FCC RADIO TEST REPORT

FCC ID	:	**2AXW2-3476**
Equipment	:	**Digital Media Receiver**
Model Name	:	**C76N8S**
Applicant	:	**Calcium Crater LLC** **DTC QUADRANT** **5445 DTC PARKWAY, PENTHOUSE 4** **GREENWOOD VILLAGE, COLORADO, 80111**
Standard	:	**FCC Part 15 Subpart C §15.247**

The product was received on Dec. 09, 2020 and testing was started from Dec. 09, 2020 and completed on Jan. 07, 2021. We, SPORTON INTERNATIONAL INC., EMC & Wireless Communications 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 of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FR092923-01C	01	Initial issue of report	Jan. 26, 2021

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)
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
3.6	15.207	AC Conducted Emission	Pass
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 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.

Reviewed by: Wii Chang

Report Producer: Lucy Wu

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Digital Media Receiver
Model Name	C76N8S
FCC ID	2AXW2-3476
EUT supports Radios application	WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE

1.2 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Frequency Range	2412 MHz ~ 2472 MHz
Maximum Output Power to antenna	802.11b: 20.17 dBm, 0.1040 W 802.11g: 24.43 dBm, 0.2773 W 802.11n HT20: 24.52 dBm, 0.2831 W
99% Occupied Bandwidth	802.11b: 13.84 MHz 802.11g: 16.98 MHz 802.11n HT20: 17.98 MHz
Antenna Type	PCB IFA Antenna
Antenna Gain	3.45 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

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

1.3 Modification of EUT

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

1.4 Testing Location

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	TH05-HY, CO05-HY, 03CH07-HY

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

FCC designation No.: TW1190

1.5 Applicable Standards

According to the specifications of 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 test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.

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

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

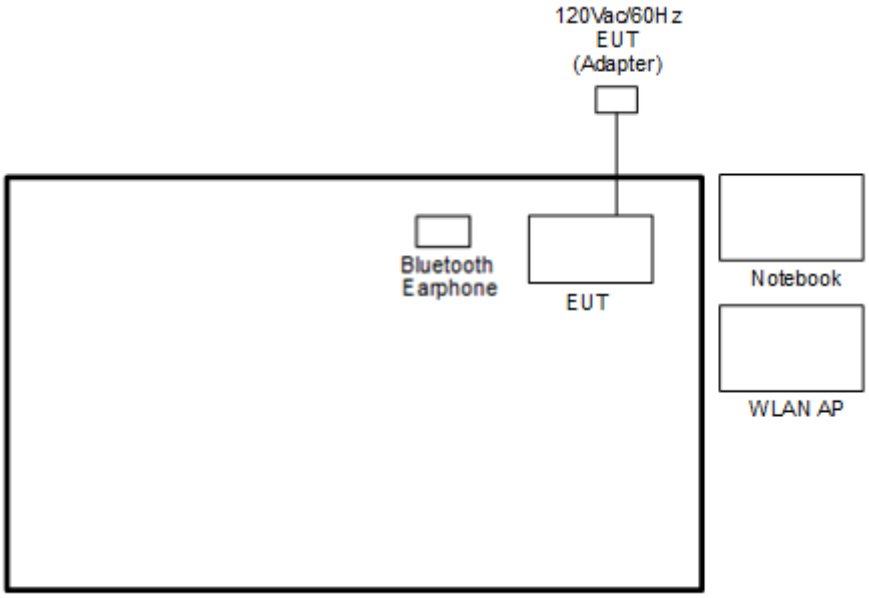
Test Cases	
AC Conducted Emission	Mode 1 :WLAN (2.4GHz) Link + Bluetooth Link + MPEG4 + AC Adapter (AP23 G1) (Acbel)
Remark: For Radiated Test Cases, the tests were performed with AC Adapter (AP23 G1) (Acbel)	

Ch. #	2400-2483.5 MHz		
	802.11b	802.11g	802.11n HT20
Low	01	01	01
Middle	06	06	06
High	11	11	11
	12	12	12
	13	13	13

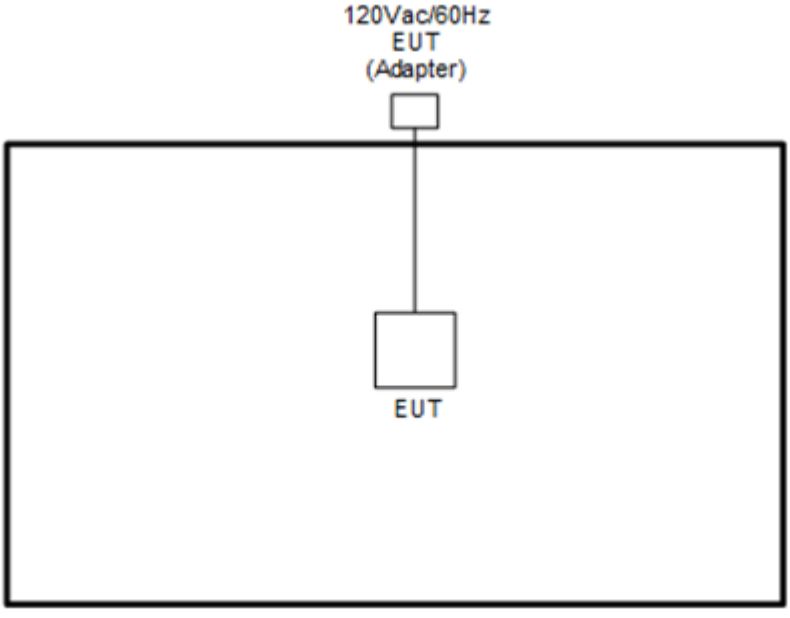
Remark: For radiation spurious emission, the final modulation and the worst data rate was reference the max RF conducted power.

2.3 Connection Diagram of Test System

<AC Conducted Emission Mode>



<WLAN Tx Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model Name	FCC ID	Data Cable	Power Cord
1.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
2.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
3.	Notebook	DELL	Latitude 3400	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m

2.5 EUT Operation Test Setup

The RF test items, utility “Compliance tool 1.0.0.90” was installed in Notebook which was programmed in order to make the EUT 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 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).
= 4.2 + 10 = 14.2 (dB)

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.

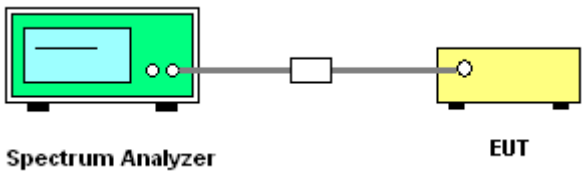
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

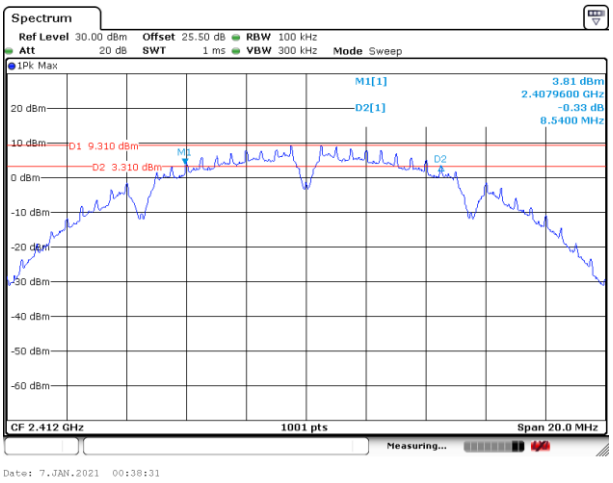
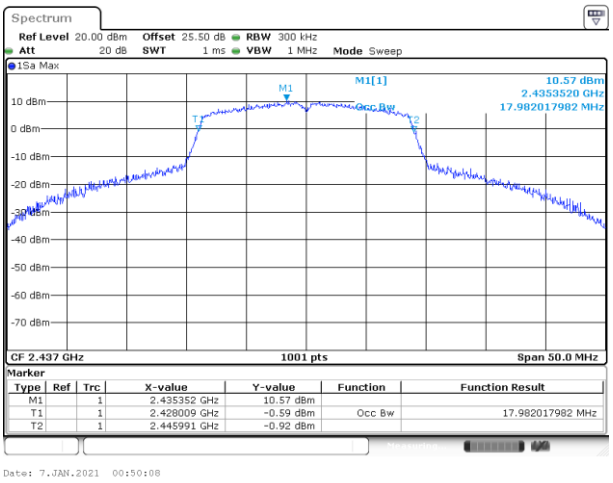
1. The testing follows the ANSI C63.10 Section 6.9.3 (OBW) and 11.8.1 (6dB BW).
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit 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. 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) ≥ 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.

Minimum 6dB Bandwidth	Maximum 99% Occupied Bandwidth
	

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 2400-2483.5MHz, the limit for 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.

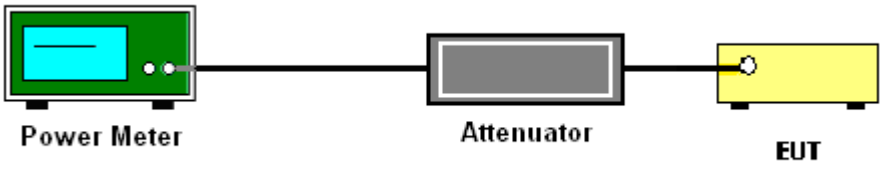
3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

3.2.3 Test Procedures

1. For Peak Power, the testing follows ANSI C63.10 Section 11.9.1.3 PKPM1
2. For Average Power, the testing follows ANSI C63.10 Section 11.9.2.3.2 Method AVGPM-G
3. 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.
4. Set to the maximum power setting and enable the EUT transmit continuously.
5. 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.

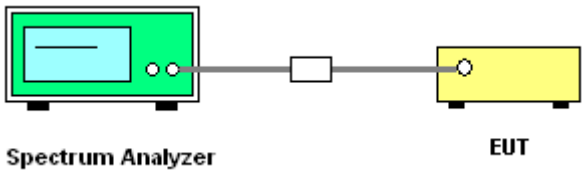
3.3.2 Measuring Instruments

See list of measuring equipment of 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 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.

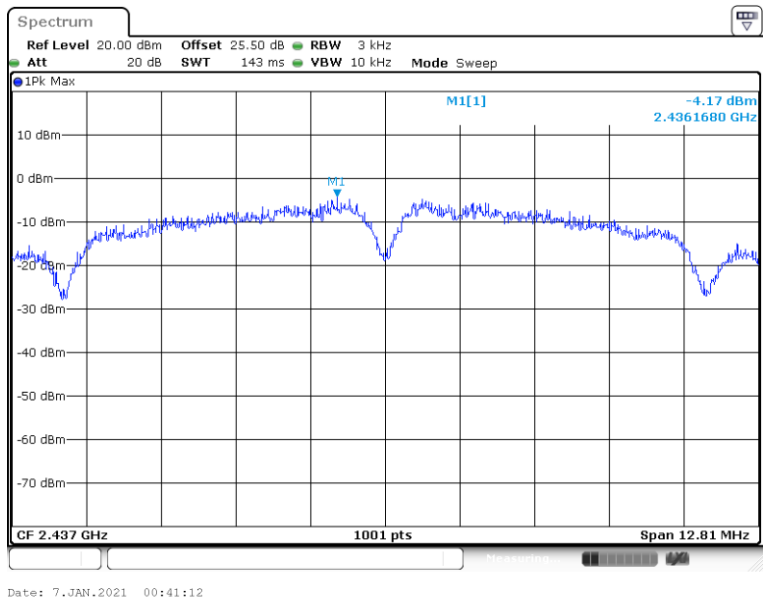
3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.

Worst Case Power Density (dBm/3kHz)



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.

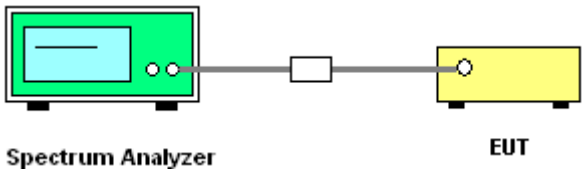
3.4.2 Measuring Instruments

See list of measuring equipment of 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 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

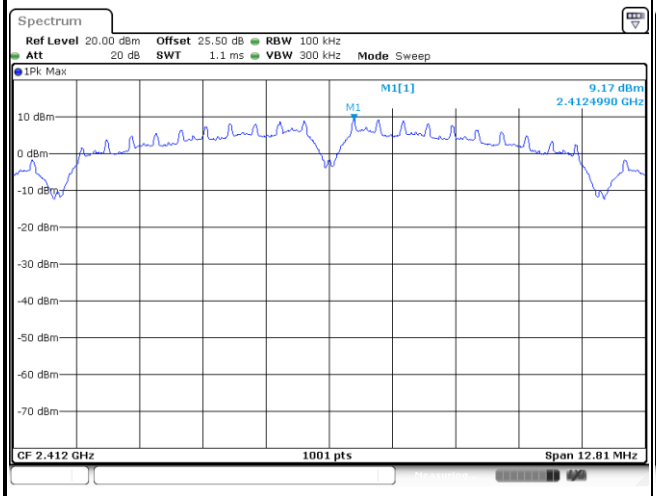
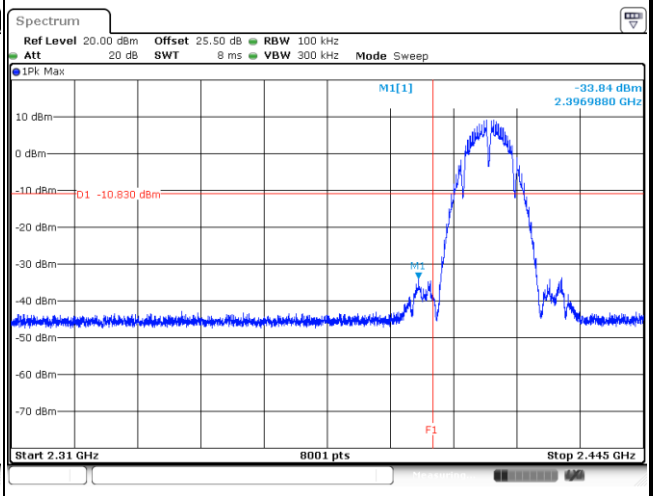
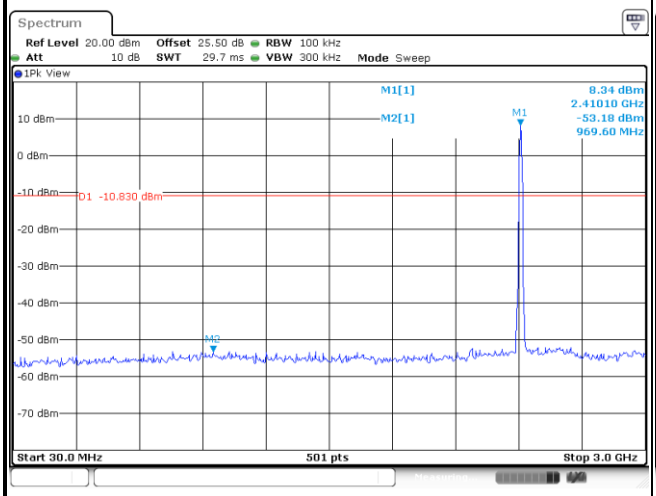
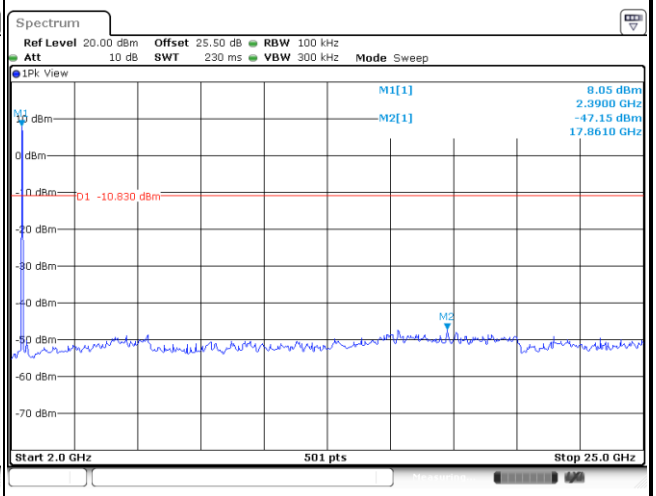


3.4.5 Test Result of Conducted Band Edges and Spurious Emission

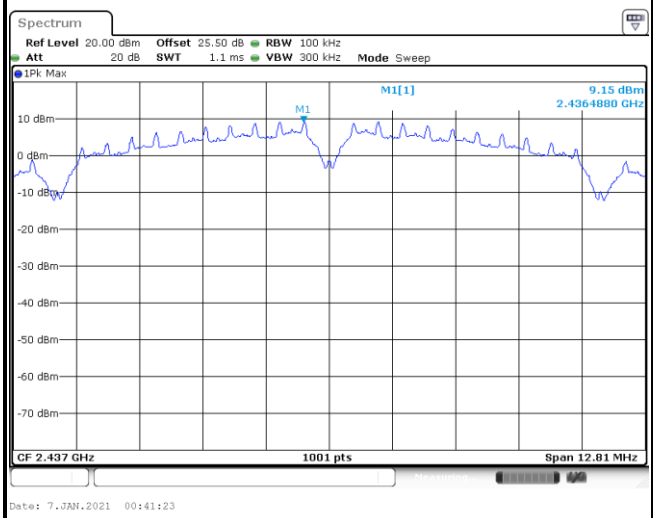
Test Engineer :	Hank Hsu	Temperature :	21~25℃
		Relative Humidity :	51~54%

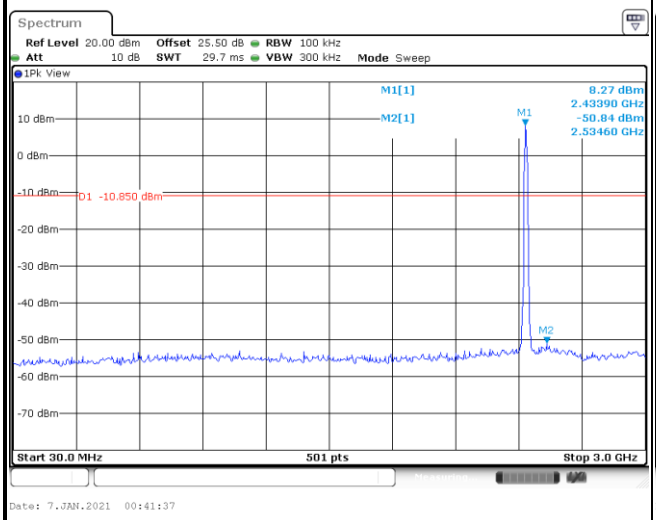
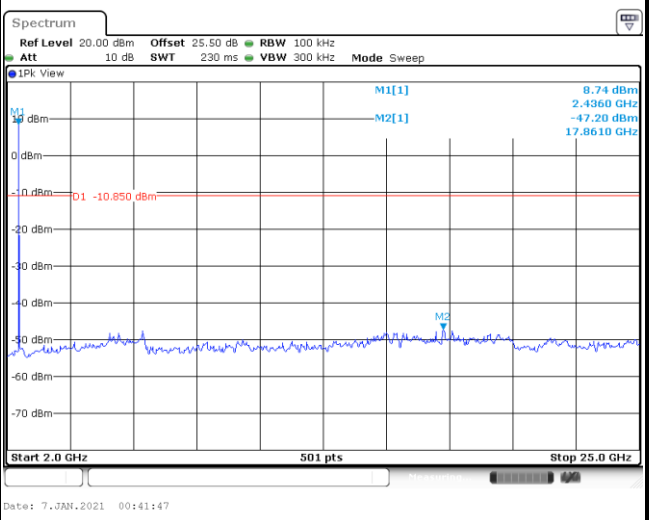
Number of TX = 1, Ant. 1 (Measured)

Test Mode :	802.11b	Test Channel :	01

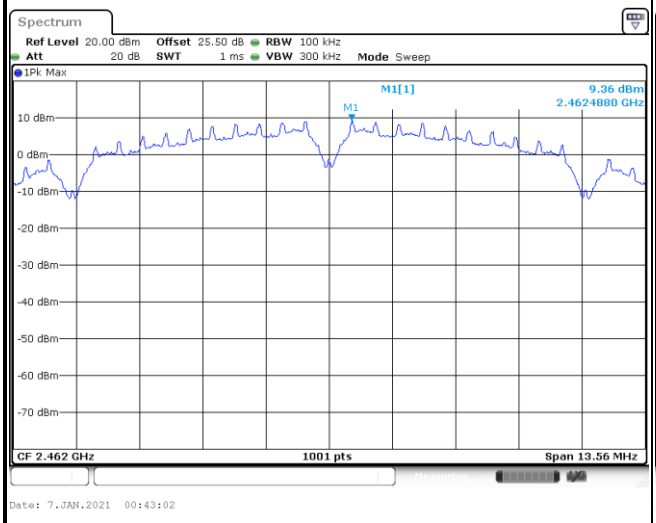
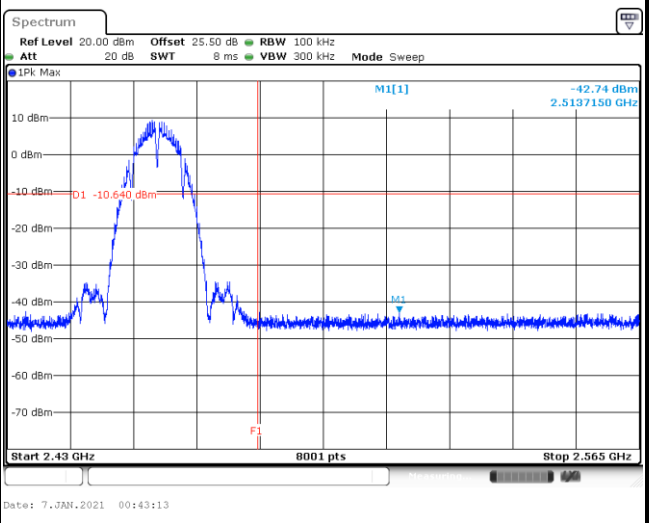
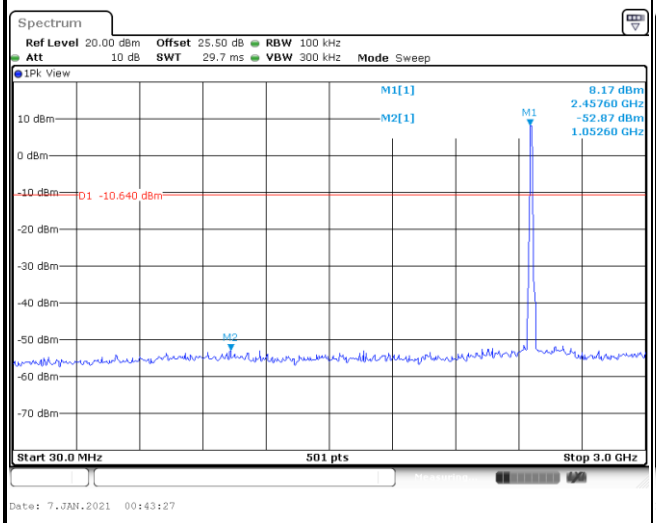
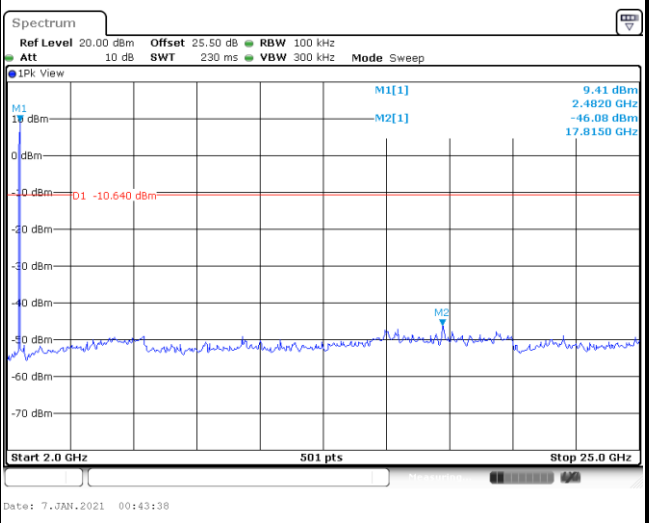
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

Test Mode :	802.11b	Test Channel :	06

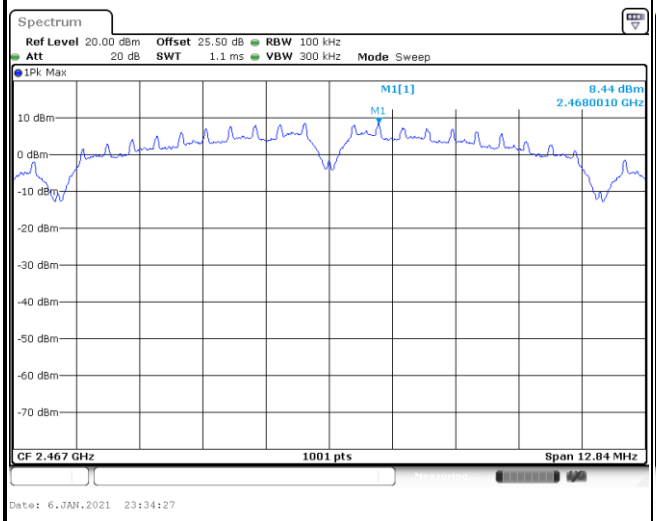
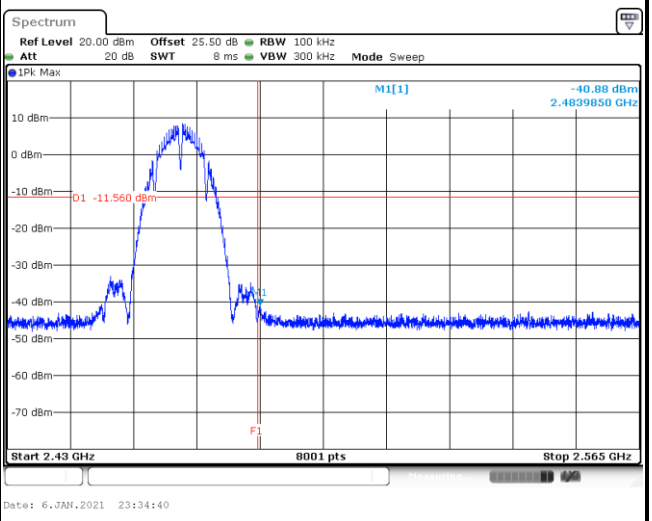
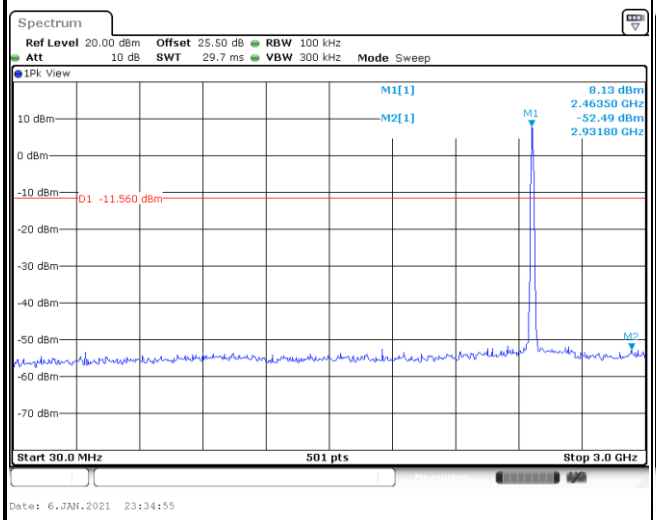
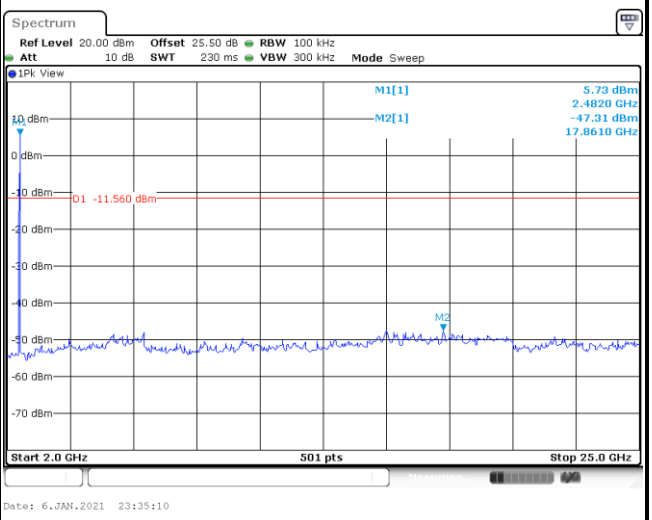
100kHz PSD reference Level	Mid Channel Plot
	

Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

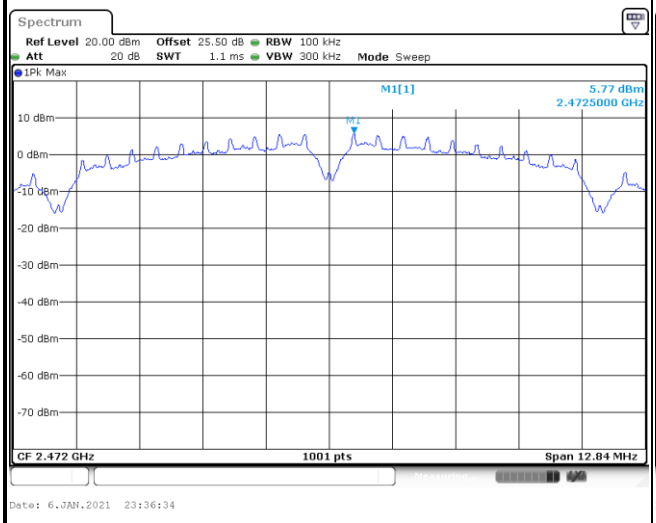
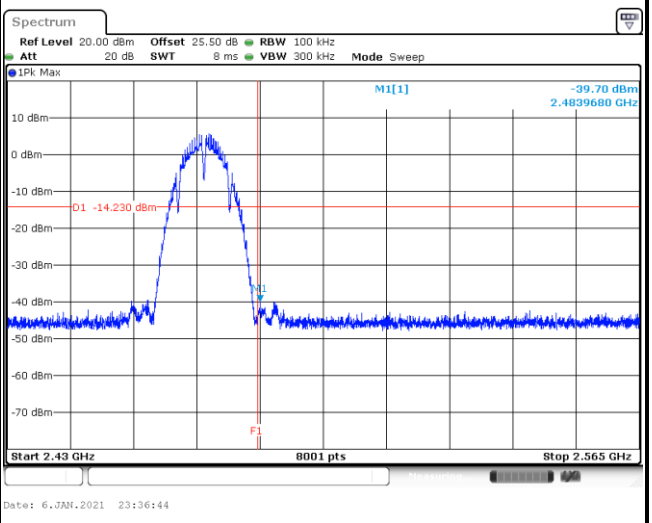
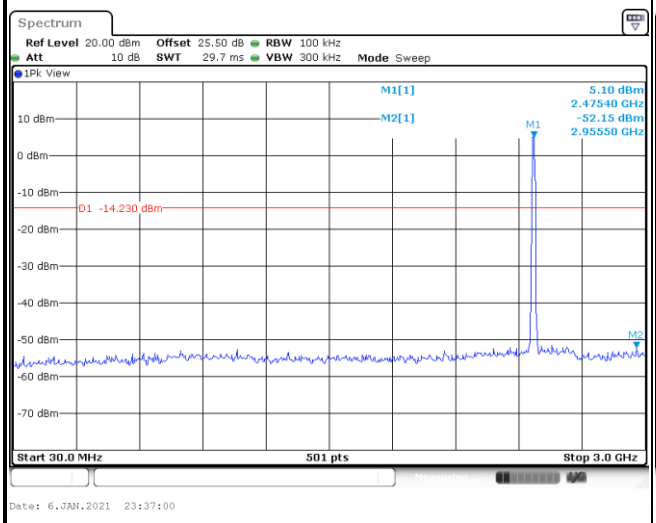
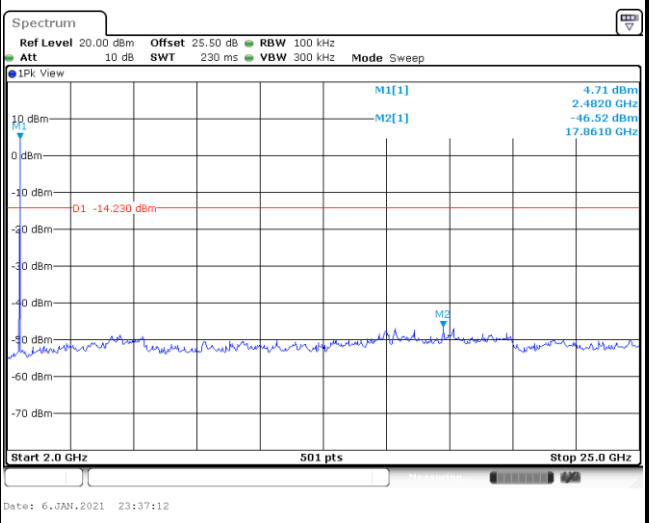
Test Mode :	802.11b	Test Channel :	11

100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

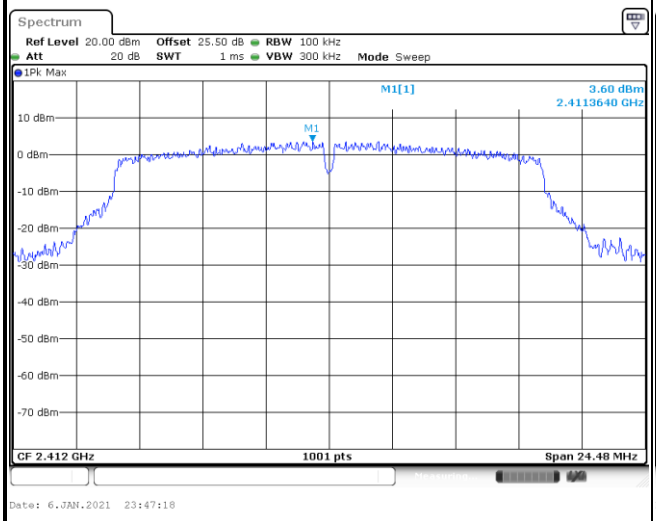
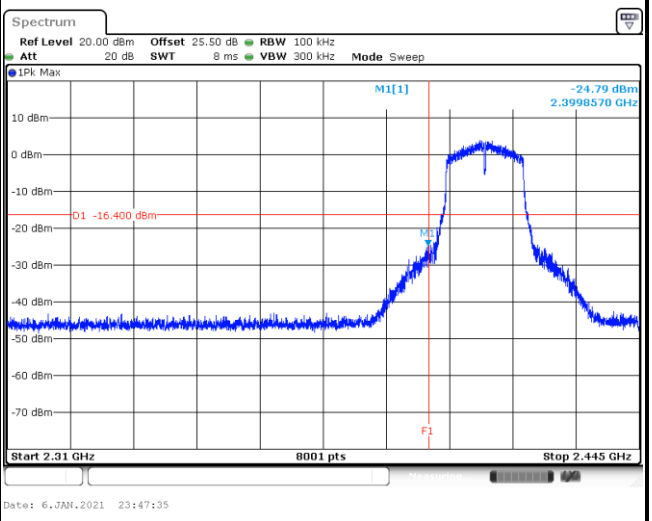
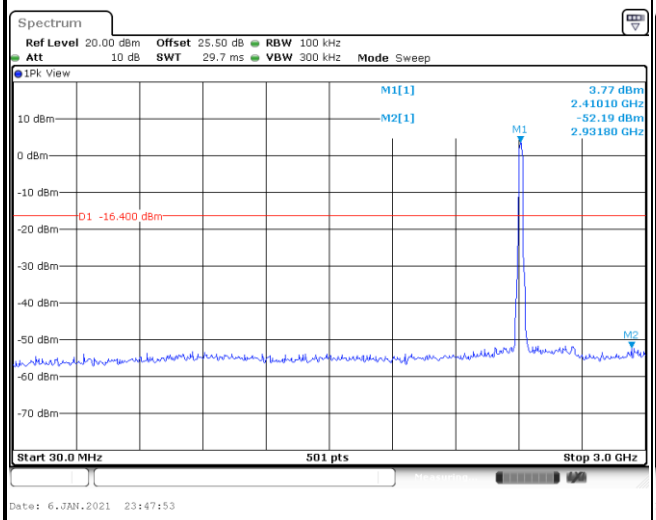
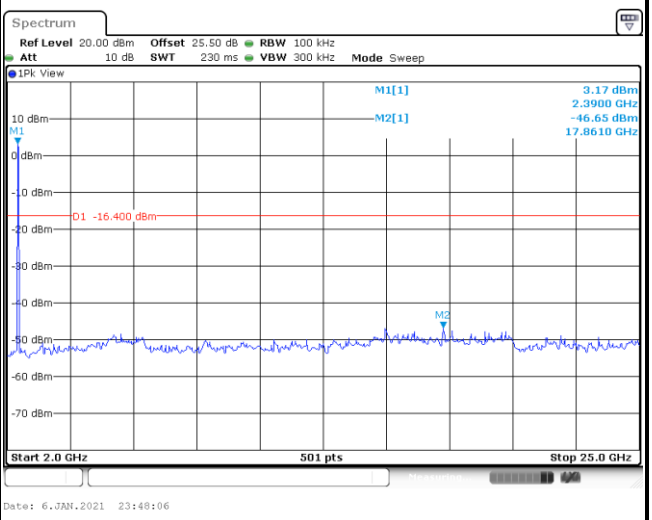
Test Mode :	802.11b	Test Channel :	12

100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

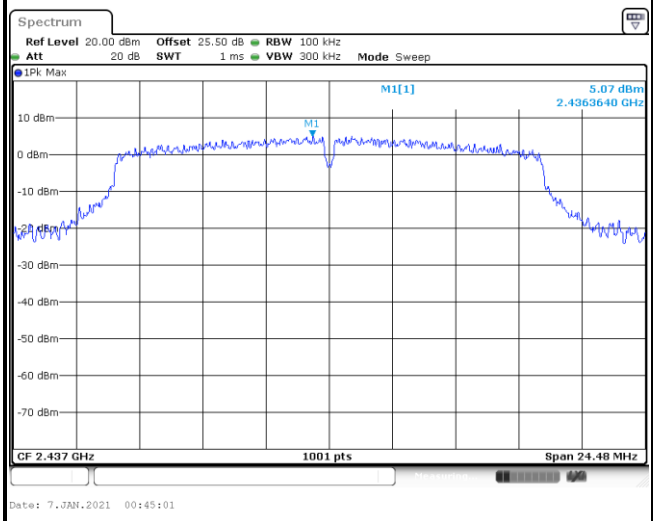
Test Mode :	802.11b	Test Channel :	13

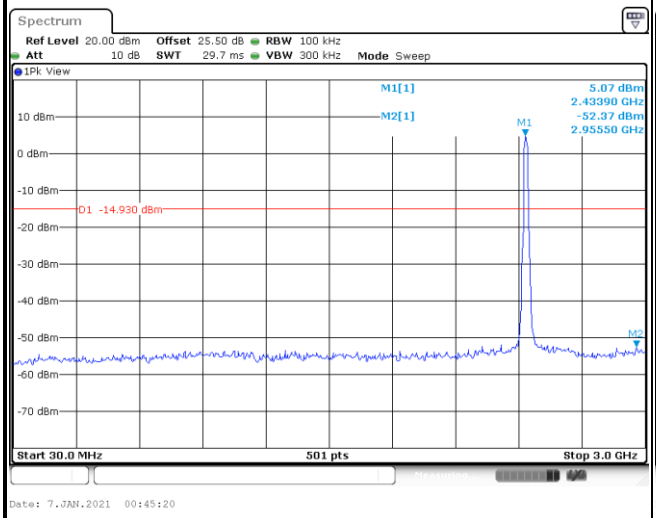
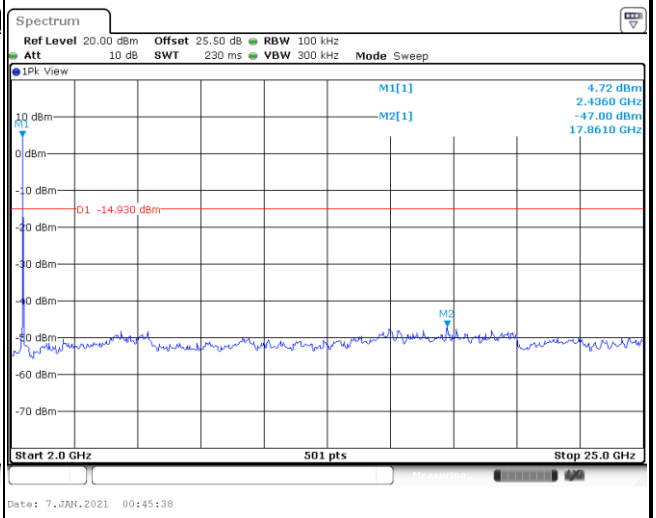
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

Test Mode :	802.11g	Test Channel :	01

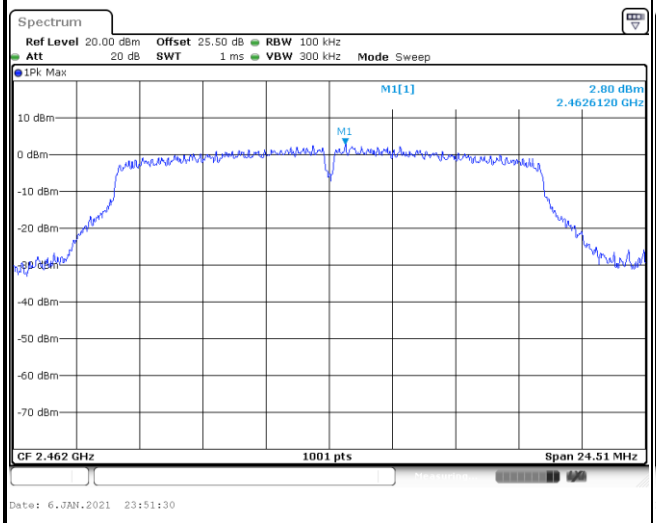
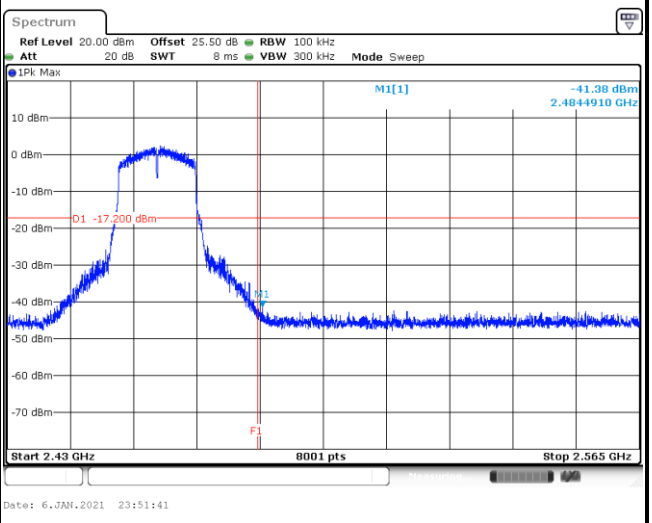
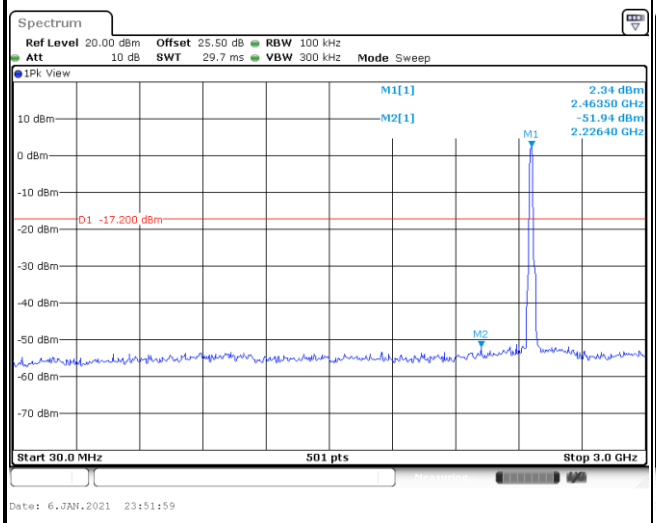
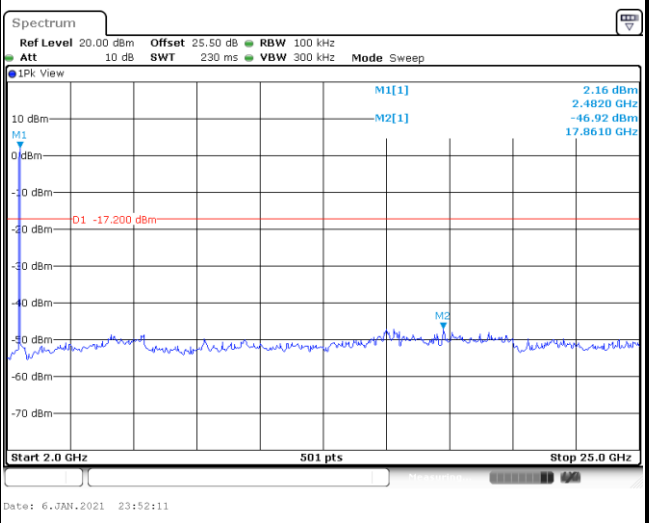
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

Test Mode :	802.11g	Test Channel :	06

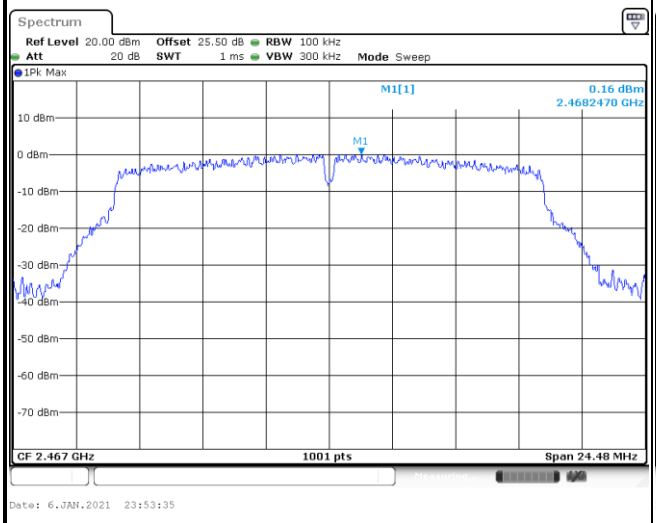
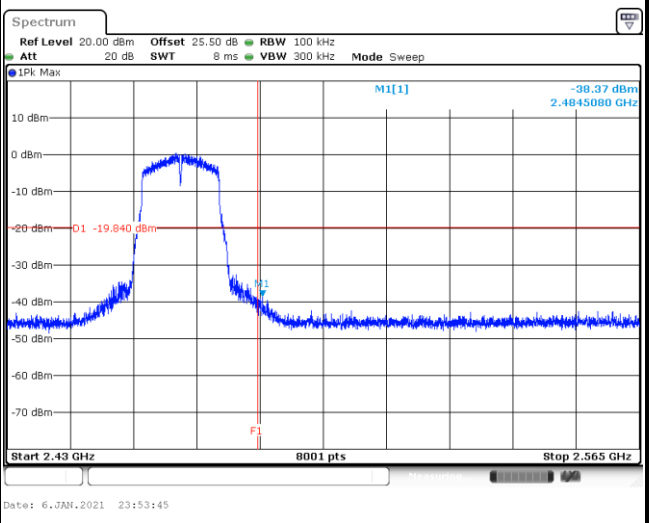
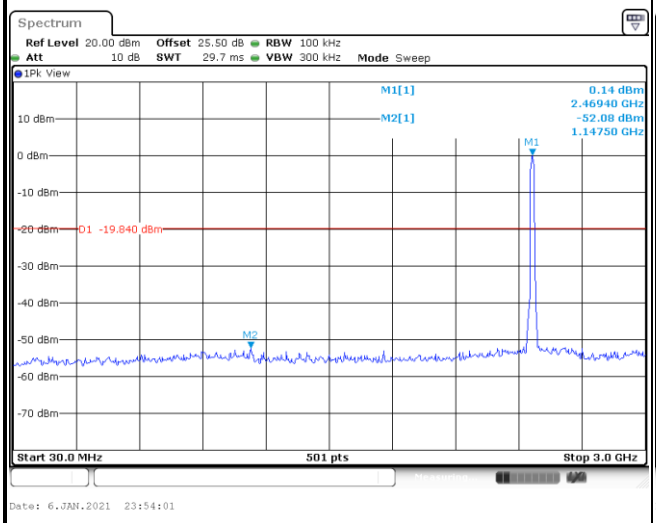
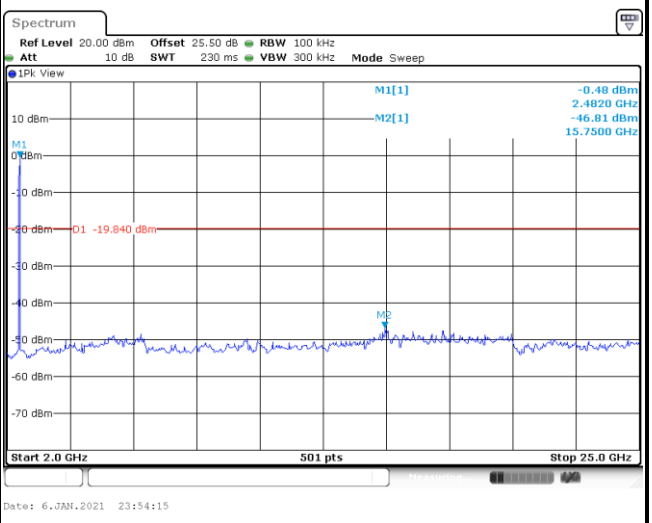
100kHz PSD reference Level	Mid Channel Plot
	

Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

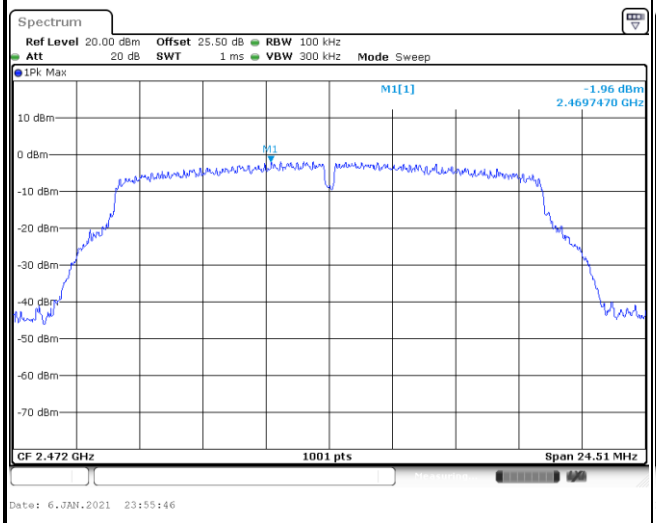
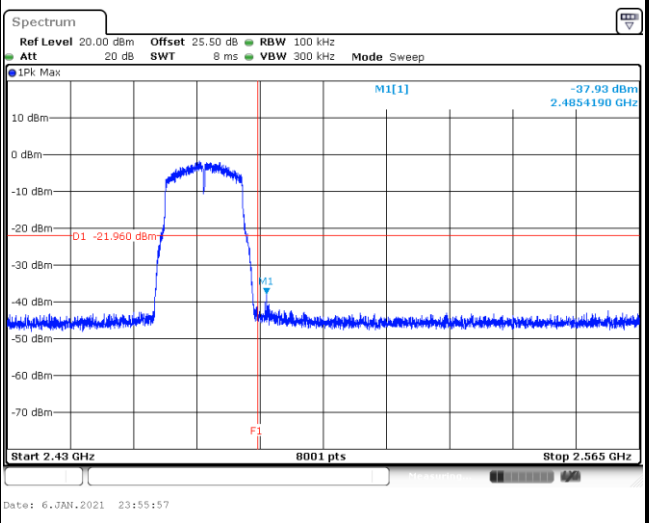
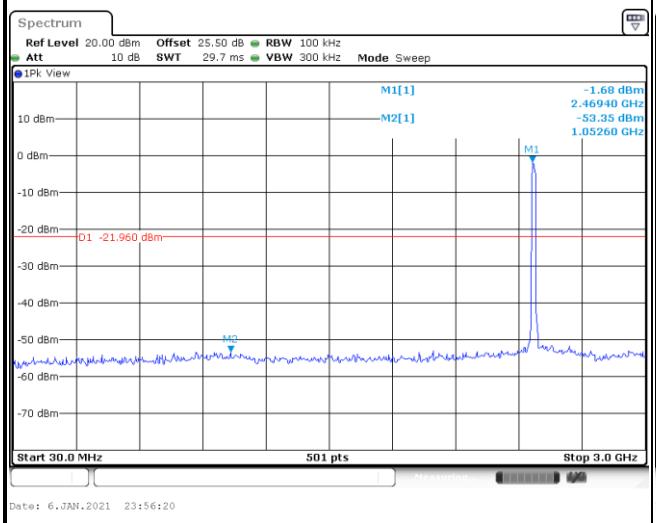
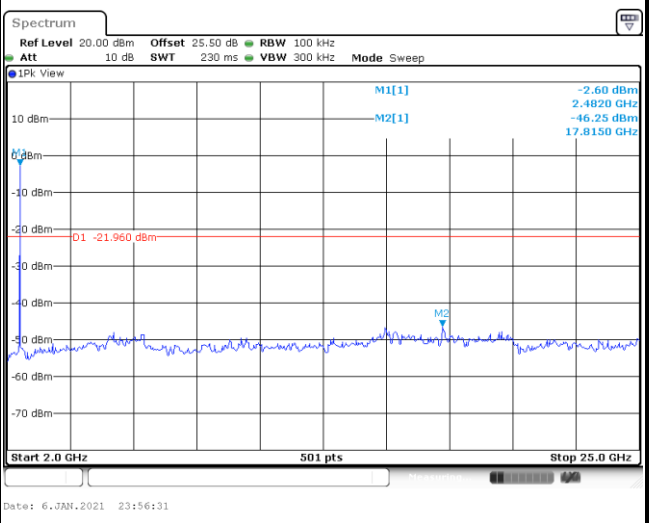
Test Mode :	802.11g	Test Channel :	11

100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

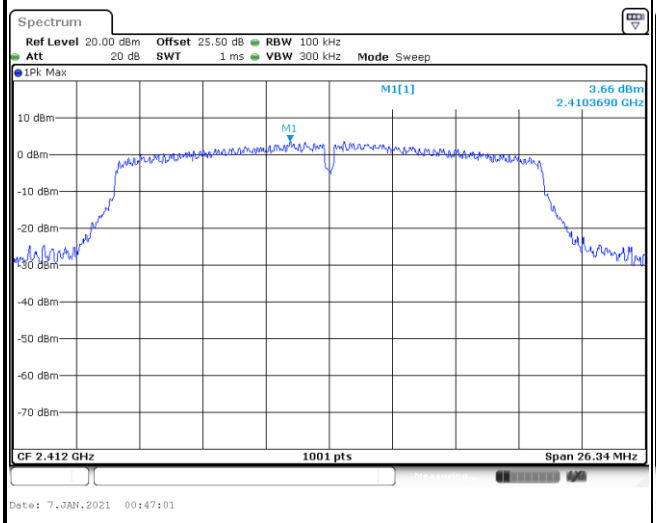
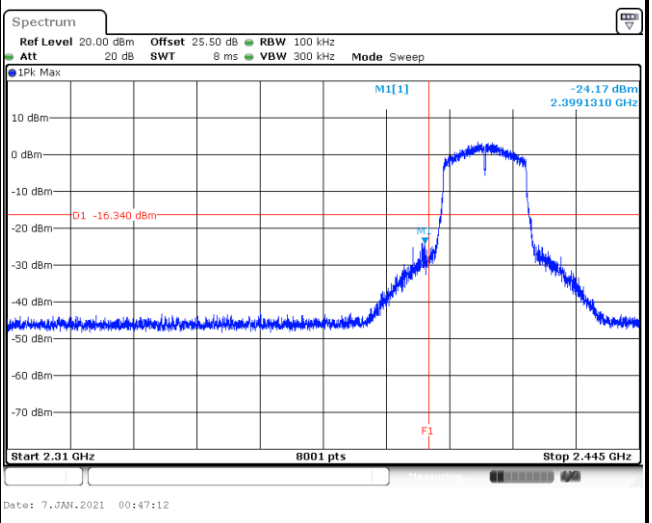
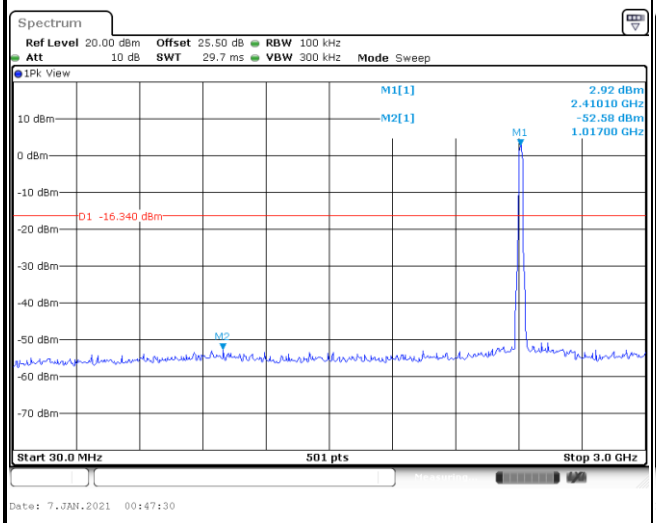
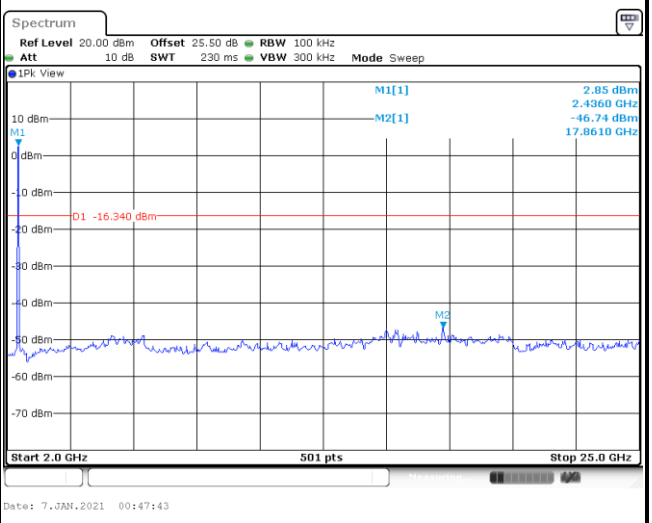
Test Mode :	802.11g	Test Channel :	12

100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

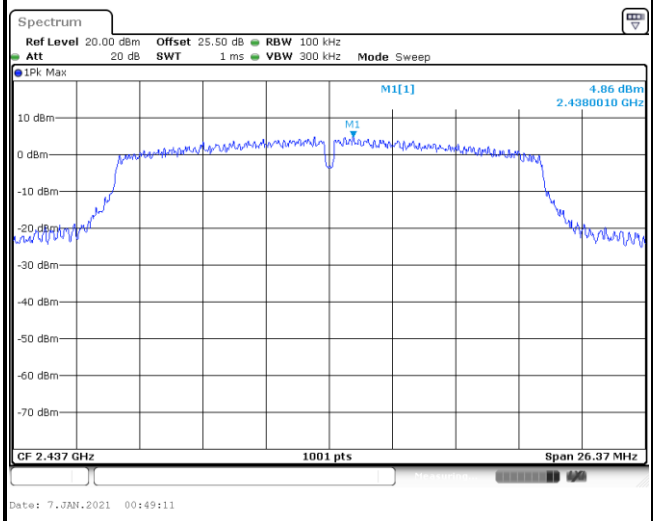
Test Mode :	802.11g	Test Channel :	13

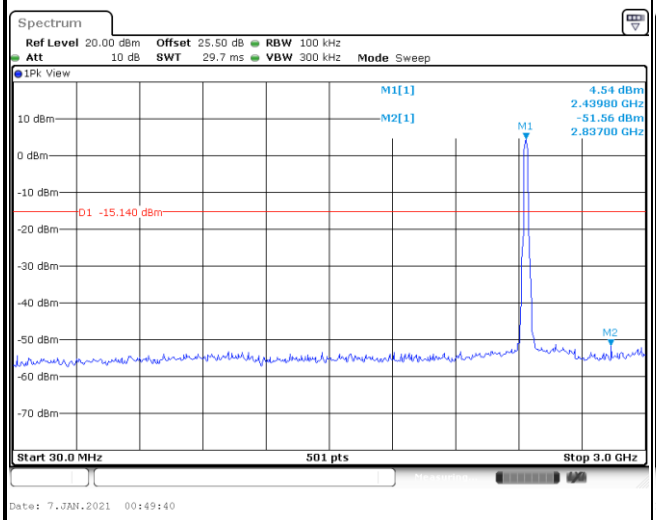
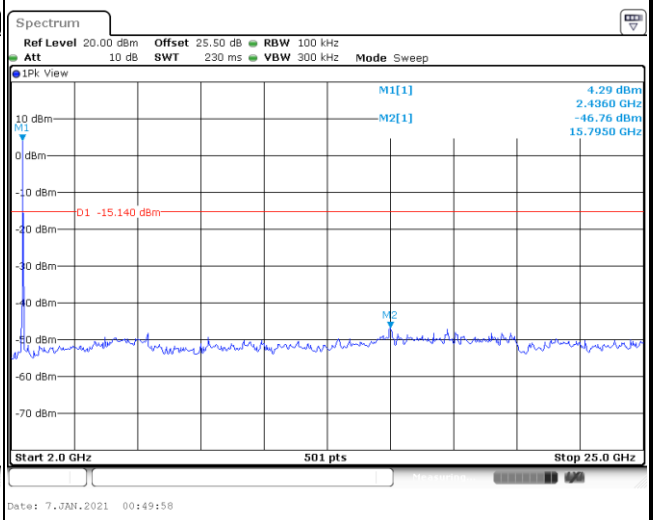
100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

Test Mode :	802.11n HT20	Test Channel :	01

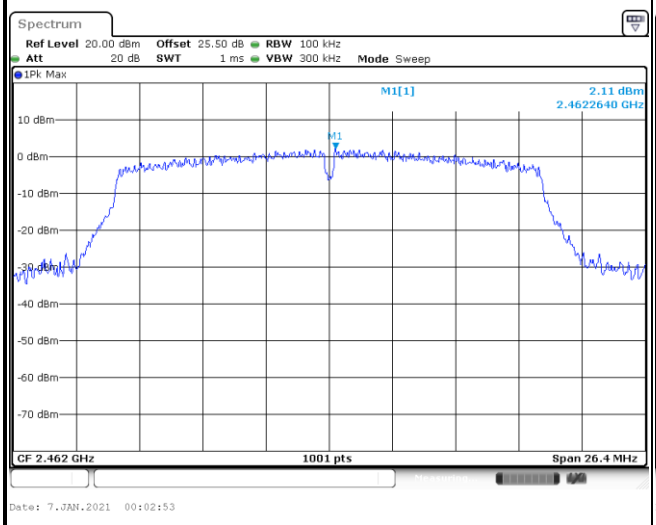
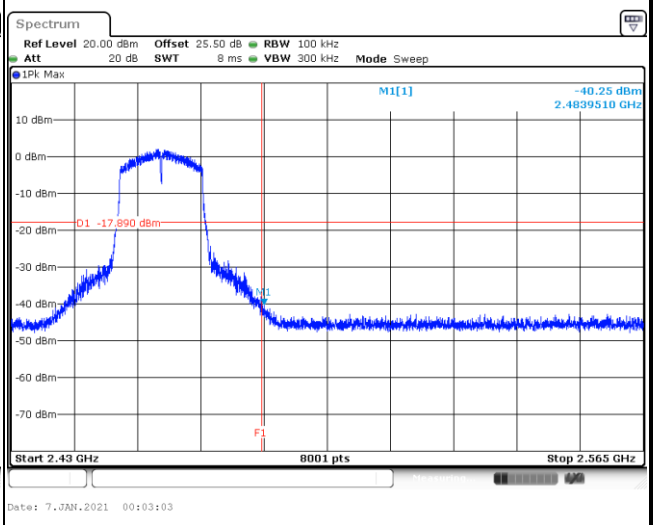
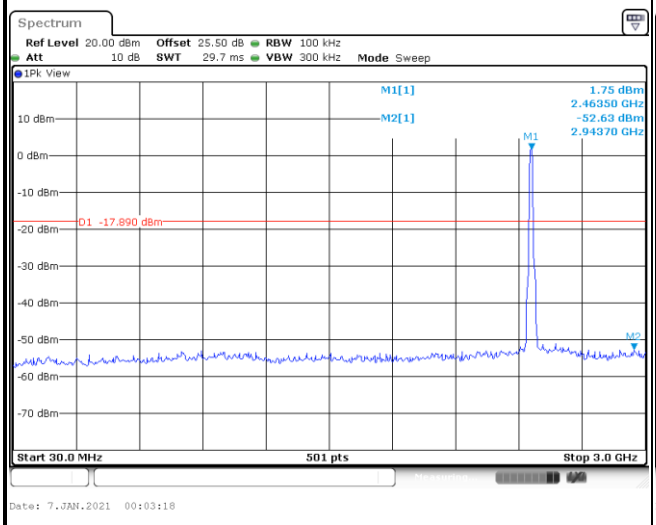
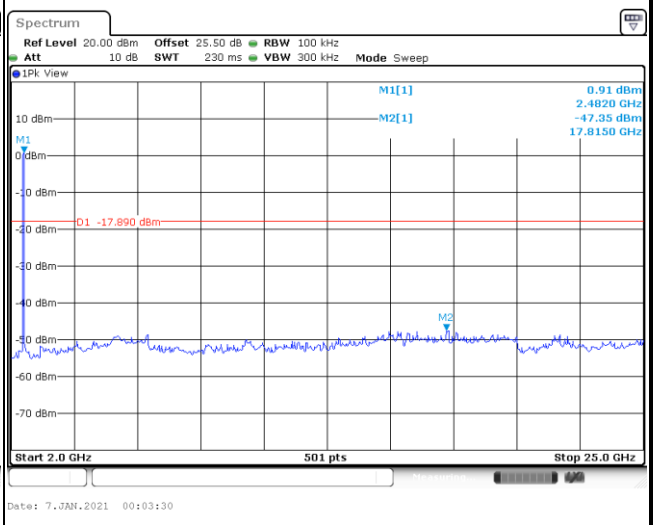
100kHz PSD reference Level	Low Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

Test Mode :	802.11n HT20	Test Channel :	06

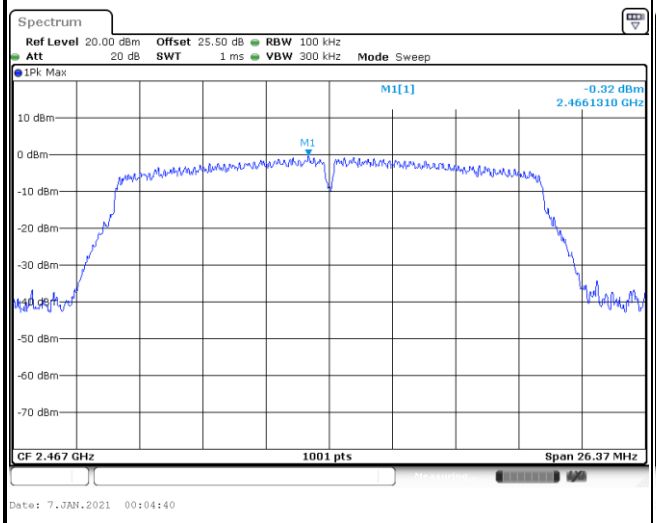
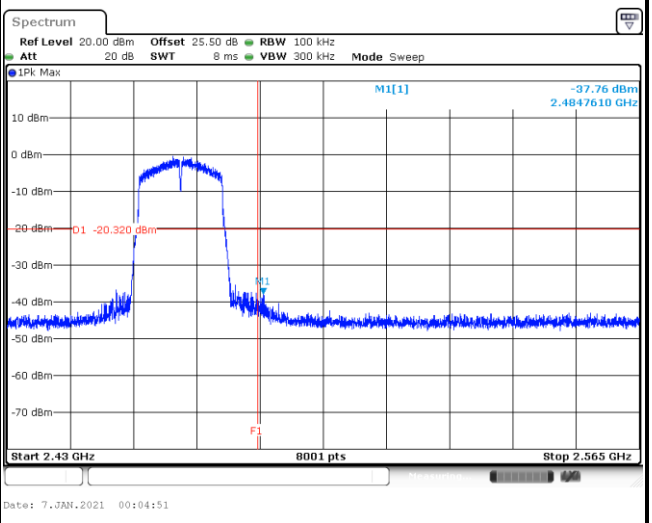
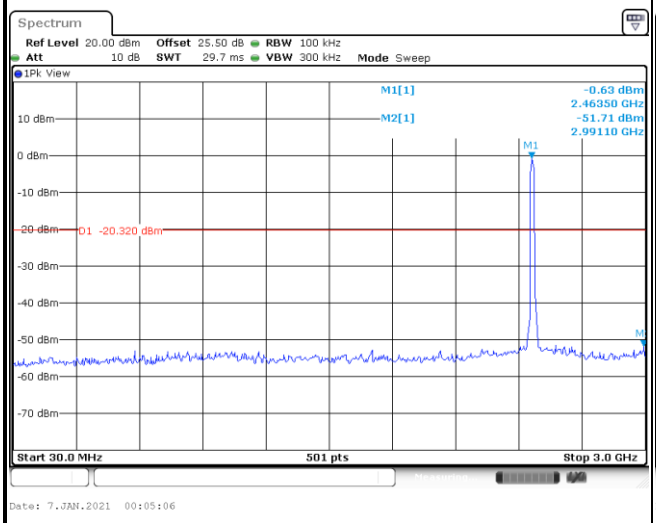
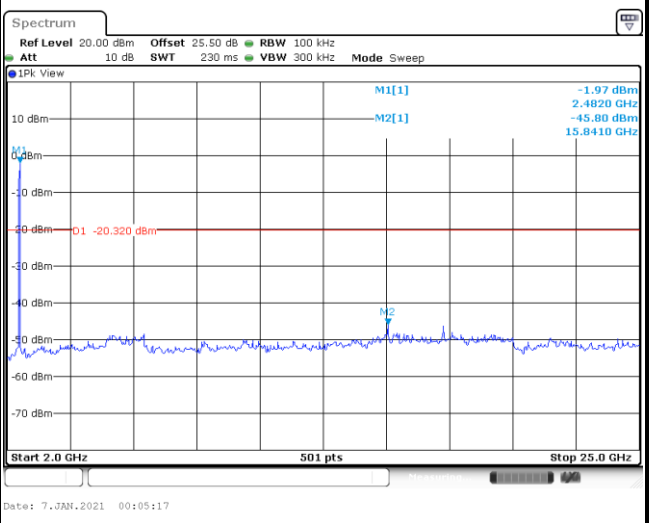
100kHz PSD reference Level	Mid Channel Plot
	

Spurious Emission 30MHz~3GHz	Spurious Emission 2GHz~25GHz
	

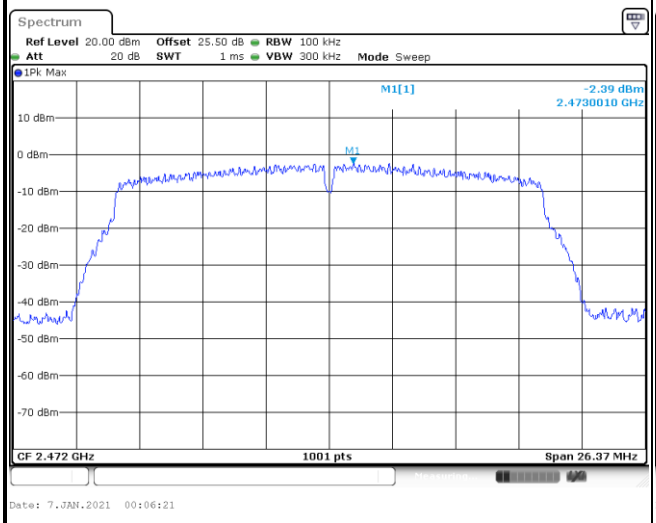
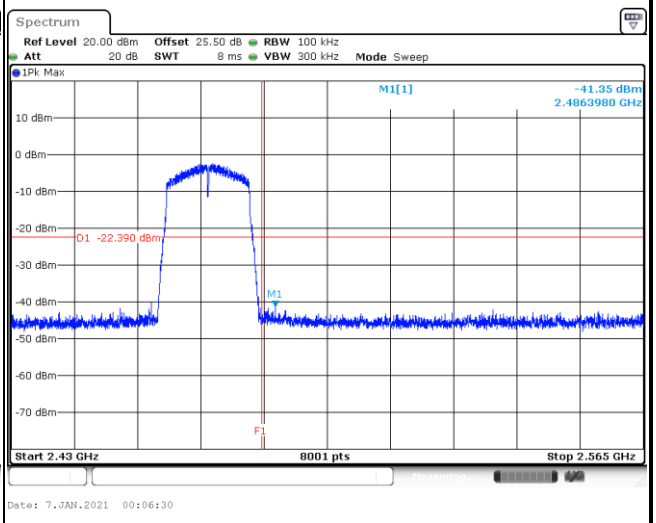
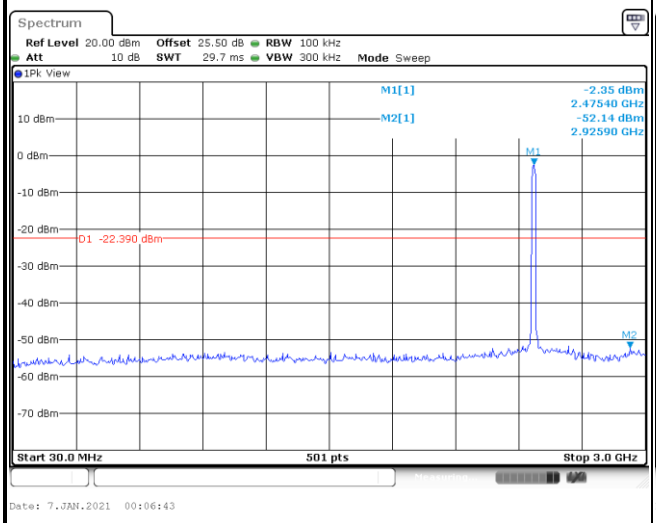
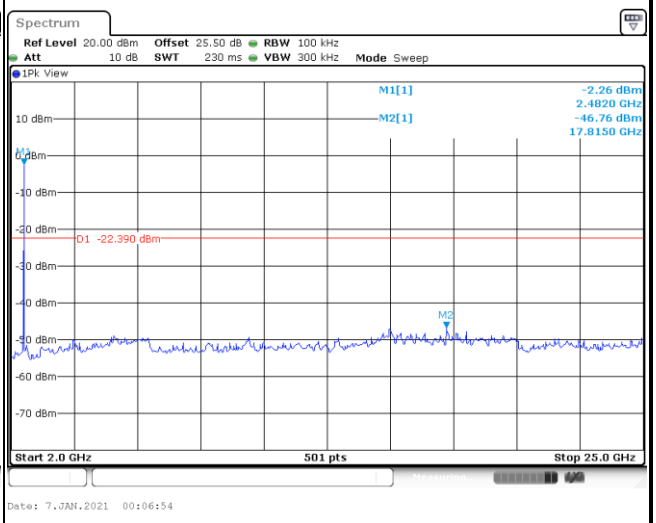
Test Mode :	802.11n HT20	Test Channel :	11

100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

Test Mode :	802.11n HT20	Test Channel :	12

100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

Test Mode :	802.11n HT20	Test Channel :	13

100kHz PSD reference Level	High Channel Plot
	
Spurious Emission 30MHz~3GHz	**Spurious Emission 2GHz~25GHz**
	

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

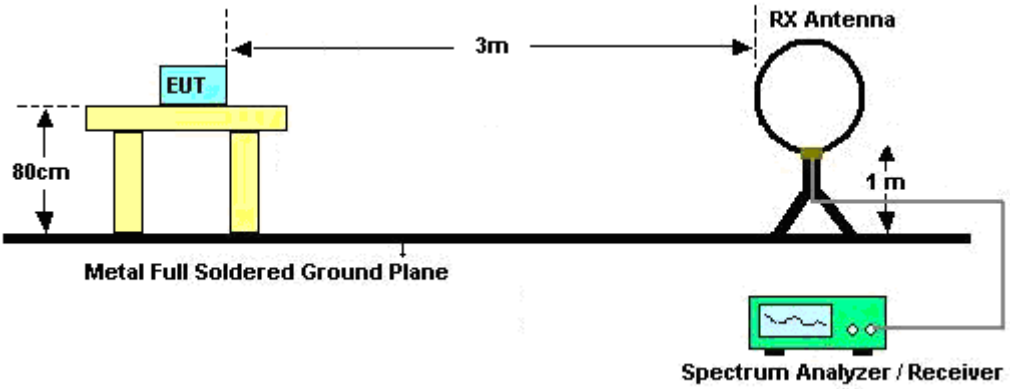
See list of measuring equipment of this test report.

3.5.3 Test Procedures

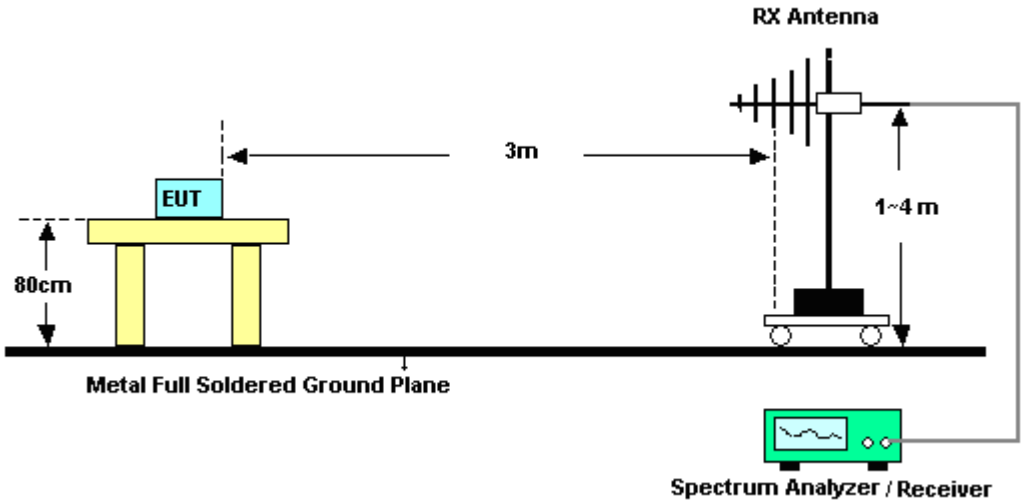
1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the 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 average 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 ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
   (3) Set RBW = 1 MHz, VBW= 3MHz for f ≥ 1 GHz for peak measurement.
   For average measurement:
   - VBW = 10 Hz, when duty cycle is no less than 98 percent.
   - VBW ≥ 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

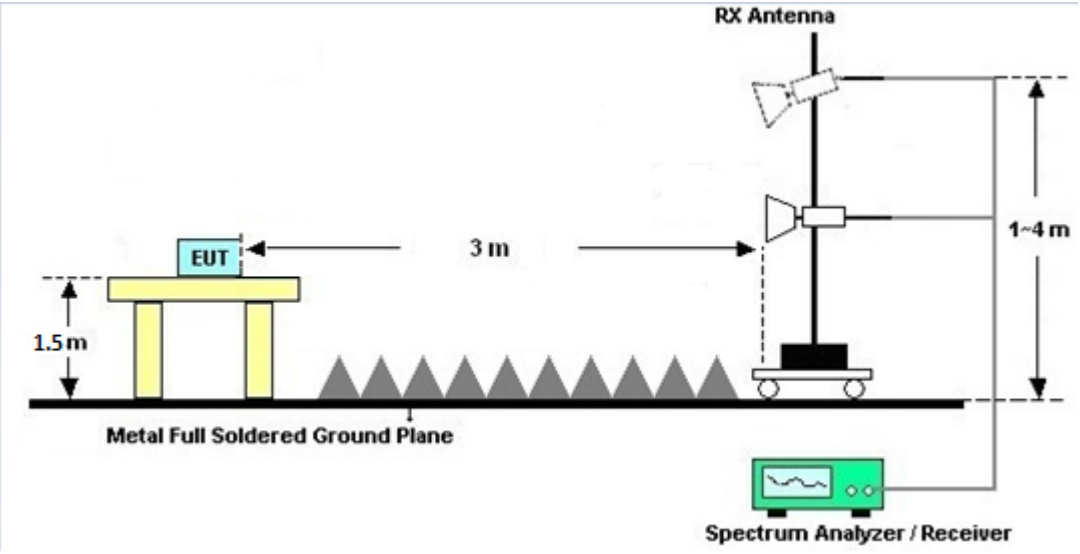
For radiated emissions below 30MHz



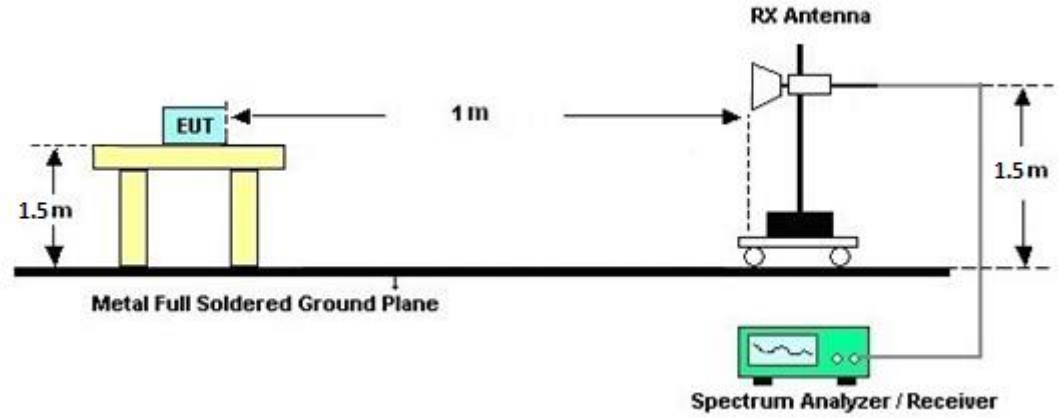
For radiated emissions from 30MHz to 1GHz



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 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 alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came 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 (dBμV)	
	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.

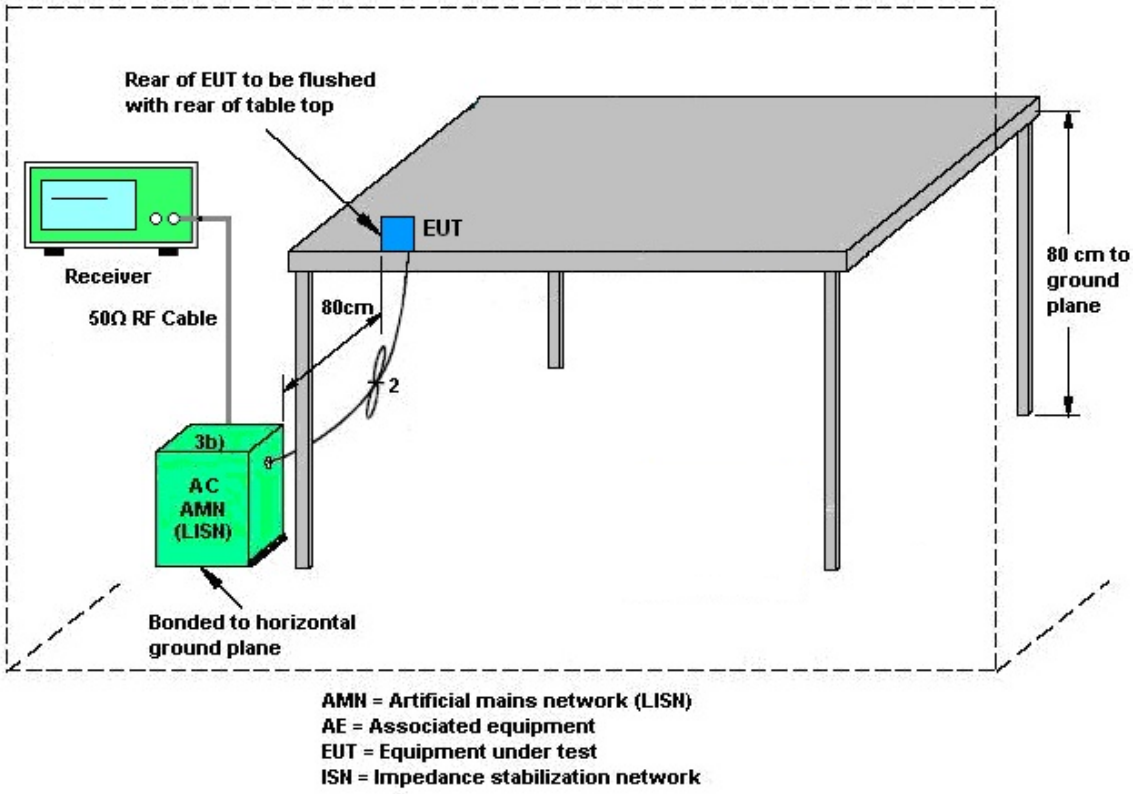
3.6.2 Measuring Instruments

See list of measuring equipment 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



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

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	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	Jul. 14, 2020	Dec. 09, 2020~ Jan. 05, 2021	Jul. 13, 2021	Radiation (03CH07-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01 N-06	35419 & 03	30MHz~1GHz	Apr. 29, 2020	Dec. 09, 2020~ Jan. 05, 2021	Apr. 28, 2021	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Dec. 01, 2020	Dec. 09, 2020~ Jan. 05, 2021	Nov. 30, 2021	Radiation (03CH07-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Dec. 02, 2020	Dec. 09, 2020~ Jan. 05, 2021	Dec. 01, 2021	Radiation (03CH07-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290053	20Hz~26.5GHz	May 21, 2020	Dec. 09, 2020~ Jan. 05, 2021	May 20, 2021	Radiation (03CH07-HY)
Spectrum Analyzer	Agilent	N9030A	MY52350276	3Hz~44GHz	Jun. 09, 2020	Dec. 09, 2020~ Jan. 05, 2021	Jun. 08, 2021	Radiation (03CH07-HY)
Preamplifier	COM-POWER	PA-103A	161241	10MHz~1GHz	May 19, 2020	Dec. 09, 2020~ Jan. 05, 2021	May 18, 2021	Radiation (03CH07-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1590075	1GHz~18GHz	Apr. 23, 2020	Dec. 09, 2020~ Jan. 05, 2021	Apr. 22, 2021	Radiation (03CH07-HY)
Preamplifier	Agilent	8449B	3008A02362	1GHz~26.5GHz	Oct. 31, 2020	Dec. 09, 2020~ Jan. 05, 2021	Oct. 30, 2021	Radiation (03CH07-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 15, 2020	Dec. 09, 2020~ Jan. 05, 2021	Jun. 14, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2858/2,801606/2	18GHz~40GHz	Feb. 25, 2020	Dec. 09, 2020~ Jan. 05, 2021	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24971/4, MY28655/4	9kHz~30MHz	Feb. 25, 2020	Dec. 09, 2020~ Jan. 05, 2021	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	30MHz~1GHz	Feb. 25, 2020	Dec. 09, 2020~ Jan. 05, 2021	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY28655/4, MY24971/4, MY15682/4	1GHz~18GHz	Feb. 25, 2020	Dec. 09, 2020~ Jan. 05, 2021	Feb. 24, 2021	Radiation (03CH07-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	801606/2	9KHz ~ 40GHz	N/A	Dec. 09, 2020~ Jan. 05, 2021	N/A	Radiation (03CH07-HY)
Antenna Mast	Max-Full	MFA520BS	N/A	1m~4m	N/A	Dec. 09, 2020~ Jan. 05, 2021	N/A	Radiation (03CH07-HY)
Turn Table	ChainTek	Chaintek 3000	N/A	0~360 Degree	N/A	Dec. 09, 2020~ Jan. 05, 2021	N/A	Radiation (03CH07-HY)
USB Data Logger	TECPEL	TR-32	HE17XB2495	N/A	N/A	Dec. 09, 2020~ Jan. 05, 2021	N/A	Radiation (03CH07-HY)
Software	Audix	E3 6.2009-8-24	N/A	N/A	N/A	Dec. 09, 2020~ Jan. 05, 2021	N/A	Radiation (03CH07-HY)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 02, 2020	Dec. 28, 2020~ Jan. 07, 2021	Mar. 01, 2021	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054SNO10	10MHz~6GHz	Dec. 09, 2020	Dec.28, 2020~ Jan. 07, 2021	Dec. 08, 2021	Conducted (TH05-HY)
Signal Analyzer	Rohde & Schwarz	FSV40	101566	10Hz ~ 40GHz	Jul. 22, 2020	Dec. 28, 2020~ Jan. 07, 2021	Jul. 21, 2021	Conducted (TH05-HY)
Switch Box & RF Cable	EM Electronics	EMSW18SE	SW200302	N/A	Mar. 17, 2020	Dec.28, 2020~ Jan. 07, 2021	Mar. 16, 2021	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Dec. 30, 2020	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESR3	102317	9kHz~3.6GHz	Sep. 11, 2020	Dec. 30, 2020	Sep. 10, 2021	Conduction (CO05-HY)
Hygrometer	Testo	608-H1	34913912	N/A	Nov. 18, 2020	Dec. 30, 2020	Nov. 17, 2021	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Nov. 16, 2020	Dec. 30, 2020	Nov. 15, 2021	Conduction (CO05-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Dec. 30, 2020	N/A	Conduction (CO05-HY)
LF Cable	HUBER + SUHNER	RG-214/U	LF01	N/A	Jan. 02, 2020	Dec. 30, 2020	Jan. 01, 2021	Conduction (CO05-HY)
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100851	N/A	Jan. 02, 2020	Dec. 30, 2020	Jan. 01, 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))	**2.3**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.7**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.3**

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

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

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Hank Hsu	Temperature:	21~25	°C
Test Date:	2020/12/28~2021/01/07	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band Single Antenna										
Mod.	Data Rate	NTX	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	13.69	-	8.54	-	0.50	Pass
11b	1Mbps	1	6	2437	13.69	-	8.54	-	0.50	Pass
11b	1Mbps	1	11	2462	13.69	-	9.04	-	0.50	Pass
11b	1Mbps	1	12	2467	13.84	-	8.56	-	0.50	Pass
11b	1Mbps	1	13	2472	13.49	-	8.56	-	0.50	Pass
11g	6Mbps	1	1	2412	16.78	-	16.32	-	0.50	Pass
11g	6Mbps	1	6	2437	16.98	-	16.32	-	0.50	Pass
11g	6Mbps	1	11	2462	16.73	-	16.34	-	0.50	Pass
11g	6Mbps	1	12	2467	16.68	-	16.32	-	0.50	Pass
11g	6Mbps	1	13	2472	16.68	-	16.34	-	0.50	Pass
HT20	MCS0	1	1	2412	17.78	-	17.56	-	0.50	Pass
HT20	MCS0	1	6	2437	17.98	-	17.58	-	0.50	Pass
HT20	MCS0	1	11	2462	17.73	-	17.60	-	0.50	Pass
HT20	MCS0	1	12	2467	17.73	-	17.58	-	0.50	Pass
HT20	MCS0	1	13	2472	17.68	-	17.58	-	0.50	Pass

TEST RESULTS DATA
Peak Output Power

2.4GHz Band Single Antenna																
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	Ant1	Ant2	
11b	1Mbps	1	1	2412	20.17	-		30.00	-	3.45	-	23.62	-	36.00	-	Pass
11b	1Mbps	1	6	2437	20.13	-		30.00	-	3.45	-	23.58	-	36.00	-	Pass
11b	1Mbps	1	11	2462	20.05	-		30.00	-	3.45	-	23.50	-	36.00	-	Pass
11b	1Mbps	1	12	2467	19.48	-		30.00	-	3.45	-	22.93	-	36.00	-	Pass
11b	1Mbps	1	13	2472	16.53	-		30.00	-	3.45	-	19.98	-	36.00	-	Pass
11g	6Mbps	1	1	2412	24.21	-		30.00	-	3.45	-	27.66	-	36.00	-	Pass
11g	6Mbps	1	6	2437	24.43	-		30.00	-	3.45	-	27.88	-	36.00	-	Pass
11g	6Mbps	1	11	2462	23.61	-		30.00	-	3.45	-	27.06	-	36.00	-	Pass
11g	6Mbps	1	12	2467	22.71	-		30.00	-	3.45	-	26.16	-	36.00	-	Pass
11g	6Mbps	1	13	2472	21.31	-		30.00	-	3.45	-	24.76	-	36.00	-	Pass
HT20	MCS0	1	1	2412	24.16	-		30.00	-	3.45	-	27.61	-	36.00	-	Pass
HT20	MCS0	1	6	2437	24.52	-		30.00	-	3.45	-	27.97	-	36.00	-	Pass
HT20	MCS0	1	11	2462	23.66	-		30.00	-	3.45	-	27.11	-	36.00	-	Pass
HT20	MCS0	1	12	2467	22.23	-		30.00	-	3.45	-	25.68	-	36.00	-	Pass
HT20	MCS0	1	13	2472	21.34	-		30.00	-	3.45	-	24.79	-	36.00	-	Pass

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

TEST RESULTS DATA
Average Output Power
(Reporting Only)

2.4GHz Band Single Antenna											
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			DG (dBi)		EIRP Power (dBm)	
					Ant1	Ant2	SUM	Ant1	Ant2	Ant1	Ant2
11b	1Mbps	1	1	2412	18.20	-		3.45	-	21.65	-
11b	1Mbps	1	6	2437	18.10	-		3.45	-	21.55	-
11b	1Mbps	1	11	2462	18.00	-		3.45	-	21.45	-
11b	1Mbps	1	12	2467	17.30	-		3.45	-	20.75	-
11b	1Mbps	1	13	2472	14.50	-		3.45	-	17.95	-
11g	6Mbps	1	1	2412	17.30	-		3.45	-	20.75	-
11g	6Mbps	1	6	2437	18.40	-		3.45	-	21.85	-
11g	6Mbps	1	11	2462	16.10	-		3.45	-	19.55	-
11g	6Mbps	1	12	2467	13.90	-		3.45	-	17.35	-
11g	6Mbps	1	13	2472	11.90	-		3.45	-	15.35	-
HT20	MCS0	1	1	2412	17.10	-		3.45	-	20.55	-
HT20	MCS0	1	6	2437	18.40	-		3.45	-	21.85	-
HT20	MCS0	1	11	2462	15.80	-		3.45	-	19.25	-
HT20	MCS0	1	12	2467	13.40	-		3.45	-	16.85	-
HT20	MCS0	1	13	2472	11.70	-		3.45	-	15.15	-

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

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band Single Antenna											
Mod.	Data Rate	NTX	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	-4.42	-	3.45	-	8.00	-	Pass
11b	1Mbps	1	6	2437	-4.17	-	3.45	-	8.00	-	Pass
11b	1Mbps	1	11	2462	-4.17	-	3.45	-	8.00	-	Pass
11b	1Mbps	1	12	2467	-5.60	-	3.45	-	8.00	-	Pass
11b	1Mbps	1	13	2472	-8.33	-	3.45	-	8.00	-	Pass
11g	6Mbps	1	1	2412	-7.44	-	3.45	-	8.00	-	Pass
11g	6Mbps	1	6	2437	-6.15	-	3.45	-	8.00	-	Pass
11g	6Mbps	1	11	2462	-8.81	-	3.45	-	8.00	-	Pass
11g	6Mbps	1	12	2467	-10.65	-	3.45	-	8.00	-	Pass
11g	6Mbps	1	13	2472	-12.35	-	3.45	-	8.00	-	Pass
HT20	MCS0	1	1	2412	-8.69	-	3.45	-	8.00	-	Pass
HT20	MCS0	1	6	2437	-5.92	-	3.45	-	8.00	-	Pass
HT20	MCS0	1	11	2462	-8.66	-	3.45	-	8.00	-	Pass
HT20	MCS0	1	12	2467	-12.12	-	3.45	-	8.00	-	Pass
HT20	MCS0	1	13	2472	-13.13	-	3.45	-	8.00	-	Pass

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

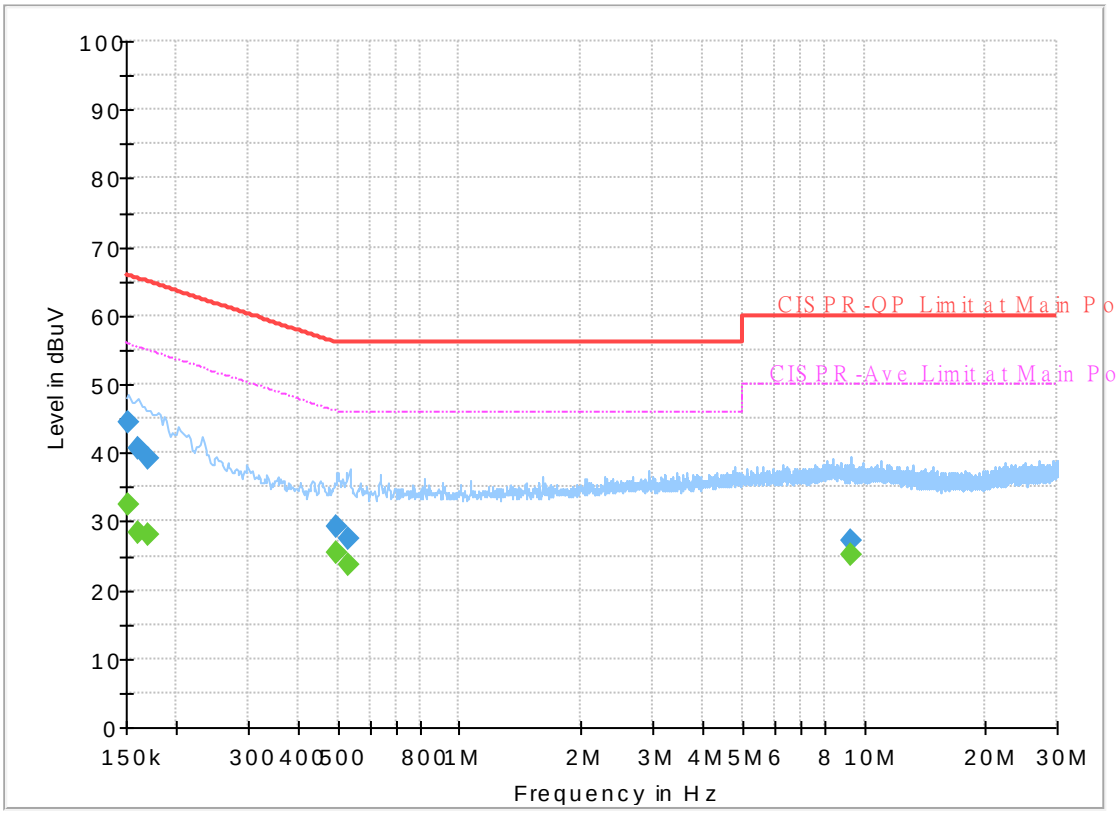
Appendix B. AC Conducted Emission Test Results

Test Engineer :	Tom Lee	**Temperature :**	23~26℃
		Relative Humidity :	40~50%

EUT Information

Report NO :	092923-01
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Line

Full Spectrum



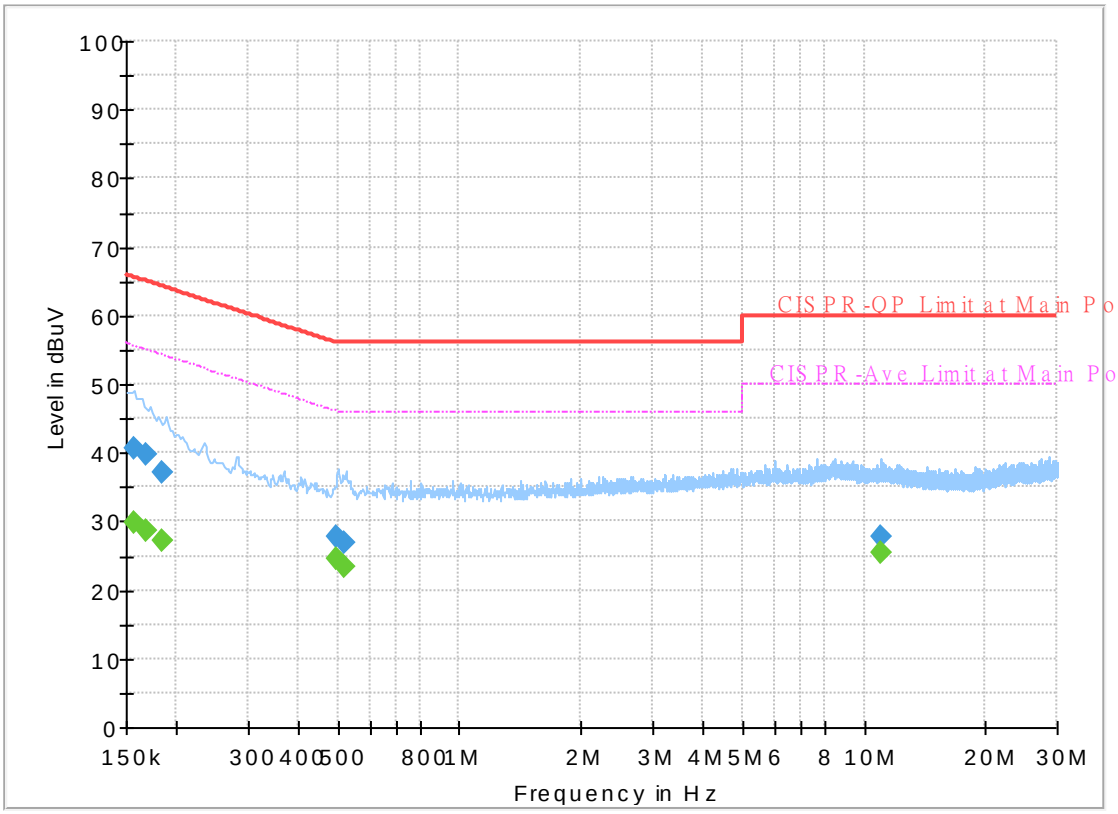
Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.152250	---	32.56	55.88	23.32	L1	OFF	19.6
0.152250	44.37	---	65.88	21.51	L1	OFF	19.6
0.161250	---	28.38	55.40	27.02	L1	OFF	19.6
0.161250	40.60	---	65.40	24.80	L1	OFF	19.6
0.170250	---	28.13	54.95	26.82	L1	OFF	19.6
0.170250	39.32	---	64.95	25.63	L1	OFF	19.6
0.498930	---	25.55	46.02	20.47	L1	OFF	19.5
0.498930	29.21	---	56.02	26.81	L1	OFF	19.5
0.531960	---	23.70	46.00	22.30	L1	OFF	19.6
0.531960	27.38	---	56.00	28.62	L1	OFF	19.6
9.298500	---	25.10	50.00	24.90	L1	OFF	20.0
9.298500	27.18	---	60.00	32.82	L1	OFF	20.0

EUT Information

Report NO :	092923-01
Test Mode :	Mode 1
Test Voltage :	120Vac/60Hz
Phase :	Neutral

Full Spectrum



Final_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.156750	40.65	---	65.63	24.98	N	OFF	19.6
0.156750	---	29.84	55.63	25.79	N	OFF	19.6
0.168000	39.86	---	65.06	25.20	N	OFF	19.6
0.168000	---	28.75	55.06	26.31	N	OFF	19.6
0.183750	37.11	---	64.31	27.20	N	OFF	19.6
0.183750	---	27.11	54.31	27.20	N	OFF	19.6
0.498300	27.81	---	56.03	28.22	N	OFF	19.6
0.498300	---	24.47	46.03	21.56	N	OFF	19.6
0.519000	26.89	---	56.00	29.11	N	OFF	19.6
0.519000	---	23.47	46.00	22.53	N	OFF	19.6
11.031000	27.64	---	60.00	32.36	N	OFF	20.1
11.031000	---	25.30	50.00	24.70	N	OFF	20.1

Appendix C. Radiated Spurious Emission

Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	Temperature :	20~25°C
		Relative Humidity :	50~58%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant.	Note	Frequency	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Path Loss	Preamp Factor	Ant Pos	Table Pos	Peak Avg.	Pol.
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2324.7	52.91	-21.09	74	38.65	31.77	17.88	35.39	288	232	P	H
		2390	43.21	-10.79	54	28.72	31.9	18.01	35.42	288	232	A	H
	*	2412	106.19	-	-	91.57	32	18.04	35.42	288	232	P	H
	*	2412	103.06	-	-	88.44	32	18.04	35.42	288	232	A	H
		2390	53.43	-20.57	74	38.94	31.9	18.01	35.42	116	63	P	V
		2390	44.57	-9.43	54	30.08	31.9	18.01	35.42	116	63	A	V
	*	2412	111.74	-	-	97.12	32	18.04	35.42	116	63	P	V
	*	2412	108.64	-	-	94.02	32	18.04	35.42	116	63	A	V
802.11b CH 06 2437MHz		2378.88	53.87	-20.13	74	39.42	31.87	17.99	35.41	313	320	P	H
		2388.68	42.48	-11.52	54	27.98	31.9	18.01	35.41	313	320	A	H
	*	2437	107.46	-	-	92.63	32.2	18.06	35.43	313	320	P	H
	*	2437	104.35	-	-	89.52	32.2	18.06	35.43	313	320	A	H
		2492.58	53.67	-20.33	74	38.41	32.6	18.12	35.46	313	320	P	H
		2492.65	43.1	-10.9	54	27.84	32.6	18.12	35.46	313	320	A	H
		2366	52.84	-21.16	74	38.46	31.83	17.96	35.41	100	40	P	V
		2385.88	42.73	-11.27	54	28.23	31.9	18.01	35.41	100	40	A	V
	*	2437	109.59	-	-	94.76	32.2	18.06	35.43	100	40	P	V
	*	2437	106.54	-	-	91.71	32.2	18.06	35.43	100	40	A	V
		2493.49	53.53	-20.47	74	38.26	32.6	18.13	35.46	100	40	P	V
		2484.67	43.7	-10.3	54	28.57	32.47	18.11	35.45	100	40	A	V

802.11b CH 11 2462MHz	*	2462	107.35	-	-	92.36	32.33	18.1	35.44	302	320	P	H
	*	2462	104.2	-	-	89.21	32.33	18.1	35.44	302	320	A	H
		2484.28	54.78	-19.22	74	39.65	32.47	18.11	35.45	302	320	P	H
		2483.52	47.64	-6.36	54	32.51	32.47	18.11	35.45	302	320	A	H
	*	2462	110.64	-	-	95.65	32.33	18.1	35.44	100	61	P	V
	*	2462	107.66	-	-	92.67	32.33	18.1	35.44	100	61	A	V
		2483.84	56.92	-17.08	74	41.79	32.47	18.11	35.45	100	61	P	V
		2483.52	50.78	-3.22	54	35.65	32.47	18.11	35.45	100	61	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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 12 2467MHz	*	2467	103.51	-	-	88.53	32.33	18.1	35.45	303	318	P	H
	*	2467	100.39	-	-	85.41	32.33	18.1	35.45	303	318	A	H
		2484.92	55.64	-18.36	74	40.51	32.47	18.11	35.45	303	318	P	H
		2483.92	46.14	-7.86	54	31.01	32.47	18.11	35.45	303	318	A	H
	*	2467	106.94	-	-	91.96	32.33	18.1	35.45	100	40	P	V
	*	2467	103.96	-	-	88.98	32.33	18.1	35.45	100	40	A	V
		2483.8	57.38	-16.62	74	42.25	32.47	18.11	35.45	100	40	P	V
		2483.84	50.23	-3.77	54	35.1	32.47	18.11	35.45	100	40	A	V
802.11b CH 13 2472MHz	*	2472	100.36	-	-	85.24	32.47	18.1	35.45	303	319	P	H
	*	2472	97.27	-	-	82.15	32.47	18.1	35.45	303	319	A	H
		2484.04	54.71	-19.29	74	39.58	32.47	18.11	35.45	303	319	P	H
		2487.24	45.99	-8.01	54	30.85	32.47	18.12	35.45	303	319	A	H
	*	2472	104.39	-	-	89.27	32.47	18.1	35.45	100	38	P	V
	*	2472	101.42	-	-	86.3	32.47	18.1	35.45	100	38	A	V
		2486.72	57.15	-16.85	74	42.01	32.47	18.12	35.45	100	38	P	V
		2487.2	50.14	-3.86	54	35	32.47	18.12	35.45	100	38	A	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	43.77	-30.23	74	56.74	34.05	11.87	58.89	100	0	P	H
		4824	45.61	-28.39	74	58.58	34.05	11.87	58.89	100	0	P	V
802.11b CH 06 2437MHz		4874	46.46	-27.54	74	59.11	34.1	12.01	58.76	100	0	P	H
		7311	44.81	-29.19	74	52.22	35.6	14.46	57.47	100	0	P	H
		4874	48.51	-25.49	74	61.16	34.1	12.01	58.76	100	0	P	V
		7311	45.52	-28.48	74	52.93	35.6	14.46	57.47	100	0	P	V
802.11b CH 11 2462MHz		4924	45.82	-28.18	74	58.15	34.17	12.14	58.64	100	0	P	H
		7386	44.36	-29.64	74	51.75	35.6	14.55	57.54	100	0	P	H
		4924	47.95	-26.05	74	60.28	34.17	12.14	58.64	100	0	P	V
		7386	44.25	-29.75	74	51.64	35.6	14.55	57.54	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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 12 2467MHz		4934	41.27	-32.73	74	53.55	34.17	12.17	58.62	100	0	P	H
		7401	39.4	-34.6	74	46.79	35.6	14.56	57.55	100	0	P	H
		4934	42.03	-31.97	74	54.31	34.17	12.17	58.62	100	0	P	V
		7401	40.84	-33.16	74	48.23	35.6	14.56	57.55	100	0	P	V
802.11b CH 13 2472MHz		4944	39.35	-34.65	74	51.54	34.2	12.2	58.59	100	0	P	H
		7416	39.83	-34.17	74	47.22	35.6	14.58	57.57	100	0	P	H
		4944	40.35	-33.65	74	52.54	34.2	12.2	58.59	100	0	P	V
		7416	40.43	-33.57	74	47.82	35.6	14.58	57.57	100	0	P	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 (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		2390	60.46	-13.54	74	45.97	31.9	18.01	35.42	353	18	P	H
		2390	46.58	-7.42	54	32.09	31.9	18.01	35.42	353	18	A	H
	*	2412	106.51	-	-	91.89	32	18.04	35.42	353	18	P	H
	*	2412	99.27	-	-	84.65	32	18.04	35.42	353	18	A	H
		2389.905	62.11	-11.89	74	47.62	31.9	18.01	35.42	100	41	P	V
		2390	49.28	-4.72	54	34.79	31.9	18.01	35.42	100	41	A	V
	*	2412	108.71	-	-	94.09	32	18.04	35.42	100	41	P	V
	*	2412	101.07	-	-	86.45	32	18.04	35.42	100	41	A	V
802.11g CH 06 2437MHz		2311.26	52.97	-21.03	74	38.77	31.73	17.85	35.38	311	319	P	H
		2389.94	42.87	-11.13	54	28.38	31.9	18.01	35.42	311	319	A	H
	*	2437	108.57	-	-	93.74	32.2	18.06	35.43	311	319	P	H
	*	2437	100.82	-	-	85.99	32.2	18.06	35.43	311	319	A	H
		2483.76	53.37	-20.63	74	38.24	32.47	18.11	35.45	311	319	P	H
		2483.5	43.23	-10.77	54	28.1	32.47	18.11	35.45	311	319	A	H
		2387	55.78	-18.22	74	41.28	31.9	18.01	35.41	100	40	P	V
		2389.94	43.63	-10.37	54	29.14	31.9	18.01	35.42	100	40	A	V
	*	2437	110.49	-	-	95.66	32.2	18.06	35.43	100	40	P	V
	*	2437	103.29	-	-	88.46	32.2	18.06	35.43	100	40	A	V
		2492.86	57.07	-16.93	74	41.81	32.6	18.12	35.46	100	40	P	V
		2483.5	44.88	-9.12	54	29.75	32.47	18.11	35.45	100	40	A	V

802.11g CH 11 2462MHz	*	2462	104.12	-	-	89.13	32.33	18.1	35.44	303	319	P	H
	*	2462	96.61	-	-	81.62	32.33	18.1	35.44	303	319	A	H
		2484.68	59.69	-14.31	74	44.56	32.47	18.11	35.45	303	319	P	H
		2483.52	46.45	-7.55	54	31.32	32.47	18.11	35.45	303	319	A	H
	*	2462	108.04	-	-	93.05	32.33	18.1	35.44	100	56	P	V
	*	2462	100.33	-	-	85.34	32.33	18.1	35.44	100	56	A	V
		2483.68	65.2	-8.8	74	50.07	32.47	18.11	35.45	100	56	P	V
		2483.52	49.74	-4.26	54	34.61	32.47	18.11	35.45	100	56	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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 12 2467MHz	*	2467	101.73	-	-	86.75	32.33	18.1	35.45	302	321	P	H
	*	2467	94.34	-	-	79.36	32.33	18.1	35.45	302	321	A	H
		2483.64	61.51	-12.49	74	46.38	32.47	18.11	35.45	302	321	P	H
		2483.52	47.42	-6.58	54	32.29	32.47	18.11	35.45	302	321	A	H
	*	2467	105.58	-	-	90.6	32.33	18.1	35.45	100	58	P	V
	*	2467	98.11	-	-	83.13	32.33	18.1	35.45	100	58	A	V
		2483.92	68.31	-5.69	74	53.18	32.47	18.11	35.45	100	58	P	V
		2483.52	50.81	-3.19	54	35.68	32.47	18.11	35.45	100	58	A	V
802.11g CH 13 2472MHz	*	2472	99.66	-	-	84.54	32.47	18.1	35.45	342	321	P	H
	*	2472	92.13	-	-	77.01	32.47	18.1	35.45	342	321	A	H
		2483.84	58.9	-15.1	74	43.77	32.47	18.11	35.45	342	321	P	H
		2483.52	46.42	-7.58	54	31.29	32.47	18.11	35.45	342	321	A	H
	*	2472	104.09	-	-	88.97	32.47	18.1	35.45	120	40	P	V
	*	2472	96.64	-	-	81.52	32.47	18.1	35.45	120	40	A	V
		2484.48	66.62	-7.38	74	51.49	32.47	18.11	35.45	120	40	P	V
		2483.52	50.18	-3.82	54	35.05	32.47	18.11	35.45	120	40	A	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	39.91	-34.09	74	52.88	34.05	11.87	58.89	100	0	P	H
		4824	40.31	-33.69	74	53.28	34.05	11.87	58.89	100	0	P	V
802.11g CH 06 2437MHz		4874	42.54	-31.46	74	55.19	34.1	12.01	58.76	100	0	P	H
		7311	43.15	-30.85	74	50.56	35.6	14.46	57.47	100	0	P	H
		4874	45.05	-28.95	74	57.7	34.1	12.01	58.76	100	0	P	V
		7311	46.26	-27.74	74	53.67	35.6	14.46	57.47	100	0	P	V
802.11g CH 11 2462MHz		4924	40.2	-33.8	74	52.53	34.17	12.14	58.64	100	0	P	H
		7386	40.06	-33.94	74	47.45	35.6	14.55	57.54	100	0	P	H
		4924	40.54	-33.46	74	52.87	34.17	12.14	58.64	100	0	P	V
		7386	40.28	-33.72	74	47.67	35.6	14.55	57.54	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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 12 2467MHz		4934	40.16	-33.84	74	52.44	34.17	12.17	58.62	100	0	P	H
		7401	39.45	-34.55	74	46.84	35.6	14.56	57.55	100	0	P	H
		4934	40.08	-33.92	74	52.36	34.17	12.17	58.62	100	0	P	V
		7401	39.82	-34.18	74	47.21	35.6	14.56	57.55	100	0	P	V
802.11g CH 13 2472MHz		4944	39.51	-34.49	74	51.7	34.2	12.2	58.59	100	0	P	H
		7416	39.97	-34.03	74	47.36	35.6	14.58	57.57	100	0	P	H
		4944	39.76	-34.24	74	51.95	34.2	12.2	58.59	100	0	P	V
		7416	40.17	-33.83	74	47.56	35.6	14.58	57.57	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (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)
		2389.905	58.75	-15.25	74	44.26	31.9	18.01	35.42	389	22	P	H
		2390	46.53	-7.47	54	32.04	31.9	18.01	35.42	389	22	A	H
802.11n	*	2412	105.27	-	-	90.65	32	18.04	35.42	389	22	P	H
HT20	*	2412	97.65	-	-	83.03	32	18.04	35.42	389	22	A	H
CH 01		2389.8	62.05	-11.95	74	47.56	31.9	18.01	35.42	111	62	P	V
2412MHz		2390	47.71	-6.29	54	33.22	31.9	18.01	35.42	111	62	A	V
	*	2412	108.07	-	-	93.45	32	18.04	35.42	111	62	P	V
	*	2412	100.6	-	-	85.98	32	18.04	35.42	111	62	A	V
		2370.48	53.32	-20.68	74	38.89	31.87	17.97	35.41	342	17	P	H
		2389.38	42.64	-11.36	54	28.14	31.9	18.01	35.41	342	17	A	H
	*	2437	107.56	-	-	92.73	32.2	18.06	35.43	342	17	P	H
	*	2437	100.04	-	-	85.21	32.2	18.06	35.43	342	17	A	H
802.11n		2486.56	53.86	-20.14	74	38.72	32.47	18.12	35.45	342	17	P	H
HT20		2484.39	43.31	-10.69	54	28.18	32.47	18.11	35.45	342	17	A	H
CH 06		2345.98	53.99	-20.01	74	39.66	31.8	17.93	35.4	127	40	P	V
2437MHz		2389.94	43.16	-10.84	54	28.67	31.9	18.01	35.42	127	40	A	V
	*	2437	110.04	-	-	95.21	32.2	18.06	35.43	127	40	P	V
	*	2437	102.35	-	-	87.52	32.2	18.06	35.43	127	40	A	V
		2499.93	54.24	-19.76	74	38.97	32.6	18.13	35.46	127	40	P	V
		2483.5	43.71	-10.29	54	28.58	32.47	18.11	35.45	127	40	A	V

802.11n HT20 CH 11 2462MHz	*	2462	102.99	-	-	88	32.33	18.1	35.44	306	317	P	H
	*	2462	95.41	-	-	80.42	32.33	18.1	35.44	306	317	A	H
		2483.76	61.55	-12.45	74	46.42	32.47	18.11	35.45	306	317	P	H
		2483.52	47.19	-6.81	54	32.06	32.47	18.11	35.45	306	317	A	H
	*	2462	106.63	-	-	91.64	32.33	18.1	35.44	124	41	P	V
	*	2462	98.76	-	-	83.77	32.33	18.1	35.44	124	41	A	V
		2483.88	62.91	-11.09	74	47.78	32.47	18.11	35.45	124	41	P	V
		2483.52	50.02	-3.98	54	34.89	32.47	18.11	35.45	124	41	A	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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)
	*	2467	100.92	-	-	85.94	32.33	18.1	35.45	302	320	P	H
	*	2467	92.96	-	-	77.98	32.33	18.1	35.45	302	320	A	H
802.11n		2484.4	62.98	-11.02	74	47.85	32.47	18.11	35.45	302	320	P	H
HT20		2483.56	46.41	-7.59	54	31.28	32.47	18.11	35.45	302	320	A	H
CH 12	*	2467	105.31	-	-	90.33	32.33	18.1	35.45	122	40	P	V
2467MHz	*	2467	97.69	-	-	82.71	32.33	18.1	35.45	122	40	A	V
		2484.96	67.69	-6.31	74	52.56	32.47	18.11	35.45	122	40	P	V
		2483.52	49.84	-4.16	54	34.71	32.47	18.11	35.45	122	40	A	V
	*	2472	99.49	-	-	84.37	32.47	18.1	35.45	342	319	P	H
	*	2472	91.79	-	-	76.67	32.47	18.1	35.45	342	319	A	H
802.11n		2485.64	58.78	-15.22	74	43.65	32.47	18.11	35.45	342	319	P	H
HT20		2483.52	46.59	-7.41	54	31.46	32.47	18.11	35.45	342	319	A	H
CH 13	*	2472	103.97	-	-	88.85	32.47	18.1	35.45	122	40	P	V
2472MHz	*	2472	96.32	-	-	81.2	32.47	18.1	35.45	122	40	A	V
		2486.24	69.79	-4.21	74	54.65	32.47	18.12	35.45	122	40	P	V
		2483.52	50.22	-3.78	54	35.09	32.47	18.11	35.45	122	40	A	V

Remark

1. No other spurious found.
2. All results are PASS against Peak and Average limit line.

2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (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)
802.11n HT20 CH 01 2412MHz		4824	40.43	-33.57	74	53.4	34.05	11.87	58.89	100	0	P	H
		4824	40.65	-33.35	74	53.62	34.05	11.87	58.89	100	0	P	V
802.11n HT20 CH 06 2437MHz		4874	41.6	-32.4	74	54.25	34.1	12.01	58.76	100	0	P	H
		7311	41.94	-32.06	74	49.35	35.6	14.46	57.47	100	0	P	H
		4874	42.94	-31.06	74	55.59	34.1	12.01	58.76	100	0	P	V
		7311	43.56	-30.44	74	50.97	35.6	14.46	57.47	100	0	P	V
802.11n HT20 CH 11 2462MHz		4924	40.1	-33.9	74	52.43	34.17	12.14	58.64	100	0	P	H
		7386	40.37	-33.63	74	47.76	35.6	14.55	57.54	100	0	P	H
		4924	40.33	-33.67	74	52.66	34.17	12.14	58.64	100	0	P	V
		7386	39.88	-34.12	74	47.27	35.6	14.55	57.54	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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)
802.11n		4934	40.22	-33.78	74	52.5	34.17	12.17	58.62	100	0	P	H
HT20		7401	40.62	-33.38	74	48.01	35.6	14.56	57.55	100	0	P	H
CH 12		4934	40.1	-33.9	74	52.38	34.17	12.17	58.62	100	0	P	V
2467MHz		7401	40.1	-33.9	74	47.49	35.6	14.56	57.55	100	0	P	V
802.11n		4944	39.87	-34.13	74	52.06	34.2	12.2	58.59	100	0	P	H
HT20		7416	40.29	-33.71	74	47.68	35.6	14.58	57.57	100	0	P	H
CH 13		4944	39.96	-34.04	74	52.15	34.2	12.2	58.59	100	0	P	V
2472MHz		7416	39.72	-34.28	74	47.11	35.6	14.58	57.57	100	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

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		24440	36.83	-37.17	74	44.39	39.06	6.72	53.34	150	0	P	H
		24902	36.69	-37.31	74	43.78	38.93	6.95	52.97	150	0	P	V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												

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	21.87	-18.13	40	26.63	24.32	0.93	30.01	-	-	P	H
		129.09	30.11	-13.39	43.5	40.74	17.43	1.9	29.96	-	-	P	H
		176.88	29.03	-14.47	43.5	41.59	15.15	2.23	29.94	-	-	P	H
		855.8	31.83	-14.17	46	27.19	28.85	4.98	29.19	-	-	P	H
		931.4	32.21	-13.79	46	26.46	29.35	5.21	28.81	-	-	P	H
		953.8	32.67	-13.33	46	25.66	30.42	5.27	28.68	100	0	P	H
		30.27	32.9	-7.1	40	37.66	24.32	0.93	30.01	100	0	P	V
		35.94	28.24	-11.76	40	35.79	21.44	1.01	30	-	-	P	V
		68.07	23.21	-16.79	40	39.75	12.06	1.38	29.98	-	-	P	V
		911.1	31.68	-14.32	46	26.64	28.82	5.15	28.93	-	-	P	V
		925.1	32.21	-13.79	46	26.78	29.09	5.19	28.85	-	-	P	V
		954.5	32.91	-13.09	46	25.83	30.48	5.27	28.67	-	-	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.
!	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	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		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) =

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

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

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Path 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) + Path 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. Radiated Spurious Emission Plots

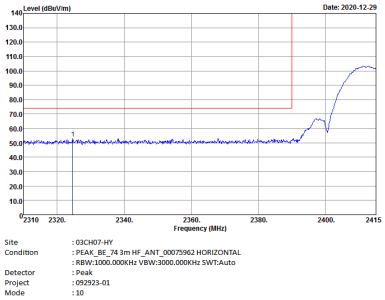
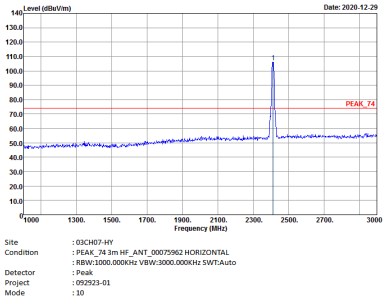
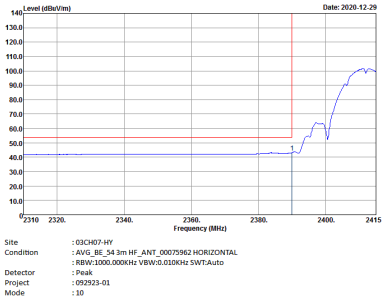
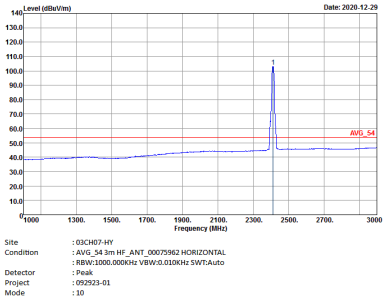
Test Engineer :	Jesse Wang, Stan Hsieh and Ken Wu	**Temperature :**	20~25°C
		Relative Humidity :	50~58%

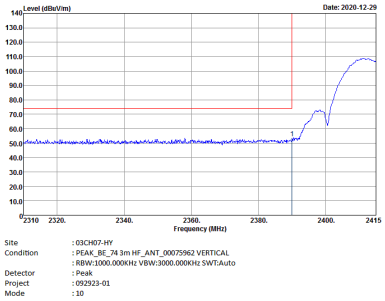
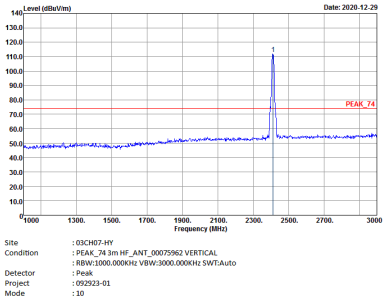
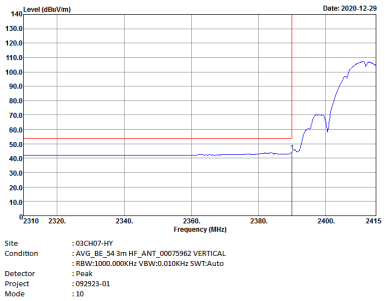
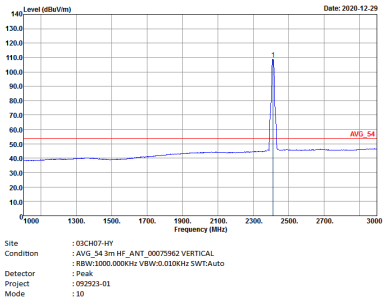
Note symbol

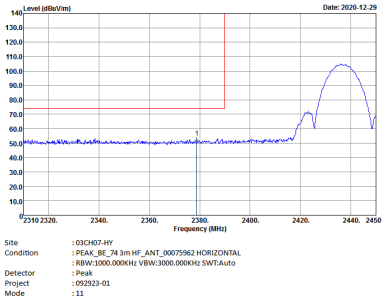
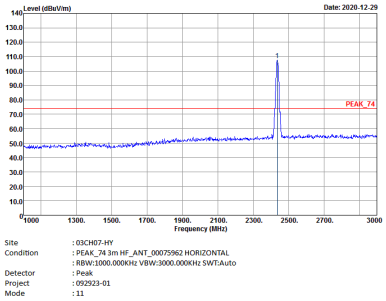
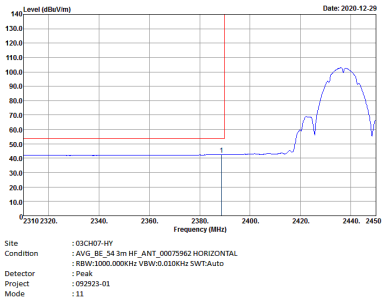
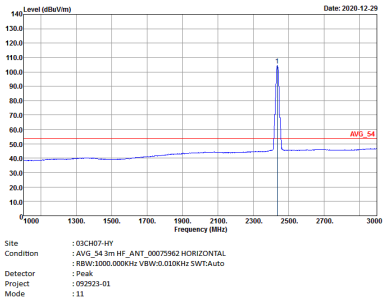
-L	**Low channel location**
-R	**High channel location**

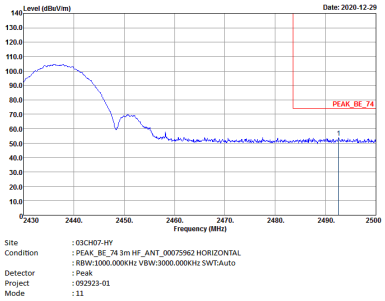
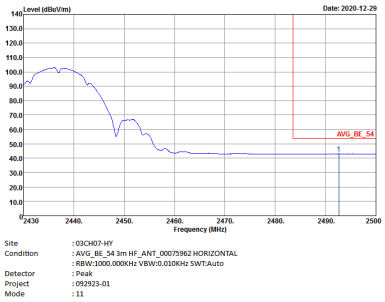
2.4GHz 2400~2483.5MHz

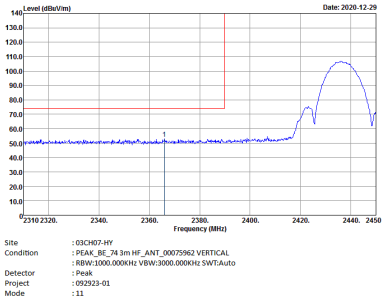
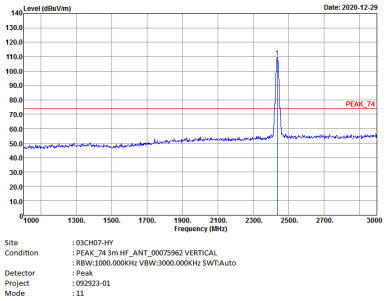
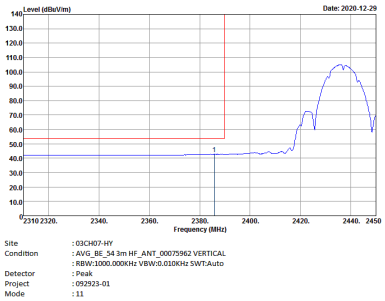
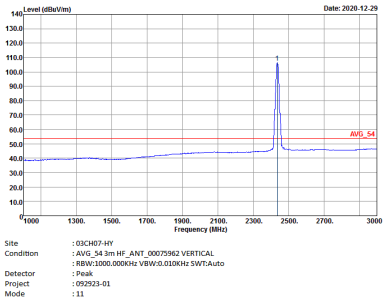
WIFI 802.11b (Band Edge @ 3m)

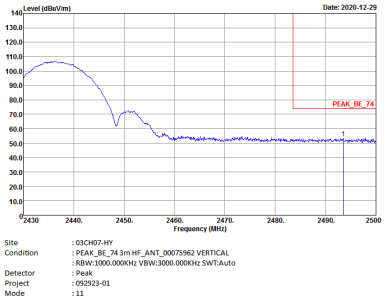
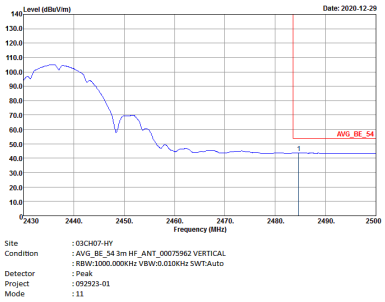
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

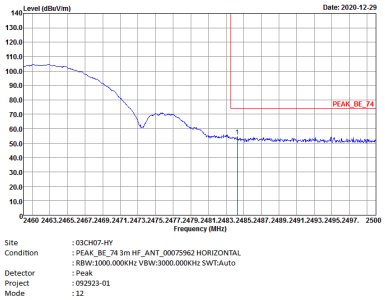
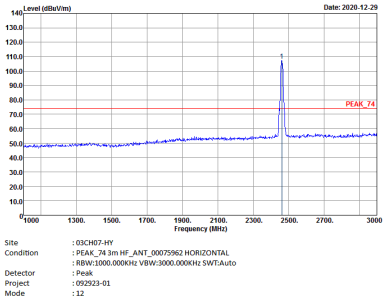
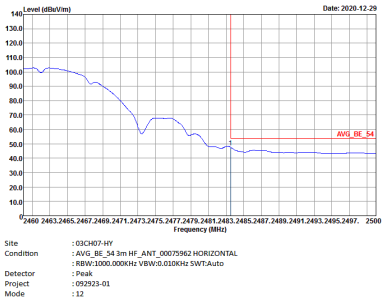
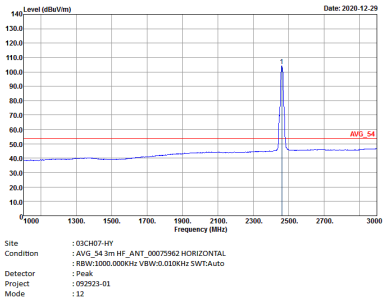
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

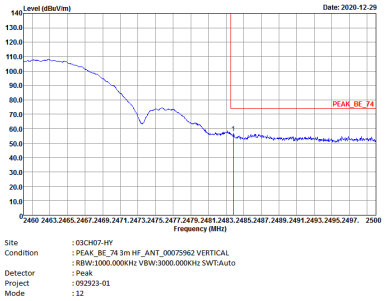
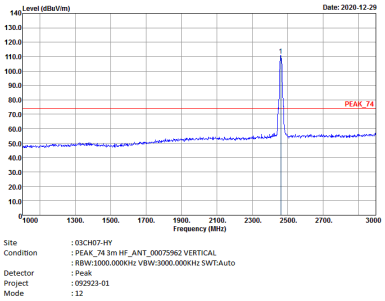
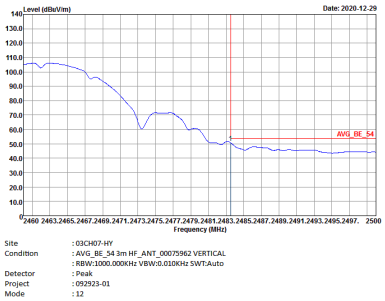
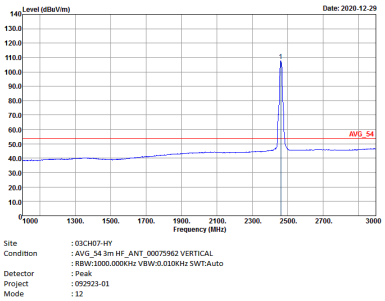
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

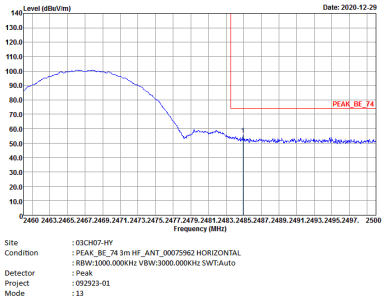
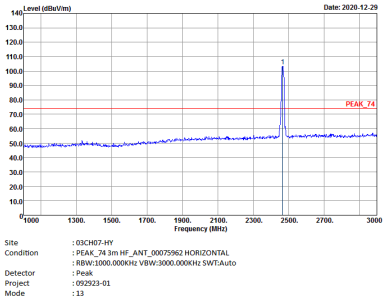
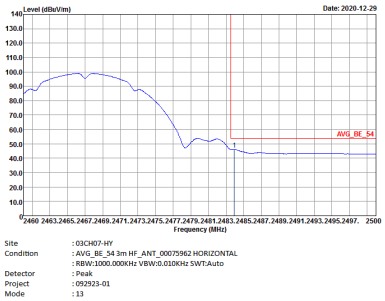
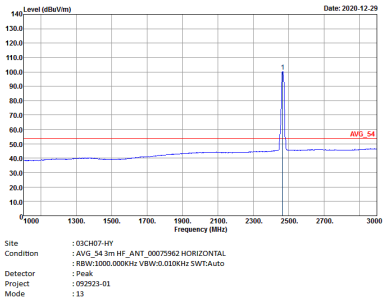
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

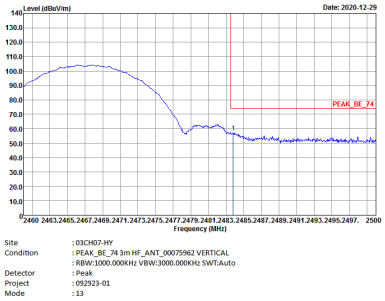
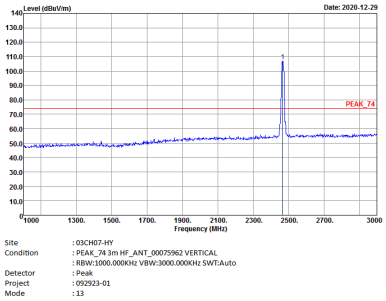
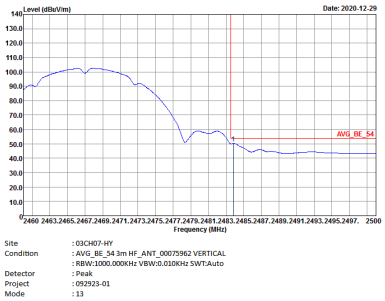
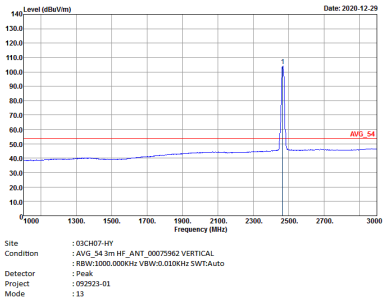
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

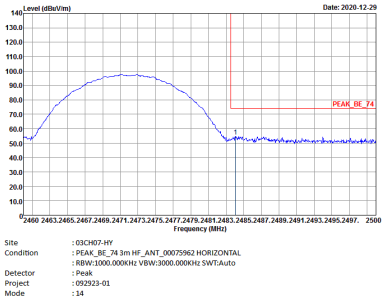
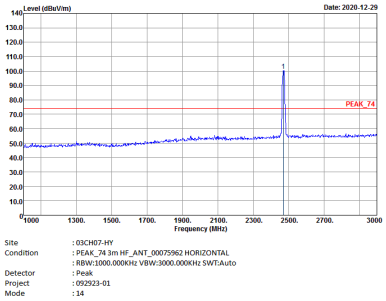
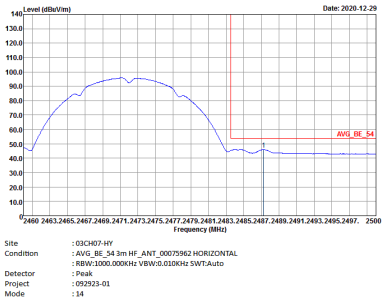
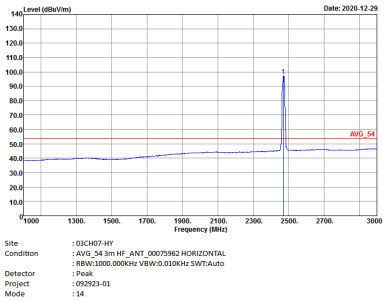
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left blank
Avg.		Left blank

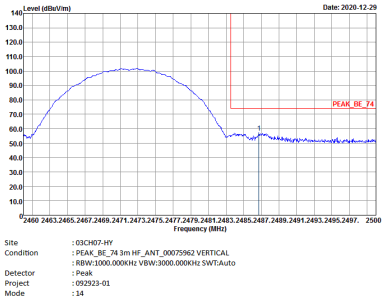
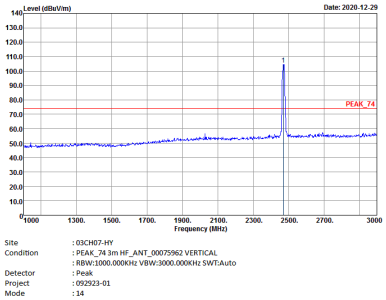
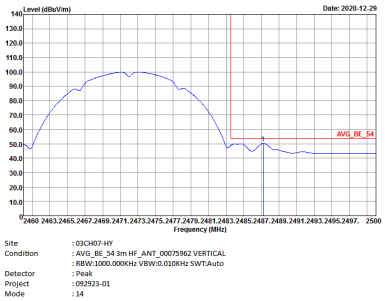
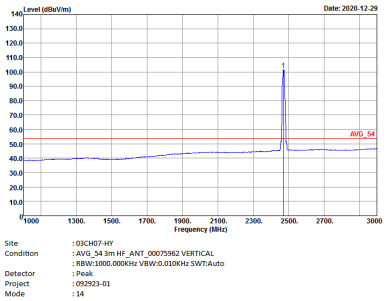
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 12	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 12
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 12	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 12

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH12 2467MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 13	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 13
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 13	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 13

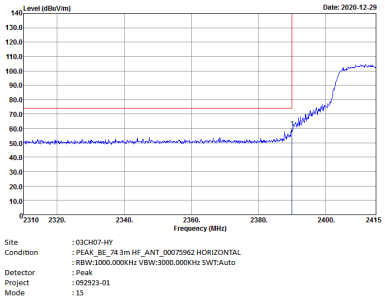
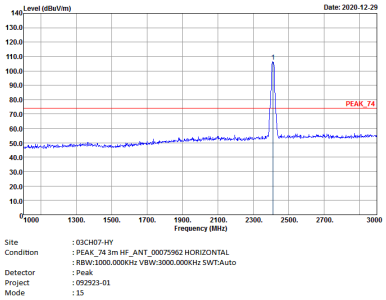
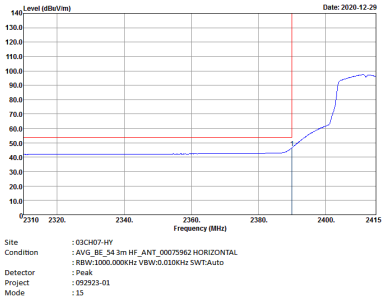
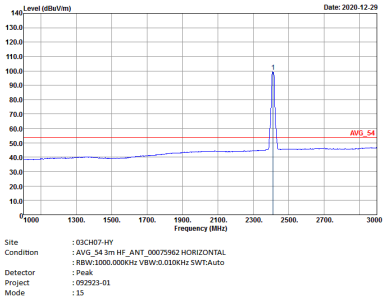
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH12 2467MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 13	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 13
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 13	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 13

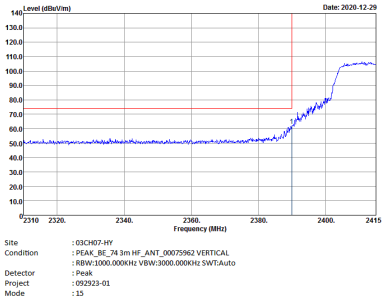
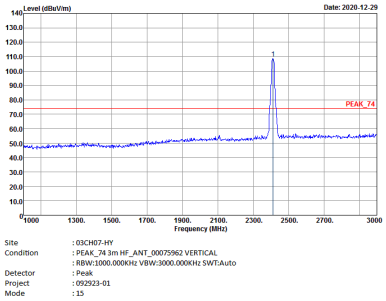
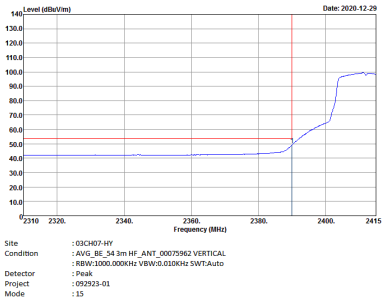
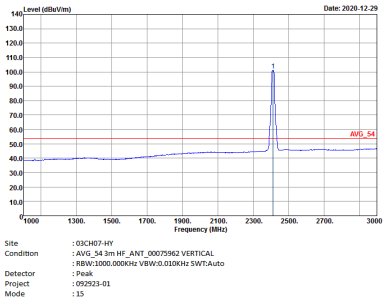
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH13 2472MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 14	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 14
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 14	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 14

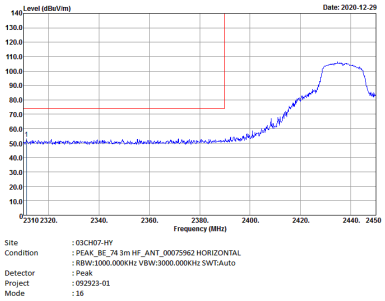
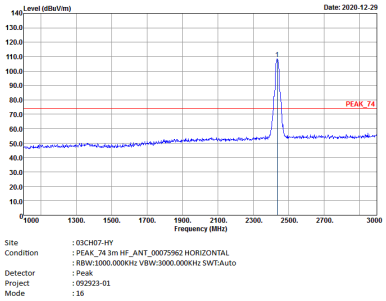
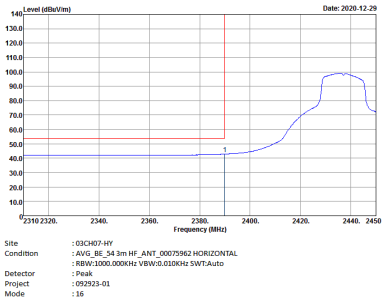
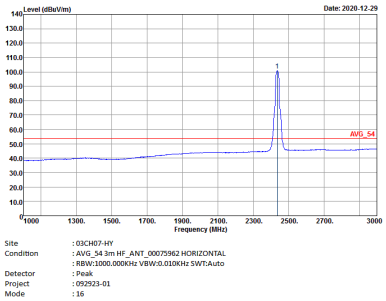
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH13 2472MHz	
1	Vertical	Fundamental
Peak		
Avg.		

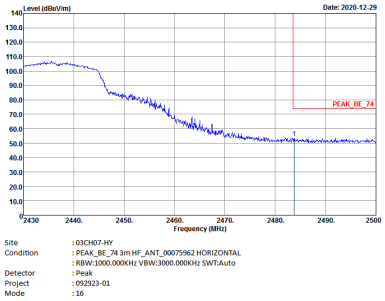
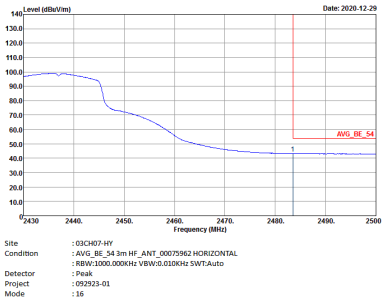
2.4GHz 2400~2483.5MHz

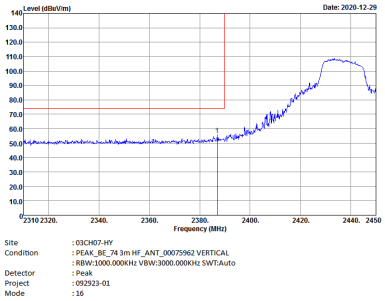
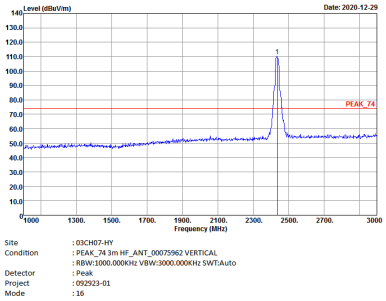
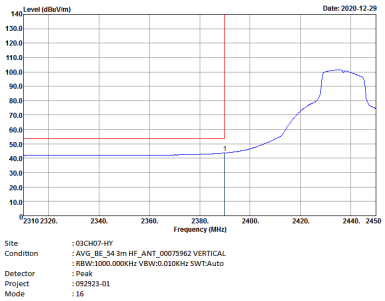
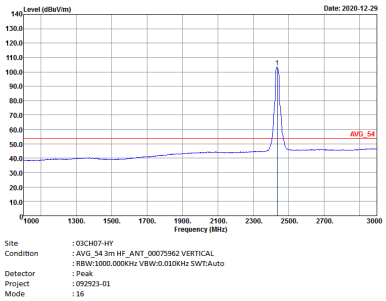
WIFI 802.11g (Band Edge @ 3m)

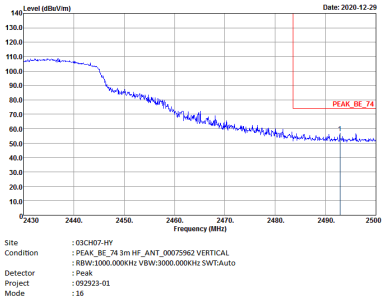
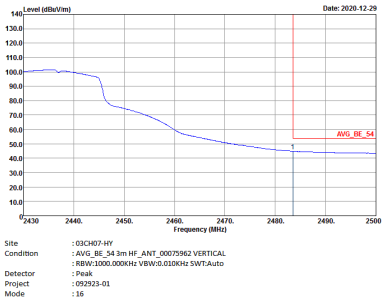
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

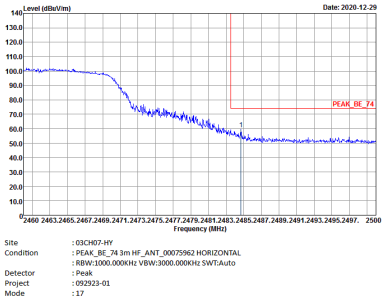
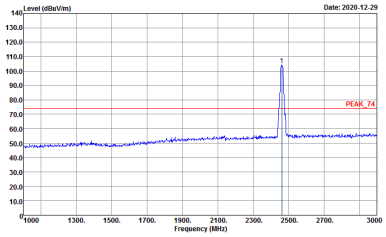
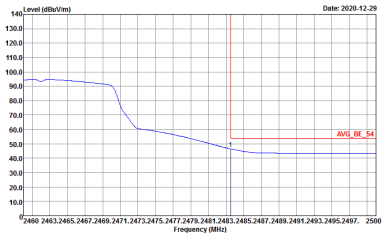
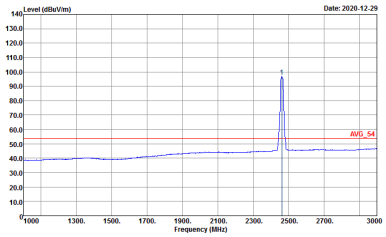
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

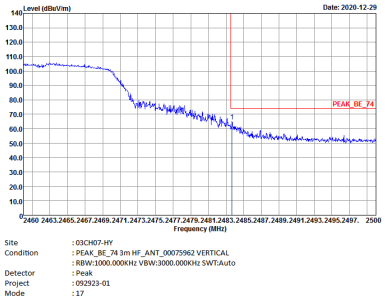
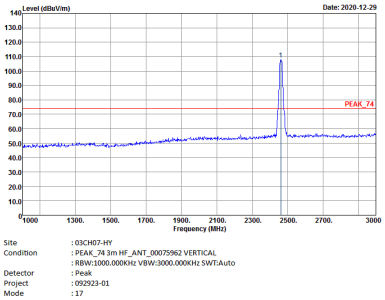
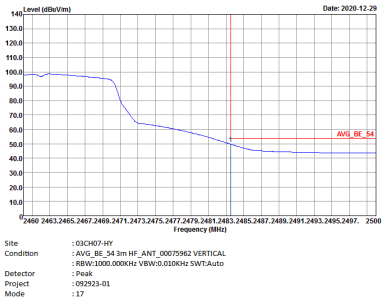
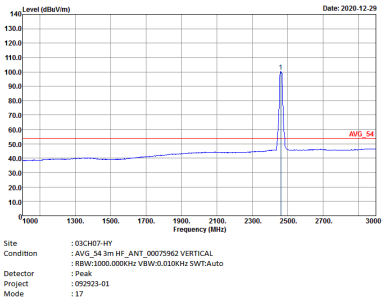
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

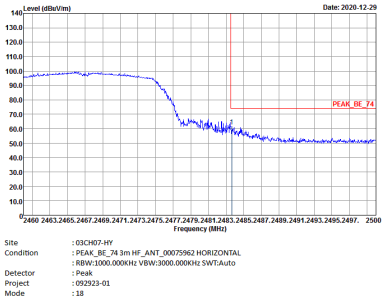
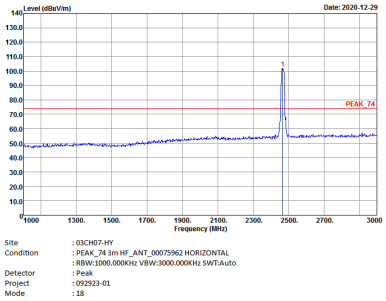
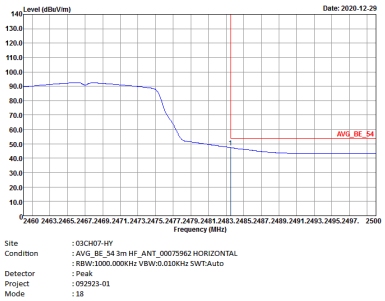
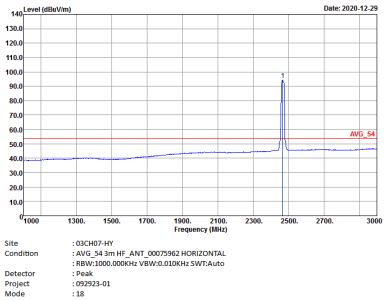
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

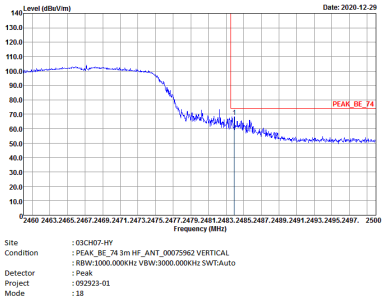
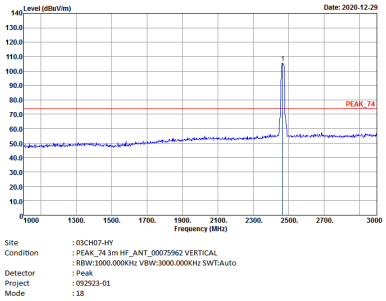
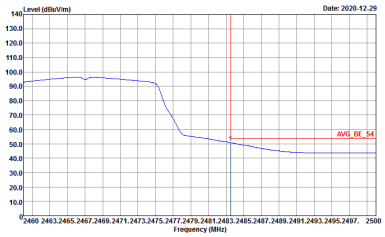
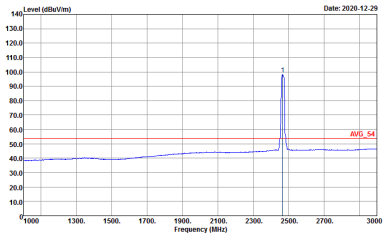
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

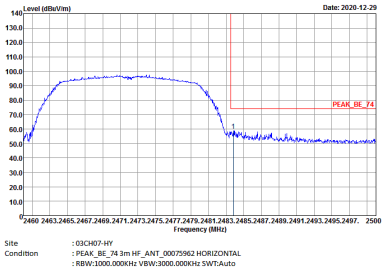
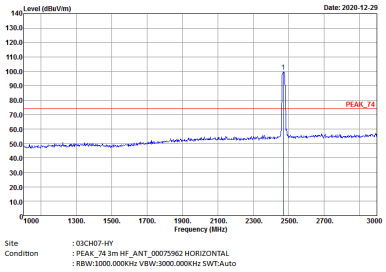
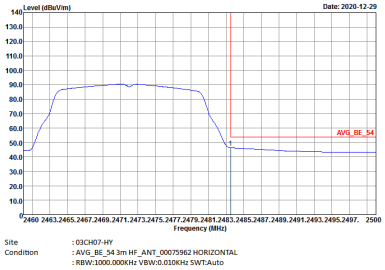
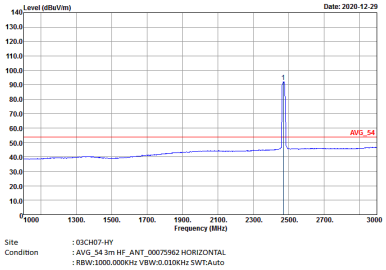
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

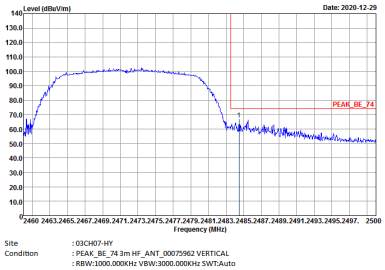
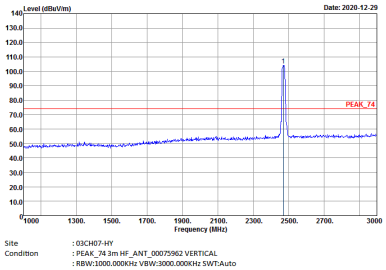
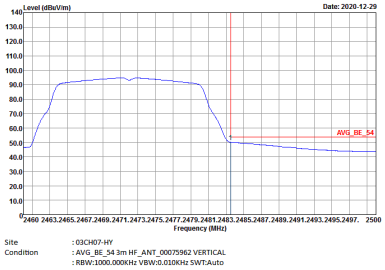
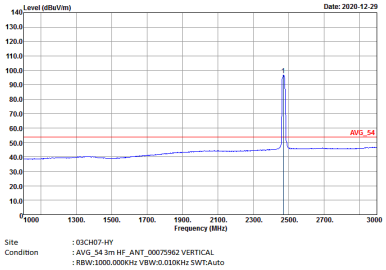
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 17	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 17
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 17	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 17

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 17	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 17
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 17	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 17

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH12 2467MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 18	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 18
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 18	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 18

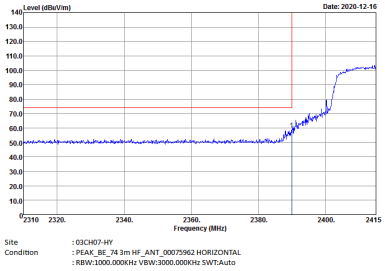
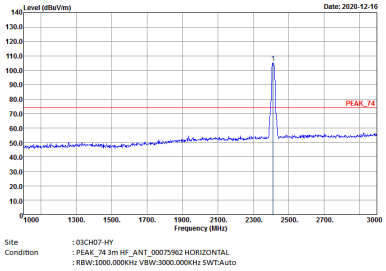
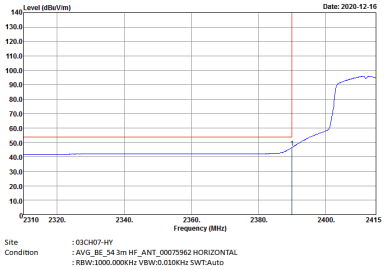
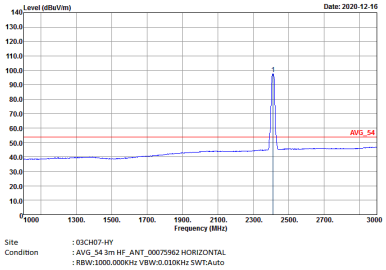
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH12 2467MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH07-HY Condition : PEAK_BE_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 18	 Site : 03CH07-HY Condition : PEAK_74 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 18
Avg.	 Site : 03CH07-HY Condition : AVG_BE_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 18	 Site : 03CH07-HY Condition : AVG_54 3m HF_ANT_00075962 VERTICAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 092923-01 Mode : 18

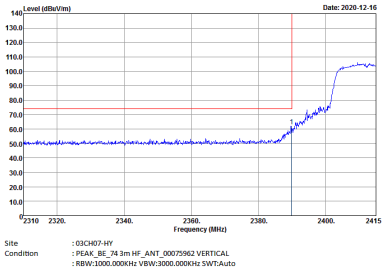
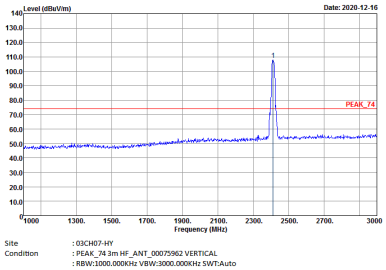
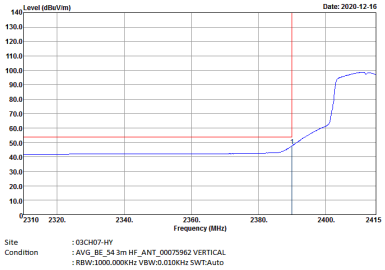
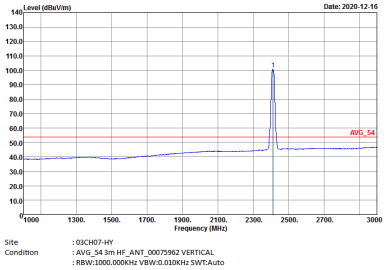
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH13 2472MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

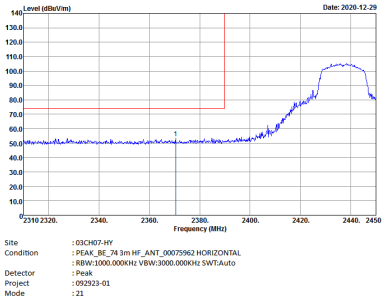
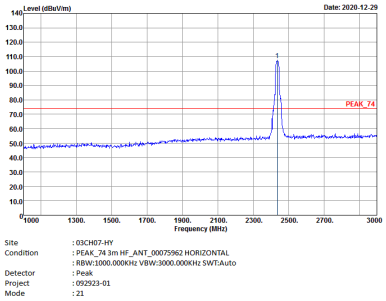
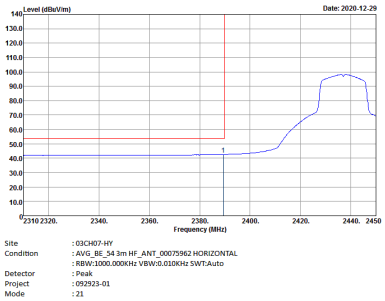
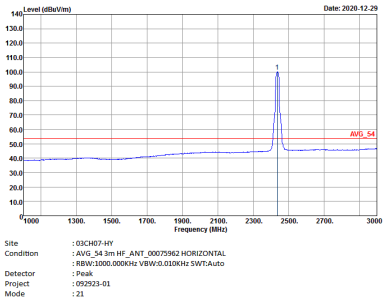
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH13 2472MHz	
1	Vertical	Fundamental
Peak		
Avg.		

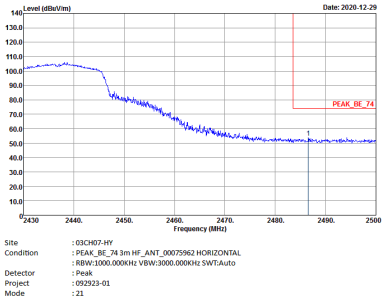
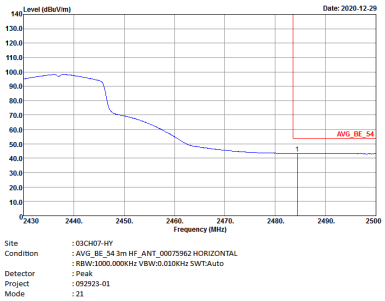
2.4GHz 2400~2483.5MHz

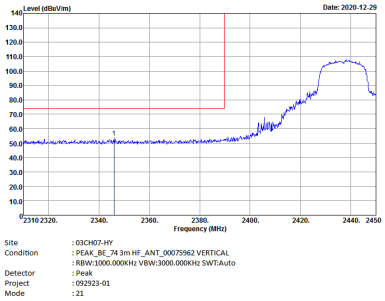
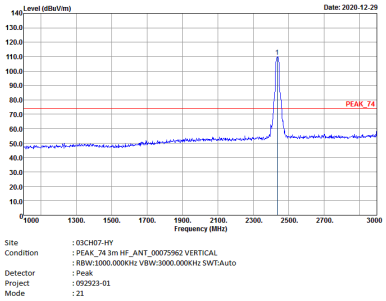
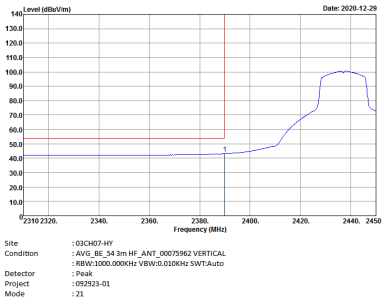
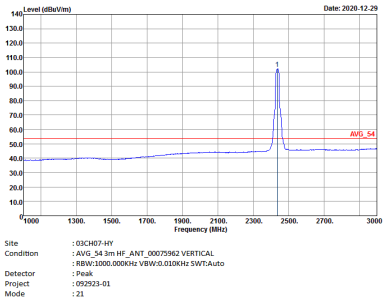
WIFI 802.11n HT20 (Band Edge @ 3m)

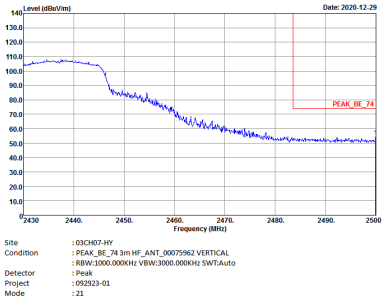
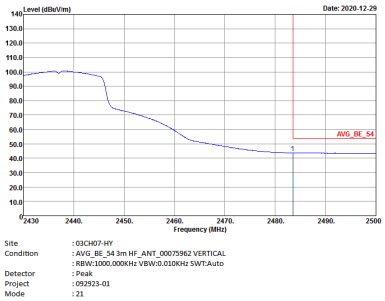
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

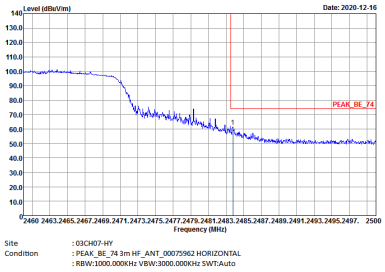
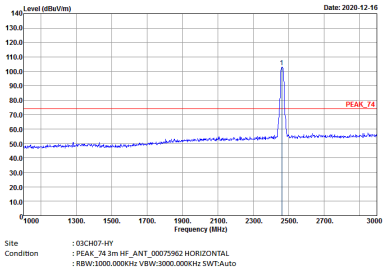
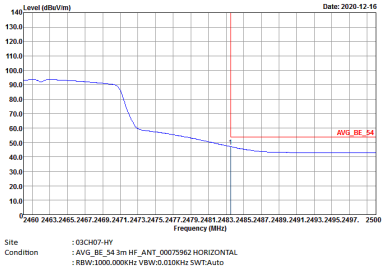
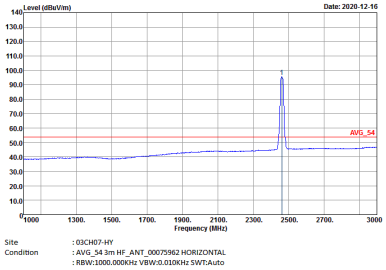
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Vertical	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak		Left blank
Avg.		Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Vertical	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Vertical	Fundamental
Peak		Left Blank
Avg.		Left Blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

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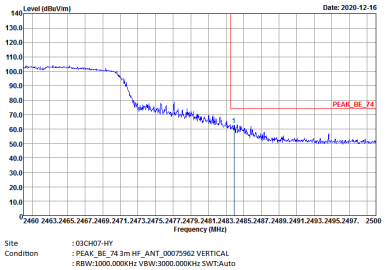
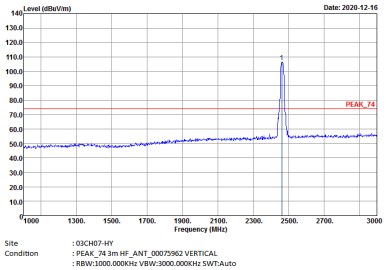
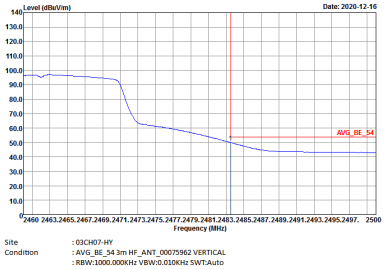
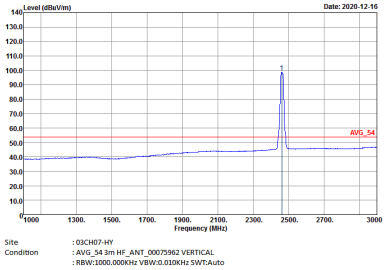
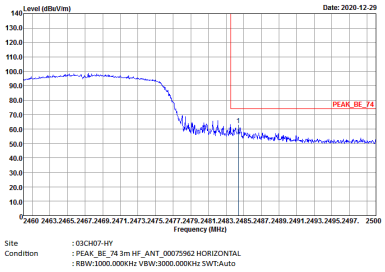
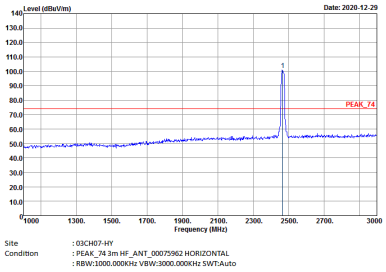
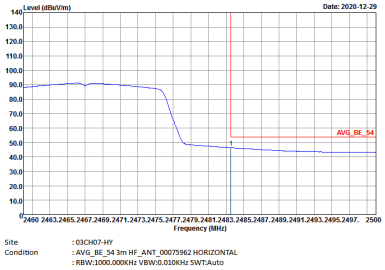
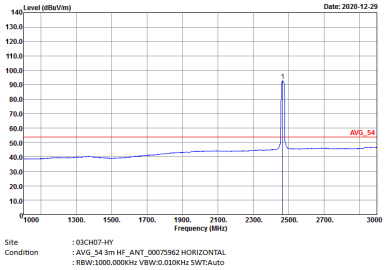
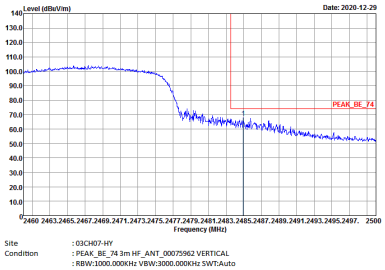
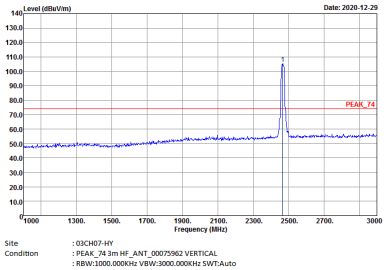
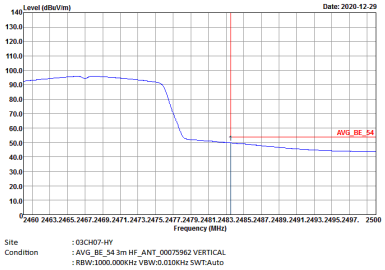
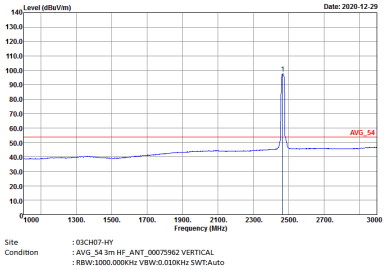
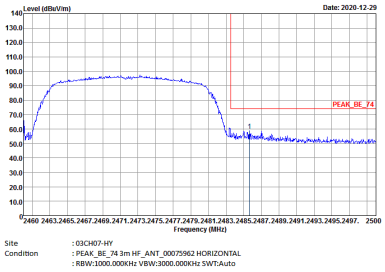
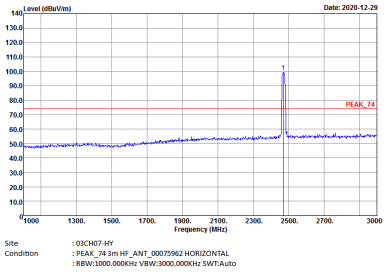
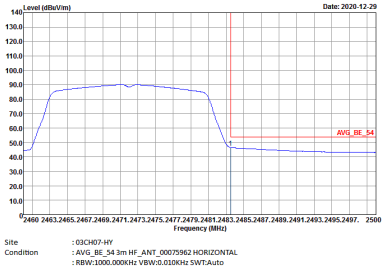
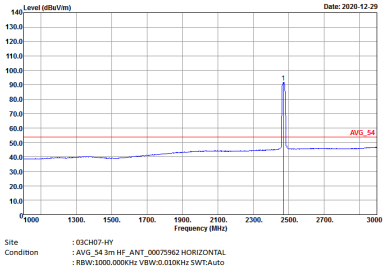
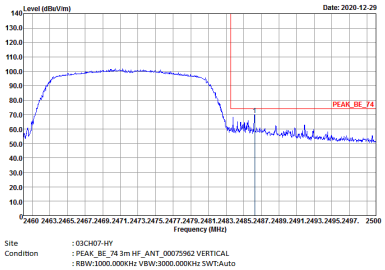
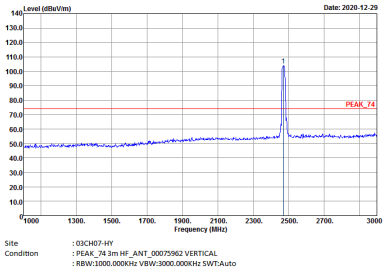
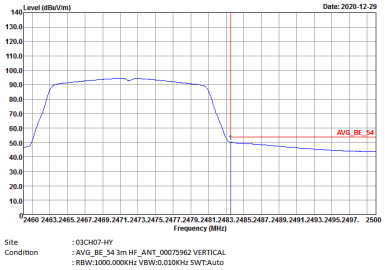
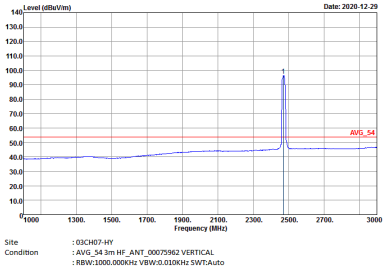
ANT	802.11n HT20 CH11 2462MHz	
1	Vertical	Fundamental
Peak		
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH12 2467MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

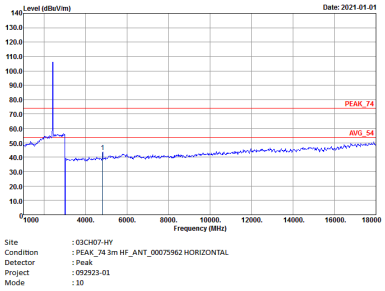
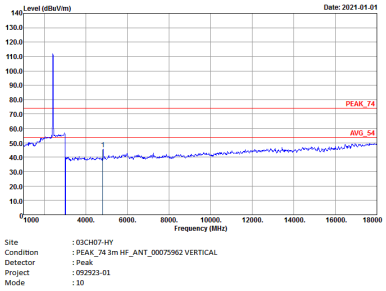
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH12 2467MHz	
1	Vertical	Fundamental
Peak		
Avg.		

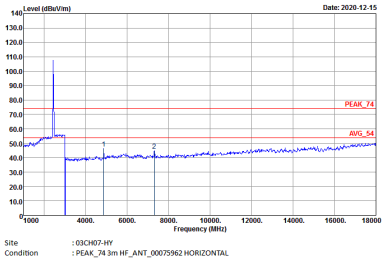
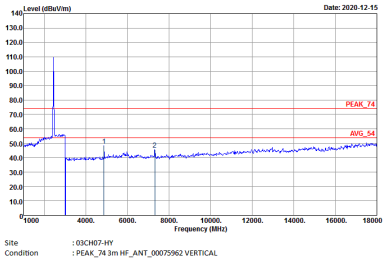
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH13 2472MHz	
1	Horizontal	Fundamental
Peak		
Avg.		

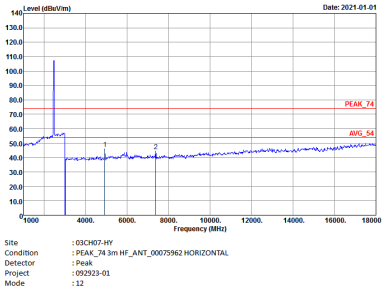
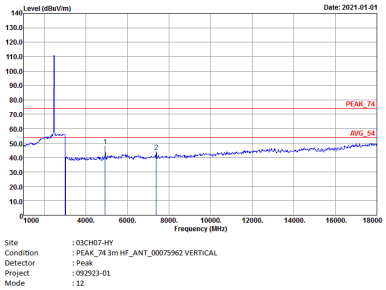
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH13 2472MHz	
1	Vertical	Fundamental
Peak		
Avg.		

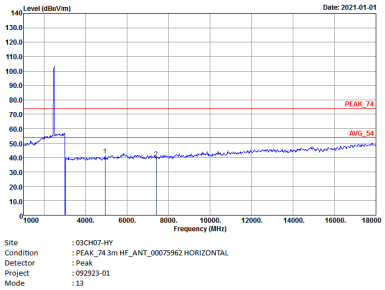
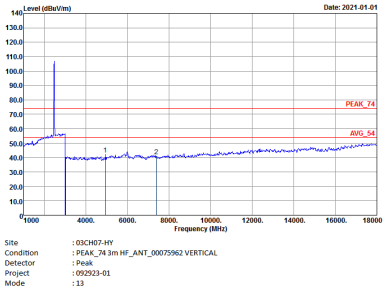
2.4GHz 2400~2483.5MHz

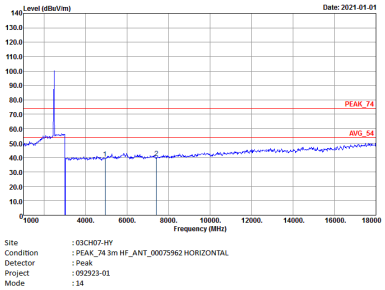
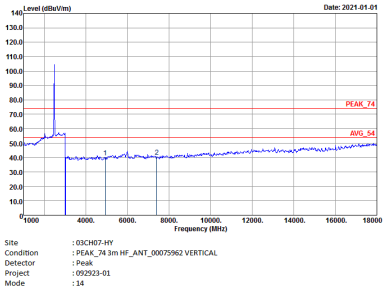
WIFI 802.11b (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

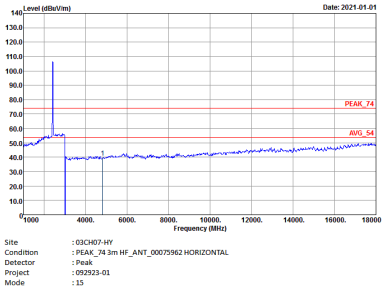
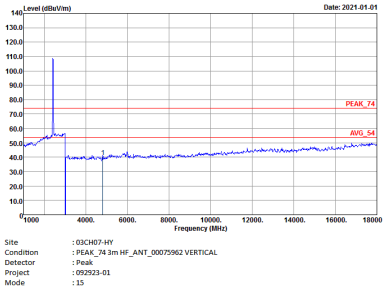
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

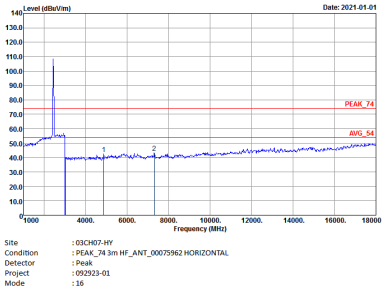
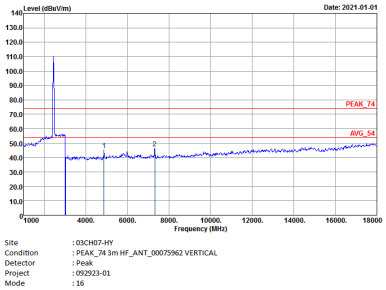
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH12 2467MHz	
1	Horizontal	Vertical
Peak Avg.		

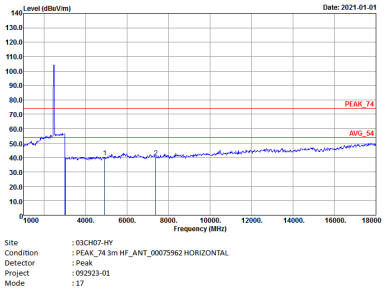
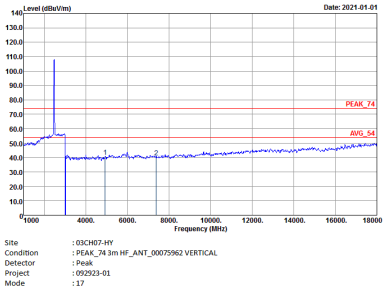
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH13 2472MHz	
1	Horizontal	Vertical
Peak Avg.		

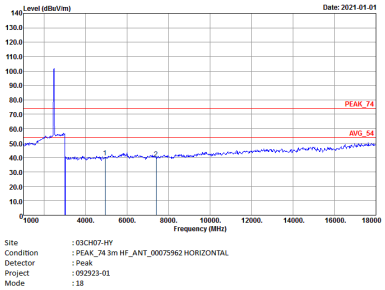
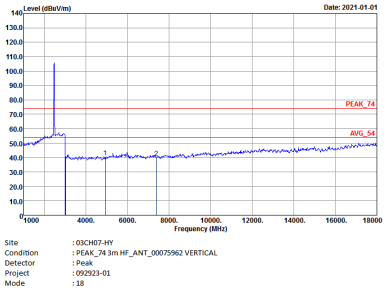
2.4GHz 2400~2483.5MHz

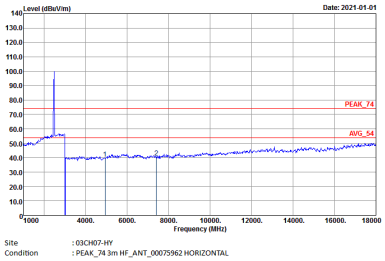
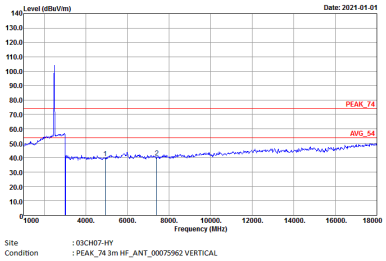
WIFI 802.11g (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

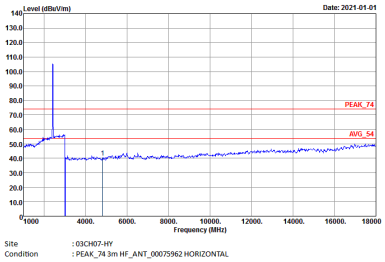
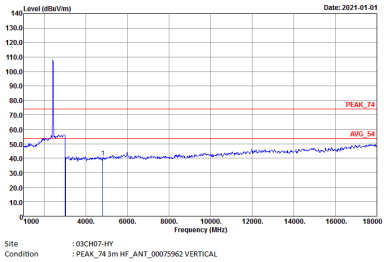
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

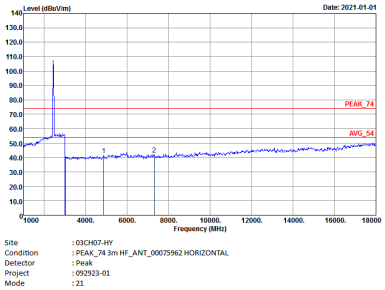
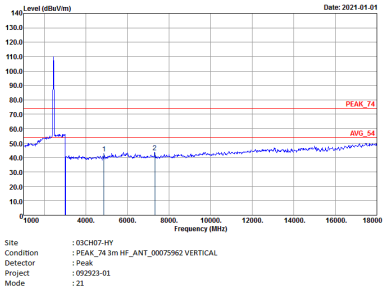
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH12 2467MHz	
1	Horizontal	Vertical
Peak Avg.		

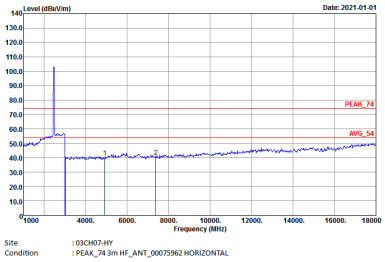
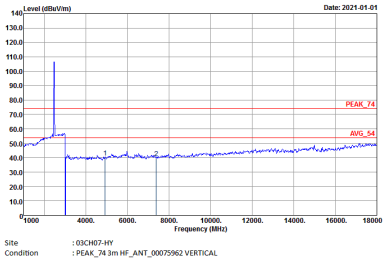
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH13 2472MHz	
1	Horizontal	Vertical
Peak Avg.		

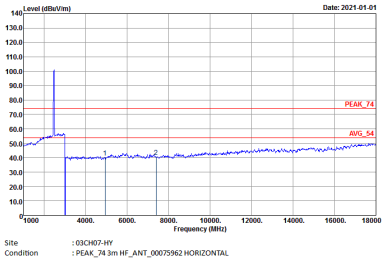
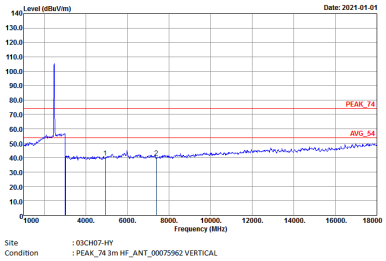
2.4GHz 2400~2483.5MHz

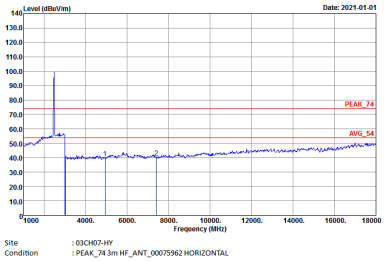
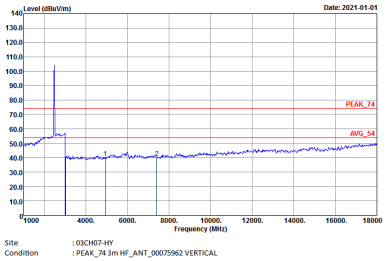
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.		

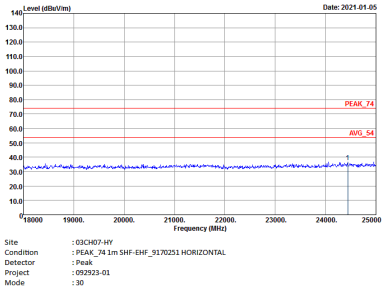
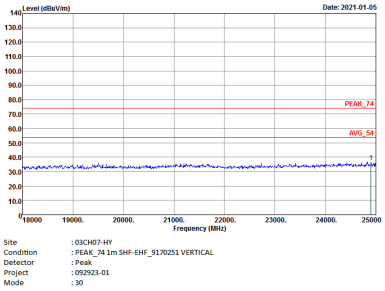
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH12 2462MHz	
1	Horizontal	Vertical
Peak Avg.		

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH13 2472MHz	
1	Horizontal	Vertical
Peak Avg.		

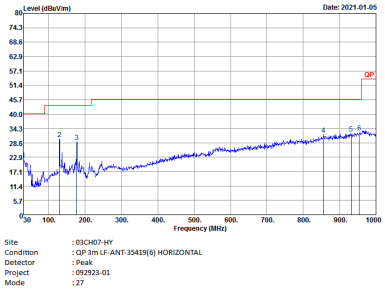
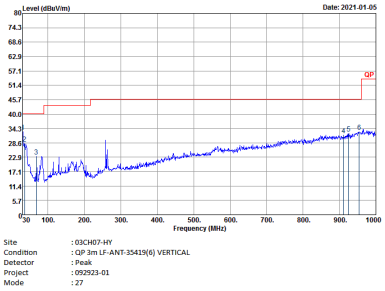
Emission above 18GHz

2.4GHz WIFI 802.11g (SHF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11g SHF	
1	Horizontal	Vertical
QP / Peak		

Emission below 1GHz

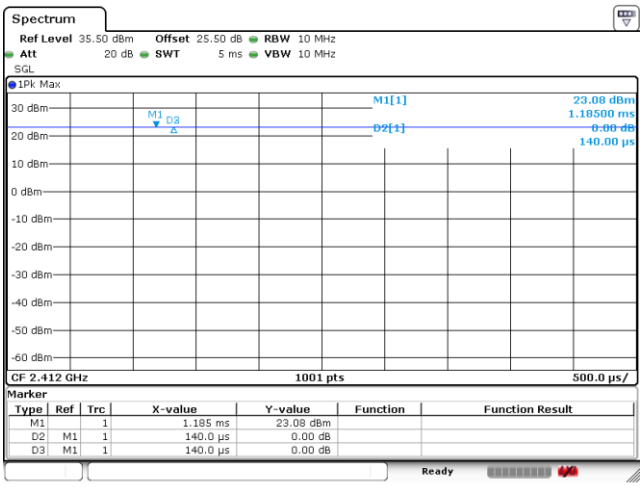
2.4GHz WIFI 802.11g (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11g LF	
1	Horizontal	Vertical
QP / Peak		

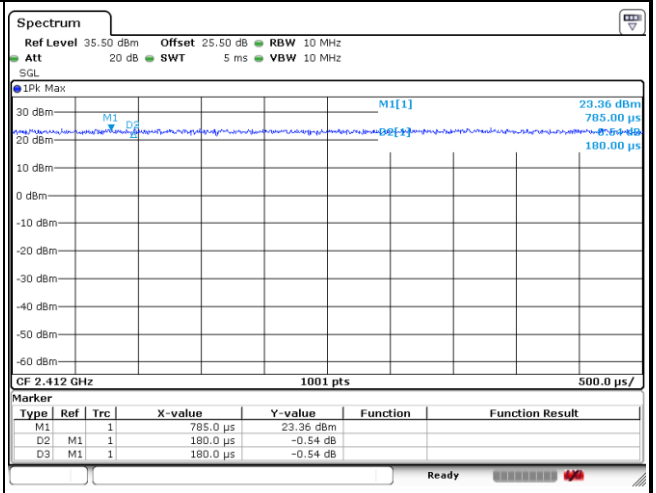
Appendix E. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
802.11b	100.00	-	-	10Hz	0.00
802.11g	100.00	-	-	10Hz	0.00
2.4GHz 802.11n HT20	100.00	-	-	10Hz	0.00

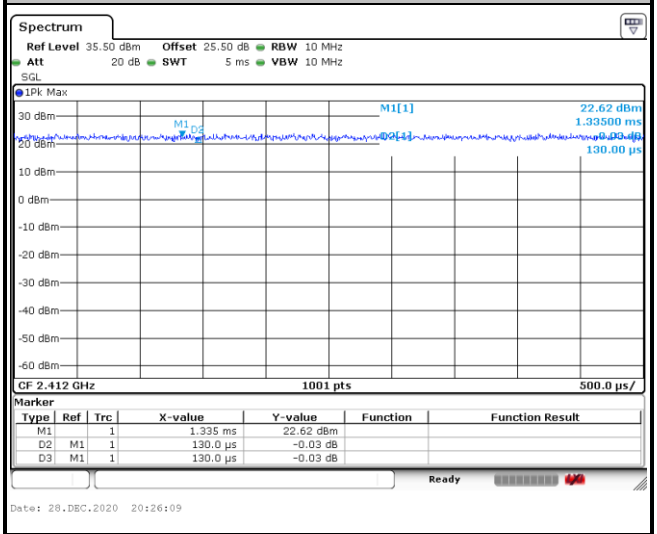
802.11b



802.11g



802.11n HT20



———THE END———