

## TEST REPORT

**Product** : Portable PC  
**Trade mark** : CHUWI  
**Model/Type reference** : CWI519, CWI530, CWI557, CWI558,  
CWI575, CWI570, CWI620, CWI621,  
CWI622, CWI623, CWI624, CWI625,  
CWI626, CWI627, CWI628, CWI629  
**Serial Number** : N/A  
**Report Number** : EED32P81064506  
**Date of Issue** : Jul. 27, 2023  
**Product Class** : Item 19-3 of Article 2 Paragraph 1  
**Test result** : PASS

Prepared for:

**CHUWI Innovation And Technology (ShenZhen)co.,Ltd.**  
**F2, Building 3, Li jincheng Industrial Park, Industrial east Road,**  
**Longhua Street, Longhua District, ShenZhen City, China**

Prepared by:

**Centre Testing International Group Co., Ltd.**  
**Hongwei Industrial Zone, Bao'an 70 District,**  
**Shenzhen, Guangdong, China**  
**TEL: +86-755-3368 3668**  
**FAX: +86-755-3368 3385**

Compiled by:

*mark.chen.*

Reviewed by:

*Tom Chen*

Approved by:

*Aaron Ma*

Date:

*Jul. 27, 2023*

Aaron Ma

Check No.: 7609120723



## 2 Version

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | Jul. 27, 2023 | 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 | 21  | 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≤20MHz<br>For BW=40MHz:OFDM≤40MHz<br>For BW=80MHz:OFDM≤80MHz   | PASS   |
| Tolerance of adjacent channel leakage power      | Item 19-3 of Article 2 Paragraph 1 | Adjacent channel leakage power<br>See page 108  | PASS   |
| Antenna Power                                    | Item 19-3 of Article 2 Paragraph 1 | OFDM<br>20MHz sys: 10mW/MHz or less<br>40MHz sys: 5 mW /MHz or less<br>80MHz sys: 2.5 mW /MHz or less<br>Tolerance : +50%, -50% | PASS   |
| Unwanted Emission Strength                       | Item 19-3 of Article 2 Paragraph 1 | See page 157  | 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<br>(2) 1GHz - 10GHz : 20nW<br>(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.

Model No.: GemiBook XPro, CWI519, CWI530, CWI557, CWI558, CWI575, CWI570, CWI620, CWI621, CWI622, CWI623, CWI624, CWI625, CWI626, CWI627, CWI628, CWI629

Only the model GemiBook XPro was tested. They have the same circuit principle, electrical design, and key components used. The models may vary depending on the sales platform and sales channel, the model sold on Amazon platform is GemiBook XPro, and the model sold on eBay platform is CWI620, etc. And its differences do not affect safety and electromagnetic compatibility performance.

This report only added Model No., all test data come from the report of EED32P80338906.

## 4 Contents

|   |           |
|---|-----------|
| <b>1 COVER PAGE</b> .....                                 | <b>1</b>  |
| <b>2 VERSION</b> .....                                    | <b>2</b>  |
| <b>3 TEST SUMMARY</b> .....                               | <b>3</b>  |
| <b>4 CONTENTS</b> .....                                   | <b>4</b>  |
| <b>5 GENERAL INFORMATION</b> .....                        | <b>5</b>  |
| 5.1 Client Information .....                              | 5         |
| 5.2 General Description of EUT .....                      | 5         |
| 5.3 EUT test environment range .....                      | 7         |
| 5.4 Description of Support Units .....                    | 7         |
| 5.5 Test Location .....                                   | 7         |
| <b>6 EQUIPMENT LIST</b> .....                             | <b>8</b>  |
| <b>7 RADIO TECHNICAL REQUIREMENTS SPECIFICATION</b> ..... | <b>9</b>  |
| 7.1 Transmitter Requirements .....                        | 10        |
| 7.1.1 EUT test voltage and Frequency .....                | 10        |
| 7.1.2 Antenna Requirement .....                           | 12        |
| 7.1.3 Tolerance of frequency .....                        | 13        |
| 7.1.4 Occupied Bandwidth (99%) .....                      | 14        |
| 7.1.5 Adjacent Channel Power Tolerance .....              | 15        |
| 7.1.2 Unwanted Emission Strength .....                    | 16        |
| 7.1.6 Antenna Power .....                                 | 17        |
| 7.1.7 Burst Length .....                                  | 18        |
| 7.1.8 Interference prevention function .....              | 19        |
| 7.1.9 Carrier sense capability .....                      | 20        |
| 7.1.10 RF accessibility .....                             | 24        |
| 7.2 Receiver Requirements .....                           | 25        |
| 7.2.1 Conducted Spurious Emissions of Rx .....            | 25        |
| <b>8 PHOTOGRAPHS</b> .....                                | <b>26</b> |
| 8.1 EUT Test Setup .....                                  | 26        |
| 8.2 EUT Constructional Details .....                      | 27        |

## 5 General Information

### 5.1 Client Information

|                          |   |
|--------------------------|---|
| Applicant:               | CHUWI Innovation And Technology (ShenZhen)co.,Ltd.  |
| Address of Applicant:    | F2, Building 3, Li jincheng Industrial Park, Industrial east Road, Longhua Street, Longhua District, ShenZhen City, China                     |
| Manufacturer:            | CHUWI Innovation And Technology (ShenZhen)co.,Ltd.  |
| Address of Manufacturer: | F2, Building 3, Li jincheng Industrial Park, Industrial east Road, Longhua Street, Longhua District, ShenZhen City, China                     |
| Factory:                 | SHENZHEN LUCKYSTAR TECHNOLOGY CO., LTD  |
| Address of Factory:      | BLDG1,YUJINGTAI INDUSTRIAL PARK, HUARONG ROAD, SHUIWEI VILLAGE, DALANG STREET, LONGHUA DISTRICT, SHENZHEN CITY, GUANGDONG PROVINCE P.R. CHINA |

### 5.2 General Description of EUT

|                                  |  |
|----------------------------------|--|
| Product Name:                    | Portable PC  |
| Model No.:                       | CWI519, CWI530, CWI557, CWI558, CWI575, CWI570, CWI620, CWI621, CWI622, CWI623, CWI624, CWI625, CWI626, CWI627, CWI628, CWI629   |
| Trade mark:                      | CHUWI  |
| EUT Supports Radios application: | 5.470-5.730GHz(Only indoor use)  |
| Operating Frequency:             | 5.470-5.730GHz   |
| Conducted rate power:            | 3.7mW/MHz (W56 Band_802.11a-HT20)<br>3.2mW/MHz (W56 Band_802.11n-HT20)<br>1.4mW/MHz (W56 Band_802.11n-HT40)<br>3.0mW/MHz (W56 Band_802.11ac-VHT20)<br>1.6mW/MHz (W56 Band_802.11ac-VHT40)<br>0.7mW/MHz (W56 Band_802.11ac-VHT80)<br>3.3mW/MHz (W56 Band_802.11ax-HE20)<br>1.5mW/MHz (W56 Band_802.11ax-HE40)<br>0.7mW/MHz (W56 Band_802.11ax-HE80) |
| Type of Modulation:              | IEEE 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>IEEE 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM)<br>IEEE for 802.11ac: OFDM(256QAM, 64QAM, 16QAM, QPSK, BPSK)<br>IEEE 802.11ax(HE20/HE40/HE80): OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM,1024QAM)  |
| Transmit Data Rate:              | IEEE 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps<br>IEEE 802.11n HT20: up to 288.9Mbps, HT40: up to 600 Mbps<br>IEEE 802.11ac VHT20: up to 346.7 Mbps, VHT40: up to 800 Mbps, VHT80: up to 1733.3 Mbps<br>IEEE 802.11ax-HE20: up to 346.7 Mbps, ax-HE40: up to 800 Mbps, ax-HE80: up to 1733.3 Mbps   |
| Antenna Type:                    | FPC Antenna  |
| Antenna gain:                    | WIFI 1:2.23 dBi<br>WIFI 2:3.89 dBi   |
| Function:                        | <input checked="" type="checkbox"/> SISO <input type="checkbox"/> 2x2 MIMO <input type="checkbox"/> TPC  |
| Test Power Grade:                | Default  |

|                       |   |
|-----------------------|---|
| Test Software of EUT: | DRTU  |
| Power Supply:         | Model:1-CHUSB202-128    Input:100-240V~50/60Hz 0.6A |
|                       | Output:12.0V $\overline{\text{---}}$ 2.0A           |
|                       | Battery DC 7.6V                                     |
| Test Voltage:         | DC 7.6V   |
| Sample Received Date: | Mar. 14, 2023                                       |
| Sample tested Date:   | Mar. 14, 2023 to May 11, 2023                       |

## 5.3 EUT test environment range

|                       |          |
|-----------------------|----------|
| Temperature:          | 23 °C    |
| Humidity:             | 54% RH   |
| Atmospheric Pressure: | 1010mbar |

## 5.4 Description of Support Units

The EUT has been tested with associated equipment below.

| Description | Manufacturer | Model No.     | Certification | Supplied by |
|-------------|--------------|---------------|---------------|-------------|
| Netbook     | DELL         | Latitude 3490 | FCC&CE        | CTI         |

## 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

| RF test system                          |                        |           |               |                           |                               |
|---|------------------------|-----------|---------------|---------------------------|-------------------------------|
| Equipment                               | Manufacturer           | Model No. | Serial Number | Cal. Date<br>(mm-dd-yyyy) | Cal. Due date<br>(mm-dd-yyyy) |
| Spectrum Analyzer                       | Keysight               | N9010A    | MY54510339    | 12-23-2022                | 12-22-2023                    |
| Signal Generator                        | Keysight               | N5182B    | MY53051549    | 12-19-2022                | 12-18-2023                    |
| Signal Generator                        | Agilent                | N5181A    | MY46240094    | 12-19-2022                | 12-18-2023                    |
| DC Power                                | Keysight               | E3642A    | MY56376072    | 12-19-2022                | 12-18-2023                    |
| Wi-Fi 7GHz Band<br>Extender             | JS Tonscend            | TS-WF7U2  | 2206200002    | 06-11-2022                | 06-10-2023                    |
| RF control unit                         | JS Tonscend            | JS0806-2  | 158060006     | 12-23-2022                | 12-22-2023                    |
| Communication test<br>set               | R&S                    | CMW500    | 120765        | 12-23-2022                | 12-22-2023                    |
| high-low<br>temperature test<br>chamber | Dong Guang Qin<br>Zhuo | LK-80GA   | QZ20150611879 | 12-19-2022                | 12-18-2023                    |
| Temperature/<br>Humidity Indicator      | biaozhi                | HM10      | 1804186       | 07-01-2022                | 06-15-2023                    |
| BT&WI-FI<br>Automatic test<br>software  | JS Tonscend            | JS1120-3  | 2.6.77.0518   | ---                       | ---                           |

**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) (5.6GHz band) (Item 19-3 of Article 2 Paragraph 1)**

| Items                                       | Technical standard  |
|---|---|
| Assigned frequency or designated frequency  | 5500,5520,5540,5560,5580,5600,5620,5640,5660,5680,5700,5720,5510,5550,5590,5630,5670,5710,5530,5610,5690MHz                     |
| Communication method                        | One-way communication, simplex, semi-duplex, or duplex operation of digital signal transmission including spread spectrum       |
| Number of channels or channel separation    | 21  |
| Tolerance of frequency ( $\times 10^{-6}$ ) | $20 \times 10^{-6}$   |
| Tolerance of occupied bandwidth             | For BW=20MHz:OFDM $\leq$ 20MHz<br>For BW=40MHz:OFDM $\leq$ 40MHz<br>For BW=80MHz:OFDM $\leq$ 80MHz                              |
| Antenna power                               | OFDM<br>20MHz sys: 10mW/MHz or less<br>40MHz sys: 5 mW /MHz or less<br>80MHz sys: 2.5 mW /MHz or less<br>Tolerance : +50%, -50% |
| EIRP  | Without TPC<br>20MHz sys: 25 mW/MHz or less<br>40MHz sys: 12.5mW /MHz or less<br>80MHz sys: 6.25mW /MHz or less                 |
| Unwanted Emission Strength                  | See page 15   |
| Tolerance of adjacent channel leakage power | Adjacent channel leakage power<br>See page 14   |
| Transmission burst length                   | 8ms or less   |
| Limit of secondary radiated emissions       | (1) Below 1GHz : 4nW<br>(2) 1GHz - 10GHz : 20nW<br>(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<br>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>           | Battery DC 7.6V   |  |          |            |       |          |       |          |       |          |
|--------------------------------|---|--|----------|------------|-------|----------|-------|----------|-------|----------|
| <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>RF circuit test points:</b> |   |  |          |            |       |          |       |          |       |          |
| <b>Power Supply result:</b>    | The measurement result of the voltage fluctuation at RF circuit when DC 7.6V +/- 10%. <table border="1" data-bbox="534 1534 1449 1657"> <thead> <tr> <th>DC Input</th> <th>RF circuit</th> </tr> </thead> <tbody> <tr> <td>8.36V</td> <td>DC 3.30V</td> </tr> <tr> <td>7.60V</td> <td>DC 3.30V</td> </tr> <tr> <td>6.84V</td> <td>DC 3.30V</td> </tr> </tbody> </table> |  | DC Input | RF circuit | 8.36V | DC 3.30V | 7.60V | DC 3.30V | 6.84V | DC 3.30V |
| DC Input                       | RF circuit  |  |          |            |       |          |       |          |       |          |
| 8.36V                          | DC 3.30V  |  |          |            |       |          |       |          |       |          |
| 7.60V                          | DC 3.30V  |  |          |            |       |          |       |          |       |          |
| 6.84V                          | DC 3.30V  |  |          |            |       |          |       |          |       |          |

### 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<br>802.11n 20MHz<br>802.11ac 20MHz<br>802.11ax 20MHz |                 | 802.11n 40MHz<br>802.11ac 40MHz<br>802.11ax 40MHz |                 | 802.11ac 80MHz<br>802.11ax 80MHz |                 |
|--|-----------------|---|-----------------|----------------------------------|-----------------|
| W56  |                 | W56   |                 | W56                              |                 |
| Channel  | Frequency (MHz) | Channel   | Frequency (MHz) | Channel                          | Frequency (MHz) |
| 100  | 5500            | 102   | 5510            | 106                              | 5530            |
| 104  | 5520            | 110   | 5550            | 122                              | 5610            |
| 108  | 5540            | 118   | 5590            | 138                              | 5690            |
| 112  | 5560            | 126   | 5630            | N/A                              | N/A             |
| 116  | 5580            | 134   | 5670            | N/A                              | N/A             |
| 120  | 5600            | 142   | 5710            | N/A                              | N/A             |
| 124  | 5620            | N/A   | N/A             | N/A                              | N/A             |
| 128  | 5640            | N/A   | N/A             | N/A                              | N/A             |
| 132  | 5660            | N/A   | N/A             | N/A                              | N/A             |
| 136  | 5680            | N/A   | N/A             | N/A                              | N/A             |
| 140  | 5700            | N/A   | N/A             | N/A                              | N/A             |
| 144  | 5720            | N/A   | N/A             | N/A                              | N/A             |

Test channel:

| Test mode                                 | Test channel/frequency(MHz)        |
|---|------------------------------------|
| Mode 3: IEEE 802.11a W56 mode             | CH100/5500, CH120/5600, CH144/5720 |
| Mode 6: IEEE 802.11n/ac/ax 20MHz W56 mode | CH100/5500, CH120/5600, CH144/5720 |
| Mode 9: IEEE 802.11n/ac/ax 40MHz W56 mode | CH102/5510, CH118/5590, CH142/5710 |
| Mode 12: IEEE 802.11ac/ax 80MHz W56 mode  | CH106/5530, CH122/5610, CH138/5690 |

## 7.1.2 Antenna Requirement

|  |  |
|--|--|
| <b>Standard requirement</b>  |  |
| 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. |  |
| <b>EUT Antenna</b>   |  |
| The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna Ant1 2.23dBi and Ant2 3.89dBi.  |  |
| <b>Result:</b> An antenna connector is available, all relevant tests will be carried out conducted.  |  |

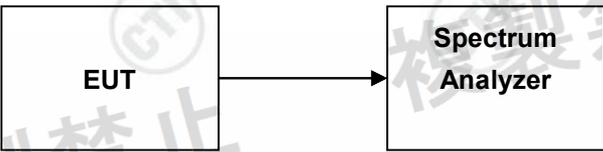
### 7.1.3 Tolerance of frequency

|                                      |   |
|--------------------------------------|---|
| <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<br>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<br>Span 500kHz<br>RBW 10kHz (Modulation OFF),<br>VBW 30kHz (Modulation OFF),<br>Sweep Time Auto<br>Detector mode Positive peak<br>Indication mode Max hold                                  |
| <b>Technical standard:</b>           | Tolerance of frequency: $\pm 20 \times 10^{-6}$   |
| <b>Test result:</b>                  | Refer to Appendix: W5.6 WIFI of Report No. EED32P81064506   |

## 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).<br>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.<br>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<br>Span 30MHz<br>RBW 300 kHz<br>VBW 300 kHz<br>Sweep Time Auto<br>detector mode Positive peak<br>Indication mode Max hold<br>OBW 99%  |
| <b>Technical standard:</b>           | For BW=20MHz:OFDM≤20MHz<br>For BW=40MHz:OFDM≤40MHz<br>For BW=80MHz:OFDM≤80MHz   |
| <b>Test result:</b>                  | Refer to Appendix: W5.6 WIFI of Report No. EED32P81064506   |

## 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>           | <div style="text-align: center;">  <pre> graph LR     EUT[EUT] --&gt; SA[Spectrum Analyzer]             </pre> </div>  |
| <b>EUT conditions:</b>               | Modulation/Spread/Hopping on.<br>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<br>RBW 300 kHz, VBW 300 kHz<br>Tx bandwidth 18MHz<br>Adjacent channel bandwidth 1MHz, Channel spacing 9MHz<br>Alternate channel bandwidth 1MHz, Channel spacing 19MHz<br>2nd Alternate channel bandwidth 1MHz, Channel spacing 29MHz<br>Sweep Time Auto<br>detector mode Positive peak<br>Indication mode Max hold   |
| <b>Technical standard:</b>           | 20MHz system (OB: below 20MHz)<br>(1) Mean power of $\pm 10$ MHz; bandwidth at 20MHz; detuning : 25dBc<br>(2) Mean power of $\pm 10$ MHz; bandwidth at 40MHz; detuning : 40dBc<br>40MHz system (OB: over 20, below 40MHz)<br>(1) Mean power of $\pm 20$ MHz; bandwidth at 20MHz; detuning : 25dBc<br>(2) Mean power of $\pm 20$ MHz; bandwidth at 40MHz; detuning : 40dBc<br>80MHz system (OB: over 40, below 80MHz)<br>Mean power of $\pm 39$ MHz; bandwidth at 80MHz; detuning : 25dBc |
| <b>Test result:</b>                  | Refer to Appendix: W5.6 WIFI of Report No. EED32P81064506  |

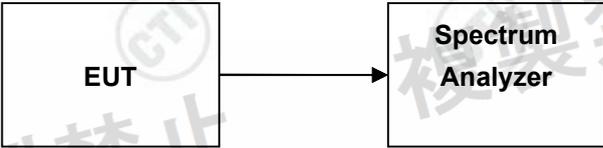
Note: The cable loss and antenna gain have been put into spectrum analyzer as amplitude offset.

## 7.1.2 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>           | <div style="text-align: center;">  <pre> graph LR     EUT[EUT] --&gt; SA[Spectrum Analyzer]             </pre> </div>  |
| <b>EUT conditions:</b>               | Modulation/Spread/Hopping on.<br>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<br>All spurious are measured by peak mode.<br>Step 2:<br>Frequency: Spurious Frequency<br>RBW 1 MHz<br>VBW 1 MHz<br>Sweep Time Auto<br>detector mode Sample<br>Indication mode Max hold   |
| <b>Technical standard:</b>           | OB: ≤20MHz (exclude OFDM)<br>30-5470MHz ≤12.5μW/MHz<br>5730MHz-26GHz ≤12.5μW/MHz<br>OB: ≤20MHz (OFDM)<br>30-5460MHz ≤2.5μW/MHz<br>5460-5470MHz ≤12.5μW/MHz<br>5745-5765MHz ≤12.5μW/MHz<br>5765MHz-26GHz ≤2.5μW/MHz<br>OB: 20-40MHz<br>30-5460MHz ≤12.5μW/MHz<br>5460-5470MHz ≤50μW/MHz<br>5770MHz-26GHz ≤12.5μW/MHz<br>OB: 40-80MHz<br>30-5460MHz ≤12.5μW/MHz<br>5460-5469.5MHz ≤50μW/MHz<br>5469.5-5470MHz ≤51.2μW/MHz<br>5770MHz-26GHz ≤12.5μW/MHz |
| <b>Test result:</b>                  | Refer to Appendix: W5.6 WIFI of Report No. EED32P81064506  |

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

## 7.1.6 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>                 |  <pre> graph LR     EUT[EUT] --&gt; SA[Spectrum Analyzer]             </pre>   |
| <b>EUT conditions:</b>                     | Modulation/Spread/Hopping on<br>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<br>Span 50 MHz<br>RBW 1 MHz<br>VBW 1 MHz<br>Sweep Time Auto<br>detector mode Positive peak<br>Indication mode Max hold   |
| <b>Technical standard:</b>                 | OFDM<br>20MHz sys: 10mW/MHz or less<br>40MHz sys: 5 mW /MHz or less<br>80MHz sys: 2.5 mW /MHz or less<br>Tolerance : +50%,-50%   |
| <b>E.I.R.P.</b>                            | 20MHz sys: 50mW/MHz or less<br>40MHz sys: 25mW/MHz or less<br>80MHz sys: 12.5mW/MHz or less  |
| <b>Test result:</b>                        | Refer to Appendix: W5.6 WIFI of Report No. EED32P81064506  |

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

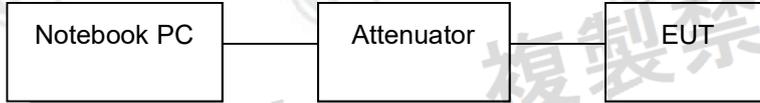
## 7.1.7 Burst Length

|                                      |   |
|--------------------------------------|---|
| <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).<br>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.<br>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<br>Span 0 MHz<br>RBW 1 MHz,<br>VBW 1 MHz,<br>Sweep Time: $\geq 4$ ms<br>Detector mode Positive peak<br>Indication mode Max hold   |
| <b>Technical standard:</b>           | Burst length $\leq 8$ ms  |
| <b>Test result:</b>                  | Refer to Appendix: W5.6 WIFI of Report No. EED32P81064506   |

## 7.1.8 Interference prevention function

### 1) Measurement system diagram

(1) When transmitting identification code

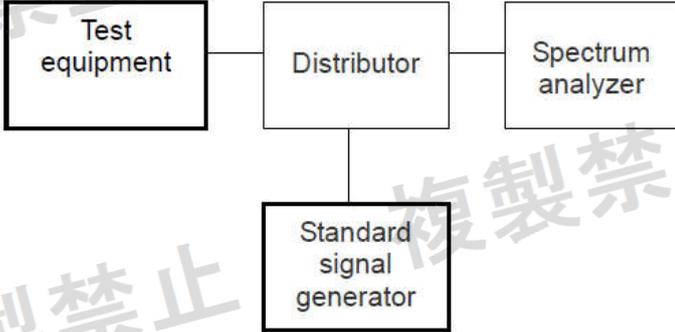


Test result:

- 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).

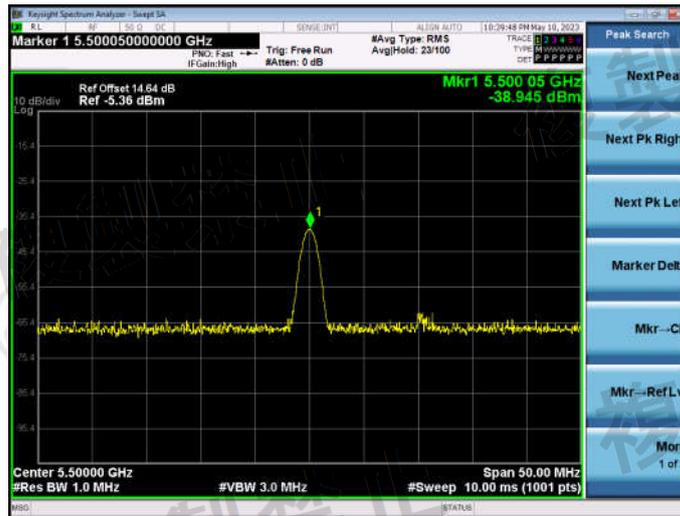
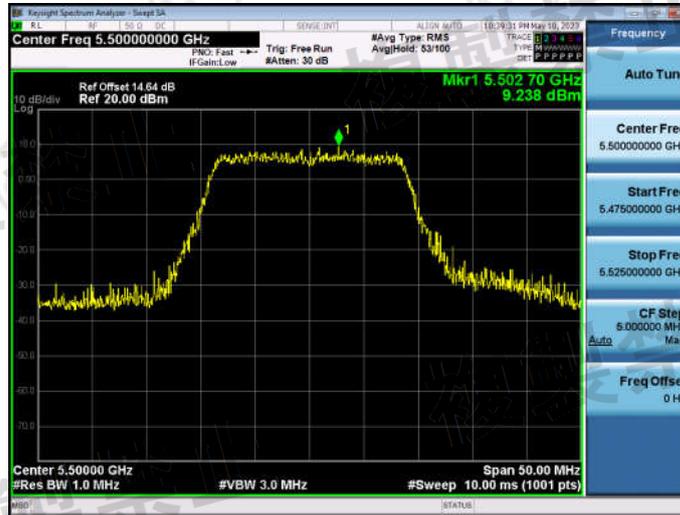
64:49:7d:f5:9e:93

## 7.1.9 Carrier sense capability

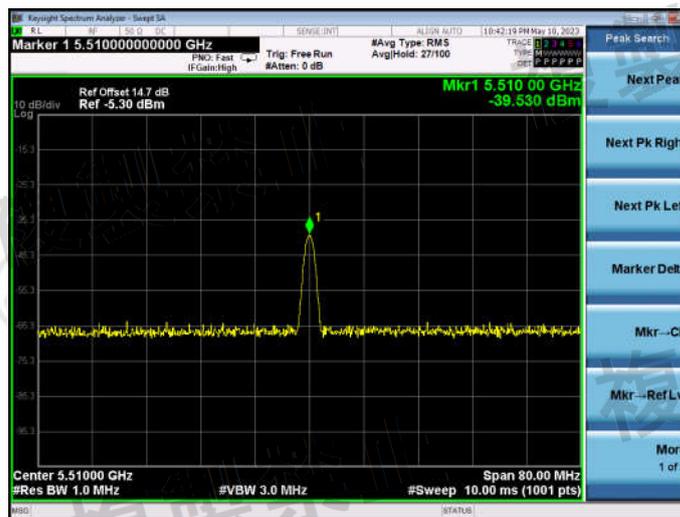
|                               |   |
|-------------------------------|---|
| <b>Test Requirement:</b>      | Item 19-3 of Article 2 Paragraph 1  |
| <b>EUT Operation:</b>         |   |
| <b>Test Status:</b>           | The EUT state shall be "normal mode link with wireless router"  |
| <b>Test Configuration:</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:

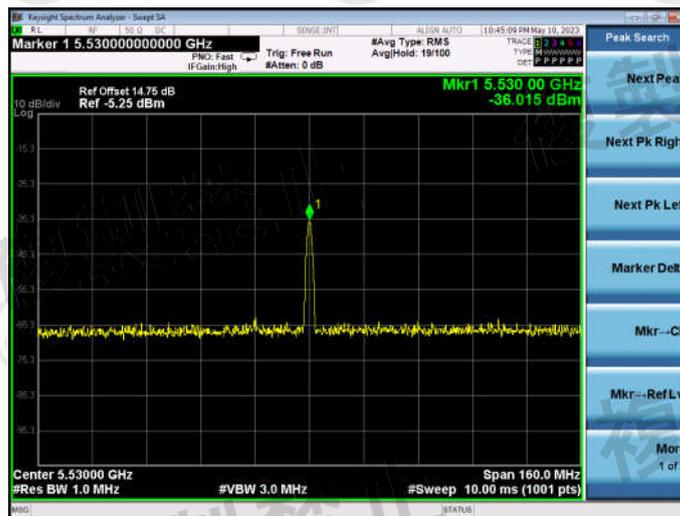
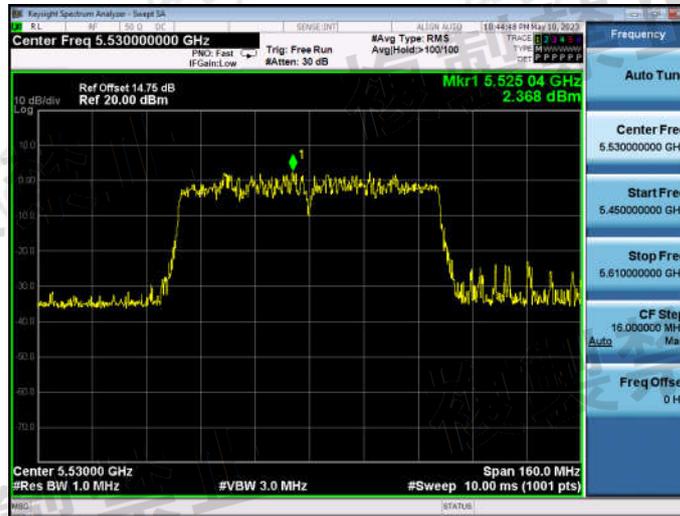
Carrier sense capability, 11a, 5500 MHz



## Carrier sense capability, 11n HT40, 5510 MHz



## Carrier sense capability, 11ax HE80, 5530 MHz



## 7.1.10 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             |  |

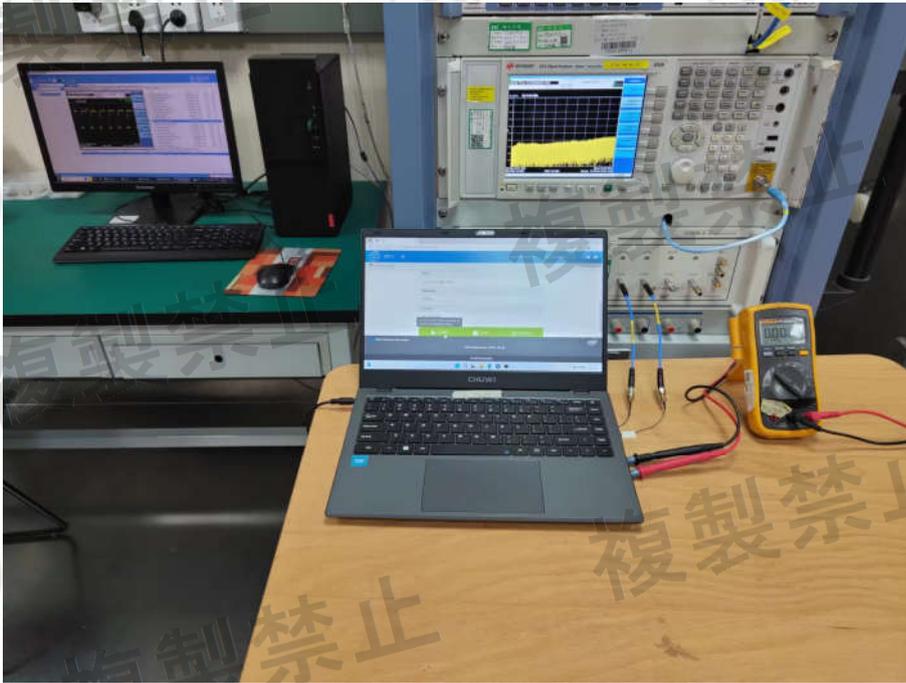
## 7.2 Receiver Requirements

### 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<br>All spurious are measured from 30 MHz to 26 GHz by peak mode.<br>Step 2:<br>Frequency: Spurious Frequency<br>RBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz)<br>VBW 100 kHz (30 – 1GHz) , 1 MHz (over 1GHz)<br>Sweep Time Auto<br>detector mode Sample<br>Indication mode Max hold |
| <b>Technical standard:</b>           | (1) Below 1GHz : 4nW<br>(2) 1GHz - 10GHz : 20nW<br>(3) 10GHz or higher : 20nW  |
| <b>Test result:</b>                  | Refer to Appendix: W5.6 WIFI of Report No. EED32P81064506  |

## 8 Photographs

### 8.1 EUT Test Setup



EUT Test Setup-1

## 8.2 EUT Constructional Details

Refer to Report No. EED32P81064501 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 \*\*\*