



FCC RADIO TEST REPORT

FCC ID : 2AFZZ117SY
Equipment : Mobile Phone
Brand Name : Redmi
Model Name : 2201117SY
Applicant : Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road,
Haidian District, Beijing, China, 100085
Manufacturer : Xiaomi Communications Co., Ltd.
#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road,
Haidian District, Beijing, China, 100085
Standard : FCC Part 15 Subpart C §15.247

The product was received on Dec. 01, 2021 and testing was performed from Dec. 09, 2021 to Dec. 23, 2021. We, Sporton International Inc. Wensan Laboratory, 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 from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No. 58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1 General Description	5
1.1 Product Feature of Equipment Under Test.....	5
1.2 Modification of EUT	5
1.3 Testing Location	6
1.4 Applicable Standards.....	6
2 Test Configuration of Equipment Under Test	7
2.1 Carrier Frequency and Channel	7
2.2 Test Mode.....	7
2.3 Connection Diagram of Test System.....	8
2.4 Support Unit used in test configuration and system	8
2.5 EUT Operation Test Setup	9
2.6 Measurement Results Explanation Example.....	9
3 Test Result	10
3.1 6dB and 99% Bandwidth Measurement	10
3.2 Output Power Measurement.....	13
3.3 Power Spectral Density Measurement	14
3.4 Conducted Band Edges and Spurious Emission Measurement	16
3.5 Radiated Band Edges and Spurious Emission Measurement	26
3.6 AC Conducted Emission Measurement.....	30
3.7 Antenna Requirements	32
4 List of Measuring Equipment.....	33
5 Uncertainty of Evaluation	34
Appendix A. Conducted Test Results	
Appendix B. AC Conducted Emission Test Result	
Appendix C. Radiated Spurious Emission	
Appendix D. Radiated Spurious Emission Plots	
Appendix E. Duty Cycle Plots	
Appendix F. Setup Photographs	



History of this test report

Report No.	Version	Description	Issue Date
FR1N3028C	01	Initial issue of report	Dec. 29, 2021

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(2)	6dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.247(b)	Power Output Measurement	Pass	-
3.3	15.247(e)	Power Spectral Density	Pass	-
3.4	15.247(d)	Conducted Band Edges	Pass	-
		Conducted Spurious Emission	Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	3.56 dB under the limit at 2483.600 MHz
3.6	15.207	AC Conducted Emission	Pass	9.50 dB under the limit at 0.161 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Danny Lee

Report Producer: Ruby Zou

1 General Description

1.1 Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac, NFC, FM Receiver, and GNSS.

Product Feature	
Sample 1	6G+128GB with Battery 1
Sample 2	8G+128GB with Battery 2
Sample 3	6G+64GB with Battery 1
Antenna Type	WWAN: PIFA Antenna WLAN: PIFA Antenna Bluetooth: PIFA Antenna GPS/Glonass/BDS/Galileo/SBAS : PIFA Antenna NFC: Planar Antenna FM: Using earphone as Antenna

Antenna Information		
2400 MHz ~ 2483.5 MHz	Peak Gain (dBi)	-0.31

Remark: The above EUT's information is declared by manufacturer. Please refer to Comments and Explanations in report summary.

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. CO05-HY (TAF Code: 1190)
Remark	The Conducted Emission test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory.

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. TH05-HY, 03CH16-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW3786

1.4 Applicable Standards

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

- ♦ FCC Part 15 Subpart C §15.247
- ♦ FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ ANSI C63.10-2013

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. 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, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find Z plane as worst plane.
- 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

The final test modes consider the modulation and the worst data rates as shown in the table below.

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

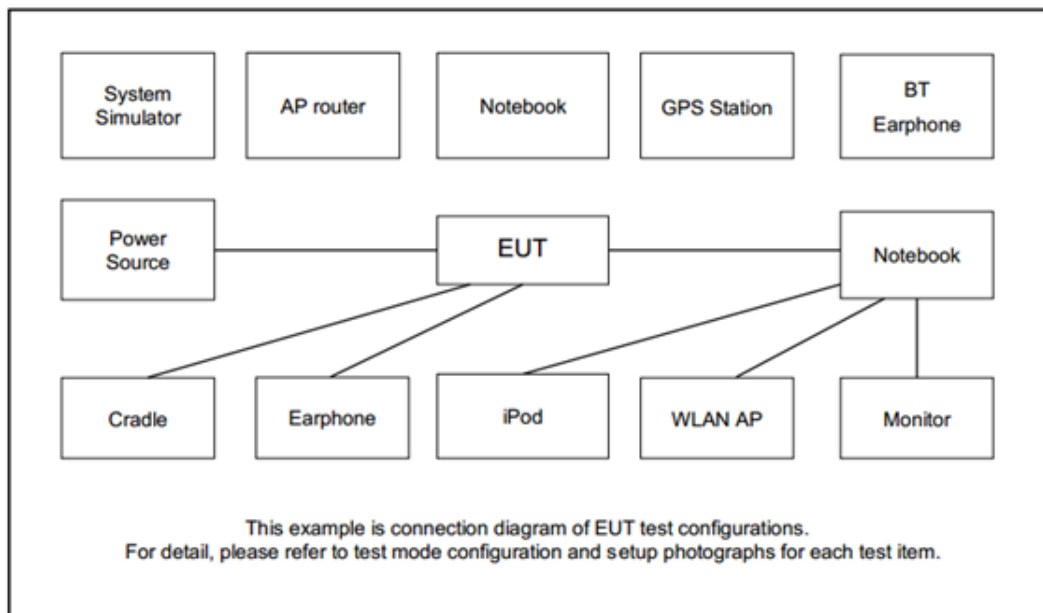
Test Cases	
AC Conducted Emission	Mode 1: LTE Band 4 Idle + Bluetooth Link + WLAN (2.4GHz) Link + NFC On + Earphone + USB Cable 1 (Data Link with Notebook) for Sample 1
Remark: - For Radiated Test Cases, the tests were performed with USB Cable 2 and Sample 1. - Data transfer to Notebook means data application transferred mode between EUT and Notebook.	

Ch. #	2400-2483.5 MHz	
	802.11b	802.11g
Low	01	01
Middle	06	06
High	11	11

Remark:

1. For radiation spurious emission, the modulation and the data rate picked for testing are determined by the Max. RF conducted power.
2. Since the verify power, the smaller power can be covered by the higher power. Radiation test item 802.11n HT20 covered by 802.11g.

2.3 Connection Diagram of Test System



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
3.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8m
4.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0m	N/A
5.	Notebook	Dell	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8m
6.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
7.	Earphone	MI	EM023	N/A	Unshielded, 1.2m	N/A



2.5 EUT Operation Test Setup

The RF test items, make the EUT (SW: 11 RP1A.200720.011) get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

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 + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10 dB attenuator.

$$\begin{aligned}\text{Offset(dB)} &= \text{RF cable loss(dB)} + \text{attenuator factor(dB)} \\ &= 4.2 + 10 = 14.2 \text{ (dB)}\end{aligned}$$

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.1.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to 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. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW) $\geq 3 * RBW$.
6. Measure and record the results in the test report.

3.1.4 Test Setup

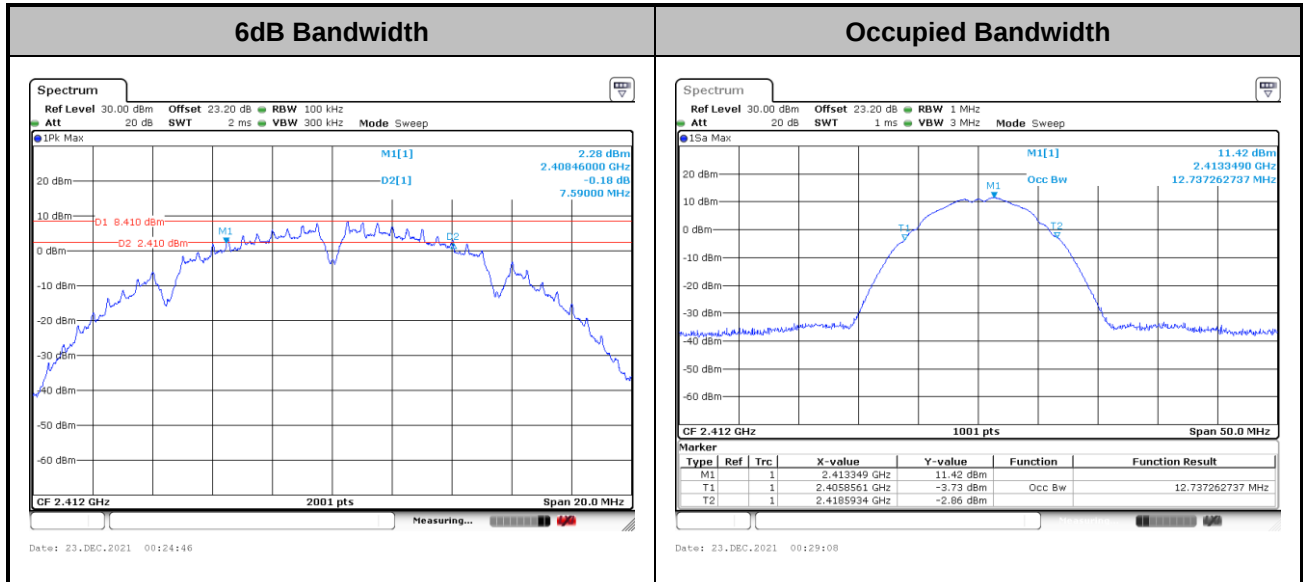




3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

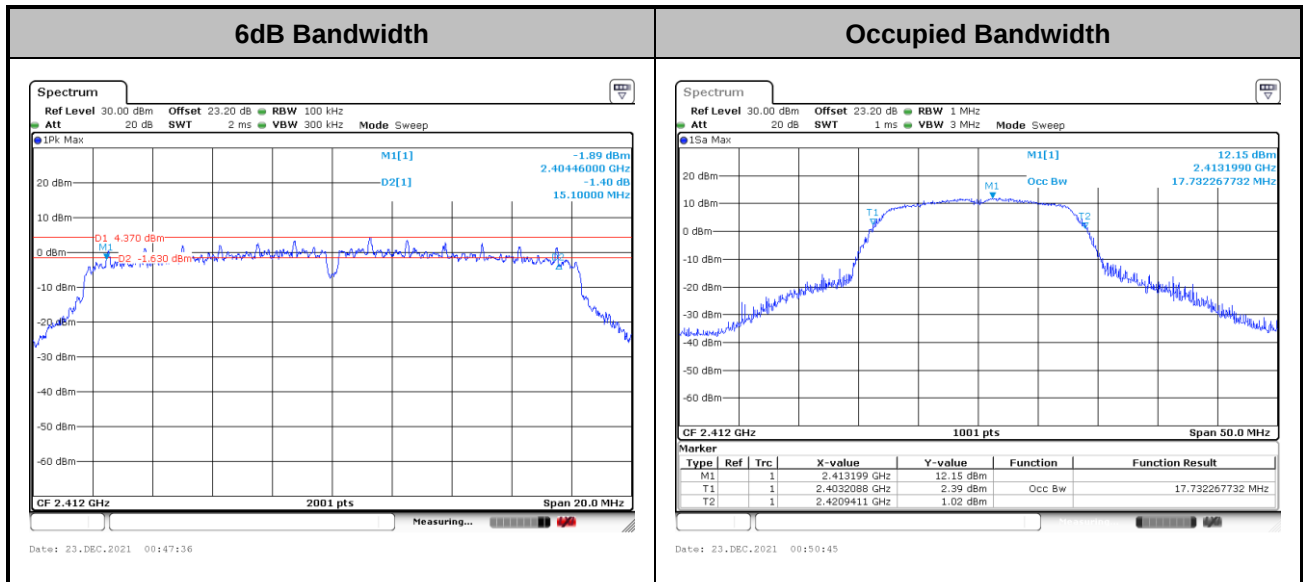
Please refer to Appendix A.

<802.11b>



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

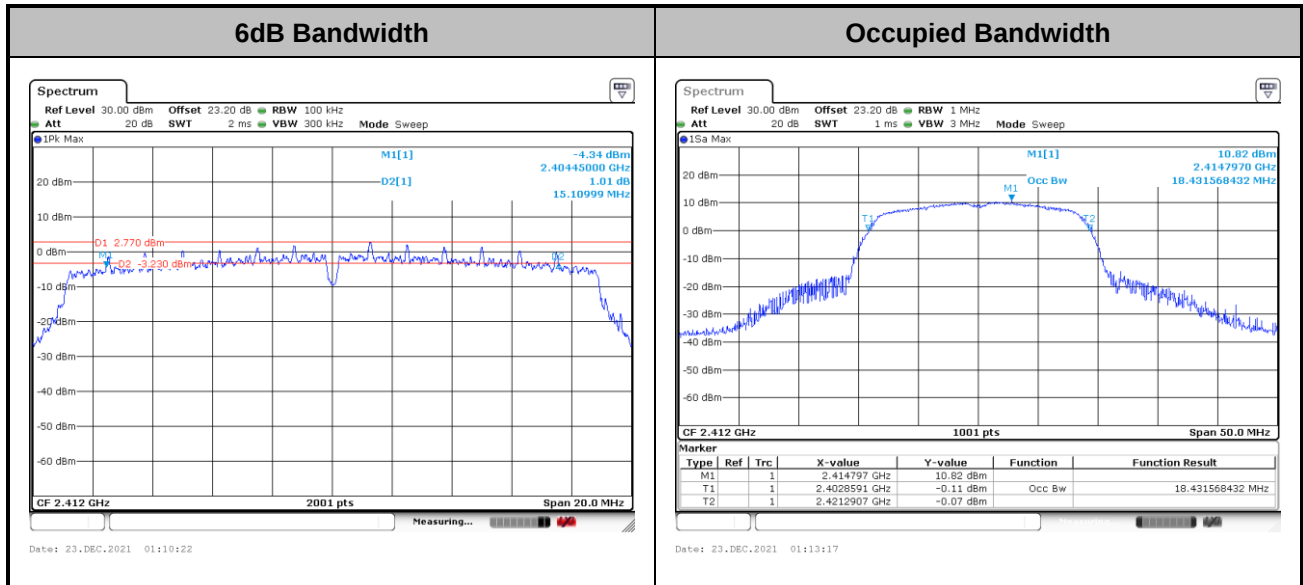
<802.11g>



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.



<802.11n HT20>



Note: The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5 MHz, the limit for output power is 30 dBm. If transmitting antenna with directional gain greater than 6 dBi 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 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.2.3 Test Procedures

1. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
2. The RF output of EUT is connected to the power meter by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to 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 Average Output Power

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 8 dBm in any 3 kHz band at any time interval of continuous transmission.

3.3.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.3.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 11.10.2 Method PKPSD.
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to 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.

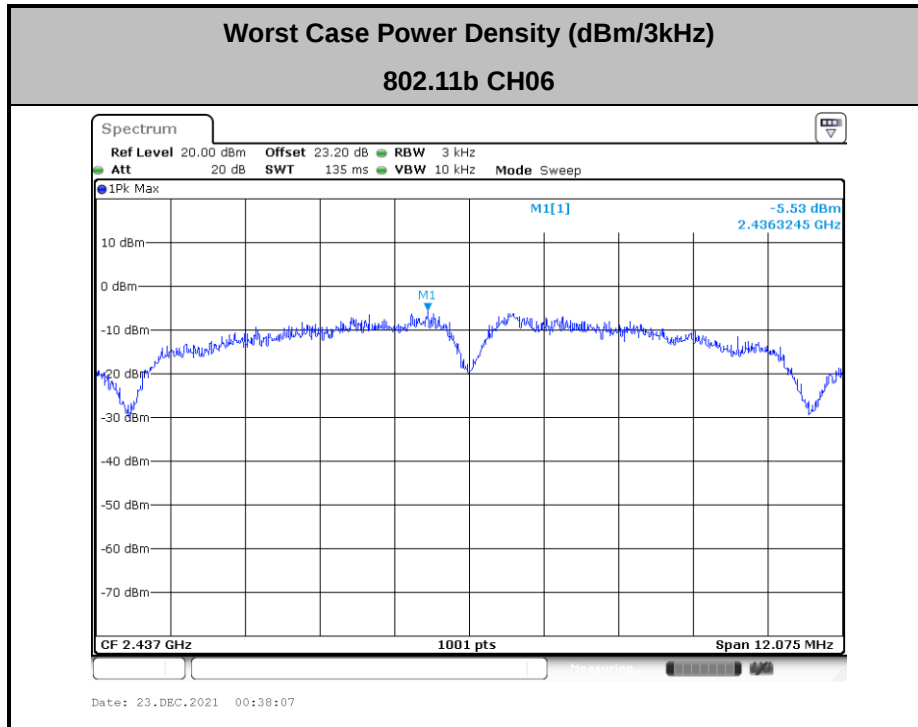
3.3.4 Test Setup





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.

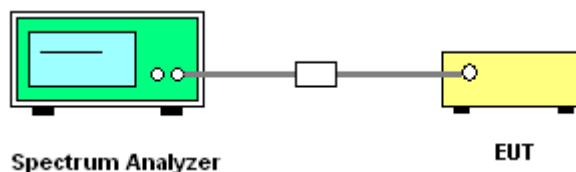
3.4.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.4.3 Test Procedures

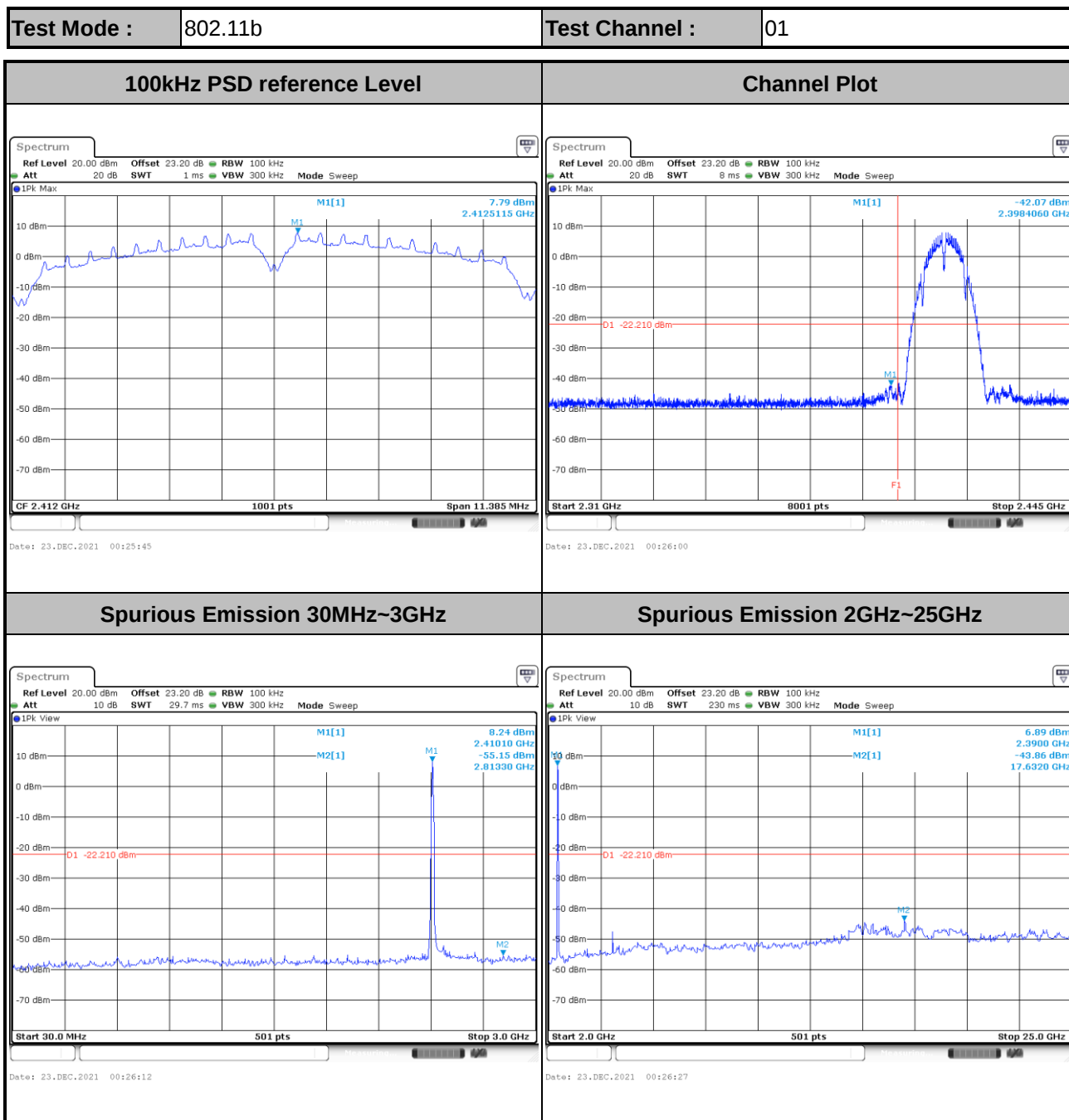
1. The testing follows the ANSI C63.10 Section 11.11.3 Emission level measurement.
2. The RF output of EUT is connected to the spectrum analyzer by RF cable and attenuator. The path loss is compensated to the results for each measurement.
3. Set the maximum power setting and enable the EUT to transmit 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





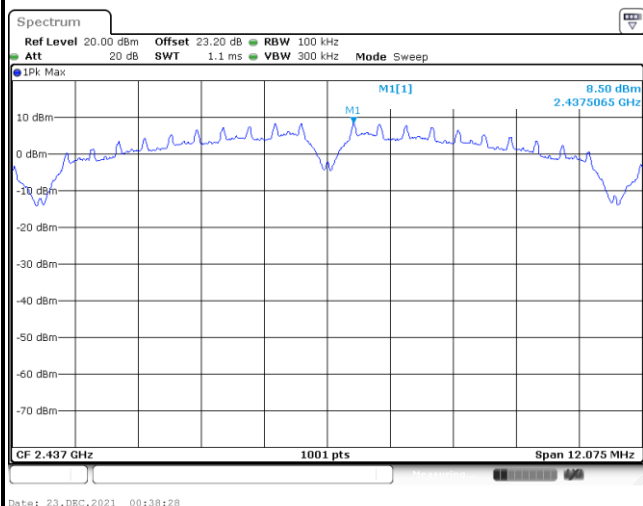
3.4.5 Test Result of Conducted Band Edges and Spurious Emission





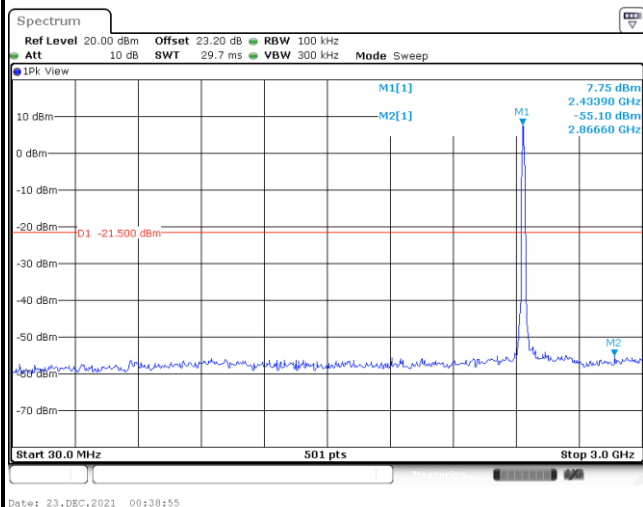
Test Mode :	802.11b	Test Channel :	06
-------------	---------	----------------	----

100kHz PSD reference Level

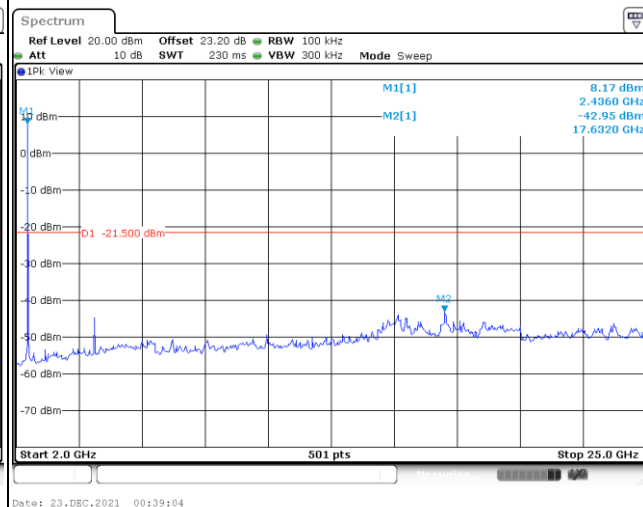


Channel Plot

Spurious Emission 30MHz~3GHz

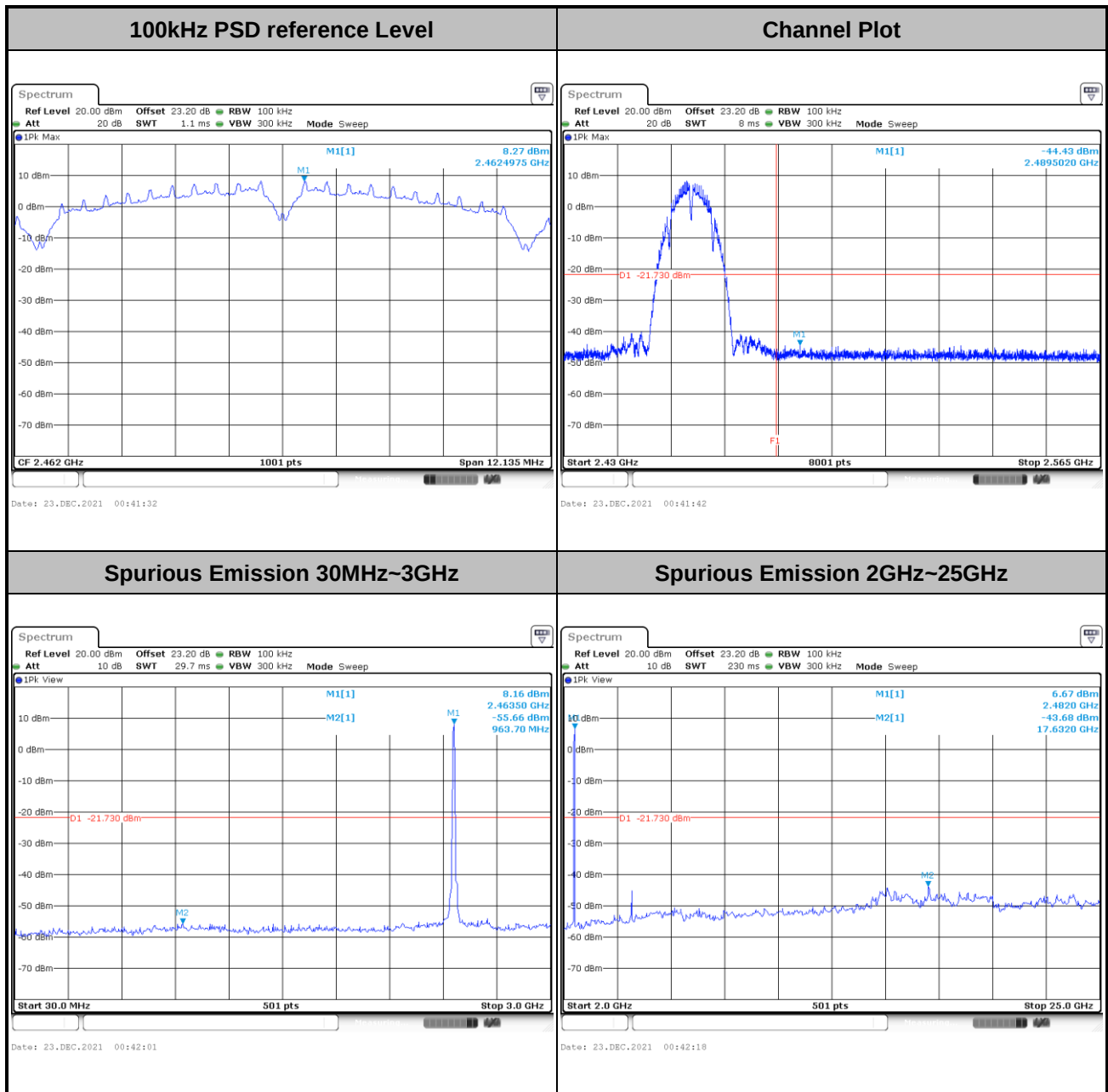


Spurious Emission 2GHz~25GHz





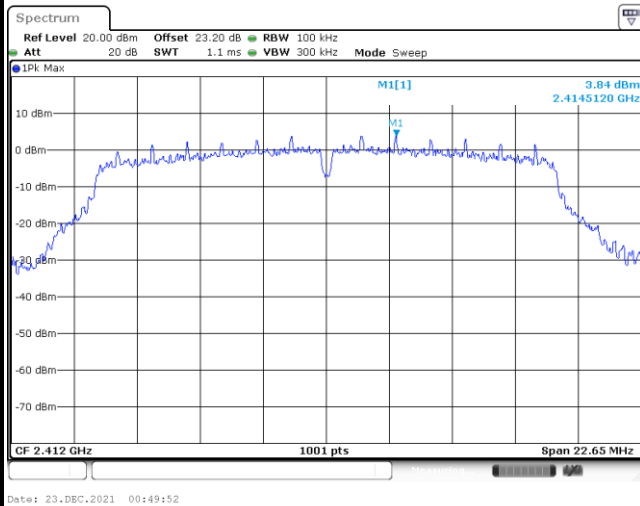
Test Mode :	802.11b	Test Channel :	11
-------------	---------	----------------	----



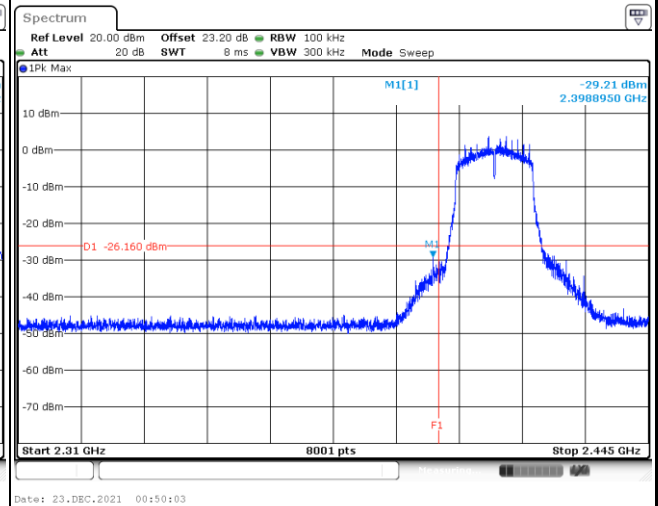


Test Mode :	802.11g	Test Channel :	01
-------------	---------	----------------	----

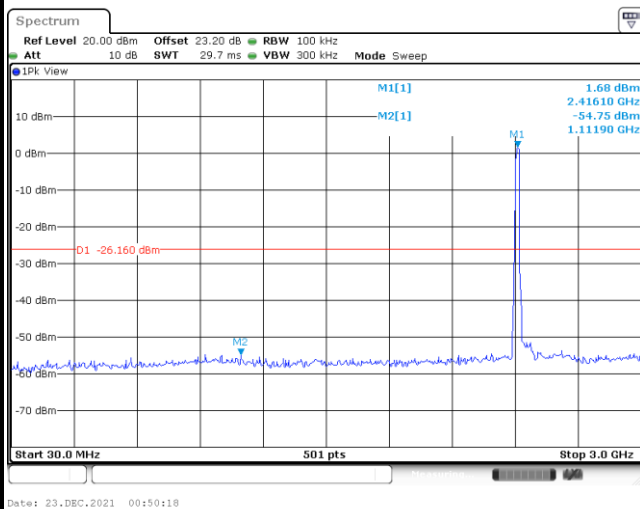
100kHz PSD reference Level



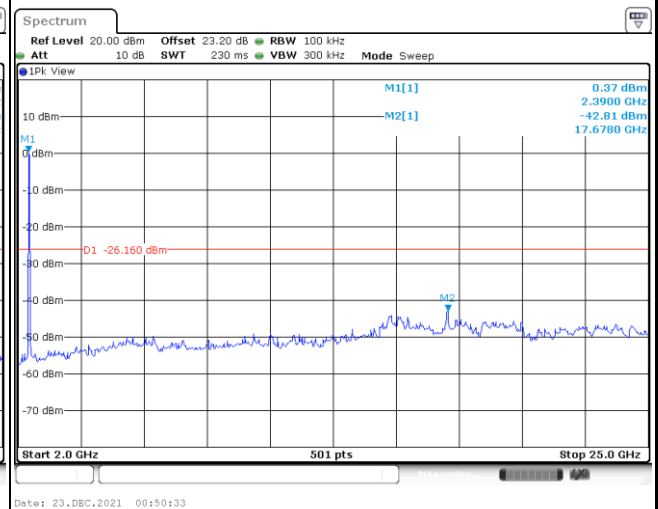
Channel Plot



Spurious Emission 30MHz~3GHz



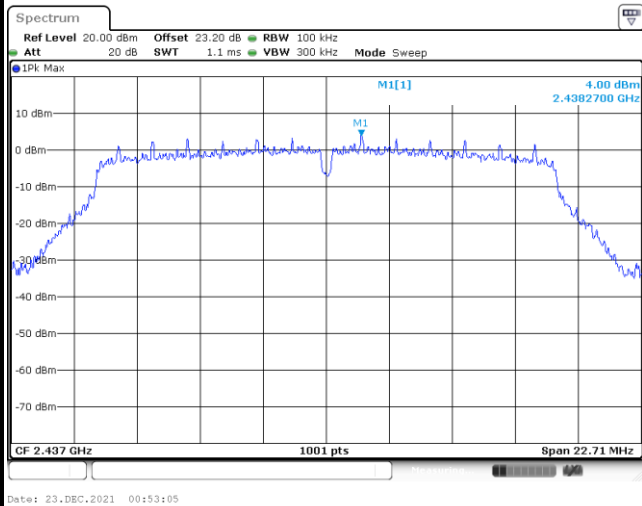
Spurious Emission 2GHz~25GHz





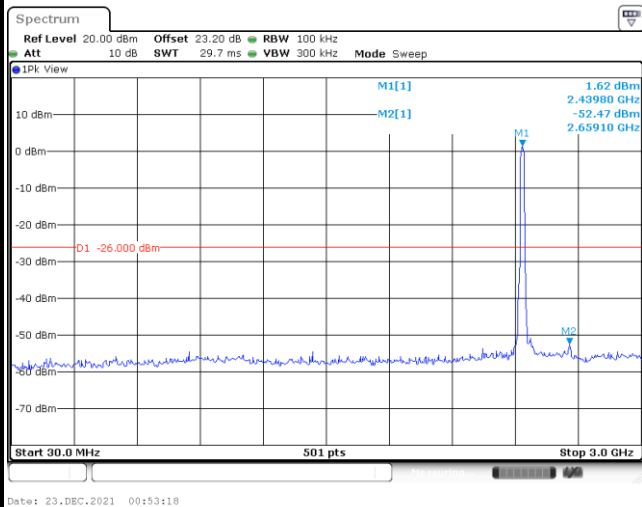
Test Mode :	802.11g	Test Channel :	06
-------------	---------	----------------	----

100kHz PSD reference Level

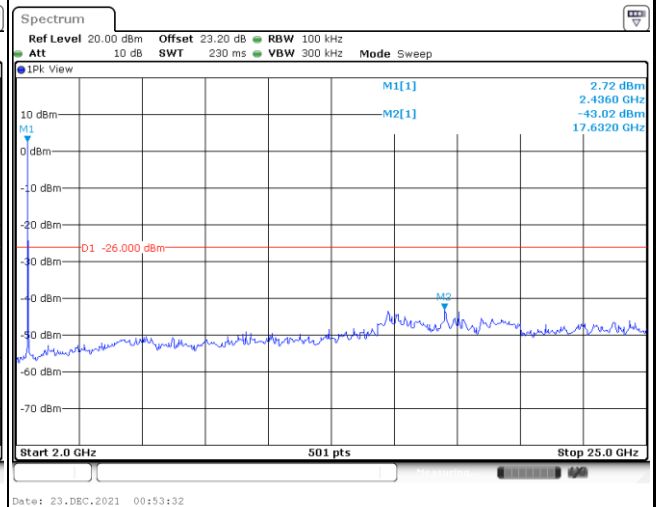


Channel Plot

Spurious Emission 30MHz~3GHz

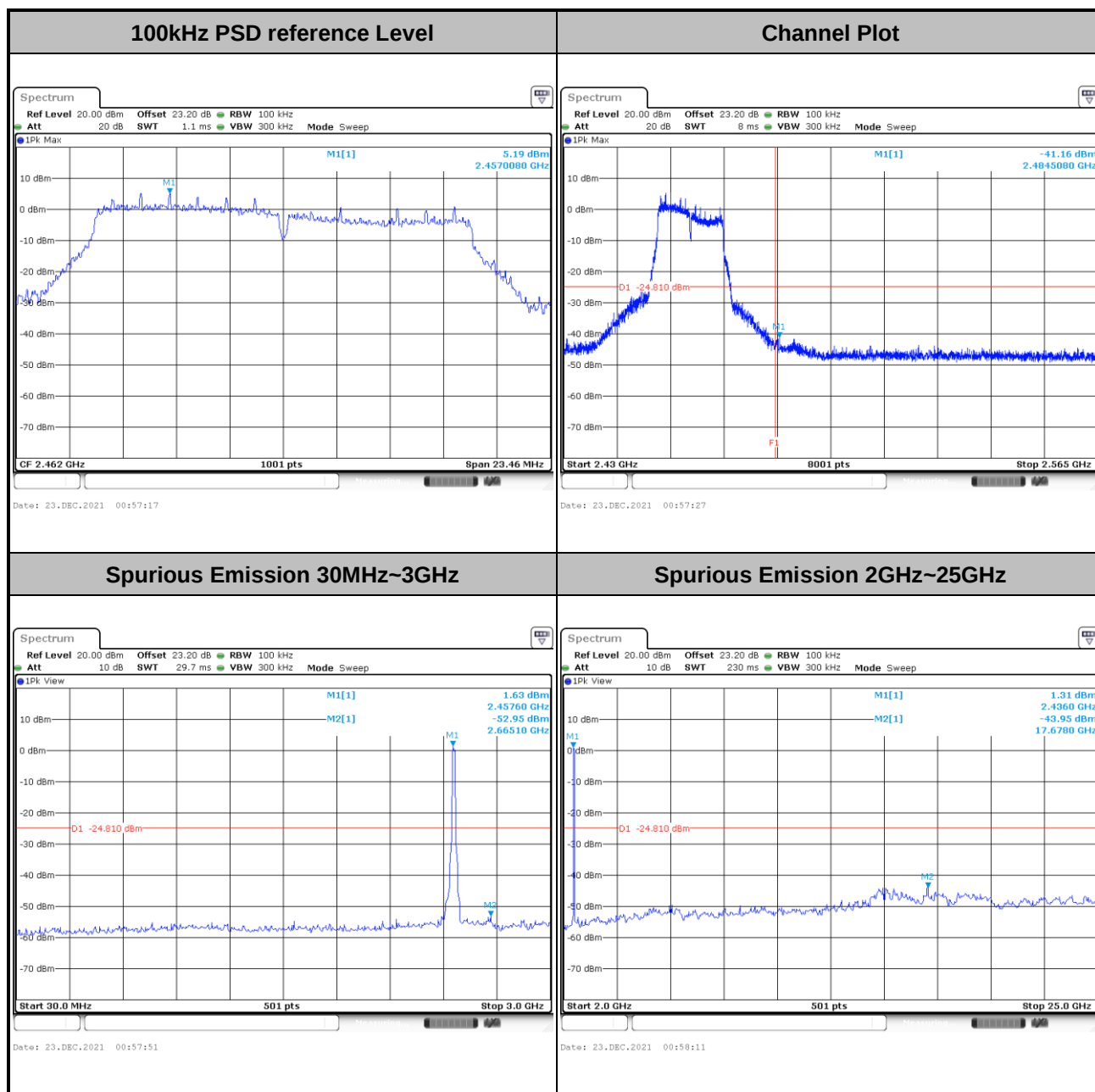


Spurious Emission 2GHz~25GHz



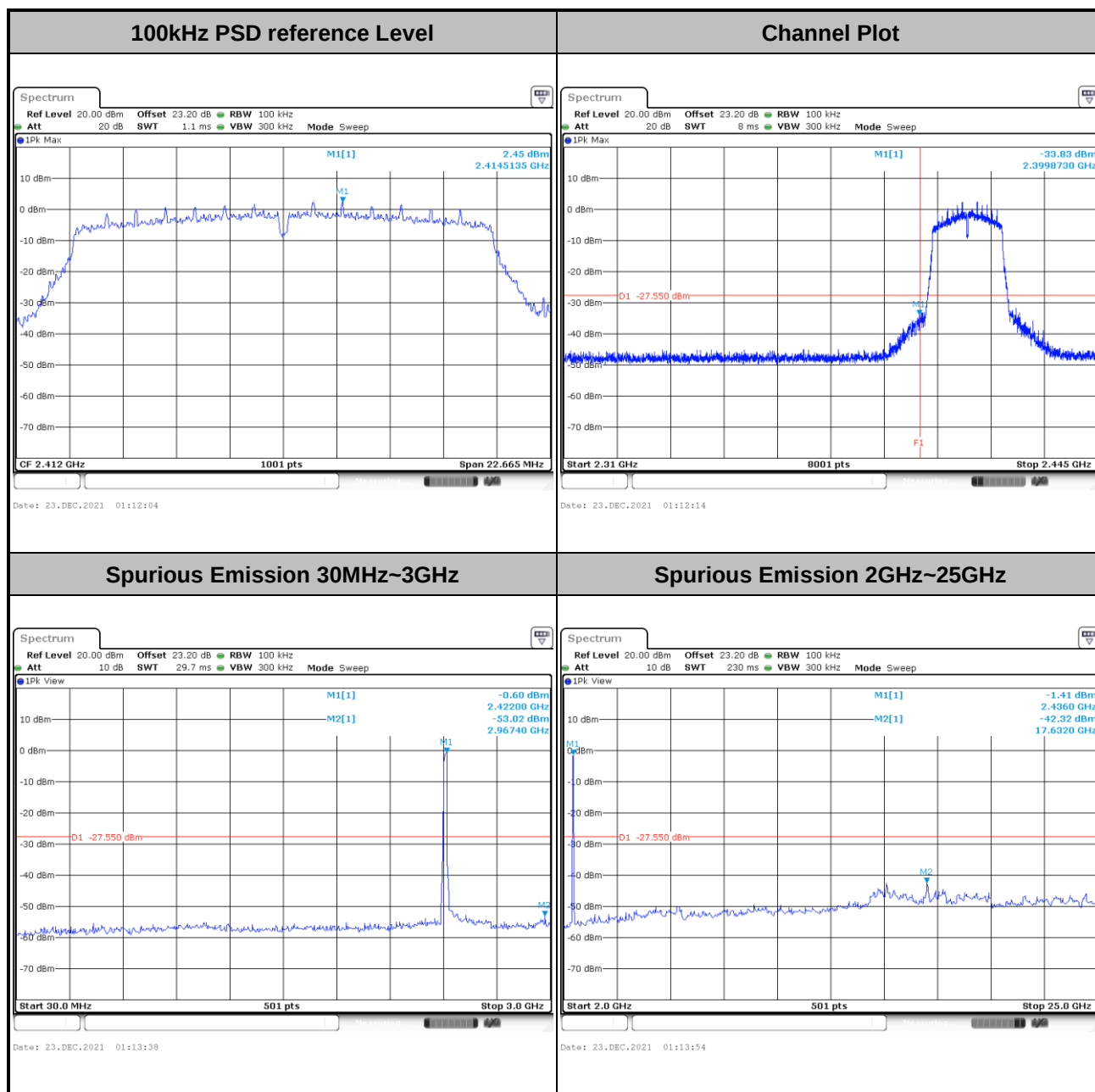


Test Mode :	802.11g	Test Channel :	11
-------------	---------	----------------	----





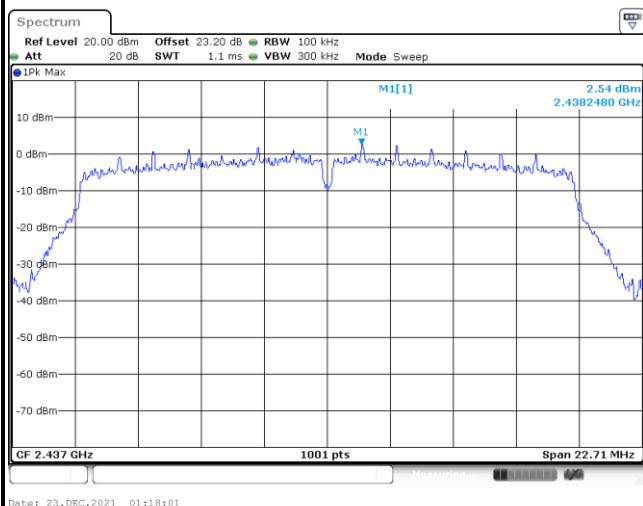
Test Mode :	802.11n HT20	Test Channel :	01
-------------	--------------	----------------	----





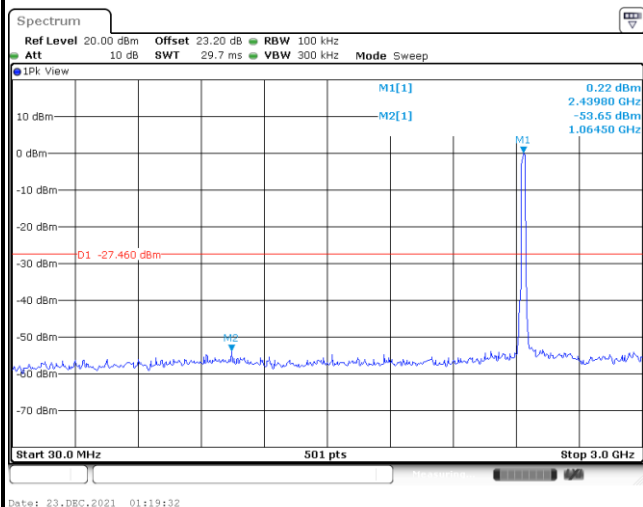
Test Mode :	802.11n HT20	Test Channel :	06
-------------	--------------	----------------	----

100kHz PSD reference Level

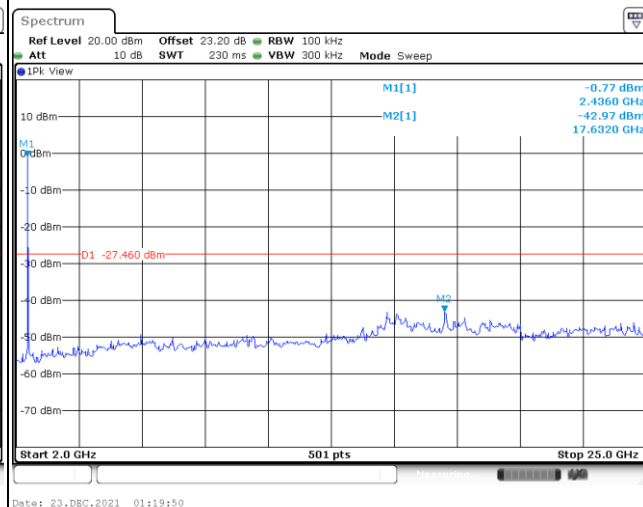


Channel Plot

Spurious Emission 30MHz~3GHz

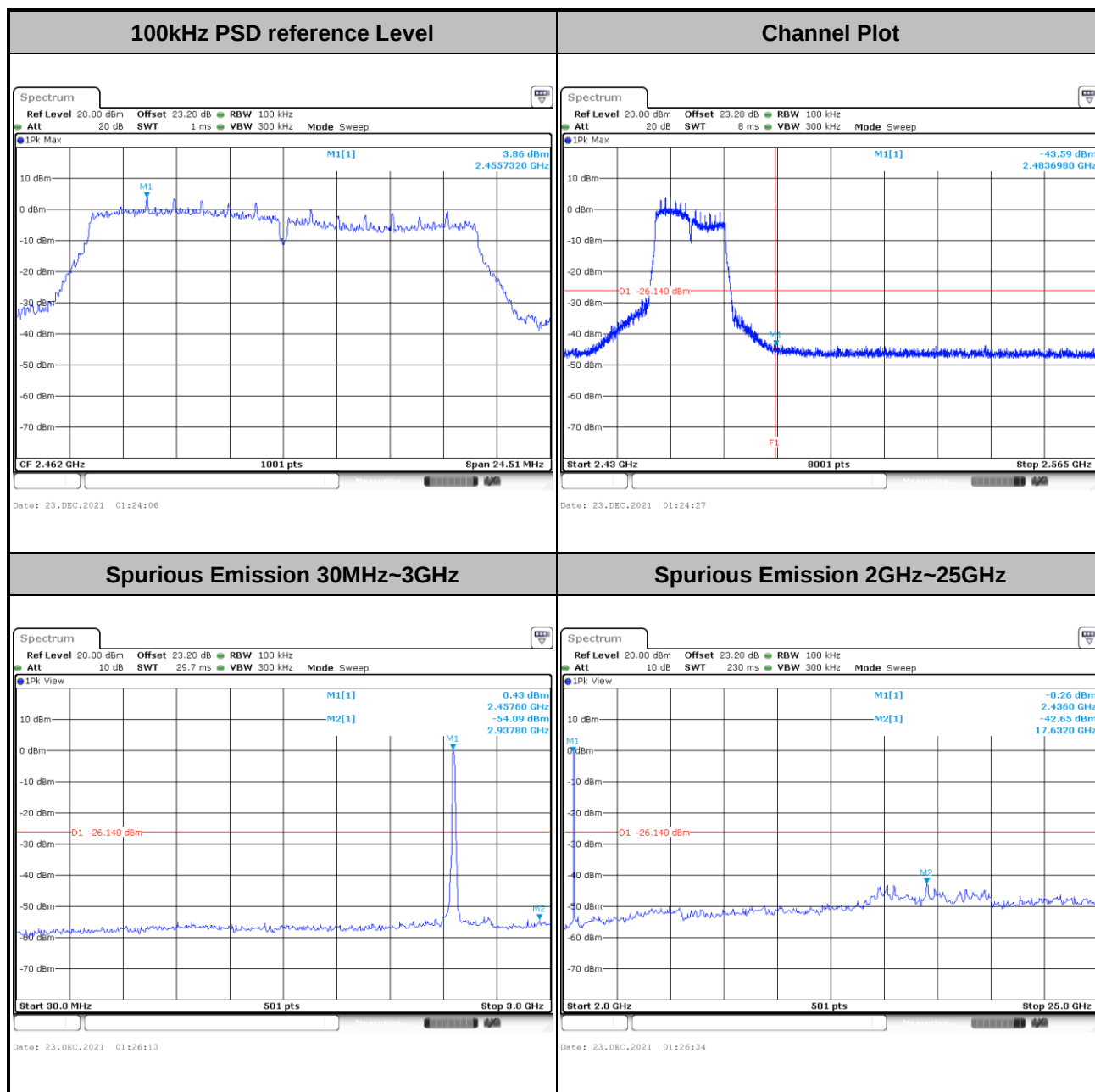


Spurious Emission 2GHz~25GHz





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



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 is 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

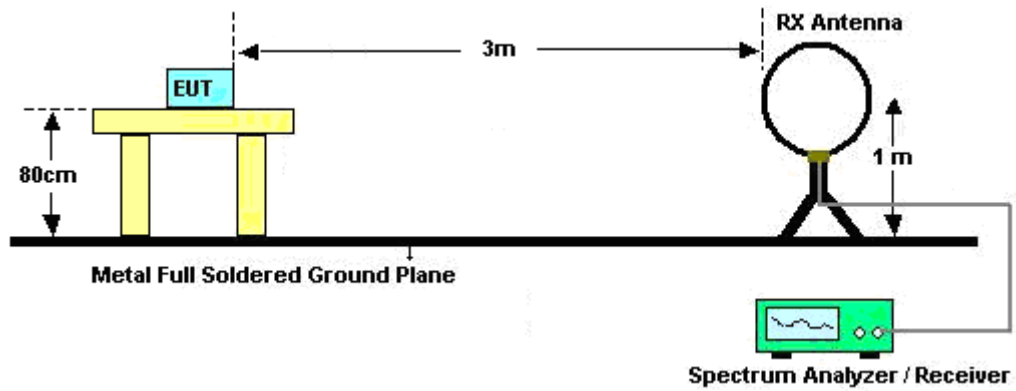
Please refer to the measuring equipment list in this test report.

3.5.3 Test Procedures

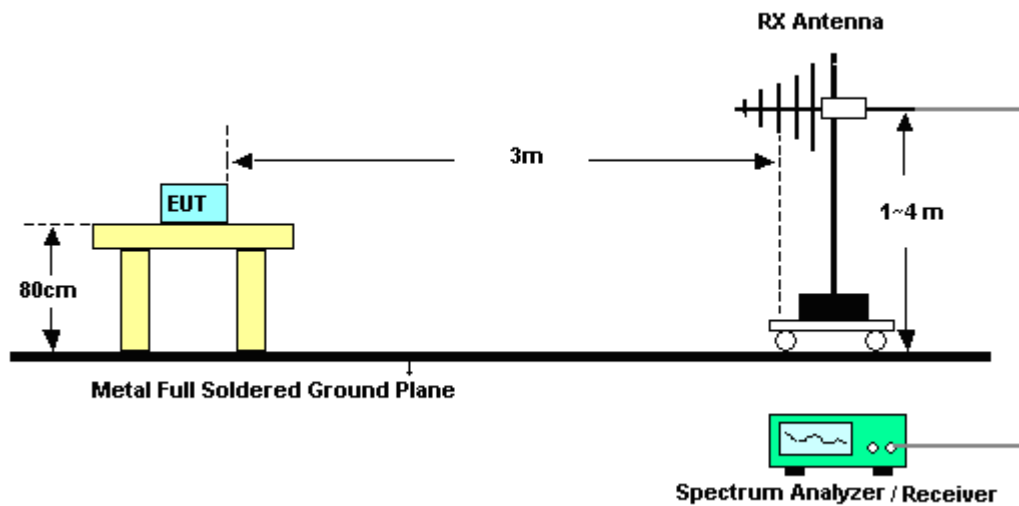
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT is arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
4. The EUT is set 3 meters away from the receiving antenna, which is mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamplifier Factor = Level
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading. When there is no suspected emission found and the emission level is with at least 6 dB margin against QP limit line, the position is marked as “-”.
7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies. When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-”.
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= 3 MHz 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

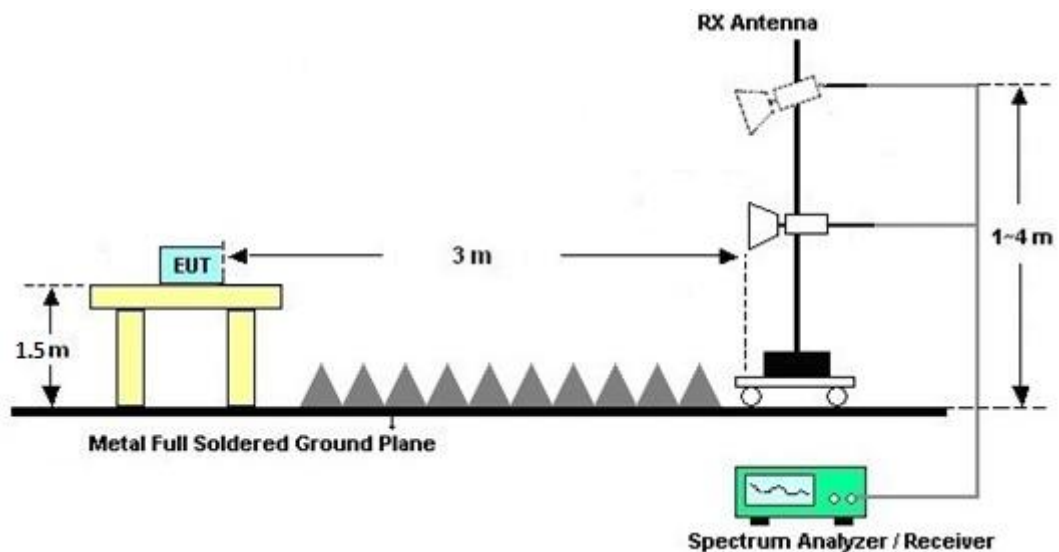
For radiated emissions below 30MHz



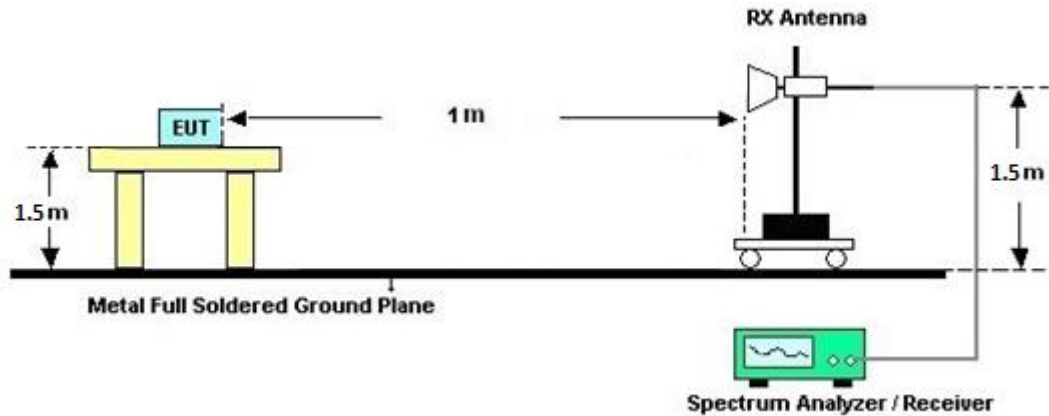
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



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

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

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result comes out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.

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.

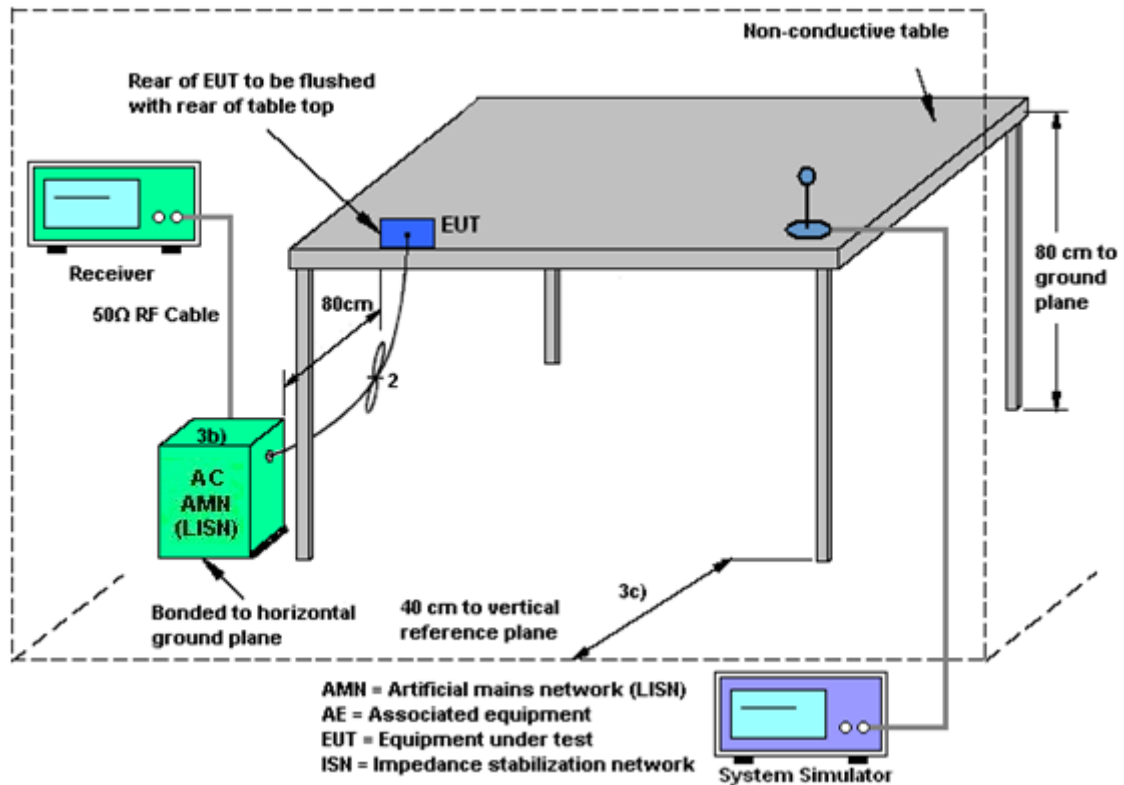
3.6.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.6.3 Test Procedures

1. The EUT is placed 0.4 meter away from the conducting wall of the shielding room, and is 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 shall be used.
6. Both Line and Neutral shall be tested in order to find out the maximum conducted emission.
7. The frequency range from 150 kHz to 30 MHz is scanned.
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 6 dBi, the power shall be reduced by the same level in dB comparing to gain minus 6 dBi. 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	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 07, 2021	Dec. 10, 2021~ Dec. 20, 2021	Sep. 06, 2022	Radiation (03CH16-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00802N1D01N -06	47020 & 06	30MHz to 1GHz	Oct. 09, 2021	Dec. 10, 2021~ Dec. 20, 2021	Oct. 08, 2022	Radiation (03CH16-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-02114	1G~18GHz	Aug. 04, 2021	Dec. 10, 2021~ Dec. 20, 2021	Aug. 03, 2022	Radiation (03CH16-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1522	1G~18GHz	Oct. 12, 2021	Dec. 10, 2021~ Dec. 20, 2021	Oct. 11, 2022	Radiation (03CH16-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	00991	18GHz ~40GHz	May 12, 2021	Dec. 10, 2021~ Dec. 20, 2021	May 11, 2022	Radiation (03CH16-HY)
Amplifier	SONOMA	310N	371607	9kHz~1G	Jul. 05, 2021	Dec. 10, 2021~ Dec. 20, 2021	Jul. 04, 2022	Radiation (03CH16-HY)
Amplifier	EMCI	EMC051845S E	980729	1-18GHz	Jul. 09, 2021	Dec. 10, 2021~ Dec. 20, 2021	Jul. 08, 2022	Radiation (03CH16-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 22, 2021	Dec. 10, 2021~ Dec. 20, 2021	Jun. 21, 2022	Radiation (03CH16-HY)
Preamplifier	Keysight	83017A	MY53270264	1GHz~26.5GHz	Dec. 09, 2021	Dec. 10, 2021~ Dec. 20, 2021	Dec. 08, 2022	Radiation (03CH16-HY)
EMI Test Receiver	Keysight	N9038A	MY59053012	3Hz~26.5GHz	Nov. 18, 2021	Dec. 10, 2021~ Dec. 20, 2021	Nov. 17, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11680/4P E	NA	Aug. 28, 2021	Dec. 10, 2021~ Dec. 20, 2021	Aug. 27, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY11688/4P E	NA	Aug. 28, 2021	Dec. 10, 2021~ Dec. 20, 2021	Aug. 27, 2022	Radiation (03CH16-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	EC-A5-300-5 757	NA	Aug. 28, 2021	Dec. 10, 2021~ Dec. 20, 2021	Aug. 27, 2022	Radiation (03CH16-HY)
Software	Audix	E3 6.2009-8-24	RK-001136	N/A	N/A	Dec. 10, 2021~ Dec. 20, 2021	N/A	Radiation (03CH16-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Dec. 10, 2021~ Dec. 20, 2021	N/A	Radiation (03CH16-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Dec. 10, 2021~ Dec. 20, 2021	N/A	Radiation (03CH16-HY)
Power Sensor	DARE	RPR3006W	13I00030SNO 31(NO:182)	10MHz~6GHz	Dec. 30, 2020	Dec. 10, 2021~ Dec. 23, 2021	Dec. 29, 2021	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz~40GHz	Aug. 30, 2021	Dec. 10, 2021~ Dec. 23, 2021	Aug. 29, 2022	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW191204 (BOX8)	N/A	Jan. 07, 2021	Dec. 10, 2021~ Dec. 23, 2021	Jan. 06, 2022	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Dec. 09, 2021	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Oct. 21, 2021	Dec. 09, 2021	Oct. 20, 2022	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2021	Dec. 09, 2021	Nov. 15, 2022	Conduction (CO05-HY)
Four Line V-Network	TESEQ	NNB 52	36122	N/A	Feb. 01, 2021	Dec. 09, 2021	Jan. 31, 2022	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32	N/A	N/A	N/A	Dec. 09, 2021	N/A	Conduction (CO05-HY)
Pulse Limiter	SCHWARZBE CK	VTSD 9561-F N	00691	N/A	Jul. 28, 2021	Dec. 09, 2021	Jul. 27, 2022	Conduction (CO05-HY)
LISN Cable	MVE	RG-400	260260	N/A	Dec. 31, 2020	Dec. 09, 2021	Dec. 30, 2021	Conduction (CO05-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.1 dB
---	--------

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.8 dB
---	--------

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.2 dB
---	--------

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.8 dB
---	--------

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Junyu Jhou	Temperature:	23.2~24.2	°C
Test Date:	2021/12/10~2021/12/23	Relative Humidity:	49.2~52.5	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band Single Antenna										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant1	Ant2	Ant1	Ant2		
11b	1Mbps	1	1	2412	12.74	-	7.59	-	0.50	Pass
11b	1Mbps	1	6	2437	13.19	-	8.05	-	0.50	Pass
11b	1Mbps	1	11	2462	13.24	-	8.09	-	0.50	Pass
11g	6Mbps	1	1	2412	17.73	-	15.10	-	0.50	Pass
11g	6Mbps	1	6	2437	17.68	-	15.14	-	0.50	Pass
11g	6Mbps	1	11	2462	18.28	-	15.64	-	0.50	Pass
HT20	MCS0	1	1	2412	18.43	-	15.11	-	0.50	Pass
HT20	MCS0	1	6	2437	18.48	-	15.14	-	0.50	Pass
HT20	MCS0	1	11	2462	18.98	-	16.34	-	0.50	Pass

TEST RESULTS DATA
Average Output Power

2.4GHz Band Single Antenna															
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Average Conducted Power (dBm)		Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	1	1	2412	17.20	-	30.00	-	-0.31	-	16.89	-	36.00	-	Pass
11b	1Mbps	1	6	2437	17.40	-	30.00	-	-0.31	-	17.09	-	36.00	-	Pass
11b	1Mbps	1	11	2462	17.40	-	30.00	-	-0.31	-	17.09	-	36.00	-	Pass
11g	6Mbps	1	1	2412	14.80	-	30.00	-	-0.31	-	14.49	-	36.00	-	Pass
11g	6Mbps	1	6	2437	15.00	-	30.00	-	-0.31	-	14.69	-	36.00	-	Pass
11g	6Mbps	1	11	2462	15.00	-	30.00	-	-0.31	-	14.69	-	36.00	-	Pass
HT20	MCS0	1	1	2412	13.20	-	30.00	-	-0.31	-	12.89	-	36.00	-	Pass
HT20	MCS0	1	6	2437	13.60	-	30.00	-	-0.31	-	13.29	-	36.00	-	Pass
HT20	MCS0	1	11	2462	13.50	-	30.00	-	-0.31	-	13.19	-	36.00	-	Pass

Note: Measured power (dBm) has offset with cable loss.

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band Single Antenna											
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)		DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	1	1	2412	-6.29	-	-0.31	-	8.00	-	Pass
11b	1Mbps	1	6	2437	-5.53	-	-0.31	-	8.00	-	Pass
11b	1Mbps	1	11	2462	-5.54	-	-0.31	-	8.00	-	Pass
11g	6Mbps	1	1	2412	-9.28	-	-0.31	-	8.00	-	Pass
11g	6Mbps	1	6	2437	-9.30	-	-0.31	-	8.00	-	Pass
11g	6Mbps	1	11	2462	-9.02	-	-0.31	-	8.00	-	Pass
HT20	MCS0	1	1	2412	-11.84	-	-0.31	-	8.00	-	Pass
HT20	MCS0	1	6	2437	-11.40	-	-0.31	-	8.00	-	Pass
HT20	MCS0	1	11	2462	-11.39	-	-0.31	-	8.00	-	Pass

Measured power density (dBm) has offset with cable loss.



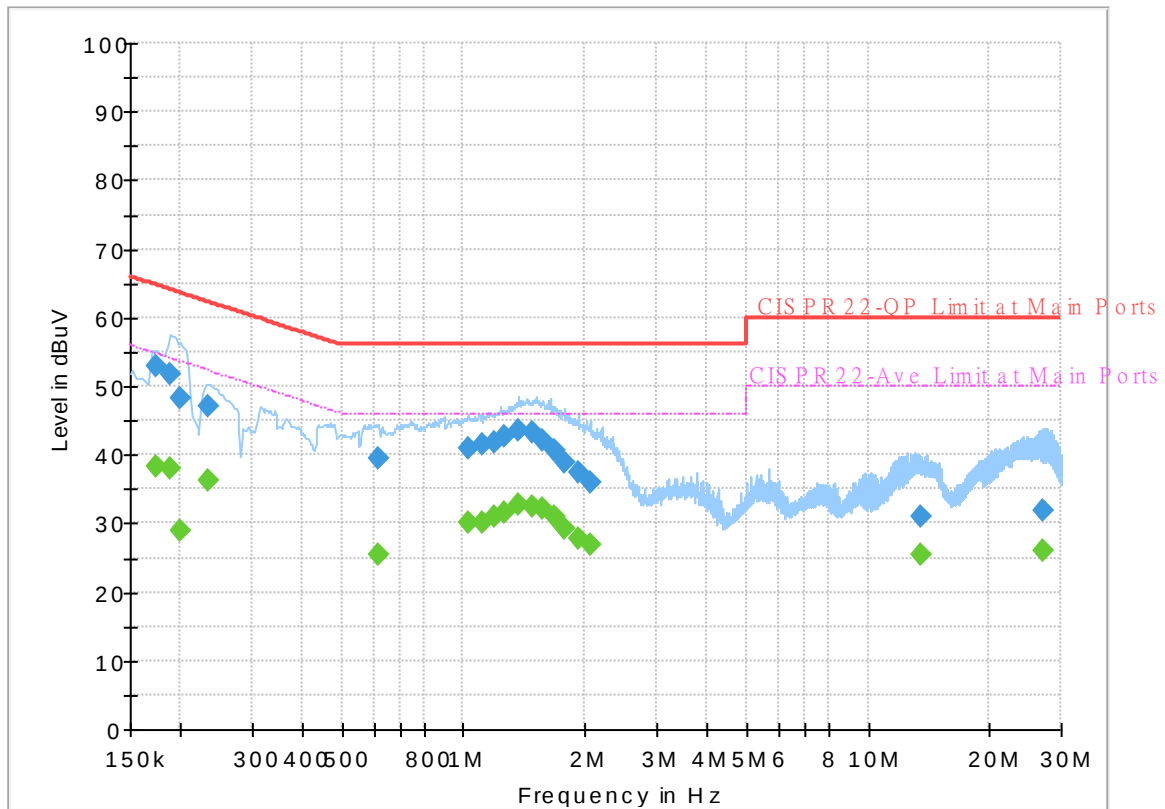
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Tom Lee	Temperature :	23~26℃
		Relative Humidity :	45~55%

EUT Information

Report NO : 1N3028
 Test Mode : Mode 1
 Test Voltage : Power From System
 Phase : Line

Full Spectrum



Final_Result

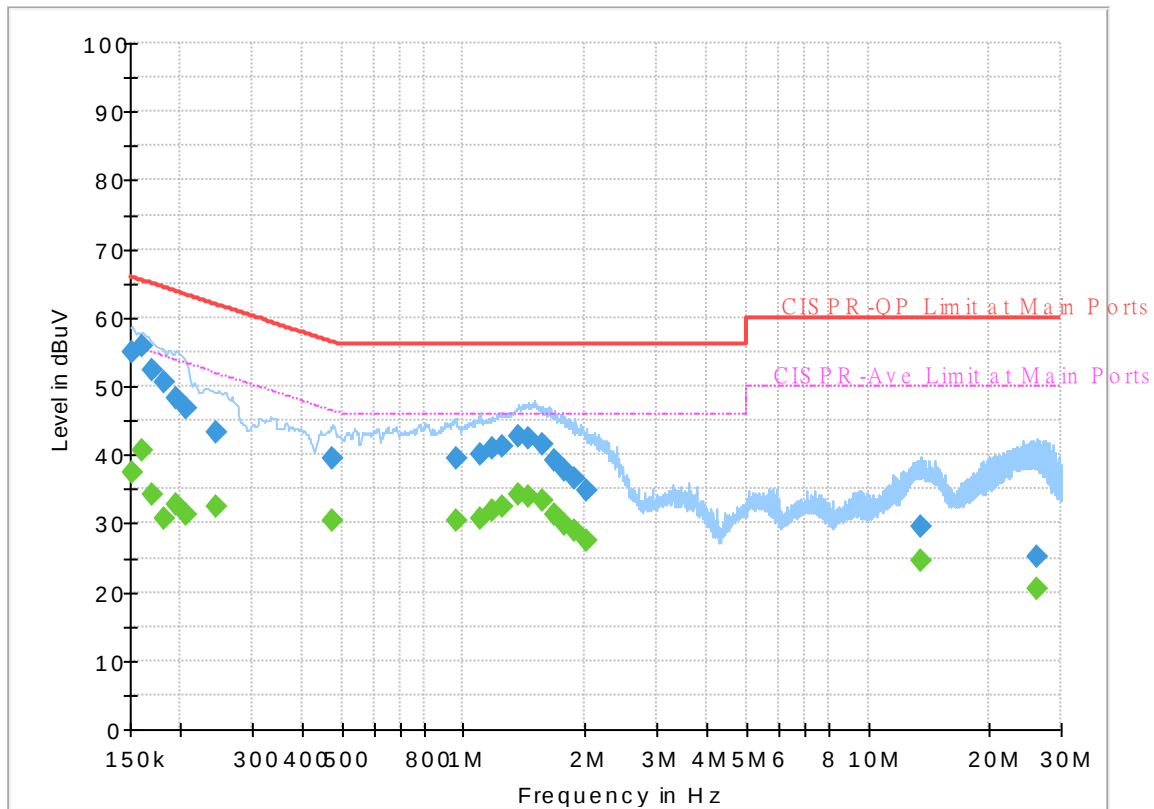
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.174750	---	38.31	54.73	16.42	L1	OFF	19.6
0.174750	52.84	---	64.73	11.89	L1	OFF	19.6
0.188250	---	38.06	54.11	16.05	L1	OFF	19.6
0.188250	51.64	---	64.11	12.47	L1	OFF	19.6
0.199500	---	28.83	53.63	24.80	L1	OFF	19.6
0.199500	48.37	---	63.63	15.26	L1	OFF	19.6
0.233250	---	36.16	52.33	16.17	L1	OFF	19.6
0.233250	46.94	---	62.33	15.39	L1	OFF	19.6
0.615750	---	25.57	46.00	20.43	L1	OFF	19.8
0.615750	39.36	---	56.00	16.64	L1	OFF	19.8
1.027500	---	30.12	46.00	15.88	L1	OFF	20.1
1.027500	40.84	---	56.00	15.16	L1	OFF	20.1
1.119750	---	30.21	46.00	15.79	L1	OFF	20.1
1.119750	41.44	---	56.00	14.56	L1	OFF	20.1
1.187250	---	30.90	46.00	15.10	L1	OFF	20.1
1.187250	41.93	---	56.00	14.07	L1	OFF	20.1
1.259250	---	31.69	46.00	14.31	L1	OFF	20.1
1.259250	42.58	---	56.00	13.42	L1	OFF	20.1
1.365000	---	32.88	46.00	13.12	L1	OFF	20.1
1.365000	43.61	---	56.00	12.39	L1	OFF	20.1
1.482000	---	32.47	46.00	13.53	L1	OFF	20.1

1.482000	43.18	---	56.00	12.82	L1	OFF	20.1
1.576500	---	32.09	46.00	13.91	L1	OFF	20.0
1.576500	42.10	---	56.00	13.90	L1	OFF	20.0
1.677750	---	30.94	46.00	15.06	L1	OFF	20.0
1.677750	40.67	---	56.00	15.33	L1	OFF	20.0
1.783500	---	29.10	46.00	16.90	L1	OFF	20.0
1.783500	38.94	---	56.00	17.06	L1	OFF	20.0
1.920750	---	27.80	46.00	18.20	L1	OFF	20.0
1.920750	37.32	---	56.00	18.68	L1	OFF	20.0
2.055750	---	26.76	46.00	19.24	L1	OFF	20.0
2.055750	36.01	---	56.00	19.99	L1	OFF	20.0
13.560000	---	25.37	50.00	24.63	L1	OFF	19.9
13.560000	30.88	---	60.00	29.12	L1	OFF	19.9
27.093750	---	25.99	50.00	24.01	L1	OFF	20.0
27.093750	31.88	---	60.00	28.12	L1	OFF	20.0

EUT Information

Report NO : 1N3028
 Test Mode : Mode 1
 Test Voltage : Power From System
 Phase : Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	37.34	55.88	18.54	N	OFF	19.6
0.152250	55.03	---	65.88	10.85	N	OFF	19.6
0.161250	---	40.50	55.40	14.90	N	OFF	19.6
0.161250	55.90	---	65.40	9.50	N	OFF	19.6
0.170250	---	34.30	54.95	20.65	N	OFF	19.6
0.170250	52.47	---	64.95	12.48	N	OFF	19.6
0.181500	---	30.69	54.42	23.73	N	OFF	19.6
0.181500	50.45	---	64.42	13.97	N	OFF	19.6
0.195000	---	32.69	53.82	21.13	N	OFF	19.6
0.195000	48.15	---	63.82	15.67	N	OFF	19.6
0.206250	---	31.27	53.36	22.09	N	OFF	19.6
0.206250	46.75	---	63.36	16.61	N	OFF	19.6
0.244500	---	32.34	51.94	19.60	N	OFF	19.6
0.244500	43.32	---	61.94	18.62	N	OFF	19.6
0.474000	---	30.35	46.44	16.09	N	OFF	19.7
0.474000	39.42	---	56.44	17.02	N	OFF	19.7
0.957750	---	30.49	46.00	15.51	N	OFF	20.1
0.957750	39.53	---	56.00	16.47	N	OFF	20.1
1.097250	---	30.75	46.00	15.25	N	OFF	20.1
1.097250	39.98	---	56.00	16.02	N	OFF	20.1
1.173750	---	31.86	46.00	14.14	N	OFF	20.1

1.173750	40.80	---	56.00	15.20	N	OFF	20.1
1.254750	---	32.48	46.00	13.52	N	OFF	20.1
1.254750	41.31	---	56.00	14.69	N	OFF	20.1
1.362750	---	34.15	46.00	11.85	N	OFF	20.1
1.362750	42.79	---	56.00	13.21	N	OFF	20.1
1.448250	---	34.01	46.00	11.99	N	OFF	20.1
1.448250	42.49	---	56.00	13.51	N	OFF	20.1
1.560750	---	33.21	46.00	12.79	N	OFF	20.0
1.560750	41.56	---	56.00	14.44	N	OFF	20.0
1.675500	---	31.15	46.00	14.85	N	OFF	20.0
1.675500	39.20	---	56.00	16.80	N	OFF	20.0
1.783500	---	29.72	46.00	16.28	N	OFF	20.0
1.783500	37.66	---	56.00	18.34	N	OFF	20.0
1.889250	---	28.89	46.00	17.11	N	OFF	20.0
1.889250	36.43	---	56.00	19.57	N	OFF	20.0
2.019750	---	27.41	46.00	18.59	N	OFF	20.0
2.019750	34.69	---	56.00	21.31	N	OFF	20.0
13.560000	---	24.58	50.00	25.42	N	OFF	19.9
13.560000	29.58	---	60.00	30.42	N	OFF	19.9
26.200500	---	20.59	50.00	29.41	N	OFF	20.1
26.200500	25.02	---	60.00	34.98	N	OFF	20.1



Appendix C. Radiated Spurious Emission

Test Engineer :	Karl Hou and Andy Yang	Temperature :	20~25°C
		Relative Humidity :	50~65%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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)
802.11b CH 01 2412MHz		2384.13	56.36	-17.64	74	40.88	27.34	18.21	30.07	145	35	P	H
		2389.905	44.13	-9.87	54	28.62	27.36	18.22	30.07	145	35	A	H
	*	2412	108.33	-	-	92.69	27.45	18.26	30.07	145	35	P	H
	*	2412	105.1	-	-	89.46	27.45	18.26	30.07	145	35	A	H
													H
													H
		2381.4	56.85	-17.15	74	41.4	27.33	18.2	30.08	100	103	P	V
		2389.485	44.22	-9.78	54	28.71	27.36	18.22	30.07	100	103	A	V
	*	2412	110.29	-	-	94.65	27.45	18.26	30.07	100	103	P	V
	*	2412	107.17	-	-	91.53	27.45	18.26	30.07	100	103	A	V
													V
													V
802.11b CH 06 2437MHz		2370.76	55.99	-18.01	74	40.61	27.28	18.18	30.08	158	35	P	H
		2389.24	44.08	-9.92	54	28.57	27.36	18.22	30.07	158	35	A	H
	*	2437	108.34	-	-	92.54	27.55	18.31	30.06	158	35	P	H
	*	2437	105.12	-	-	89.32	27.55	18.31	30.06	158	35	A	H
		2486.35	57.06	-16.94	74	40.88	27.82	18.4	30.04	158	35	P	H
		2483.76	45.45	-8.55	54	29.3	27.8	18.39	30.04	158	35	A	H
		2373.84	55.82	-18.18	74	40.41	27.3	18.19	30.08	100	90	P	V
		2389.94	44.13	-9.87	54	28.62	27.36	18.22	30.07	100	90	A	V
	*	2437	110.56	-	-	94.76	27.55	18.31	30.06	100	90	P	V
	*	2437	107.45	-	-	91.65	27.55	18.31	30.06	100	90	A	V
		2484.81	57.74	-16.26	74	41.58	27.81	18.39	30.04	100	90	P	V
		2485.02	45.74	-8.26	54	29.58	27.81	18.39	30.04	100	90	A	V



802.11b CH 11 2462MHz	*	2462	108.32	-	-	92.35	27.67	18.35	30.05	147	35	P	H
	*	2462	105.23	-	-	89.26	27.67	18.35	30.05	147	35	A	H
		2484.08	57.19	-16.81	74	41.04	27.8	18.39	30.04	147	35	P	H
		2483.52	45.36	-8.64	54	29.21	27.8	18.39	30.04	147	35	A	H
													H
													H
	*	2462	109.71	-	-	93.74	27.67	18.35	30.05	100	102	P	V
	*	2462	106.56	-	-	90.59	27.67	18.35	30.05	100	102	A	V
		2484.72	57.9	-16.1	74	41.74	27.81	18.39	30.04	100	102	P	V
		2483.52	45.55	-8.45	54	29.4	27.8	18.39	30.04	100	102	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	46.1	-27.9	74	56.58	32.46	12.34	55.28	-	-	P	H
		12645	50.5	-23.5	74	45.09	38.93	20.97	54.49	-	-	P	H
		12645	38.93	-15.07	54	33.52	38.93	20.97	54.49	-	-	A	H
		14505	49.77	-24.23	74	41.69	40.39	22.02	54.33	-	-	P	H
		14505	41.83	-12.17	54	33.75	40.39	22.02	54.33	-	-	A	H
		17985	54.34	-19.66	74	43.01	42.88	25.04	56.59	-	-	P	H
		17985	42.85	-11.15	54	31.52	42.88	25.04	56.59	-	-	A	H
													H
													H
													H
													H
													H
		4824	51.54	-22.46	74	62.02	32.45	12.34	55.27	100	264	P	V
		4824	47.8	-6.2	54	58.28	32.45	12.34	55.27	100	264	A	V
		10845	49.69	-24.31	74	46.67	39.02	19.41	55.41	-	-	P	V
		10845	36.59	-17.41	54	33.57	39.02	19.41	55.41	-	-	A	V
		14505	50.34	-23.66	74	42.26	40.39	22.02	54.33	-	-	P	V
		14505	41.6	-12.4	54	33.52	40.39	22.02	54.33	-	-	A	V
		18000	54.55	-19.45	74	43.11	43	25.04	56.6	-	-	P	V
		18000	43.91	-10.09	54	32.47	43	25.04	56.6	-	-	A	V
													V
													V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 06 2437MHz		4874	45.84	-28.16	74	56.25	32.6	12.32	55.33	-	-	P	H
		7311	45.98	-28.02	74	49.02	36.78	15.83	55.65	-	-	P	H
		11025	50.42	-23.58	74	47.3	38.9	19.57	55.35	-	-	P	H
		11025	38.61	-15.39	54	35.49	38.9	19.57	55.35	-	-	A	H
		14505	49.65	-24.35	74	41.57	40.39	22.02	54.33	-	-	P	H
		14505	41.93	-12.07	54	33.85	40.39	22.02	54.33	-	-	A	H
		17985	53.87	-20.13	74	42.54	42.88	25.04	56.59	-	-	P	H
		17985	43.98	-10.02	54	32.65	42.88	25.04	56.59	-	-	A	H
													H
													H
													H
													H
		4874	51.07	-22.93	74	61.48	32.6	12.32	55.33	100	265	P	V
		4874	48.53	-5.47	54	58.94	32.6	12.32	55.33	100	265	A	V
		7311	45.97	-28.03	74	49.01	36.78	15.83	55.65	-	-	P	V
		10935	49.99	-24.01	74	47.06	38.83	19.49	55.39	-	-	P	V
		10935	38.82	-15.18	54	35.89	38.83	19.49	55.39	-	-	A	V
		14490	49.66	-24.34	74	41.58	40.4	22.01	54.33	-	-	P	V
		14490	41.66	-12.34	54	33.58	40.4	22.01	54.33	-	-	A	V
		17985	54.03	-19.97	74	42.7	42.88	25.04	56.59	-	-	P	V
		17985	44.06	-9.94	54	32.73	42.88	25.04	56.59	-	-	A	V
													V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 11 2462MHz		4924	45.53	-28.47	74	55.78	32.84	12.3	55.39	-	-	P	H
		7386	46.62	-27.38	74	49.62	36.41	16.25	55.66	-	-	P	H
		12120	49.8	-24.2	74	44.86	38.98	20.7	54.74	-	-	P	H
		12120	40.42	-13.58	54	35.48	38.98	20.7	54.74	-	-	A	H
		14490	49.55	-24.45	74	41.47	40.4	22.01	54.33	-	-	P	H
		14490	41.71	-12.29	54	33.63	40.4	22.01	54.33	-	-	A	H
		17970	55.3	-18.7	74	44.09	42.76	25.03	56.58	-	-	P	H
		17970	43.67	-10.33	54	32.46	42.76	25.03	56.58	-	-	A	H
													H
													H
													H
													H
		4924	47.81	-26.19	74	58.06	32.84	12.3	55.39	-	-	P	V
		7386	46.04	-27.96	74	49.04	36.41	16.25	55.66	-	-	P	V
		12180	49.68	-24.32	74	44.73	38.92	20.73	54.7	-	-	P	V
		12180	40.4	-13.6	54	35.45	38.92	20.73	54.7	-	-	A	V
		14490	50.11	-23.89	74	42.03	40.4	22.01	54.33	-	-	P	V
		14490	40.61	-13.39	54	32.53	40.4	22.01	54.33	-	-	A	V
		17880	53.78	-20.22	74	43.32	41.96	25.02	56.52	-	-	P	V
		17880	43.02	-10.98	54	32.56	41.96	25.02	56.52	-	-	A	V
													V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												



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

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.695	57.03	-16.97	74	41.52	27.36	18.22	30.07	150	35	P	H
		2389.905	46.09	-7.91	54	30.58	27.36	18.22	30.07	150	35	A	H
	*	2412	107.53	-	-	91.89	27.45	18.26	30.07	150	35	P	H
	*	2412	99.78	-	-	84.14	27.45	18.26	30.07	150	35	A	H
													H
													H
		2390	58.25	-15.75	74	42.74	27.36	18.22	30.07	100	105	P	V
		2390	46.44	-7.56	54	30.93	27.36	18.22	30.07	100	105	A	V
	*	2412	109.36	-	-	93.72	27.45	18.26	30.07	100	105	P	V
	*	2412	101.78	-	-	86.14	27.45	18.26	30.07	100	105	A	V
													V
													V
802.11g CH 06 2437MHz		2371.6	56.67	-17.33	74	41.28	27.29	18.18	30.08	142	36	P	H
		2382.66	45.09	-8.91	54	29.63	27.33	18.21	30.08	142	36	A	H
	*	2437	107.41	-	-	91.61	27.55	18.31	30.06	142	36	P	H
	*	2437	99.9	-	-	84.1	27.55	18.31	30.06	142	36	A	H
		2492.44	56.75	-17.25	74	40.53	27.85	18.41	30.04	142	36	P	H
		2485.51	46.92	-7.08	54	30.76	27.81	18.39	30.04	142	36	A	H
		2376.78	56.17	-17.83	74	40.75	27.31	18.19	30.08	100	102	P	V
		2388.68	45.19	-8.81	54	29.69	27.35	18.22	30.07	100	102	A	V
	*	2437	109.53	-	-	93.73	27.55	18.31	30.06	100	102	P	V
	*	2437	101.84	-	-	86.04	27.55	18.31	30.06	100	102	A	V
		2486.14	57.89	-16.11	74	41.71	27.82	18.4	30.04	100	102	P	V
		2484.04	47.23	-6.77	54	31.08	27.8	18.39	30.04	100	102	A	V



802.11g CH 11 2462MHz	*	2462	108.39	-	-	92.42	27.67	18.35	30.05	191	35	P	H
	*	2462	100.75	-	-	84.78	27.67	18.35	30.05	191	35	A	H
		2483.56	63.01	-10.99	74	46.86	27.8	18.39	30.04	191	35	P	H
		2483.52	49.18	-4.82	54	33.03	27.8	18.39	30.04	191	35	A	H
													H
													H
	*	2462	109.74	-	-	93.77	27.67	18.35	30.05	100	101	P	V
	*	2462	102.02	-	-	86.05	27.67	18.35	30.05	100	101	A	V
		2483.56	63.52	-10.48	74	47.37	27.8	18.39	30.04	100	101	P	V
		2483.6	50.44	-3.56	54	34.29	27.8	18.39	30.04	100	101	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	41.28	-32.72	74	51.76	32.45	12.34	55.27	-	-	P	H
		10830	49.9	-24.1	74	46.83	39.08	19.4	55.41	-	-	P	H
		10830	37.81	-16.19	54	34.74	39.08	19.4	55.41	-	-	A	H
		14475	49.79	-24.21	74	41.71	40.4	22	54.32	-	-	P	H
		14475	41.71	-12.29	54	33.63	40.4	22	54.32	-	-	A	H
		17970	54.78	-19.22	74	43.57	42.76	25.03	56.58	-	-	P	H
		17970	43.86	-10.14	54	32.65	42.76	25.03	56.58	-	-	A	H
													H
													H
													H
													H
													H
		4824	41.66	-32.34	74	52.14	32.45	12.34	55.27	-	-	P	V
		10875	50.24	-23.76	74	47.3	38.9	19.44	55.4	-	-	P	V
		10875	35.42	-18.58	54	32.48	38.9	19.44	55.4	-	-	A	V
		14505	50	-24	74	41.92	40.39	22.02	54.33	-	-	P	V
		14505	41.62	-12.38	54	33.54	40.39	22.02	54.33	-	-	A	V
		17940	54.59	-19.41	74	43.6	42.52	25.03	56.56	-	-	P	V
		17940	43.43	-10.57	54	32.44	42.52	25.03	56.56	-	-	A	V
													V
													V
													V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 06 2437MHz		4874	40.75	-33.25	74	51.16	32.6	12.32	55.33	-	-	P	H
		7311	46.36	-27.64	74	49.4	36.78	15.83	55.65	-	-	P	H
		12690	49.75	-24.25	74	44.18	39.07	21	54.5	-	-	P	H
		12690	40.38	-13.62	54	34.81	39.07	21	54.5	-	-	A	H
		14490	49.73	-24.27	74	41.65	40.4	22.01	54.33	-	-	P	H
		14490	40.71	-13.29	54	32.63	40.4	22.01	54.33	-	-	A	H
		17970	54.55	-19.45	74	43.34	42.76	25.03	56.58	-	-	P	H
		17970	43.76	-10.24	54	32.55	42.76	25.03	56.58	-	-	A	H
													H
													H
													H
													H
		4874	41.14	-32.86	74	51.55	32.6	12.32	55.33	-	-	P	V
		7311	46.22	-27.78	74	49.26	36.78	15.83	55.65	-	-	P	V
		11205	50.1	-23.9	74	46.55	39.01	19.76	55.22	-	-	P	V
		11205	38.44	-15.56	54	34.89	39.01	19.76	55.22	-	-	A	V
		14490	50.25	-23.75	74	42.17	40.4	22.01	54.33	-	-	P	V
		14490	42.85	-11.15	54	34.77	40.4	22.01	54.33	-	-	A	V
		17970	54.16	-19.84	74	42.95	42.76	25.03	56.58	-	-	P	V
		17970	43.85	-10.15	54	32.64	42.76	25.03	56.58	-	-	A	V
													V
													V
													V
													V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 11 2462MHz		4924	40.76	-33.24	74	51.01	32.84	12.3	55.39	-	-	P	H
		7386	46.18	-27.82	74	49.18	36.41	16.25	55.66	-	-	P	H
		12675	49.8	-24.2	74	44.29	39.02	20.98	54.49	-	-	P	H
		12675	40.53	-13.47	54	35.02	39.02	20.98	54.49	-	-	A	H
		14490	50.53	-23.47	74	42.45	40.4	22.01	54.33	-	-	P	H
		14490	41.71	-12.29	54	33.63	40.4	22.01	54.33	-	-	A	H
		17955	54.49	-19.51	74	43.38	42.64	25.04	56.57	-	-	P	H
		17955	43.56	-10.44	54	32.45	42.64	25.04	56.57	-	-	A	H
													H
													H
													H
													H
		4924	42.08	-31.92	74	52.33	32.84	12.3	55.39	-	-	P	V
		7386	46.56	-27.44	74	49.56	36.41	16.25	55.66	-	-	P	V
		10665	50.01	-23.99	74	47.19	39	19.27	55.45	-	-	P	V
		10665	37.44	-16.56	54	34.62	39	19.27	55.45	-	-	A	V
		14505	49.84	-24.16	74	41.76	40.39	22.02	54.33	-	-	P	V
		14505	41.71	-12.29	54	33.63	40.39	22.02	54.33	-	-	A	V
		17880	53.89	-20.11	74	43.43	41.96	25.02	56.52	-	-	P	V
		17880	43	-11	54	32.54	41.96	25.02	56.52	-	-	A	V
													V
													V
													V
													V
Remark	1. No other spurious found.												
	2. All results are PASS against Peak and Average limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												
	4. The emission level close to 18GHz is checked that the average emission level is noise floor only.												

Emission above 18GHz

2.4GHz WIFI 802.11g (SHF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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 802.11g SHF		19736	38.34	-35.66	74	59.08	37.79	-3.58	54.95		-	-	V
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
													H
		19752	38.2	-35.8	74	58.93	37.8	-3.58	54.95	-	-	P	H
													V
													V
													V
													V
													V
													V
													V
													V
													V
												V	
Remark	1. No other spurious found.												
	2. All results are PASS against limit line.												
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.												

Emission below 1GHz

2.4GHz WIFI 802.11g (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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 802.11g LF		30	22.25	-17.75	40	29.13	24.63	0.81	32.32	-	-	P	H	
		100.81	25.36	-18.14	43.5	39.77	16.07	1.82	32.3	-	-	P	H	
		158.04	30.62	-12.88	43.5	43.81	16.76	2.3	32.25	-	-	P	H	
		306.45	26.24	-19.76	46	36.06	19.34	3.12	32.28	-	-	P	H	
		775.93	30.99	-15.01	46	30.33	28.09	4.86	32.29	-	-	P	H	
		938.89	35.36	-10.64	46	31.02	30.2	5.42	31.28	-	-	P	H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
													H	
			38.73	27.15	-12.85	40	38.28	20.15	1.02	32.3	-	-	P	V
			99.84	23.71	-19.79	43.5	38.33	15.87	1.81	32.3	-	-	P	V
			187.14	24.2	-19.3	43.5	39.13	14.83	2.47	32.23	-	-	P	V
			310.33	23.74	-22.26	46	33.48	19.42	3.12	32.28	-	-	P	V
			828.31	31.59	-14.41	46	30.12	28.5	5.05	32.08	-	-	P	V
			948.59	34.36	-11.64	46	29.6	30.51	5.46	31.21	-	-	P	V
														V
														V
														V
													V	
													V	
													V	
													V	
Remark	1. No other spurious found.													
	2. All results are PASS against limit line.													
	3. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only.													



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical

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

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	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)
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

$$1. \text{ Path Loss(dB)} = \text{Cable loss(dB)} + \text{Filter loss(dB)} + \text{Attenuator loss(dB)}$$

$$2. \text{ Level(dB}\mu\text{V/m)} =$$

$$\text{Antenna Factor(dB/m)} + \text{Path Loss(dB)} + \text{Read Level(dB}\mu\text{V)} - \text{Preamp Factor(dB)}$$

$$3. \text{ Over Limit(dB)} = \text{Level(dB}\mu\text{V/m)} - \text{Limit Line(dB}\mu\text{V/m)}$$

For Peak Limit @ 2390MHz:

$$1. \text{ Level(dB}\mu\text{V/m)}$$

$$= \text{Antenna Factor(dB/m)} + \text{Path Loss(dB)} + \text{Read Level(dB}\mu\text{V)} - \text{Preamp Factor(dB)}$$

$$= 32.22(\text{dB/m}) + 4.58(\text{dB}) + 54.51(\text{dB}\mu\text{V}) - 35.86(\text{dB})$$

$$= 55.45(\text{dB}\mu\text{V/m})$$

$$2. \text{ Over Limit(dB)}$$

$$= \text{Level(dB}\mu\text{V/m)} - \text{Limit Line(dB}\mu\text{V/m)}$$

$$= 55.45(\text{dB}\mu\text{V/m}) - 74(\text{dB}\mu\text{V/m})$$

$$= -18.55(\text{dB})$$

For Average Limit @ 2390MHz:

$$1. \text{ Level(dB}\mu\text{V/m)}$$

$$= \text{Antenna Factor(dB/m)} + \text{Path Loss(dB)} + \text{Read Level(dB}\mu\text{V)} - \text{Preamp Factor(dB)}$$

$$= 32.22(\text{dB/m}) + 4.58(\text{dB}) + 42.6(\text{dB}\mu\text{V}) - 35.86(\text{dB})$$

$$= 43.54(\text{dB}\mu\text{V/m})$$

$$2. \text{ Over Limit(dB)}$$

$$= \text{Level(dB}\mu\text{V/m)} - \text{Limit Line(dB}\mu\text{V/m)}$$

$$= 43.54(\text{dB}\mu\text{V/m}) - 54(\text{dB}\mu\text{V/m})$$

$$= -10.46(\text{dB})$$

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



Appendix D. Radiated Spurious Emission Plots

Test Engineer :	Karl Hou and Andy Yang	Temperature :	20~25°C
		Relative Humidity :	50~65%

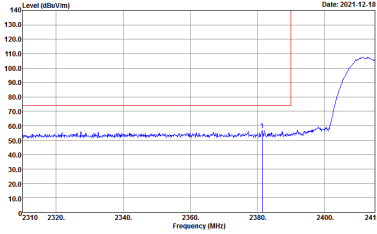
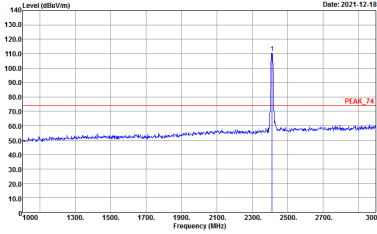
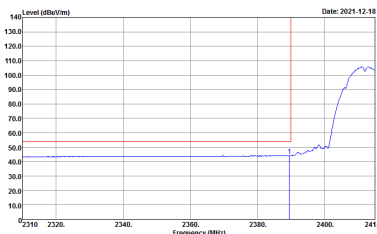
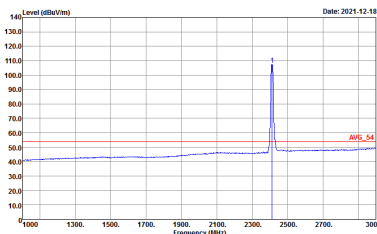
Note symbol

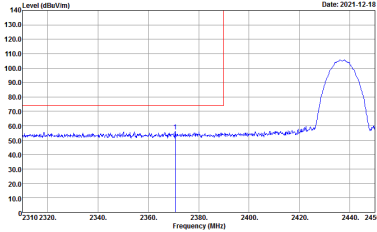
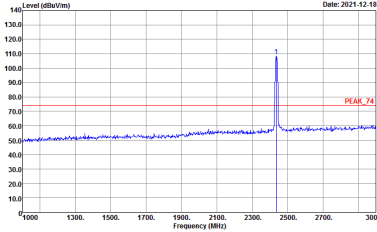
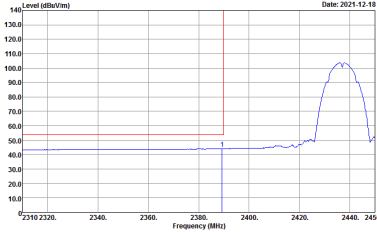
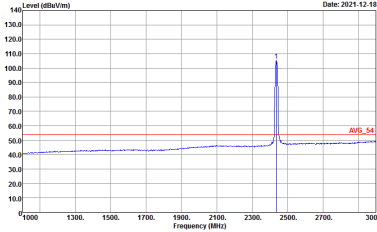
-L	Low channel location
-R	High channel location



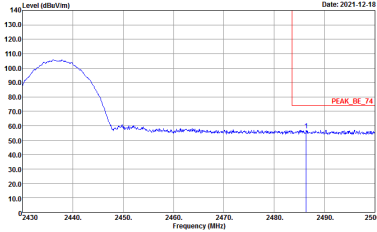
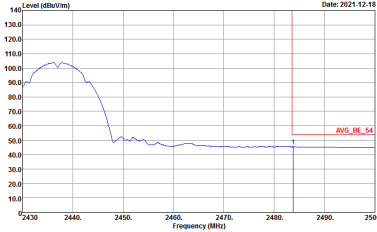
2.4GHz 2400~2483.5MHz
WIFI 802.11b (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak	Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto	Site : 03CH16-HY Condition : AVG_54 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto

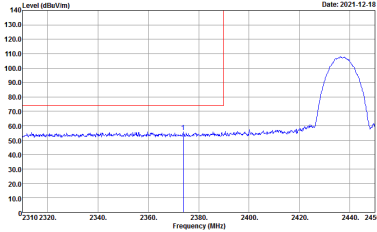
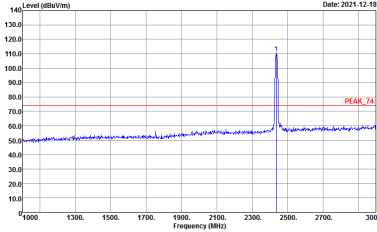
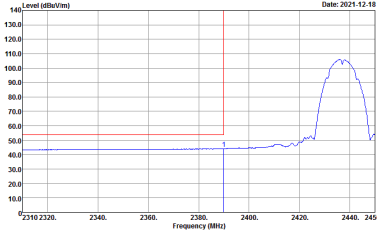
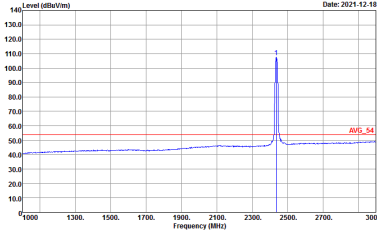
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11b CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11b CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AV6_BE_54 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AV6_54 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto

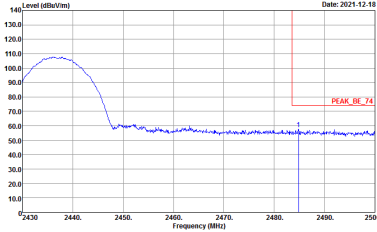
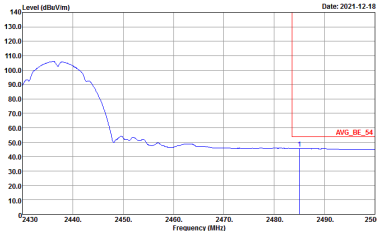


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11b CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto	Left blank



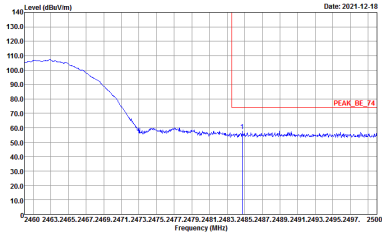
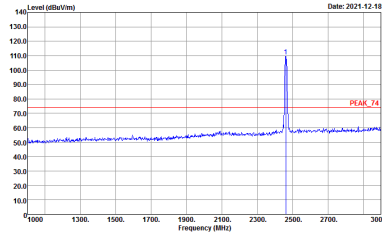
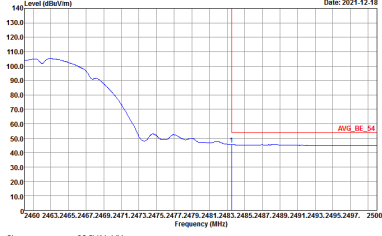
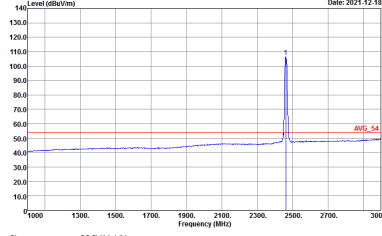
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11b CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11b CH06 2437MHz - R	
1	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto	Left blank

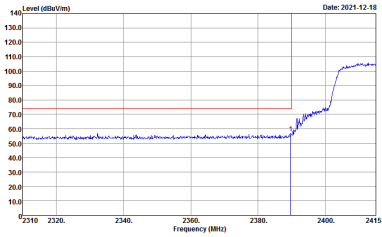
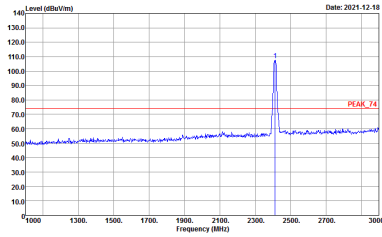
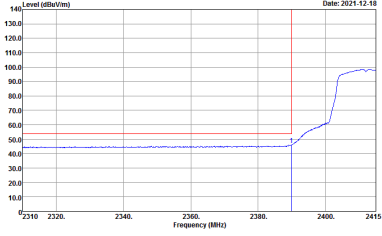
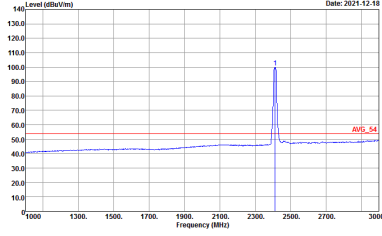


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak	Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto	Site : 03CH16-HY Condition : AVG_54 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto

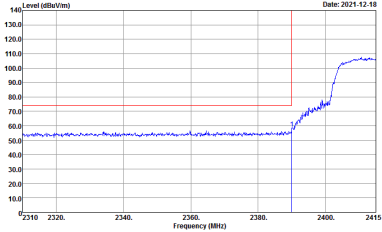
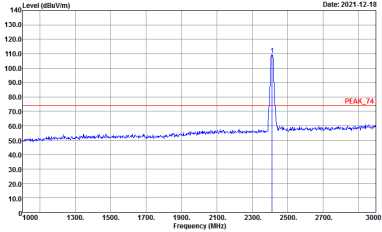
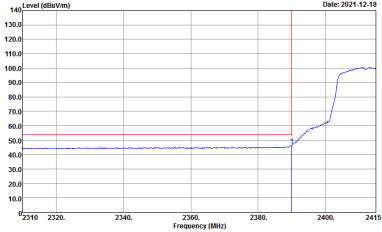
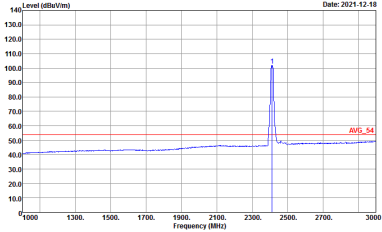
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto



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

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11g CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto

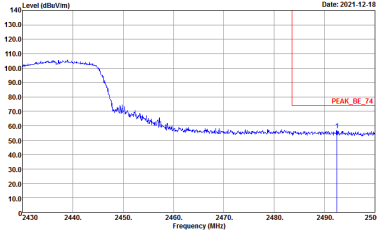
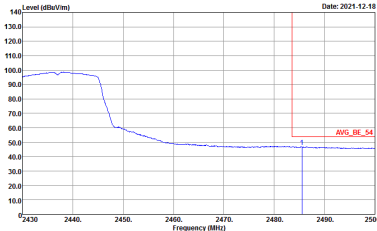


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11g CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto

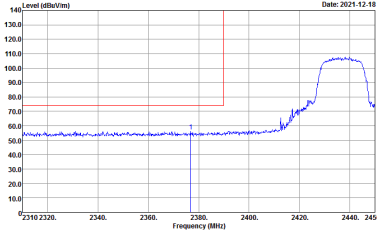
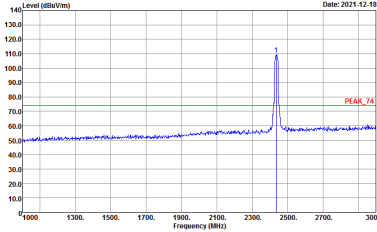
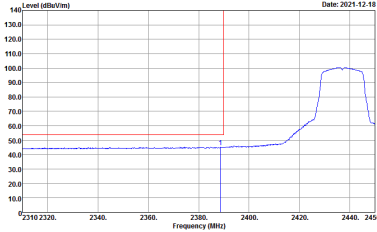
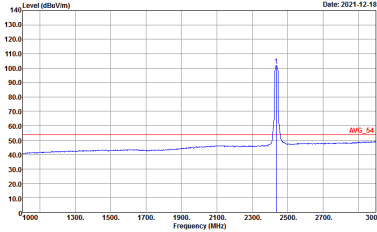


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11g CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto	Site : 03CH16-HY Condition : AVG_54 3m 91200_02114_210804 HORIZONTAL : RBW:1000.000KHz VBW:1000KHz SWT:Auto

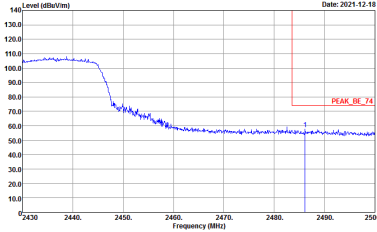
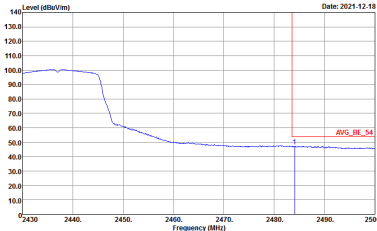


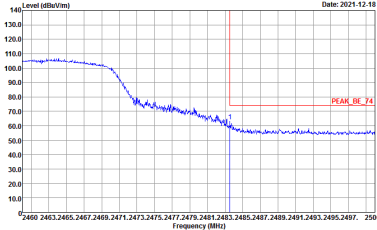
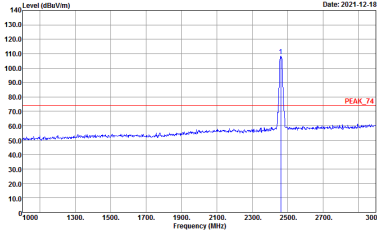
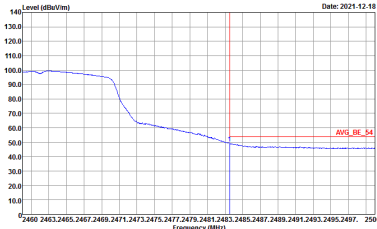
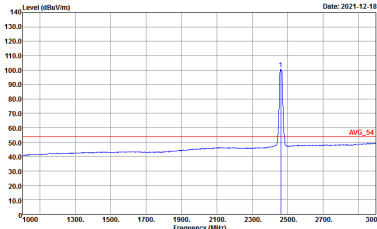
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11g CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left blank
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto	Left blank

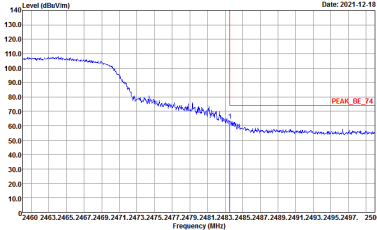
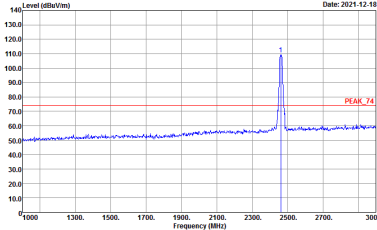
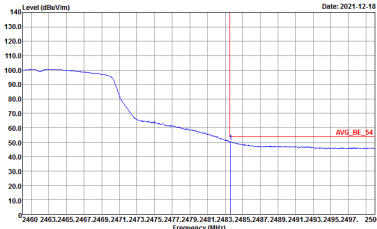
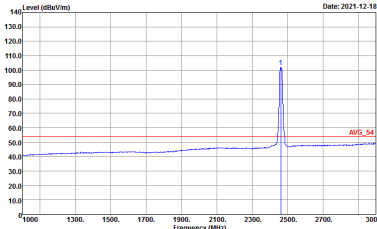


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11g CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto



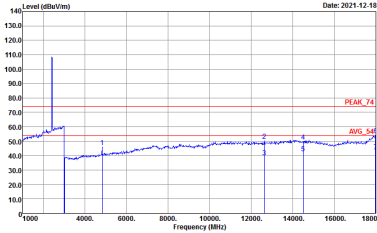
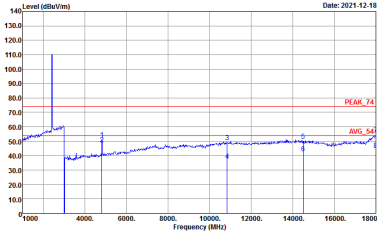
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11g CH06 2437MHz - R	
1	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	Left Blank
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 VERTICAL : RBW:1000.000KHz VBW:1.000KHz SWT:Auto	Left Blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11g CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AV6_BE_54 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto	 Site : 03CH16-HY Condition : AV6_54 3m 91200_02114_210804 HORIZONTAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto

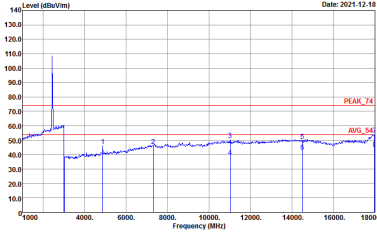
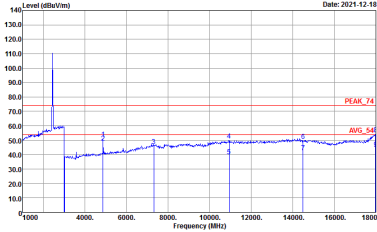
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
Ant.	802.11g CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH16-HY Condition : PEAK_BE_74 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto
Avg.	 Site : 03CH16-HY Condition : AVG_BE_54 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto	 Site : 03CH16-HY Condition : AVG_54 3m 91200_02114_210804 VERTICAL RBW:1000.000KHz VBW:1.000KHz SWT:Auto



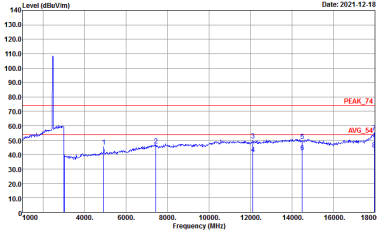
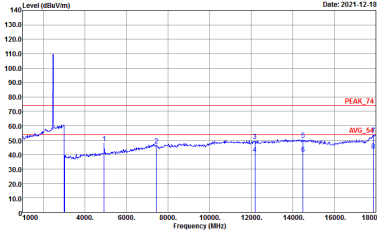
2.4GHz 2400~2483.5MHz
WIFI 802.11b (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
Ant.	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL Detector : Peak

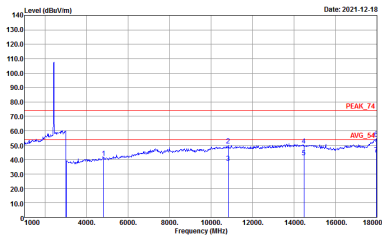
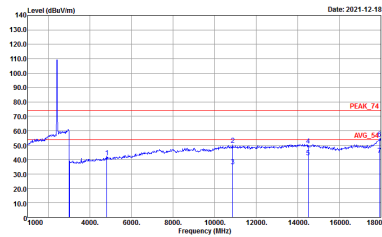


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
Ant.	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL Detector : Peak



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
Ant.	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL Detector : Peak

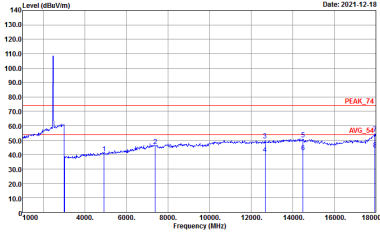
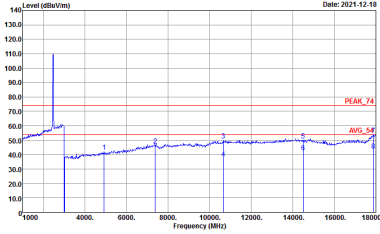
2.4GHz 2400~2483.5MHz
WIFI 802.11g (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
Ant.	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_02114_210804 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 9120D_02114_210804 VERTICAL Detector : Peak

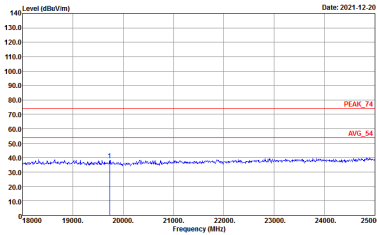
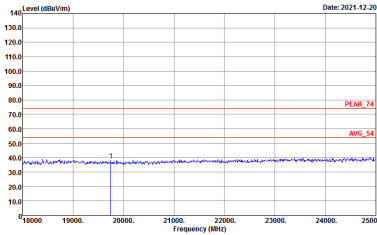


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
Ant.	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	Level (dBuV/m) Date: 2021-12-18 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL Detector : Peak	Level (dBuV/m) Date: 2021-12-18 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL Detector : Peak

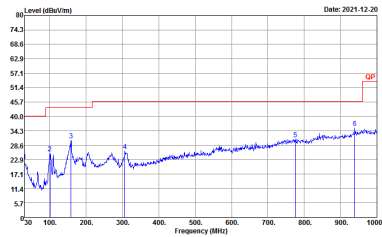
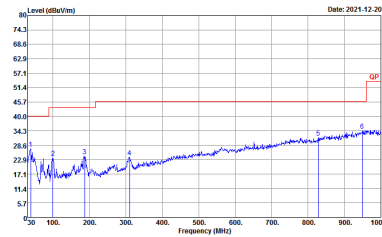


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
Ant.	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 3m 91200_02114_210804 VERTICAL Detector : Peak

Emission above 18GHz
2.4GHz WIFI 802.11g (SHF @ 1m)

WIFI	2.4GHz 2400~2483.5MHz	
Ant.	802.11g SHF	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH16-HY Condition : PEAK_74 1m SHF ANT_9170_00991 VERTICAL Detector : Peak	 Site : 03CH16-HY Condition : PEAK_74 1m SHF ANT_9170_00991 HORIZONTAL Detector : Peak

**Emission below 1GHz
2.4GHz WIFI 802.11g (LF)**

WIFI	2.4GHz 2400~2483.5MHz	
Ant.	802.11g LF	
1	Horizontal	Vertical
QP / Peak	 Site : 03CH16-HY Condition : QP 3m BIL06_47020_211009 HORIZONTAL Detector : Peak	 Site : 03CH16-HY Condition : QP 3m BIL06_47020_211009 VERTICAL Detector : Peak



Appendix E. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11b	100.00	-	-	10Hz
802.11g	97.54	1390	0.72	1kHz

