

RF Test Report

For

Applicant name: Shanghai Huace Navigation Technology Ltd.
Address: 577 Songying Road, Qingpu District, 201706 Shanghai, China
EUT name: GNSS Receiver
Brand name: 
Model number: MC300
Series model number: N/A

Issued By

Company name: BTF Testing Lab (Shenzhen) Co., Ltd.
Address: Plant 101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, Guangdong, China

Report number: BTF260422R00101
Test standards: Article 2-1, Item 19
MIC Notice No.88 Appendix No. 43
Test conclusion: Pass

Date of sample receipt: 2026-04-22
Test date: 2026-04-23 to 2026-05-14
Date of issue: 2026-05-27

Prepared by:



Chris Liu / Project engineer

Approved by:



Ryan.CJ / EMC Manager

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Revision History		
Version	Issue Date	Revisions Content
R_V0	2026-05-27	Original
Note: <i>Once the revision has been made, then previous versions reports are invalid.</i>		

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1 Introduction

1.1 Laboratory Location

Test location:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	Plant 101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, Guangdong, China
Phone number:	+86-0755-23146130
Fax number:	+86-0755-23146130

1.2 Identification of the Responsible Testing Location

Test Location:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	Plant 101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, Guangdong, China
Description:	All measurement facilities used to collect the measurement data are located at F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

1.3 Laboratory Facility

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

- **FCC - Designation No.: CN1409**
BTF Testing Lab (Shenzhen) Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The test firm Registration No. is 695374.
- **CNAS - Registration No.: CNAS L17568**
BTF Testing Lab (Shenzhen) Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L17568.
- **A2LA - Registration No.: 6660.01**
BTF Testing Lab (Shenzhen) Co., Ltd. is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.
- **ISED – CAB identifier.: CN0135**
The 3m Semi-anechoic chamber of BTF Testing Lab (Shenzhen) Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 27844.
- **VCCI - Registration No.: C-20122, G-20157, R-20166**
EMC LAB: Certificated by VCCI, Japan
Registration No.: C-20122, G-20157, R-20166
Date of Registration: June 20, 2025
This Certificate is valid until June 19, 2028

1.4 Announcement

- (1) The test report reference to the report template version v0.
- (2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
- (3) The test report is invalid if there is any evidence and/or falsification.
- (4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.
- (5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
- (6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.
- (7) All entrusted information in this report is provided by the client and has been confirmed through consultation with the client; The testing items for this report have been discussed and confirmed with the client, and our company is only responsible for the content reflected in the report.

2 Product Information

2.1 Application Information

Company name:	Shanghai Huace Navigation Technology Ltd.
Address:	577 Songying Road, Qingpu District, 201706 Shanghai, China

2.2 Manufacturer Information

Company name:	Shanghai Huace Navigation Technology Ltd.
Address:	577 Songying Road, Qingpu District, 201706 Shanghai, China

2.3 Factory Information

Company name:	Shanghai Huace Navigation Technology Ltd.
Address:	577 Songying Road, Qingpu District, 201706 Shanghai, China

2.4 General Description of Equipment under Test (EUT)

EUT name:	GNSS Receiver
Under test model name:	MC300
Series model name:	N/A
Description of model name differentiation:	N/A
Ratings:	Input: 9-36V DC ---2A

2.5 Technical Information

Operation Frequency:	2412-2472MHz
Channel numbers:	13 channels for 20MHz bandwidth;
Channel separation:	5MHz
Modulation technology:	802.11b: DSSS(CCK, DQPSK, DBPSK); 802.11g: OFDM(BPSK, QPSK, 16QAM, 64QAM); 802.11n(HT20): OFDM (BPSK, QPSK, 16QAM, 64QAM)
The Max RF conducted output power (mW/MHz)	1.220mW/MHz
Antenna type:	External Antenna
Antenna gain:	3.68dBi

3 Summary of Test Results

3.1 Test Standards

The tests were performed according to following standards:

Article 2-1, Item 19 : 2.4GHz for SRD/BT/WIFI

MIC Notice No.88 Appendix No.43: 2.4GHz band advanced low-power data communication system

3.2 Uncertainty of Test

Measurement	Value
Radio Frequency	$\pm 1.2 \times 10^{-9}$
Occupied Channel Bandwidth	$\pm 173.1\text{Hz}$
RF output power, conducted	$\pm 0.66\text{ dB}$
Unwanted Emissions, Conducted	$\pm 2.32\text{dB}$
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Tolerance of Frequency	Article 2-1, Item 19	Article 2-1, Item 19	Pass
Occupied Bandwidth (99%)	Article 2-1, Item 19	Article 2-1, Item 19	Pass
Spread Factor	Article 2-1, Item 19	Article 2-1, Item 19	Pass
Antenna Power and Tolerance	Article 2-1, Item 19	Article 2-1, Item 19	Pass
Spurious Emission Intensity	Article 2-1, Item 19	Article 2-1, Item 19	Pass
Secondary Radiated Emissions	Article 2-1, Item 19	Article 2-1, Item 19	Pass
Carrier Sensing	Article 2-1, Item 19	Article 2-1, Item 19	N/A
Interference Prevention Function	Article 2-1, Item 19	Article 2-1, Item 19	Pass
RF Accessibility	Article 2-1, Item 19	Article 49-20, paragraph 1(a)	Pass
Remark: 1. Pass: Meet the requirements. 2. N/A: not applicable.			

3.4 Additions to, deviations, or exclusions from the method

None

4 Test Configuration

4.1 Test Equipment List

RF Conducted							
Test Equipment	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Cal. By	Remark
Test Software	TST Pass	/	Version: 2.0	/	/	Guangzhou LiSai Metrology & Test Co., Ltd.	3
Cell Site Test Set	HP	8921A	US35010158	2025-10-17	2026-10-16	Guangzhou LiSai Metrology & Test Co., Ltd.	3
Spectrum Analyzer	Keysight	N9020A	MY50410020	2025-10-17	2026-10-16	Guangzhou LiSai Metrology & Test Co., Ltd.	3
ESG Vector Signal Generator	Agilent	E4438C	MY45094854	2025-10-17	2026-10-16	Guangzhou LiSai Metrology & Test Co., Ltd.	3
MXG Vector Signal Generator	Agilent	N5182A	MY46240163	2025-10-17	2026-10-16	Guangzhou LiSai Metrology & Test Co., Ltd.	3
Wideband Radio Communication Tester	Rohde&Schwarz	CMW500	161997	2025-10-17	2026-10-16	Guangzhou LiSai Metrology & Test Co., Ltd.	3
Programmable Constant Temperature And Humidity Test Chamber	ZZCKONG	ZZ-K02A	20210928007	2025-10-17	2026-10-16	Guangzhou LiSai Metrology & Test Co., Ltd.	3
DC Power Supply	Tongmen	etm-6050c	20211026123	2025-10-17	2026-10-16	Guangzhou LiSai Metrology & Test Co., Ltd.	3
RF Control Unit	Techy	TR1029-1	/	2025-10-17	2026-10-16	Guangzhou LiSai Metrology & Test Co., Ltd.	3
RF Sensor Unit	Techy	TR1029-2	/	2025-10-17	2026-10-16	Guangzhou LiSai Metrology & Test Co., Ltd.	3
RF shielding box	Yinuoxin Electronics	50*50*50 cm	/	2025-05-26	2026-05-25	Guangzhou LiSai Metrology & Test Co., Ltd.	3

Remark:

1. 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.
2. Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement Act (Act. No.51 of 1992)
3. 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).
4. 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 (2) to (4).

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

All calibration information is from Guangzhou LiSai Metrology & Test Co., Ltd.

4.2 Test Auxiliary Equipment

The EUT has been tested as an independent unit.

4.3 Environment Condition

ENV	Temperature (°C)	Voltage (VDC)
NTLV	25	21.6
NTNV	25	24
NTHV	25	26.4

Voltage fluctuation test:

The RF unit is supplied DC 12V. The fluctuation of input voltage to the circuit of RF unit of test equipment is under $\pm 1\%$, when input voltage DC 24V fluctuated $\pm 10\%$, so all measurement has been conducted by only rated voltage.

DC Input	RF_IC Input	Rate of fluctuation(%)
26.4V	12.0V	0.0
21.6V	12.0V	0.0
24V	12.0V	0.0

4.4 Test Modes

No.	Test Modes
TM1	802.11b TX mode
TM2	802.11g TX mode
TM3	802.11n20 TX mode
TM4	RX mode

4.5 Test Channel of EUT

Operation Band: 1

Bandwidth (MHz)	Lowest Channel (LCH) (MHz)	Middle Channel (MCH) (MHz)	Highest Channel (HCH) (MHz)
20	2412	2442	2472

5 Evaluation Results (Evaluation)

5.1 Interference Prevention Function

Test Requirement:	The EUT shall support one of the following functions: - Automatic identification transmission - Automatic identification reception
Test Method:	Notification No.88 of MIC, 2004
Procedure:	(1) For EUTs capable of automatically transmitting identification data a. Transmit identification data from EUT to Demodulator b. Confirm identification data is correctly received by Demodulator (2) For EUTs capable of automatically receiving identification data a. Transmit identification data from Link Partner to EUT b. Confirm communication link is established c. Link Partner shall respond by transmitting different identification data back to the EUT d. Confirm EUT stops transmitting, or confirm EUT recognizes that the two identification data are different
Operating Environment:	
Temperature:	22.7 °C
Humidity:	54.9 %
Atmospheric Pressure:	1010 mbar
Test voltage:	DC 24V

5.1.1 Conclusion

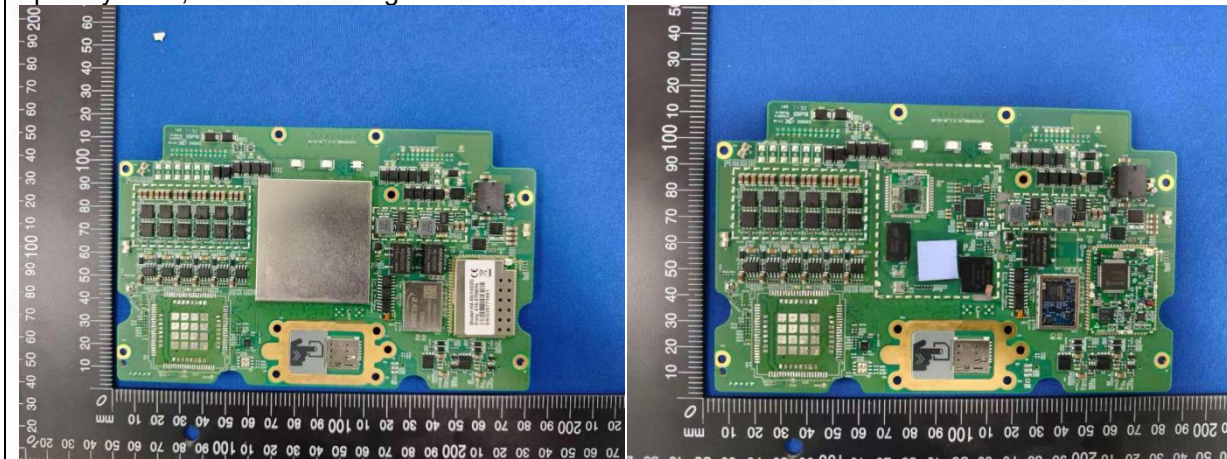
The detected ID of the device is below: E0:53:7B:92:55:BB Test result: The device meet the requirements PASS

5.2 RF Accessibility

Test Requirement:	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.
Operating Environment:	
Temperature:	24.5 °C
Humidity:	46.7 %
Atmospheric Pressure:	1010 mbar
Test voltage:	DC 24V

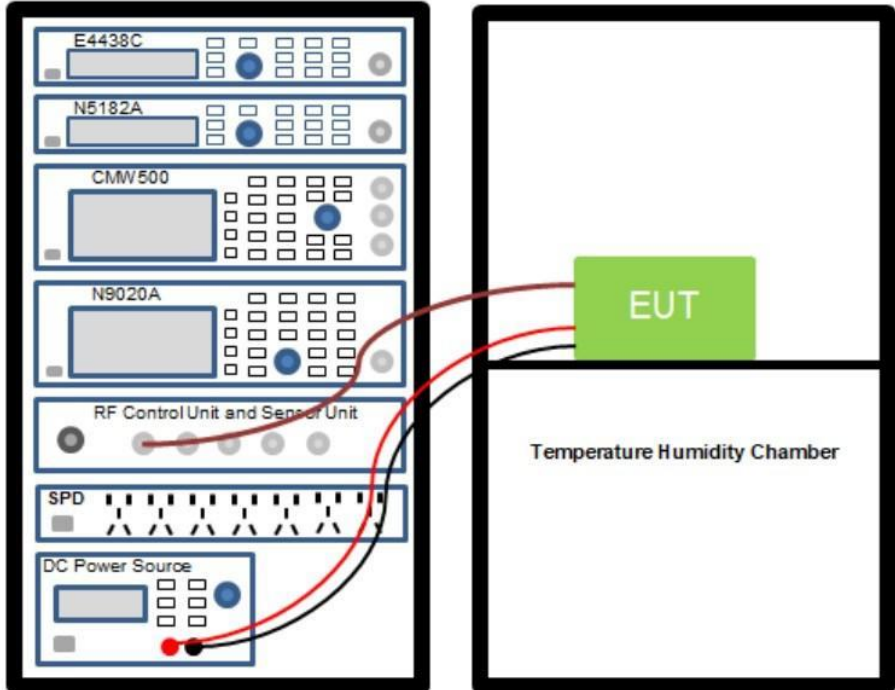
5.2.1 Conclusion

We apply the product for Japan RF certification, the RF module is protected by RF shield, If the shield will be open by force, it's will be damaged. See below the structure:



6 Radio Spectrum Matter Test Results (RF)

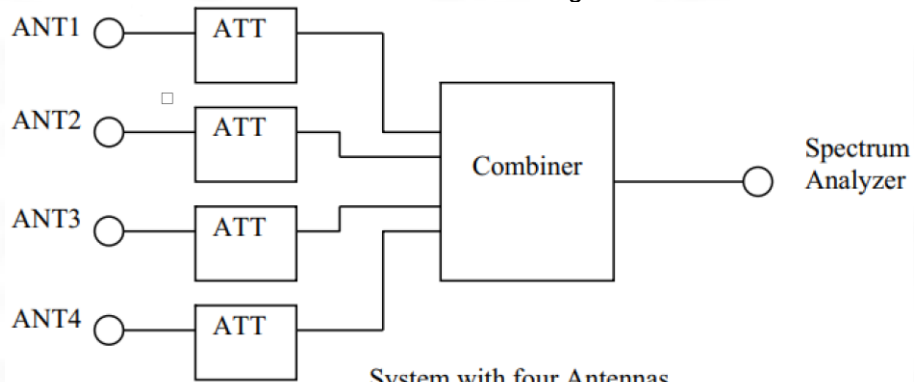
6.1 Tolerance of Frequency

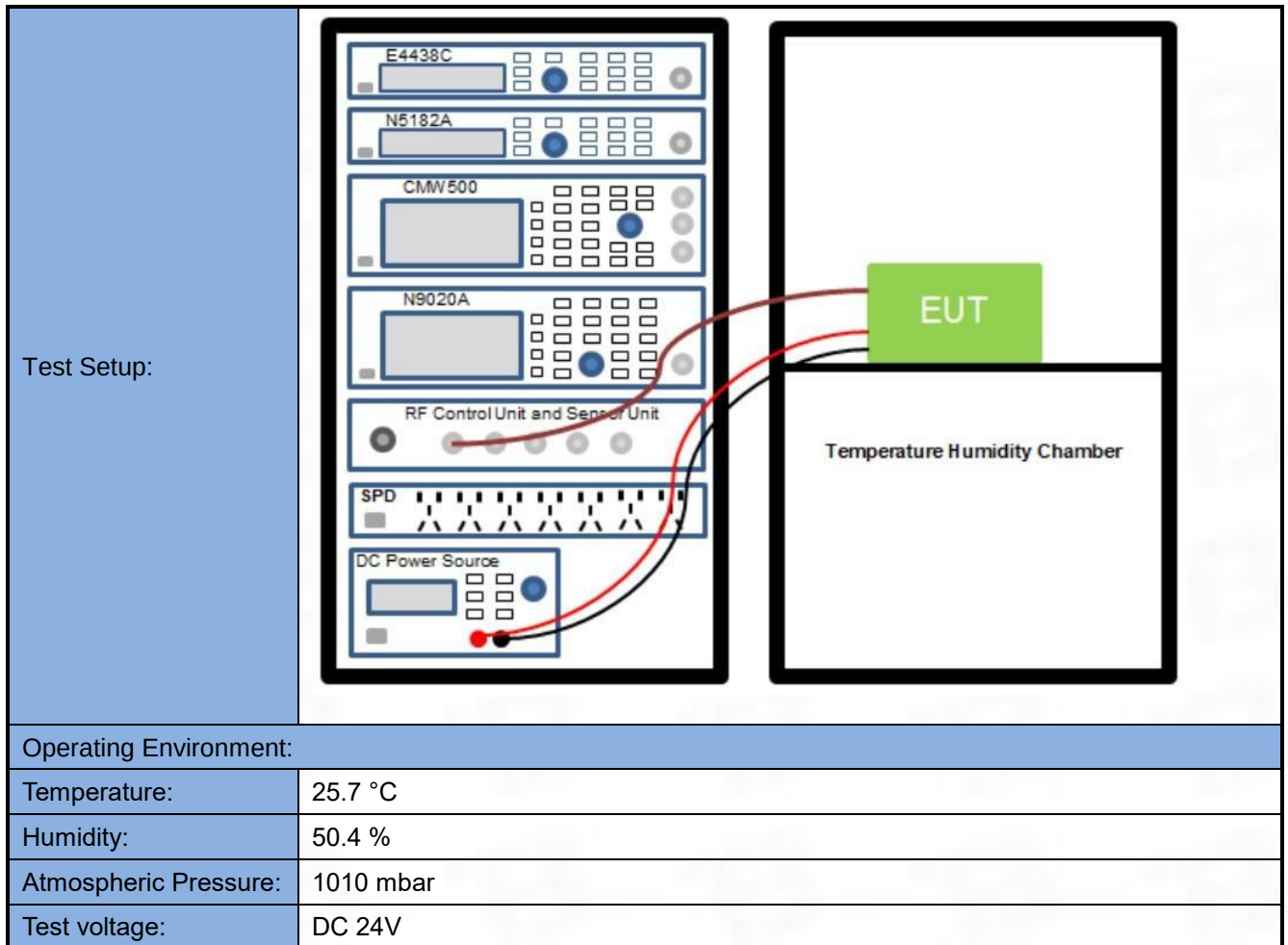
Test Requirement:	Article 2-1, Item 19		
Test Method:	Notification No.88 of MIC, 2004		
Test Limit:	±50ppm or less.		
Procedure:	Center frequency:	Test frequency	
	Span:	2 times channel bandwidth	
	RBW:	100 kHz (Modulation ON)	
	VBW:	100 kHz (Modulation ON)	
	Sweep data points:	1001 or greater	
	Sweep time:	Auto	
	Detector mode:	Positive peak	
	Indication mode:	Max hold	
	If the EUT cannot transmit in un-modulated mode then modulated mode measurements can be made, as follows: If the spectrum observed using the spectrum analyzer has a characteristic dip at the center, then the center frequency of the dip shall be regarded as the center frequency of the carrier.		
	Test Setup:		
Operating Environment:			
Temperature:	23.6 °C		
Humidity:	51.8 %		
Atmospheric Pressure:	1010 mbar		
Test voltage:	DC 24V		

6.1.1 Test Data

Please Refer to Appendix-2.4G WIFI for Details.

6.2 Occupied Bandwidth (99%)

Test Requirement:	Article 2-1, Item 19																		
Test Method:	Notification No.88 of MIC, 2004																		
Test Limit:	For OFDM Modulation: The measured bandwidth at the low and high channels shall meet the following requirements: - The lowest frequency of the measured bandwidth shall not be less than 2400 MHz - The highest frequency of the measured bandwidth shall not be greater than 2483.5 MHz [Occupied Bandwidth] 40 MHz or less For DSSS or other modulation: The measured bandwidth at the low and high channels shall meet the following requirements: - The lowest frequency of the measured bandwidth shall not be less than 2400 MHz - The highest frequency of the measured bandwidth shall not be greater than 2483.5 MHz [Occupied Bandwidth] 26 MHz or less																		
Procedure:	<table border="1"> <tr> <td>Center Frequency:</td><td>Test frequency</td></tr> <tr> <td>Span:</td><td>2 - 3.5 times the technical standard</td></tr> <tr> <td>RBW:</td><td>Within 3% of the technical standard</td></tr> <tr> <td>VBW:</td><td>Same as RBW</td></tr> <tr> <td>Sweep time:</td><td>Auto</td></tr> <tr> <td>Sweep data points:</td><td>1001 or greater</td></tr> <tr> <td>Detector mode:</td><td>Positive peak</td></tr> <tr> <td>Indication mode:</td><td>Max hold</td></tr> <tr> <td>BW setting:</td><td>99%</td></tr> </table> (1) Measure the signal bandwidth using a spectrum analyzer (2) For multiple antenna systems: a) Each antenna shall be individually measured b) If the measured occupied bandwidth for any antenna exceeds [(Occupied Bandwidth Limit) – 100kHz] then, in addition, the occupied bandwidth shall be measured with all antennas combined – see diagram below:  System with four Antennas	Center Frequency:	Test frequency	Span:	2 - 3.5 times the technical standard	RBW:	Within 3% of the technical standard	VBW:	Same as RBW	Sweep time:	Auto	Sweep data points:	1001 or greater	Detector mode:	Positive peak	Indication mode:	Max hold	BW setting:	99%
Center Frequency:	Test frequency																		
Span:	2 - 3.5 times the technical standard																		
RBW:	Within 3% of the technical standard																		
VBW:	Same as RBW																		
Sweep time:	Auto																		
Sweep data points:	1001 or greater																		
Detector mode:	Positive peak																		
Indication mode:	Max hold																		
BW setting:	99%																		

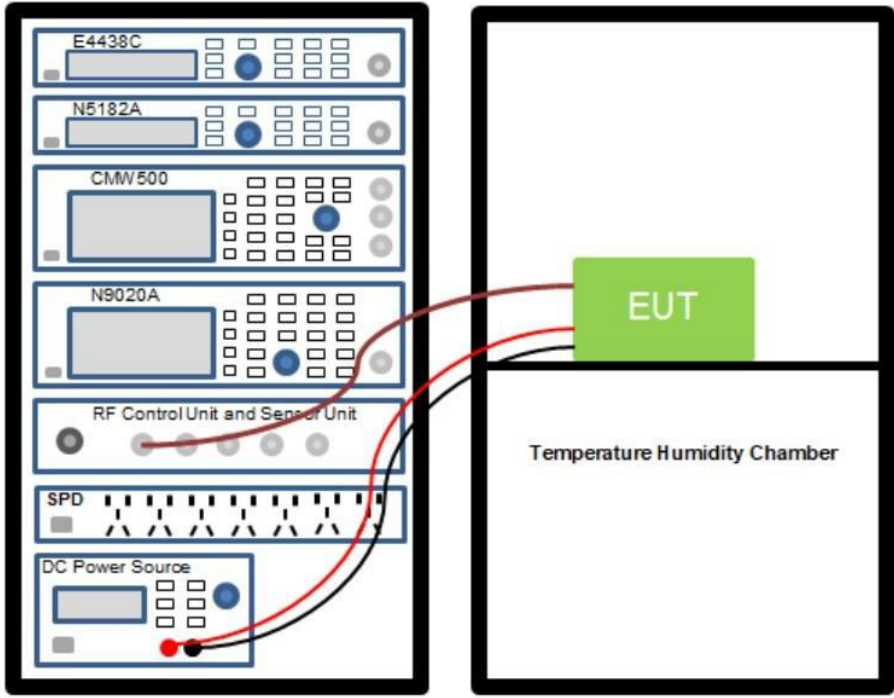


6.2.1 Test Data

Please Refer to Appendix-2.4G WIFI for Details.

6.3 Antenna Power and Tolerance

Test Requirement:	Article 2-1, Item 19																																																									
Test Method:	Notification No.88 of MIC, 2004																																																									
Test Limit:	Antenna Power: 26MHz<OBW≤40MHz: 5 mW/MHz or less Tolerance: +20% or less EIRP: 9.13dBm/MHz Antenna Power: OBW≤26MHz: 10mW/MHz or less Tolerance: +20% or less EIRP: 12.14dBm/MHz																																																									
Procedure:	<table><tr><td colspan="2">[Setting 1] – Search for peak power frequency</td></tr><tr><td>Center Frequency:</td><td>Test frequency</td></tr><tr><td>Span:</td><td>Approximately twice the occupied bandwidth</td></tr><tr><td>RBW:</td><td>1MHz</td></tr><tr><td>VBW:</td><td>Approximately three times the RBW</td></tr><tr><td>Sweep time:</td><td>Auto</td></tr><tr><td>Sweep data points:</td><td>1001 or greater</td></tr><tr><td>Detector mode:</td><td>Positive peak</td></tr><tr><td>Indication mode:</td><td>Max hold</td></tr><tr><td colspan="2"> </td></tr><tr><td colspan="2">[Setting 2] – Measurement of average antenna power for FHSS, DSSS, OFDM</td></tr><tr><td>Frequency:</td><td>Frequency of peak power found using [Setting 1]</td></tr><tr><td>Span:</td><td>0 Hz</td></tr><tr><td>RBW:</td><td>3 MHz (FHSS-Channel Spacing ≤ 1MHz) 1MHz (DSSS, OFDM, FHSS-Channel Spacing > 1MHz)</td></tr><tr><td>Detector mode:</td><td>Sample</td></tr><tr><td>Sweep:</td><td>Minimum time required to make an accurate measurement.</td></tr><tr><td> </td><td>For burst type (intermittent) transmission sweep time shall be greater than one burst interval</td></tr><tr><td>Sweep data points:</td><td>1001 or greater</td></tr><tr><td colspan="2"> </td></tr><tr><td colspan="2">[Setting 3] – Measurement of average antenna power other than for FHSS, DSSS, OFDM</td></tr><tr><td>Frequency:</td><td>Frequency of peak power found using [Setting 1]</td></tr><tr><td>Span:</td><td>0 Hz</td></tr><tr><td>RBW:</td><td>Bandwidth sufficient to cover that occupied by the carrier</td></tr><tr><td>VBW:</td><td>Bandwidth sufficient to cover that occupied by the carrier</td></tr><tr><td>Detector mode:</td><td>Sample</td></tr><tr><td>Sweep:</td><td>Minimum time required to make an accurate measurement.</td></tr><tr><td> </td><td>For burst type (intermittent) transmission sweep time shall be greater than one burst interval</td></tr><tr><td>Sweep data points:</td><td>1001 or greater</td></tr></table> (1) After configuring the spectrum analyzer to [Setting 1], find the frequency of maximum transmitted power		[Setting 1] – Search for peak power frequency		Center Frequency:	Test frequency	Span:	Approximately twice the occupied bandwidth	RBW:	1MHz	VBW:	Approximately three times the RBW	Sweep time:	Auto	Sweep data points:	1001 or greater	Detector mode:	Positive peak	Indication mode:	Max hold			[Setting 2] – Measurement of average antenna power for FHSS, DSSS, OFDM		Frequency:	Frequency of peak power found using [Setting 1]	Span:	0 Hz	RBW:	3 MHz (FHSS-Channel Spacing ≤ 1MHz) 1MHz (DSSS, OFDM, FHSS-Channel Spacing > 1MHz)	Detector mode:	Sample	Sweep:	Minimum time required to make an accurate measurement.		For burst type (intermittent) transmission sweep time shall be greater than one burst interval	Sweep data points:	1001 or greater			[Setting 3] – Measurement of average antenna power other than for FHSS, DSSS, OFDM		Frequency:	Frequency of peak power found using [Setting 1]	Span:	0 Hz	RBW:	Bandwidth sufficient to cover that occupied by the carrier	VBW:	Bandwidth sufficient to cover that occupied by the carrier	Detector mode:	Sample	Sweep:	Minimum time required to make an accurate measurement.		For burst type (intermittent) transmission sweep time shall be greater than one burst interval	Sweep data points:	1001 or greater
[Setting 1] – Search for peak power frequency																																																										
Center Frequency:	Test frequency																																																									
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Detector mode:	Positive peak																																																									
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[Setting 2] – Measurement of average antenna power for FHSS, DSSS, OFDM																																																										
Frequency:	Frequency of peak power found using [Setting 1]																																																									
Span:	0 Hz																																																									
RBW:	3 MHz (FHSS-Channel Spacing ≤ 1MHz) 1MHz (DSSS, OFDM, FHSS-Channel Spacing > 1MHz)																																																									
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	For burst type (intermittent) transmission sweep time shall be greater than one burst interval																																																									
Sweep data points:	1001 or greater																																																									

	(2) After configuring the spectrum analyzer to [Setting 2], measure the Average Burst Power of the frequency found in (1) Antenna Power (W/MHz) = Average Burst Power
Test Setup:	
Operating Environment:	
Temperature:	24 °C
Humidity:	47.1 %
Atmospheric Pressure:	1010 mbar
Test voltage:	DC 24V

6.3.1 Test Data

Please Refer to Appendix-2.4G WIFI for Details.

6.4 Spurious Emission Intensity

Test Requirement:	Article 2-1, Item 19	
Test Method:	Notification No.88 of MIC, 2004	
Test Limit:	(1) Below 2387 MHz: 2.5 μ W (-26 dBm)/MHz or less (2) 2387 to 2400 MHz: 25.0 μ W (-16 dBm)/MHz or less (3) 2483.5 to 2496.5 MHz: 25.0 μ W (-16 dBm)/MHz or less (4) Over 2496.5 MHz: 2.5 μ W (-26 dBm)/MHz or less	
Procedure:	[Setting 1]	
	Frequency range:	(see Note 1)
	RBW:	1 MHz
	VBW:	1 MHz
	Sweep time:	Minimum time required to make an accurate measurement
	Sweep Data Points:	1001 or greater
	Detector mode:	Positive peak
	Indication mode:	Max hold (see Note 2)
	Note 1:	Measurement range shall be 30 MHz to 12.5 GHz, except for the following cases: -FHSS, FHSS+DSSS, FHSS+OFDM:2374 MHz to 2509.5 MHz -Other than FHSS, FHSS+DSSS, FHSS+OFDM: 2400 MHz to 2483.5 MHz
	Note 2:	Sweep shall be repeated until the max hold waveform is stable.
	[Setting 2]	
	Center frequency:	Frequency of spurious emission found using [Setting 1]
	Span:	0 Hz
	RBW:	1 MHz
	VBW:	1 MHz
	Sweep time:	Minimum time required to make an accurate measurement. For burst type (intermittent) spurious emissions, sweep time shall be greater than one burst interval
	Sweep Data Points:	1001 or greater
	Detector mode:	Sample
	[Setting 3]	
	Frequency range:	2374 MHz to 2400 MHz 2483.5 MHz to 2509.5 MHz
	RBW:	30 kHz
	VBW:	30 kHz
	Sweep time:	Minimum time required to make an accurate measurement.
	Sweep data points:	1001 or greater
	Detector mode:	Positive peak
	Indication mode:	Max hold
	(1) After configuring the spectrum analyzer to [Setting 1], search for spurious emissions from 30 MHz to 12.5 GHz. If the sweep range does not cover the required measurement frequency range then the measurement range will need to	

be divided into sufficient sections of size [RBW x Sweep Data Points]. If spurious emissions greater than [Limit - 3dB] are found, then more detailed measurements are required, go to step (2)

(2) Configure the spectrum analyzer using [Setting 2] and measure the average signal amplitude.

If the spurious emission is burst type (intermittent), then the average value shall not include signal OFF time.

If spurious emissions ranging from 30 MHz to 2374 MHz and from 2509.5MHz to 12.5GHz are over the limit, then the test result is Fail.

If spurious emissions ranging from 2374 MHz to 2400 MHz and from 2483.5 MHz to 2509.5 MHz are over the limit, then further detailed measurements are required, go to step (3)

(3) In the following cases, measure the spurious emissions using [Setting 3]

- Case1: FHSS, FHSS+DSSS, FHSS+OFDM
- Case2: Other than FHSS, FHSS+DSSS, FHSS+OFDM, and the spurious emissions in step (2) are over the limit

(4) Calculate the spurious emission value (Calculated Value) using following the formula below:

Calculated Value = (Measured Value using (3) + 15.2dB)

Note: 15.2dB adjustment is derived from the Conversion Factor of RBW

Conversion Factor of RBW = $10 \times \log(\text{Reference Bandwidth} / \text{RBW of measurement}) = 15.2 \text{ [dB]}$ Where: Reference Bandwidth = 1 MHz

RBW of measurement = 30 kHz

(5) If the calculated value using (4) is over the Limit (section 6.7), go to (6)

(6) Configure the spectrum analyzer to [Setting 3] then make the following changes:

Frequency: Frequency of spurious emission

Span: 1 MHz

(7) After sweep, send the span data set to the PC

(8) Convert measured data from dBm to Watts

(9) Sum all the data using the formula below. If the sum is within the limit, the test result is Pass, otherwise, Fail

$$P_s = \left(\sum_{i=1}^n E_i \right) \times \frac{S_w}{RBW \times k \times n}$$

Ps: Sum (Watts)

Ei: Measured value at each point in the Span (Watts) Sw: Span (1MHz)

n: Number of measurement points in the Span

k: Correction factor for Equivalent Noise Bandwidth, specific to each spectrum analyzer, check the instrument user guide

RBW: Resolution Bandwidth (MHz).

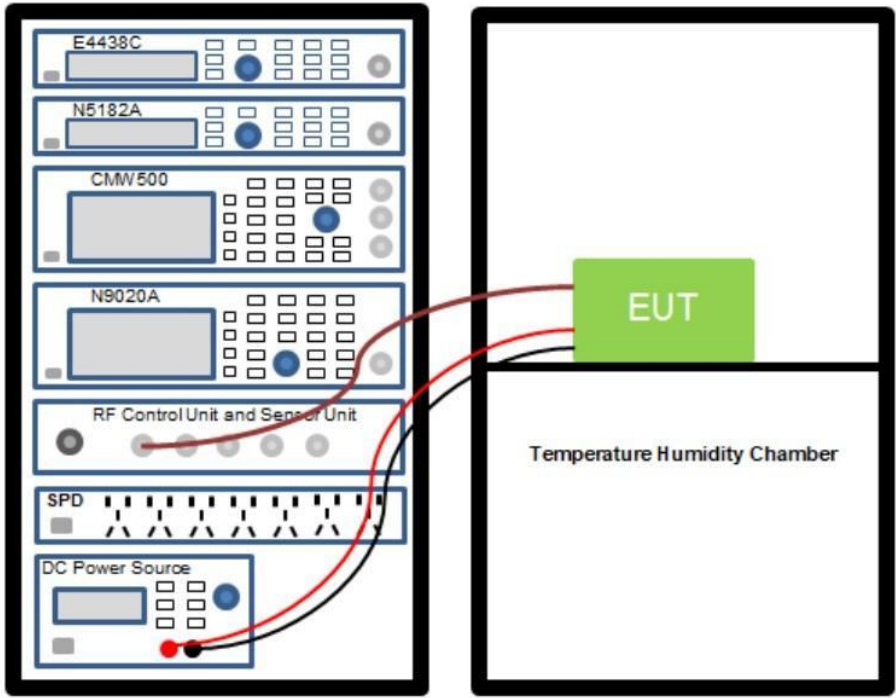
(10) If the EUT has multiple antennas, measure the spurious emission from each individual antenna using steps (1) through (9)

(11) Convert the individual antenna spurious level measurements (step (10)) from dB to absolute values

(12) Combine (sum) the absolute values of the spurious measurements at each frequency for each antenna (to create a single composite spectrum of spurious emissions)

(13) Ensure that the composite spectrum does not exceed the Limit defined in 6.7 (Technical Standard)

(14) Configuring the spectrum analyzer using [Setting 3] and measure the spurious emissions with all the antennas electrically combined

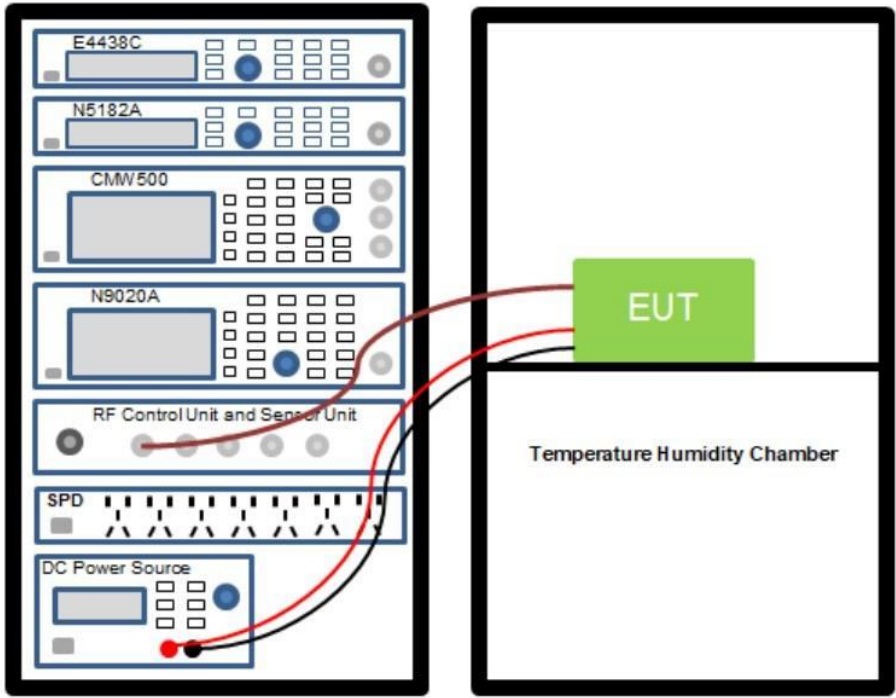
Test Setup:	
Operating Environment:	
Temperature:	23.1 °C
Humidity:	51.8 %
Atmospheric Pressure:	1010 mbar
Test voltage:	DC 24V

6.4.1 Test Data

Please Refer to Appendix-2.4G WIFI for Details.

6.5 Secondary Radiated Emissions

Test Requirement:	Article 2-1, Item 19	
Test Method:	Notification No.88 of MIC, 2004	
Test Limit:	(1) Below 1 GHz: 4 nW (-54dBm) or less (2) Above 1 GHz: 20 nW (-47dBm) or less	
Procedure:	[Setting 1]	
	Frequency range:	30 MHz ~ 12.5 GHz
	RBW:	Below 1 GHz:100 kHz
		Above 1 GHz:1 MHz
	VBW:	Below 1 GHz:100 kHz
		Above 1 GHz:1 MHz
	Sweep time:	Auto
	Sweep data points:	1001 or greater
	Detector mode:	Positive peak
	Indication mode:	Max hold
	[Setting 2]	
	Center Frequency:	Frequency of spurious emission found using [Setting 1]
	Span:	0 Hz
	RBW:	Below 1 GHz:100 kHz
		Above 1 GHz:1 MHz
	VBW:	Below 1 GHz:100 kHz
		Above 1 GHz:1 MHz
	Sweep time:	Auto
	Sweep data points:	1001 or greater
	Detector mode:	Sample
	(1) Configure the spectrum analyzer to [Setting 1] and then search for spurious emissions in the range 30 MHz to 12.5GHz. If the sweep range does not cover the required measurement frequency range then the measurement range will need to be divided into sufficient sections of size [RBW x Sweep Data Points].	
	(2) If spurious emissions are found with an amplitude greater than [Limit - 10dB] then perform further detailed measurements as described in (3)	
	(3) Configure the spectrum analyzer using [Setting 2] and measure the average signal amplitude.	
	If the spurious emission is burst type (intermittent), then the average value shall not include signal OFF time Multiple Antenna Systems	
	If the EUT has multiple antennas then emissions from each antenna shall be measured individually, as described below	
	(4) For each antenna repeat steps (1) through (3). Convert all spurious level measurements from dB to absolute value	
	(5) Combine (sum) the absolute values of the spurious measurements at each frequency for each antenna (to create a single composite spectrum of spurious emissions)	
	(6) Ensure that the composite spectrum does not exceed the Limit	

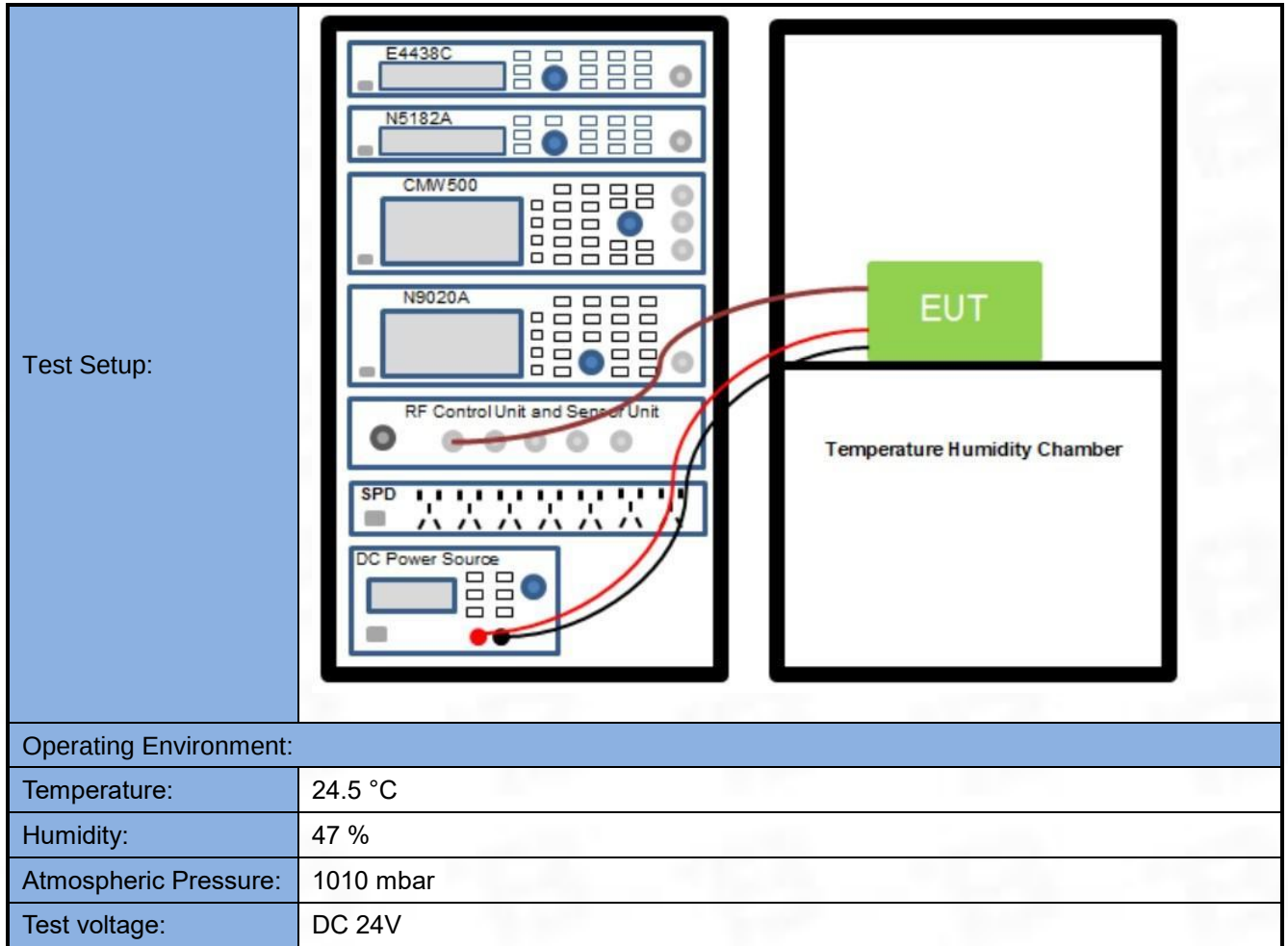
Test Setup:	
Operating Environment:	
Temperature:	23.2 °C
Humidity:	48.4 %
Atmospheric Pressure:	1010 mbar
Test voltage:	DC 24V

6.5.1 Test Data

Please Refer to Appendix-2.4G WIFI for Details.

6.6 Carrier Sensing

Test Requirement:	Article 2-1, Item 19	
Test Method:	Notification No.88 of MIC, 2004	
Procedure:	Signal Generator Settings	
	[Setting 1]	
	Output frequency:	Center of test frequency
	Modulation:	Un-modulated, see note
	Output level:	The required level at the EUT antenna input, as defined by the applicant
	Note:	
	If the EUT's carrier sensing cannot function with an un-modulated signal at the center of the test frequency, then the un-modulated signal can be moved away from the center.	
	Spectrum Analyzer Settings	
	[Setting 2]	
	Frequency:	Center of test frequency
	Span:	50 MHz
	RBW:	1 MHz
	VBW:	1 MHz
	Trigger:	Free running
	Detector:	Positive peak
	Testing without a Link Partner	
	(1) Set the spectrum analyzer to [Setting 2]	
	(2) With the signal generator OFF, set the EUT to transmit mode and confirm that the transmission meets the following characteristics:	
	a.Modulation:OFDM	
	b.Occupied bandwidth:over 26 MHz	
	(3) Set the EUT to receive mode	
	(4) First, set the signal generator output ON, then set the EUT to transmit mode and confirm that the EUT does NOT transmit a signal with the following characteristics:	
	a.Modulation:OFDM	
	b.Occupied bandwidth:over 26 MHz	
	Testing with a Link Partner	
	(1) Set the spectrum analyzer to [Setting 2]	
	(2) Set the signal generator output to OFF	
	(3) After establishing a connection between the EUT and the Link Partner, set the EUT to transmit mode and confirm that the transmission meets the following characteristics:	
	a.Modulation:OFDM	
	b.Occupied bandwidth:over 26 MHz	
	(4) Set the EUT to receive mode	
	(5) Set the signal generator output ON, then set the EUT to transmit mode and confirm that the EUT does NOT transmit a signal with the following characteristics:	
	a.Modulation:OFDM	
	b.Occupied bandwidth:over 26 MHz	



6.6.1 Test Data

This device didn't support 40M bandwidth, not applicable

7 Test Setup Photos

Please refer to Appendix I Test Setup Photos.

8 EUT Constructional Details (EUT Photos)

Please refer to Appendix II External Photos and Appendix III Internal Photos.



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-- END OF REPORT --