



JAPAN Radio Test Report

WLAN 2.4GHz Band

APPLICANT : Lenovo (Shanghai) Electronics Technology Co., Ltd.

PRODUCT NAME : Portable Tablet Computer

BRAND NAME : Lenovo

MODEL NAME : Lenovo TB-8505FS

TYPE EMISSIONS : 13M7G1D (DSSS_802.11b) ;
17M4G1D/D1D (OFDM_802.11g) ;
18M7G1D/D1D (OFDM_802.11n_HT20) ;
36M8G1D/D1D (OFDM_802.11n_HT40)

DECLARATION : 9.00 mW/MHz (DSSS_802.11b) ;

OUTPUT POWER : 5.50 mW/MHz (OFDM_802.11g) ;
5.00 mW/MHz (OFDM_802.11n_HT20) ;
2.40 mW/MHz (OFDM_802.11n_HT40)

STANDARD : Article 49-20 and the relevant articles of the
Ordinance Regulating Radio Equipment

TEST PROCEDURE : MIC Notice No.88 Appendix No.43



The product sample received on Aug. 12, 2019 and completely tested on Sep. 05, 2019. We, Sporton International Inc. (KunShan), would like to declare that the tested sample has been evaluated in accordance with the procedures given in MIC Notice No.88 Appendix No.43 and shown to be compliant with the applicable technical standards. Article 2 Paragraph 1 Item 19 of the Certificate Ordinance of the Radio Law indicates the classification of the specified radio equipment.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. (KunShan), the test report shall not be reproduced except in full.

James Huang

Prepared by: James Huang / Manager

Jones Tsai

Approved by: Jones Tsai / Manager



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TABLE OF CONTENTS

REVISION HISTORY	4
SUMMARY OF TEST RESULT	5
1 GENERAL DESCRIPTION	6
1.1 Applicant	6
1.2 Manufacturer	6
1.3 Feature of Equipment Under Test	7
1.4 Modification of EUT	8
1.5 Testing Site	9
1.6 Applied Standards	9
1.7 Ancillary Equipment List	9
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	10
2.1 Carrier Frequency Channel	10
2.2 EUT Operation Test Setup	10
3 TEST RESULT	11
3.1 Frequency Tolerance Measurement	11
3.2 Occupied Bandwidth and Spread-spectrum Bandwidth / Spread Factor Measurement	12
3.3 Unwanted Emission Intensity Measurement	14
3.4 RF Output Power / Tolerance	16
3.5 Limitation of Collateral Emission of Receiver Measurement	18
3.6 Transmission Antenna Gain (EIRP Antenna Power) Measurement	20
3.7 Transmission Radiation Angle Width (3dB Beamwidth) Measurement	22
3.8 Radio Interference Prevention Capability Measurement	24
3.9 Carrier Sense	25
3.10 Construction Protection Confirmation Method	26
4 LIST OF MEASURING EQUIPMENT	27
APPENDIX A. SETUP PHOTOGRAPHS	
APPENDIX B. TEST RESULTS	
APPENDIX C. TEST PLOTS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
JR981204-03B	Rev. 01	Initial issue of report	Sep. 25, 2019



SUMMARY OF TEST RESULT

Report Section	Description	Result
3.1	Frequency Tolerance	Pass
3.2	Occupied Bandwidth and Spread-spectrum Bandwidth / Spread Factor	Pass
3.3	Unwanted Emission Intensity	Pass
3.4	RF Output Power / Tolerance	Pass
3.5	Limitation of Collateral Emission of Receiver	Pass
3.6	Transmission Antenna Gain (EIRP Antenna Power)	N/A
3.7	Transmission Radiation Angle Width (3dB Beam width)	N/A
3.8	Radio Interference Prevention Capability	Pass
3.9	Carrier Sense Function	Pass
3.10	Construction Protection Confirmation	Pass



1 General Description

1.1 Applicant

Lenovo (Shanghai) Electronics Technology Co., Ltd.

Section 304-305, Building No. 4, # 222, Meiyue Road, China (Shanghai) Pilot Free Trade Zone

1.2 Manufacturer

Lenovo PC HK Limited

23/F, Lincoln House, Taikoo Place 979 King's Road, Quarry Bay, Hong Kong P.R.CHINA

1.3 Feature of Equipment Under Test

Product Feature & Specification		
Product Name	Portable Tablet Computer	
Brand Name	Lenovo	
Model Name	Lenovo TB-8505FS	
Support Category / Frequency Range	Article 2-1-19 / 2400MHz ~ 2483.5MHz	
WLAN Type of Modulation	<input checked="" type="checkbox"/> Direct Spreading (DS) <input checked="" type="checkbox"/> Orthogonal frequency-division multiplexing (OFDM) <input type="checkbox"/> Frequency Hopping (FH)	
RF Technology	<input checked="" type="checkbox"/> 802.11b <input checked="" type="checkbox"/> 802.11g <input checked="" type="checkbox"/> 802.11n-HT20 <input checked="" type="checkbox"/> 802.11n-HT40	
Number of Channels	20MHz System	13
	40MHz System	9
Channel Spacing	5 MHz	
Declaration RF Output Power	9.00 mW/MHz (DSSS 802.11b mode) 5.50 mW/MHz (OFDM 802.11g mode) 5.00 mW/MHz (OFDM 802.11n_HT20 mode) 2.40 mW/MHz (OFDM 802.11n_HT40 mode)	
Antenna Power (E.I.R.P)	6.542 dBm/MHz (DSSS 802.11b mode) 4.404 dBm/MHz (OFDM 802.11g mode) 3.990 dBm/MHz (OFDM 802.11n_HT20 mode) 0.802 dBm/MHz (OFDM 802.11n_HT40 mode)	
Type of Modulation	<input checked="" type="checkbox"/> BPSK <input checked="" type="checkbox"/> QPSK <input checked="" type="checkbox"/> 16QAM <input checked="" type="checkbox"/> 64QAM <input type="checkbox"/> 256QAM	
Power Source ^{NOTE}	<input checked="" type="checkbox"/> Commercial power	AC 100 ~ 240V
	<input checked="" type="checkbox"/> External Power Source	DC 5V, 2.0A
	<input checked="" type="checkbox"/> Lithium battery	DC 3.86V, 5000mAh
	<input type="checkbox"/> UM battery	DC 1.2V

NOTE: When EUT be operated at $\pm 10\%$ from the normal supply voltage, the supply voltage of RF part was varied within $\pm 1\%$. All test cases were done under the normal supply voltage.

Power Supply voltage 3.86 Vdc (Nominal)	Power Supply voltage 4.246 Vdc (+10%)	Power Supply voltage 3.474 Vdc (-10%)
1.8	1.8	1.8
3.3	3.3	3.3
Measurement point		



Antenna Information			
Brand Name :	N/A	Model Name :	N/A
Antenna Type :	IFA	Antenna Gain :	-3.00 dBi

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4 Modification of EUT

No modifications are made to the EUT during all test items.



1.5 Testing Site

Test Site	Sporton International Inc. (KunShan) Mobile Communications Laboratory
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone, Jiangsu province, China TEL: +86-0512-5790-0158 FAX: +86-0512-5790-0958
Test Site No.	Sporton Site No.: TH01-KS

Test Items	Uncertainty	Remark
Occupied Channel Bandwidth	± 101.5 kHz	Confidence 95%
RF output power, conducted	± 0.68 dB	Confidence 95%
Frequency Tolerance	± 101.5 kHz	Confidence 95%
Power density, conducted	± 0.46 dB	Confidence 95%
Temperature	± 0.8 °C	Confidence 95%
Humidity	± 3 %	Confidence 95%
Time	± 0.33 %	Confidence 95%

1.6 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- Article 49-20 and the relevant articles of the Ordinance Regulating Radio Equipment

Remark:

- All test items were verified and recorded according to the standards and without any deviation during the test.
- The measurement was implemented in accordance with MIC Notice No. 88 Appendix No. 43.

1.7 Ancillary Equipment List

None.



2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

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

2.2 EUT Operation Test Setup

During testing, RF test program provided by the customer was used to control the operating channel as well as the output power level.

3 Test Result

3.1 Frequency Tolerance Measurement

3.1.1 Limit

Item	Limits
Frequency Tolerance	≤50ppm

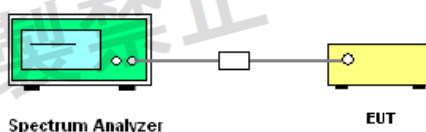
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedure

1. Frequency accuracy of instrument shall be less than 10% of limits tolerance (5ppm).
2. Two methods for the item
 - a. CW Tone method
 - i. Setting of SA is following as: RBW:1kHz / VBW:30kHz.
 - ii. Maker Max. level to get measuring frequency f.
 - b. 10dB down method
 - i. Setting of SA is following as: RBW:100kHz / VBW: 100kHz / Trace: MaxHold
 - ii. Display line Level = Max. level – 10dB to place two markers, highest(fH) and lowest(fL) frequency
 - iii. Determine measuring frequency $f = (fH - fL) / 2$
3. The frequency tolerance test case is directly measured using spectrum analyzer. Then the frequency error formula is $(f - f_c) / f_c \times 10^6$ ppm and the limit is less than ±50ppm.

3.1.4 Test Setup



3.1.5 Test Deviation

There is no deviation with the original standard.

3.1.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.1.7 Test Result of Frequency Tolerance

Please refer to Appendix B.

3.2 Occupied Bandwidth and Spread-spectrum Bandwidth / Spread Factor Measurement

3.2.1 Limit

Item	Limits
Occupied Band Width	DS \leq 26MHz; Others \leq 26MHz OFDM (For BW=20MHz) \leq 26MHz OFDM (For BW=40MHz) \leq 38MHz
Spreading Bandwidth	DS \geq 500 kHz

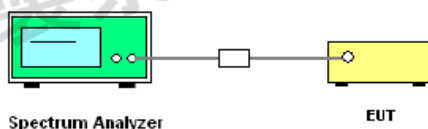
3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

3.2.3 Test Procedures

1. Setting of SA is following as: RBW: 300KHz / VBW:300KHz / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold.
2. EUT have transmitted each modulation signal and fixed channelize (For DSSS or OFDM Device). SA set to 99% of occupied bandwidth to measure occupied bandwidth. The limit is less than 26MHz (For DSSS or OFDM Device).
3. SA set to 90% of occupied bandwidth to measure Spread Spectrum Bandwidth and must greater than 500kHz.
4. Spread Spectrum Factor = Spread Spectrum Bandwidth / modulation rate of EUT.
5. Spread Spectrum Factor limit is greater than 5.

3.2.4 Test Setup





3.2.5 Test Deviation

There is no deviation with the original standard.

3.2.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.2.7 Test Result of Occupied Bandwidth and Spread-spectrum Bandwidth / Spread Factor Measurement

Please refer to Appendix B.

3.3 Unwanted Emission Intensity Measurement

3.3.1 Limit

Item	Limits
Tx Spurious Emission	$\leq 2.5 \mu\text{W}$ ($2387\text{MHz} > f$; $2496.5\text{MHz} < f$)
	$\leq 25 \mu\text{W}$ ($2387\text{MHz} \leq f < 2400\text{MHz}$) and ($2483.5\text{MHz} < f \leq 2496.5\text{MHz}$)

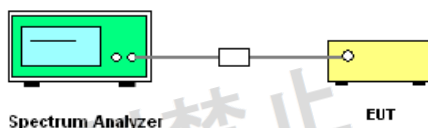
3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

1. EUT have transmitted the maximum power and fixed channelize.
2. Setting of SA is following as: RBW:1MHz / VBW:1MHz above 1GHz, Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold.
3. Setting of SA is following as: RBW:100KHz / VBW:100KHz under 1GHz, Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold.
4. Setting of SA is following as 30MHz and stop frequency 2387MHz Then to mark peak reading value + cable loss shall be less than 2.5 μW .
5. SA adjusted to start frequency 2387MHz and stop frequency 2400MHz. Then to mark peak reading value + cable loss shall be less than 25 μW .
6. SA adjusted to start frequency 2483.5MHz and stop frequency 2496.5MHz Then to mark peak reading value + cable loss shall be less than 25 μW .
7. SA adjusted to start frequency 2496.5MHz and stop frequency 12500MHz Then to mark peak reading value + cable loss shall be less than 2.5 μW .
8. If the Result_Value is over the requirement, take total sum of 1MHz band centered at the spur frequency like ACLP measurement as Result_Value.

3.3.4 Test Setup





3.3.5 Test Deviation

There is no deviation with the original standard.

3.3.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.3.7 Test Result of Unwanted Emission Intensity

Please refer to Appendix B.

3.4 RF Output Power / Tolerance

3.4.1 Limit

Item	Limits
Antenna Power Density	$\leq 10\text{mW/MHz}$ (OFDM,DS from 2400~2483.5MHz) $\leq 10\text{mW}$ (Other from 2400~2483.5MHz)
Antenna Power Error	+20%, -80% (Base on manufacturer declare antenna power density)

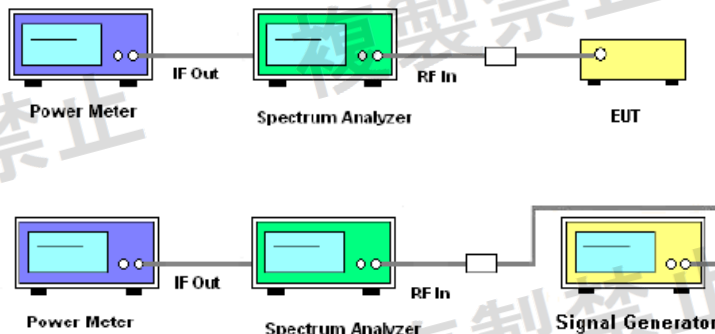
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. A power meter is connected on the IF output port of the spectrum analyzer.
2. Adjust the spectrum analyzer to have the center frequency the same with the measured carrier.
RBW=VBW=1MHz, detector mode is positive peak. Turn off the averaging function and use zero span.
3. The calibrating signal power shall be reduced to 0 dBm and it shall be verified that the power meter reading also reduces by 10 dB.
4. Connect the equipment to be measured. Using the following settings of the spectrum analyzer in combination with "max hold" function, find the frequency of highest power output in the power envelope: center frequency equal to operating frequency; RBW & VBW: 1 MHz; detector mode: positive peak; averaging: off; span: 3 times the spectrum width; amplitude: adjust for middle of the instrument's range. The frequency found shall be recorded.
5. Set the center frequency of the spectrum analyzer to the found frequency and switch to zero span. The power meter indicates the measured power density "E".
6. Remove the EUT and put the replacing standard signal generator (SSG). Set the standard signal generator (SSG) at same frequency and transmit on, then set SSG output power at P_t to give the equivalent output level of "E".
7. Calculate antenna power density by the formula below $PD = P_t + 10 \cdot \log(1/x)$.
x: The duty cycle of the EUT in continuously transmitting mode
 P_t : Output power of the SSG
8. Antenna Power Error is definition that actual measure antenna power tolerance between + 20% to - 80% power range that base on manufacturer declare the conducted power density.

3.4.4 Test Setup



3.4.5 Test Deviation

There is no deviation with the original standard.

3.4.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.4.7 Test Result of RF Output Power / Tolerance

Please refer to Appendix B.

3.5 Limitation of Collateral Emission of Receiver Measurement

3.5.1 Limit

Item	Limits
Rx Spurious Emission	$\leq 4\text{nW}$ ($f < 1\text{GHz}$)
	$\leq 20\text{nW}$ ($1\text{GHz} \leq f$)

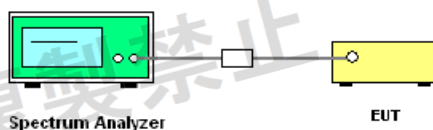
3.5.2 Measuring Instruments

See list of measuring instruments of this test report.

3.5.3 Test Procedures

1. EUT have the continuous reception mode and fixed only one channelize.
2. SA set RBW: 100KHz and VBW: 100KHz. Then adjust to start frequency 30MHz and stop frequency 1000MHz. Search to mark peak reading value + cable loss shall be less than 4nW.
3. SA set RBW: 1MHz and VBW: 1MHz. Then adjust to start frequency 1000MHz and stop frequency 12500MHz. Search to mark peak reading value + cable loss shall be less than 20nW.
4. If power level of lower emissions are more than 1/10 of limit (.0.4nW for $f < 1\text{GHz}$, 2nW for $f \geq 1\text{GHz}$), all those are to be indicated in the 2nd and 3rd lines. If others are 1/10 or less more of the limit, no necessary to be indicated.

3.5.4 Test Setup





3.5.5 Test Deviation

There is no deviation with the original standard.

3.5.6 EUT Operation during Test

The EUT was programmed to be in continuously reception mode.

3.5.7 Test Result of Limitation of Collateral Emission of Receiver

Please refer to Appendix B.

3.6 Transmission Antenna Gain (EIRP Antenna Power) Measurement

3.6.1 Limit

Item	Limits
EIRP Power Density	$\leq 12.14\text{dBm/MHz}$ (OFDM, DS from 2400~2483.5MHz)
	$\leq 12.14\text{dBm}$ (Other from 2400~2483.5MHz)
Remark: This test item will not be applied to EIRP power of EUT is lower than 12.14dBm/MHz.	

3.6.2 Measuring Instruments

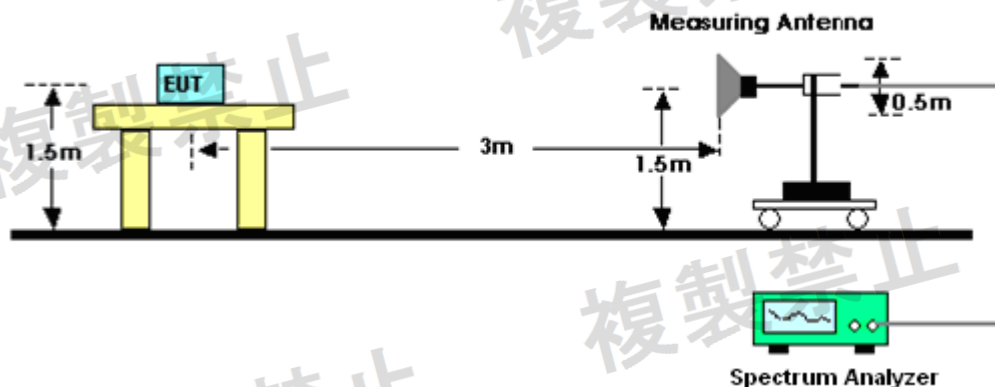
See list of measuring instruments of this test report.

3.6.3 Test Procedures

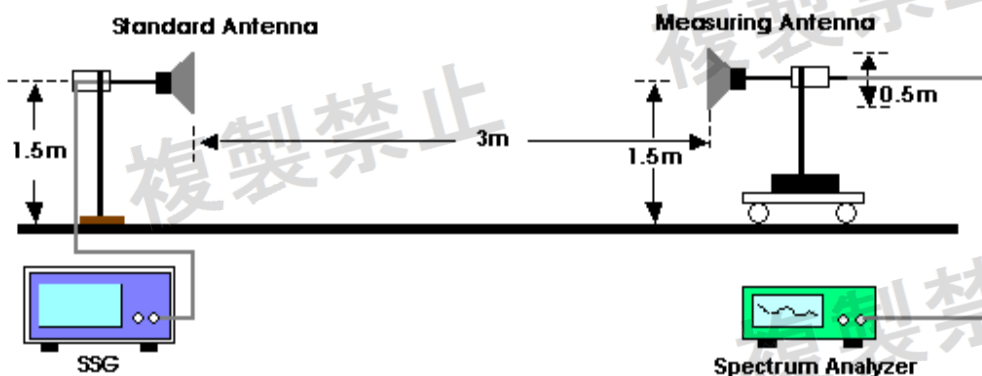
1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of EUT height and swing it to find the maximum output of the measuring antenna. The output level at the spectrum analyzer is read as "E".
3. Remove the EUT from the turn table and put the replacing antenna facing to measuring antenna at same height. Set the standard signal generator (SSG) at same frequency and transmit on then receive the signal.
4. Swing the replacing antenna give a maximum receiving level.
5. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of replacing antenna height and swing it to find the maximum receiving level.
6. Set SSG output power at P_t to give the equivalent output level of "E" or calculate P_t with SSG output which gives the nearest of "E" and difference ($\pm 1\text{dB}$). Record the P_t .
7. Calculate EIRP by the formula below $\text{EIRP} = G_t - L + P_t$.
Gt: gain of replacing antenna (dBi)
L: feeder loss between SSG and replacing antenna
Pt: Output power of the SSG
8. If the antenna for the EUT has circular polarization, sum of V-field and H-field will be result if measuring antenna is linear polarization.

3.6.4 Test Setup

<For EUT radiation measurement>



<For standard antenna measurement>



3.6.5 Test Deviation

There is no deviation with the original standard.

3.6.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.6.7 Test Result of Transmission Antenna Gain (EIRP Antenna Power)

Please refer to Appendix B. For the antenna gain, please refer to antenna test report.

Remark: This test item will not be applied to EIRP power of EUT is lower than 12.14dBm/MHz.

3.7 Transmission Radiation Angle Width (3dB Beamwidth) Measurement

3.7.1 Limit

Item	Limits
3dB antenna beamwidth	360/A (If $A < 1$; then $A = 1$) $A = \{\text{EIRP Power [dBm/MHz]} - 12.14 \text{ [dBm/MHz] for DS, OFDM}\}$ or $\{\text{E.I.R.P Power [dBm/MHz]} - 6.91 \text{ [dBm/MHz] for FH}\}$
Remark: This test item will not be applied to EIRP power of EUT is lower than 12.14dBm/MHz.	

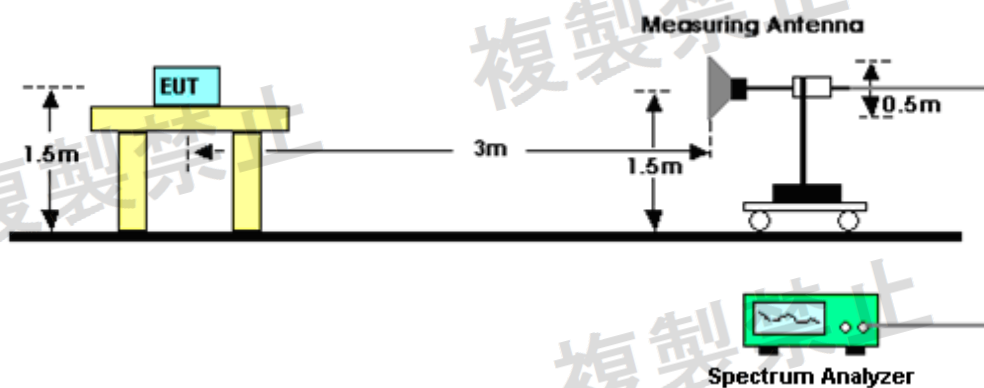
3.7.2 Measuring Instruments

See list of measuring instruments of this test report.

3.7.3 Test Procedures

1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Set spectrum analyzer with condition in section 3.7.2 and tune reference level to observe receiving signal position.
3. Rotate directions of the EUT horizontally and vertically to find the maximum receiving power.
4. Move the measuring antenna height up and down within $\pm 50\text{cm}$ of EUT height and swing it to find the maximum output of measuring antenna. The output level at the spectrum analyzer is read as "E".
5. Calculate permitted radiation angle in horizontal and vertical using EIRP measured in another test method.
6. Calculate 3dB antenna beam width by the formula below $360/A$ (If $A < 1$; then $A = 1$).
 $A = \{\text{EIRP Power [dBm/MHz]} - 12.14 \text{ [dBm/MHz] for DS, OFDM}\}$ or
 $A = \{\text{E.I.R.P Power [dBm/MHz]} - 6.91 \text{ [dBm/MHz] for FH}\}$

3.7.4 Test Setup



3.7.5 Test Deviation

There is no deviation with the original standard.

3.7.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.7.7 Test Result of Transmission Radiation Angle Width (3dB Beamwidth)

Please refer to Appendix B.

For the antenna gain, please refer to antenna test report.

Remark: This test item will not be applied to EIRP power of EUT is lower than 12.14dBm/MHz.

3.8 Radio Interference Prevention Capability Measurement

3.8.1 Limit

Item	Limits
Identification code	≥ 48 bits

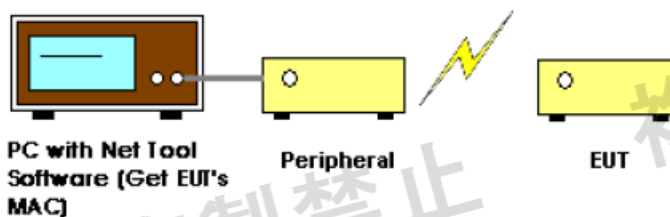
3.8.2 Measuring Instruments

See list of measuring instruments of this test report.

3.8.3 Test Procedures

- 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.
- 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 signals other 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.

3.8.4 Test Setup



3.8.5 Test Deviation

There is no deviation with the original standard.

3.8.6 EUT Operation during Test

The EUT was programmed to be in normal transmitting mode.

3.8.7 Test Result of Radio Interference Prevention Capability

Please refer to Appendix B.

3.9 Carrier Sense

3.9.1 Limit

The radio equipment connected to telecommunication circuit equipment shall be equipped with a device which detects emissions radiated from another radio station and prevents interference, or a device which prevents interference by operation on a receive signal and a signal for diffusion for signal level detection.

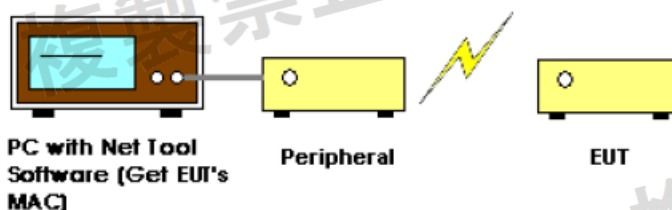
3.9.2 Measuring Instruments

See list of measuring instruments of this test report.

3.9.3 Test Procedures

1. Set the EUT link with a peripheral, access point 802.11n-HT40
2. Set a signal generator (simulate a radio device which co-exists with EUT) at same frequency channel with a proper signal level (exceeding 100mV/m) output to act as interference signal.
3. Monitor the signal transmission between the EUT and peripheral, while the interference signal presents. The EUT would stop transmitting once it detects interference signal over the air, then record it pass, otherwise, the result is fail.

3.9.4 Test Setup



3.9.5 Test Deviation

There is no deviation with the original standard.

3.9.6 EUT Operation during Test

The EUT was programmed to be in normal transmitting mode.

3.9.7 Test Result of Carrier Sense

Please refer to Appendix B.

3.10 Construction Protection Confirmation Method

3.10.1 Limit

The high-frequency section and modulation section of the radio equipment except for the antenna system shall not be capable of being opened easily.

3.10.2 Confirmation Method

<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 a non-transparent laminating agent.
<input type="checkbox"/>	Other :

3.10.3 The Photos of Construction Protection





4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Periods of Test	Due Date	Calibration Body	Calibration Method
Spectrum Analyzer	R&S	FSV30	101338	10Hz~30GHz	Apr. 16, 2019	Aug. 21, 2019~ Sep. 05, 2019	Apr. 15, 2020	CEPREI Calibration and Testing Center	C
Pulse Power Sensor	Anritsu	ML2495A	1339163	300MHz~40GHz	Nov. 19, 2018	Aug. 21, 2019~ Sep. 05, 2019	Nov. 18, 2019	CEPREI Calibration and Testing Center	C
Power Meter	Anritsu	ML2495A	1435004	50MHz Bandwidth	Nov. 19, 2018	Aug. 21, 2019~ Sep. 05, 2019	Nov. 18, 2019	CEPREI Calibration and Testing Center	C
DC Power Supply	GW INSTEK	GPD-2303S	GEO861339	Max 31	Oct. 12, 2018	Aug. 21, 2019~ Sep. 05, 2019	Oct. 11, 2019	CEPREI Calibration and Testing Center	C
Signal Generator	R&S	SMR20	101787	10MHz~20GHz	Apr. 17, 2019	Aug. 21, 2019~ Sep. 05, 2019	Apr. 16, 2020	CEPREI Calibration and Testing Center	C
Multi-meter	YFE	YF-303	YF-303-01	-	Apr. 17, 2019	Aug. 21, 2019~ Sep. 05, 2019	Apr. 16, 2020	CEPREI Calibration and Testing Center	C

Note: Above test equipment was used and kept valid calibration period during test.

Calibration Method :

a) : Calibration conducted by the National Institute of Information and Communications Technology~
NICT~ or a designated calibration agency under Article 102-18 paragraph

(1) TELEC Engineering Center, Intertek Japan K.K., Keysight Technologies, Inc~.

b) : Correction conducted pursuant to the provisions of Article 135 or Article 144 of the Measurement
Law (Law No. 51 of 1992)~Japan Calibration Service System~

c) : Calibration conducted in foreign countries, which shall be equivalent to the calibration conducted by
the NICT or a designated calibration agency under Article 102-18 paragraph

(1)~ TELEC Engineering Center, Intertek Japan K.K., Keysight Technologies, Inc~.



Appendix A. Setup Photographs

Front View



Near View





Appendix B. Test Results

Please refer to the following pages for test results.

1. TEST RESULTS DATA

WLAN 2.4G Band - 802.11b

Environment of Test Room	Temperature	21~24 °C
	Humidity	49~51 %
Test Engineer	Lion Ran	

Modulatoion Type :	DS
Type Emissions :	13M7G1D

Peak Antenna Gain	-3.00	dBi
Declaration Output Power	9.00	mW/MHz
Declaration Output Power	9.542	dBm/MHz
E.I.R.P	6.542	dBm/MHz
Input Power Voltage	3.86	VDC

Antenna System	SISO
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Antenna	No.	Type	Gain
	1	IFA	-3.00
	2	---	---
	3	---	---

Tested Circuit Insertion Loss		6.4	dB
Burst	ON TIME	-Not applicable-	msec
	OFF TIME	-Not applicable-	msec
	Ratio	100.000	%
Packet Type (Mode)		1Mbps	mode

Frequency equal to the transmission rate of the modulation signal (5.5Mbps mode)	1.375
--	-------

Test Category : 2.4GHz Band Wideband Low-Power Data Communication System

Comprehensive operation test

Use the DC Power Supply to adjust voltage.

1.1. TEST Results (Normal Voltage)

Measurement Frequency	MHz	2412	2442	2472	Regulation	Result
Channel Number	Ch.	1	7	13	-----	-----
Reading Frequency (TX1)	MHz	2412.001	2442.001	2472.000	-----	-----
Frequency Tolerance (TX1)	ppm	0.4146	0.4095	0.0000	50	PASS
Reading Frequency (TX2)	MHz	-----	-----	-----	-----	-----
Frequency Tolerance (TX2)	ppm	-----	-----	-----	-----	-----
Reading Frequency (TX3)	MHz	-----	-----	-----	-----	-----
Frequency Tolerance (TX3)	ppm	-----	-----	-----	-----	-----
Occupied Bandwidth (TX1)	MHz	12.66	13.24	13.75	26	PASS
Spread Bandwidth (TX1)	MHz	7.96	8.32	8.61	0.5	PASS
Occupied Bandwidth (TX2)	MHz	-----	-----	-----	-----	-----
Spread Bandwidth (TX2)	MHz	-----	-----	-----	-----	-----
Occupied Bandwidth (TX3)	MHz	-----	-----	-----	-----	-----
Spread Bandwidth (TX3)	MHz	-----	-----	-----	-----	-----
RF Output Power (TX1)	mW/MHz	8.279	8.954	8.299	-----	-----
RF Output Power (TX2)	mW/MHz	-----	-----	-----	-----	-----
RF Output Power (TX3)	mW/MHz	-----	-----	-----	-----	-----
RF Output Power (Max)	mW/MHz	8.279	8.954	8.299	10.00	PASS
RF Output Power Tolerance Max(TX1,TX2,TX3)	%	-8.01	-0.52	-7.79	20%~80%	PASS
Real Total Output Power (TX1)	dBm	16.74	17.15	16.97	-----	-----
Real Total Output Power (TX2)	dBm	-----	-----	-----	-----	-----
Real Total Output Power (TX3)	dBm	-----	-----	-----	-----	-----
Real Total Output Power (Max)	dBm	16.74	17.15	16.97	-----	-----

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1.1. TEST Results (Normal Voltage)

Measurement Frequency		MHz	2412	2442	2472	Regulation	Result
Channel Number		Ch.	1	7	13	-----	-----
Unwanted Emission Strength (TX1) for Ch1 ~13	Under 2387MHz	μW/MHz	0.020464	0.019320	0.019999	2.5	PASS
		MHz	951.650	892.583	837.978	-----	-----
	2387-2400MHz	μW/MHz	0.134896	0.031550	0.023878	25	PASS
		MHz	2399.940	2394.900	2390.490	-----	-----
	2483.5-2496.5MHz	μW/MHz	0.025586	0.043451	0.853100	25	PASS
		MHz	2484.840	2484.400	2484.530	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	0.087096	0.090782	0.056234	2.5	PASS
		MHz	7237.180	4884.600	7415.230	-----	-----
Unwanted Emission Strength (TX2) for Ch1 ~13	Under 2387MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2387-2400MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2483.5-2496.5MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Unwanted Emission Strength (TX3) for Ch1 ~13	Under 2387MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2387-2400MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2483.5-2496.5MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Unwanted Emission Strength (TX1+2) or (TX1+2+3) for Ch1 ~13	Under 2387MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2387-2400MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2483.5-2496.5MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
It should be added up all spurious measurement values within "Reference Bandwidth(=1MHz)" of the same frequency.							
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX1)	Under 1GHz	nW	0.057412	0.142889	0.050119	4	PASS
		MHz	910.817	50.029	813.730	-----	-----
	1 - 12.5GHz	nW	0.588844	0.608135	0.741310	20	PASS
		MHz	6964.650	6381.070	6832.410	-----	-----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX2)	Under 1GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	1 - 12.5GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX3)	Under 1GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	1 - 12.5GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX1+2) or (RX1+2+3)	Under 1GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	1 - 12.5GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
It should be added up all spurious measurement values within "Reference Bandwidth(=1MHz)" of the same frequency.							
Spread Factor		-----	5.79	6.05	6.26	5	PASS
Interference Prevention Function		-----	good			-----	PASS

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2. TEST RESULTS DATA

WLAN 2.4G Band - 802.11g

Environment of Test Room	Temperature	21~24 °C
	Humidity	49~51 %
Test Engineer	Lion Ran	

Modulatoin Type :	OFDM
Type Emissions :	17M4G1D/D1D

Peak Antenna Gain	-3.00	dBi
Declaration Output Power	5.50	mW/MHz
Declaration Output Power	7.404	dBm/MHz
E.I.R.P	4.404	dBm/MHz
Input Power Voltage	3.86	VDC

Antenna System	SISO
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Antenna	No.	Type	Gain
	1	IFA	-3.00
	2	---	---
	3	---	---

Tested Circuit Insertion Loss		6.4	dB
Burst	ON TIME	1.393	msec
	OFF TIME	0.055	msec
	Ratio	96.196	%
Packet Type (Mode)		6Mbps	mode

Test Category : 2.4GHz Band Wideband Low-Power Data Communication System

Comprehensive operation test

Use the DC Power Supply to adjust voltage.

2.1. TEST Results (Normal Voltage)

Measurement Frequency	MHz	2412	2442	2472	Regulation	Result
Channel Number	Ch.	1	7	13	-----	-----
Reading Frequency (TX1)	MHz	2412.001	2442.001	2472.001	-----	-----
Frequency Tolerance (TX1)	ppm	0.4146	0.4095	0.4045	50	PASS
Reading Frequency (TX2)	MHz	-----	-----	-----	-----	-----
Frequency Tolerance (TX2)	ppm	-----	-----	-----	-----	-----
Reading Frequency (TX3)	MHz	-----	-----	-----	-----	-----
Frequency Tolerance (TX3)	ppm	-----	-----	-----	-----	-----
Occupied Bandwidth (TX1)	MHz	16.71	17.37	17.44	26	PASS
Occupied Bandwidth (TX2)	MHz	-----	-----	-----	-----	-----
Occupied Bandwidth (TX3)	MHz	-----	-----	-----	-----	-----
RF Output Power (TX1)	mW/MHz	5.441	5.150	5.017	-----	-----
RF Output Power (TX2)	mW/MHz	-----	-----	-----	-----	-----
RF Output Power (TX3)	mW/MHz	-----	-----	-----	-----	-----
RF Output Power (Max)	mW/MHz	5.441	5.150	5.017	10.00	PASS
RF Output Power Tolerance Max(TX1,TX2,TX3)	%	-1.08	-6.36	-8.78	20%~80%	PASS
Real Total Output Power (TX1)	dBm	18.05	17.91	17.61	-----	-----
Real Total Output Power (TX2)	dBm	-----	-----	-----	-----	-----
Real Total Output Power (TX3)	dBm	-----	-----	-----	-----	-----
Real Total Output Power (Max)	dBm	18.05	17.91	17.61	-----	-----

2.1. TEST Results (Normal Voltage)

Measurement Frequency		MHz	2412	2442	2472	Regulation	Result
Channel Number		Ch.	1	7	13	-----	-----
Unwanted Emission Strength (TX1) for Ch1 ~13	Under 2387MHz	μW/MHz	0.774462	0.021528	0.017701	2.5	PASS
		MHz	2386.653	917.510	903.834	-----	-----
	2387-2400MHz	μW/MHz	3.828247	0.227510	0.034041	25	PASS
		MHz	2399.964	2398.918	2397.255	-----	-----
	2483.5-2496.5MHz	μW/MHz	0.033266	0.816582	9.418896	25	PASS
		MHz	2486.817	2485.693	2483.529	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	0.065917	0.040644	0.036392	2.5	PASS
		MHz	7232.184	7333.209	7418.230	-----	-----
Unwanted Emission Strength (TX2) for Ch1 ~ 13	Under 2387MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2387-2400MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2483.5-2496.5MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Unwanted Emission Strength (TX3) for Ch1 ~ 13	Under 2387MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2387-2400MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2483.5-2496.5MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Unwanted Emission Strength (TX1+2) or (TX1+2+3) for Ch1 ~13	Under 2387MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2387-2400MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2483.5-2496.5MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
It should be added up all spurious measurement values within "Reference Bandwidth(=1MHz)" of the same frequency.							
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX1)	Under 1GHz	nW	0.063096	0.062087	0.058614	4	PASS
		MHz	999.855	827.600	901.118	-----	-----
	1 - 12.5GHz	nW	0.712853	0.630957	0.645654	20	PASS
		MHz	6689.630	6997.229	6946.442	-----	-----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX2)	Under 1GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	1 - 12.5GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX3)	Under 1GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	1 - 12.5GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX1+2) or (RX1+2+3)	Under 1GHz	nW	-----	-----	-----	-----	-----
			-----	-----	-----	-----	-----
	1 - 12.5GHz	nW	-----	-----	-----	-----	-----
			-----	-----	-----	-----	-----
It should be added up all spurious measurement values within "Reference Bandwidth(=1MHz)" of the same frequency.							
Interference Prevention Function		-----	good			-----	PASS

3. TEST RESULTS DATA

WLAN 2.4G Band - 802.11n-HT20

Environment of Test Room	Temperature	21~24 °C
	Humidity	49~51 %
Test Engineer	Lion Ran	

Modulatoin Type :	OFDM
Type Emissions :	18M7G1D/D1D

Peak Antenna Gain	-3.00	dBi
Declaration Output Power	5.00	mW/MHz
Declaration Output Power	6.990	dBm/MHz
E.I.R.P	3.990	dBm/MHz
Input Power Voltage	3.86	VDC

Antenna System	SISO
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Antenna	No.	Type	Gain
	1	IFA	-3.00
	2	---	---
	3	---	---

Tested Circuit Insertion Loss		6.4	dB
Burst	ON TIME	1.306	msec
	OFF TIME	0.048	msec
	Ratio	96.467	%
Packet Type (Mode)		MCS0	mode

Test Category : 2.4GHz Band Wideband Low-Power Data Communication System

Comprehensive operation test

Use the DC Power Supply to adjust voltage.

3.1. TEST Results (Normal Voltage)

Measurement Frequency	MHz	2412	2442	2472	Regulation	Result
Channel Number	Ch.	1	7	13	-----	-----
Reading Frequency (TX1)	MHz	2412.001	2442.001	2472.001	-----	-----
Frequency Tolerance (TX1)	ppm	0.4146	0.4095	0.4045	50	PASS
Reading Frequency (TX2)	MHz	-----	-----	-----	-----	-----
Frequency Tolerance (TX2)	ppm	-----	-----	-----	-----	-----
Reading Frequency (TX3)	MHz	-----	-----	-----	-----	-----
Frequency Tolerance (TX3)	ppm	-----	-----	-----	-----	-----
Occupied Bandwidth (TX1)	MHz	17.73	18.09	18.67	26	PASS
Occupied Bandwidth (TX2)	MHz	-----	-----	-----	-----	-----
Occupied Bandwidth (TX3)	MHz	-----	-----	-----	-----	-----
RF Output Power (TX1)	mW/MHz	4.635	4.763	4.609	-----	-----
RF Output Power (TX2)	mW/MHz	-----	-----	-----	-----	-----
RF Output Power (TX3)	mW/MHz	-----	-----	-----	-----	-----
RF Output Power (Max)	mW/MHz	4.635	4.763	4.609	10.00	PASS
RF Output Power Tolerance Max(TX1,TX2,TX3)	%	-7.31	-4.73	-7.82	20%~80%	PASS
Real Total Output Power (TX1)	dBm	17.53	17.87	17.31	-----	-----
Real Total Output Power (TX2)	dBm	-----	-----	-----	-----	-----
Real Total Output Power (TX3)	dBm	-----	-----	-----	-----	-----
Real Total Output Power (Max)	dBm	17.53	17.87	17.31	-----	-----

3.1. TEST Results (Normal Voltage)

Measurement Frequency		MHz	2412	2442	2472	Regulation	Result
Channel Number		Ch.	1	7	13	-----	-----
Unwanted Emission Strength (TX1) for Ch1 ~13	Under 2387MHz	μW/MHz	0.190546	0.019634	0.021727	2.5	PASS
		MHz	2385.960	589.586	875.319	-----	-----
	2387-2400MHz	μW/MHz	2.851018	0.287078	0.023933	25	PASS
		MHz	2399.841	2399.854	2396.105	-----	-----
	2483.5-2496.5MHz	μW/MHz	0.043152	0.944061	10.990058	25	PASS
		MHz	2485.251	2483.971	2484.114	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	0.046026	0.035975	0.037154	2.5	PASS
		MHz	7235.184	7325.207	7410.228	-----	-----
Unwanted Emission Strength (TX2) for Ch1 ~ 13	Under 2387MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2387-2400MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2483.5-2496.5MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Unwanted Emission Strength (TX3) for Ch1 ~ 13	Under 2387MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2387-2400MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2483.5-2496.5MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Unwanted Emission Strength (TX1+2) or (TX1+2+3) for Ch1 ~13	Under 2387MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2387-2400MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2483.5-2496.5MHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	2496.5MHz-12.5GHz	μW/MHz	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
It should be added up all spurious measurement values within "Reference Bandwidth(=1MHz)" of the same frequency.							
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX1)	Under 1GHz	nW	0.060395	0.050466	0.059566	4	PASS
		MHz	889.480	253.029	861.255	-----	-----
	1 - 12.5GHz	nW	0.644169	0.657658	0.633870	20	PASS
		MHz	6522.894	6833.368	6847.742	-----	-----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX2)	Under 1GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	1 - 12.5GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX3)	Under 1GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
	1 - 12.5GHz	nW	-----	-----	-----	-----	-----
		MHz	-----	-----	-----	-----	-----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX1+2) or (RX1+2+3)	Under 1GHz	nW	-----	-----	-----	-----	-----
			-----	-----	-----	-----	-----
	1 - 12.5GHz	nW	-----	-----	-----	-----	-----
			-----	-----	-----	-----	-----
It should be added up all spurious measurement values within "Reference Bandwidth(=1MHz)" of the same frequency.							
Interference Prevention Function		-----	good			-----	PASS

4. TEST RESULTS DATA

WLAN 2.4G Band - 802.11n-HT40

Environment of Test Room	Temperature	21~24 °C
	Humidity	49~51 %
Test Engineer	Lion Ran	

Modulatoin Type :	OFDM
Type Emissions :	36M8G1D/D1D

Peak Antenna Gain	-3.00	dBi
Declaration Output Power	2.40	mW/MHz
Declaration Output Power	3.802	dBm/MHz
E.I.R.P	0.802	dBm/MHz
Input Power Voltage	3.86	VDC

Antenna System	SISO
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Antenna	No.	Type	Gain
	1	IFA	-3.00
	2	---	---
	3	---	---

Tested Circuit Insertion Loss		6.4	dB
Burst	ON TIME	0.645	msec
	OFF TIME	0.048	msec
	Ratio	93.097	%
Packet Type (Mode)		MCS0	mode

Test Category : 2.4GHz Band Wideband Low-Power Data Communication System

Comprehensive operation test

Use the DC Power Supply to adjust voltage.

4.1. TEST Results (Normal Voltage)

Measurement Frequency	MHz	2422	2442	2462	Regulation	Result
Channel Number	Ch.	3	7	11	-----	-----
Reading Frequency (TX1)	MHz	2422.000	2442.001	2462.001	-----	-----
Frequency Tolerance (TX1)	ppm	0.0000	0.4095	0.4062	50	PASS
Reading Frequency (TX2)	MHz	-----	-----	-----	-----	-----
Frequency Tolerance (TX2)	ppm	-----	-----	-----	-----	-----
Reading Frequency (TX3)	MHz	-----	-----	-----	-----	-----
Frequency Tolerance (TX3)	ppm	-----	-----	-----	-----	-----
Occupied Bandwidth (TX1)	MHz	35.89	36.76	35.89	38	PASS
Occupied Bandwidth (TX2)	MHz	-----	-----	-----	-----	-----
Occupied Bandwidth (TX3)	MHz	-----	-----	-----	-----	-----
RF Output Power (TX1)	mW/MHz	2.164	2.143	2.207	-----	-----
RF Output Power (TX2)	mW/MHz	-----	-----	-----	-----	-----
RF Output Power (TX3)	mW/MHz	-----	-----	-----	-----	-----
RF Output Power (Max)	mW/MHz	2.164	2.143	2.207	5.00	PASS
RF Output Power Tolerance Max(TX1,TX2,TX3)	%	-9.83	-10.70	-8.03	20%~80%	PASS
Real Total Output Power (TX1)	dBm	16.63	16.78	16.57	-----	-----
Real Total Output Power (TX2)	dBm	-----	-----	-----	-----	-----
Real Total Output Power (TX3)	dBm	-----	-----	-----	-----	-----
Real Total Output Power (Max)	dBm	16.63	16.78	16.57	-----	-----

4.1. TEST Results (Normal Voltage)

Measurement Frequency		MHz	2422	2442	2462	Regulation	Result
Channel Number		Ch.	3	7	11	----	----
Unwanted Emission Strength (TX1) for Ch1 ~13	Under 2387MHz	μW/MHz	1.004616	0.051880	0.038282	2.5	PASS
		MHz	2386.653	2386.653	2384.574	----	----
	2387-2400MHz	μW/MHz	2.371374	4.487454	0.616595	25	PASS
		MHz	2399.737	2397.944	2394.033	----	----
	2483.5-2496.5MHz	μW/MHz	0.476431	14.157938	5.520774	25	PASS
		MHz	2483.536	2485.140	2484.959	----	----
	2496.5MHz-12.5GHz	μW/MHz	0.024774	0.029174	0.024044	2.5	PASS
		MHz	6629.033	6565.017	6548.013	----	----
Unwanted Emission Strength (TX2) for Ch1 ~ 13	Under 2387MHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
	2387-2400MHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
	2483.5-2496.5MHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
	2496.5MHz-12.5GHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
Unwanted Emission Strength (TX3) for Ch1 ~ 13	Under 2387MHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
	2387-2400MHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
	2483.5-2496.5MHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
	2496.5MHz-12.5GHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
Unwanted Emission Strength (TX1+2) or (TX1+2+3) for Ch1 ~13	Under 2387MHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
	2387-2400MHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
	2483.5-2496.5MHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
	2496.5MHz-12.5GHz	μW/MHz	----	----	----	----	----
		MHz	----	----	----	----	----
It should be added up all spurious measurement values within "Reference Bandwidth(=1MHz)" of the same frequency.							
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX1)	Under 1GHz	nW	0.062517	0.053456	0.060954	4	PASS
		MHz	874.252	527.124	981.911	----	----
	1 - 12.5GHz	nW	0.988553	0.688652	0.633870	20	PASS
		MHz	1747.917	6696.338	6919.611	----	----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX2)	Under 1GHz	nW	----	----	----	----	----
		MHz	----	----	----	----	----
	1 - 12.5GHz	nW	----	----	----	----	----
		MHz	----	----	----	----	----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX3)	Under 1GHz	nW	----	----	----	----	----
		MHz	----	----	----	----	----
	1 - 12.5GHz	nW	----	----	----	----	----
		MHz	----	----	----	----	----
Secondarily Emitted Radio Wave Strength (RX Spurious) (RX1+2) or (RX1+2+3)	Under 1GHz	nW	----	----	----	----	----
	1 - 12.5GHz	nW	----	----	----	----	----
It should be added up all spurious measurement values within "Reference Bandwidth(=1MHz)" of the same frequency.							
Carrier Sensing Function		----	-48.56			-47.89	PASS
Interference Prevention Function		----	good			----	PASS

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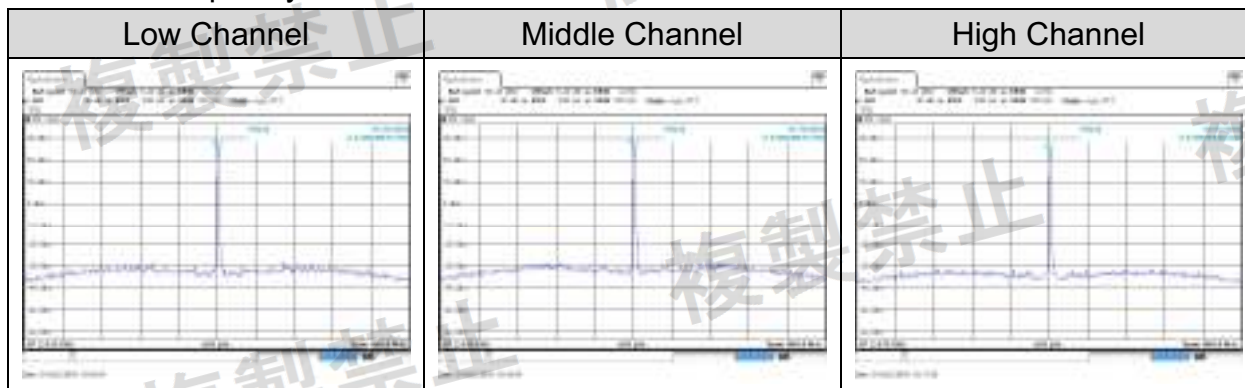


Appendix C. Test Plots

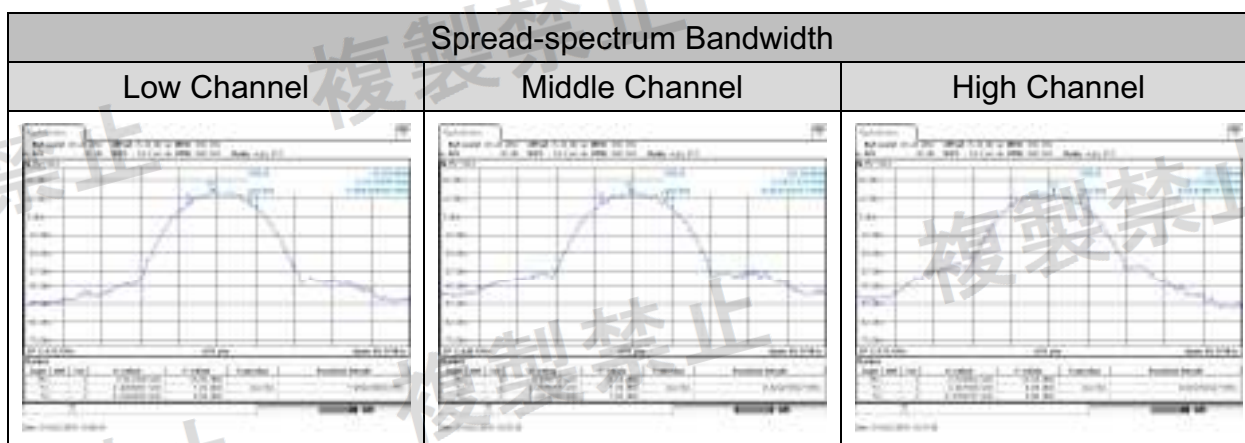
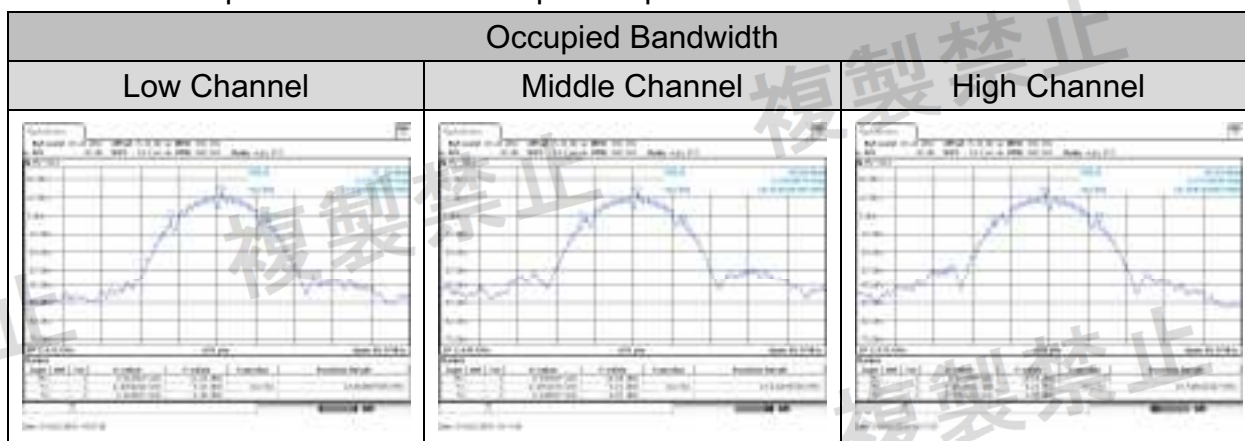
C.1. 2.4GHz Band_NV

C.1.1. 802.11b

i. Frequency Tolerance

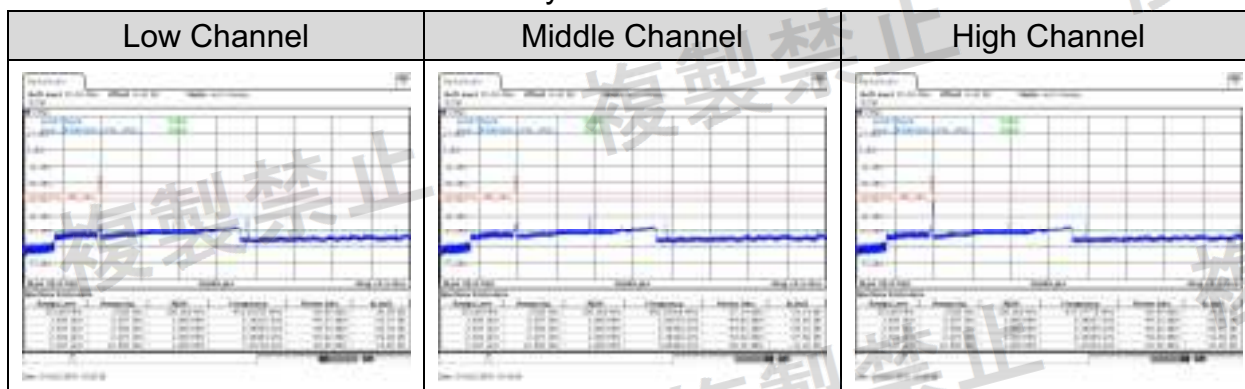


ii. Occupied Bandwidth and Spread-spectrum Bandwidth

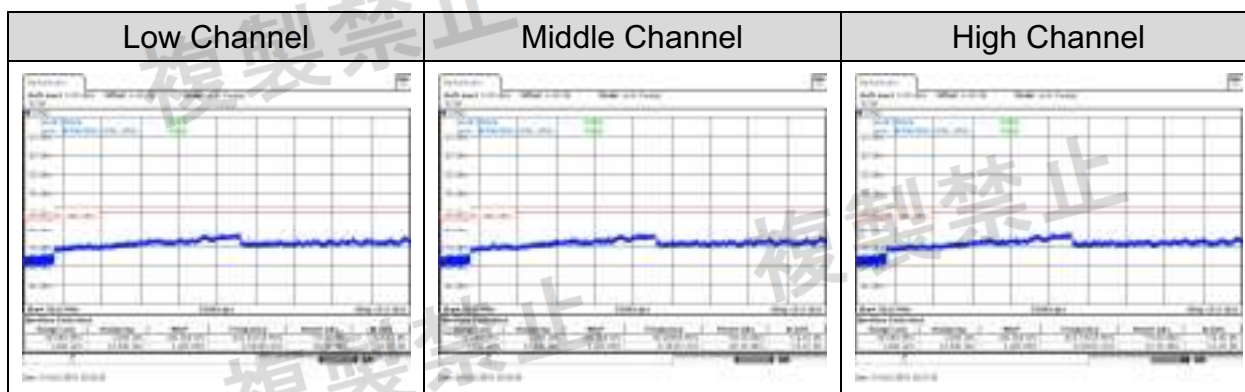




iii. Unwanted Emission Intensity



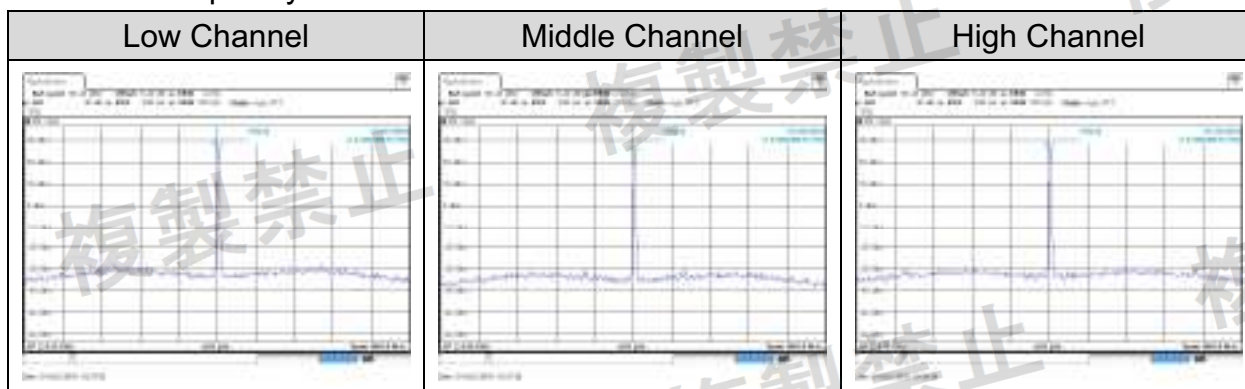
iv. Limitation of Collateral Emission of Receiver



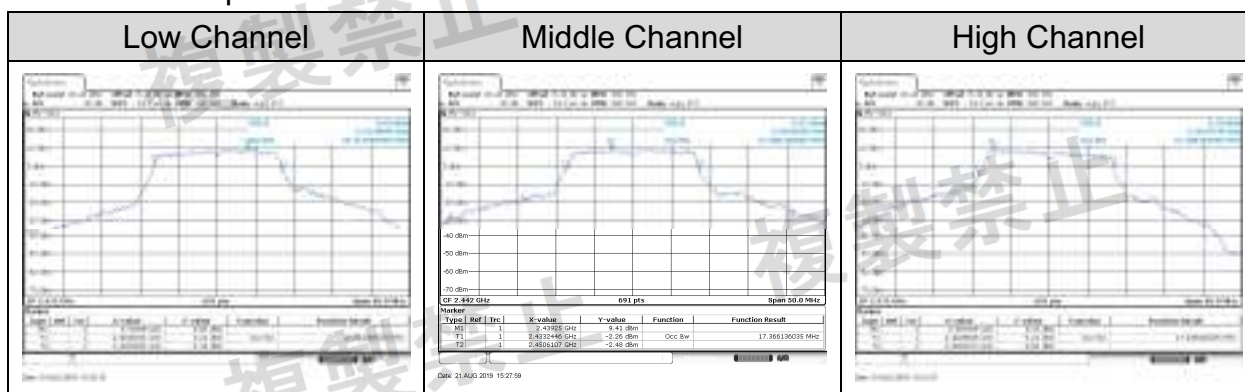


C.1.2. 802.11g

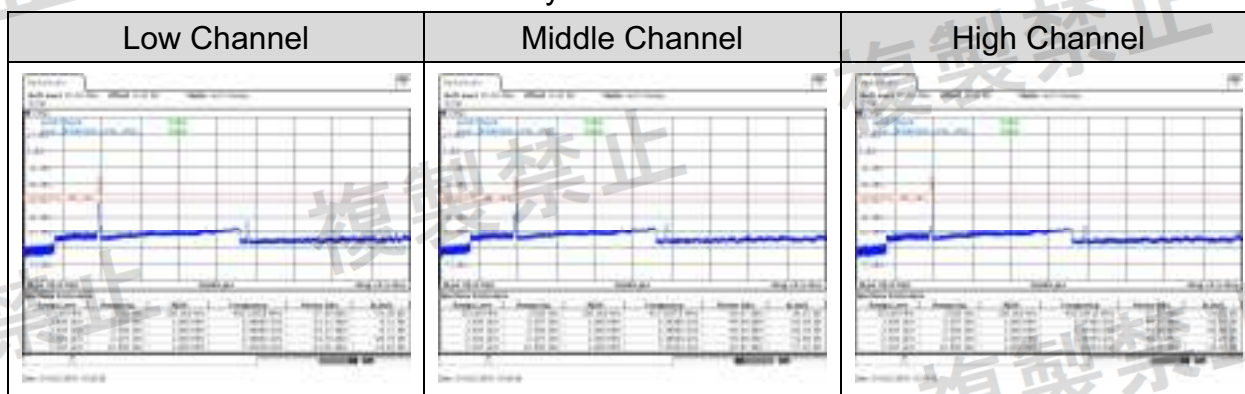
i. Frequency Tolerance



ii. Occupied Bandwidth

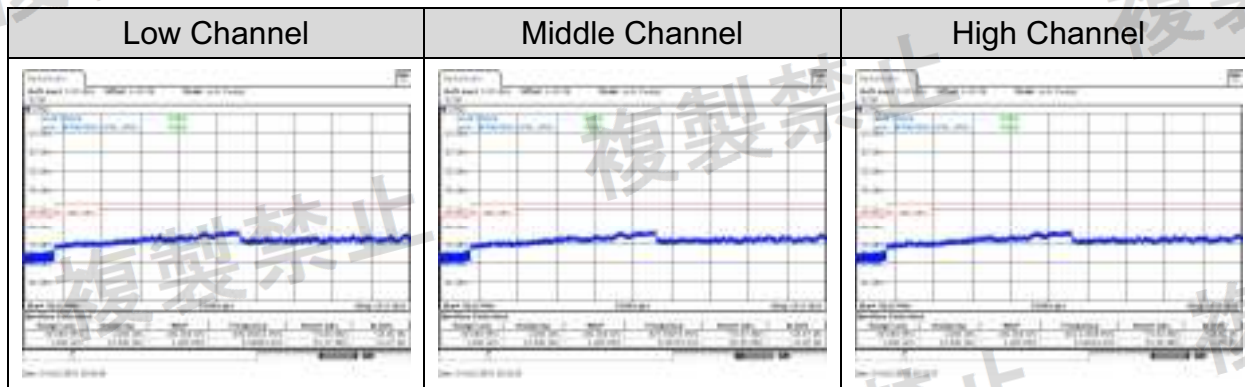


iii. Unwanted Emission Intensity





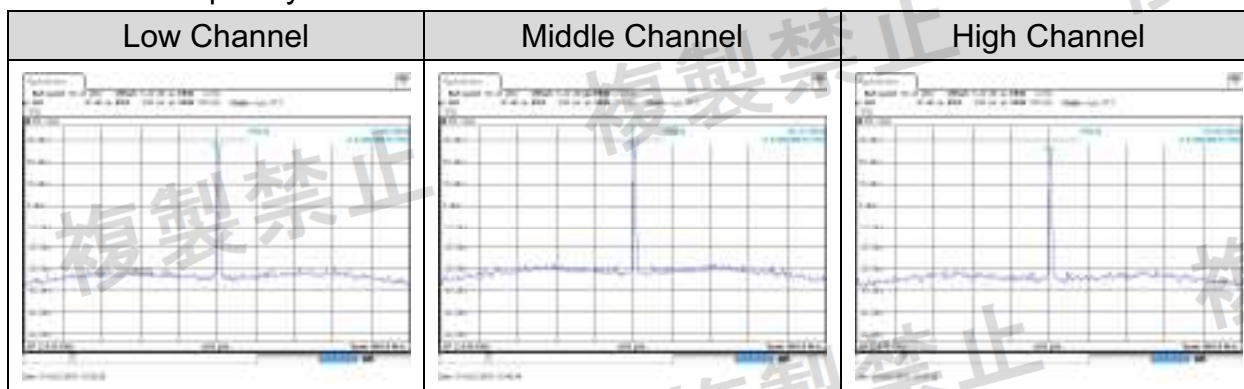
iv. Limitation of Collateral Emission of Receiver



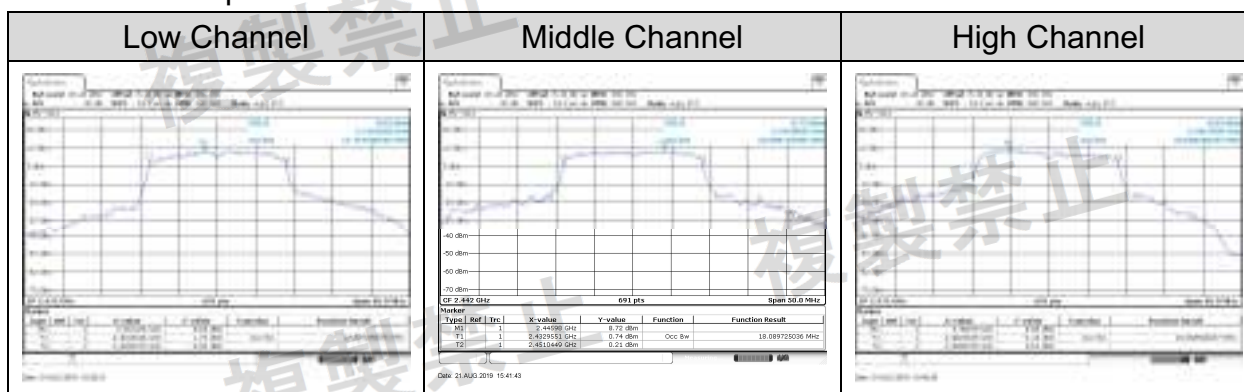


C.1.3. 802.11n-HT20

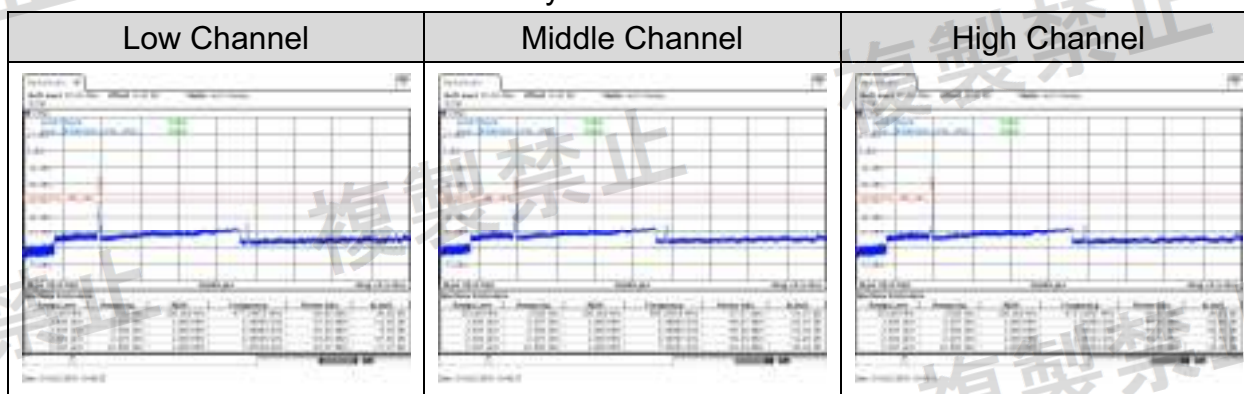
i. Frequency Tolerance



ii. Occupied Bandwidth

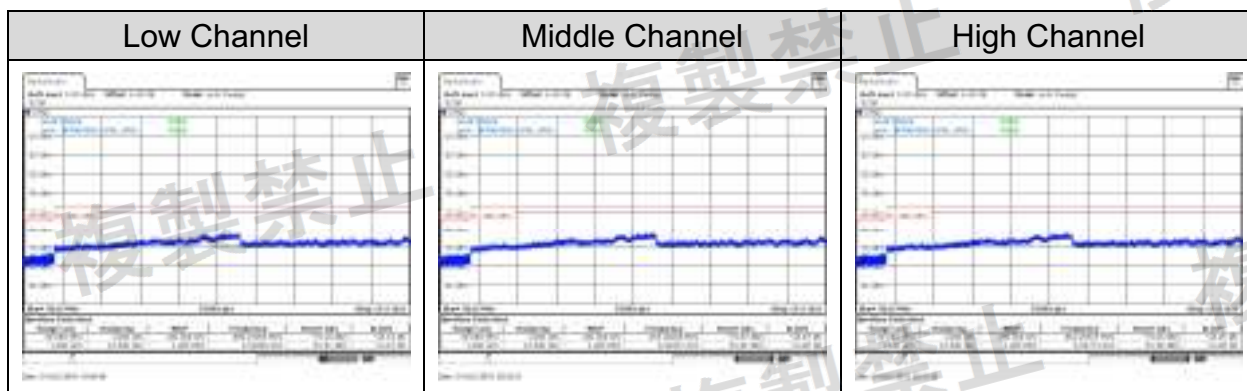


iii. Unwanted Emission Intensity





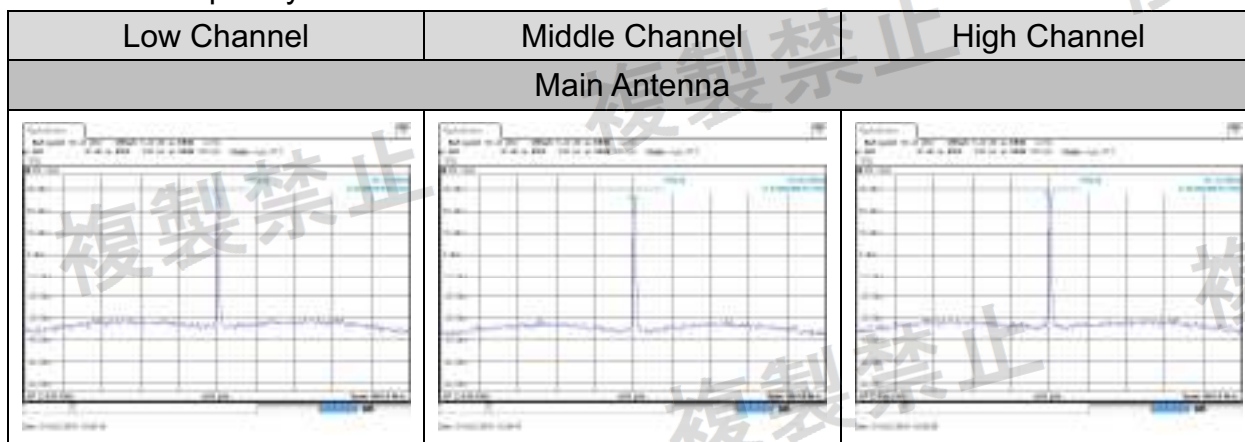
iv. Limitation of Collateral Emission of Receiver



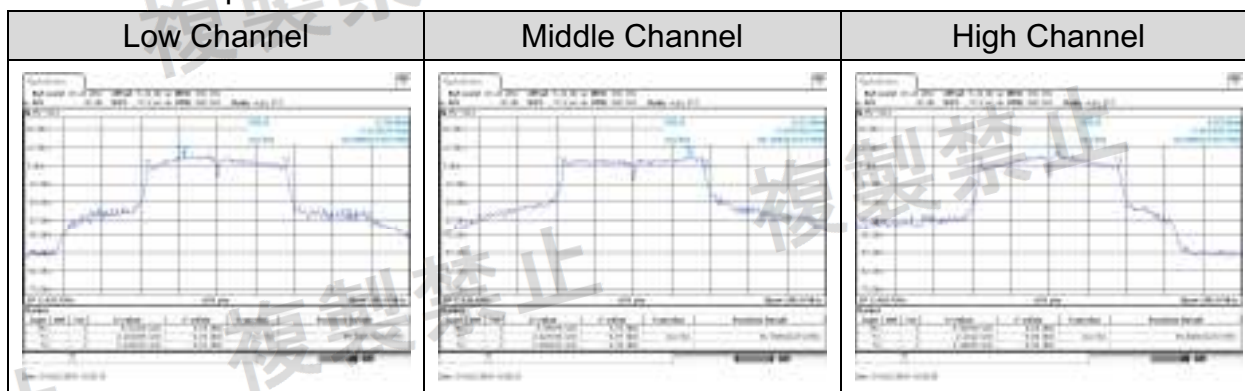


C.2. 802.11n-HT40

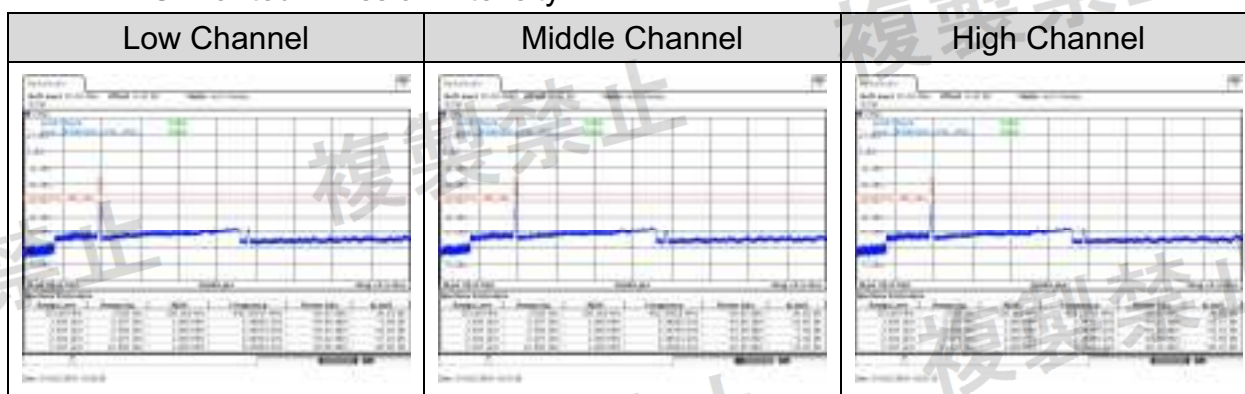
i. Frequency Tolerance



ii. Occupied Bandwidth

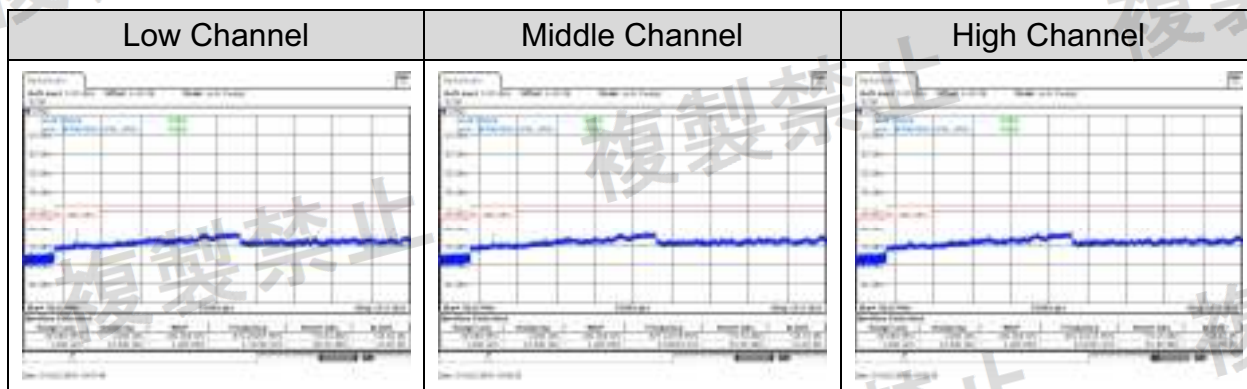


iii. Unwanted Emission Intensity





iv. Limitation of Collateral Emission of Receiver



v. Carrier Sensing

