	E3642A	MY54426035	12-28-2020	12-27-2021	CTIMT	(c)

**Remark:**

- (a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) in Japan (hereinafter referred to as "NICT") or a designated calibration agency under Article 102-18 paragraph (1) in JRL.
- (b) Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act (Act No. 51 of 1992).
- (c) Calibration conducted in countries except Japan, which shall be equivalent to the calibration conducted by the NICT or a designated calibration agency under Article 102-18 paragraph (1).
- (d) Calibration, etc. conducted by using measuring instruments and other equipment listed in the right column of appended table No. 3, which shall have been given any type of calibration, etc. listed above from (a) to(c).

From JRL Article 24-2, paragraph 4, Item 2

## 7 Radio Technical Requirements Specification

**Table 1: 5 GHz band low-power data communication system (1) (5.3GHz band) (Item 19-3 of Article 2 Paragraph 1)**

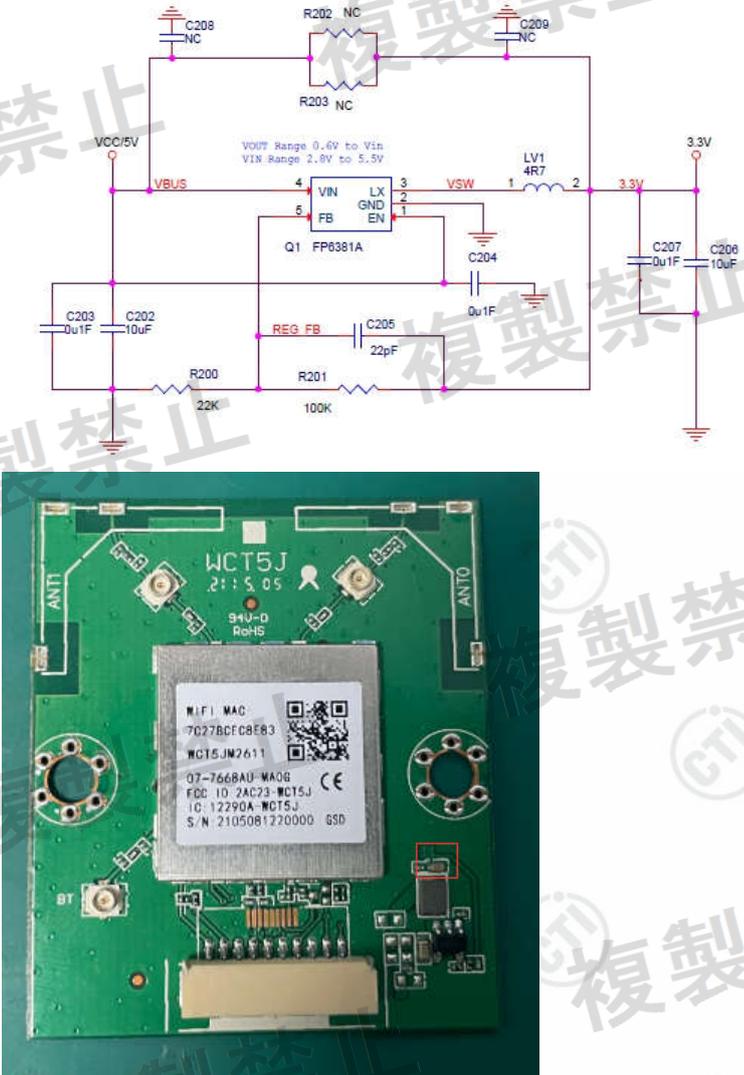
Items	Technical standard
Assigned frequency or designated frequency	5260,5280,5300,5320,5270,5310,5290MHz
Communication method	One-way communication, simplex, semi-duplex, or duplex operation of digital signal transmission including spread spectrum
Number of channels or channel separation	7
Tolerance of frequency ( $\times 10^{-6}$ )	$20 \times 10^{-6}$
Tolerance of occupied bandwidth	For BW=20MHz:OFDM $\leq 19$ MHz; Others $\leq 18$ MHz For BW=40MHz:OFDM $\leq 38$ MHz For BW=80MHz:OFDM $\leq 78$ MHz
Antenna power	OFDM 20MHz sys: 10mW/MHz or less 40MHz sys: 5 mW /MHz or less 80MHz sys: 2.5 mW /MHz or less Tolerance : +20%,-80%
EIRP	Without TPC 20MHz sys: 5 mW/MHz or less 40MHz sys: 2.5mW /MHz or less 80MHz sys: 1.25mW /MHz or less
Unwanted Emission Strength	See page 15
Tolerance of adjacent channel leakage power	Adjacent channel leakage power See page 14
Transmission burst length	8ms or less
Limit of secondary radiated emissions	(1) Below 1GHz : 4nW (2) 1GHz - 10GHz : 20nW (3) 10GHz or higher : 20nW
Interference prevention function	Shall have the function of automatic transmission or reception of identification code.
Structure	Shall be of the structure that the RF and modulator sections excluding antenna cannot easily be opened.
Note	DS: Direct spread OFDM: Orthogonal frequency division multiplexing

Note: The Technical Standards described here do not cover all of the regulated items.

## 7.1 Transmitter Requirements

### 7.1.1 EUT test voltage and Frequency

#### 7.1.1.1 EUT test voltage

<b>Power Supply:</b>	DC 5V								
<b>Test voltage require:</b>	Supply the rated voltage and the rated voltage $\pm 10\%$ to power supply. However, If the fluctuation of input voltage to the circuit of RF unit (except power supply) of test equipment is under $\pm 1\%$ , when input voltage from external power supply to the test equipment is fluctuated by $\pm 10\%$ : Conduct the test with the rated voltage only.								
<b>Power Supply view:</b>									
<b>Power Supply result:</b>	<p>The measurement result of the voltage fluctuation at RF circuit when DC 5V <math>\pm 10\%</math>.</p> <table border="1" data-bbox="536 1906 1449 2033"> <thead> <tr> <th>DC Input</th> <th>RF circuit</th> </tr> </thead> <tbody> <tr> <td>5.5V</td> <td>3.3V</td> </tr> <tr> <td>5.0V</td> <td>3.3V</td> </tr> <tr> <td>4.5V</td> <td>3.2V</td> </tr> </tbody> </table>	DC Input	RF circuit	5.5V	3.3V	5.0V	3.3V	4.5V	3.2V
DC Input	RF circuit								
5.5V	3.3V								
5.0V	3.3V								
4.5V	3.2V								

### 7.1.1.2 Test frequency

Test frequencies:	If the EUT can be set to 3 or more different (carrier) frequencies in 1 allocated band, testing shall be performed using the Lowest, Middle and the Highest frequency (L,M and H). If there are 2 or fewer frequencies, testing shall be performed with the available frequencies.	
Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom

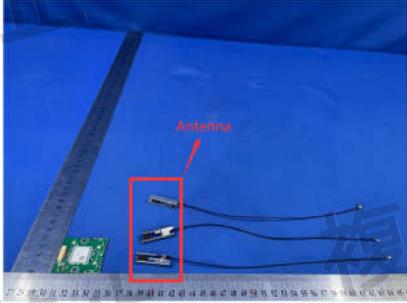
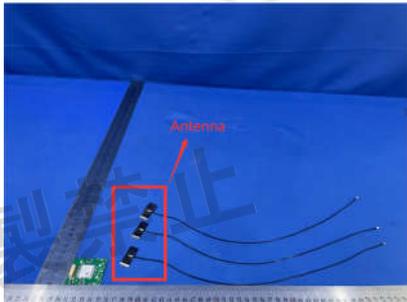
EUT channels and frequencies list:

802.11a 20MHz 802.11n 20MHz 802.11ac 20MHz		802.11n 40MHz 802.11ac 40MHz		802.11ac 80MHz	
W53		W53		W53	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	54	5270	58	5290
56	5280	62	5310	N/A	N/A
60	5300	N/A	N/A	N/A	N/A
64	5320	N/A	N/A	N/A	N/A

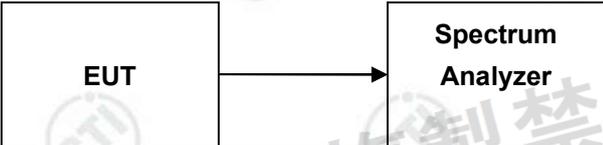
Test channel:

Test mode	Test channel/frequency(MHz)
Mode 1: IEEE 802.11a W53 mode	CH52/5260, CH56/5280, CH64/5320
Mode 2: IEEE 802.11n/ac 20MHz W53 mode	CH52/5260, CH56/5280, CH64/5320
Mode 3: IEEE 802.11n/ac 40MHz W53 mode	CH54/5270, CH62/5310
Mode 4: IEEE 802.11ac 80MHz W53 mode	CH58/5290

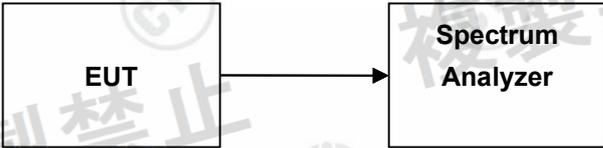
## 7.1.2 Antenna Requirement

<p><b>Standard requirement</b></p>	
<p>Applicable for equipment with an antenna terminal, including testing terminals) If an antenna connector is available, all relevant tests will be carried out conducted. If not, tests will be carried out in an anechoic room or with a suitable test-fixture.</p>	
<p><b>EUT Antenna</b> (WCT5J-40)</p>	
<p>The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 3.86Bi.</p>	
<p><b>EUT Antenna</b> (WCT5H-40)</p>	
<p>The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 3.83dBi</p>	
<p><b>Result:</b> An antenna connector is available, all relevant tests will be carried out conducted.</p>	

### 7.1.3 Tolerance of frequency

<b>Test Requirement:</b>	Item 19-3 of Article 2 Paragraph 1
<b>EUT Operation:</b>	
<b>Test Status:</b>	Enter the unmodulation mode for the product. Test in Channel lowest , middle and highest, keep in continuously transmitting status.
<b>Test Configuration:</b>	 <pre> graph LR     EUT[EUT] --&gt; SA[Spectrum Analyzer]             </pre>
<b>Test Conditions:</b>	Frequency Counter or Spectrum Analyzer is used for measurement.
<b>EUT conditions:</b>	Modulation/Spread/Hopping off, CW Tx If EUT does not accept "Modulation OFF" mode in the measurement, you may use "Modulation ON" mode. In that case you can use the Max power Frequency as the measuring results.
<b>Spectrum Analyzer conditions:</b>	Frequency: Test Frequency Span 500kHz RBW 10kHz (Modulation OFF), VBW 30kHz (Modulation OFF), Sweep Time Auto Detector mode Positive peak Indication mode Max hold
<b>Technical standard:</b>	Tolerance of frequency: $\pm 20 \times 10^{-6}$
<b>Test result:</b>	Refer to Appendix: W5.3 WIFI of Report No. EED32N80695205

## 7.1.4 Occupied Bandwidth (99%)

<b>Test Requirement:</b>	Item 19-3 of Article 2 Paragraph 1
<b>EUT Operation:</b>	
<b>Test Status:</b>	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
<b>Test Configuration:</b>	 <pre> graph LR     EUT[EUT] --&gt; SA[Spectrum Analyzer]             </pre>
<b>EUT conditions:</b>	Modulation/Spread/Hopping on. For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
<b>Spectrum Analyzer conditions:</b>	Frequency: Test Frequency Span 30MHz RBW 300 kHz VBW 300 kHz Sweep Time Auto detector mode Positive peak Indication mode Max hold OBW 99%
<b>Technical standard:</b>	For BW=20MHz:OFDMA $\leq$ 20MHz; Others $\leq$ 18MHz For BW=40MHz:OFDM $\leq$ 40MHz For BW=80MHz:OFDM $\leq$ 80MHz
<b>Test result:</b>	Refer to Appendix: W5.3 WIFI of Report No. EED32N80695205

**Measurement Record:**

**Uncertainty:  $\pm$  10KHz**

## 7.1.5 Adjacent Channel Power Tolerance

<b>Test Requirement:</b>	Item 19-3 of Article 2 Paragraph 1
<b>EUT Operation:</b>	
<b>Test Status:</b>	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).Following channel(s) was (were) selected for the final test as listed below.
<b>Test Configuration:</b>	
 <pre> graph LR     EUT[EUT] --&gt; SA[Spectrum Analyzer]             </pre>	
<b>EUT conditions:</b>	Modulation/Spread/Hopping on. For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
<b>Spectrum Analyzer conditions:</b>	Frequency: Test Frequency RBW 300 kHz, VBW 300 kHz Tx bandwidth 20MHz Adjacent channel bandwidth 20MHz, Channel spacing 20MHz Alternate channel bandwidth 20MHz, Channel spacing 40MHz 2nd Alternate channel bandwidth 40MHz, Channel spacing 80MHz Sweep Time Auto detector mode Positive peak Indication mode Max hold
<b>Technical standard:</b>	20MHz system (OB: below 20MHz) (1) Mean power of ±10MHz; bandwidth at 20MHz; detuning : -25dBc (2) Mean power of ±10MHz; bandwidth at 40MHz; detuning : -40dBc 40MHz system (OB: over 20, below 40MHz) (1) Mean power of ±20MHz; bandwidth at 40MHz; detuning : -25dBc (2) Mean power of ±20MHz; bandwidth at 80MHz; detuning : -40dBc 80MHz system (OB: over 40, below 80MHz) Mean power of ±40MHz; bandwidth at 80MHz; detuning : -25dBc
<b>Test result:</b>	Refer to Appendix: W5.3 WIFI of Report No. EED32N80695205

Note: The cable loss and antenna gain have been put into spectrum analyzer as amplitude offset.

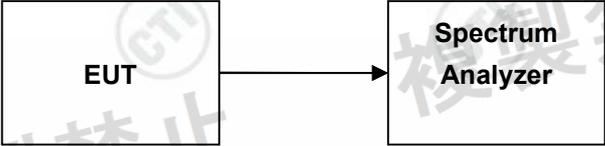
## 7.1.6 Unwanted Emission Strength

<b>Test Requirement:</b>	Item 19-3 of Article 2 Paragraph 1
<b>EUT Operation:</b>	
<b>Test Status:</b>	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).Following channel(s) was (were) selected for the final test as listed below.
<b>Test Configuration:</b>	 <pre> graph LR     EUT[EUT] --&gt; SA[Spectrum Analyzer]             </pre>
<b>EUT conditions:</b>	Modulation/Spread/Hopping on. For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
<b>Spectrum Analyzer conditions:</b>	Step 1 All spurious are measured by peak mode. Step 2: Frequency: Spurious Frequency RBW 1 MHz VBW 1 MHz Sweep Time Auto detector mode Sample Indication mode Max hold
<b>Technical standard:</b>	OB: ≤18MHz 30-5233.3MHz ≤2.5μW/MHz 5233.3-5240MHz (Df:26.7-20MHz) ≤10 <sup>-1.8-(6/50)(Df-20)</sup> mW/MHz 5240-5249MHz (Df: 20-11MHz) ≤10 <sup>-1-(8/90)(Df-11)</sup> mW/MHz 5249-5250MHz (Df: 11-10MHz) ≤10 <sup>1-(Df-9)</sup> mW/MHz 5350MHz-26GHz ≤2.5μW/MHz OB: 18-19MHz 30-5233.3MHz ≤2.5μW/MHz 5233.3-5240MHz (Df:26.7-20MHz) ≤10 <sup>-1.8-(6/50)(Df-20)</sup> mW/MHz 5240-5249MHz (Df:20-11MHz) ≤10 <sup>-1-(8/90)(Df-11)</sup> mW/MHz 5249-5250MHz (Df: 11-20MHz) ≤10 <sup>1-(Df-9)</sup> mW/MHz 5350MHz-26GHz ≤2.5μW/MHz OB: 19-38MHz 30-5210MHz ≤2.5μW/MHz 5210-5221.6MHz ≤15μW/MHz 5221.6-5230MHz (Df:48.4-40MHz) ≤10 <sup>-(3/50)(Df-40)-1.8+log(1/2)</sup> mW/MHz 5230-5249MHz (Df: 40-21MHz) ≤10 <sup>-(8/190)(f-21)-1+log(1/2)</sup> mW/MHz 5249-5250MHz (Df: 21-20MHz) ≤10 <sup>-(Df-20)+log(1/2)</sup> mW/MHz 5350-5358.4MHz ≤15μW/MHz

	5358.4MHz-26GHz $\leq 2.5\mu\text{W}/\text{MHz}$ OB: 38-78MHz 30-5203.3MHz $\leq 2.5\mu\text{W}/\text{MHz}$ 5203.3-5210MHz (Df:86.7-80MHz) $\leq 10^{-(3/100)(\text{Df}-80)-1.8+\log(1/4)}\text{mW}/\text{MHz}$ 5210-5249MHz (Df:80-41MHz) $\leq 10^{-(8/390)(\text{Df}-41)-1+\log(1/4)}\text{mW}/\text{MHz}$ 5249-5250MHz (Df:41-40MHz) $\leq 10^{-(\text{Df}-80)+\log(1/4)}\text{mW}/\text{MHz}$ 5350-5376.8MHz $\leq 15\mu\text{W}/\text{MHz}$ 5376.8MHz-26GHz $\leq 2.5\mu\text{W}/\text{MHz}$
<b>Test result:</b>	Refer to Appendix: W5.3 WIFI of Report No. EED32N80695205

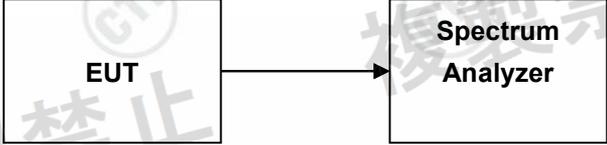
Note: The cable loss and antenna gain have been put into spectrum analyzer as amplitude offset.

## 7.1.7 Antenna Power

<b>Test Requirement:</b>	Item 19-3 of Article 2 Paragraph 1
<b>EUT Operation:</b>	
<b>Test Status:</b>	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
<b>Test Configuration:</b>	<div style="text-align: center;">  <pre> graph LR     EUT[EUT] --&gt; SA[Spectrum Analyzer]             </pre> </div>
<b>EUT conditions:</b>	Modulation/Spread/Hopping on For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
<b>Spectrum Analyzer conditions(FHSS):</b>	Frequency: Test Frequency Span 50 MHz RBW 1 MHz VBW 1 MHz Sweep Time Auto detector mode Positive peak Indication mode Max hold
<b>Technical standard:</b>	OFDM 20MHz sys: 10mW/MHz or less 40MHz sys: 5 mW /MHz or less 80MHz sys: 2.5 mW /MHz or less Tolerance : +20%,-80%
<b>E.I.R.P.</b>	20MHz system (OB: $\leq 19$ MHz) (a) With TPC: 10mW/MHz (b) Without TPC: 5mW/MHz 40MHz system (OB: 19-38MHz) (a) With TPC: 5mW/MHz (b) Without TPC: 2.5mW/MHz 80MHz system (OB: 38-78MHz) (a) With TPC: 2.5mW/MHz or less (b) Without TPC: 1.25mW/MHz or less
<b>Test result:</b>	Refer to Appendix: W5.3 WIFI of Report No. EED32N80695205

Note: The cable loss have been put into spectrum analyzer as amplitude offset.

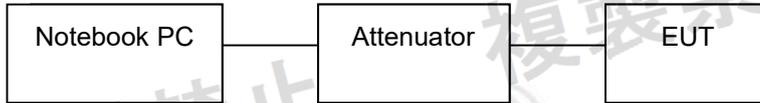
## 7.1.8 Transmission Burst Length

<b>Test Requirement:</b>	Item 19-3 of Article 2 Paragraph 1
<b>EUT Operation:</b>	
<b>Test Status:</b>	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
<b>Test Configuration:</b>	<div style="text-align: center;">  <pre> graph LR     EUT[EUT] --&gt; SA[Spectrum Analyzer]             </pre> </div>
<b>EUT conditions:</b>	Modulation/Spread/Hopping on. For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
<b>Spectrum Analyzer conditions:</b>	Frequency: Test Frequency Span 0 MHz RBW 1 MHz, VBW 1 MHz, Sweep Time: $\geq 4$ ms Detector mode Positive peak Indication mode Max hold
<b>Technical standard:</b>	Burst length $\leq 8$ ms
<b>Test result:</b>	Refer to Appendix: W5.3 WIFI of Report No. EED32N80695205

## 7.1.9 Interference prevention function

### 1) Measurement system diagram

(1) When transmitting identification code

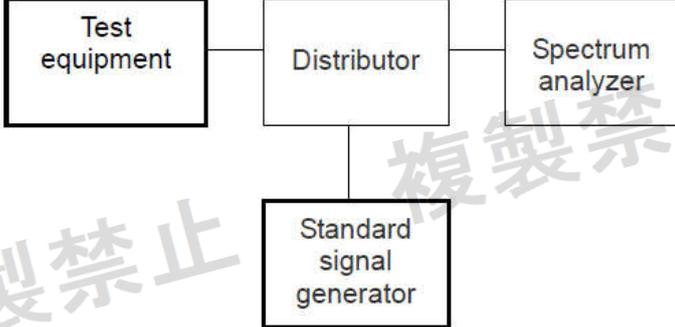


Test result:

- 1) The transmitting mode of EUT is normal operating, the interference prevention function does meet the requirements (Good).
- 2) The receiving mode of EUT is normal operating, the interference prevention function does meet the requirements (Good).

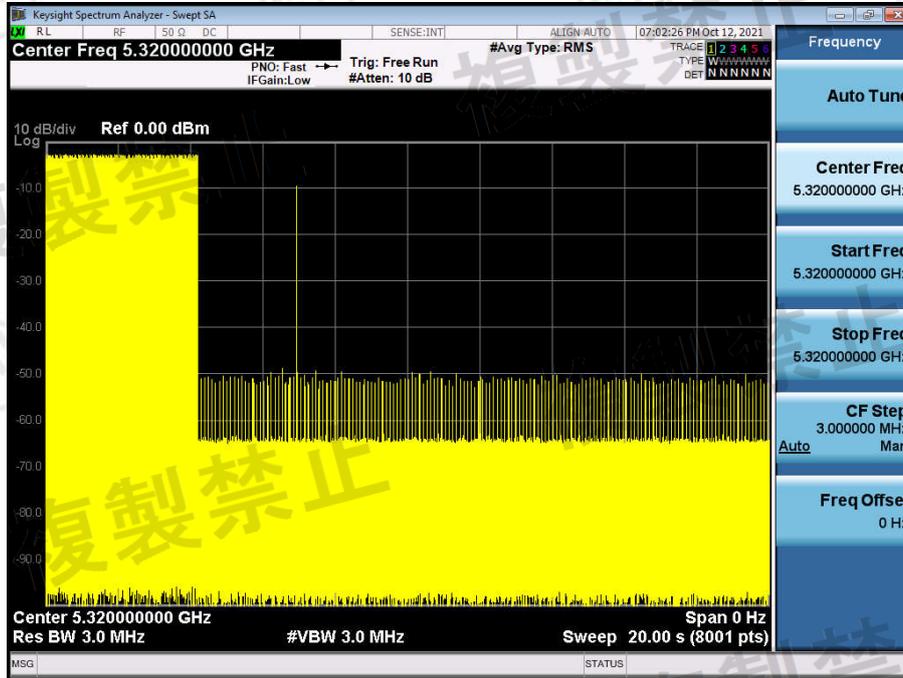
00:0c:e7:66:32:dd

## 7.1.10 Carrier sense capability

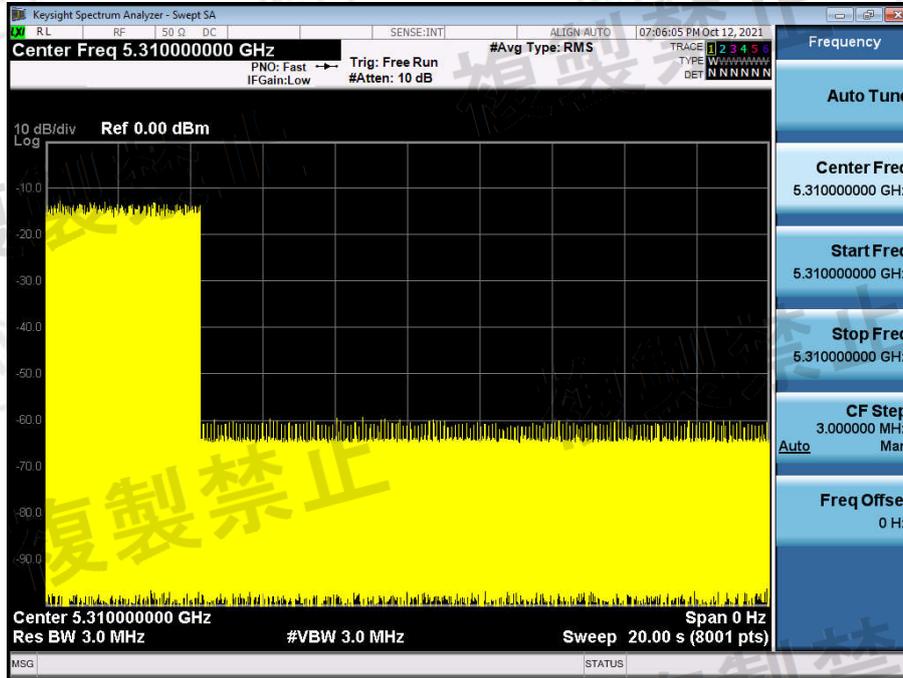
<b>Test Requirement:</b>	Item 19-3 of Article 2 Paragraph 1
<b>EUT Operation:</b>	
<b>Test Status:</b>	The EUT state shall be "normal mode link with wireless router"
<b>Test Configuration:</b>	 <pre> graph LR     TE[Test equipment] --- D[Distributor]     D --- SA[Spectrum analyzer]     D --- SSG[Standard signal generator]             </pre>
<b>Measurement Procedure:</b>	<ol style="list-style-type: none"> <li>1. SG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SG and power level is (on <math>22.79+Gr-20*\log(F)\text{dBm}</math>) (Gr is the antenna gain, F is the transmission frequency).</li> <li>2. Turn off the RF signal of the SG.</li> <li>3. EUT have transmitted the maximum modulation signal and fixed channelize.</li> <li>4. Setting of SA: RBW/VBW=1MHz/1MHz, Span= 50MHz, Sweep time= auto, Sweep mode= continuous, Detect mode=positive peak</li> <li>5. SG RF signal on,</li> <li>6. Record the result,</li> <li>7. SG RF signal off,</li> <li>8. Record the result.</li> </ol>
<b>Technical standard:</b>	EUT shall be stop the transmitted any signal and SG RF signal off.
<b>Test result:</b>	The unit does meet the requirements (Good).

Test result:

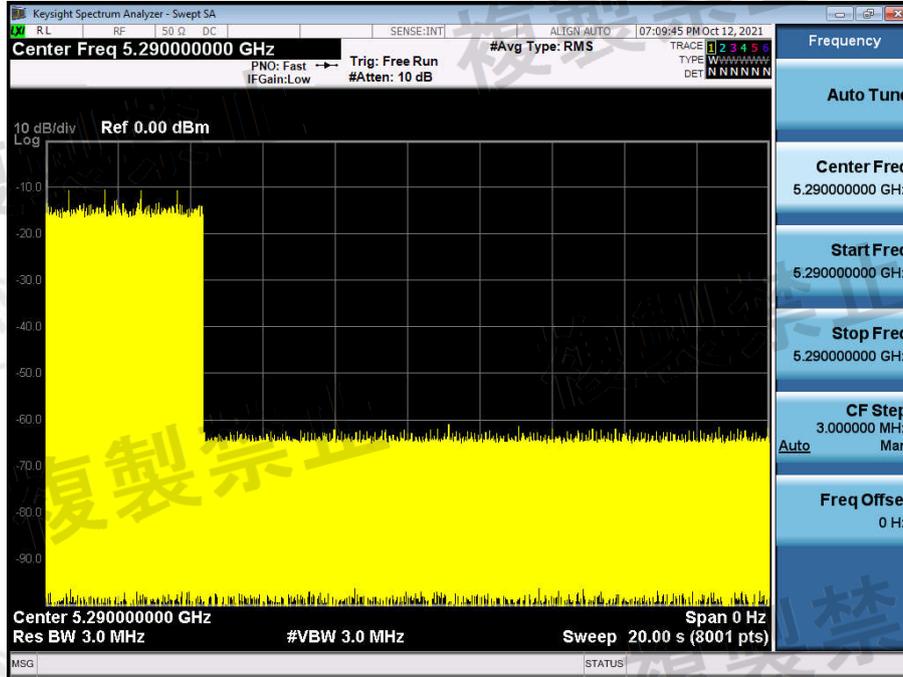
Carrier sense capability, 11a, 5320 MHz



## Carrier sense capability, 11n (HT40), 5310 MHz



## Carrier sense capability, 11ac VHT80, 5290 MHz

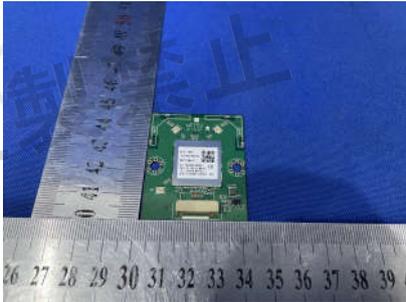


## 7.1.11 RF accessibility

### Standard requirement

Article 49-20, paragraph 1 (a)

The EUT shall be constructed in such a way that sensitive RF parts, (like modulation and oscillator parts) cannot be reached easily by the user. These parts shall be covered by soldered metal caps or glue or by other mechanical covers. If the covers are fixed with screws, these shall be not the common type(s) like a Phillips, but special versions like Torx, so that the user cannot open the device with common tools.

<input type="checkbox"/> Sealed with special screws.
<input type="checkbox"/> Plastic chassis is being welded using ultrasonic waves.
<input type="checkbox"/> Chassis is glued using a special adhesive.
<input type="checkbox"/> Metal covers are spot-fused.
<input type="checkbox"/> Cover is specially interlocked.
<input checked="" type="checkbox"/> RF and Modulation components are covered with shielding case and this shielding case is soldered.
<input type="checkbox"/> Shield case is welded at RF and modulation parts, and ID-ROM is welded using the BGA Method.
<input type="checkbox"/> Shield case is welded at RF and modulation parts, and ID-ROM is glued at its lead with a special adhesive.
<input type="checkbox"/> Shield case is welded at RF and modulation parts, and ID-ROM is glued with anon-transparent laminating agent.
<input type="checkbox"/> RF and Modulation parts are mounted on PCB with surface mount technology, the antenna is printed on PCB, chip is welded on PCB, and there is no any adjustable parts on PCB or adjustable parts are not exposed. The interval of terminals: 0.5 mm Number of terminals: 33


RF circuitry is protected by a metal cover.

All edges of metal cover are soldered onto PCB and module will be damaged when metal cover removal using a solder gun.

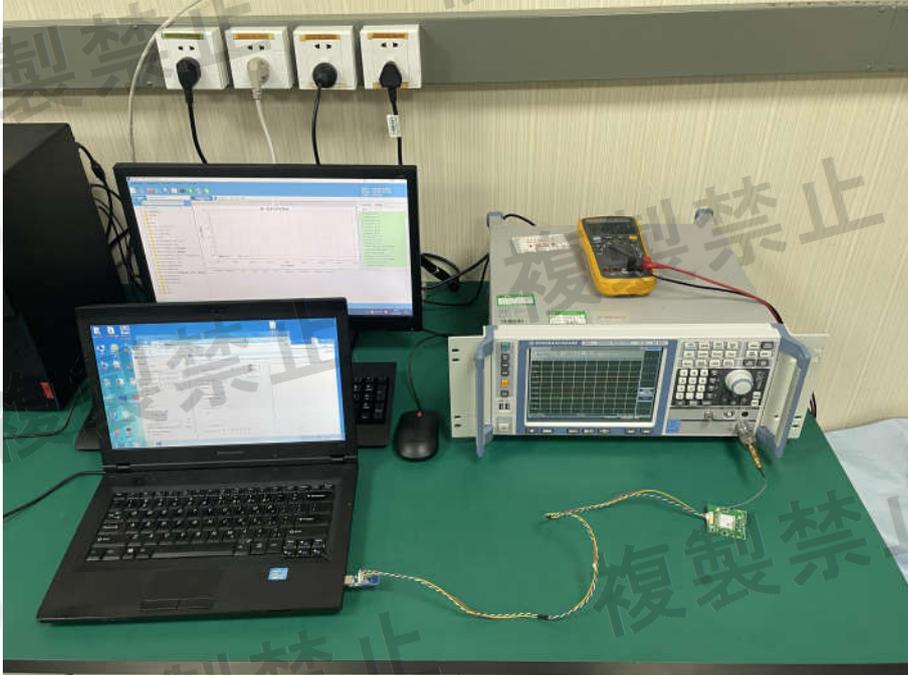
## 7.2 Receiver Requirements

### 7.2.1 Conducted Spurious Emissions of Rx

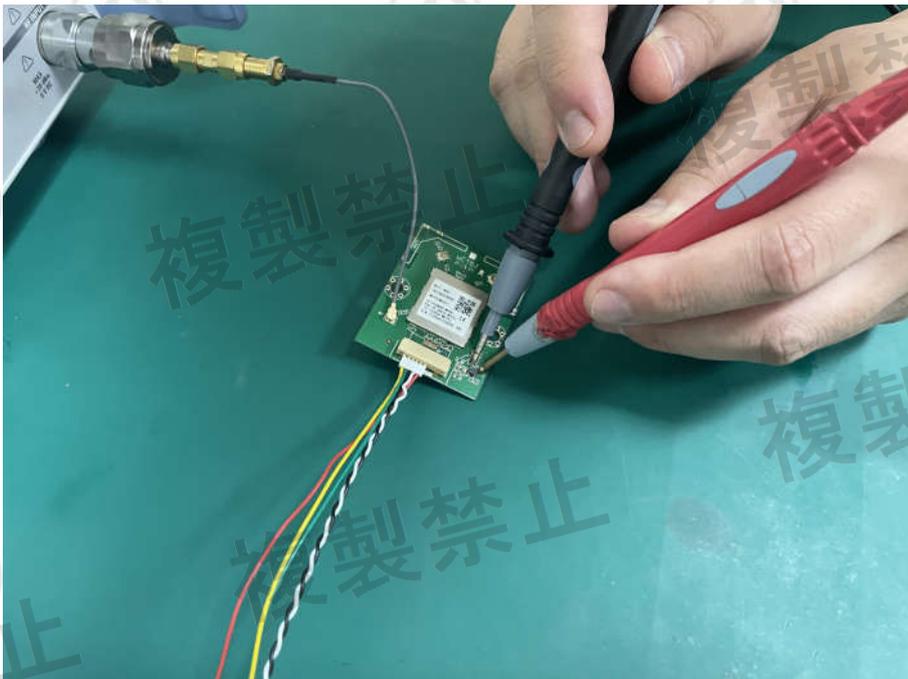
<b>Test Requirement:</b>	Item 19-3 of Article 2 Paragraph 1
<b>EUT Operation:</b>	
<b>Test Status:</b>	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
<b>Test Configuration:</b>	 <pre> graph LR     EUT[EUT] --&gt; SA[Spectrum Analyzer]             </pre>
<b>EUT conditions:</b>	Rx
<b>Spectrum Analyzer conditions:</b>	Step 1 All spurious are measured from 30 MHz to 26 GHz by peak mode. Step 2: Frequency: Spurious Frequency RBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz) VBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz) Sweep Time Auto detector mode Sample Indication mode Max hold
<b>Technical standard:</b>	(1) Below 1GHz : 4nW (2) 1GHz - 10GHz : 20nW (3) 10GHz or higher : 20nW
<b>Test result:</b>	Refer to Appendix: W5.3 WIFI of Report No. EED32N80695205

## 8 Photographs

### 8.1 EUT Test Setup (test model No.:WCT5JM2611)



EUT Test Setup-1



EUT Test Setup-2

## 8.2 EUT Constructional Details

Refer to Report No. EED32N80695201 for EUT external and internal photos

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.

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