

FCC RADIO TEST REPORT

FCC ID : A6GC4MAX-4MUSACV4
Equipment : Telematic embedded system
Brand Name : Mobile Devices Ingenierie
Model Name : C4MAX-4MUSAC_V4
Marketing Name : C4MAX-4MUSAC_V4
Applicant : Mobile Devices Ingénierie
100 Avenue de Stalingrad 94800
Villejuif FRANCE
Manufacturer : Mobile Devices Ingénierie
100 Avenue de Stalingrad 94800
Villejuif FRANCE
Standard : FCC Part 15 Subpart C §15.247

The product was received on Jul. 09, 2018 and testing was started from Sep. 27, 2018 and completed on Oct. 02, 2018. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

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.



Approved by: Joseph Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1 General Description	5
1.1 Product Feature of Equipment Under Test.....	5
1.2 Modification of EUT	5
1.3 Testing Location	5
1.4 Applicable Standards.....	6
2 Test Configuration of Equipment Under Test	7
2.1 Carrier Frequency and Channel	7
2.2 Test Mode.....	7
2.3 Connection Diagram of Test System.....	8
2.4 EUT Operation Test Setup	8
2.5 Measurement Results Explanation Example.....	8
3 Test Result	9
3.1 6dB and 99% Bandwidth Measurement	9
3.2 Output Power Measurement.....	11
3.3 Power Spectral Density Measurement	12
3.4 Conducted Band Edges and Spurious Emission Measurement	14
3.5 Radiated Band Edges and Spurious Emission Measurement	24
3.6 Antenna Requirements.....	28
4 List of Measuring Equipment.....	29
5 Uncertainty of Evaluation	30
Appendix A. Conducted Test Results	
Appendix B. Radiated Spurious Emission	
Appendix C. Radiated Spurious Emission Plots	
Appendix D. Duty Cycle Plots	
Appendix E. Setup Photographs	



History of this test report

Report No.	Version	Description	Issued Date
FR870921C	01	Initial issue of report	Oct. 15, 2018

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	15.247(a)(2)	6dB Bandwidth	Pass	-
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.247(b)	Power Output Measurement	Pass	-
3.3	15.247(e)	Power Spectral Density	Pass	-
3.4	15.247(d)	Conducted Band Edges	Pass	-
		Conducted Spurious Emission	Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	Pass	Under limit 3.24 dB at 31.080 MHz
-	15.207	AC Conducted Emission	Not Required	-
3.6	15.203 & 15.247(b)	Antenna Requirement	Pass	-
Remark: Not required means after assessing, test items are not necessary to carry out.				

Reviewed by: Wii Chang

Report Producer: Nancy Yang



1 General Description

1.1 Product Feature of Equipment Under Test

LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, and GNSS.

Product Specification subjective to this standard	
Antenna Type	WWAN: LDS Antenna WLAN: Chip Antenna Bluetooth: Chip Antenna GPS / Glonass: External Antenna

1.2 Modification of EUT

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

1.3 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1190 and TW0007 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.
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

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

Test Site	SPORTON INTERNATIONAL INC.
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No.
	03CH13-HY

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



1.4 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 v05
- ♦ 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. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

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:, radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.

2.1 Carrier Frequency and Channel

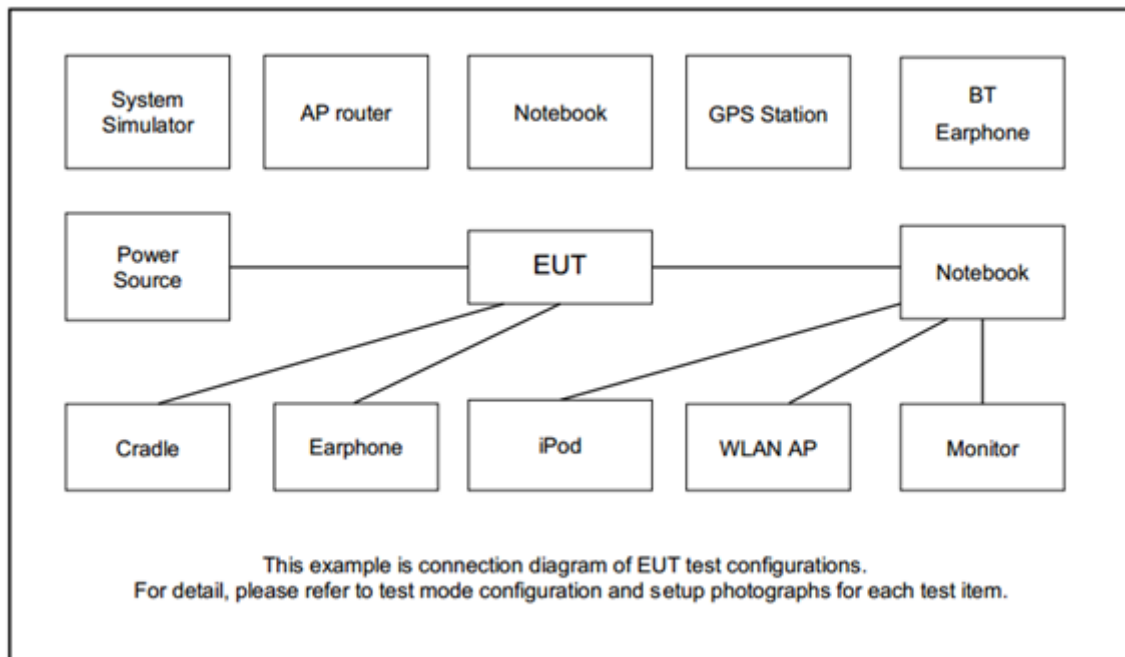
Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437		

2.2 Test Mode

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

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

2.3 Connection Diagram of Test System



2.4 EUT Operation Test Setup

The RF test items, utility “Tera Term” 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.

2.5 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.

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

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

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

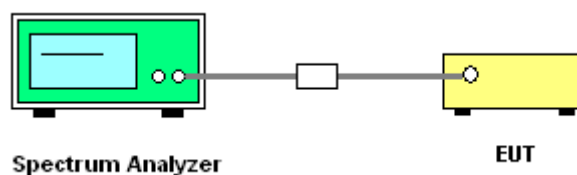
3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v05.
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) $\geq 3 * RBW$.
6. Measure and record the results in the test report.

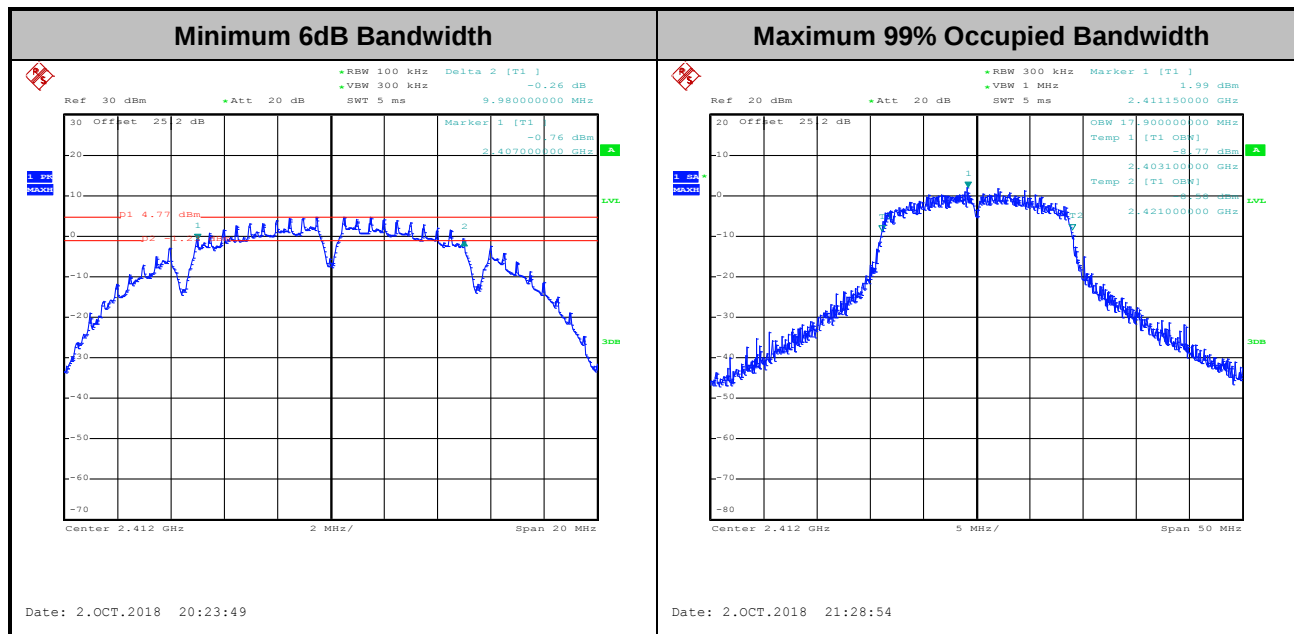
3.1.4 Test Setup





3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.



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

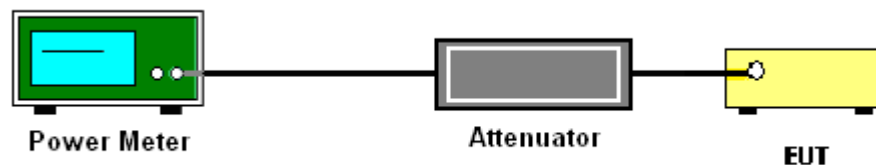
3.2.2 Measuring Instruments

See list of measuring equipment of this test report.

3.2.3 Test Procedures

1. For Peak Power, the testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v05 section 9.1.3 PKPM1 Peak power meter method.
2. For Average Power, the testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v05 section 9.2.3.1 Method AVGPM.
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.

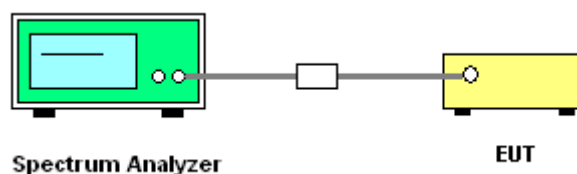
3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

3.3.3 Test Procedures

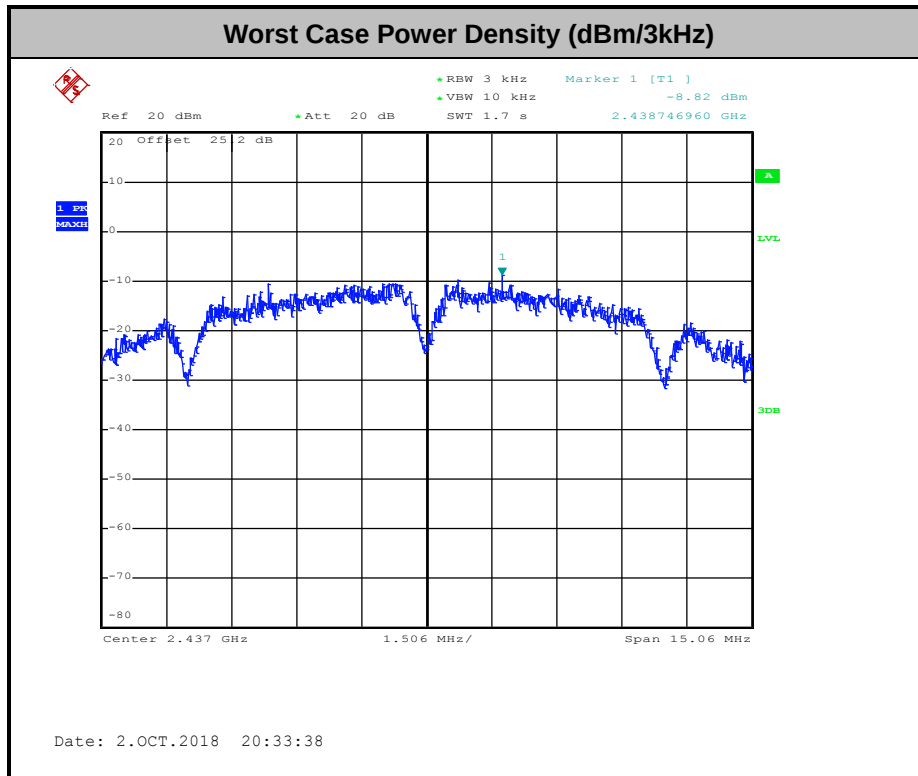
1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.

3.3.4 Test Setup



3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

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

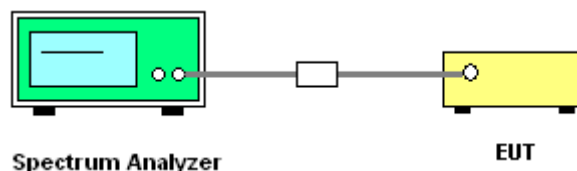
3.4.2 Measuring Instruments

See list of measuring equipment of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05.
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



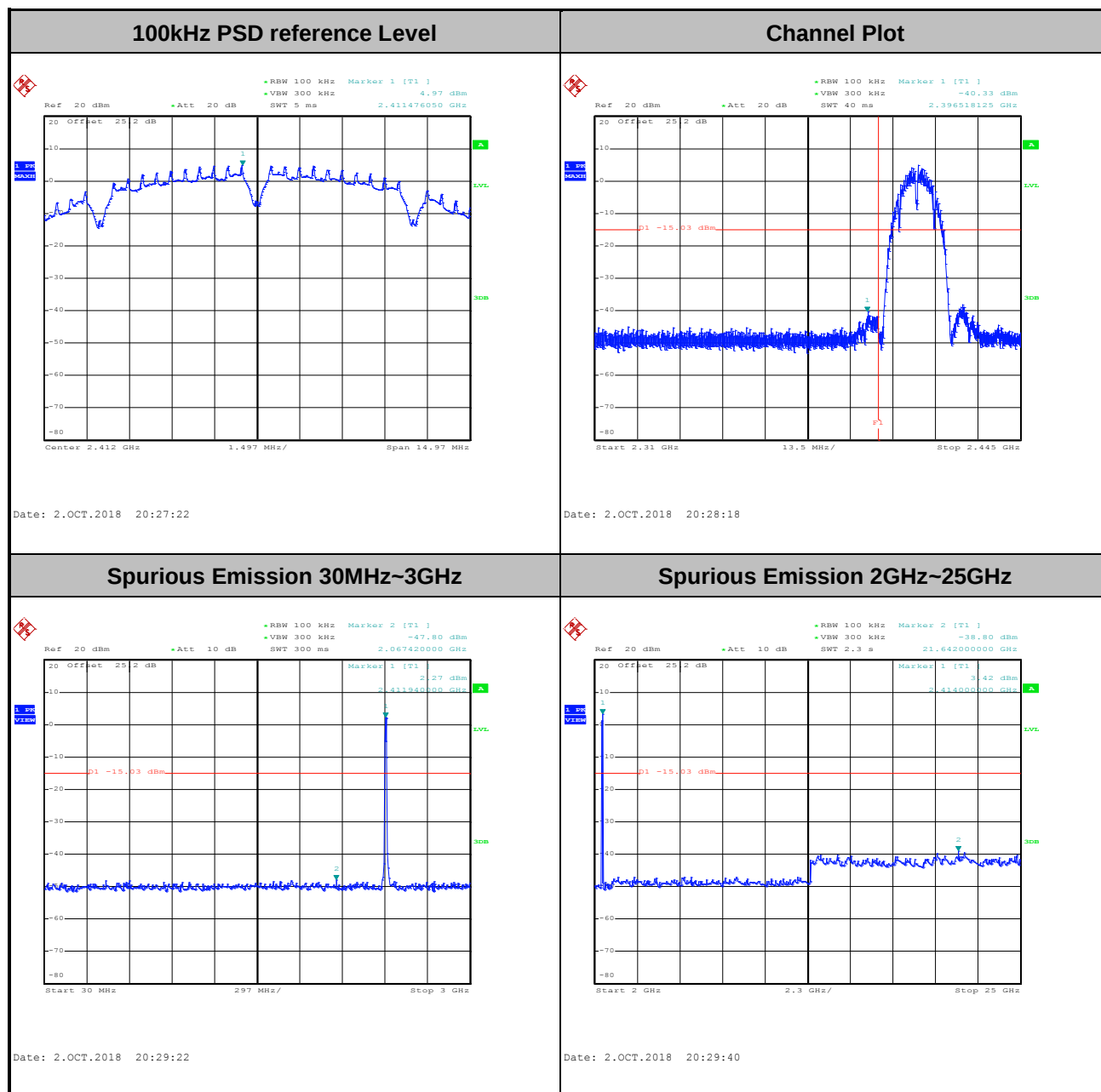


3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Engineer :	Shiming Liu	Temperature :	21~25°C
		Relative Humidity :	51~54%

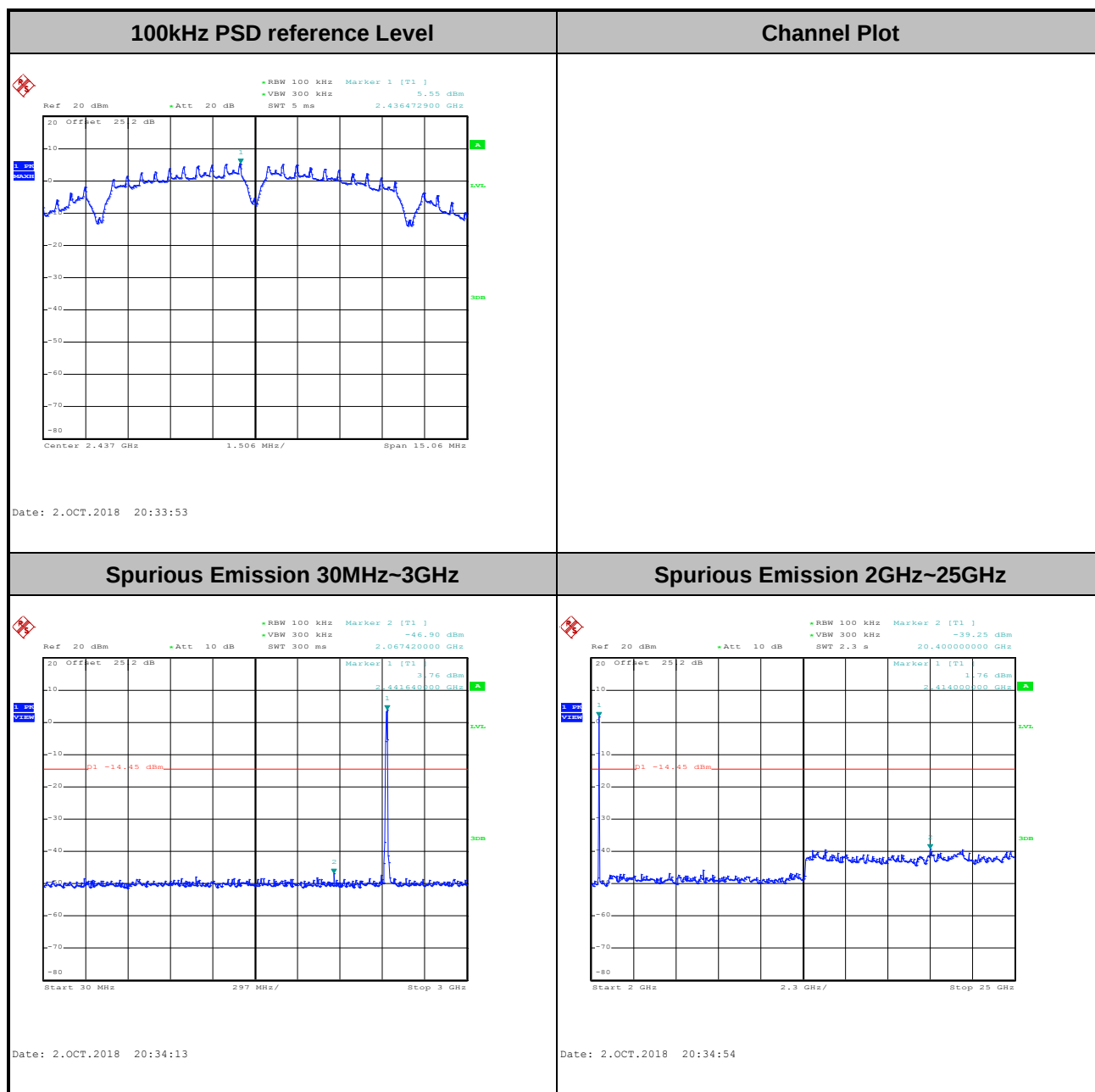
Number of TX = 1, Ant. 1 (Measured)

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





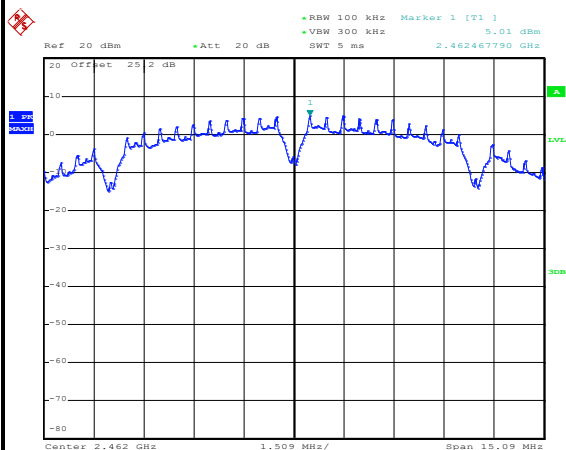
Test Mode :	802.11b	Test Channel :	06
-------------	---------	----------------	----





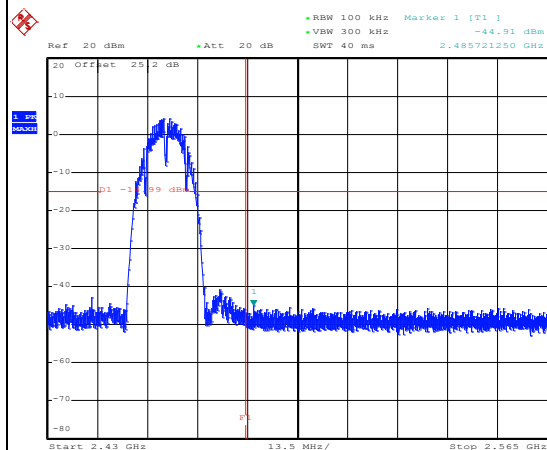
Test Mode :	802.11b	Test Channel :	11
-------------	---------	----------------	----

100kHz PSD reference Level



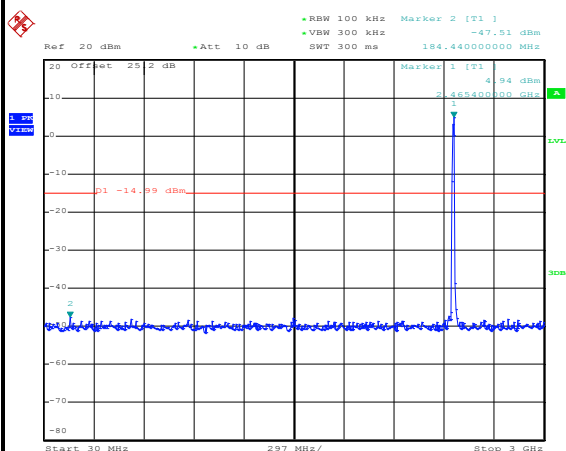
Date: 2.OCT.2018 20:41:35

Channel Plot



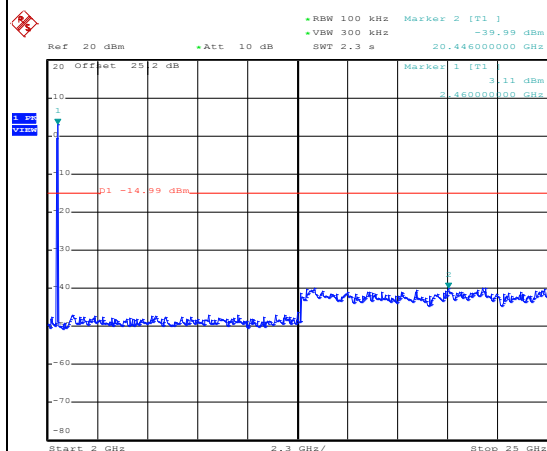
Date: 2.OCT.2018 20:42:43

Spurious Emission 30MHz~3GHz



Date: 2.OCT.2018 20:43:29

Spurious Emission 2GHz~25GHz

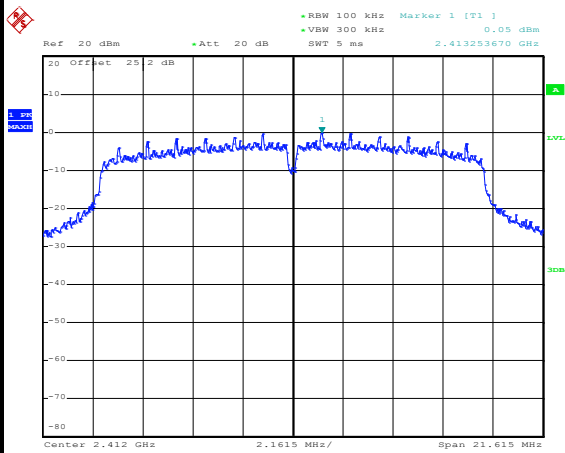


Date: 2.OCT.2018 20:44:06



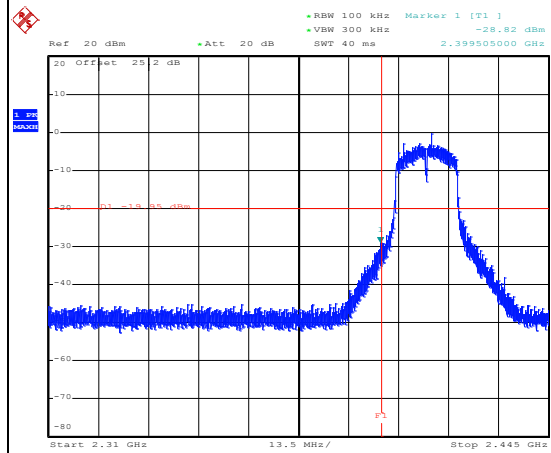
Test Mode :	802.11g	Test Channel :	01
-------------	---------	----------------	----

100kHz PSD reference Level



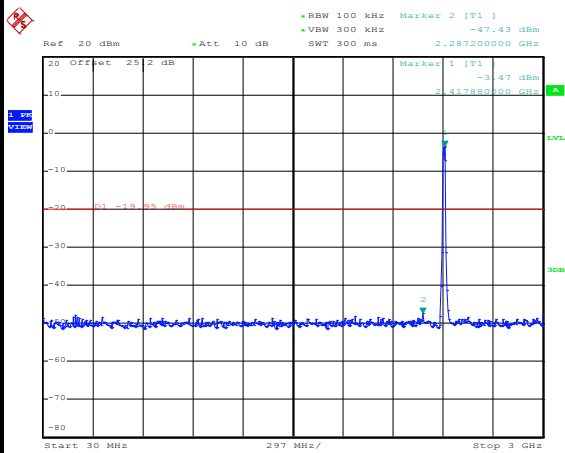
Date: 2.OCT.2018 20:56:22

Channel Plot



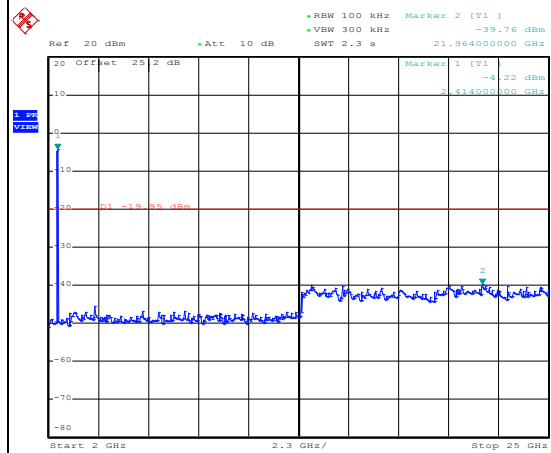
Date: 2.OCT.2018 20:56:36

Spurious Emission 30MHz~3GHz



Date: 2.OCT.2018 20:57:30

Spurious Emission 2GHz~25GHz

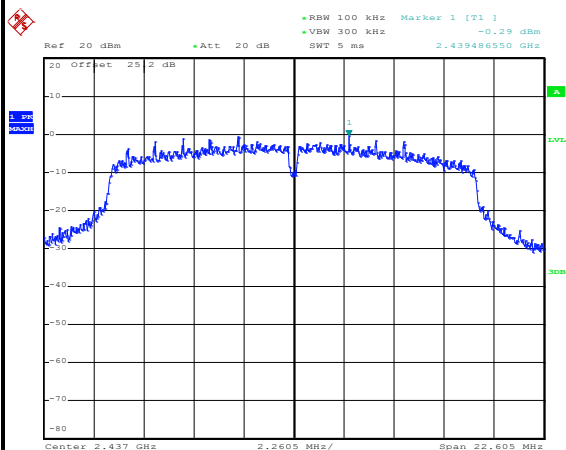


Date: 2.OCT.2018 20:57:49



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

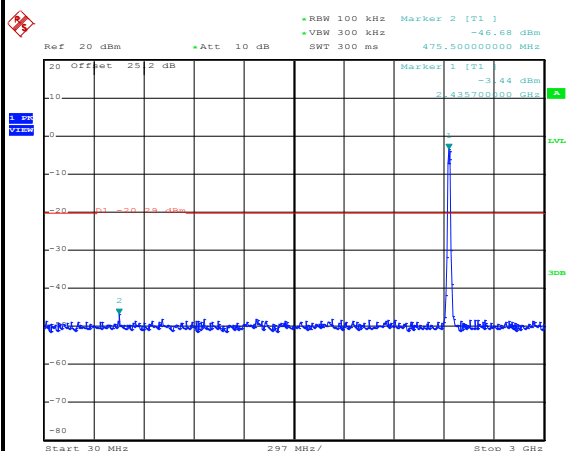
100kHz PSD reference Level



Date: 2.OCT.2018 21:02:59

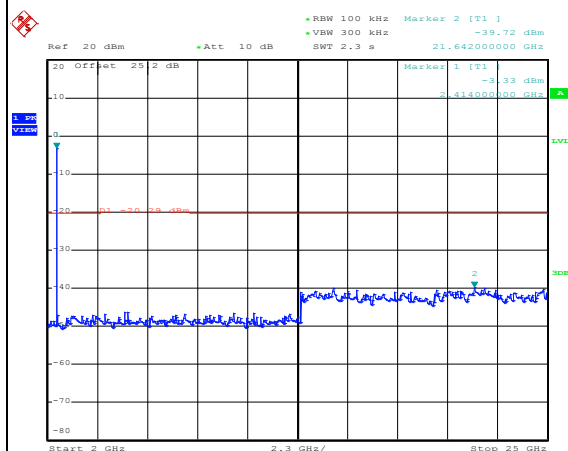
Channel Plot

Spurious Emission 30MHz~3GHz



Date: 2.OCT.2018 21:03:15

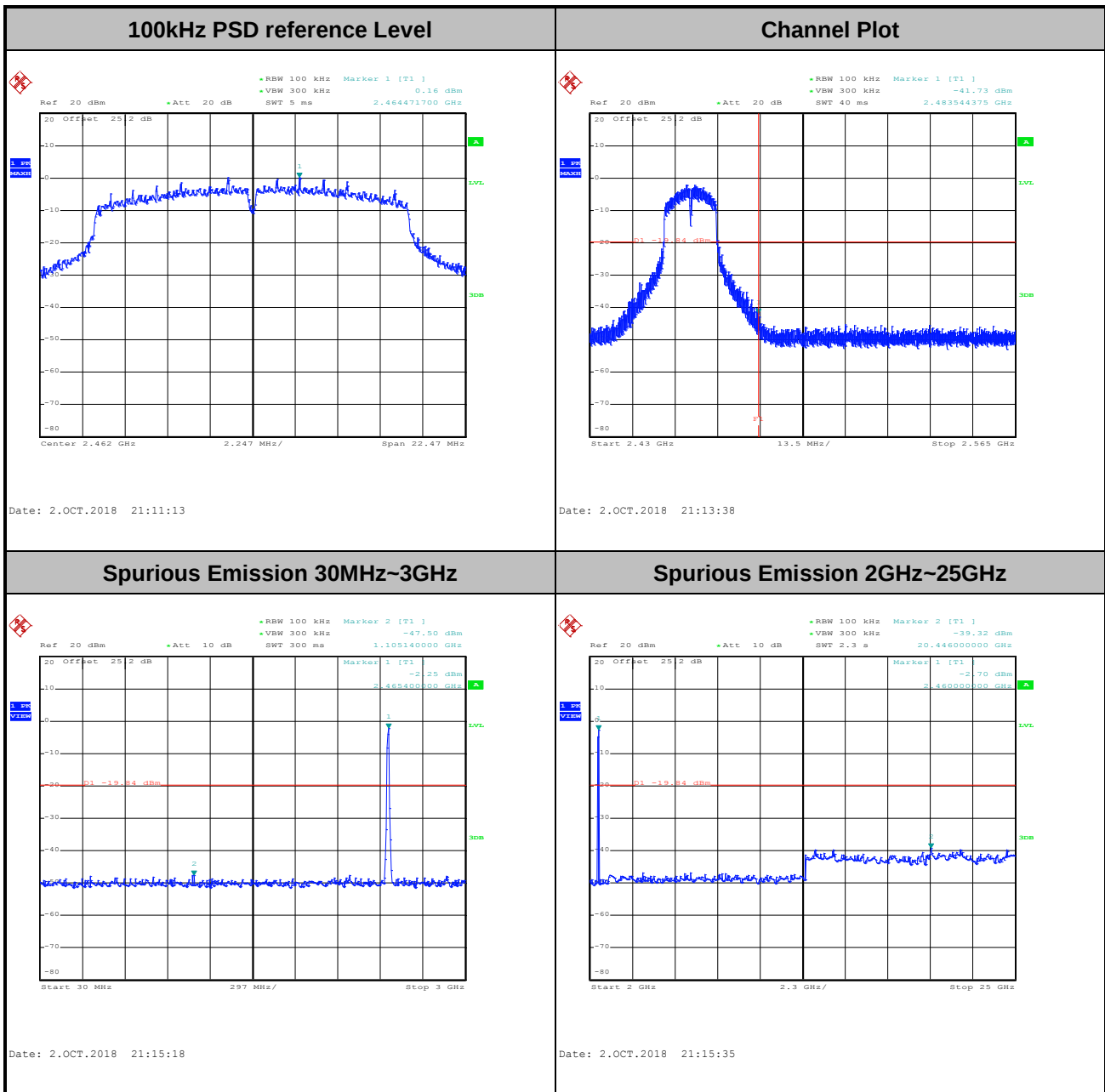
Spurious Emission 2GHz~25GHz



Date: 2.OCT.2018 21:03:31

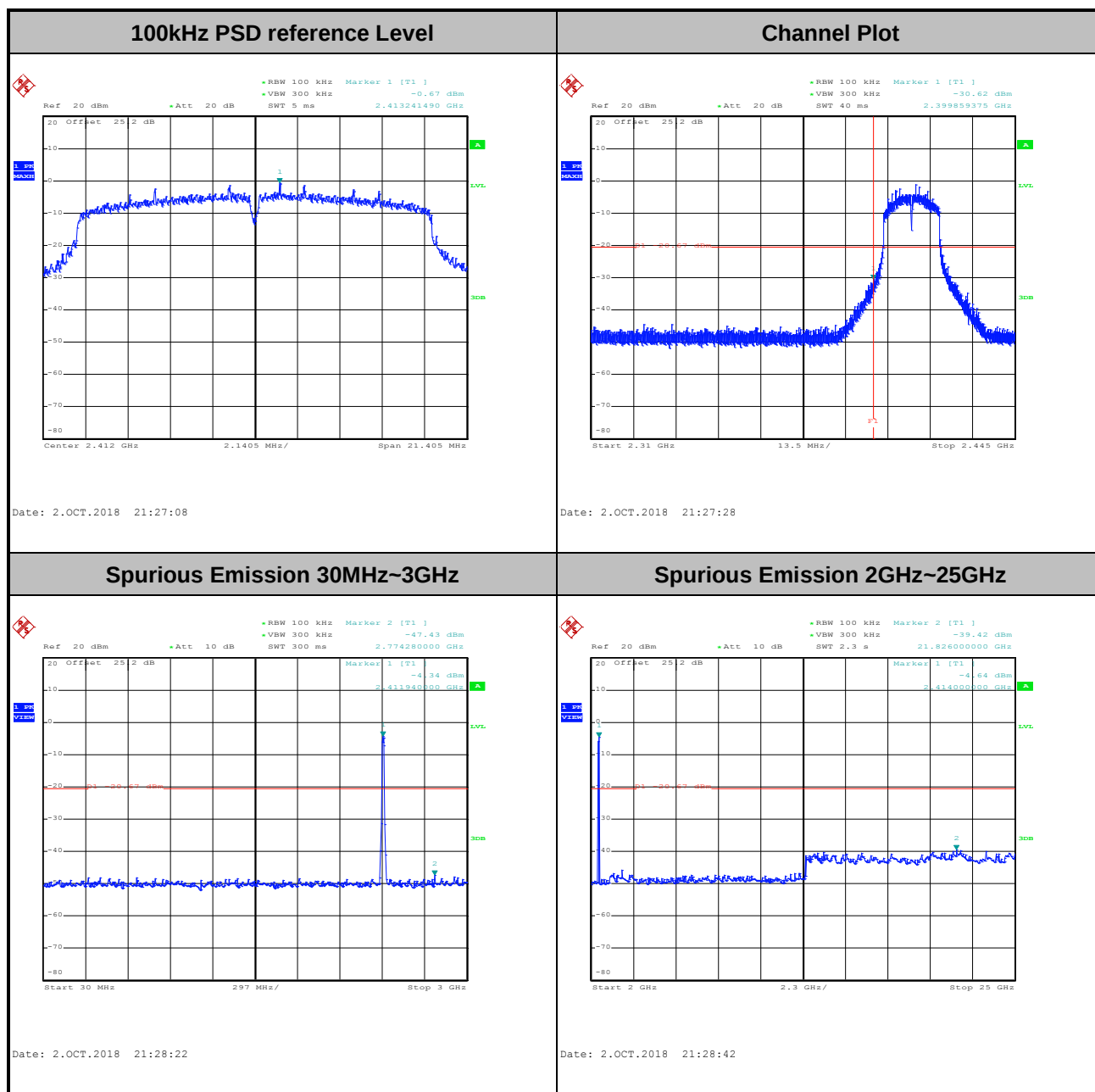


Test Mode :	802.11g	Test Channel :	11
-------------	---------	----------------	----





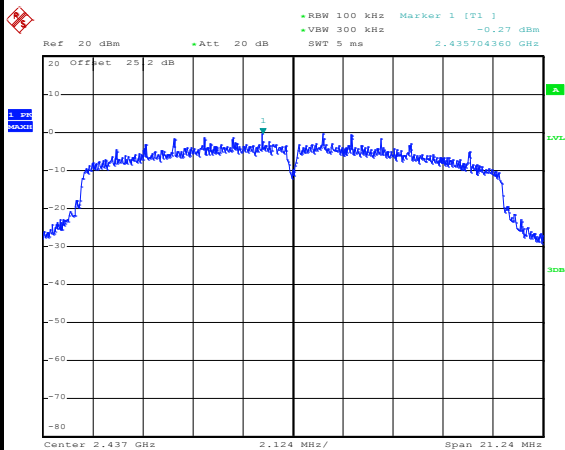
Test Mode :	802.11n HT20	Test Channel :	01
-------------	--------------	----------------	----





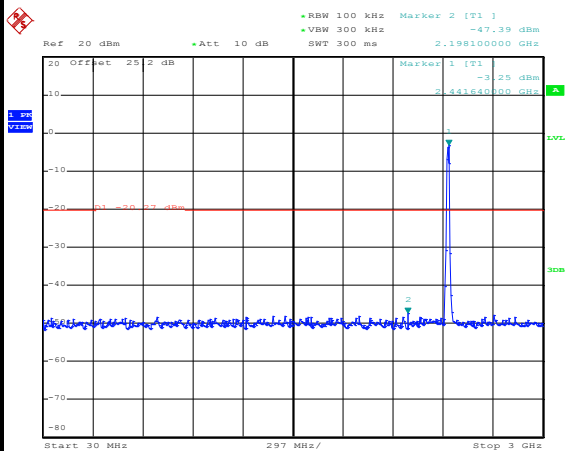
Test Mode :	802.11n HT20	Test Channel :	06
-------------	--------------	----------------	----

100kHz PSD reference Level

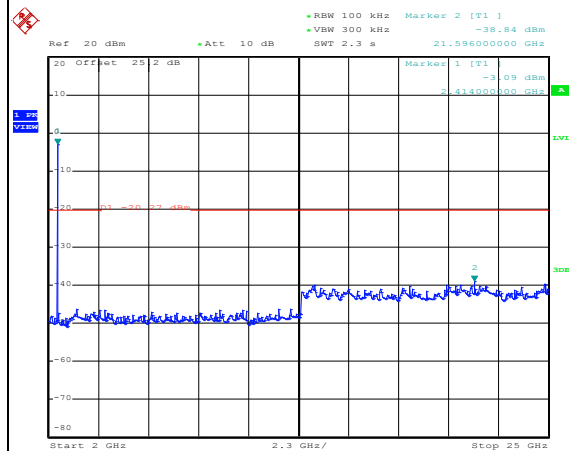


Channel Plot

Spurious Emission 30MHz~3GHz

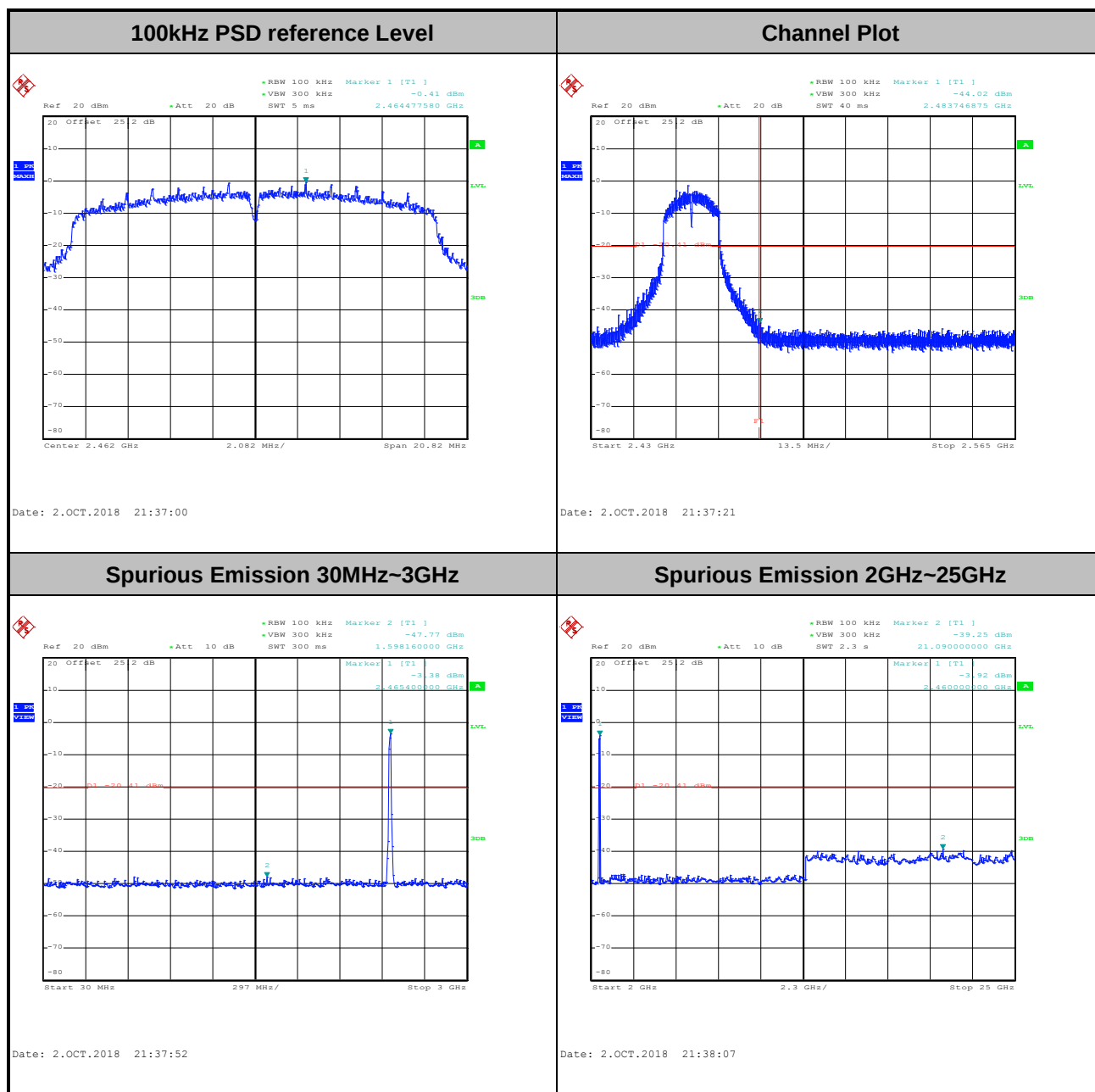


Spurious Emission 2GHz~25GHz





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





3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device 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

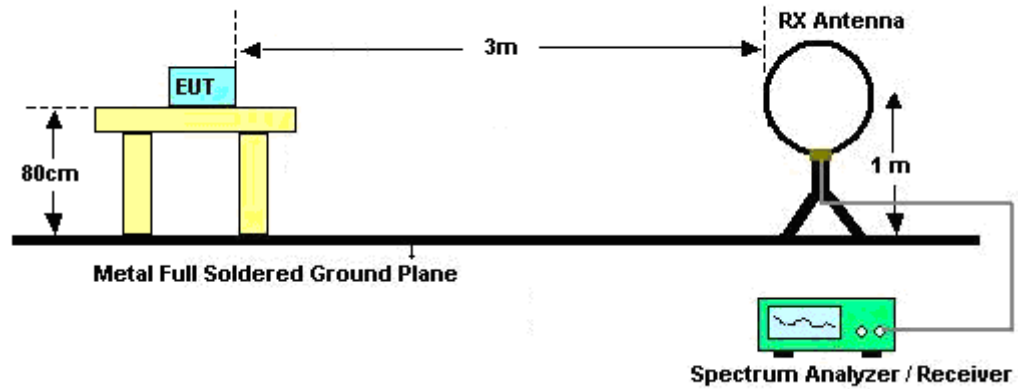
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test 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 $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

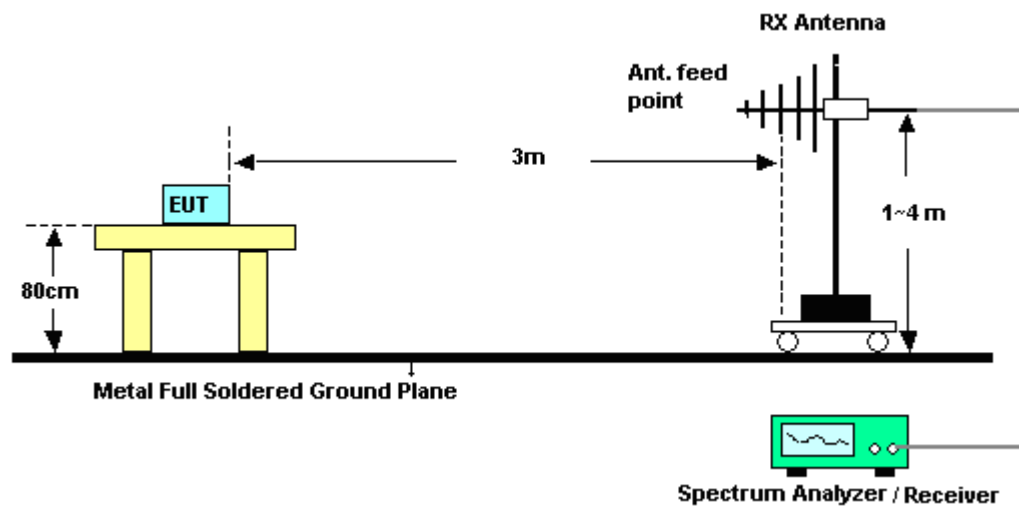
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

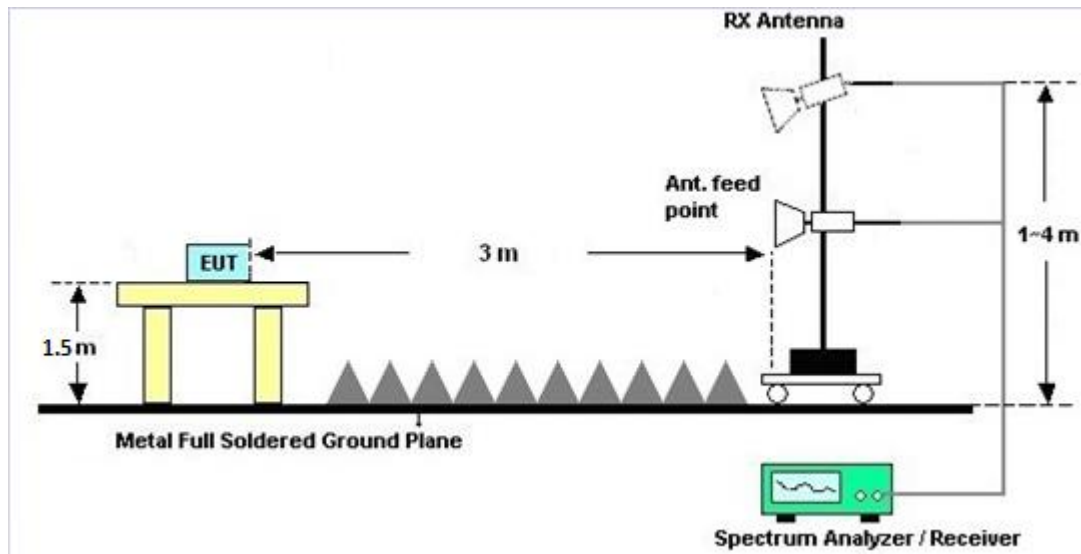
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



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

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

There is a comparison data of both open-field test site and 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 B and C.

3.5.7 Duty Cycle

Please refer to Appendix D.

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

Please refer to Appendix B and C.



3.6 Antenna Requirements

3.6.1 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.

3.6.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.6.3 Antenna Gain

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



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	1218006	N/A	Oct. 06, 2017	Sep. 27, 2018~ Oct. 02, 2018	Oct. 05, 2018	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	1207363	300MHz~40GHz	Oct. 06, 2017	Sep. 27, 2018~ Oct. 02, 2018	Oct. 05, 2018	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP30	101067	9kHz ~ 30GHz	Nov. 13, 2017	Sep. 27, 2018~ Oct. 02, 2018	Nov. 12, 2018	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	EL890001	1V~20V 0.5A~4A	Oct. 06, 2017	Sep. 27, 2018~ Oct. 02, 2018	Oct. 05, 2018	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC1300484	N/A	Mar. 01, 2018	Sep. 27, 2018~ Oct. 02, 2018	Feb. 28, 2019	Conducted (TH05-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Nov. 10, 2017	Sep. 29, 2018~ Oct. 02, 2018	Nov. 09, 2018	Radiation (03CH13-HY)
Amplifier	Sonoma-Instrument	310 N	187282	9KHz~1GHz	Dec. 21, 2016	Sep. 29, 2018~ Oct. 02, 2018	Dec. 20, 2018	Radiation (03CH13-HY)
Bilog Antenna	TESEQ	CBL 6111D&00800 N1D01N-06	40103&07	30MHz to 1GHz	Jan. 10, 2018	Sep. 29, 2018~ Oct. 02, 2018	Jan. 09, 2019	Radiation (03CH13-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1241	1GHz ~ 18GHz	Jun. 29, 2018	Sep. 29, 2018~ Oct. 02, 2018	Jun. 28, 2019	Radiation (03CH13-HY)
Preamplifier	MITEQ	AMF-7D-0010 1800-30-10P	1590074	1GHz~18GHz	May 21, 2018	Sep. 29, 2018~ Oct. 02, 2018	May 20, 2019	Radiation (03CH13-HY)
Preamplifier	Keysight	83017A	MY53270147	1GHz~26.5GHz	Feb. 02, 2018	Sep. 29, 2018~ Oct. 02, 2018	Feb. 01, 2019	Radiation (03CH13-HY)
Spectrum Analyzer	Keysight	N9010A	MY55370526	10Hz~44GHz	Mar. 15, 2018	Sep. 29, 2018~ Oct. 02, 2018	Mar. 14, 2019	Radiation (03CH13-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Sep. 29, 2018~ Oct. 02, 2018	N/A	Radiation (03CH13-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Sep. 29, 2018~ Oct. 02, 2018	N/A	Radiation (03CH13-HY)
EMI Test Receiver	Agilent	N9038A (MXE)	MY53290053	20Hz to 26.5GHz	Jan. 16, 2018	Sep. 29, 2018~ Oct. 02, 2018	Jan. 15, 2019	Radiation (03CH13-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170584	18GHz- 40GHz	Nov. 27, 2017	Sep. 29, 2018~ Oct. 02, 2018	Nov. 26, 2018	Radiation (03CH13-HY)
Filter	Microwave	H3G018G1	SN477219	3.0G High Pass	Nov. 21, 2017	Sep. 29, 2018~ Oct. 02, 2018	Nov. 20, 2018	Radiation (03CH13-HY)
Filter	Wainwright	WLKS1200-8SS	SN3	1.2G Low Pass	Nov. 21, 2017	Sep. 29, 2018~ Oct. 02, 2018	Nov. 20, 2018	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0030/126E	30M-18G	Jan. 22, 2018	Sep. 29, 2018~ Oct. 02, 2018	Jan. 21, 2019	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	335041/4	30M-18G	Jan. 22, 2018	Sep. 29, 2018~ Oct. 02, 2018	Jan. 21, 2019	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY24961/4	30M~18GHz	Jan. 22, 2018	Sep. 29, 2018~ Oct. 02, 2018	Jan. 21, 2019	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30M~40GHz	Oct. 17, 2017	Sep. 29, 2018~ Oct. 02, 2018	Oct. 16, 2018	Radiation (03CH13-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30M~40GHz	Oct. 17, 2017	Sep. 29, 2018~ Oct. 02, 2018	Oct. 16, 2018	Radiation (03CH13-HY)
Software	AUDIX	E3 6.2009-8-24c	RK-001124	N/A	N/A	Sep. 29, 2018~ Oct. 02, 2018	N/A	Radiation (03CH13-HY)

5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.9
--	-----

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.4
--	-----

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.3
--	-----

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Shiming Liu	Temperature:	21~25	°C
Test Date:	2018/9/27~2018/10/2	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band										
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	99% Occupied BW (MHz)		6dB BW (MHz)		6dB BW Limit (MHz)	Pass/Fail
					Ant 1	Ant 2	Ant 1	Ant 2		
11b	1Mbps	1	1	2412	14.70	-	9.98	-	0.50	Pass
11b	1Mbps	1	6	2437	14.60	-	10.04	-	0.50	Pass
11b	1Mbps	1	11	2462	14.55	-	10.06	-	0.50	Pass
11g	6Mbps	1	1	2412	17.10	-	14.41	-	0.50	Pass
11g	6Mbps	1	6	2437	16.75	-	15.07	-	0.50	Pass
11g	6Mbps	1	11	2462	16.75	-	14.98	-	0.50	Pass
HT20	MCS0	1	1	2412	17.90	-	14.27	-	0.50	Pass
HT20	MCS0	1	6	2437	17.75	-	14.16	-	0.50	Pass
HT20	MCS0	1	11	2462	17.70	-	13.88	-	0.50	Pass

TEST RESULTS DATA
Peak Output Power

2.4GHz Band																
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Peak Conducted Power (dBm)			Conducted Power Limit (dBm)		DG (dBi)		EIRP Power (dBm)		EIRP Power Limit (dBm)		Pass /Fail
					Ant 1	Ant 2	SUM	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	16.45	-	-	30.00	-	0.20	-	16.65	-	36.00	-	Pass
11b	1Mbps	1	6	2437	16.75	-	-	30.00	-	0.20	-	16.95	-	36.00	-	Pass
11b	1Mbps	1	11	2462	16.32	-	-	30.00	-	0.20	-	16.52	-	36.00	-	Pass
11g	6Mbps	1	1	2412	17.92	-	-	30.00	-	0.20	-	18.12	-	36.00	-	Pass
11g	6Mbps	1	6	2437	18.44	-	-	30.00	-	0.20	-	18.64	-	36.00	-	Pass
11g	6Mbps	1	11	2462	18.41	-	-	30.00	-	0.20	-	18.61	-	36.00	-	Pass
HT20	MCS0	1	1	2412	17.80	-	-	30.00	-	0.20	-	18.00	-	36.00	-	Pass
HT20	MCS0	1	6	2437	18.26	-	-	30.00	-	0.20	-	18.46	-	36.00	-	Pass
HT20	MCS0	1	11	2462	18.20	-	-	30.00	-	0.20	-	18.40	-	36.00	-	Pass

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

TEST RESULTS DATA
Average Output Power

2.4GHz Band									
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Duty Factor (dB)		Average Conducted Power (dBm)		
					Ant 1	Ant 2	Ant 1	Ant 2	SUM
11b	1Mbps	1	1	2412	0.00	-	14.70	-	-
11b	1Mbps	1	6	2437	0.00	-	14.94	-	
11b	1Mbps	1	11	2462	0.00	-	14.55	-	
11g	6Mbps	1	1	2412	0.45	-	11.15	-	
11g	6Mbps	1	6	2437	0.45	-	11.42	-	
11g	6Mbps	1	11	2462	0.45	-	11.33	-	
HT20	MCS0	1	1	2412	0.49	-	10.24	-	
HT20	MCS0	1	6	2437	0.49	-	10.49	-	
HT20	MCS0	1	11	2462	0.49	-	10.25	-	

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

TEST RESULTS DATA
Peak Power Spectral Density

2.4GHz Band												
Mod.	Data Rate	N _{TX}	CH.	Freq. (MHz)	Peak PSD (dBm/3kHz)			DG (dBi)		Peak PSD Limit (dBm/3kHz)		Pass/Fail
					Ant 1	Ant 2	Worse + 3.01	Ant 1	Ant 2	Ant 1	Ant 2	
11b	1Mbps	1	1	2412	-9.42	-	-	0.20	-	8.00	-	Pass
11b	1Mbps	1	6	2437	-8.82	-	-	0.20	-	8.00	-	Pass
11b	1Mbps	1	11	2462	-9.72	-	-	0.20	-	8.00	-	Pass
11g	6Mbps	1	1	2412	-13.68	-	-	0.20	-	8.00	-	Pass
11g	6Mbps	1	6	2437	-14.05	-	-	0.20	-	8.00	-	Pass
11g	6Mbps	1	11	2462	-14.30	-	-	0.20	-	8.00	-	Pass
HT20	MCS0	1	1	2412	-16.39	-	-	0.20	-	8.00	-	Pass
HT20	MCS0	1	6	2437	-15.11	-	-	0.20	-	8.00	-	Pass
HT20	MCS0	1	11	2462	-15.81	-	-	0.20	-	8.00	-	Pass

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



Appendix B. Radiated Spurious Emission

Test Engineer :	Alex Jheng, Fu Chen, and Wilson Wu	Temperature :	24.5~25°C
		Relative Humidity :	50~52%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Path	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b CH 01 2412MHz		2386.23	53.37	-20.63	74	40.55	27.23	15.49	29.9	389	15	P	H
		2390	42.98	-11.02	54	30.15	27.23	15.49	29.89	389	15	A	H
	*	2412	102.92	-	-	90	27.28	15.53	29.89	389	15	P	H
	*	2412	99.88	-	-	86.96	27.28	15.53	29.89	389	15	A	H
													H
													H
		2390	53.48	-20.52	74	40.65	27.23	15.49	29.89	386	356	P	V
		2390	42.83	-11.17	54	30	27.23	15.49	29.89	386	356	A	V
	*	2412	103.24	-	-	90.32	27.28	15.53	29.89	386	356	P	V
	*	2412	100.24	-	-	87.32	27.28	15.53	29.89	386	356	A	V
													V
													V
802.11b CH 06 2437MHz		2388.96	53.88	-20.12	74	41.06	27.23	15.49	29.9	328	58	P	H
		2389.24	42.55	-11.45	54	29.73	27.23	15.49	29.9	328	58	A	H
	*	2437	104.34	-	-	91.31	27.37	15.55	29.89	328	58	P	H
	*	2437	101.29	-	-	88.26	27.37	15.55	29.89	328	58	A	H
		2485.58	54.16	-19.84	74	40.97	27.46	15.61	29.88	328	58	P	H
		2487.4	43.58	-10.42	54	30.39	27.46	15.61	29.88	328	58	A	H
		2346.82	53.78	-20.22	74	41.14	27.1	15.45	29.91	334	354	P	V
		2389.1	42.32	-11.68	54	29.5	27.23	15.49	29.9	334	354	A	V
	*	2437	102.2	-	-	89.17	27.37	15.55	29.89	334	354	P	V
	*	2437	99.11	-	-	86.08	27.37	15.55	29.89	334	354	A	V
		2488.03	53.65	-20.35	74	40.42	27.5	15.61	29.88	334	354	P	V
		2486.84	43.11	-10.89	54	29.92	27.46	15.61	29.88	334	354	A	V



802.11b CH 11 2462MHz	*	2462	105.04	-	-	91.94	27.41	15.57	29.88	356	58	P	H
	*	2462	101.86	-	-	88.76	27.41	15.57	29.88	356	58	A	H
		2487.76	54.73	-19.27	74	41.5	27.5	15.61	29.88	356	58	P	H
		2487.52	44.38	-9.62	54	31.15	27.5	15.61	29.88	356	58	A	H
													H
													H
	*	2462	102.5	-	-	89.4	27.41	15.57	29.88	372	356	P	V
	*	2462	99.36	-	-	86.26	27.41	15.57	29.88	372	356	A	V
		2490.32	54	-20	74	40.77	27.5	15.61	29.88	372	356	P	V
		2487.48	43.49	-10.51	54	30.3	27.46	15.61	29.88	372	356	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	47.86	-26.14	74	64.9	31.26	8.27	56.57	100	0	P	H
													H
													H
													H
		4824	49.71	-24.29	74	66.75	31.26	8.27	56.57	100	0	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	47.87	-26.13	74	64.57	31.36	8.49	56.55	100	0	P	H
		7311	41.88	-32.12	74	51.25	36.18	10.68	56.23	100	0	P	H
													H
													H
		4874	51.53	-22.47	74	68.23	31.36	8.49	56.55	310	235	P	V
		4874	50.19	-3.81	54	66.89	31.36	8.49	56.55	310	235	A	V
		7311	42.83	-31.17	74	52.2	36.18	10.68	56.23	100	0	P	V
													V
802.11b CH 11 2462MHz		4924	48.85	-25.15	74	65.28	31.46	8.64	56.53	100	0	P	H
		7386	41.92	-32.08	74	51	36.37	10.67	56.12	100	0	P	H
													H
													H
		4924	51.24	-22.76	74	67.67	31.46	8.64	56.53	324	236	P	V
		4924	50.03	-3.97	54	66.46	31.46	8.64	56.53	324	236	A	V
		7386	42.43	-31.57	74	51.51	36.37	10.67	56.12	100	0	P	V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11g (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		2388.54	57.28	-16.72	74	44.46	27.23	15.49	29.9	389	16	P	H
		2389.905	46.1	-7.9	54	33.27	27.23	15.49	29.89	389	16	A	H
	*	2412	102.36	-	-	89.44	27.28	15.53	29.89	389	16	P	H
	*	2412	94.57	-	-	81.65	27.28	15.53	29.89	389	16	A	H
													H
													H
		2389.59	58.79	-15.21	74	45.97	27.23	15.49	29.9	384	355	P	V
		2390	45.96	-8.04	54	33.13	27.23	15.49	29.89	384	355	A	V
	*	2412	102.21	-	-	89.29	27.28	15.53	29.89	384	355	P	V
													V
													V
													V
802.11g CH 06 2437MHz		2386.86	54.55	-19.45	74	41.73	27.23	15.49	29.9	293	63	P	H
		2389.8	42.75	-11.25	54	29.92	27.23	15.49	29.89	293	63	A	H
	*	2437	104.97	-	-	91.94	27.37	15.55	29.89	293	63	P	H
	*	2437	97.08	-	-	84.05	27.37	15.55	29.89	293	63	A	H
		2494.33	53.76	-20.24	74	40.52	27.5	15.61	29.87	293	63	P	H
		2483.83	43.29	-10.71	54	30.1	27.46	15.61	29.88	293	63	A	H
		2382.24	53.26	-20.74	74	40.48	27.19	15.49	29.9	330	354	P	V
		2389.52	42.6	-11.4	54	29.78	27.23	15.49	29.9	330	354	A	V
	*	2437	102.59	-	-	89.56	27.37	15.55	29.89	330	354	P	V
	*	2437	94.52	-	-	81.49	27.37	15.55	29.89	330	354	A	V
		2489.15	53.61	-20.39	74	40.38	27.5	15.61	29.88	330	354	P	V
		2485.02	43.32	-10.68	54	30.13	27.46	15.61	29.88	330	354	A	V



802.11g CH 11 2462MHz	*	2462	103.59	-	-	90.49	27.41	15.57	29.88	400	61	P	H
	*	2462	95.8	-	-	82.7	27.41	15.57	29.88	400	61	A	H
		2483.56	65.72	-8.28	74	52.53	27.46	15.61	29.88	400	61	P	H
		2483.68	48.64	-5.36	54	35.45	27.46	15.61	29.88	400	61	A	H
													H
													H
	*	2462	103.24	-	-	90.14	27.41	15.57	29.88	373	356	P	V
	*	2462	94.17	-	-	81.07	27.41	15.57	29.88	373	356	A	V
		2484.16	61.11	-12.89	74	47.92	27.46	15.61	29.88	373	356	P	V
		2483.52	46.47	-7.53	54	33.28	27.46	15.61	29.88	373	356	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Path Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	40.92	-33.08	74	57.96	31.26	8.27	56.57	100	0	P	H
													H
													H
													H
		4824	45.18	-28.82	74	62.22	31.26	8.27	56.57	100	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	41.03	-32.97	74	57.73	31.36	8.49	56.55	100	0	P	H
		7311	42.63	-31.37	74	52	36.18	10.68	56.23	100	0	P	H
													H
													H
		4874	45.5	-28.5	74	62.2	31.36	8.49	56.55	100	0	P	V
		7311	41.99	-32.01	74	51.36	36.18	10.68	56.23	100	0	P	V
													V
													V
802.11g CH 11 2462MHz		4924	43.47	-30.53	74	59.9	31.46	8.64	56.53	100	0	P	H
		7386	42.8	-31.2	74	51.88	36.37	10.67	56.12	100	0	P	H
													H
													H
		4924	44.76	-29.24	74	61.19	31.46	8.64	56.53	100	0	P	V
		7386	42	-32	74	51.08	36.37	10.67	56.12	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n 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)
802.11n HT20 CH 01 2412MHz		2389.59	61.46	-12.54	74	48.64	27.23	15.49	29.9	326	60	P	H
		2389.905	45.69	-8.31	54	32.86	27.23	15.49	29.89	326	60	A	H
	*	2412	102.89	-	-	89.97	27.28	15.53	29.89	326	60	P	H
	*	2412	94.89	-	-	81.97	27.28	15.53	29.89	326	60	A	H
													H
													H
		2389.59	57.68	-16.32	74	44.86	27.23	15.49	29.9	339	356	P	V
		2390	44.74	-9.26	54	31.91	27.23	15.49	29.89	339	356	A	V
	*	2412	100.93	-	-	88.01	27.28	15.53	29.89	339	356	P	V
	*	2412	92.92	-	-	80	27.28	15.53	29.89	339	356	A	V
													V
													V
802.11n HT20 CH 06 2437MHz		2336.04	52.69	-21.31	74	40.07	27.1	15.43	29.91	361	61	P	H
		2381.26	42.61	-11.39	54	29.83	27.19	15.49	29.9	361	61	A	H
	*	2437	103.45	-	-	90.42	27.37	15.55	29.89	361	61	P	H
	*	2437	95.7	-	-	82.67	27.37	15.55	29.89	361	61	A	H
		2486.77	53.65	-20.35	74	40.46	27.46	15.61	29.88	361	61	P	H
		2484.53	43.43	-10.57	54	30.24	27.46	15.61	29.88	361	61	A	H
		2369.78	53.03	-20.97	74	40.27	27.19	15.47	29.9	332	355	P	V
		2387.98	42.57	-11.43	54	29.75	27.23	15.49	29.9	332	355	A	V
	*	2437	101.72	-	-	88.69	27.37	15.55	29.89	332	355	P	V
	*	2437	93.22	-	-	80.19	27.37	15.55	29.89	332	355	A	V
		2484.81	53.13	-20.87	74	39.94	27.46	15.61	29.88	332	355	P	V
		2484.67	43.21	-10.79	54	30.02	27.46	15.61	29.88	332	355	A	V



802.11n HT20 CH 11 2462MHz	*	2462	103.04	-	-	89.94	27.41	15.57	29.88	284	63	P	H
	*	2462	94.35	-	-	81.25	27.41	15.57	29.88	284	63	A	H
		2483.56	62.08	-11.92	74	48.89	27.46	15.61	29.88	284	63	P	H
		2483.52	46.52	-7.48	54	33.33	27.46	15.61	29.88	284	63	A	H
													H
													H
	*	2462	100.66	-	-	87.56	27.41	15.57	29.88	380	340	P	V
	*	2462	93.11	-	-	80.01	27.41	15.57	29.88	380	340	A	V
		2484.56	59.07	-14.93	74	45.88	27.46	15.61	29.88	380	340	P	V
		2483.6	45.71	-8.29	54	32.52	27.46	15.61	29.88	380	340	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz
WIFI 802.11n 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	40.54	-33.46	74	57.58	31.26	8.27	56.57	100	0	P	H
													H
													H
													H
		4824	41.42	-32.58	74	58.46	31.26	8.27	56.57	100	0	P	V
													V
													V
													V
802.11n HT20 CH 06 2437MHz		4874	40.97	-33.03	74	57.67	31.36	8.49	56.55	100	0	P	H
		7311	41.48	-32.52	74	50.85	36.18	10.68	56.23	100	0	P	H
													H
													H
		4874	42.03	-31.97	74	58.73	31.36	8.49	56.55	100	0	P	V
		7311	41.6	-32.4	74	50.97	36.18	10.68	56.23	100	0	P	V
													V
													V
802.11n HT20 CH 11 2462MHz		4924	41.72	-32.28	74	58.15	31.46	8.64	56.53	100	0	P	H
		7386	43.45	-30.55	74	52.53	36.37	10.67	56.12	100	0	P	H
													H
													H
		4924	44.7	-29.3	74	61.13	31.46	8.64	56.53	100	0	P	V
		7386	42.05	-31.95	74	51.13	36.37	10.67	56.12	100	0	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

2.4GHz 2400~2483.5MHz

Emission below 1GHz

2.4GHz WIFI 802.11b (LF)

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)
2.4GHz 802.11b LF		72.12	28.66	-11.34	40	47.05	12.75	1.17	32.31	100	0	P	H
		95.88	30.41	-13.09	43.5	45.68	15.67	1.35	32.29	-	-	P	H
		192	28.21	-15.29	43.5	43.74	15.01	1.73	32.27	-	-	P	H
		335.7	32.31	-13.69	46	42.23	20	2.22	32.14	-	-	P	H
		360.2	32.24	-13.76	46	41.27	20.83	2.28	32.14	-	-	P	H
		947.5	33.47	-12.53	46	30.34	30.5	3.71	31.08	-	-	P	H
													H
													H
													H
													H
													H
													H
		31.08	36.76	-3.24	40	44.35	23.96	0.79	32.34	100	0	P	V
		39.99	33.26	-6.74	40	44.9	19.71	0.98	32.33	-	-	P	V
		72.12	33.35	-6.65	40	51.74	12.75	1.17	32.31	-	-	P	V
		311.9	32.76	-13.24	46	43.32	19.42	2.15	32.13	-	-	P	V
		335.7	37.65	-8.35	46	47.57	20	2.22	32.14	-	-	P	V
		954.5	33.77	-12.23	46	30.22	30.86	3.71	31.02	-	-	P	V
													V
													V
												V	
												V	
												V	
												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		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. 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 C. Radiated Spurious Emission Plots

Test Engineer :	Alex Jheng, Fu Chen, and Wilson Wu	Temperature :	24.5~25°C
		Relative Humidity :	50~52%

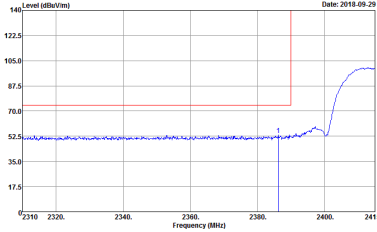
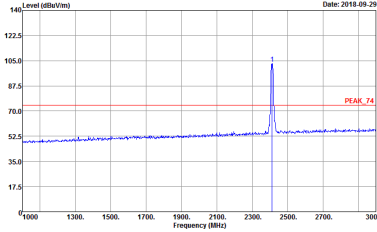
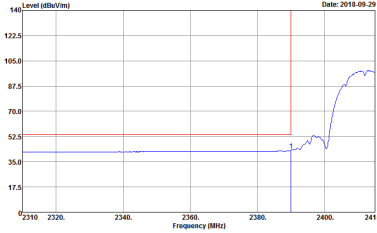
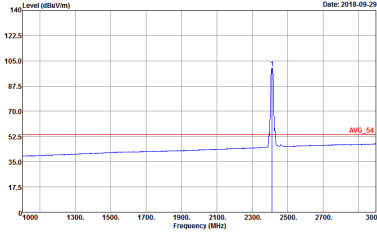
Note symbol

-L	Low channel location
-R	High channel location

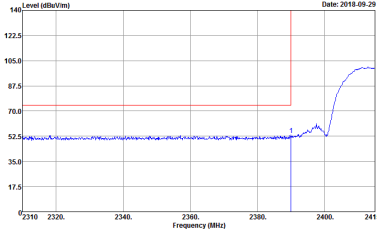
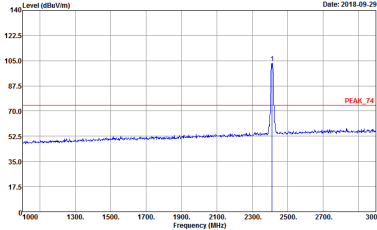
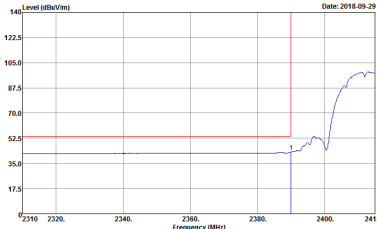
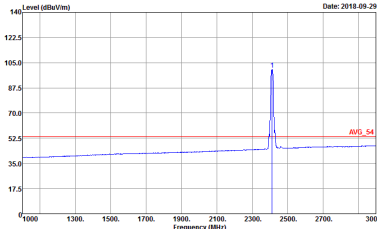


2.4GHz 2400~2483.5MHz

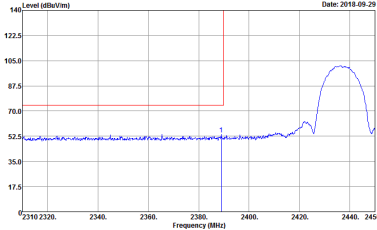
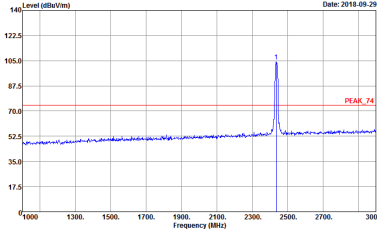
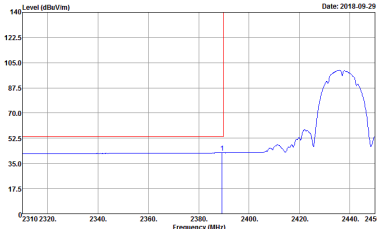
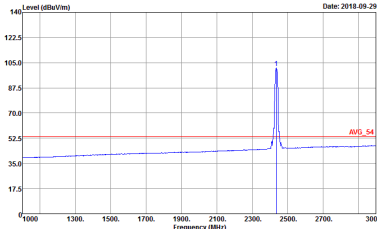
WIFI 802.11b (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 4	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 4
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 870921 Mode : 4	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto Detector : Peak Project : 870921 Mode : 4

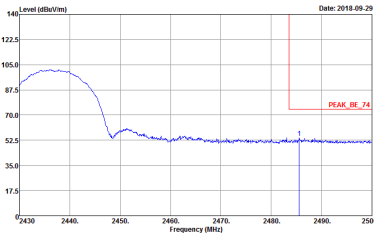
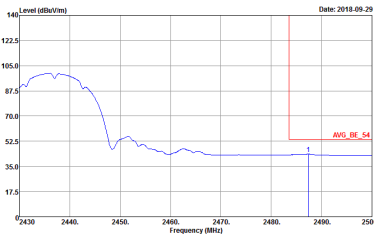


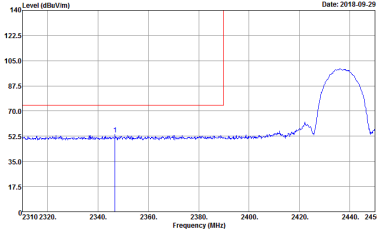
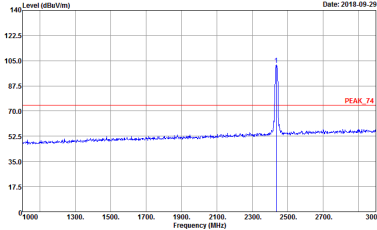
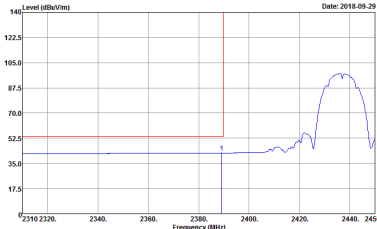
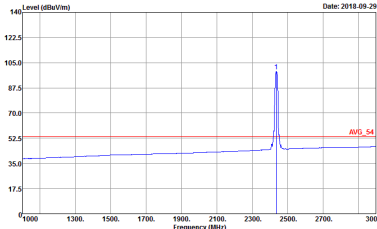
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 870921 Mode : 4	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 870921 Mode : 4
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 870921 Mode : 4	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Project : 870921 Mode : 4

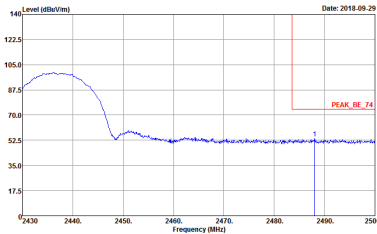
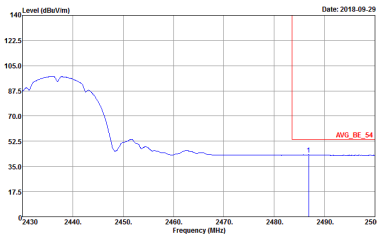


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 5	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 5
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 5	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 5

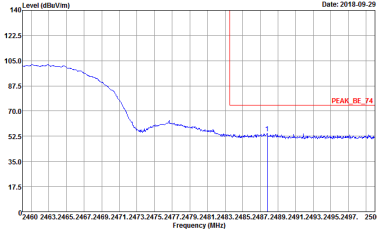
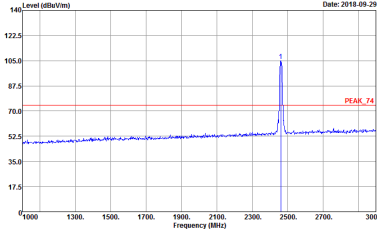
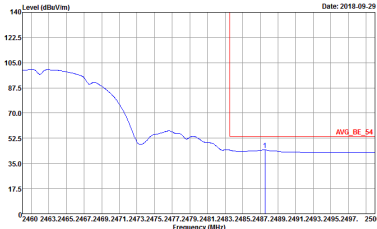
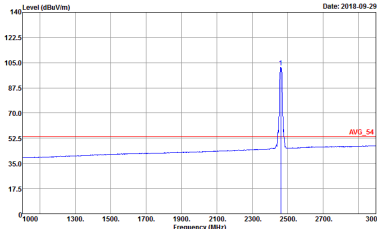


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 5	Left blank
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 5	Left blank

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 5	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 5
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 5	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 5
Avg.		

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_9120D_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 5	Left blank
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_9120D_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 5	Left blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 6	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 6
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 6	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 6

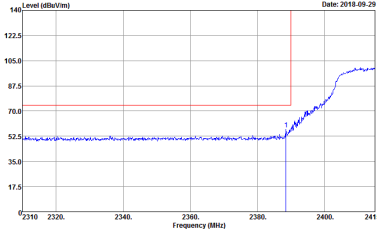
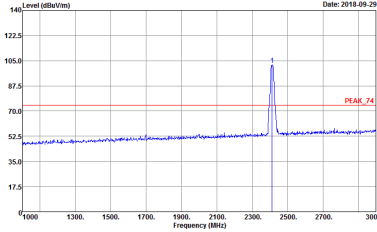
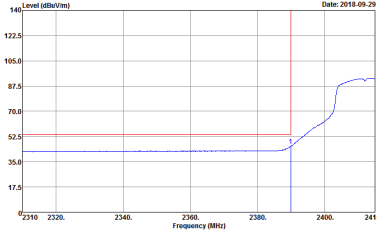
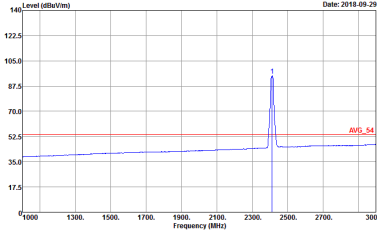


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Vertical	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 6	Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 6
	Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 6	Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 6

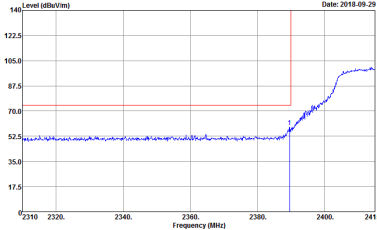
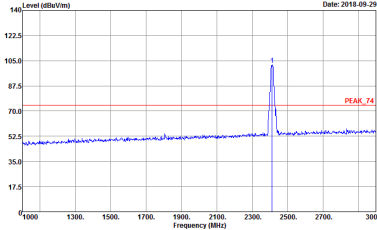
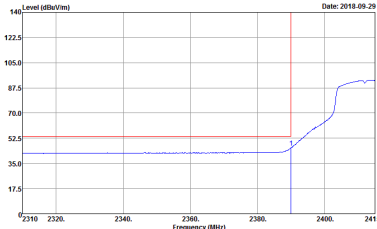
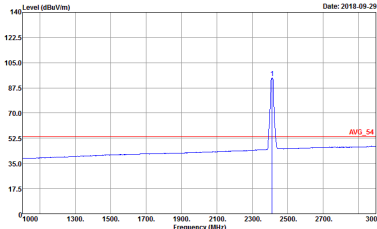


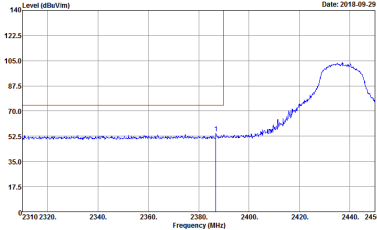
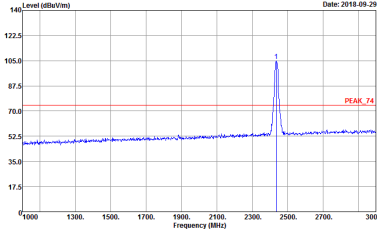
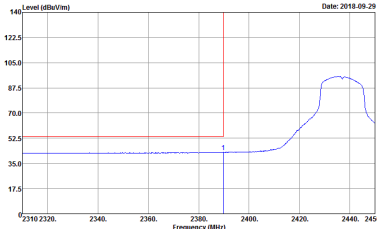
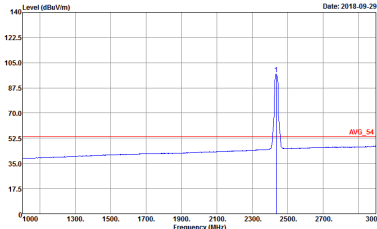
2.4GHz 2400~2483.5MHz

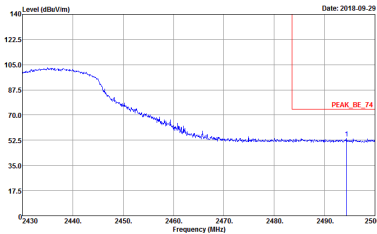
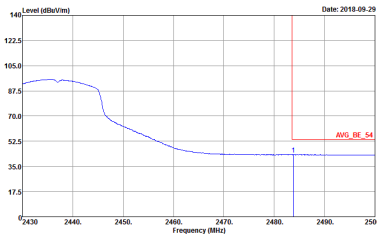
WIFI 802.11g (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 7	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 7
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:0.300KHz SWT:Auto Detector : Peak Project : 870921 Mode : 7	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:0.300KHz SWT:Auto Detector : Peak Project : 870921 Mode : 7

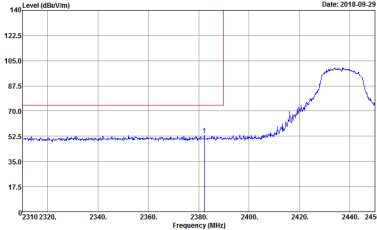
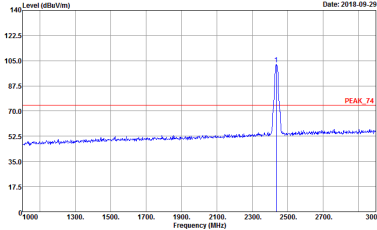
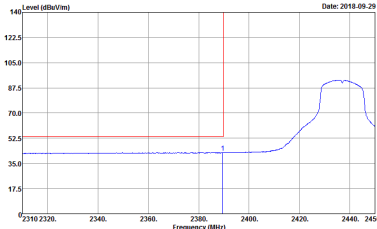
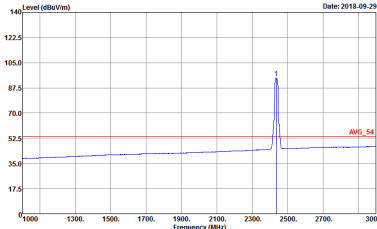


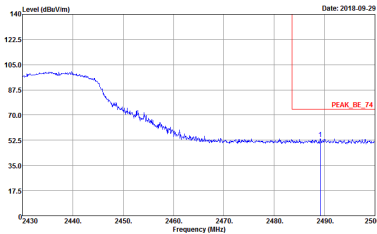
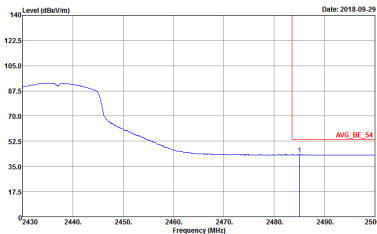
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 7	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 7
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 7	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 7

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 8	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 8
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 8	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 8

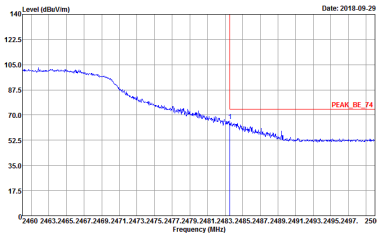
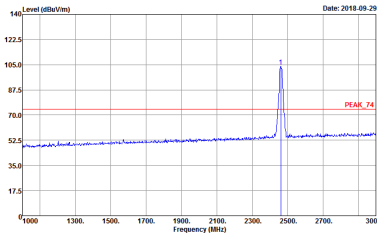
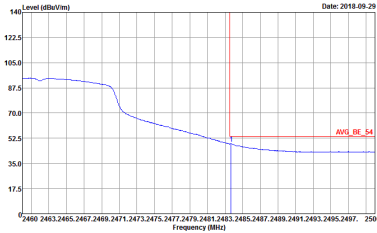
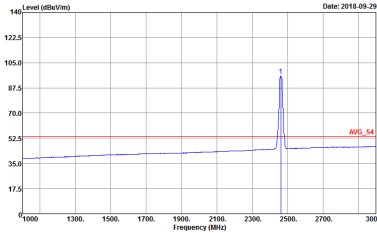
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz SWT:Auto Detector : Peak Project : 870921 Mode : 8	Left blank
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000kHz VBW:3.000kHz SWT:Auto Detector : Peak Project : 870921 Mode : 8	Left blank

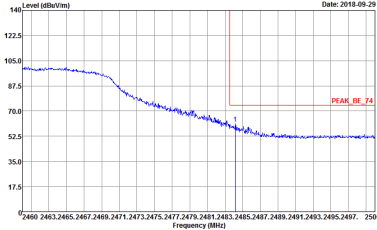
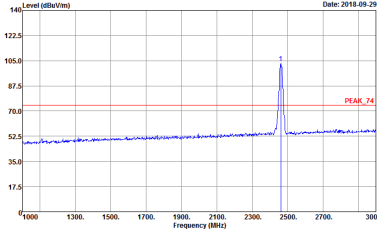
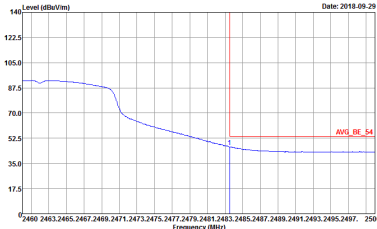
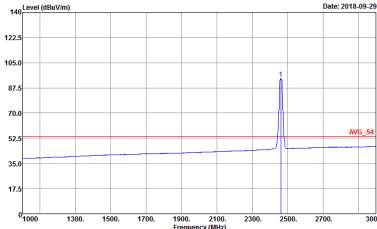


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 8	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 8
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 8	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 8

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 8	Left Blank
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 8	Left Blank



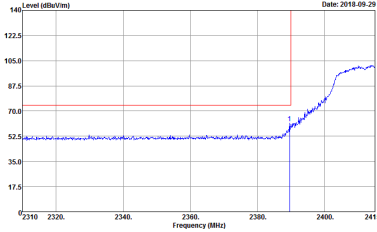
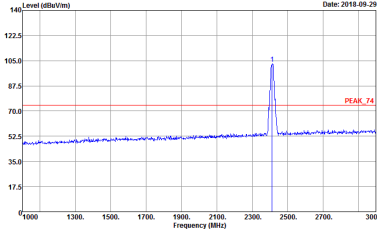
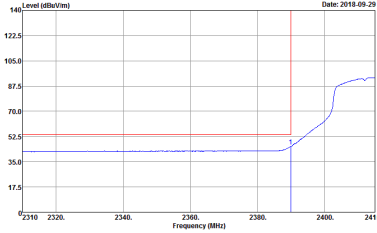
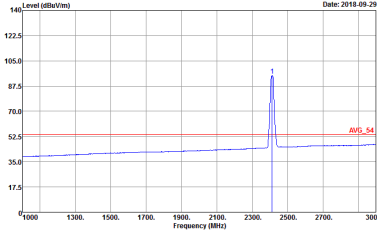
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 9	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 9
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 9	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 9

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 9	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 9
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 9	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 9

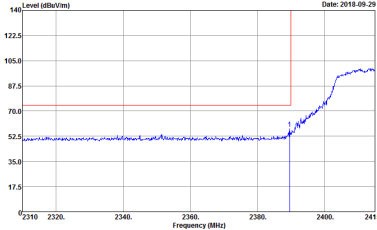
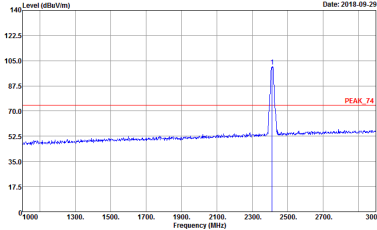
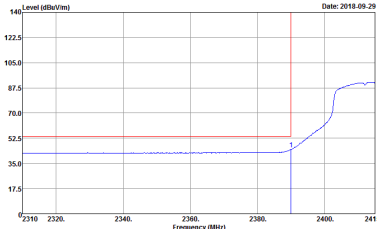
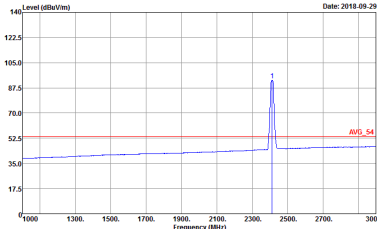


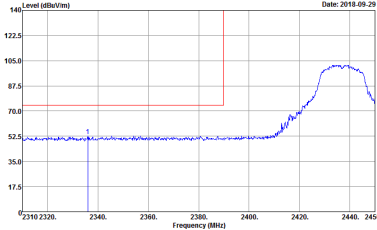
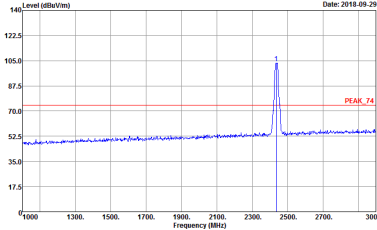
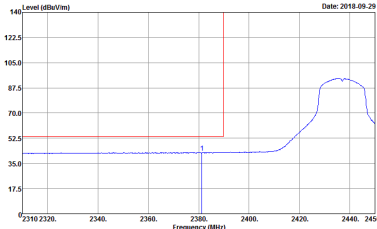
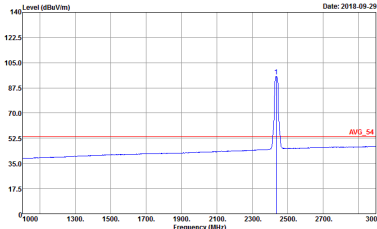
2.4GHz 2400~2483.5MHz

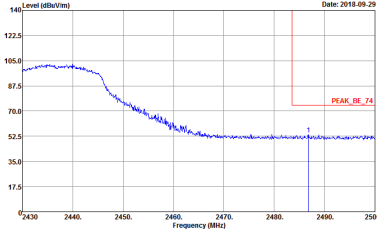
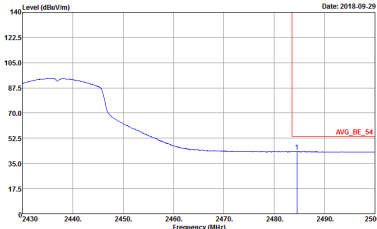
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 10	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 10
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:0.300KHz SWT:Auto Detector : Peak Project : 870921 Mode : 10	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:0.300KHz SWT:Auto Detector : Peak Project : 870921 Mode : 10

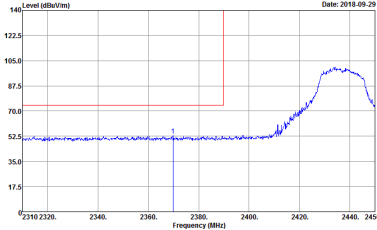
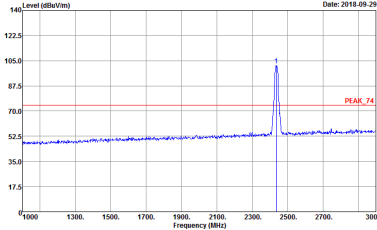
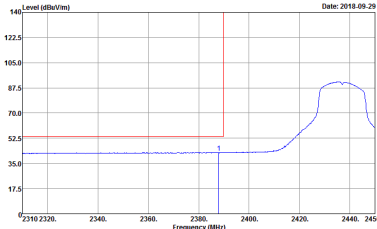
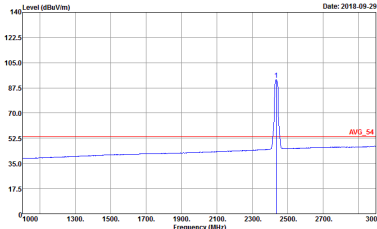


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 10	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 10
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 10	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 10

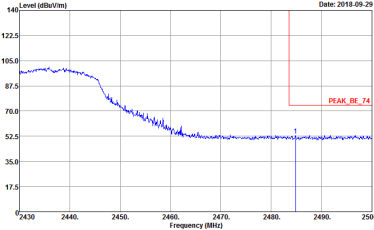
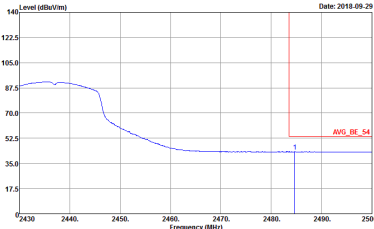
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 11	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 11
	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 11	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 11

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Horizontal	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 11	Left blank
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL Detector : Peak Project : 870921 Mode : 11	Left blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 11	 Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 11
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 11	 Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 11



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Vertical	Fundamental
Peak	 Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 11	Left Blank
Avg.	 Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL RBW:1000.000KHz VBW:3.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 11	Left Blank



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 12	Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto Detector : Peak Project : 870921 Mode : 12
Avg.	Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:0.300KHz SWT:Auto Detector : Peak Project : 870921 Mode : 12	Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 HORIZONTAL RBW:1000.000KHz VBW:0.300KHz SWT:Auto Detector : Peak Project : 870921 Mode : 12

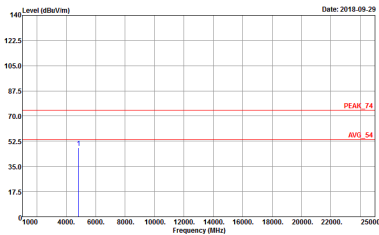
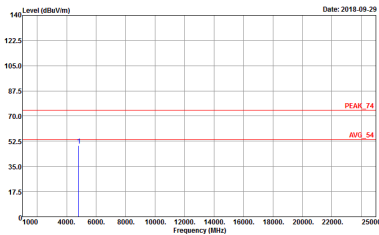


WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Vertical	Fundamental
Peak	Site : 03CH13-HY Condition : PEAK_BE_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 12	Site : 03CH13-HY Condition : PEAK_74 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 12
	Site : 03CH13-HY Condition : AVG_BE_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 12	Site : 03CH13-HY Condition : AVG_54 3m HORN_91200_1241 VERTICAL Detector : Peak Project : 870921 Mode : 12



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 870921 Mode : 4	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 870921 Mode : 4



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH13-11Y Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 870921 Mode : S	Site : 03CH13-11Y Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 870921 Mode : S

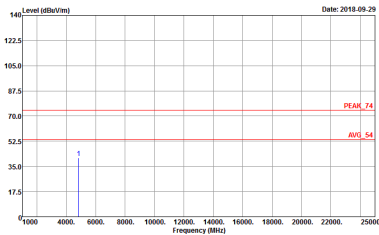
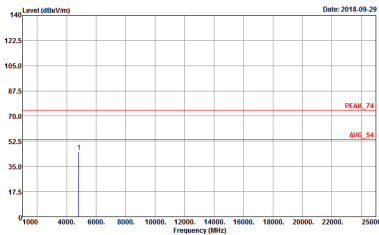


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH13-11Y Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 870921 Mode : 6	Site : 03CH13-11Y Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 870921 Mode : 6



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 870921 Mode : 7	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 870921 Mode : 7



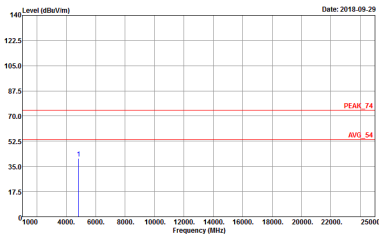
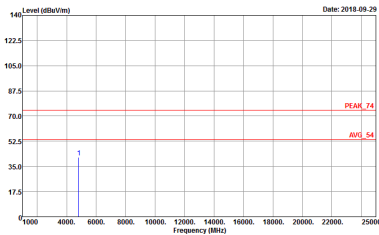
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH13-11Y Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 870921 Mode : 8	Site : 03CH13-11Y Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 870921 Mode : 8



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH13-11Y Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 870921 Mode : 9	Site : 03CH13-11Y Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 870921 Mode : 9



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.	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 870921 Mode : 10	 Site : 03CH13-HY Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 870921 Mode : 10

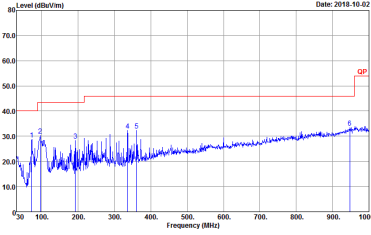
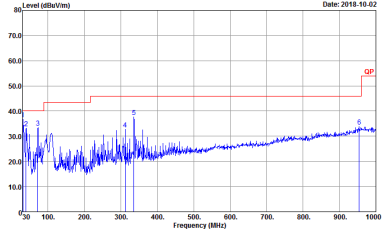


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH13-49Y Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 870921 Mode : 11	Site : 03CH13-49Y Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 870921 Mode : 11



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH13-49Y Condition : PEAK_74 3m SHF_HORN_576 HORIZONTAL Detector : Peak Project : 870921 Mode : 12	Site : 03CH13-49Y Condition : PEAK_74 3m SHF_HORN_576 VERTICAL Detector : Peak Project : 870921 Mode : 12

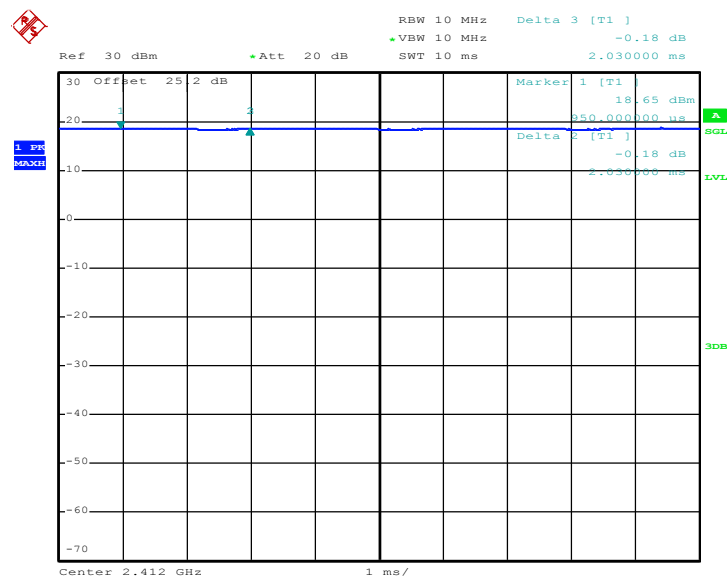
Emission below 1GHz
2.4GHz WIFI 802.11b (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11b LF	
1	Horizontal	Vertical
QP / Peak	 Site : 03CH13-HY Condition : QP 3m BLOC_40103 HORIZONTAL Detector : Peak Project : 870921 Mode : 18	 Site : 03CH13-HY Condition : QP 3m BLOC_40103 VERTICAL Detector : Peak Project : 870921 Mode : 18

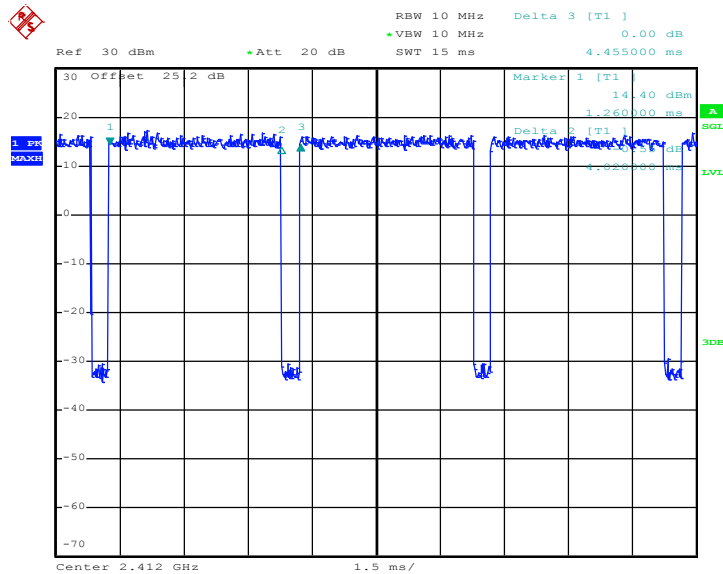
Appendix D. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting	Duty Factor(dB)
802.11b	100.00	2030	0.49	10Hz	0.00
802.11g	90.24	4020	0.25	300Hz	0.45
802.11n HT20	89.29	3375	0.30	300Hz	0.49

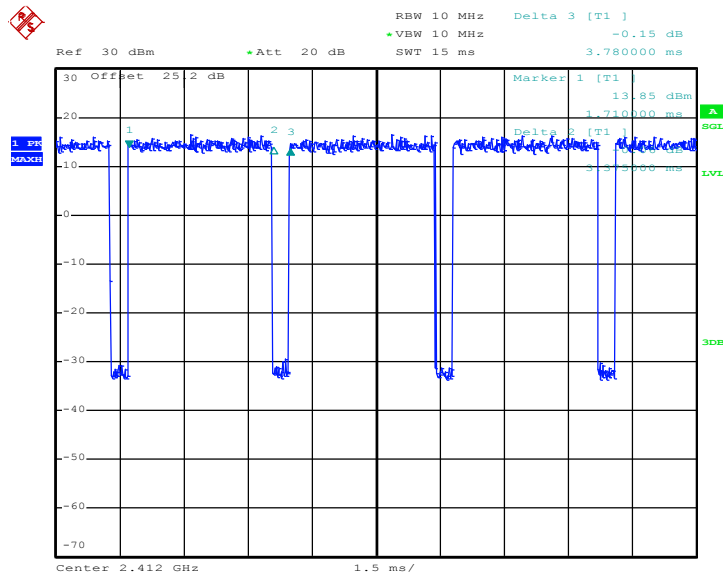
802.11b



Date: 27.SEP.2018 06:04:00

802.11g


Date: 27.SEP.2018 06:34:17

802.11n HT20


Date: 27.SEP.2018 06:48:11