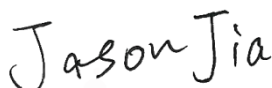


FCC RF Test Report

APPLICANT : GigaDevice Semiconductor Inc.
EQUIPMENT : 802.11bgn wlan module
BRAND NAME : GigaDevice
MODEL NAME : GD32W515_MD1
FCC ID : 2A3BS-GD32W515MD1
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System
TEST DATE(S) : Sep. 27, 2021 ~ Oct. 21, 2021

We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

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



Reviewed by: Jason Jia / Supervisor



Approved by: Alex Wang / Manager



Sporton International (Kunshan) Inc.

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300
People's Republic of China



TABLE OF CONTENTS

SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Manufacturer	5
1.3 Product Feature of Equipment Under Test	5
1.4 Product Specification of Equipment Under Test	6
1.5 Modification of EUT	6
1.6 Testing Location	6
1.7 Test Software	6
1.8 Applicable Standards	7
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	8
2.1 Carrier Frequency and Channel	8
2.2 Test Mode	9
2.3 Connection Diagram of Test System	10
2.4 Support Unit used in test configuration and system	11
2.5 EUT Operation Test Setup	11
2.6 Measurement Results Explanation Example	11
3 TEST RESULT	12
3.1 6dB Bandwidth Measurement	12
3.2 Output Power Measurement	14
3.3 Power Spectral Density Measurement	15
3.4 Conducted Band Edges and Spurious Emission Measurement	17
3.5 Radiated Band Edges and Spurious Emission Measurement	30
3.6 AC Conducted Emission Measurement	34
3.7 Antenna Requirements	36
4 LIST OF MEASURING EQUIPMENT	37
5 UNCERTAINTY OF EVALUATION	38
APPENDIX A. CONDUCTED TEST RESULTS	
APPENDIX B. AC CONDUCTED EMISSION TEST RESULT	
APPENDIX C. RADIATED SPURIOUS EMISSION	
APPENDIX D. DUTY CYCLE PLOTS	
APPENDIX E. SETUP PHOTOGRAPHS	

**REVISION HISTORY**

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR191334	Rev. 01	Initial issue of report	Oct. 22, 2021

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.2	15.247(b)	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
		Conducted Spurious Emission		Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 5.91 dB at 2483.500 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 11.78 dB at 0.169 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	15.203 & 15.247(b)	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

GigaDevice Semiconductor Inc.

Building No. 8, IC Park, No. 9 Fenghao East Road, Haidian District, Beijing 100094, China

1.2 Manufacturer

GigaDevice Semiconductor Inc.

Building No. 8, IC Park, No. 9 Fenghao East Road, Haidian District, Beijing 100094, China

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	802.11bgn wlan module
Brand Name	GigaDevice
Model Name	GD32W515_MD1
FCC ID	2A3BS-GD32W515MD1
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n HT20/HT40
HW Version	GD32W515_MD1_SP_2V1
SW Version	KEIL-image-all-rf-test-1.0.3.bin
EUT Stage	Identical Prototype

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 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	2412 MHz ~ 2462 MHz
Maximum (Peak) Output Power to antenna	802.11b : 20.12 dBm (0.1028 W) 802.11g : 24.73 dBm (0.2972 W) 802.11n HT20 : 24.67 dBm (0.2931 W) 802.11n HT40 : 23.43 dBm (0.2203 W)
Antenna Type / Gain	PCB Antenna type with gain 2.9 dBi Dipole Antenna type with gain 2.5 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

Note: The device supports two types of antenna which can't use simultaneously. For Conducted test items, we evaluate maximum antenna Gain/2.9dBi to test.

1.5 Modification of EUT

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

1.6 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH05-KS TH01-KS CO01-KS	CN1257	314309

1.7 Test Software

Item	Site	Manufacturer	Name	Version
1.	03CH05-KS	AUDIX	E3	6.2009-8-24a1
2.	CO01-KS	AUDIX	E3	6.2009-8-24



1.8 Applicable Standards

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

- ♦ 47 CFR Part 15 Subpart C §15.247
- ♦ FCC KDB 558074 D01 15.247 Meas Guidance v05r02
- ♦ ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz) radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases(X/Y Plane) were recorded in this report.
- b. AC power line Conducted Emission was tested under maximum output power.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Test Mode

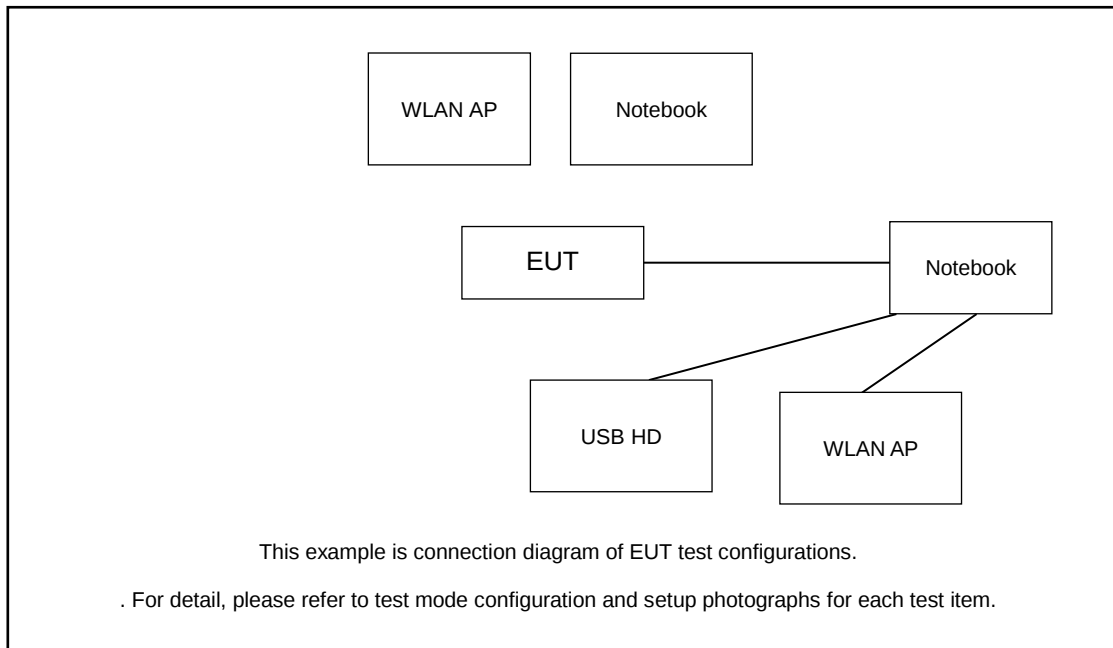
Final test modes are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0

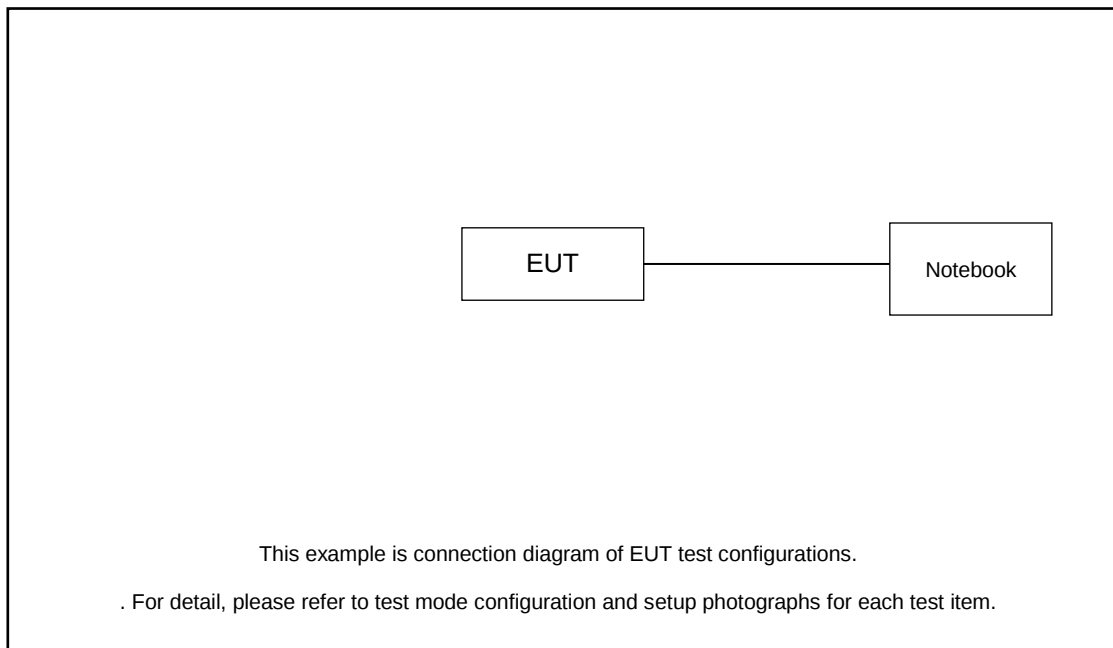
Test Cases	
AC Conducted Emission	Mode 1 :WIFI(2.4G)Tx + Power From NB + PCB Antenna Mode 2 :WIFI(2.4G)Tx + Power From NB + Dipole Antenna
Remark: The worst case of conducted emission is mode 1; only the test data of it was reported.	

2.3 Connection Diagram of Test System

<Conduction>



<Radiation>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	USB Cable	N/A	N/A	N/A	Unshielded,1.2m	N/A
2.	WLAN AP	TP-Link	TL-WDR5600	N/A	N/A	Unshielded,1.8m
3.	WLAN AP	D-Link	DIR-655	KA21R655B1	N/A	Unshielded,1.8m
4.	Notebook	Lenovo	G480	QDS-BRCM1050I	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
5.	Notebook	Lenovo	V130-15IKB005	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
6.	Test Jig	N/A	N/A	N/A	N/A	N/A
7.	Adapter	Moto	C-P56	N/A	N/A	N/A
8.	USB HD	Lenovo	FH310	N/A	Unshielded,1.2m	N/A

2.5 EUT Operation Test Setup

For WLAN RF test items, an engineering test program was provided and enabled to make EUT continuous transmit.

For AC power line conducted emissions, the EUT was set to connect with the WLAN AP under large package sizes transmission.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss

Following shows an offset computation example with cable loss 5.4 dB

Offset(dB) = RF cable loss(dB).

= 5.4 (dB)

3 Test Result

3.1 6dB Bandwidth Measurement

3.1.1 Limit of 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

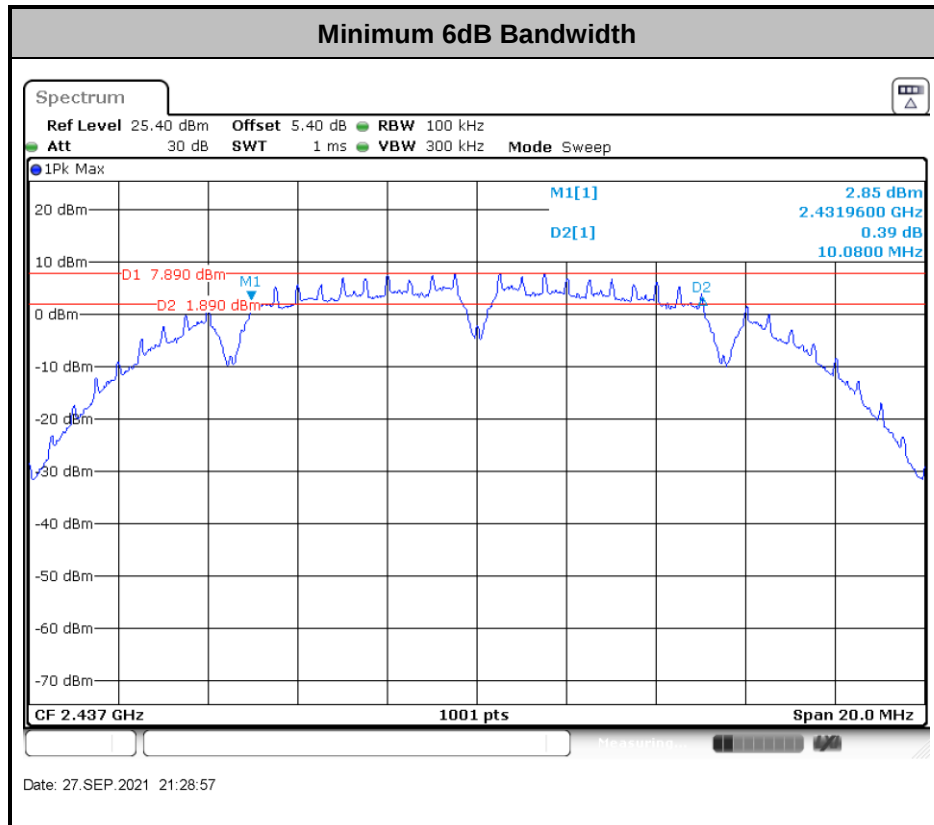
1. The testing follows ANSI C63.10-2013 clause 11.8
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. Measure and record the results in the test report.

3.1.4 Test Setup



3.1.5 Test Result of 6dB Bandwidth

Please refer to Appendix A.



3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna with directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of ANSI C63.10-2013 clause 11.9.1.3 PKPM1 Peak power meter or ANSI C63.10-2013 clause 11.9.2.3.2 Method AVGPM-G method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.2.6 Test Result of Average Output Power (Reporting Only)

Please refer to Appendix A.



3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

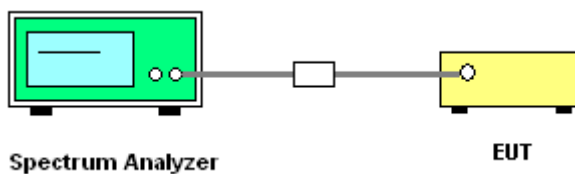
3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

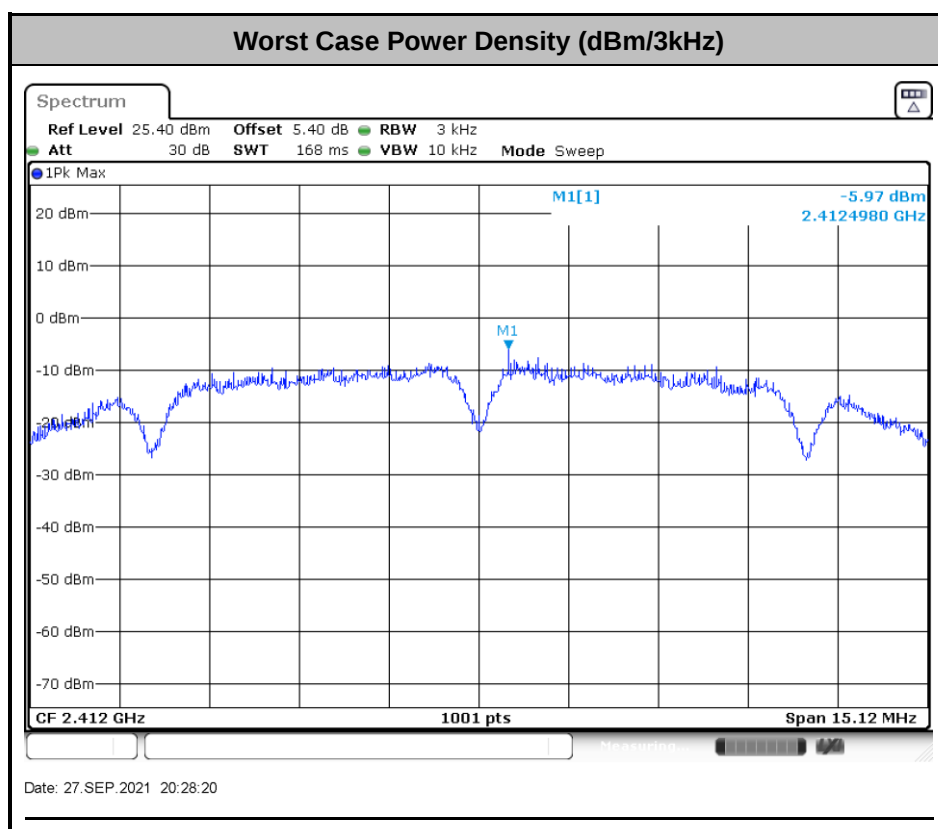
1. The testing follows Measurement Procedure of ANSI C63.10-2013 clause 11.10.2 Method PKPSD.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement.

3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The testing follows ANSI C63.10-2013 clause 11.13
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup

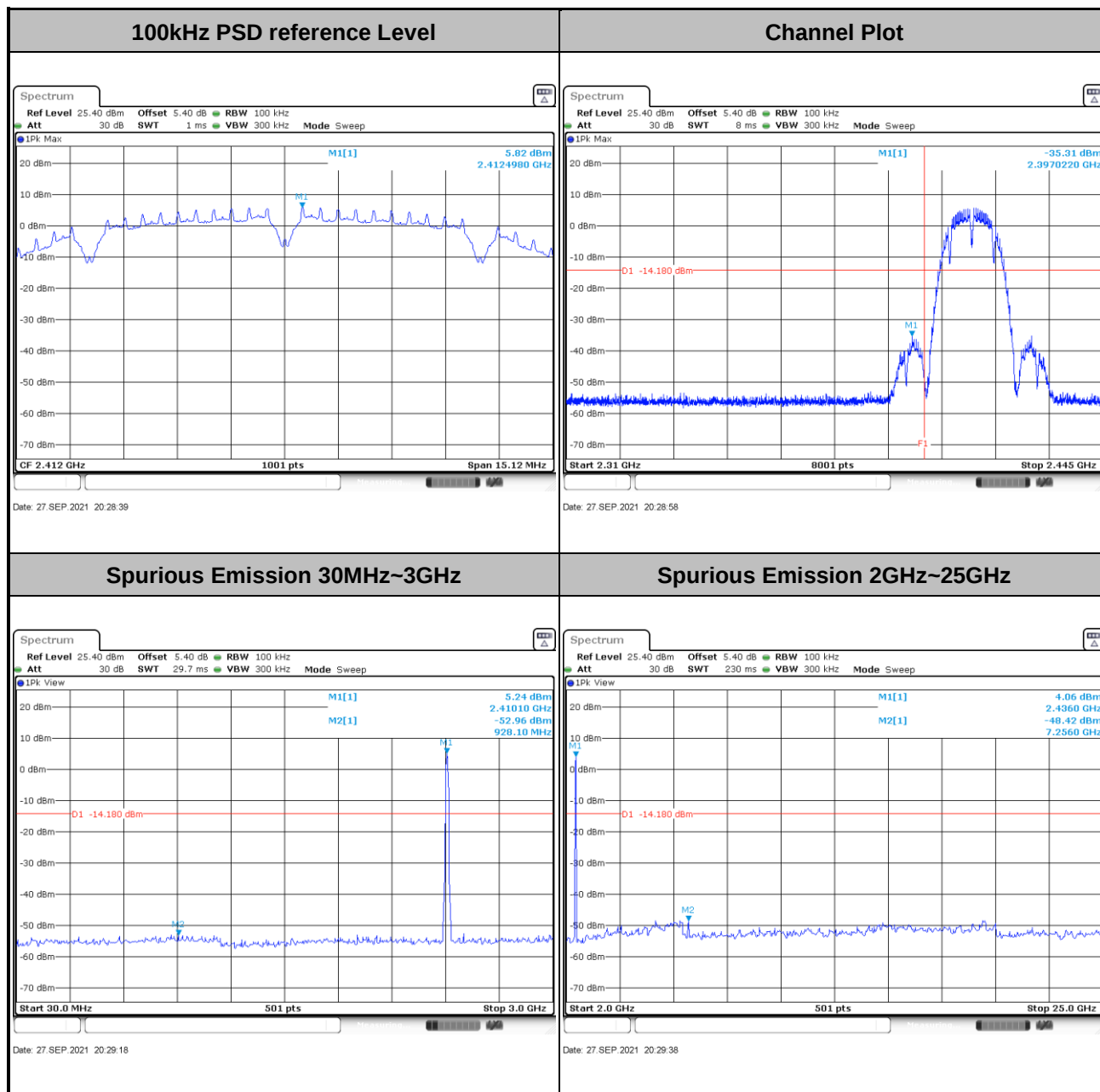




3.4.5 Test Result of Conducted Band Edges and Spurious Emission

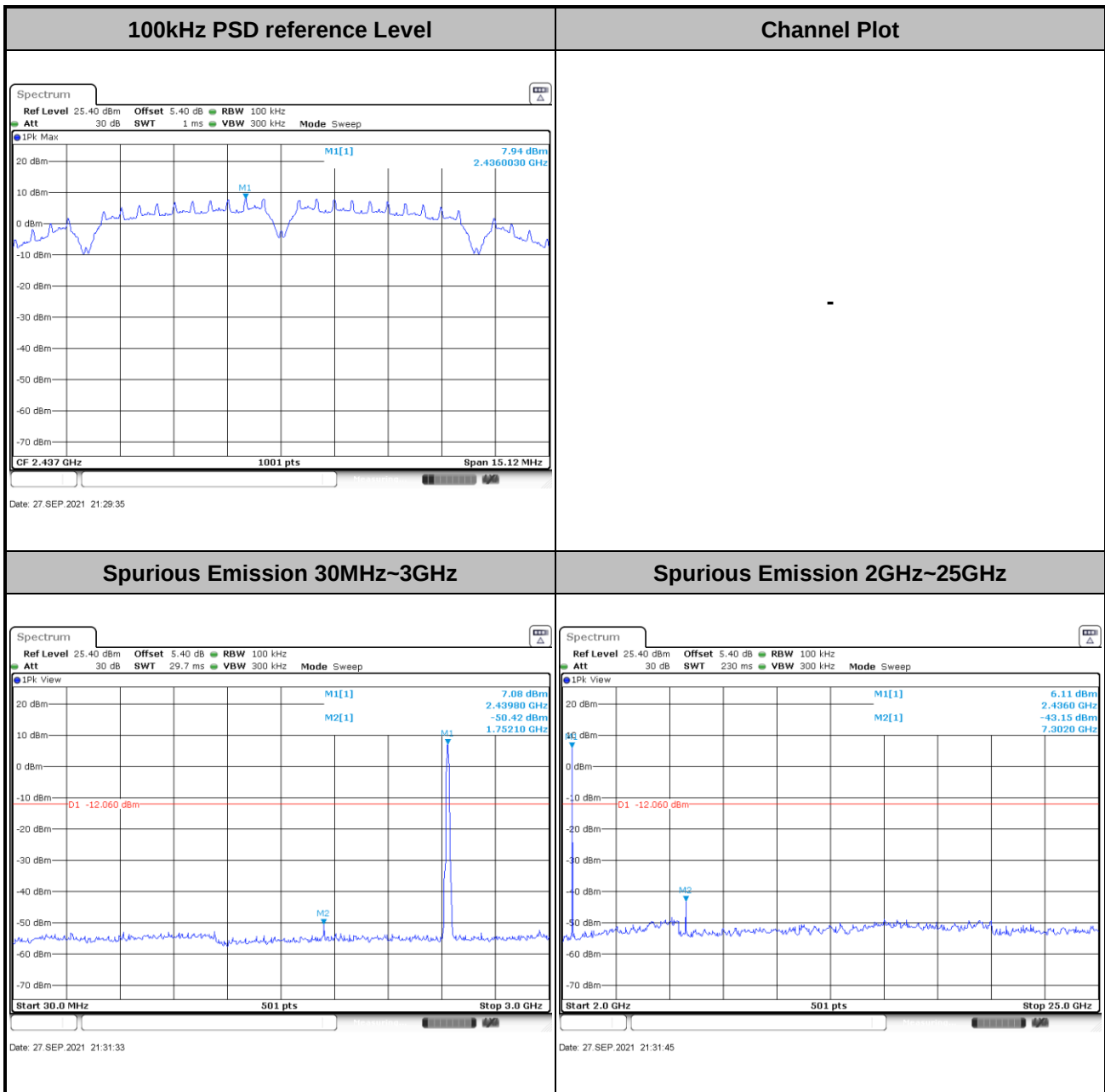
Test Engineer :	rise liu	Temperature :	21~25°C
		Relative Humidity :	51~54%

Test Mode :	802.11b	Test Channel :	01
-------------	---------	----------------	----



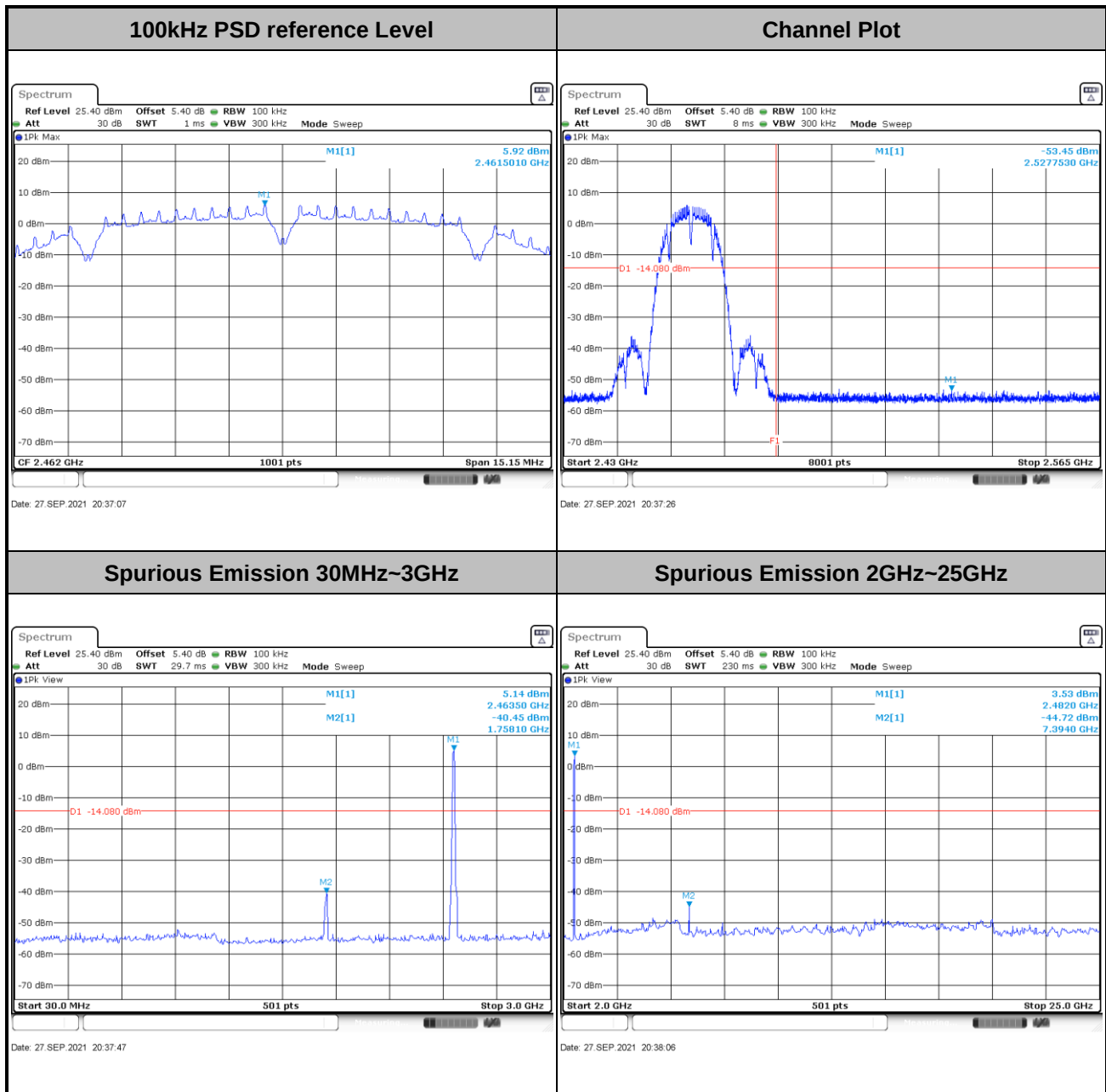


Test Mode :	802.11b	Test Channel :	06
-------------	---------	----------------	----





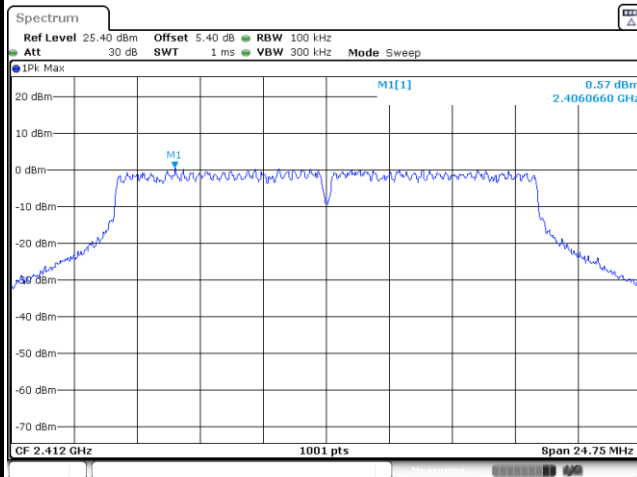
Test Mode :	802.11b	Test Channel :	11
-------------	---------	----------------	----



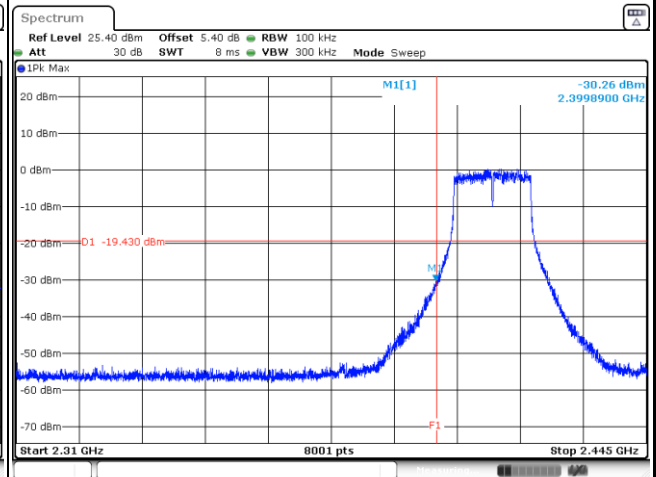


Test Mode :	802.11g	Test Channel :	01
-------------	---------	----------------	----

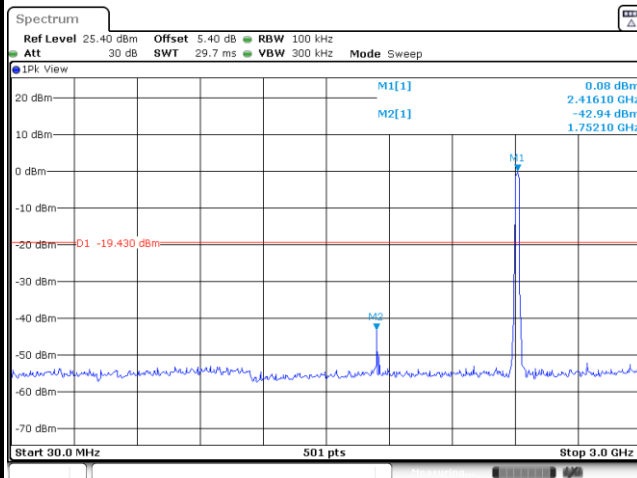
100kHz PSD reference Level



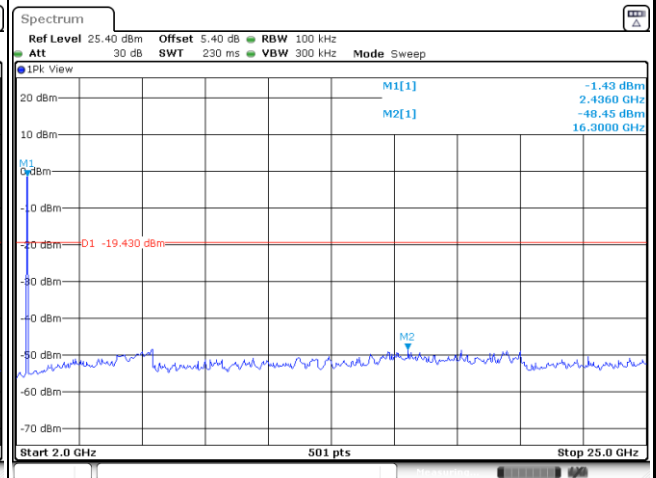
Channel Plot



Spurious Emission 30MHz~3GHz

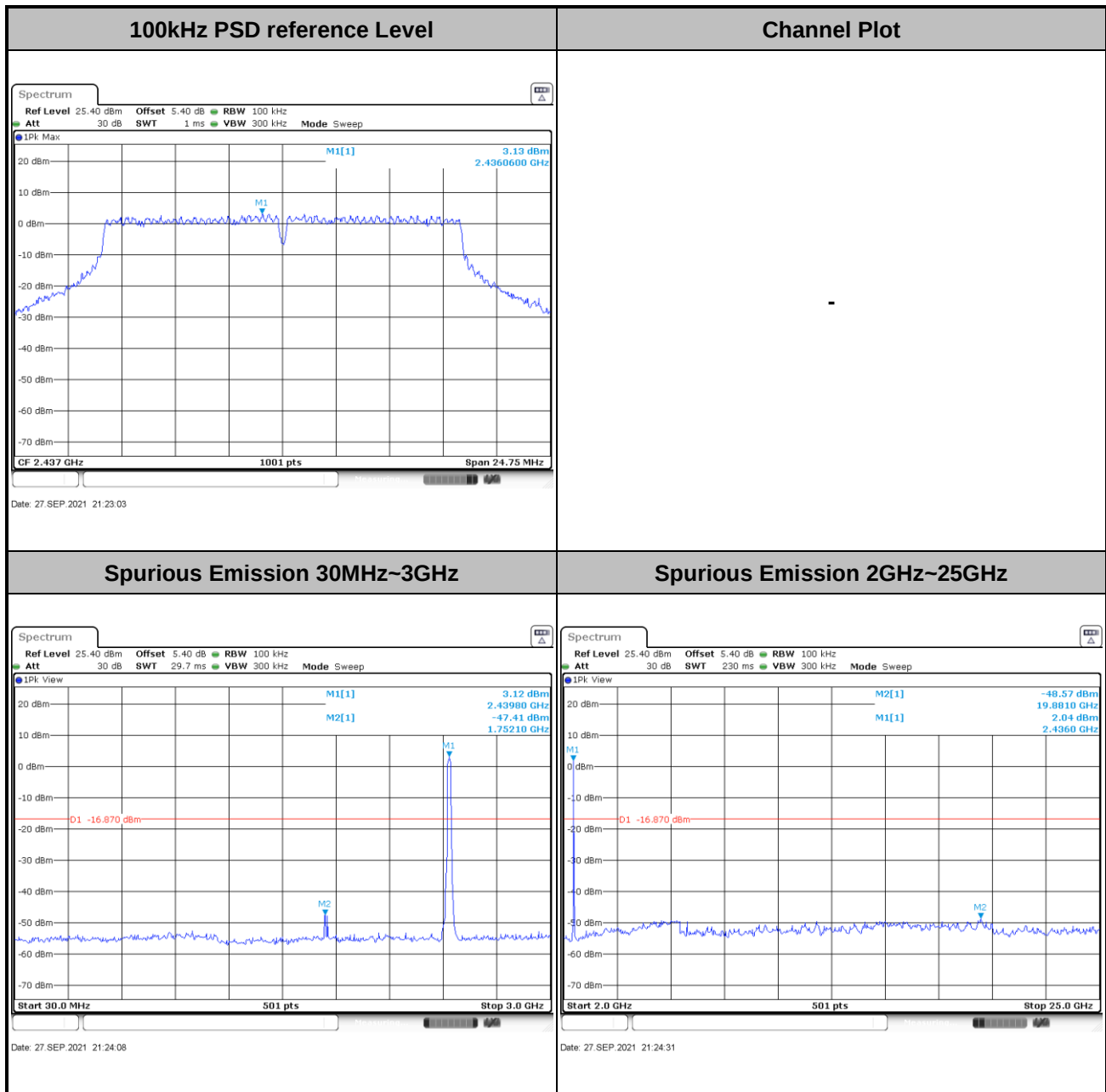


Spurious Emission 2GHz~25GHz





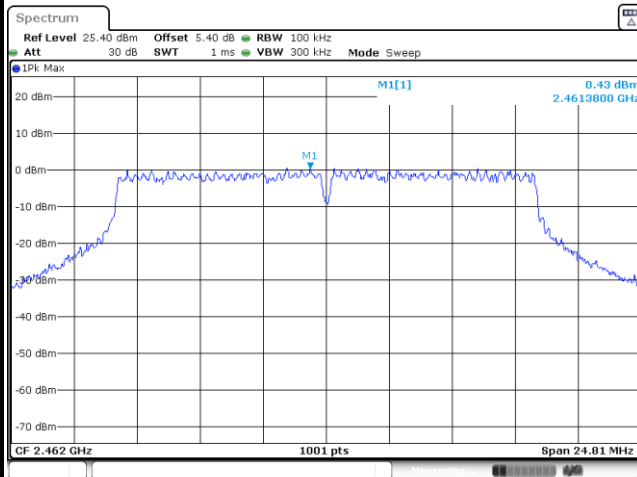
Test Mode :	802.11g	Test Channel :	06
-------------	---------	----------------	----



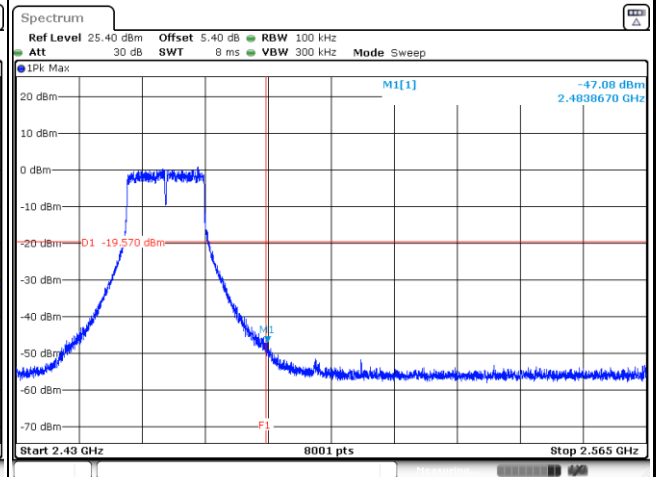


Test Mode :	802.11g	Test Channel :	11
-------------	---------	----------------	----

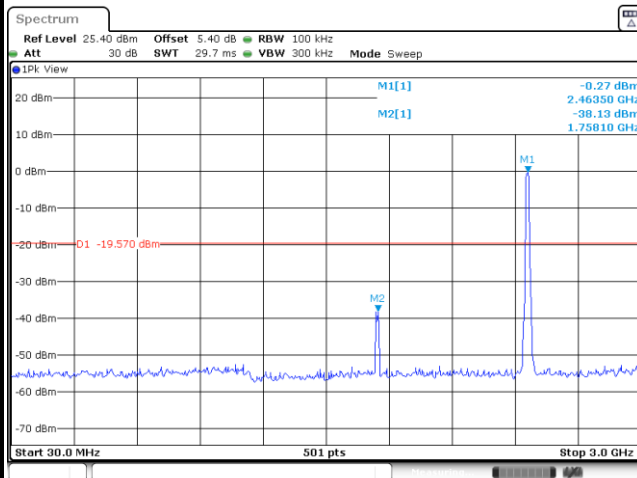
100kHz PSD reference Level



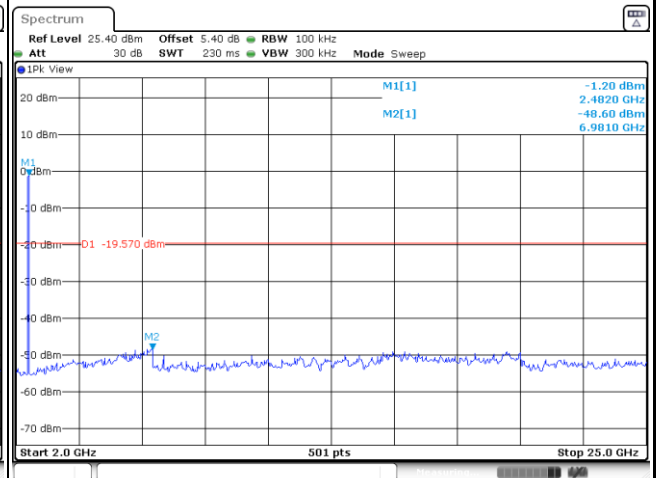
Channel Plot



Spurious Emission 30MHz~3GHz

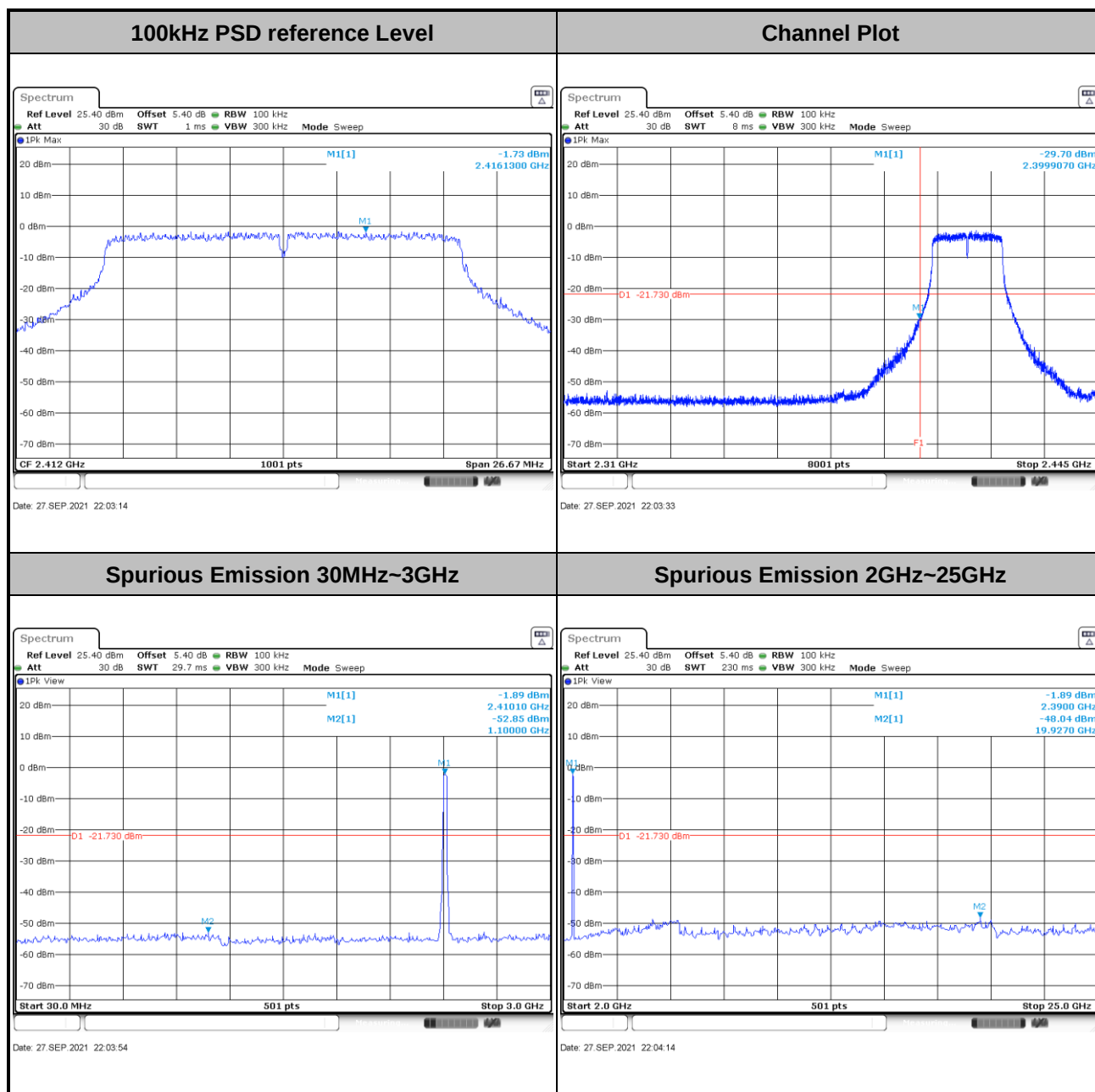


Spurious Emission 2GHz~25GHz



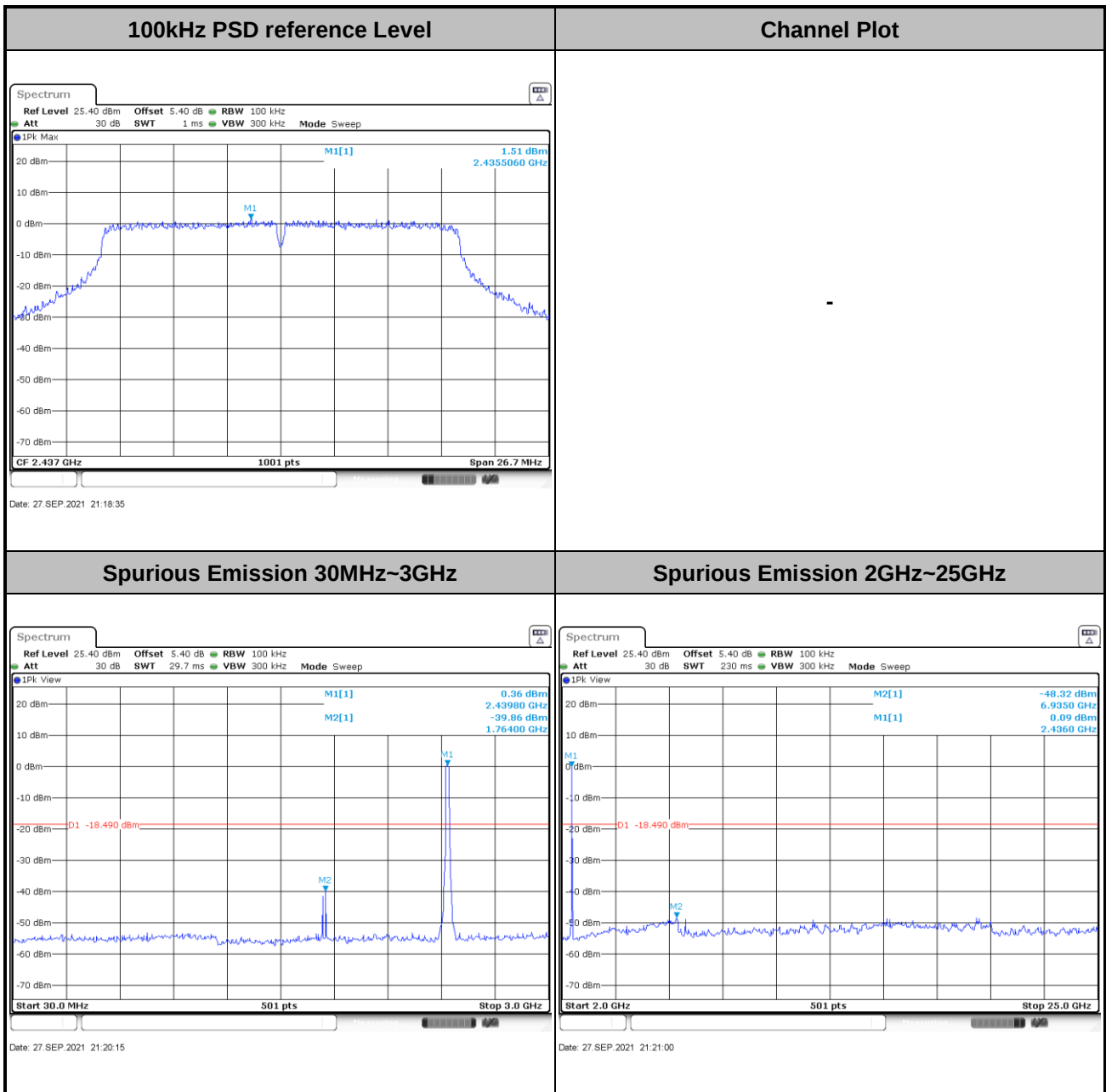


Test Mode :	802.11n HT20	Test Channel :	01
-------------	--------------	----------------	----



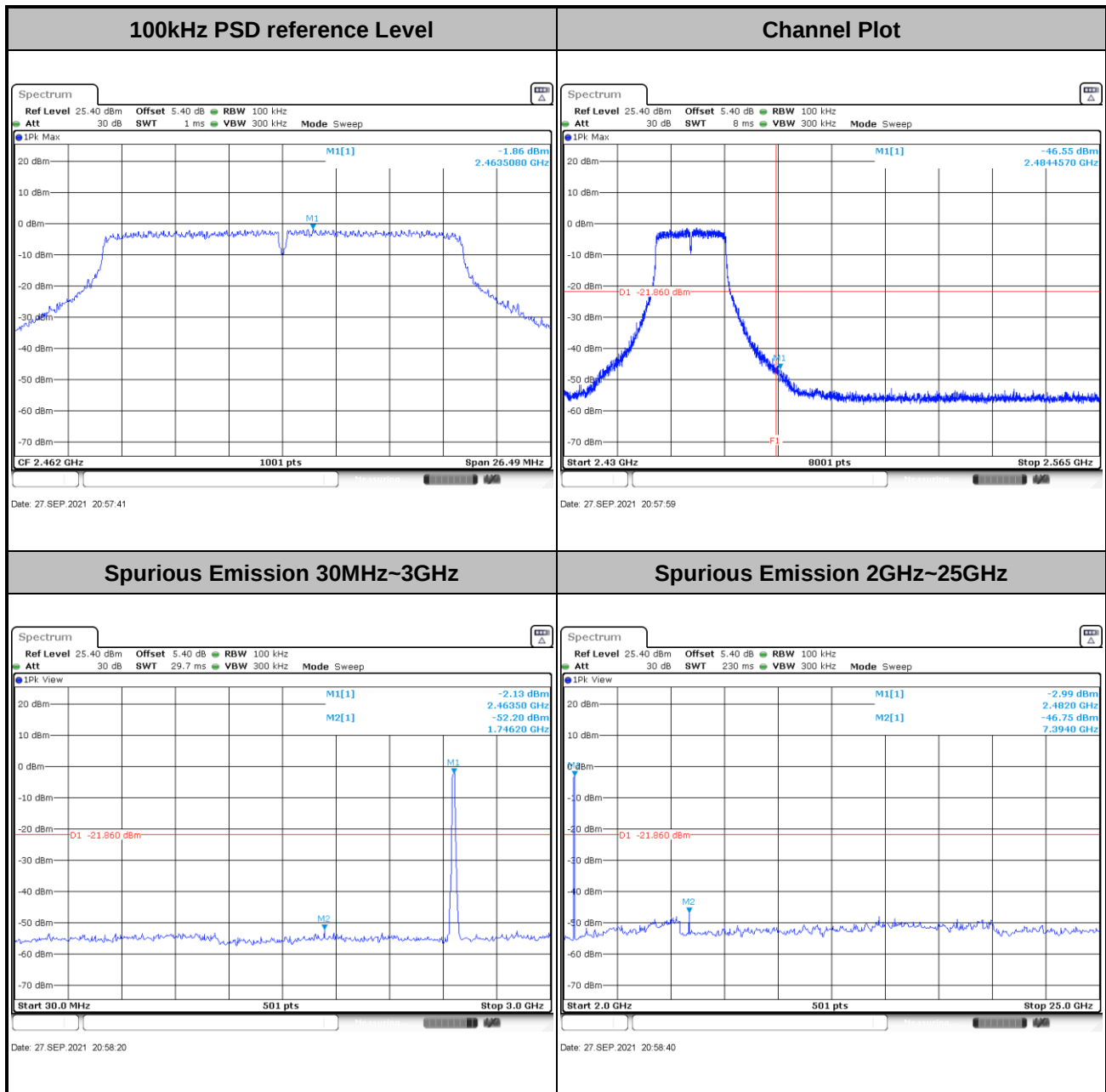


Test Mode :	802.11n HT20	Test Channel :	06
-------------	--------------	----------------	----





Test Mode :	802.11n HT20	Test Channel :	11
-------------	--------------	----------------	----

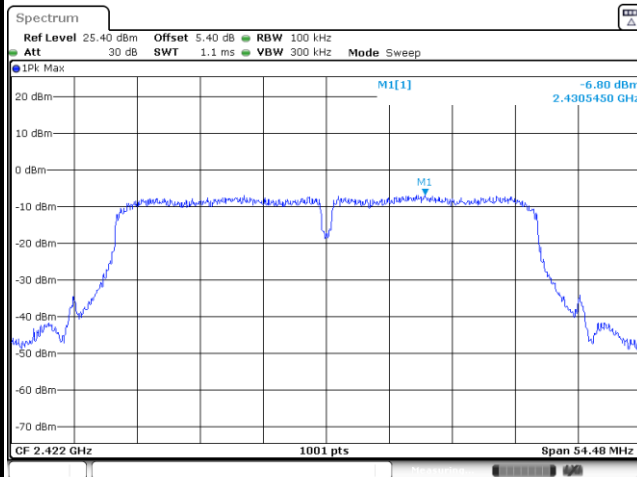




Test Mode : 802.11n HT40

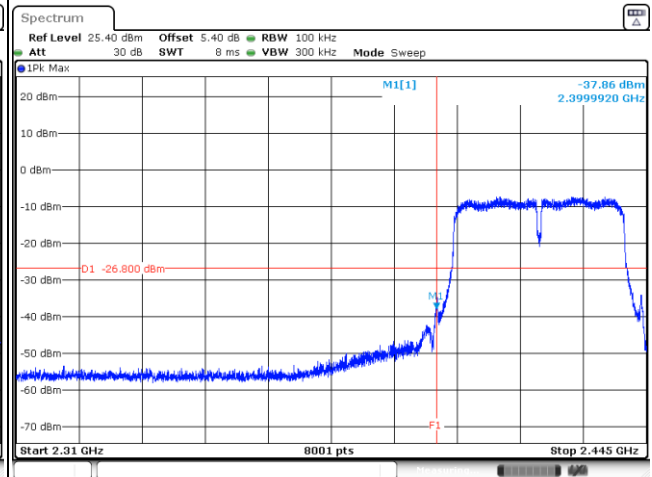
Test Channel : 03

100kHz PSD reference Level



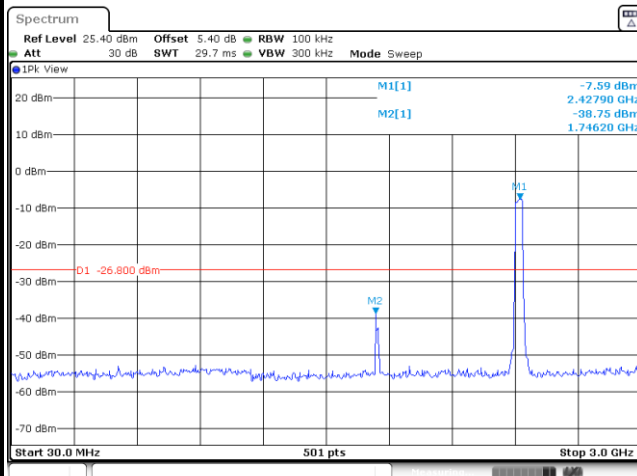
Date: 27.SEP.2021 21:03:44

Channel Plot



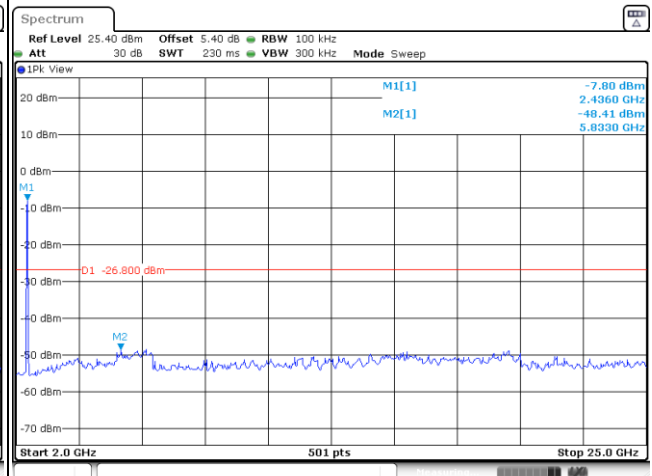
Date: 27.SEP.2021 21:04:03

Spurious Emission 30MHz~3GHz



Date: 27.SEP.2021 21:04:23

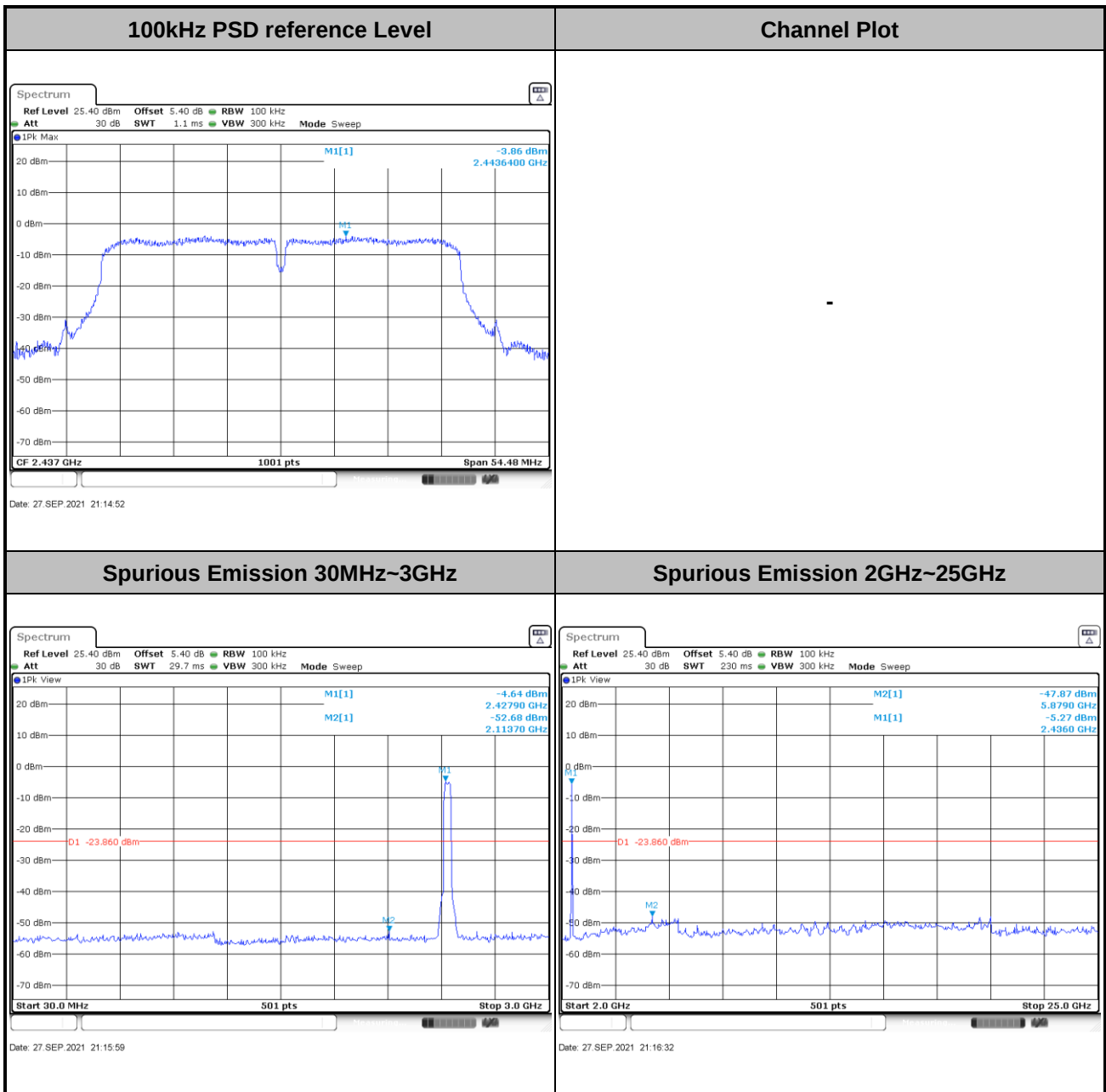
Spurious Emission 2GHz~25GHz



Date: 27.SEP.2021 21:04:43



Test Mode :	802.11n HT40	Test Channel :	06
-------------	--------------	----------------	----

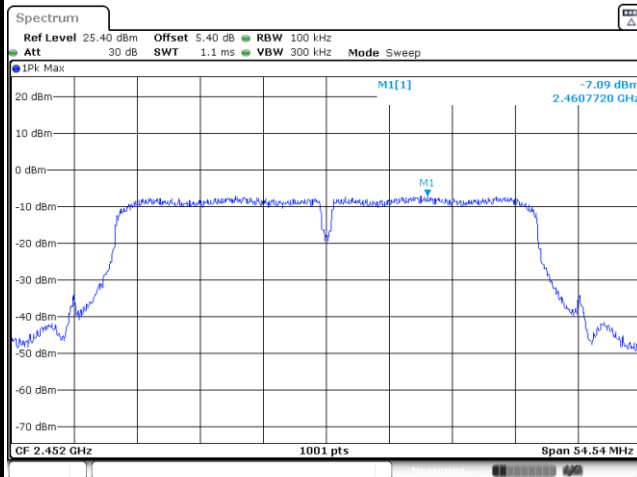




Test Mode : 802.11n HT40

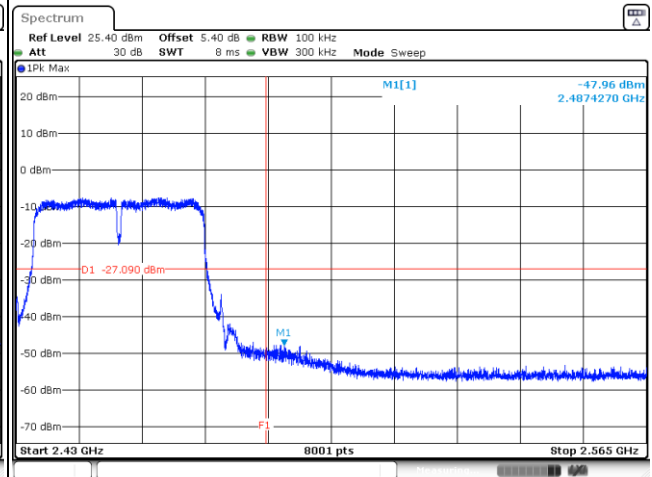
Test Channel : 09

100kHz PSD reference Level



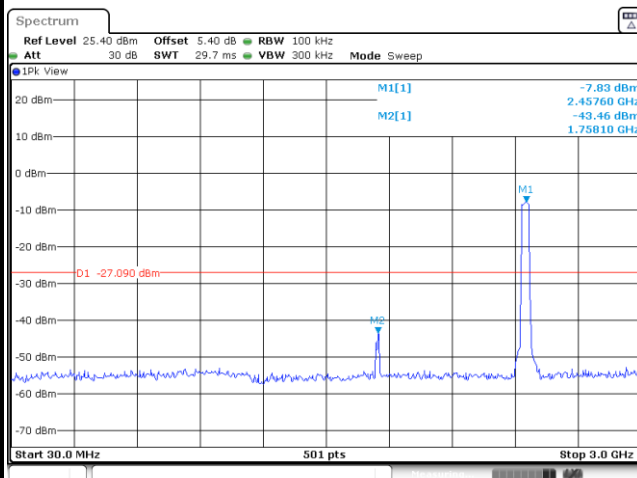
Date: 27.SEP.2021 21:10:41

Channel Plot



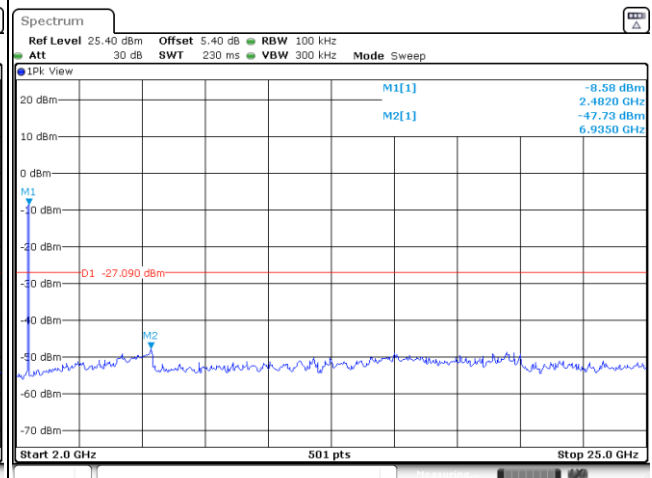
Date: 27.SEP.2021 21:11:00

Spurious Emission 30MHz~3GHz



Date: 27.SEP.2021 21:12:15

Spurious Emission 2GHz~25GHz



Date: 27.SEP.2021 21:12:28

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

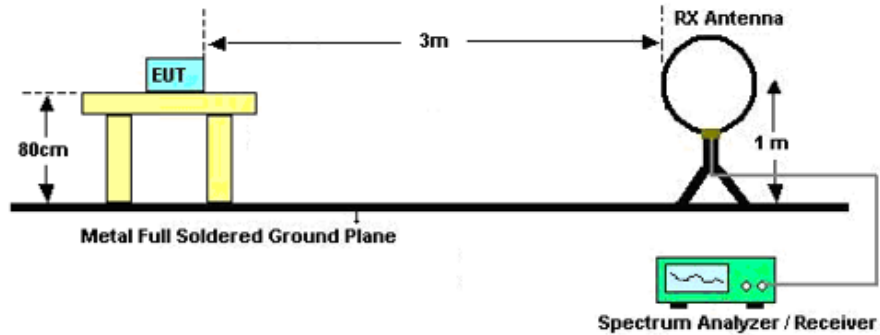
1. The testing follows ANSI C63.10-2013 clause 11.11 & 11.12
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than peak limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

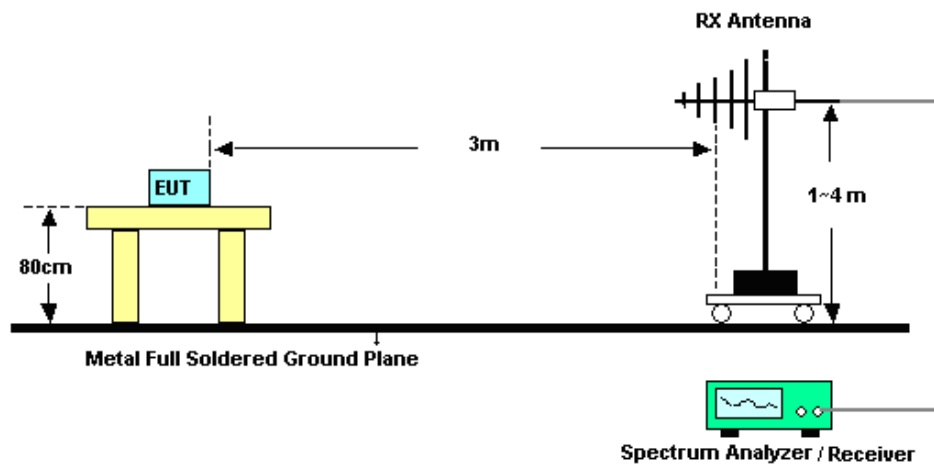
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

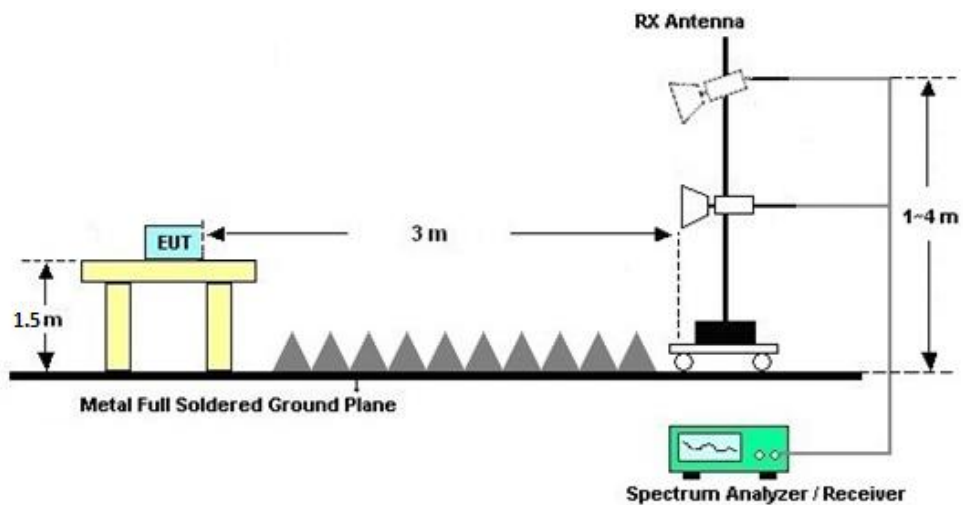
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



**3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)**

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C.

3.5.7 Duty Cycle

Please refer to Appendix D.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic or 40GHz, whichever is lower)

Please refer to Appendix C.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

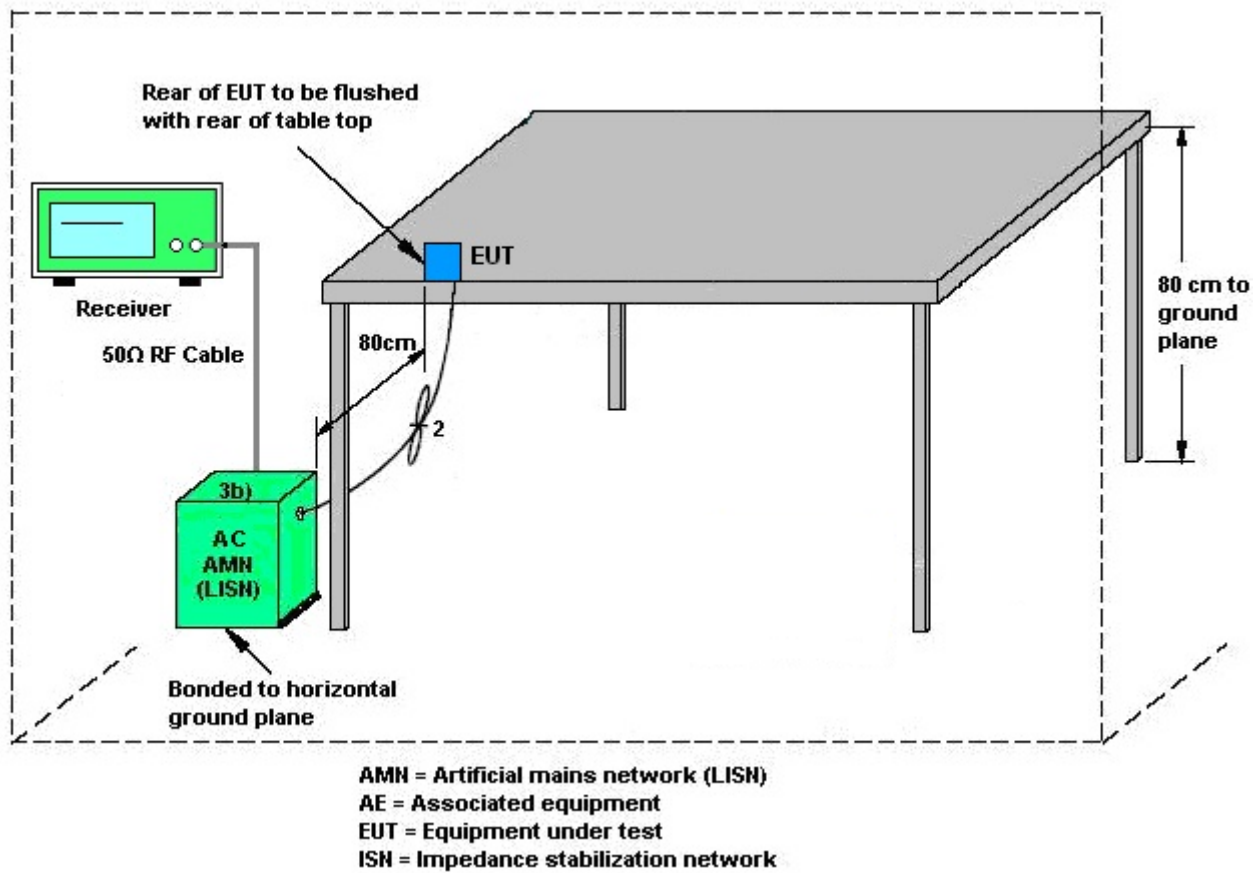
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101040	10Hz~40GHz	Nov. 01, 2020	Sep. 27, 2021	Oct. 31, 2021	Conducted (TH01-KS)
Pulse Power Sensor	Anritsu	MA2411B	0917070	300MHz~40GHz	Jan. 07, 2021	Sep. 27, 2021	Jan. 06, 2022	Conducted (TH01-KS)
Power Meter	Anritsu	ML2495A	1005002	50MHz Bandwidth	Jan. 07, 2021	Sep. 27, 2021	Jan. 06, 2022	Conducted (TH01-KS)
EMI Test Receiver	Keysight	N9038A	MY56400004	3Hz~8.5GHz;Max 30dBm	Oct. 17, 2020	Oct. 07, 2021	Oct. 16, 2021	Radiation (03CH05-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz~44G,MAX 30dB	Apr. 13, 2021	Oct. 07, 2021	Apr. 12, 2022	Radiation (03CH05-KS)
Loop Antenna	R&S	HFH2-Z2	100321	9kHz~30MHz	Nov. 01, 2020	Oct. 07, 2021	Oct. 31, 2021	Radiation (03CH05-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz~1GHz	Jun. 04, 2021	Oct. 07, 2021	Jun. 03, 2022	Radiation (03CH05-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00218652	1GHz~18GHz	Apr. 24, 2021	Oct. 07, 2021	Apr. 23, 2022	Radiation (03CH05-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 10, 2020	Oct. 07, 2021	Nov. 09, 2021	Radiation (03CH05-KS)
Amplifier	SONOMA	310N	187289	9KHz~1GHz	Apr. 12, 2021	Oct. 07, 2021	Apr. 11, 2022	Radiation (03CH05-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 07, 2021	Oct. 07, 2021	Jan. 06, 2022	Radiation (03CH05-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2012228	1Ghz~18Ghz	Oct. 17, 2020	Oct. 07, 2021	Oct. 16, 2021	Radiation (03CH05-KS)
Amplifier	Keysight	83017A	MY53270316	500MHz~26.5GHz	Oct. 17, 2020	Oct. 07, 2021	Oct. 16, 2021	Radiation (03CH05-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 07, 2021	NCR	Radiation (03CH05-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Oct. 07, 2021	NCR	Radiation (03CH05-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Oct. 07, 2021	NCR	Radiation (03CH05-KS)
EMI Receiver	R&S	ESC17	100768	9kHz~7GHz;	Apr. 21, 2021	Oct. 21, 2021	Apr. 20, 2022	Conduction (CO01-KS)
AC LISN (for auxiliary equipment)	MessTec	AN3016	060103	9kHz~30MHz	Oct. 17, 2021	Oct. 21, 2021	Oct. 16, 2022	Conduction (CO01-KS)
AC LISN	R&S	ENV216	100334	9kHz~30MHz	Oct. 17, 2021	Oct. 21, 2021	Oct. 16, 2022	Conduction (CO01-KS)
AC Power Source	Chroma	61602	ABP00000811	AC 0V~300V, 45Hz~1000Hz	Oct. 17, 2021	Oct. 21, 2021	Oct. 16, 2022	Conduction (CO01-KS)

NCR: No Calibration Required.

5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.10-2013. All the measurement uncertainty value were shown with a coverage $K=2$ to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.94dB
---	--------

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
---	-------

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
---	-------

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0dB
---	-------



Appendix A. Conducted Test Results

A1 - DTS Part

Test Engineer:	rise liu	Temperature:	21~25	°C
Test Date:	2021/9/27	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band								
Mod.	Data Rate	N _{Tx}	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
11b	1Mbps	1	1	2412	14.79	10.08	0.50	Pass
11b	1Mbps	1	6	2437	14.84	10.08	0.50	Pass
11b	1Mbps	1	11	2462	14.79	10.10	0.50	Pass
11g	6Mbps	1	1	2412	18.38	16.50	0.50	Pass
11g	6Mbps	1	6	2437	18.48	16.50	0.50	Pass
11g	6Mbps	1	11	2462	18.28	16.54	0.50	Pass
HT20	MCS0	1	1	2412	19.53	17.78	0.50	Pass
HT20	MCS0	1	6	2437	19.58	17.80	0.50	Pass
HT20	MCS0	1	11	2462	19.48	17.66	0.50	Pass
HT40	MCS0	1	3	2422	36.06	36.32	0.50	Pass
HT40	MCS0	1	6	2437	36.16	36.32	0.50	Pass
HT40	MCS0	1	9	2452	36.16	36.36	0.50	Pass

TEST RESULTS DATA
Peak Power Table

2.4GHz Band										
Mod.	Data Rate	N _{Tx}	CH.	Freq. (MHz)	Peak Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
11b	1Mbps	1	1	2412	18.09	30.00	2.90	20.99	36.00	Pass
11b	1Mbps	1	6	2437	20.12	30.00	2.90	23.02	36.00	Pass
11b	1Mbps	1	11	2462	18.07	30.00	2.90	20.97	36.00	Pass
11g	6Mbps	1	1	2412	23.47	30.00	2.90	26.37	36.00	Pass
11g	6Mbps	1	6	2437	24.73	30.00	2.90	27.63	36.00	Pass
11g	6Mbps	1	11	2462	23.66	30.00	2.90	26.56	36.00	Pass
HT20	MCS0	1	1	2412	23.34	30.00	2.90	26.24	36.00	Pass
HT20	MCS0	1	6	2437	24.67	30.00	2.90	27.57	36.00	Pass
HT20	MCS0	1	11	2462	23.19	30.00	2.90	26.09	36.00	Pass
HT40	MCS0	1	3	2422	20.65	30.00	2.90	23.55	36.00	Pass
HT40	MCS0	1	6	2437	23.43	30.00	2.90	26.33	36.00	Pass
HT40	MCS0	1	9	2452	21.14	30.00	2.90	24.04	36.00	Pass

TEST RESULTS DATA
Average Power Table
(Reporting Only)

2.4GHz Band						
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
11b	1Mbps	1	1	2412	0.00	16.04
11b	1Mbps	1	6	2437	0.00	18.11
11b	1Mbps	1	11	2462	0.00	16.01
11g	6Mbps	1	1	2412	0.00	13.38
11g	6Mbps	1	6	2437	0.00	16.07
11g	6Mbps	1	11	2462	0.00	13.35
HT20	MCS0	1	1	2412	0.00	13.28
HT20	MCS0	1	6	2437	0.00	16.02
HT20	MCS0	1	11	2462	0.00	13.25
HT40	MCS0	1	3	2422	0.00	10.29
HT40	MCS0	1	6	2437	0.00	13.10
HT40	MCS0	1	9	2452	0.00	10.23

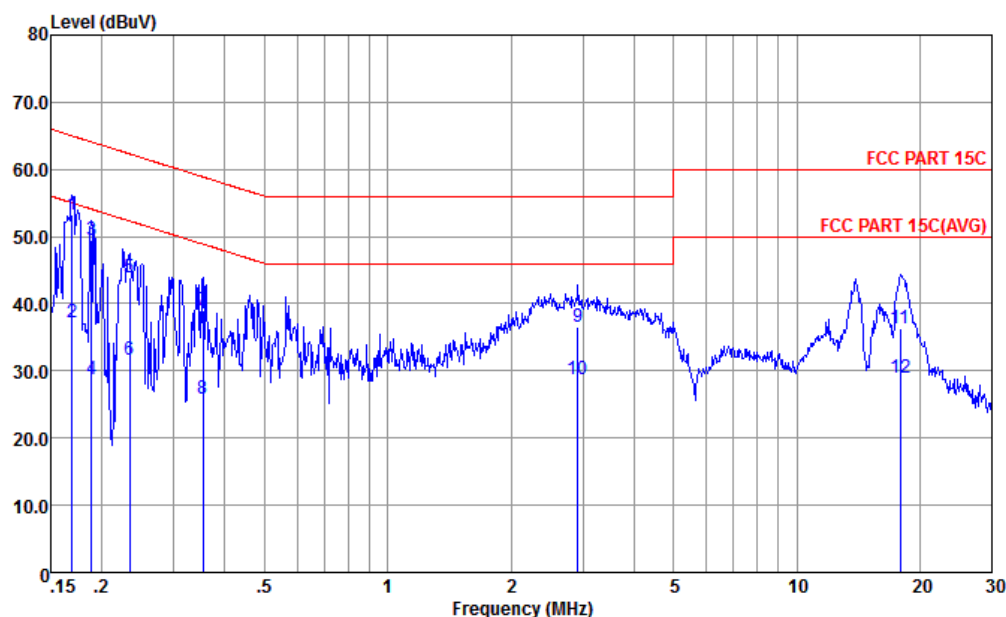
TEST RESULTS DATA
Peak Power Density

2.4GHz Band								
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
11b	1Mbps	1	1	2412	-5.97	2.90	8.00	Pass
11b	1Mbps	1	6	2437	-6.29	2.90	8.00	Pass
11b	1Mbps	1	11	2462	-7.19	2.90	8.00	Pass
11g	6Mbps	1	1	2412	-11.91	2.90	8.00	Pass
11g	6Mbps	1	6	2437	-10.25	2.90	8.00	Pass
11g	6Mbps	1	11	2462	-11.47	2.90	8.00	Pass
HT20	MCS0	1	1	2412	-12.10	2.90	8.00	Pass
HT20	MCS0	1	6	2437	-10.27	2.90	8.00	Pass
HT20	MCS0	1	11	2462	-12.30	2.90	8.00	Pass
HT40	MCS0	1	3	2422	-18.59	2.90	8.00	Pass
HT40	MCS0	1	6	2437	-15.51	2.90	8.00	Pass
HT40	MCS0	1	9	2452	-18.10	2.90	8.00	Pass



Appendix B. AC Conducted Emission Test Results

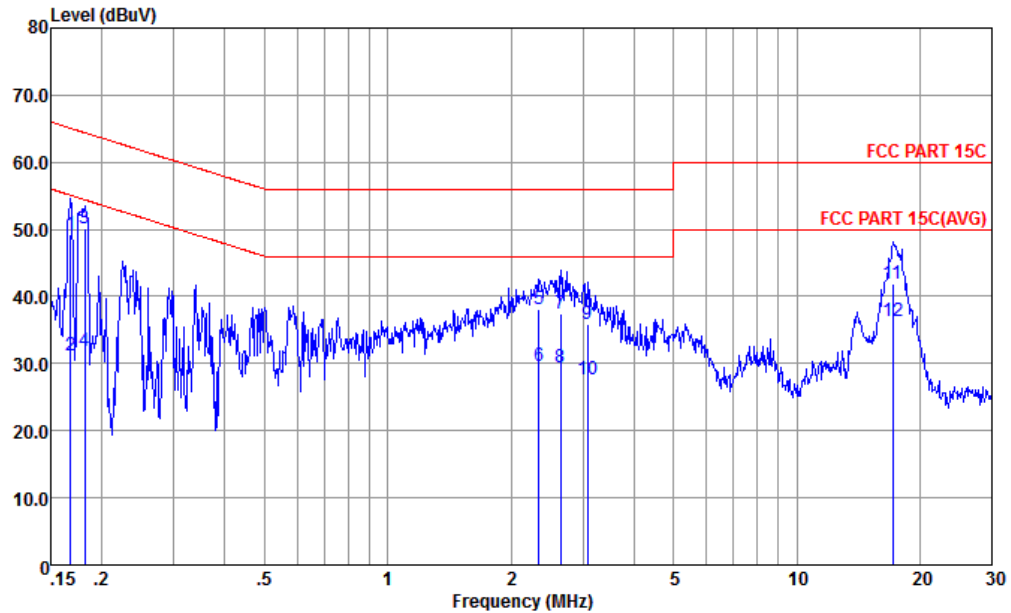
Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : FCC PART 15C LISN-L-060105-CN02 LINE

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1 *	0.169	53.21	-11.78	64.99	42.70	0.08	10.43	QP
2	0.169	37.11	-17.88	54.99	26.60	0.08	10.43	Average
3	0.188	49.57	-14.54	64.11	39.10	0.08	10.39	QP
4	0.188	28.67	-25.44	54.11	18.20	0.08	10.39	Average
5	0.234	43.94	-18.36	62.30	33.51	0.09	10.34	QP
6	0.234	31.64	-20.66	52.30	21.21	0.09	10.34	Average
7	0.354	39.00	-19.87	58.87	28.61	0.11	10.28	QP
8	0.354	25.90	-22.97	48.87	15.51	0.11	10.28	Average
9	2.915	36.55	-19.45	56.00	25.80	0.51	10.24	QP
10	2.915	28.85	-17.15	46.00	18.10	0.51	10.24	Average
11	17.944	36.29	-23.71	60.00	23.90	1.93	10.46	QP
12	17.944	28.99	-21.01	50.00	16.60	1.93	10.46	Average

Test Engineer :	Amos Zhang	Temperature :	25.3~26.2°C
		Relative Humidity :	38~40%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-KS
Condition : FCC PART 15C LISN-N-060105-CN02 NEUTRAL

	Freq	Level	Over	Limit	Read	LISN	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.168	49.19	-15.89	65.08	38.60	0.16	10.43	QP
2	0.168	31.19	-23.89	55.08	20.60	0.16	10.43	Average
3	0.182	50.17	-14.25	64.42	39.61	0.16	10.40	QP
4	0.182	31.77	-22.65	54.42	21.21	0.16	10.40	Average
5	2.346	38.01	-17.99	56.00	27.20	0.58	10.23	QP
6	2.346	29.71	-16.29	46.00	18.90	0.58	10.23	Average
7	2.650	37.45	-18.55	56.00	26.59	0.62	10.24	QP
8	2.650	29.35	-16.65	46.00	18.49	0.62	10.24	Average
9	3.074	35.81	-20.19	56.00	24.91	0.66	10.24	QP
10	3.074	27.71	-18.29	46.00	16.81	0.66	10.24	Average
11	17.199	41.96	-18.04	60.00	29.20	2.32	10.44	QP
12 *	17.199	36.26	-13.74	50.00	23.50	2.32	10.44	Average

Note:

1. Level(dBμV) = Read Level(dBμV) + LISN Factor(dB) + Cable Loss(dB)
2. Over Limit(dB) = Level(dBμV) – Limit Line(dBμV)



Appendix C. Radiated Spurious Emission

For PCB Antenna

15C 2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2364.99	53.3	-20.7	74	49.53	30.46	7.66	34.35	159	349	P	H
		2386.31	43.33	-10.67	54	39.45	30.5	7.72	34.34	159	349	A	H
	*	2414	107.62	-	-	103.61	30.57	7.75	34.31	159	349	P	H
	*	2414	104.55	-	-	100.54	30.57	7.75	34.31	159	349	A	H
		2343.28	53.59	-20.41	74	49.87	30.45	7.63	34.36	333	340	P	V
		2386.31	42.42	-11.58	54	38.54	30.5	7.72	34.34	333	340	A	V
	*	2412	101.89	-	-	97.88	30.57	7.75	34.31	333	340	P	V
	*	2410	98.71	-	-	94.73	30.57	7.75	34.34	333	340	A	V
802.11b CH 11 2462MHz		2487.64	54.68	-19.32	74	50.12	30.93	7.89	34.26	105	348	P	H
		2487.94	44.64	-9.36	54	40.08	30.93	7.89	34.26	105	348	A	H
	*	2462	107.62	-	-	103.28	30.79	7.83	34.28	105	348	P	H
	*	2464	104.47	-	-	100.11	30.79	7.83	34.26	105	348	A	H
		2499.16	53.97	-20.03	74	49.38	30.93	7.89	34.23	331	343	P	V
		2487.88	43.05	-10.95	54	38.49	30.93	7.89	34.26	331	343	A	V
	*	2462	101.91	-	-	97.57	30.79	7.83	34.28	331	343	P	V
	*	2460	98.72	-	-	94.38	30.79	7.83	34.28	331	343	A	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		4824	44.77	-29.23	74	58.99	34.61	11.21	60.04	300	0	P	H
		4824	44.17	-29.83	74	58.39	34.61	11.21	60.04	300	360	P	V
802.11b CH 06 2437MHz		4872	44.12	-29.88	74	58.18	34.69	11.28	60.03	300	0	P	H
		7308	48.1	-25.9	74	58.21	36.68	13.72	60.51	300	0	P	H
		4872	44.79	-29.21	74	58.85	34.69	11.28	60.03	300	360	P	V
		7308	49.55	-24.45	74	59.66	36.68	13.72	60.51	300	360	P	V
802.11b CH 11 2462MHz		4926	44.74	-29.26	74	58.64	34.77	11.35	60.02	300	0	P	H
		7386	46.84	-27.16	74	56.93	36.64	13.8	60.53	300	0	P	H
		4926	44.14	-29.86	74	58.04	34.77	11.35	60.02	300	360	P	V
		7386	47.57	-26.43	74	57.66	36.64	13.8	60.53	300	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz
WIFI 802.11g (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11g CH 01 2412MHz		2389.95	62.05	-11.95	74	58.17	30.5	7.72	34.34	159	349	P	H
		2389.95	45.85	-8.15	54	41.97	30.5	7.72	34.34	159	349	A	H
	*	2414	108.93	-	-	104.92	30.57	7.75	34.31	159	349	P	H
	*	2414	99.64	-	-	95.63	30.57	7.75	34.31	159	349	A	H
		2389.82	56.31	-17.69	74	52.43	30.5	7.72	34.34	303	342	P	V
		2389.95	43.99	-10.01	54	40.11	30.5	7.72	34.34	303	342	A	V
	*	2408	105.16	-	-	101.18	30.57	7.75	34.34	303	342	P	V
	*	2414	95.37	-	-	91.36	30.57	7.75	34.31	303	342	A	V
802.11g CH 11 2462MHz		2486.2	57.17	-16.83	74	52.71	30.86	7.86	34.26	105	348	P	H
		2483.5	44.45	-9.55	54	39.99	30.86	7.86	34.26	105	348	A	H
	*	2460	108.18	-	-	103.84	30.79	7.83	34.28	105	348	P	H
	*	2464	99.16	-	-	94.8	30.79	7.83	34.26	105	348	A	H
		2484.22	56.12	-17.88	74	51.66	30.86	7.86	34.26	294	345	P	V
		2483.5	43.23	-10.77	54	38.77	30.86	7.86	34.26	294	345	A	V
	*	2458	101.86	-	-	97.52	30.79	7.83	34.28	294	345	P	V
	*	2456	92.83	-	-	88.49	30.79	7.83	34.28	294	345	A	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11g CH 01 2412MHz		4824	43.36	-30.64	74	57.58	34.61	11.21	60.04	100	360	P	H
		4824	42.57	-31.43	74	56.79	34.61	11.21	60.04	100	360	P	V
802.11g CH 06 2437MHz		4872	40.76	-33.24	74	54.82	34.69	11.28	60.03	100	360	P	H
		7308	46.04	-27.96	74	56.15	36.68	13.72	60.51	100	360	P	H
		4872	41.83	-32.17	74	55.89	34.69	11.28	60.03	100	360	P	V
		7308	45.99	-28.01	74	56.1	36.68	13.72	60.51	100	360	P	V
802.11g CH 11 2462MHz		4926	42.28	-31.72	74	56.18	34.77	11.35	60.02	100	360	P	H
		7386	44.22	-29.78	74	54.31	36.64	13.8	60.53	100	360	P	H
		4926	41.96	-32.04	74	55.86	34.77	11.35	60.02	100	360	P	V
		7386	46.01	-27.99	74	56.1	36.64	13.8	60.53	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 01 2412MHz		2389.95	63.43	-10.57	74	59.55	30.5	7.72	34.34	135	351	P	H
		2389.95	47.98	-6.02	54	44.1	30.5	7.72	34.34	135	351	A	H
	*	2418	108.44	-	-	104.43	30.57	7.75	34.31	135	351	P	H
	*	2414	99.29	-	-	95.28	30.57	7.75	34.31	135	351	A	H
		2389.43	56.75	-17.25	74	52.87	30.5	7.72	34.34	303	341	P	V
		2389.95	44.95	-9.05	54	41.07	30.5	7.72	34.34	303	341	A	V
	*	2412	103.31	-	-	99.3	30.57	7.75	34.31	303	341	P	V
	*	2414	95.07	-	-	91.06	30.57	7.75	34.31	303	341	A	V
802.11n HT20 CH 11 2462MHz		2486.86	60.54	-13.46	74	56.08	30.86	7.86	34.26	104	348	P	H
		2483.5	44.81	-9.19	54	40.35	30.86	7.86	34.26	104	348	A	H
	*	2464	106.48	-	-	102.12	30.79	7.83	34.26	104	348	P	H
	*	2464	98.54	-	-	94.18	30.79	7.83	34.26	104	348	A	H
		2486.14	54.84	-19.16	74	50.38	30.86	7.86	34.26	331	343	P	V
		2483.5	43.06	-10.94	54	38.6	30.86	7.86	34.26	331	343	A	V
	*	2460	100.81	-	-	96.47	30.79	7.83	34.28	331	343	P	V
	*	2460	92.98	-	-	88.64	30.79	7.83	34.28	331	343	A	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 01 2412MHz		4824	42.42	-31.58	74	56.64	34.61	11.21	60.04	100	360	P	H
		4824	42.5	-31.5	74	56.72	34.61	11.21	60.04	100	360	P	V
802.11n HT20 CH 06 2437MHz		4872	41.7	-32.3	74	55.76	34.69	11.28	60.03	100	360	P	H
		7308	45.34	-28.66	74	55.45	36.68	13.72	60.51	100	360	P	H
		4872	41.31	-32.69	74	55.37	34.69	11.28	60.03	100	360	P	V
		7308	45.23	-28.77	74	55.34	36.68	13.72	60.51	100	360	P	V
802.11n HT20 CH 11 2462MHz		4926	42.57	-31.43	74	56.47	34.77	11.35	60.02	100	360	P	H
		7386	46.7	-27.3	74	56.79	36.64	13.8	60.53	100	360	P	H
		4926	43.06	-30.94	74	56.96	34.77	11.35	60.02	100	360	P	V
		7386	45.6	-28.4	74	55.69	36.64	13.8	60.53	100	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 03 2422MHz		2389.17	59.09	-14.91	74	55.21	30.5	7.72	34.34	105	351	P	H
		2389.95	47.2	-6.8	54	43.32	30.5	7.72	34.34	105	351	A	H
		2485.54	54.01	-19.99	74	49.55	30.86	7.86	34.26	105	351	P	H
		2491.3	42.51	-11.49	54	37.92	30.93	7.89	34.23	105	351	A	H
	*	2430	101.82	-	-	97.71	30.64	7.78	34.31	105	351	P	H
	*	2430	93.94	-	-	89.83	30.64	7.78	34.31	105	351	A	H
		2386.44	55.84	-18.16	74	51.96	30.5	7.72	34.34	303	342	P	V
		2389.95	44.16	-9.84	54	40.28	30.5	7.72	34.34	303	342	A	V
		2495.62	54.02	-19.98	74	49.43	30.93	7.89	34.23	303	342	P	V
		2494.18	42.45	-11.55	54	37.86	30.93	7.89	34.23	303	342	A	V
	*	2416	98.49	-	-	94.48	30.57	7.75	34.31	303	342	P	V
	*	2414	89.1	-	-	85.09	30.57	7.75	34.31	303	342	A	V
802.11n HT40 CH 09 2452MHz		2310.78	52.64	-21.36	74	49.02	30.41	7.58	34.37	134	352	P	H
		2389.56	41.84	-12.16	54	37.96	30.5	7.72	34.34	134	352	A	H
		2486.44	54.77	-19.23	74	50.31	30.86	7.86	34.26	134	352	P	H
		2483.5	44.34	-9.66	54	39.88	30.86	7.86	34.26	134	352	A	H
	*	2444	101.21	-	-	96.98	30.71	7.8	34.28	134	352	P	H
	*	2444	92.85	-	-	88.62	30.71	7.8	34.28	134	352	A	H
		2349.78	53.01	-20.99	74	49.29	30.45	7.63	34.36	293	341	P	V
		2389.56	41.69	-12.31	54	37.81	30.5	7.72	34.34	293	341	A	V
		2488.18	54.34	-19.66	74	49.78	30.93	7.89	34.26	293	341	P	V
		2483.68	43.06	-10.94	54	38.6	30.86	7.86	34.26	293	341	A	V
	*	2450	95.56	-	-	91.33	30.71	7.8	34.28	293	341	P	V
	*	2444	87.49	-	-	83.26	30.71	7.8	34.28	293	341	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 03 2422MHz		4842	41.15	-32.85	74	55.32	34.63	11.23	60.03	100	360	P	H
		7266	44.74	-29.26	74	54.88	36.69	13.68	60.51	100	360	P	H
		4842	41.6	-32.4	74	55.77	34.63	11.23	60.03	100	360	P	V
		7266	44.77	-29.23	74	54.91	36.69	13.68	60.51	100	360	P	V
802.11n HT40 CH 06 2437MHz		4872	41.26	-32.74	74	55.32	34.69	11.28	60.03	100	360	P	H
		7308	44.28	-29.72	74	54.39	36.68	13.72	60.51	100	360	P	H
		4872	40.71	-33.29	74	54.77	34.69	11.28	60.03	100	360	P	V
		7308	44.89	-29.11	74	55	36.68	13.72	60.51	100	360	P	V
802.11n HT40 CH 09 2452MHz		4902	41.09	-32.91	74	55.05	34.74	11.32	60.02	300	0	P	H
		7356	44.72	-29.28	74	54.81	36.66	13.77	60.52	300	0	P	H
		4902	41.18	-32.82	74	55.14	34.74	11.32	60.02	300	360	P	V
		7356	44.04	-29.96	74	54.13	36.66	13.77	60.52	300	360	P	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



15C Emission below 1GHz

2.4GHz WIFI 802.11n HT20 (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11n HT20 LF		65.89	27.44	-12.56	40	46.84	12.26	1.22	32.88	-	-	P	H
		101.78	32.51	-10.99	43.5	47.81	16.28	1.52	33.1	-	-	P	H
		150.28	29.1	-14.4	43.5	43.15	17.1	1.85	33	-	-	P	H
		180.35	27.84	-15.66	43.5	43.64	15.1	2.04	32.94	-	-	P	H
		315.18	32.25	-13.75	46	42.73	19.55	2.7	32.73	-	-	P	H
		385.02	28.6	-17.4	46	36.68	21.38	2.99	32.45	-	-	P	H
		44.55	27.91	-12.09	40	42.64	17.35	1.02	33.1	-	-	P	V
		55.22	29.61	-10.39	40	48.55	13.15	1.11	33.2	-	-	P	V
		97.9	32.41	-11.09	43.5	48.1	15.84	1.49	33.02	-	-	P	V
		198.78	28.34	-15.16	43.5	44.03	15.07	2.14	32.9	-	-	P	V
		270.56	29.74	-16.26	46	40.32	19.67	2.51	32.76	-	-	P	V
		300.63	24.68	-21.32	46	35.33	19.41	2.64	32.7	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



For Dipole Antenna

15C 2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2345.62	53.18	-20.82	74	49.46	30.45	7.63	34.36	100	250	P	H
		2389.69	41.69	-12.31	54	37.81	30.5	7.72	34.34	100	250	A	H
	*	2414	94.51	-	-	90.5	30.57	7.75	34.31	100	250	P	H
	*	2414	91.46	-	-	87.45	30.57	7.75	34.31	100	250	A	H
		2371.36	53.18	-20.82	74	49.36	30.48	7.69	34.35	100	77	P	V
		2386.31	41.93	-12.07	54	38.05	30.5	7.72	34.34	100	77	A	V
	*	2412	105.21	-	-	101.2	30.57	7.75	34.31	100	77	P	V
	*	2410	102.14	-	-	98.16	30.57	7.75	34.34	100	77	A	V
802.11b CH 11 2462MHz		2488.36	53.72	-20.28	74	49.16	30.93	7.89	34.26	150	251	P	H
		2490.88	42.56	-11.44	54	37.97	30.93	7.89	34.23	150	251	A	H
	*	2464	95.77	-	-	91.41	30.79	7.83	34.26	150	251	P	H
	*	2464	92.73	-	-	88.37	30.79	7.83	34.26	150	251	A	H
		2490.4	55.39	-18.61	74	50.8	30.93	7.89	34.23	106	77	P	V
		2487.76	43.72	-10.28	54	39.16	30.93	7.89	34.26	106	77	A	V
	*	2462	106.38	-	-	102.04	30.79	7.83	34.28	106	77	P	V
	*	2464	103.3	-	-	98.94	30.79	7.83	34.26	106	77	P	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		4824	43.22	-30.78	74	57.44	34.61	11.21	60.04	300	0	P	H
		4824	43.85	-30.15	74	58.07	34.61	11.21	60.04	300	360	P	V
802.11b CH 06 2437MHz		4872	40.52	-33.48	74	54.58	34.69	11.28	60.03	300	0	P	H
		7308	45.22	-28.78	74	55.33	36.68	13.72	60.51	300	0	P	H
		4872	41.92	-32.08	74	55.98	34.69	11.28	60.03	300	360	P	V
		7308	45.9	-28.1	74	56.01	36.68	13.72	60.51	300	360	P	V
802.11b CH 11 2462MHz		4926	42.25	-31.75	74	56.15	34.77	11.35	60.02	300	0	P	H
		7386	46.03	-27.97	74	56.12	36.64	13.8	60.53	300	0	P	H
		4926	43.6	-30.4	74	57.5	34.77	11.35	60.02	300	360	P	V
		7386	48.33	-25.67	74	58.42	36.64	13.8	60.53	300	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz
WIFI 802.11g (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11g CH 01 2412MHz		2380.59	52.9	-21.1	74	49.08	30.48	7.69	34.35	100	252	P	H
		2389.17	41.77	-12.23	54	37.89	30.5	7.72	34.34	100	252	A	H
	*	2414	95.74	-	-	91.73	30.57	7.75	34.31	100	252	P	H
	*	2414	87.13	-	-	83.12	30.57	7.75	34.31	100	252	A	H
		2389.17	58.39	-15.61	74	54.51	30.5	7.72	34.34	100	75	P	V
		2389.95	45.42	-8.58	54	41.54	30.5	7.72	34.34	100	75	A	V
	*	2418	107.12	-	-	103.11	30.57	7.75	34.31	100	75	P	V
	*	2410	97.68	-	-	93.7	30.57	7.75	34.34	100	75	A	V
802.11g CH 11 2462MHz		2491.36	53.71	-20.29	74	49.12	30.93	7.89	34.23	150	250	P	H
		2483.5	42.63	-11.37	54	38.17	30.86	7.86	34.26	150	250	A	H
	*	2468	96.68	-	-	92.32	30.79	7.83	34.26	150	250	P	H
	*	2468	87.79	-	-	83.43	30.79	7.83	34.26	150	250	A	H
		2483.56	60.21	-13.79	74	55.75	30.86	7.86	34.26	104	78	P	V
		2483.5	47.6	-6.4	54	43.14	30.86	7.86	34.26	104	78	A	V
	*	2460	107.98	-	-	103.64	30.79	7.83	34.28	104	78	P	V
	*	2464	98.64	-	-	94.28	30.79	7.83	34.26	104	78	A	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz
WIFI 802.11g (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11g CH 01 2412MHz		4824	41.68	-32.32	74	55.9	34.61	11.21	60.04	300	0	P	H
		4824	41.84	-32.16	74	56.06	34.61	11.21	60.04	300	360	P	V
802.11g CH 06 2437MHz		4872	41.16	-32.84	74	55.22	34.69	11.28	60.03	300	0	P	H
		7308	45.24	-28.76	74	55.35	36.68	13.72	60.51	300	0	P	H
		4872	41.34	-32.66	74	55.4	34.69	11.28	60.03	300	360	P	V
		7308	46.75	-27.25	74	56.86	36.68	13.72	60.51	300	360	P	V
802.11g CH 11 2462MHz		4926	42.56	-31.44	74	56.46	34.77	11.35	60.02	300	0	P	H
		7386	44.49	-29.51	74	54.58	36.64	13.8	60.53	300	0	P	H
		4926	42.57	-31.43	74	56.47	34.77	11.35	60.02	300	360	P	V
		7386	44.36	-29.64	74	54.45	36.64	13.8	60.53	300	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 01 2412MHz		2385.53	52.83	-21.17	74	48.95	30.5	7.72	34.34	100	249	P	H
		2389.95	41.82	-12.18	54	37.94	30.5	7.72	34.34	100	249	A	H
	*	2414	94.91	-	-	90.9	30.57	7.75	34.31	100	249	P	H
	*	2414	86.97	-	-	82.96	30.57	7.75	34.31	100	249	A	H
		2388.65	61.25	-12.75	74	57.37	30.5	7.72	34.34	100	89	P	V
		2389.95	46.62	-7.38	54	42.74	30.5	7.72	34.34	100	89	A	V
	*	2412	105.25	-	-	101.24	30.57	7.75	34.31	100	89	P	V
	*	2410	97.49	-	-	93.51	30.57	7.75	34.34	100	89	P	V
802.11n HT20 CH 11 2462MHz		2497.48	54.42	-19.58	74	49.83	30.93	7.89	34.23	182	251	P	H
		2483.56	42.73	-11.27	54	38.27	30.86	7.86	34.26	182	251	A	H
	*	2458	95.75	-	-	91.41	30.79	7.83	34.28	182	251	P	H
	*	2456	87.71	-	-	83.37	30.79	7.83	34.28	182	251	A	H
		2483.5	61.54	-12.46	74	57.08	30.86	7.86	34.26	105	112	P	V
		2483.5	48.09	-5.91	54	43.63	30.86	7.86	34.26	105	112	A	V
	*	2464	106.13	-	-	101.77	30.79	7.83	34.26	105	112	P	V
	*	2460	97.58	-	-	93.24	30.79	7.83	34.28	105	112	A	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT20 CH 01 2412MHz		4824	42.88	-31.12	74	57.1	34.61	11.21	60.04	300	0	P	H
		4824	42.95	-31.05	74	57.17	34.61	11.21	60.04	300	360	P	V
802.11n HT20 CH 06 2437MHz		4872	40.48	-33.52	74	54.54	34.69	11.28	60.03	300	0	P	H
		7308	44.93	-29.07	74	55.04	36.68	13.72	60.51	300	0	P	H
		4872	42.92	-31.08	74	56.98	34.69	11.28	60.03	300	360	P	V
		7308	47.04	-26.96	74	57.15	36.68	13.72	60.51	300	360	P	V
802.11n HT20 CH 11 2462MHz		4926	41.78	-32.22	74	55.68	34.77	11.35	60.02	300	0	P	H
		7386	44.35	-29.65	74	54.44	36.64	13.8	60.53	300	0	P	H
		4926	42.38	-31.62	74	56.28	34.77	11.35	60.02	300	360	P	V
		7386	45.92	-28.08	74	56.01	36.64	13.8	60.53	300	360	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 03 2422MHz		2342.89	53.71	-20.29	74	49.99	30.45	7.63	34.36	114	252	P	H
		2389.95	42.09	-11.91	54	38.21	30.5	7.72	34.34	114	252	A	H
		2484.34	54.47	-19.53	74	50.01	30.86	7.86	34.26	114	252	P	H
		2494	42.54	-11.46	54	37.95	30.93	7.89	34.23	114	252	A	H
	*	2438	89.61	-	-	85.38	30.71	7.8	34.28	114	252	P	H
	*	2438	81.77	-	-	77.54	30.71	7.8	34.28	114	252	A	H
		2388.91	56.05	-17.95	74	52.17	30.5	7.72	34.34	107	295	P	V
		2389.95	45.05	-8.95	54	41.17	30.5	7.72	34.34	107	295	A	V
		2490.22	53.75	-20.25	74	49.16	30.93	7.89	34.23	107	295	P	V
		2492.14	42.49	-11.51	54	37.9	30.93	7.89	34.23	107	295	A	V
	*	2436	99.34	-	-	95.23	30.64	7.78	34.31	107	295	P	V
	*	2430	91.35	-	-	87.24	30.64	7.78	34.31	107	295	A	V
802.11n HT40 CH 09 2452MHz		2319.75	52.85	-21.15	74	49.19	30.43	7.6	34.37	118	251	P	H
		2388.65	41.7	-12.3	54	37.82	30.5	7.72	34.34	118	251	A	H
		2496.16	53.77	-20.23	74	49.18	30.93	7.89	34.23	118	251	P	H
		2484.04	42.83	-11.17	54	38.37	30.86	7.86	34.26	118	251	A	H
	*	2444	90.28	-	-	86.05	30.71	7.8	34.28	118	251	P	H
	*	2444	82.2	-	-	77.97	30.71	7.8	34.28	118	251	A	H
		2349.39	52.92	-21.08	74	49.2	30.45	7.63	34.36	112	111	P	V
		2389.95	41.85	-12.15	54	37.97	30.5	7.72	34.34	112	111	A	V
		2483.86	56.16	-17.84	74	51.7	30.86	7.86	34.26	112	111	P	V
		2483.5	45	-9	54	40.54	30.86	7.86	34.26	112	111	A	V
	*	2444	99.72	-	-	95.49	30.71	7.8	34.28	112	111	P	V
	*	2444	91.86	-	-	87.63	30.71	7.8	34.28	112	111	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



15C 2.4GHz 2400~2483.5MHz

WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11n HT40 CH 03 2422MHz		4842	41.48	-32.52	74	55.65	34.63	11.23	60.03	300	0	P	H
		7266	45.01	-28.99	74	55.15	36.69	13.68	60.51	300	0	P	H
		4842	42.44	-31.56	74	56.61	34.63	11.23	60.03	300	360	P	V
		7266	45.33	-28.67	74	55.47	36.69	13.68	60.51	300	360	P	V
802.11n HT40 CH 06 2437MHz		4872	41.52	-32.48	74	55.58	34.69	11.28	60.03	300	0	P	H
		7308	44.52	-29.48	74	54.63	36.68	13.72	60.51	300	0	P	H
		4872	40.87	-33.13	74	54.93	34.69	11.28	60.03	300	360	P	V
		7308	44.32	-29.68	74	54.43	36.68	13.72	60.51	300	360	P	V
802.11n HT40 CH 09 2452MHz		4902	41.6	-32.4	74	55.56	34.74	11.32	60.02	300	0	P	H
		7356	43.78	-30.22	74	53.87	36.66	13.77	60.52	300	0	P	H
		4902	41.88	-32.12	74	55.84	34.74	11.32	60.02	300	360	P	V
		7356	44.73	-29.27	74	54.82	36.66	13.77	60.52	300	360	P	V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												



15C Emission below 1GHz

2.4GHz WIFI 802.11n HT20 (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11n HT20 LF		30.97	23.6	-16.4	40	31.12	24.57	0.71	32.8	-	-	P	H
		91.11	27.59	-15.91	43.5	43.83	14.93	1.45	32.62	-	-	P	H
		164.83	27.82	-15.68	43.5	42.65	16.1	1.96	32.89	-	-	P	H
		182.29	25.29	-18.21	43.5	41.19	15.04	2.05	32.99	-	-	P	H
		281.23	26.47	-19.53	46	37.86	19.02	2.56	32.97	-	-	P	H
		319.06	29.94	-16.06	46	40.53	19.59	2.72	32.9	-	-	P	H
		30.97	30.64	-9.36	40	38.16	24.57	0.71	32.8	-	-	P	V
		44.55	32.64	-7.36	40	47.17	17.35	1.02	32.9	-	-	P	V
		95.96	23.79	-19.71	43.5	39.47	15.58	1.48	32.74	-	-	P	V
		162.89	27.84	-15.66	43.5	42.51	16.26	1.95	32.88	-	-	P	V
		199.75	27.65	-15.85	43.5	43.5	15.1	2.15	33.1	-	-	P	V
		315.18	26.4	-19.6	46	37.05	19.55	2.7	32.9	-	-	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

**Note symbol**

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency per 15.209(c).
!	Test result is over limit line.
P/A	P eak or A verage
H/V	H orizontal or V ertical



A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.

Appendix D. Duty Cycle Plots

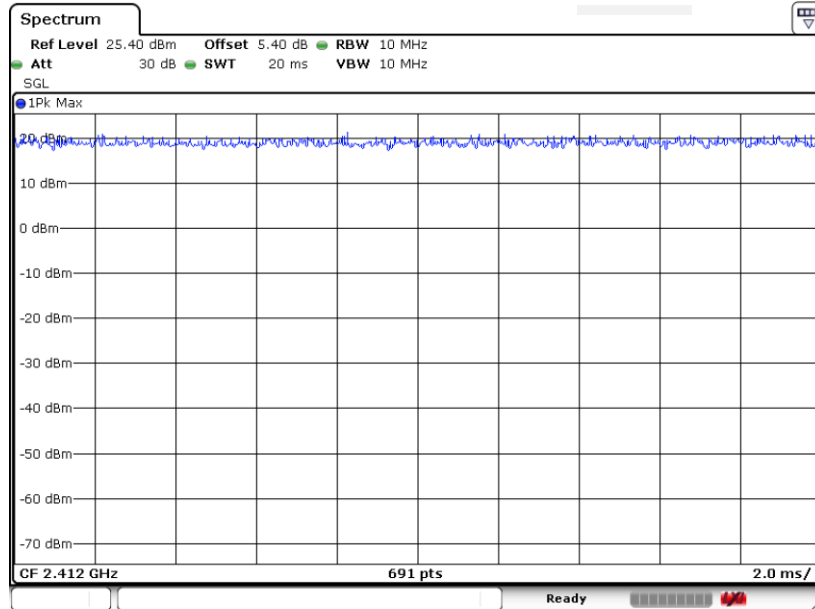
Band	Duty Cycle(%)	T(ms)	1/T(kHz)	VBW Setting
802.11b	100	-	-	10Hz
802.11g	100	-	-	10Hz
802.11n 20	100	-	-	10Hz
802.11n 40	100	-	-	10Hz

802.11b

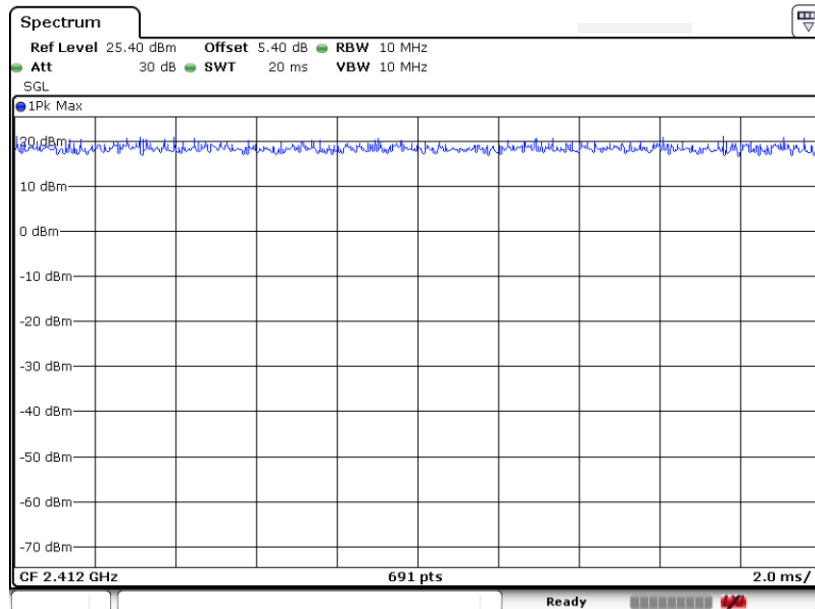




802.11g



802.11n 20





802.11n 40

