

TEST REPORT

Product : Tablet PC
Trade mark : CHUWI
Model/Type reference : UBook X, UBook XPro
Serial Number : N/A
Report Number : EED32P80690404
Date of Issue : Jun. 28, 2023
Product Class : Item 19-3 of Article 2 Paragraph 1
Test result : PASS

Prepared for:

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Jun. 28, 2023

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2 Version

Version No.	Date	Description
00	Jun. 28, 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	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 and out-band leakage power	Item 19-3 of Article 2 Paragraph 1	Adjacent channel leakage power See page 74 Out-band leakage power EIRP : refer to Item 19-3 of Article 2 Paragraph 1 Table 1	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
Tolerance of unwanted emission intensity(conducted)	Item 19-3 of Article 2 Paragraph 1	2.5μW / MHz	N/A
Interference prevention capability	Item 19-3 of Article 2 Paragraph 1	Article 49	N/A
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
Spurious Emission of Rx	Item 19-3 of Article 2 Paragraph 1	(1) Below 1 GHz: -54dBm (2) (2) 1GHz or higher: -47dBm	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.:UBook X, UBook XPro

Both of the models are tested. They have the same circuit principle, electrical design, and adapter, the motherboard, CPU, and RF module are completely identical; The screen, casing, speaker, and battery are different. The difference does not affect the safety and electromagnetic compatibility performance.

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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 Yuko Technology Co., Ltd
Address of Factory:	4/F-B, Building A4, 4/F-A, Building A4, 6/F, Building A4, 6/F-A, Building A9, 4/F, Building A9, TianRui Industrial Park, No.35, FuYuan 1st Road, Zhancheng Community, Fuhai Street, Baoan DistrictShenzhen City, Guangdong Province, P.R. China

5.2 General Description of EUT

Product Name:	Tablet PC
Model No.:	UBook X, UBook XPro
Trade mark:	CHUWI
EUT Supports Radios application:	5.15-5.25GHz(Only indoor use)
Operating Frequency:	5.150-5.250GHz
Rated power:	5.15-5.25GHz: 2.5mW/MHz (W52 Band_802.11a-HT20) 1.9mW/MHz (W52 Band_802.11n-HT20) 1.3mW/MHz (W52 Band_802.11n-HT40) 2.1mW/MHz (W52 Band_802.11ac-VHT20) 1.2mW/MHz (W52 Band_802.11ac-VHT40) 0.5mW/MHz (W52 Band_802.11ac-VHT80) 2.2mW/MHz (W52 MIMO Band_802.11n-HT20) 1.0mW/MHz (W52 MIMO Band_802.11n-HT40) 2.1mW/MHz (W52 MIMO Band_802.11ac-VHT20) 0.9mW/MHz (W52 MIMO Band_802.11ac-VHT40) 0.5mW/MHz (W52 MIMO Band_802.11ac-VHT80)
Type of Modulation:	IEEE 802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM) IEEE 802.11n(HT20/HT40): OFDM (BPSK, QPSK, 16QAM, 64QAM) 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 130 Mbps, HT40: up to 270 Mbps IEEE 802.11ac VHT20: MCS 0-8, VHT40: MCS 0-9, VHT80: MCS 0-9
Device type:	Client device
Antenna Type:	FPC Antenna
Antenna gain :	SF1211-Y: WIFI 1: 1.57dBi, WIFI 2: 2.1dBi SM13U: WIFI 1: 1.02dBi, WIFI 2: 3.89dBi
Function:	<input checked="" type="checkbox"/> SISO <input checked="" 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 --- 2.0A
	Battery DC 7.6V
Test Voltage:	DC 7.6V
Sample Received Date:	May 12, 2023
Sample tested Date:	May 12, 2023 to Jun. 28, 2023

5.3 EUT Test Environment Recorded

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
/	/	/	/	/

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.

5.6 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Frequency Error	10 Hz
2	Occupied Bandwidth	10 kHz
3	Antenna Power	0.55dB
4	Spurious Emissions	0.46dB(30MHz-1GHz)
		0.55dB(1GHz-18GHz)
5	Carrier sense capability	1.0dB
6	Temperature test	0.64°C
7	Humidity test	3.8%
8	DC and low frequency voltages test	0.026%

6 Equipment List

RF test system					
Equipment	Manufacturer	Model No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (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 Extender	JS Tonscend	TS-WF7U2	2206200002	06-11-2022 06-09-2023	06-10-2023 06-08-2024
RF control unit	JS Tonscend	JS0806-2	158060006	12-23-2022	12-22-2023
Communication test set	R&S	CMW500	120765	12-23-2022	12-22-2023
high-low temperature test chamber	Dong Guang Qin Zhuo	LK-80GA	QZ20150611879	12-19-2022	12-18-2023
Temperature/ Humidity Indicator	biaozhi	HM10	1804186	07-01-2022 06-01-2023	06-15-2023 05-30-2024
BT&Wi-Fi Automatic test software	JS Tonscend	JS1120-3	2.6.77.0518	---	---

Remark:

- 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.
- Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act (Act No. 51 of 1992).
- 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).
- 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

Notice: Calibration duration for above equipment is 1 year.

7 Radio Technical Requirements Specification

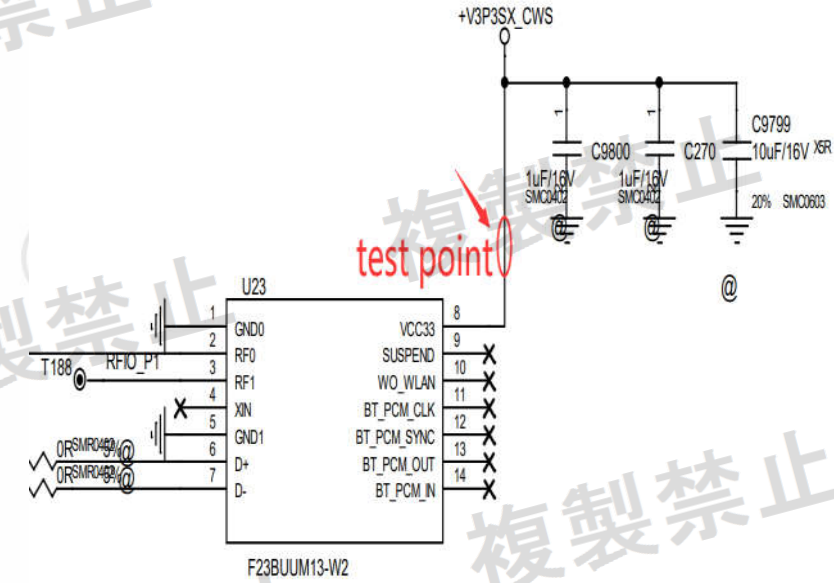
**Table 1: 5 GHz band low-power data communication system (1)
(5.2GHz band) (Item 19-3 of Article 2 Paragraph 1)**

Items	Technical standard
Assigned frequency or designated frequency	W52: 5180, 5200, 5220, 5240, 5190, 5230, 5210MHz
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 ($\times 10^{-6}$)	20×10^{-6}
Tolerance of occupied bandwidth	For BW=20MHz: OFDM ≤ 19 MHz; Others ≤ 18 MHz For BW=40MHz: OFDM ≤ 38 MHz For BW=80MHz: OFDM ≤ 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	20MHz sys: 10mW/MHz or less 40MHz sys: 5 mW /MHz or less 80MHz sys: 2.5 mW /MHz or less
Tolerance of spurious emission intensity	2.5 μ W / MHz
Tolerance of adjacent channel leakage power and out-band leakage power	Adjacent channel leakage power See page 14 Out-band leakage power See page 15
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	
Power Supply:	Battery DC 7.6V
Test voltage require:	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.
RF circuit test points:	

Power Supply result:	The measurement result of the voltage fluctuation at RF circuit when DC 7.6V +/- 10%.	
	DC Input	RF circuit
	8.36V	DC 3.30V
	7.60V	DC 3.30V
	6.84V	DC 3.30V
NT: Normal Temperature NV: Normal Voltage LV: Low Voltage HV: High Voltage		

7.1.1.2 Test frequency

Test frequencies:	If the EUT can be set to 3 of 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	
W52		W52		W52	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	38	5190	42	5210
40	5200	46	5230	N/A	N/A
44	5220	N/A	N/A	N/A	N/A
48	5240	N/A	N/A	N/A	N/A

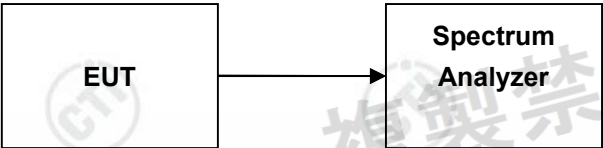
Test channel:

Test mode	Test channel/frequency(MHz)
Mode 1: IEEE 802.11a W52 mode	CH36/5180, CH40/5200, CH 48/5240
Mode 4: IEEE 802.11n/ac 20MHz W52 mode	CH36/5180, CH40/5200, CH 48/5240
Mode 7: IEEE 802.11n/ac 40MHz W52 mode	CH38/5190, CH46/5230
Mode 10: IEEE 802.11ac 80MHz W52 mode	CH42/5210

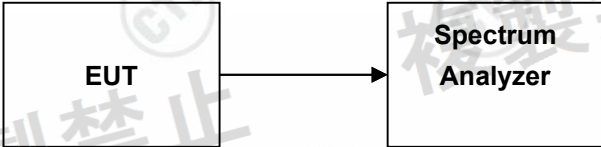
7.1.2 Antenna Requirement

Standard requirement	
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.	
EUT Antenna	
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna are SF1211-Y: WIFI 1: 1.57dBi, WIFI 2: 2.1dBi, SM13U: WIFI 1: 1.02dBi, WIFI 2: 3.89dBi	
Result: An antenna connector is available, all relevant tests will be carried out conducted.	


7.1.3 Tolerance of frequency

Test Requirement:	Item 19-3 of Article 2 Paragraph 1
EUT Operation:	
Test Status:	Enter the unmodulation mode for the product. Test in Channel lowest, middle and highest, keep in continuously transmitting status.
Test Configuration:	 <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre>
Test Conditions:	Frequency Counter or Spectrum Analyzer is used for measurement.
EUT conditions:	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.
Spectrum Analyzer conditions:	Frequency: Test Frequency Span 1MHz RBW 10KHz (Modulation OFF), VBW 10KHz (Modulation OFF), Sweep Time Auto Detector mode Positive peak Indication mode Max hold
Technical standard:	Tolerance of frequency: $\pm 20 \times 10^{-6}$
Test result:	Refer to Appendix: W5.2 WIFI of Report No. EED32P80690404

7.1.4 Occupied Bandwidth

Test Requirement:	Item 19-3 of Article 2 Paragraph 1
EUT Operation:	
Test Status:	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.
Test Configuration:	<div style="text-align: center;">  <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre> </div>
EUT conditions:	Modulation/Spread/Hopping on. For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
Spectrum Analyzer conditions:	Frequency: Test Frequency Span 40MHz/80MHz/160MHz RBW 300 kHz VBW 300 kHz Sweep Time Auto detector mode Positive peak Indication mode Max hold OBW 99%
Technical standard:	For BW=20MHz:OFDM \leq 19MHz; Others \leq 18MHz For BW=40MHz:OFDM \leq 38MHz For BW=80MHz:OFDM \leq 78MHz
Test result:	Refer to Appendix: W5.2 WIFI of Report No. EED32P80690404

7.1.5 Adjacent Channel Power Tolerance

Test Requirement:	Item 19-3 of Article 2 Paragraph 1
EUT Operation:	
Test Status:	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.
Test Configuration:	<div style="text-align: center;">  <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre> </div>
EUT conditions:	Modulation/Spread/Hopping on. For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
Spectrum Analyzer conditions:	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
Technical standard:	20MHz system (OB: below 20MHz) (1) Mean power of ± 10 MHz; bandwidth at 20MHz; detuning : -25dBc (2) Mean power of ± 10 MHz; bandwidth at 40MHz; detuning : -40dBc 40MHz system (OB: over 20, below 40MHz) (1) Mean power of ± 20 MHz; bandwidth at 40MHz; detuning : -25dBc (2) Mean power of ± 20 MHz; bandwidth at 80MHz; detuning : -40dBc 80MHz system (OB: over 40, below 80MHz) Mean power of ± 40 MHz; bandwidth at 80MHz; detuning : -25dBc
Test result:	Refer to Appendix: W5.2 WIFI of Report No. EED32P80690404

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

7.1.6 Out-Band Emissions Power

Test Requirement:	Item 19-3 of Article 2 Paragraph 1
EUT Operation:	
Test Status:	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.
Test Configuration:	 <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre>
EUT conditions:	Modulation/Spread/Hopping on. For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
Spectrum Analyzer conditions:	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
Technical standard:	OB: $\leq 18\text{MHz}$ $5140\text{-}5142\text{MHz} \leq 2.5\mu\text{W/MHz}$ $5142\text{-}5150\text{MHz} \leq 15\mu\text{W/MHz}$ $5250\text{-}5251\text{MHz} \leq 10^{-f+5250}\text{mW/MHz}$ $5251\text{-}5260\text{MHz} \leq 10^{-8/90(f-5251)-1}\text{mW/MHz}$ $5260\text{-}5266.7\text{MHz} \leq 10^{-3/25(f-5260)-1.8}\text{mW/MHz}$ $5266.7\text{-}5360\text{MHz} \leq 2.5\mu\text{W/MHz}$ OB: $18\text{-}19\text{MHz}$ $5135\text{-}5142\text{MHz} \leq 2.5\mu\text{W/MHz}$ $5142\text{-}5150\text{MHz} \leq 15\mu\text{W/MHz}$ $5250\text{-}5251\text{MHz} \leq 10^{-f+5250}\text{mW/MHz}$ $5251\text{-}5260\text{MHz} \leq 10^{-8/90(f-5251)-1}\text{mW/MHz}$ $5260\text{-}5266.7\text{MHz} \leq 10^{-3/25(f-5260)-1.8}\text{mW/MHz}$ $5266.7\text{-}5365\text{MHz} \leq 2.5\mu\text{W/MHz}$ OB: $19\text{-}38\text{MHz}$ $5100\text{-}5141.6\text{MHz} \leq 2.5\mu\text{W/MHz}$ $5141.6\text{-}5150\text{MHz} \leq 15\mu\text{W/MHz}$ $5250\text{-}5251\text{MHz} \leq 10^{-f+5250}/2\text{mW/MHz}$ $5251\text{-}5270\text{MHz} \leq 10^{-8/190(f-5251)-1}/2\text{mW/MHz}$ $5270\text{-}5278.4\text{MHz} \leq 10^{-3/50(f-5270)-1.8}/2\text{mW/MHz}$ $5278.4\text{-}5400\text{MHz} \leq 2.5\mu\text{W/MHz}$ OB: $38\text{-}78\text{MHz}$ $5020\text{-}5123.2\text{MHz} \leq 2.5\mu\text{W/MHz}$ $5123.2\text{-}5150\text{MHz} \leq 15\mu\text{W/MHz}$ $5250\text{-}5251\text{MHz} \leq 10^{-f+5250}/4\text{mW/MHz}$ $5251\text{-}5290\text{MHz} \leq 10^{-8/390(f-5251)-1}/4\text{mW/MHz}$ $5290\text{-}5296.7\text{MHz} \leq 10^{-3/100(f-5280)-1.8}/4\text{mW/MHz}$ $5296.7\text{-}5480\text{MHz} \leq 2.5\mu\text{W/MHz}$
Test result:	Refer to Appendix: W5.2 WIFI of Report No. EED32P80690404

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

7.1.7 Antenna Power

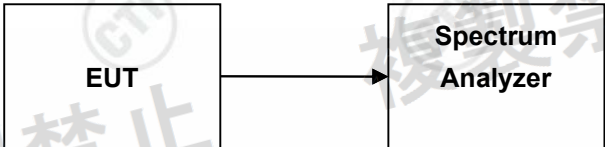
Test Requirement:	Item 19-3 of Article 2 Paragraph 1
EUT Operation:	
Test Status:	Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture). Following channel(s) was (were) selected for the final test as listed below.
Test Configuration:	
 <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre>	
EUT conditions:	Modulation/Spread/Hopping on For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
Spectrum Analyzer conditions(FHSS):	Frequency: Test Frequency Span 40MHz/80MHz/160MHz RBW 1 MHz VBW 1 MHz Sweep Time Auto detector mode Positive peak Indication mode Max hold
Technical standard:	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%
E.I.R.P.	$\leq 10\text{mW/MHz}$ (OBW $\leq 19\text{MHz}$) $\leq 5\text{mW/MHz}$ ($19 \leq \text{OBW} \leq 38\text{MHz}$) $\leq 2.5\text{mW/MHz}$ ($38 \leq \text{OBW} \leq 78\text{MHz}$)
Test result:	Refer to Appendix: W5.2 WIFI of Report No. EED32P80690404

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

7.1.8 Spurious Emissions of Tx

Test Requirement:	Item 19-3 of Article 2 Paragraph 1
EUT Operation:	
Test Status:	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.
Test Configuration:	<div style="text-align: center;">  <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre> </div>
EUT conditions:	Modulation/Spread/Hopping on. For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
Spectrum Analyzer conditions:	Step1 All spurious are measured from 30MHz to 26 GHz by peak mode. Step 2: Frequency: Spurious Frequency RBW 100kHz (30 – 1GHz), 1000KHz (over 1GHz) VBW 100kHz (30 – 1GHz), 1000KHz (over 1GHz) Sweep Time Auto detector mode Sample Indication mode Max hold
Technical standard:	20MHz system OB: below 18MHz: (1) Below 5140MHz, 2.5μW/MHz (2) Over 5360MHz, 2.5μW/MHz OB: over 18MHz, below 19MHz (1) Below 5135MHz, 2.5μW/MHz (2) Over 5365MHz, 2.5μW/MHz 40MHz system OB:From 19MHz to 38MHz (1) Below 5100MHz, 2.5μW/MHz (2) Over 5400MHz, 2.5μW/MHz 80MHz system OB:From 38MHz to 78MHz (1) Below 5020MHz, 2.5μW/MHz (2) Over 5480MHz, 2.5μW/MHz
Test result:	Refer to Appendix: W5.2 WIFI of Report No. EED32P80690404

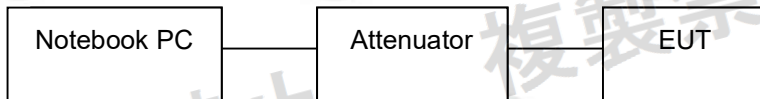
7.1.9 Transmission Burst Length

Test Requirement:	Item 19-3 of Article 2 Paragraph 1
EUT Operation:	
Test Status:	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.
Test Configuration:	<div style="text-align: center;">  <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre> </div>
EUT conditions:	Modulation/Spread/Hopping on. For equipment using diffusion code, set to the test diffusion code and modulate with standard coding test signal.
Spectrum Analyzer conditions:	Frequency: Test Frequency Span 0 MHz RBW 1 MHz, VBW 1 MHz, Sweep Time: $\geq 1\text{ms}$ Detector mode Positive peak Indication mode Max hold
Technical standard:	Burst length $\leq 8\text{ms}$
Test result:	Refer to Appendix: W5.2 WIFI of Report No. EED32P80690404

7.1.10 Interference prevention function

1) Measurement system diagram

(1) When transmitting identification code

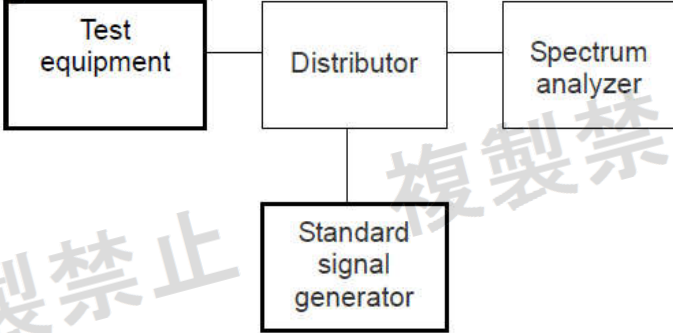


Test result:

- 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).

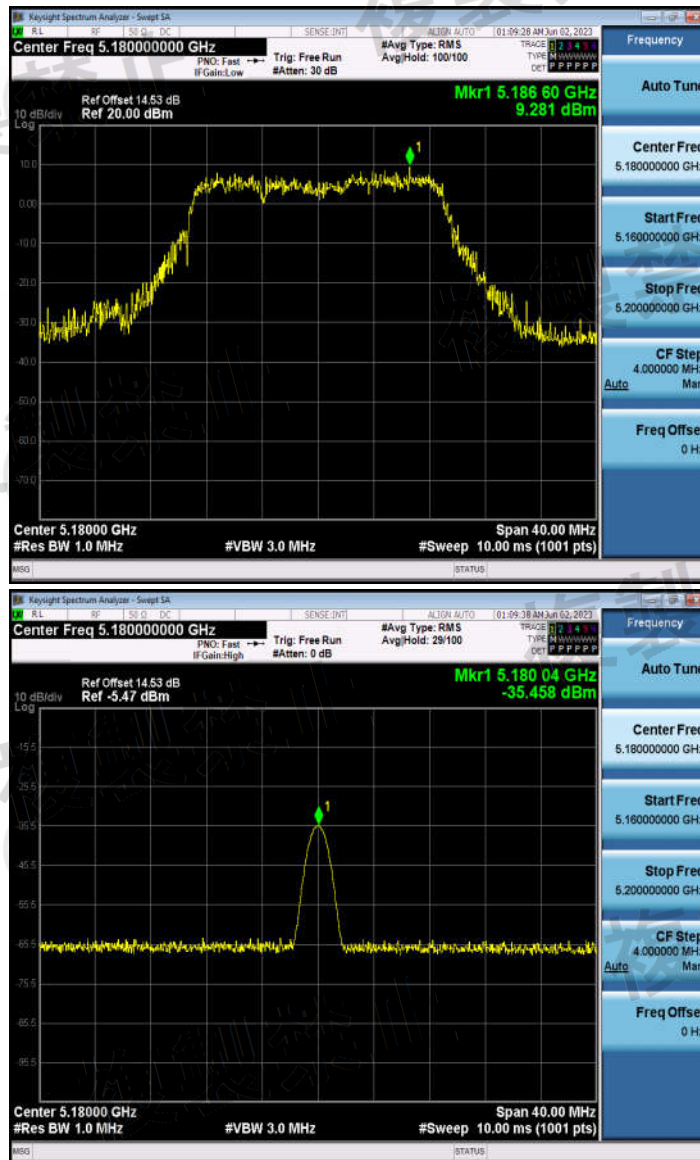
4c:79:6e:74:1e:45

7.1.11 Carrier sense capability

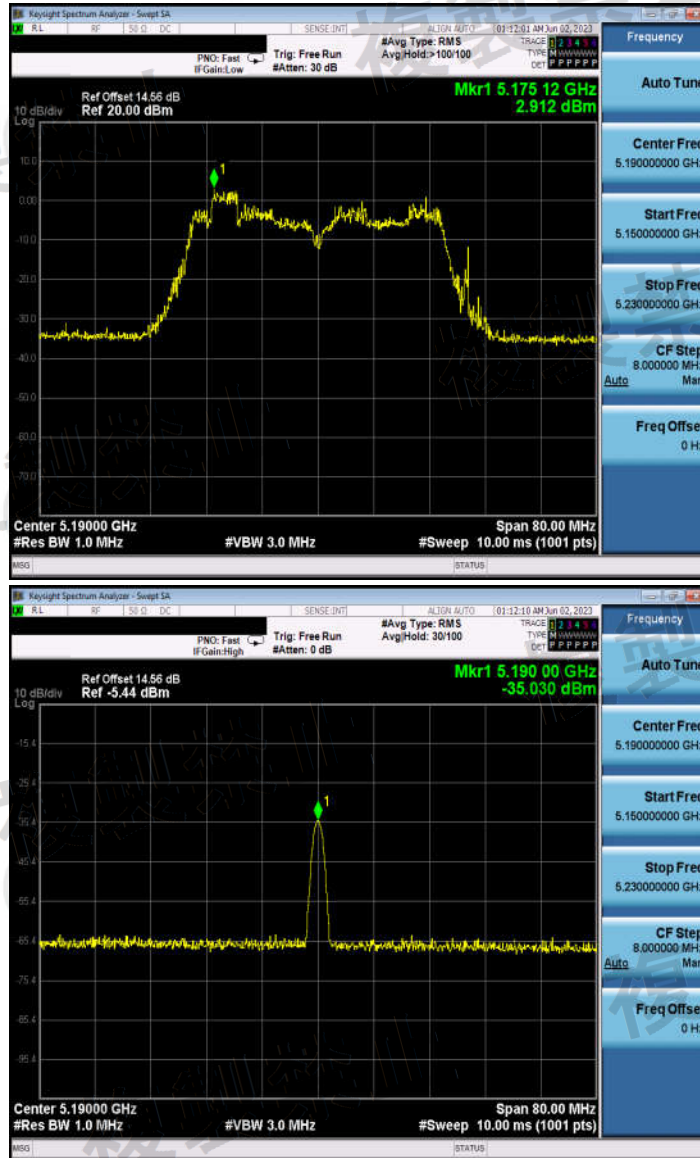
Test Requirement:	Item 19-3 of Article 2 Paragraph 1
EUT Operation:	
Test Status:	The EUT state shall be "normal mode link with wireless router"
Test Configuration:	 <pre> graph LR TE[Test equipment] --- D[Distributor] D --- SA[Spectrum analyzer] D --- SSG[Standard signal generator] </pre>
Measurement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

Test result:

Carrier sense capability, 11a, 5180 MHz



Carrier sense capability, 11n (HT40), 5190 MHz



Carrier sense capability, 11ac VHT80, 5210 MHz



7.1.12 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

Test Requirement:	Item 19-3 of Article 2 Paragraph 1
EUT Operation:	
Test Status:	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.
Test Configuration:	 <pre> graph LR EUT[EUT] --> SA[Spectrum Analyzer] </pre>
EUT conditions:	Rx
Spectrum Analyzer conditions:	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
Technical standard:	(1) Below 1GHz : 4nW (2) 1GHz - 10GHz : 20nW (3) 10GHz or higher : 20nW
Test result:	Refer to Appendix: W5.2 WIFI of Report No. EED32P80690404

8 Photographs

8.1 EUT Test Setup



EUT Test Setup-1

8.2 EUT Constructional Details

Refer to Report No. EED32P80690401 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 ***