



RADIO TEST REPORT

For

APPLE TREE Co., Ltd.

3D Printer

Test Model: Adventurer 5M

Prepared for : APPLE TREE Co., Ltd.
Address : 18F Honmachi Sankei Building, 4-3-9 Honmachi,
Chuo-ku, Osaka-shi, Osaka, Japan

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
Address : Room 101, 201, Building A and Room 301, Building C,
Juji Industrial Park, Yabianxueziwei, Shajing Street,
Bao'an District, Shenzhen, Guangdong, China
Tel : (+86)755-82591330
Fax : (+86)755-82591332
Web : www.LCS-cert.com
Mail : webmaster@LCS-cert.com

Date of receipt of test sample : December 23, 2023
Number of tested samples : 2
Sample No. : A231213076-1, A231213076-2
Serial number : Prototype
Date of Test : December 23, 2023 ~ January 19, 2024
Date of Report : January 23, 2024



Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street,
Bao'an District, Shenzhen, Guangdong, China
Tel: (+86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity

**RADIO TEST REPORT****MIC Notice No.88 Appendix No.43**

Second-Generation Low-Power Data Communication System/Wireless LAN System

Report Reference No. : LCSA12253023EA**Date of Issue..... : January 23, 2024****Testing Laboratory Name..... : Shenzhen LCS Compliance Testing Laboratory Ltd.****Address..... : Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China****Testing Location/ Procedure.... : Full application of Harmonised standards ■
Partial application of Harmonised standards □
Other standard testing method □****Applicant's Name..... : APPLE TREE Co., Ltd.****Address..... : 18F Honmachi Sankei Building, 4-3-9 Honmachi, Chuo-ku, Osaka-shi, Osaka, Japan****Test Specification****Standard..... : MIC Notice No.88 Appendix No.43****Test Report Form No..... : LCSEMC-1.0****TRF Originator..... : Shenzhen LCS Compliance Testing Laboratory Ltd.****Master TRF..... : Dated 2011-03****Shenzhen LCS Compliance Testing Laboratory Ltd. All rights reserved.**

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen LCS Compliance Testing Laboratory Ltd. is acknowledged as copyright owner and source of the material. Shenzhen LCS Compliance Testing Laboratory Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test Item Description..... : 3D Printer**Trade Mark..... : N/A****Test Model..... : Adventurer 5M****Ratings..... : Input: 100-120V/200-240V~, 50-60Hz, 350W****Result : Positive****Compiled by:**

Li Huan/ Administrator

Supervised by:

Cary Luo/ Technique principal

Approved by:

Gavin Liang/ Manager



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



RADIO -- TEST REPORT

Test Report No. : LCSA12253023EAJanuary 23, 2024

Date of issue

Test Model : Adventurer 5M

EUT..... : 3D Printer

Applicant..... : APPLE TREE Co., Ltd.Address..... : 18F Honmachi Sankei Building, 4-3-9 Honmachi, Chuo-ku,
Osaka-shi, Osaka, Japan

Telephone..... : /

Fax..... : /

Manufacturer..... : APPLE TREE Co., Ltd.Address..... : 18F Honmachi Sankei Building, 4-3-9 Honmachi, Chuo-ku,
Osaka-shi, Osaka, Japan

Telephone..... : /

Fax..... : /

Factory..... : Dongguan Flashforge 3D Technology Co., Ltd.

Address..... : Room 304, Building 2, No. 1 Jianlang Road, Tangxia Town, Dongguan City, Guangdong, China

Telephone..... : /

Fax..... : /

Test Result**Positive**

The test report merely corresponds to the test sample.

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



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street,
Bao'an District, Shenzhen, Guangdong, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



Revision History

| Report Version | Issue Date | Revision Content | Revised By |
|----------------|------------------|------------------|------------|
| 000 | January 23, 2024 | Initial Issue | --- |
| | | | |
| | | | |



Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street,
Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity



TABLE OF CONTENTS

| | |
|--|-----------|
| 1. GENERAL INFORMATION | 6 |
| 1.1. DESCRIPTION OF DEVICE (EUT) | 6 |
| 1.2. SUPPORT EQUIPMENT LIST | 7 |
| 1.3. EXTERNAL I/O CABLE | 7 |
| 1.4. DESCRIPTION OF TEST FACILITY | 7 |
| 1.5. TEST CONDITIONS | 8 |
| 1.6. FREQUENCY OF CHANNELS | 8 |
| 2. TEST METHODOLOGY | 9 |
| 2.1. EUT EXERCISE | 9 |
| 2.2. MEASUREMENT UNCERTAINTY | 9 |
| 2.3. TABLE FOR PARAMETERS OF TEST SOFTWARE SETTING | 9 |
| 2.4. DESCRIPTION OF TEST MODES | 10 |
| 2.5. TEST VOLTAGE | 10 |
| 3. SYSTEM TEST CONFIGURATION | 11 |
| 3.1. JUSTIFICATION | 11 |
| 3.2. EUT EXERCISE SOFTWARE | 11 |
| 3.3. SPECIAL ACCESSORIES | 11 |
| 3.4. BLOCK DIAGRAM/SCHEMATICS | 11 |
| 3.5. EQUIPMENT MODIFICATIONS | 11 |
| 4. SUMMARY OF TEST RESULTS | 12 |
| 5. TEST RESULT | 13 |
| 5.1. FREQUENCY TOLERANCE | 13 |
| 5.2. ANTENNA POWER | 14 |
| 5.3. OCCUPIED FREQUENCY BANDWIDTH | 16 |
| 5.4. SPREAD BANDWIDTH | 17 |
| 5.5. TRANSMITTER SPURIOUS EMISSIONS (CONDUCTED) | 18 |
| 5.6. CARRIER SENSING FUNCTION | 19 |
| 5.7. INTERFERENCE PREVENTION FUNCTION | 21 |
| 5.8. SECONDARY RADIATED EMISSIONS | 22 |
| 6. PHOTOGRAPHS OF TEST SETUP | 23 |
| 7. EXTERNAL PHOTOGRAPHS OF THE EUT | 23 |
| 8. INTERNAL PHOTOGRAPHS OF THE EUT | 23 |
| 9. LIST OF MEASURING EQUIPMENTS | 23 |





1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT : 3D Printer
Test Model : Adventurer 5M
Power Supply : Input: 100-120V/200-240V~, 50-60Hz, 350W
Hardware Version : V3.0.4
Software Version : V2.4.2

WIFI (2.4G Band)

Frequency Range : 2412-2472MHz for 802.11b/g/n(HT20)
2422-2462MHz for 802.11n(HT40)
Channel Spacing : 5MHz
Channel Number : 13 Channel for 802.11b/g/n(HT20)(2412~2472MHz)
9 channels for 802.11n(HT40) (2422~2462MHz)
Modulation Type : 802.11b: DSSS (CCK, DQPSK, DBPSK)
802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Declared Antenna Power : 802.11b: 7.0mW/MHz
802.11g: 7.0mW/MHz
802.11n(HT20): 7.0mW/MHz
802.11n(HT40): 3.0mW/MHz
Antenna Description : Internal Antenna, 3.2dBi (max.)

WIFI (5.2G Band)

Frequency Range : 5180-5240MHz
Channel Number : 4 Channel for 20MHz bandwidth(5180-5240MHz)
2 Channel for 40MHz bandwidth(5190-5230MHz)
1 Channel for 80MHz bandwidth(5210MHz)
Modulation Type : 802.11a/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
802.11ac: OFDM (256QAM, 64QAM, 16QAM, QPSK, BPSK)
Declared Antenna Power : 802.11a: 6.0mW/MHz
802.11n(HT20): 6.0mW/MHz
802.11n(HT40): 3.0mW/MHz
802.11ac(VHT20): 6.0mW/MHz
802.11ac(VHT40): 3.0mW/MHz
802.11ac(VHT80): 1.5mW/MHz
Antenna Description : Internal Antenna, 1.7dBi (max.)





1.2. Support Equipment List

| Manufacturer | Description | Model | Serial Number | Certificate |
|--------------|-------------|-------|---------------|-------------|
| --- | --- | --- | --- | --- |

1.3. External I/O Cable

| I/O Port Description | Quantity | Cable |
|----------------------|----------|-------|
| Power Port | 1 | N/A |
| LAN Port | 1 | N/A |
| USB Port | 1 | N/A |

1.4. Description of Test Facility

FCC Registration Number is 254912.

NVLAP Accreditation Code is 600167-0.

FCC Designation Number is CN5024.

CAB identifier is CN0071.

CNAS Registration Number is L4595.

Industry Canada Registration Number is 9642A.



Shenzhen LCS Compliance Testing Laboratory Ltd.

Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China

Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com

Scan code to check authenticity



1.5. Test Conditions

| | | |
|-------------------|---|-----------|
| Temperature Range | : | 21-25°C |
| Humidity Range | : | 45-85% |
| Pressure Range | : | 86-106kPa |

1.6. Frequency of Channels

802.11b/g/n (HT20)

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| 1 | 2412 | 8 | 2447 |
| 2 | 2417 | 9 | 2452 |
| 3 | 2422 | 10 | 2457 |
| 4 | 2427 | 11 | 2462 |
| 5 | 2432 | 12 | 2467 |
| 6 | 2437 | 13 | 2472 |
| 7 | 2442 | -- | -- |

802.11n (HT40)

| Channel | Frequency(MHz) | Channel | Frequency(MHz) |
|---------|----------------|---------|----------------|
| -- | -- | 7 | 2442 |
| -- | -- | 8 | 2447 |
| 3 | 2422 | 9 | 2452 |
| 4 | 2427 | 10 | 2457 |
| 5 | 2432 | 11 | 2462 |
| 6 | 2437 | -- | -- |





2. TEST METHODOLOGY

2.1. EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of ARIB STD-T66 Version 3.7/2014.

2.2. Measurement Uncertainty

| Test Item | | MU | Remark |
|-----------------------------|---|-------------|--------|
| Bandwidth | : | +/- 0.2 E-6 | / |
| Antenna Power | : | +/-0.33dB | / |
| Frequency Tolerance | : | +/- 0.3 E-6 | / |
| Conducted spurious emission | : | +/-0.13dB | / |
| DC Power | : | +/-1% | / |

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.3. Table for Parameters of Test Software Setting

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

Power Parameters:

| Test Software Version | Win7_MP_Kit_RTL11ac_8821CU_USB_v3.10_20200226(BETA) | | |
|-----------------------|---|---------|---------|
| Frequency | 2412MHz | 2442MHz | 2472MHz |
| 802.11b (20MHz) | Default | Default | Default |
| 802.11g (20MHz) | Default | Default | Default |
| 802.11n (20MHz) | Default | Default | Default |
| Frequency | 2422MHz | 2442MHz | 2462MHz |
| 802.11n (40MHz) | Default | Default | Default |

***Note: The output power level of the software was chosen as default only.





2.4. Description of Test Modes

| Tested mode, channel, and data rate information | | | | |
|---|-----------------------------------|--|-------------|-----------------|
| Mode | Preliminary Test Data Rate (Mbps) | Final Test Data Rate (Mbps) (see Note) | Channel | Frequency (MHz) |
| 802.11b | 11/1 | 11 | Low :CH1 | 2412 |
| | 11/1 | 11 | Middle: CH7 | 2442 |
| | 11/1 | 11 | High: CH13 | 2472 |
| 802.11g | 54/6 | 6 | Low :CH1 | 2412 |
| | 54/6 | 6 | Middle: CH7 | 2442 |
| | 54/6 | 6 | High: CH13 | 2472 |
| 802.11n HT20 | 65.0/6.5 | 6.5 | Low :CH1 | 2412 |
| | 65.0/6.5 | 6.5 | Middle: CH7 | 2442 |
| | 65.0/6.5 | 6.5 | High: CH13 | 2472 |
| 802.11n HT40 | 135.0/13.5 | 13.5 | Low :CH3 | 2422 |
| | 135.0/13.5 | 13.5 | Middle: CH7 | 2442 |
| | 135.0/13.5 | 13.5 | High: CH11 | 2462 |

Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.

2.5. Test Voltage

POWER SUPPLY VOLTAGE FLUCTUATION TEST

| Voltage Fluctuation Test | Normal Voltage | High Voltage +10% of Normal Voltage | Low Voltage -10% of Normal Voltage |
|--------------------------|----------------|-------------------------------------|------------------------------------|
| Input To EUT | AC 100V | AC 110V | AC 90V |
| Output To RF Module | DC 3.3V | DC 3.3V | DC 3.3V |
| Voltage Variation (%) | -- | -- | -- |

Note: As the EUT was powered by AC 100V, and with the voltage stabilizing circuit used, the chip voltage received floating not exceed $\pm 1\%$ of nominal condition when working on extreme voltage, so all test performed at nominal voltage only.





3. SYSTEM TEST CONFIGURATION

3.1. Justification

The system was configured for testing in engineering mode.

3.2. EUT Exercise Software

N/A.

3.3. Special Accessories

N/A.

3.4. Block Diagram/Schematics

Please refer to the related document.

3.5. Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.





4. SUMMARY OF TEST RESULTS

MIC Notice No.88 Appendix No.43 Article 2 Paragraph 1 Item 19

| Clause | Description of Test (Transmitter Parameters) | Result |
|---------------------|--|--------|
| 3 | Frequency Tolerance | PASS |
| 6 | Antenna Power | PASS |
| 6 | Tolerances for Antenna Power | PASS |
| 4 | Transmission Rate | PASS |
| 4 | Occupied Frequency Bandwidth | PASS |
| 4 | Spread Bandwidth | PASS |
| 5 | Spurious Emissions | PASS |
| 10 | Transmission Antenna Gain (EIRP Antenna Power) | PASS |
| 11 | Transmission Radiated Angle Width (3dB Beam width) | N/A |
| 12 | Interference prevention function | PASS |
| 8 | Carrier Sensing function | PASS |
| 8 | Number of carrier | PASS |
| Receiver Parameters | | |
| 7 | Secondary Radiated Emissions | PASS |

Note: (1) N/A is an abbreviation for Not Applicable.

(2) N/T means this test item is not tested.

(3) This is a 2.4G WIFI RF test report for 3D Printer.





5. TEST RESULT

5.1. Frequency Tolerance

5.1.1. Standard Applicable

Tolerance of frequency shall be $\pm 50 \times 10^{-6}$.

5.1.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.1.3. Test Procedures

- Set EUT work in test mode as described in clause 2.4.
- Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

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

Resolution BW: 10 KHz.

Video BW: 10 KHz.

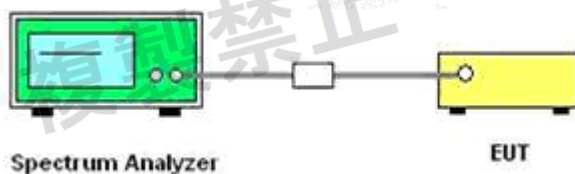
Span: 1MHz.

Detector: Peak.

Trace Mode: Max Hold.

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

5.1.4. Test Setup Layout



5.1.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.1.6. Test Result

Please refer to the Appendix A.1 for 2.4G WIFI RF Test Data.





5.2. Antenna Power

5.2.1. Standard Applicable

| Type | Limit |
|--------------------|----------|
| DTS | 10mW |
| OFDM OBW<26MHz, DS | 10mW/MHz |
| OFDM OBW 26-40MHz | 5mW/MHz |
| Tolerance | +20% |

Upper Limit of EIRP for Modulation Systems

| Modulation system | Frequency band used | Antenna power (max.) | EIRP (max.) | |
|----------------------|--------------------------------|----------------------|----------------------|------------------|
| | | | Omnidirectional case | Directional case |
| DS, OFDM | 2,400 - 2,483.5 MHz | 10 mW/MHz | 12.14 dBm/MHz | 22.14 dBm/MHz |
| FH, DS-FH FH-OFDM | 2,400 - 2,483.5 MHz | 3 mW/MHz | 6.91 dBm/MHz | 16.91 dBm/MHz |
| | Excluding 2,427 - 2,470.75 MHz | 10 mW/MHz | 12.14 dBm/MHz | 22.14 dBm/MHz |
| Other than the above | 2,400 - 2,483.5 MHz | 10 mW | 12.14 dBm | 22.14 dBm |

5.2.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.2.3. Test Procedures

- Set EUT work in test mode as described in clause 2.4.
- Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

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

Resolution BW: 1MHz.

Video BW: 1MHz.

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

Trigger condition: Free run.

Sweep mode: Continuous sweeping.

Detector: Peak.

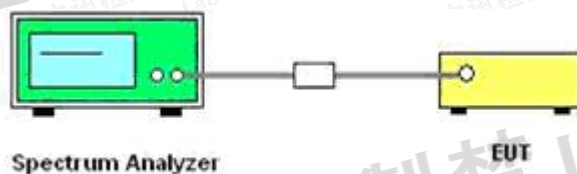
Trace Mode: Max Hold.

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





5.2.4. Test Setup



5.2.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.2.6. Test Result

Please refer to the Appendix A.2 for 2.4G WIFI RF Test Data.





5.3. Occupied Frequency Bandwidth

5.3.1. Standard Applicable

Permissible value for occupied bandwidth using the FH system, a hybrid system combining DS and FH systems, or a hybrid system combining FH and OFDM systems shall be 83.5 MHz or less, while necessary bandwidth (minimum occupied bandwidth sufficient to ensure information transmission of required quality at a required transmission rate for the system used under specified conditions for a given emission type) using a system other than any of the above shall be 26 MHz or less.

5.3.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.3.3. Test Procedures

- Set EUT work in test mode as described in clause 2.4.
- Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

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

RBW/VBW= 300 KHz/300KHz for WIFI.

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

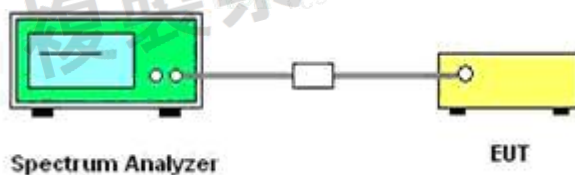
Sweep mode: Continuous sweeping.

Detector: Peak.

Trace Mode: Max Hold.

- When the trace is complete, measure the occupied bandwidth (99% bandwidth) with spectrum analyzer's bandwidth measure function.

5.3.4. Test Setup Layout



5.3.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.3.6. Test Result of 99% Spectrum Bandwidth

Please refer to the Appendix A.3 for 2.4G WIFI RF Test Data.





5.4. Spread Bandwidth

5.4.1. Standard Applicable

In spread spectrum systems, spread bandwidth (which refers to a frequency bandwidth with an upper limit and lower limit such that each of the mean powers radiated above the upper frequency limit and below the lower frequency limit is equal to 5 % of the total mean power radiated; this also applies hereafter) shall be 500 kHz or more.

5.4.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.4.3. Test Procedures

- Set EUT work in test mode as described in clause 2.4.
- Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

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

RBW/VBW= 300 KHz/300KHz for WIFI.

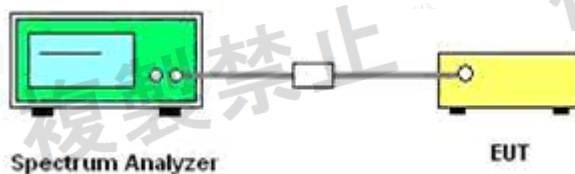
Span: Wide enough to cover the complete power envelope of the signal of the EUT.

Detector: Peak.

Trace Mode: Max Hold.

- When the trace is complete, measure the occupied bandwidth (90% bandwidth) with spectrum analyzer's bandwidth measure function.

5.4.4. Test Setup Layout



5.4.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.4.6. Test Result of 90% Occupied Bandwidth.

Please refer to the Appendix A.4 for 2.4G WIFI RF Test Data.





5.5. Transmitter Spurious Emissions (conducted)

5.5.1. Standard Applicable

Permissible mean power of spurious emission of each frequency supplied to a feeder, that is, mean power of spurious emission in the 1 MHz bandwidth at frequency f other than frequency band used shall be as follows:

STD-T66

- | | |
|--|---------------------|
| a. 30MHz - 1,000MHz | 2.5 μ W or less |
| b. 1,000MHz - 2,387MHz | 2.5 μ W or less |
| c. 2,387MHz - 2,400MHz and 2,483.5MHz - 2,496.5MHz | 25 μ W or less |
| d. 2,496.5MHz - 13GHz | 2.5 μ W or less |

STD-T33

- | | |
|--|---------------------|
| a. $2,458\text{MHz} \leq f \leq 2,471\text{MHz}$ and $2,497\text{MHz} < f \leq 2,510\text{MHz}$ less | 25 μ W or less |
| b. $2,458\text{MHz} > f$ and $2,510\text{MHz} < f$ | 2.5 μ W or less |

5.5.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.5.3. Test Procedures

- Set EUT work in test mode as described in clause 2.4.
- Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Below 1GHz: RBW/VBW= 1MHz / 3MHz.

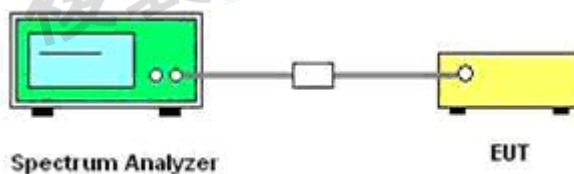
Above 1GHz: RBW/VBW= 1MHz / 3MHz.

Detector: Peak.

Trace Mode: Max Hold.

- All the emissions from 30MHz to 13GHz were measured and record.

5.5.4. Test Setup Layout



5.5.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.5.6. Test Results

Please refer to the Appendix A.5 for 2.4G WIFI RF Test Data.





5.6. Carrier sensing function

5.6.1. Standard Applicable

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

5.6.2. Measuring Instruments

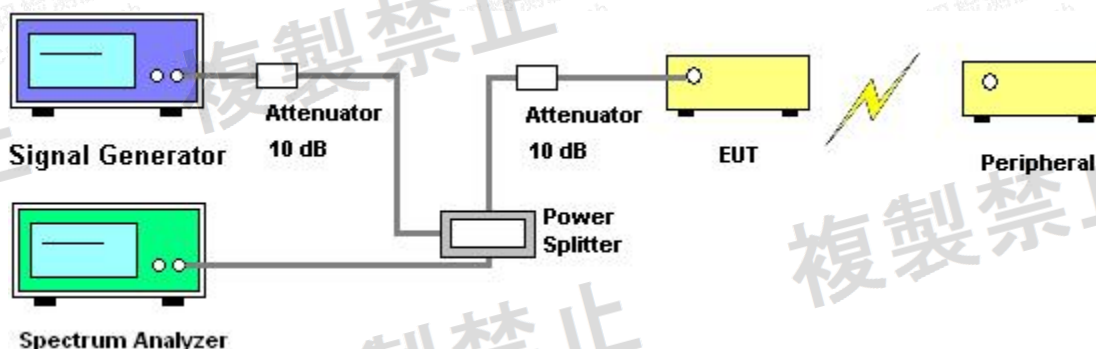
Please refer to section 6 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

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

5.6.3. Test Procedures

1. SSG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SSG and power level is (On $22.79+Gr-20*\log(f)[dBm]$ (Gr: dBi; f: MHz). Then turn off the RF signal of SSG.
2. EUT have transmitted the maximum modulation signal and fixed channelize.
3. Setting of SA is following as: RB:1MHz / VB:1MHz / SPAN: 50MHz / AT: 10dB /Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak.
4. SSG RF Signal On.
5. EUT shall be stop the transmitted any signal and SSG RF Signal Off. Then EUT will be continuous transmitted signal.

5.6.4. Test Setup Layout



5.6.5. EUT Operation during Test

The EUT was programmed to be in normal transmitting mode.





5.6.6. Test Result

| Test Mode | Test Result |
|---------------|-------------|
| 802.11n(HT40) | Pass |

Note: 1.this test item only applies to those mode with bandwidth greater than 20MHz;

after a carrier signal $22.79+Gr-20*\log(f)[dBm]$ was injected into EUT, it stopped transmission.

2. The EUT has three carriers in the test .





5.7. Interference prevention function

5.7.1. Standard Applicable

| Item | Limits |
|---------------------|----------------|
| Identification code | ≥ 48 bits |

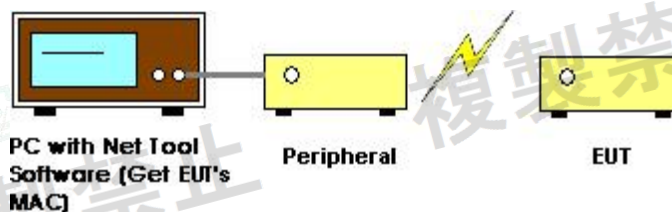
5.7.2. Measuring ID Code Software

| PC with NetTool | Setting |
|-----------------|----------|
| MAC IP List | MAC Scan |

5.7.3. Test Procedures

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

5.7.4. Test Setup Layout



5.7.5. EUT Operation during Test

The EUT was programmed to be in normal transmitting mode.

5.7.6. Test Result

MAC Address: 63:A2:E1:DB:11B:2B

Complies.





5.8. Secondary Radiated Emissions

5.8.1. Standard Applicable

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

5.8.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

5.8.3. Test Procedures

- Set EUT work in test mode as described in clause 2.4.
- Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Resolution BW: 100 KHz for frequency below 1GHz and

1MHz for frequency above 1GHz

Video BW: 300 KHz for frequency below 1GHz and

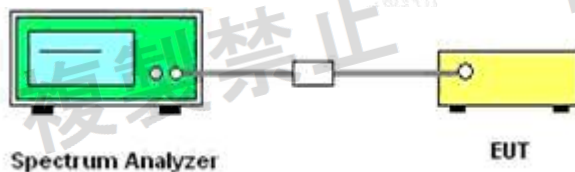
3MHz for frequency above 1GHz

Detector: Peak.

Trace Mode: Max Hold.

- All the emissions from 30MHz to 13GHz were measured and record.

5.8.4. Test Setup



5.8.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

5.8.6. Test Results

Please refer to the Appendix A.6 for 2.4G WIFI RF Test Data.





6. PHOTOGRAPHS OF TEST SETUP

Please refer to separated files Appendix C for Test Setup Photographs

7. EXTERNAL PHOTOGRAPHS OF THE EUT

Please refer to separated files Appendix D for External Photos of EUT

8. INTERNAL PHOTOGRAPHS OF THE EUT

Please refer to separated files Appendix E for Internal Photos of EUT

9. LIST OF MEASURING EQUIPMENTS

| Item | Equipment | Manufacturer | Model No. | Serial No. | Cal Date | Due Date |
|------|---------------------|--------------|--------------|------------|------------|------------|
| 1 | Power Meter | R&S | NRVS | 100444 | 2023-06-09 | 2024-06-08 |
| 2 | Power Sensor | R&S | NRV-Z81 | 100458 | 2023-06-09 | 2024-06-08 |
| 3 | Power Sensor | R&S | NRV-Z32 | 10057 | 2023-06-09 | 2024-06-08 |
| 4 | MXA Signal Analyzer | Agilent | N9020A | MY49100060 | 2023-10-18 | 2024-10-17 |
| 5 | DC Power Supply | Agilent | E3642A | N/A | 2023-10-18 | 2024-10-17 |
| 6 | Oscilloscope | Tektronix | 46084A/4609A | 140920 | 2023-06-09 | 2024-06-08 |
| 7 | Signal Generator | Agilent | N5182A | MY47071151 | 2023-06-09 | 2024-06-08 |

-----THE END OF REPORT-----



Shenzhen LCS Compliance Testing Laboratory Ltd.
Add: Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street,
Bao'an District, Shenzhen, Guangdong, China
Tel: +(86) 0755-82591330 | E-mail: webmaster@lcs-cert.com | Web: www.lcs-cert.com
Scan code to check authenticity